

**Sigma**  
elektrik

2018



**LOW VOLTAGE PRODUCTS**

**ORDER CATALOG**



## Company Profile



Sigma Elektrik® located in İstanbul, is one of the leading company, focuses on designing, manufacturing and marketing of low voltage switchgear components such as MCCB, MCB, RCCB, Contactors, Current Transformers, Motor Protection switches e.g since 1993 in Turkey. The key figure of the company's growth strategies are its subsidiaries in Turkey and abroad and close cooperation with selected strategic partners. Its products are being distributed through 5 different continents over the World.

In Sigma Elektrik® considering quality is an indispensable principle at each step of manufacturing, all work processes are completed according to ISO Quality Management System and awarded by ISO 9001:2008, ISO 14001 certificates. All products are manufactured according to applicable EN, IEC, UKRSEPRO, GOST and CE Conformance Certificates from international accredited laboratories.

Consequence of overachievements of Sigma Elektrik®, it expanded business operation and distribution channel by foreign Joint Venture investment from Netherland in 2009. Currently, %50 of its shares belongs to a Dutch company. Sigma Elektrik® is a leading supplier of solutions and services for low voltage products in residential and commercial buildings as well as for switchgear applications in industrial projects. The quality of the products and services are constantly aimed at achieving customer's satisfaction and corresponding business excellence.

Sigma Elektrik® has a modern moulding room equipped with modern workbenches. We use Uni-graphics NX software which is advanced for design, modeling, production, engineering analyse, improvement, integrated with CAD / CAM / CAE applications, and this is one of the most popular software in aviation, automation, defence, mechanical, plastic and moulding industries. We provide you large scale of solution for your LV Electro mechanical component requirements by using these assets and create extra value for solution.



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## LV MCCB, Thermal-Magnetic Adjustable Type - Technical Specifications

| Type                                               |          |    |                           | C160                                          | K 160                                         |     | M160                          | K 250                           |     | M 250                                       |     | S 250                           |
|----------------------------------------------------|----------|----|---------------------------|-----------------------------------------------|-----------------------------------------------|-----|-------------------------------|---------------------------------|-----|---------------------------------------------|-----|---------------------------------|
| Standard                                           |          |    |                           | IEC / EN 60947-2                              | IEC / EN 60947-2                              |     | IEC / EN 60947-2              | IEC/EN 60947-2                  |     | IEC / EN 60947-2                            |     | IEC / EN 60947-2                |
| Rated Current In (at 40°C)                         | A        |    |                           | 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 | 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 |     | 40, 50, 63, 80, 100, 125, 160 | 63, 80, 100, 125, 160, 200, 250 |     | 32, 40, 50, 63, 80, 100, 125, 160, 200, 250 |     | 100, 125, 160, 200, 250         |
| No of Poles                                        |          |    |                           | 3                                             | 3                                             | 4   | 3                             | 3                               | 4   | 3                                           | 4   | 3                               |
| Frequency                                          |          |    | Hz                        | 50-60                                         | 50-60                                         |     | 50-60                         | 50-60                           |     | 50-60                                       |     | 50-60                           |
| Rated Operating Voltage                            | Ue       | V  | AC                        | 400                                           | 415                                           |     | 400                           | 400                             |     | 400                                         |     | 400                             |
| Rated Insulation Voltage                           | Ui       | V  | AC                        | 690                                           | 750                                           |     | 750                           | 690                             |     | 750                                         |     | 750                             |
| Power Frequency Withstand Test at 1 Minute         |          | V  | AC                        | 3000                                          | 3000                                          |     | 3000                          | 3000                            |     | 3000                                        |     | 3000                            |
| Rated Impulse Withstand Voltage                    | Uimp     | kV | AC                        | 8                                             | 8                                             |     | 8                             | 8                               |     | 8                                           |     | 8                               |
| Rated Ultimate Short Circuit Breaking Capacity     | Icu      | kA | 690 V AC                  | 5                                             | 8                                             |     | 10                            | 8                               |     | 10                                          |     | 16                              |
|                                                    |          |    | 500 V AC                  | 7                                             | 9                                             |     | 18                            | 9                               |     | 18                                          |     | 42                              |
|                                                    |          |    | 440 V AC                  | 15                                            | 22                                            |     | 42                            | 22                              |     | 42                                          |     | 50                              |
|                                                    |          |    | 415 V AC                  | 25                                            | 50                                            |     | 50                            | 36                              |     | 50                                          |     | 70                              |
|                                                    |          |    | 240 V AC                  | 35                                            | 50                                            |     | 65                            | 50                              |     | 65                                          |     | 100                             |
|                                                    |          |    | 250 V DC (3 poles serial) | 10                                            | 15                                            |     | 25                            | 15                              |     | 25                                          |     | 30                              |
| Rated Service Short Circuit Breaking Capacity      | Ics      | kA | 690 V AC                  | 5                                             | 8                                             |     | 8                             | 8                               |     | 10                                          |     | 8                               |
|                                                    |          |    | 500 V AC                  | 7                                             | 9                                             |     | 14                            | 9                               |     | 18                                          |     | 21                              |
|                                                    |          |    | 440 V AC                  | 10                                            | 22                                            |     | 32                            | 22                              |     | 42                                          |     | 25                              |
|                                                    |          |    | 415 V AC                  | 18                                            | 50                                            |     | 50                            | 18                              |     | 50                                          |     | 52                              |
|                                                    |          |    | 240 V AC                  | 25                                            | 50                                            |     | 50                            | 50                              |     | 65                                          |     | 50                              |
|                                                    |          |    | 250 V DC (3 poles serial) | 5                                             | 10                                            |     | 19                            | 10                              |     | 25                                          |     | 23                              |
| Category (IEC/EN 60947-2)                          |          |    |                           | A                                             | A                                             |     | A                             | A                               |     | A                                           |     | A                               |
| Pollution Degree                                   |          |    |                           | 3                                             | 3                                             |     | 3                             | 3                               |     | 3                                           |     | 3                               |
| Electrical Life (Operation)                        | ON - OFF |    | 415 V                     | 5000                                          | 8000                                          |     | 8000                          | 8000                            |     | 8000                                        |     | 8000                            |
| Mechanical Life (Operation)                        | ON - OFF |    |                           | 15000                                         | 20000                                         |     | 20000                         | 20000                           |     | 20000                                       |     | 20000                           |
| Protection Unit                                    |          |    |                           | Thermal Magnetic Fixed                        |                                               |     |                               | Thermal Magnetic Adjustable     |     |                                             |     |                                 |
| Protection Unit (Power & NetworkSystem Protection) |          |    |                           | Ir: (0,8-1)xIn ; Im: 10xIn                    | Ir: (0,7-1)xIn ; Im: 10xIn                    |     | Ir: (0,8-1)xIn ; Im: 10xIn    | Ir: (0,7-1)xIn ; Im: (5-10)xIn  |     | Ir: (0,7-1)xIn ; Im: (5-10)xIn              |     | Ir: (0,8-1)xIn ; Im: (5-10)xIn  |
| Protection Unit (AC Motors Protection)             |          |    |                           | Ir: (0,8-1)xIn ; Im: 15xIn                    | Ir: (0,7-1)xIn ; Im: 15xIn                    |     | Ir: (0,8-1)xIn ; Im: 15xIn    | Ir: (0,7-1)xIn ; Im: (10-15)xIn |     | Ir: (0,7-1)xIn ; Im: (10-15)xIn             |     | Ir: (0,8-1)xIn ; Im: (10-15)xIn |
| Ambient Operation Temperature                      | °C       |    |                           | -20 to +60                                    | -20 to +60                                    |     | -20 to +60                    | -20 to +60                      |     | -20 to +60                                  |     | -20 to +60                      |
| Ambient Storage Temperature                        | °C       |    |                           | -40 to +80                                    | -40 to +80                                    |     | -40 to +80                    | -40 to +80                      |     | -40 to +80                                  |     | -40 to +80                      |
| Dimensions                                         | Width    | mm |                           | 90                                            | 105                                           | 140 | 90                            | 105                             | 140 | 105                                         | 140 | 105                             |
|                                                    | Length   | mm |                           | 141                                           | 178                                           | 169 | 138                           | 178                             | 161 | 178                                         | 161 | 161                             |
|                                                    | Depth    | mm |                           | 75                                            | 89                                            | 89  | 89                            | 89                              | 89  | 89                                          | 89  | 89                              |
| Accessories                                        |          |    |                           |                                               |                                               |     |                               |                                 |     |                                             |     |                                 |
| Shunt Trip Release                                 |          |    |                           | √                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |
| Under Voltage Release                              |          |    |                           | √                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |
| Auxiliary Contact                                  |          |    |                           | √                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |
| Alarm Contact                                      |          |    |                           | √                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |
| Motor Operator                                     |          |    |                           | —                                             | √                                             |     | —                             | √                               |     | √                                           |     | —                               |
| Ext. Rotary Handle                                 |          |    |                           | —                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |
| Connection Clamp                                   |          |    |                           | Standard                                      | √                                             |     | —                             | √                               |     | √                                           |     | —                               |
| Mechanical Lock Ped                                |          |    |                           | √                                             | √                                             |     | —                             | √                               |     | √                                           |     | —                               |
| Extention Bus Bar                                  |          |    |                           | —                                             | √                                             |     | √                             | √                               |     | √                                           |     | √                               |

| U250                              |     | K 400                             | M 400                             | S 400                              |     | K 630                             | M 630                             | S 630                              |     | M800                               | S800                               | U1600                             |
|-----------------------------------|-----|-----------------------------------|-----------------------------------|------------------------------------|-----|-----------------------------------|-----------------------------------|------------------------------------|-----|------------------------------------|------------------------------------|-----------------------------------|
| IEC / EN 60947-2                  |     | IEC / EN 60947-2                  | IEC / EN 60947-2                  | IEC / EN 60947-2                   |     | IEC / EN 60947-2                  | IEC / EN 60947-2                  | IEC / EN 60947-2                   |     | IEC / EN 60947-2                   | IEC / EN 60947-2                   | IEC / EN 60947-2                  |
| 100, 160, 250                     |     | 315, 400                          | 315, 400                          | 315, 400                           |     | 500, 630                          | 500, 630                          | 500, 630                           |     | 800                                | 800                                | 800, 1000, 1250, 1600             |
| 3                                 | 4   | 3                                 | 3                                 | 3                                  | 4   | 3                                 | 3                                 | 3                                  | 4   | 3                                  | 3                                  | 3                                 |
| 50-60                             |     | 50-60                             | 50-60                             | 50-60                              |     | 50-60                             | 50-60                             | 50-60                              |     | 50-60                              | 50-60                              | 50-60                             |
| 400                               |     | 400                               | 400                               | 400                                |     | 400                               | 400                               | 400                                |     | 400                                | 400                                | 415                               |
| 750                               |     | 690                               | 750                               | 690                                |     | 690                               | 750                               | 750                                |     | 750                                | 750                                | 690                               |
| 3000                              |     | 3000                              | 3000                              | 3000                               |     | 3000                              | 3000                              | 3000                               |     | 3000                               | 3000                               | 3000                              |
| 8                                 |     | 8                                 | 8                                 | 8                                  |     | 8                                 | 8                                 | 8                                  |     | 8                                  | 8                                  | 8                                 |
| 8                                 |     | 12                                | 17                                | 16                                 |     | 12                                | 17                                | 16                                 |     | 22                                 | 16                                 | 25                                |
| 9                                 |     | 20                                | 25                                | 42                                 |     | 20                                | 25                                | 42                                 |     | 35                                 | 42                                 | 35                                |
| 22                                |     | 25                                | 35                                | 50                                 |     | 25                                | 35                                | 50                                 |     | 42                                 | 50                                 | 50                                |
| 36                                |     | 36                                | 50                                | 70                                 |     | 36                                | 50                                | 70                                 |     | 50                                 | 70                                 | 70                                |
| 50                                |     | 65                                | 50                                | 100                                |     | 65                                | 80                                | 100                                |     | 100                                | 100                                | 85                                |
| 15                                |     | 25                                | 30                                | 30                                 |     | 25                                | 30                                | 30                                 |     | 30                                 | 30                                 | —                                 |
| 8                                 |     | 12                                | 17                                | 8                                  |     | 12                                | 17                                | 8                                  |     | 22                                 | 8                                  | 25                                |
| 9                                 |     | 20                                | 25                                | 21                                 |     | 20                                | 25                                | 21                                 |     | 35                                 | 21                                 | 35                                |
| 22                                |     | 25                                | 35                                | 25                                 |     | 25                                | 35                                | 25                                 |     | 42                                 | 25                                 | 50                                |
| 36                                |     | 18                                | 50                                | 52                                 |     | 18                                | 50                                | 35                                 |     | 36                                 | 35                                 | 35                                |
| 50                                |     | 36                                | 80                                | 50                                 |     | 36                                | 50                                | 50                                 |     | 50                                 | 50                                 | 65                                |
| 10                                |     | 20                                | 23                                | 23                                 |     | 23                                | 23                                | 23                                 |     | 23                                 | 23                                 | —                                 |
| A                                 |     | A                                 | A                                 | A                                  |     | A                                 | A                                 | A                                  |     | A                                  | A                                  | B                                 |
| 3                                 |     | 3                                 | 3                                 | 3                                  |     | 3                                 | 3                                 | 3                                  |     | 3                                  | 3                                  | 3                                 |
| 8000                              |     | 6000                              | 6000                              | 6000                               |     | 5000                              | 5000                              | 5000                               |     | 5000                               | 5000                               | 4000                              |
| 20000                             |     | 15000                             | 15000                             | 15000                              |     | 15000                             | 15000                             | 15000                              |     | 10000                              | 10000                              | 8000                              |
| Electronic                        |     | Thermal Magnetic Adjustable       |                                   |                                    |     |                                   |                                   |                                    |     |                                    |                                    | Electronic                        |
| Ir: (0,4-1)xIn ;<br>Im: (2-10)xIn |     | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn  |     | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn  |     | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn  | Ir: (0,8-1)xIn ;<br>Im: (5-10)xIn  | Ir: (0,4-1)xIn ;<br>Im: (2-10)xIn |
| Ir: (0,4-1)xIn ;<br>Im: (2-10)xIn |     | Ir: (0,8-1)xIn ;<br>Im: (8-12)xIn | Ir: (0,8-1)xIn ;<br>Im: (8-12)xIn | Ir: (0,8-1)xIn ;<br>Im: (10-15)xIn |     | Ir: (0,8-1)xIn ;<br>Im: (8-12)xIn | Ir: (0,8-1)xIn ;<br>Im: (8-12)xIn | Ir: (0,8-1)xIn ;<br>Im: (10-15)xIn |     | Ir: (0,8-1)xIn ;<br>Im: (10-15)xIn | Ir: (0,8-1)xIn ;<br>Im: (10-15)xIn | Ir: (0,4-1)xIn ;<br>Im: (2-10)xIn |
| -20 to +60                        |     | -20 to +60                        | -20 to +60                        | -20 to +60                         |     | -20 to +60                        | -20 to +60                        | -20 to +60                         |     | -20 to +60                         | -20 to +60                         | -20 to +60                        |
| -40 to +80                        |     | -40 to +80                        | -40 to +80                        | -40 to +80                         |     | -40 to +80                        | -40 to +80                        | -40 to +80                         |     | -40 to +80                         | -40 to +80                         | -40 to +80                        |
| 105                               | 140 | 140                               | 140                               | 140                                | 188 | 140                               | 140                               | 140                                | 188 | 210                                | 210                                | 210                               |
| 178                               | 161 | 267                               | 267                               | 263                                | 263 | 267                               | 267                               | 263                                | 263 | 280                                | 280                                | 408                               |
| 89                                | 89  | 104                               | 104                               | 117                                | 117 | 104                               | 104                               | 117                                | 117 | 107                                | 107                                | 143                               |
|                                   |     |                                   |                                   |                                    |     |                                   |                                   |                                    |     |                                    |                                    |                                   |
| √                                 |     | √                                 | √                                 | √                                  |     | √                                 | √                                 | √                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | √                                 | √                                 | √                                  |     | √                                 | √                                 | √                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | √                                 | √                                 | √                                  |     | √                                 | √                                 | √                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | √                                 | √                                 | √                                  |     | √                                 | √                                 | √                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | √                                 | √                                 | —                                  |     | √                                 | √                                 | —                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | √                                 | √                                 | √                                  |     | √                                 | √                                 | √                                  |     | √                                  | √                                  | √                                 |
| √                                 |     | —                                 | —                                 | —                                  |     | —                                 | —                                 | —                                  |     | —                                  | —                                  | —                                 |
| √                                 |     | √                                 | √                                 | —                                  |     | √                                 | √                                 | —                                  |     | —                                  | —                                  | —                                 |
| √                                 |     | √                                 | √                                 | —                                  |     | Standard                          | Standard                          | —                                  |     | Standard                           | Standard                           | Standard                          |

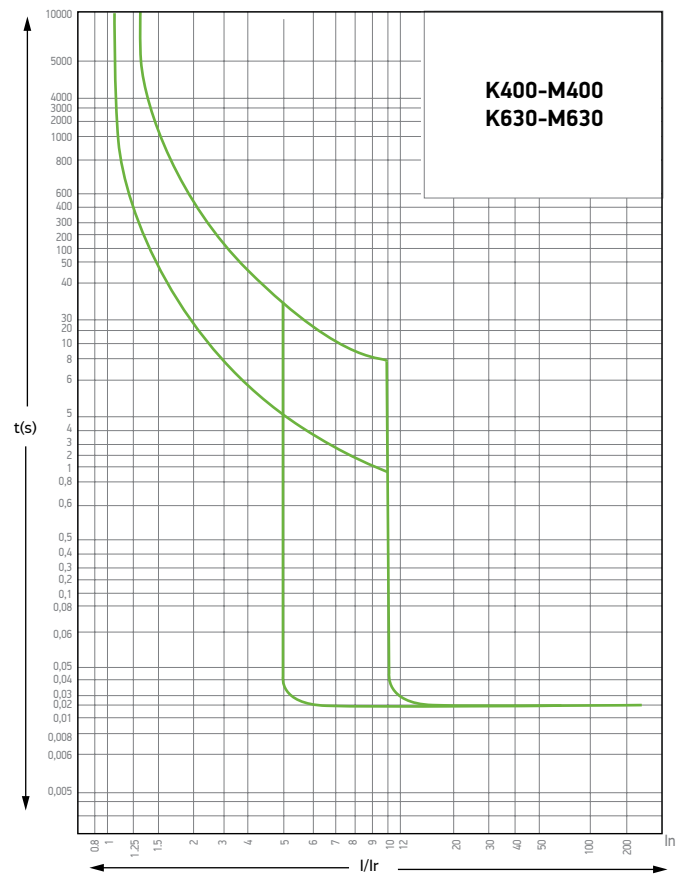
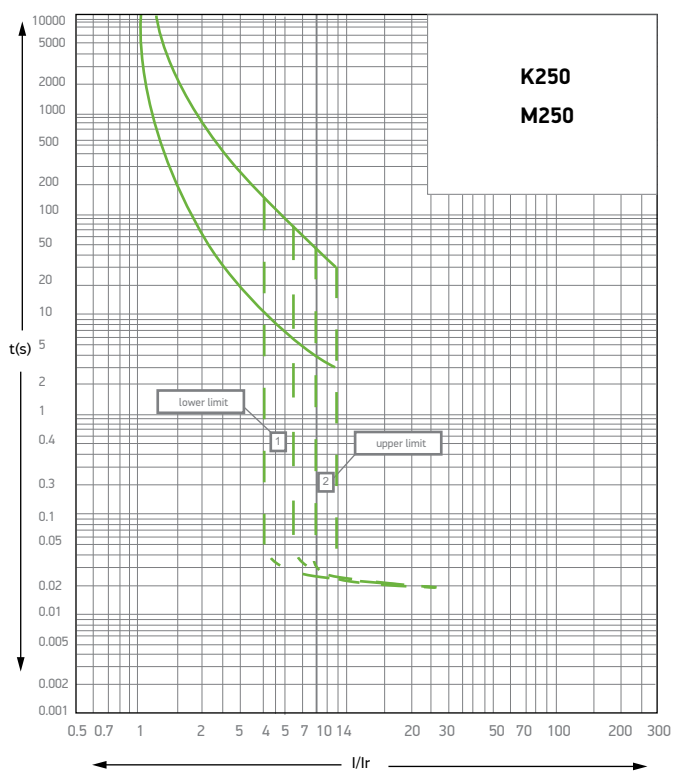
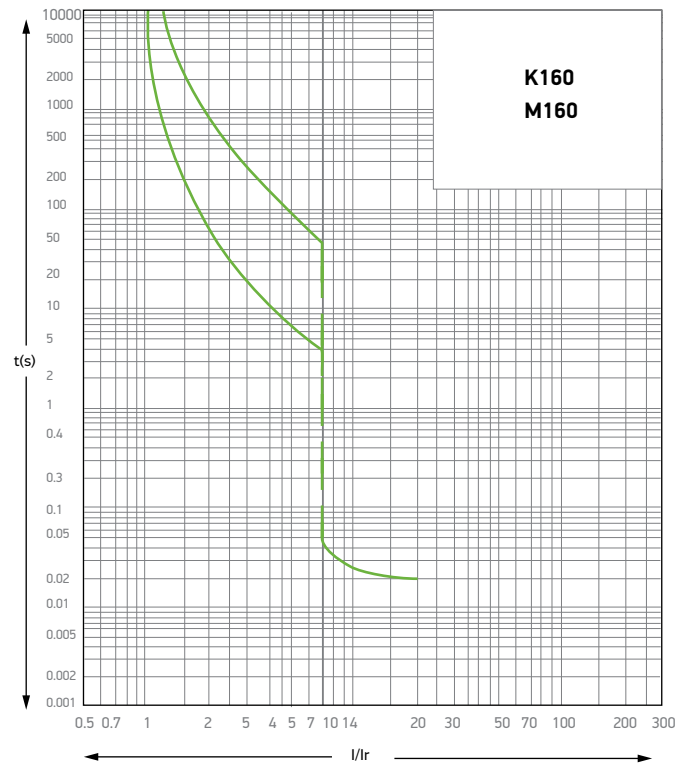
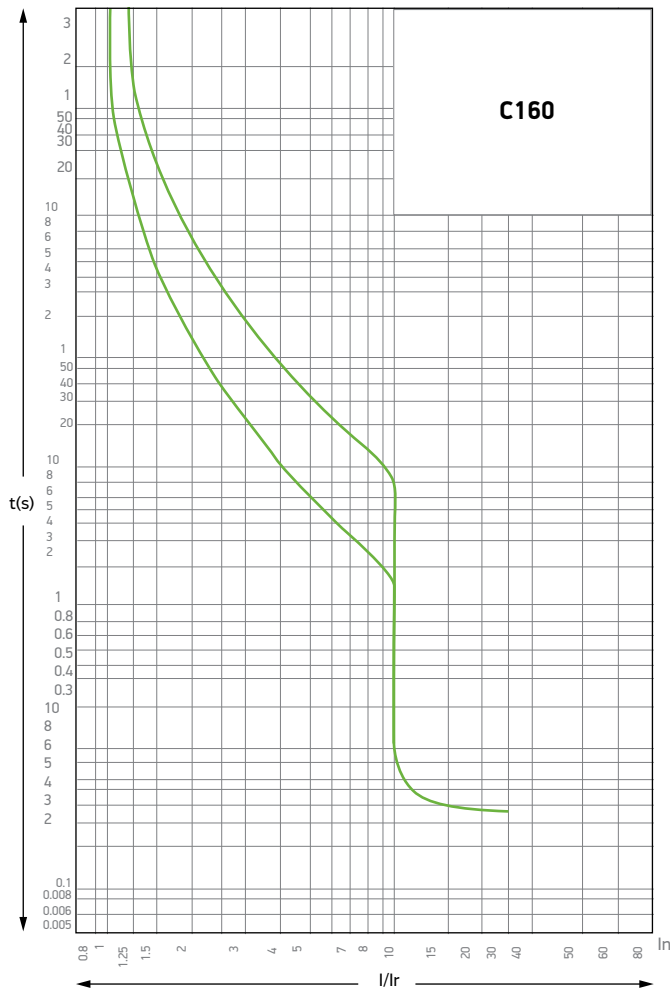
## LV MCCB, Thermal-Magnetic Fixed Type - Technical Specifications

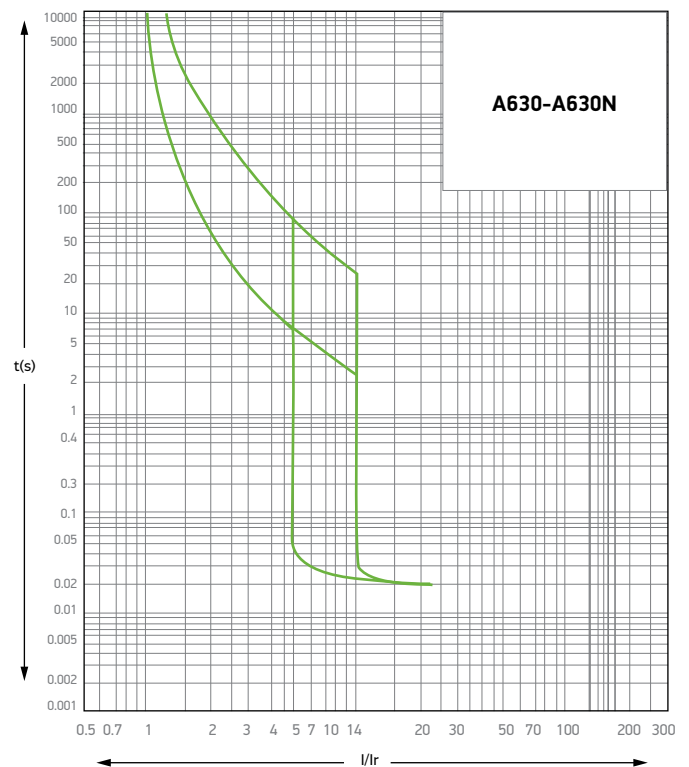
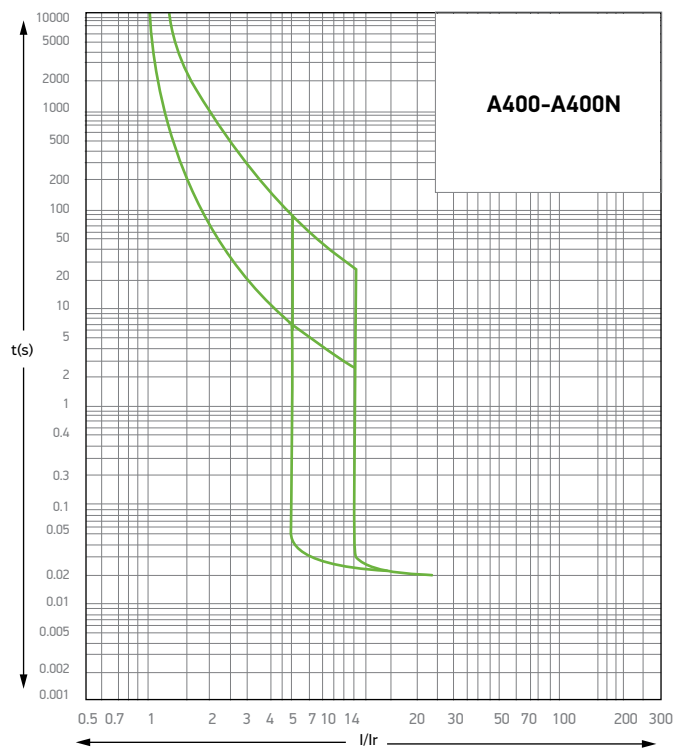
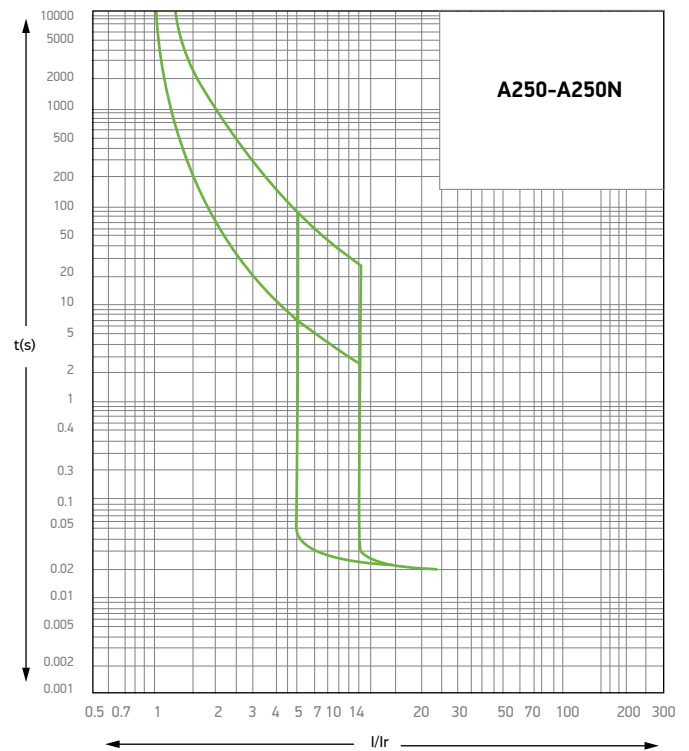
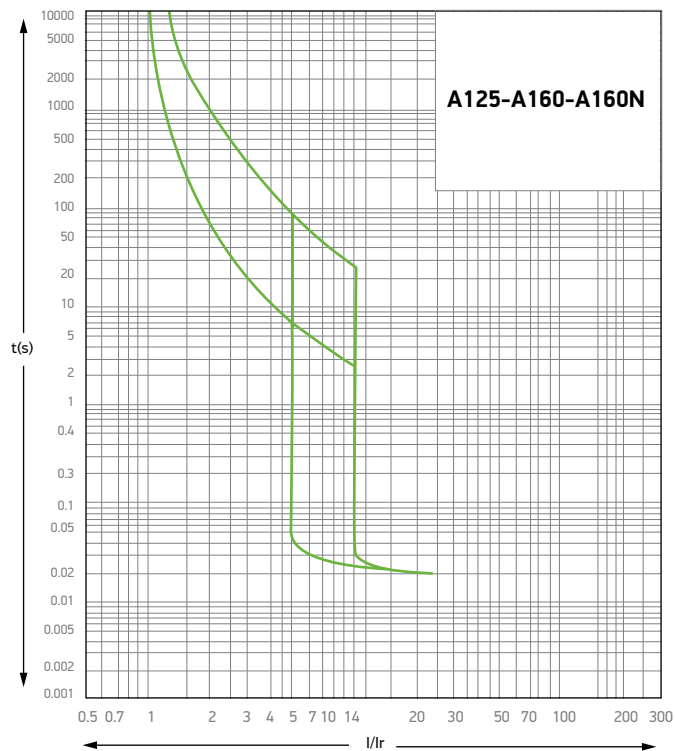
| Type                                           |        |    |              | KM200                                              | A125                                 |     | A160                                      | A250             | A400             | A160N                                     | A250N            | A400N            | A630N            | A800N            |
|------------------------------------------------|--------|----|--------------|----------------------------------------------------|--------------------------------------|-----|-------------------------------------------|------------------|------------------|-------------------------------------------|------------------|------------------|------------------|------------------|
| Standard                                       |        |    |              | IEC / EN 60947-2                                   | IEC / EN 60947-2                     |     | IEC / EN 60947-2                          | IEC / EN 60947-2 | IEC / EN 60947-2 | IEC / EN 60947-2                          | IEC / EN 60947-2 | IEC / EN 60947-2 | IEC / EN 60947-2 | IEC / EN 60947-2 |
| Rated Current In (at 40°C)                     |        | A  |              | 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160, 200 | 20, 25, 32, 40, 50, 63, 80, 100, 125 |     | 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 | 160, 200, 250    | 315, 400         | 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 | 200, 250         | 315, 400         | 500, 630         | 800              |
| No of Poles                                    |        |    |              | 1                                                  | 2                                    | 3   | 3                                         | 3                | 3                | 4                                         | 4                | 4                | 4                | 4                |
| Frequency                                      |        |    | Hz           | 50-60                                              | 50-60                                |     | 50-60                                     | 50-60            | 50-60            | 50-60                                     | 50-60            | 50-60            | 50-60            | 50-60            |
| Rated Operating Voltage                        | Ue     | V  | AC           | 400                                                | 400                                  |     | 415                                       | 400              | 415              | 415                                       | 415              | 415              | 415              | 415              |
| Rated Insulation Voltage                       | Ui     | V  | AC           | 750                                                | 750                                  |     | 750                                       | 750              | 750              | 750                                       | 750              | 750              | 750              | 750              |
| Power Frequency Withstand Test at 1 Minute     |        | V  | AC           | 3000                                               | 3000                                 |     | 3000                                      | 3000             | 3000             | 3000                                      | 3000             | 3000             | 3000             | 3000             |
| Rated Impulse Withstand Voltage                | Uimp   | kV |              | 8                                                  | 8                                    |     | 8                                         | 8                | 8                | 8                                         | 8                | 8                | 8                | 8                |
| Rated Ultimate Short Circuit Breaking Capacity | Icu    | kA | 400/415 V AC | 36                                                 | 20                                   |     | 25                                        | 25               | 36               | 25                                        | 36               | 36               | 36               | 36               |
| Rated Service Short Circuit Breaking Capacity  | Ics    | kA | 400/415 V AC | 18                                                 | 10                                   |     | 18                                        | 12,5             | 27               | 18                                        | 27               | 27               | 27               | 27               |
| Pollution Degree                               |        |    |              | 3                                                  | 3                                    |     | 3                                         | 3                | 3                | 3                                         | 3                | 3                | 3                | 3                |
| Electrical Life (Operation)                    | ON-OFF |    | 400/415 V AC | 4000                                               | 4000                                 |     | 5000                                      | 4000             | 3000             | 5000                                      | 4000             | 3000             | 2000             | 1500             |
| Mechanical Life (Operation)                    | ON-OFF |    |              | 10000                                              | 8000                                 |     | 12000                                     | 10000            | 7000             | 12000                                     | 10000            | 7000             | 6000             | 5000             |
| Thermal Adjustment                             |        |    |              | Fixed                                              | Fixed                                |     | Fixed                                     | Fixed            | Fixed            | Fixed                                     | Fixed            | Fixed            | Fixed            | Fixed            |
| Magnetic Adjustment                            |        |    |              | Fixed                                              | Fixed                                |     | Fixed                                     | Fixed            | Fixed            | Fixed                                     | Fixed            | Fixed            | Fixed            | Fixed            |
| Ambient Temperature                            |        | °C |              | -20 to +60                                         | -20 to +60                           |     | -20 to +60                                | -20 to +60       | -20 to +60       | -20 to +60                                | -20 to +60       | -20 to +60       | -20 to +60       | -20 to +60       |
| Storage Temperature                            |        | °C |              | -40 to +80                                         | -40 to +80                           |     | -40 to +80                                | -40 to +80       | -40 to +80       | -40 to +80                                | -40 to +80       | -40 to +80       | -40 to +80       | -40 to +80       |
| Dimensions                                     | Width  | mm |              | 35                                                 | 50                                   | 75  | 90                                        | 105              | 140              | 120                                       | 140              | 185              | 280              | 280              |
|                                                | Length | mm |              | 158                                                | 130                                  | 135 | 159                                       | 170              | 265              | 159                                       | 170              | 265              | 281              | 281              |
|                                                | Depth  | mm |              | 89                                                 | 60                                   | 65  | 74                                        | 74               | 110              | 74                                        | 74               | 110              | 110              | 110              |
| Accessories                                    |        |    |              |                                                    |                                      |     |                                           |                  |                  |                                           |                  |                  |                  |                  |
| Shunt Trip Release                             |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |
| Under Voltage Release                          |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |
| Auxiliary Contact                              |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |
| Alarm Contact                                  |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |
| Motor Operator                                 |        |    |              | —                                                  |                                      |     | —                                         | —                | —                | —                                         | —                | —                | —                | —                |
| Ext. Rotary Handle                             |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |
| Extension Bus Bar                              |        |    |              | —                                                  |                                      |     | √                                         | √                | √                | √                                         | √                | √                | √                | √                |

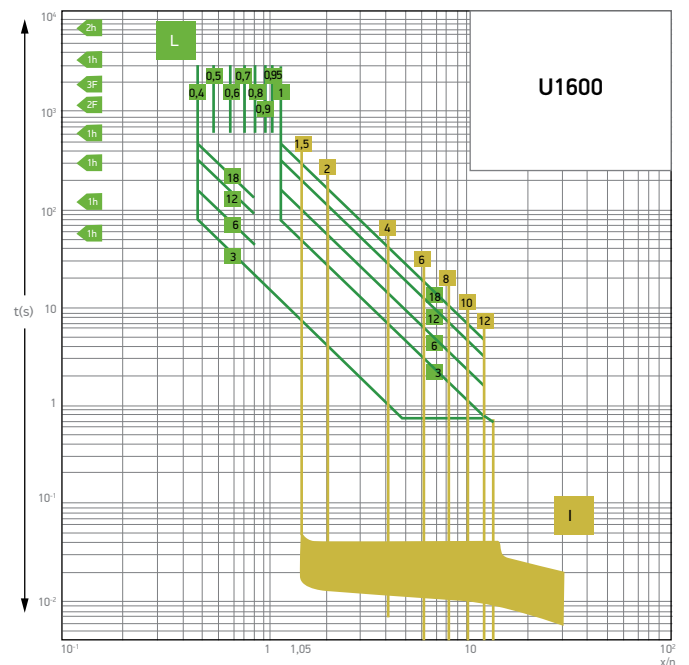
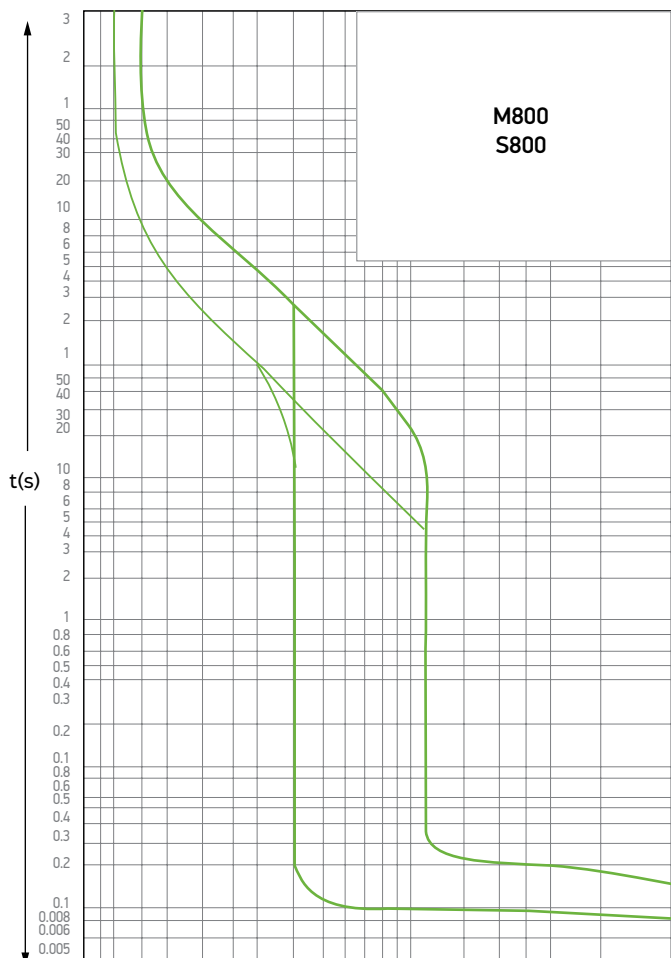
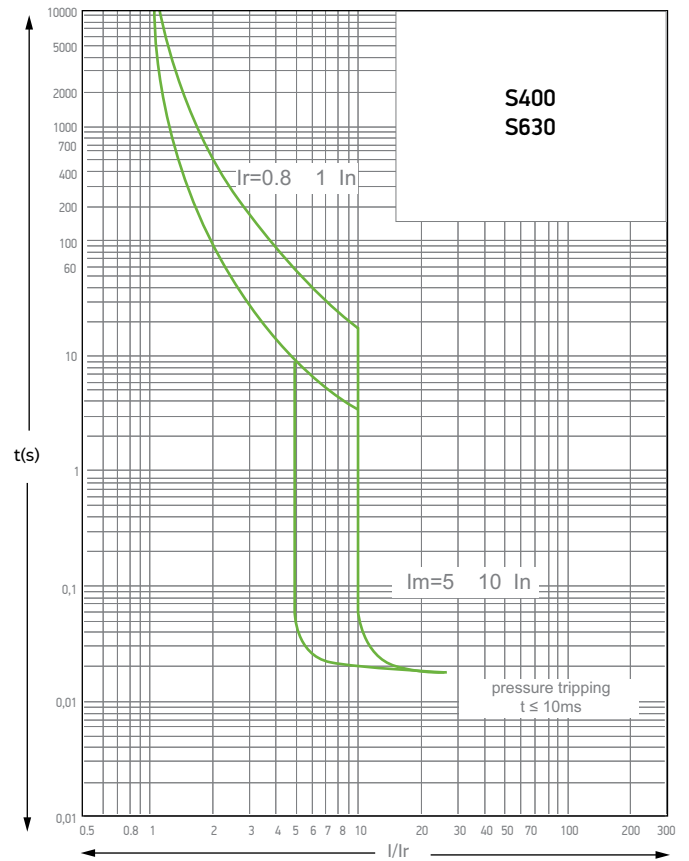
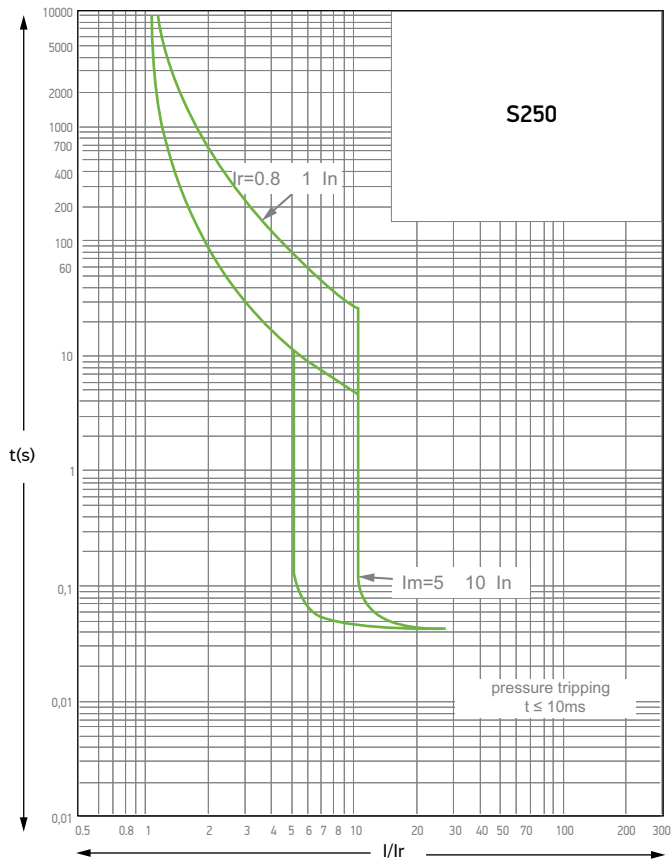
## Earth Leakage Circuit Breakers - Technical Specifications

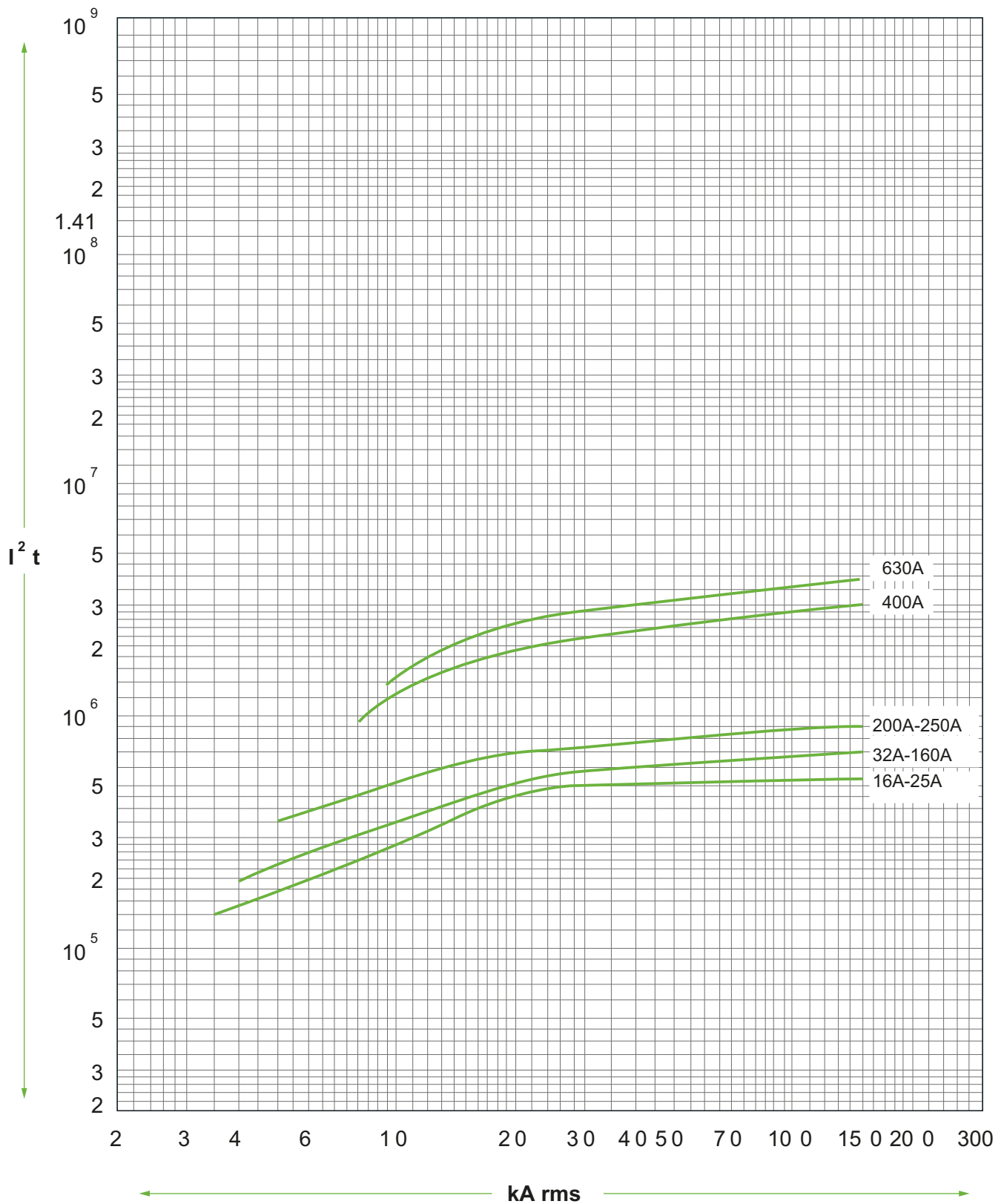
| Type                                           |             |    |              | F250                                    | D100                | D250                | D400                | D630                |
|------------------------------------------------|-------------|----|--------------|-----------------------------------------|---------------------|---------------------|---------------------|---------------------|
| No of Poles                                    |             |    |              | 3                                       | 4                   | 4                   | 4                   | 4                   |
| Frequency                                      |             |    | Hz           | 50-60                                   | 50-60               | 50-60               | 50-60               | 50-60               |
| Rated Current In (at 40°C)                     | A           |    |              | 40, 50, 63, 80, 100, 125, 160, 200, 250 | 40, 50, 63, 80, 100 | 125, 160, 200, 250  | 250, 315, 400       | 630                 |
| Rated Threshold Current                        | mA          |    |              | 30, 300, 500, 1000, 3000                | 30, 100, 300, 500   | 30, 100, 300, 500   | 100, 200, 300, 500  | 100, 200, 300, 500  |
| Threshold Tripping Time (Adjustable)           | mili second |    |              | 100, 500, 1000                          | 100, 300, 500, 1000 | 100, 300, 500, 1000 | 100, 300, 500, 1000 | 100, 300, 500, 1000 |
| Instantaneous Tripping Time (Adjustable)       | mili second |    |              | <200                                    | <200                | <200                | <200                | <200                |
| Rated Operating Voltage                        | Ue          | V  | AC           | 400                                     | 400                 | 400                 | 400                 | 400                 |
| Rated Insulation Voltage                       | Ui          | V  | AC           | 750                                     | 750                 | 750                 | 750                 | 750                 |
| Rated Impulse Withstand Voltage                | Uimp        | kV | AC           | 8                                       | 8                   | 8                   | 8                   | 8                   |
| Rated Ultimate Short Circuit Breaking Capacity | Icu         | kA | 400/415V AC  | 36                                      | 36                  | 36                  | 50                  | 50                  |
| Rated Service Short Circuit Breaking Capacity  | Ics         | kA | 400/415V AC  | 18                                      | 18                  | 18                  | 25                  | 25                  |
| Pollution Degree                               |             |    |              | 3                                       | 3                   | 3                   | 3                   | 3                   |
| Electrical Life (Operation)                    | ON - OFF    |    | 400/415 V AC | 5000                                    | 5000                | 5000                | 5000                | 4000                |
| Mechanical Life Operation)                     | ON - OFF    |    |              | 15000                                   | 15000               | 15000               | 15000               | 10000               |
| Overload Protection                            |             |    |              | >1.3xIn                                 | >1.3xIn             | >1.3xIn             | >1.3xIn             | >1.3xIn             |
| Rated Short Circuit Breaking Protection        |             |    |              | 8xIn                                    | 8xIn                | 8xIn                | 8xIn                | 8xIn                |
| Threshold Current Protection                   |             |    |              | (30-3000 mA)                            | (30-500 mA)         | (30-500 mA)         | (100-500 mA)        | (100-500 mA)        |
| Deactivation of Threshold Current Protection   |             |    |              | Available                               | Available           | Available           | Available           | Available           |
| Ambient Temperature                            | °C          |    |              | -20 to +60                              | -20 to +60          | -20 to +60          | -20 to +60          | -20 to +60          |
| Storage Temperature                            | °C          |    |              | -40 to +80                              | -40 to +80          | -40 to +80          | -40 to +80          | -40 to +80          |
| Dimensions                                     | Width       |    | mm           | 105                                     | 120                 | 140                 | 184                 | 280                 |
|                                                | Length      |    | mm           | 252                                     | 203                 | 221                 | 302                 | 347                 |
|                                                | Depth       |    | mm           | 89                                      | 68                  | 86                  | 103                 | 103                 |

## Time-Current Characteristic



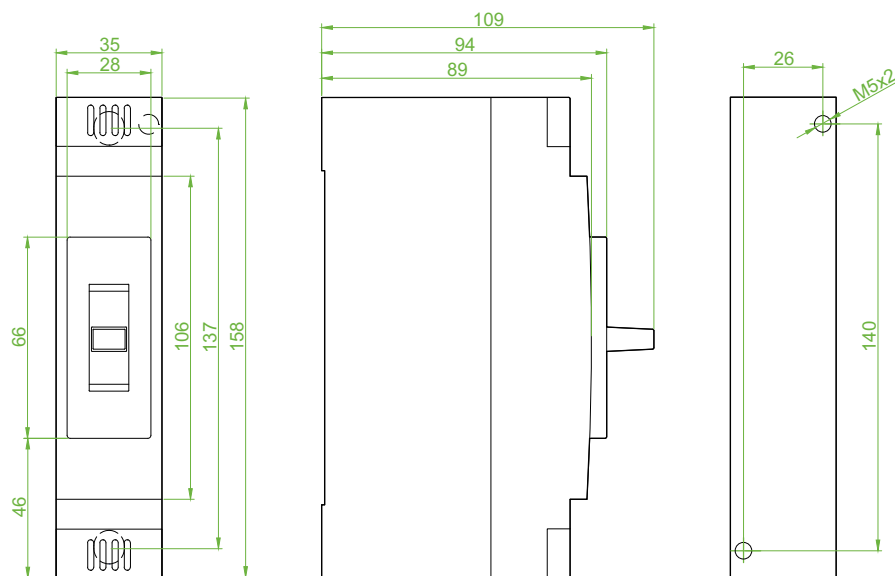




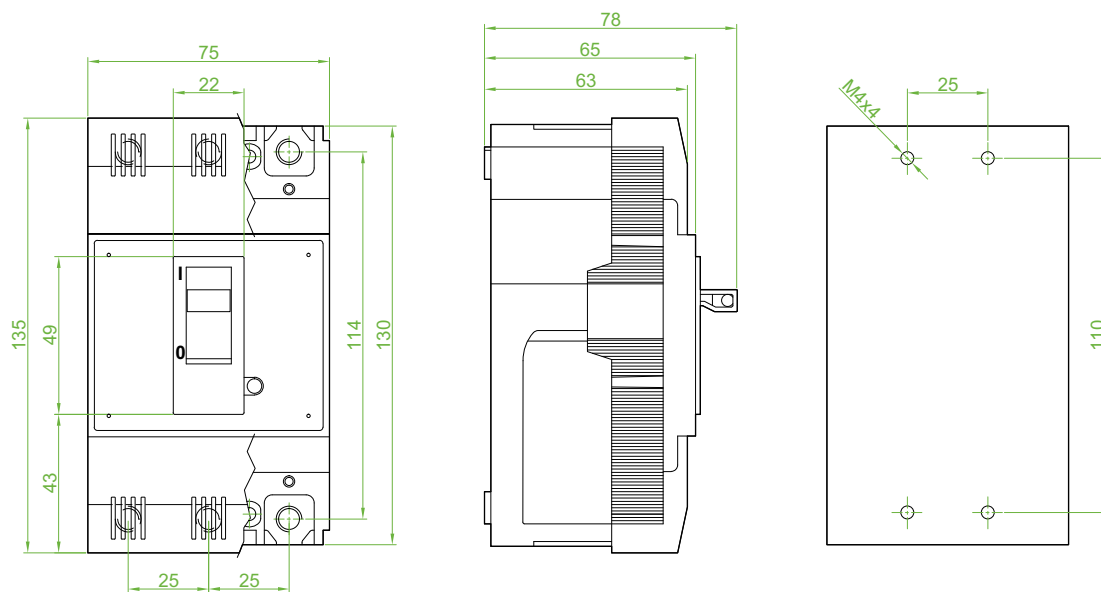
MCCB I<sup>2</sup>T


## Dimensions

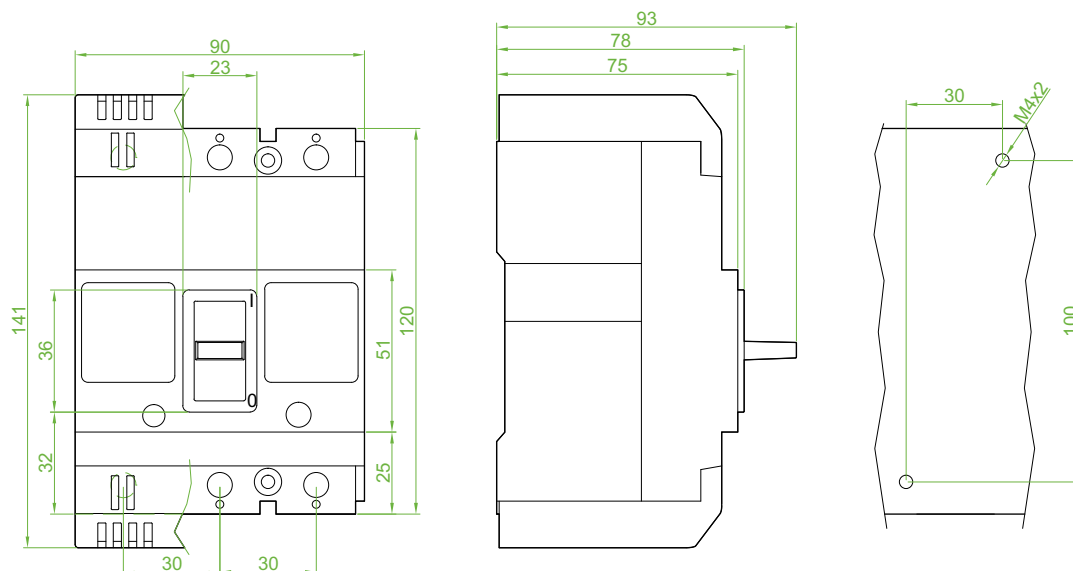
### KM200



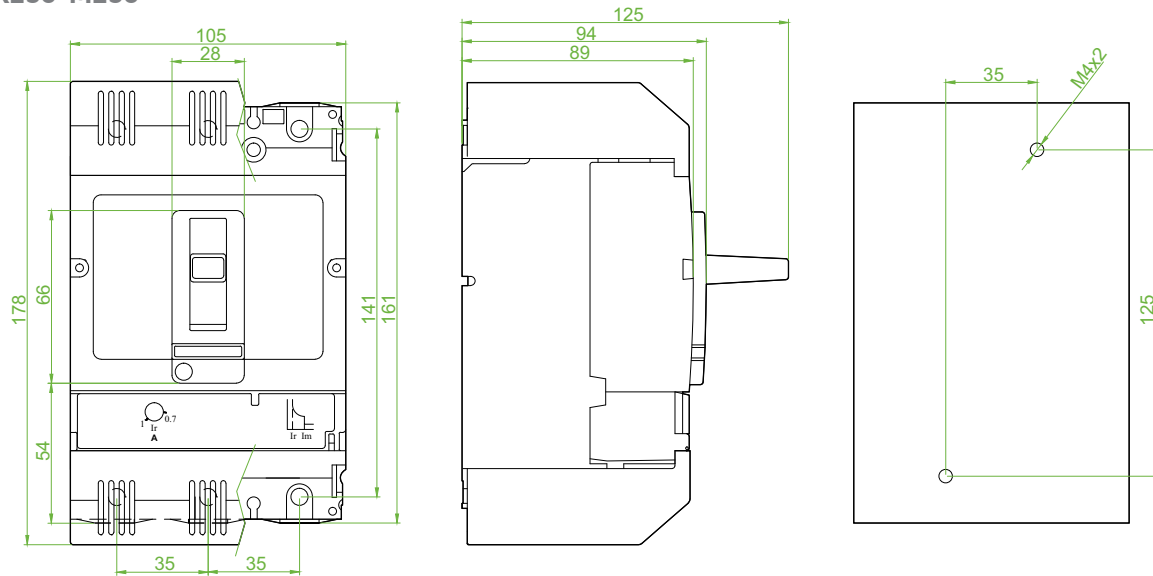
### A125



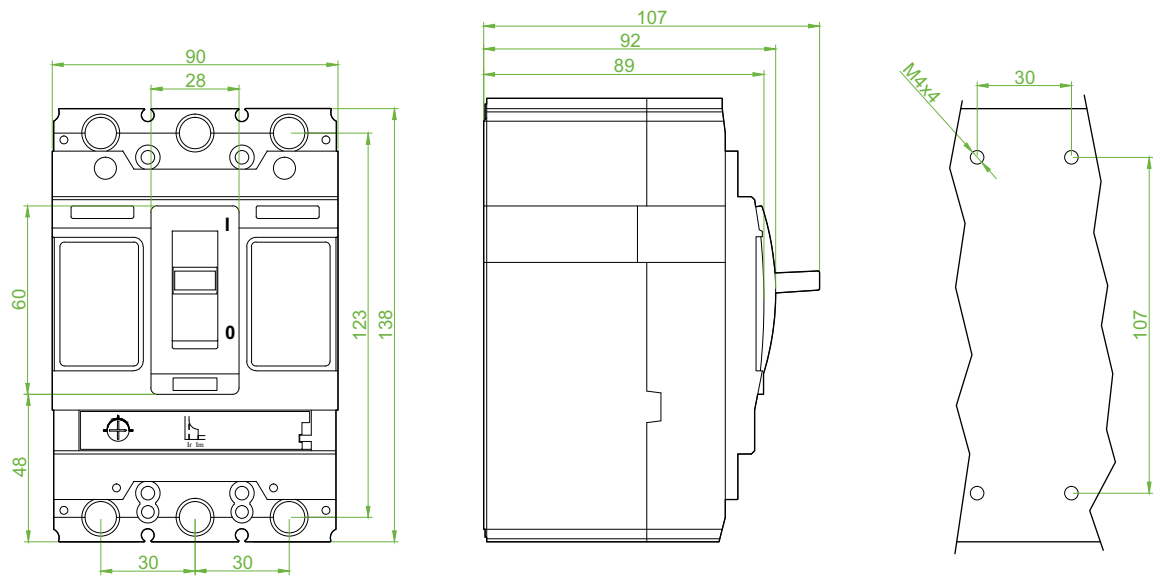
### C160



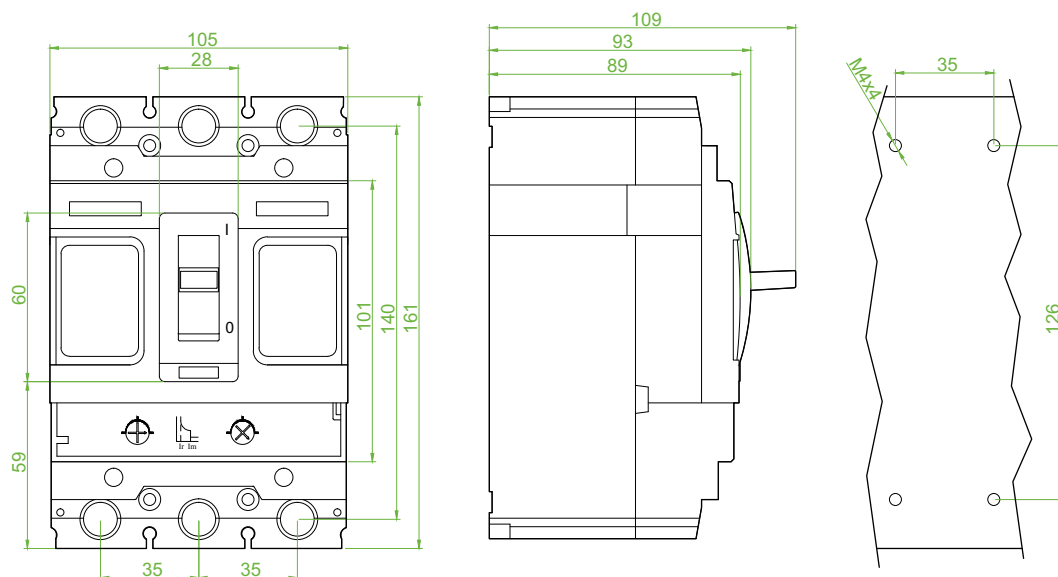
## K160-K250-M250



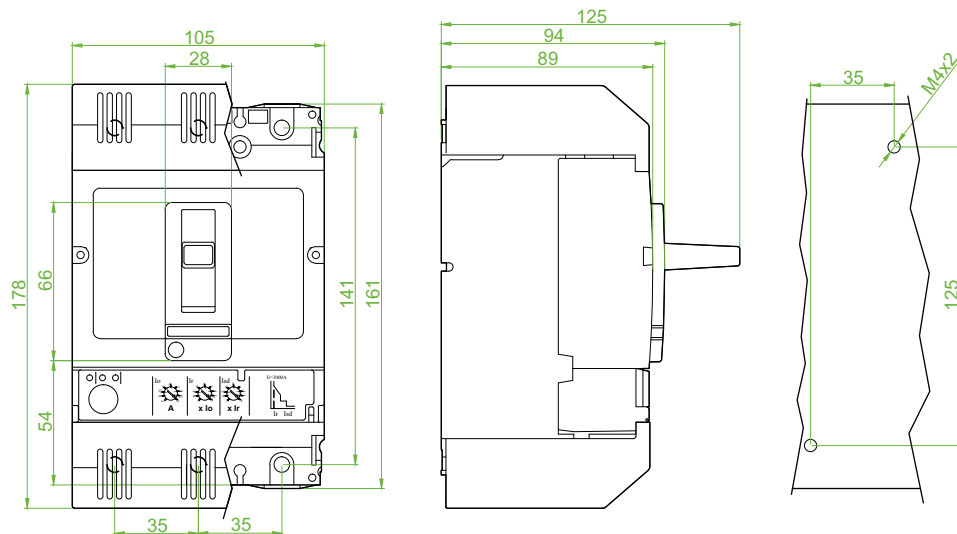
## M160



## S250

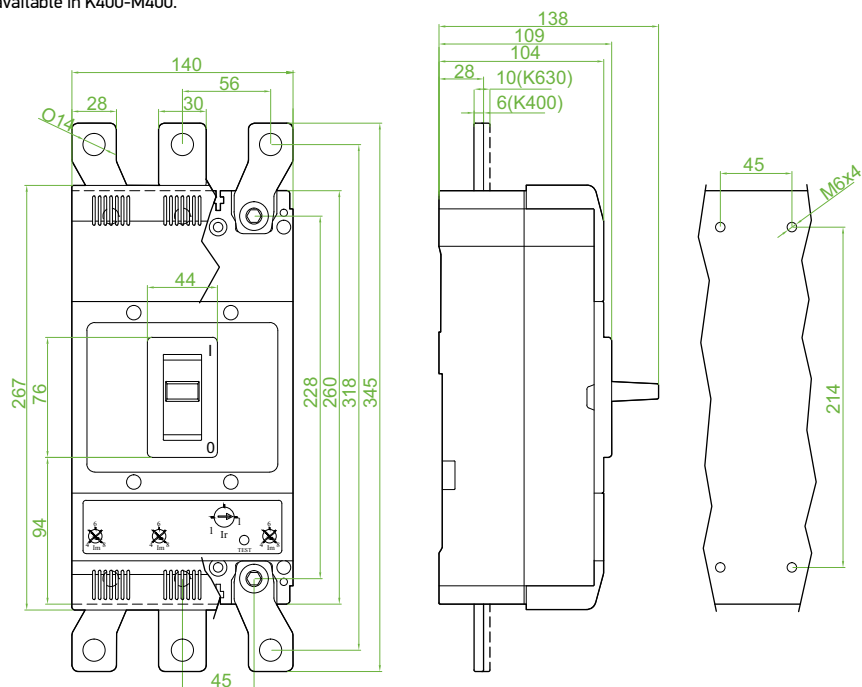


**U250**

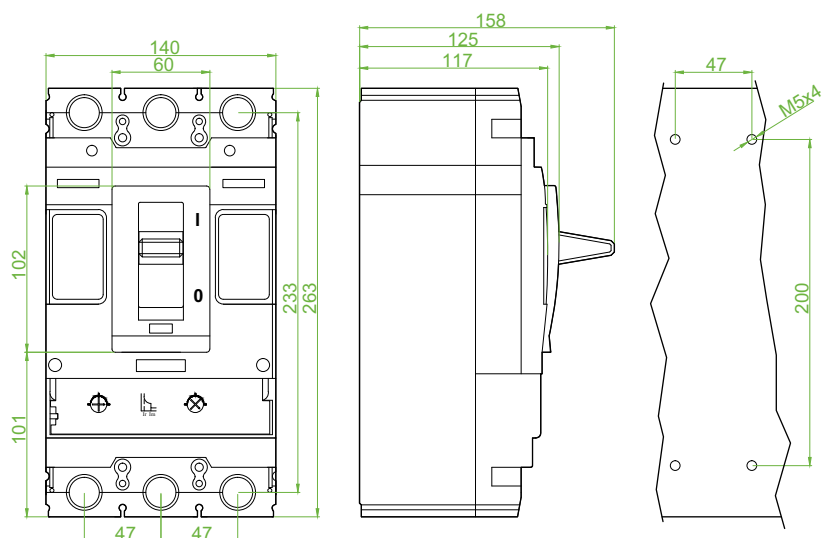


**K400-K630-M400-M630**

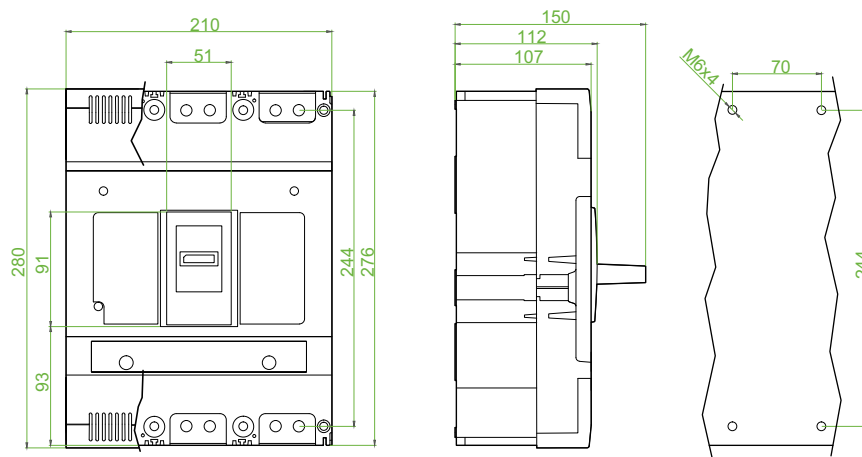
Extension bars are not available in K400-M400.



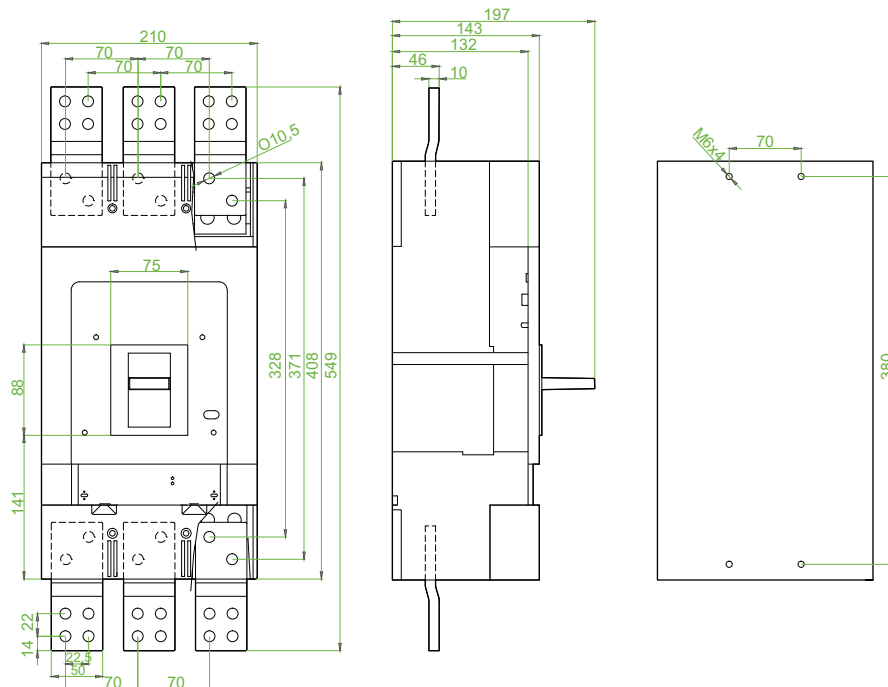
**S400-S630**



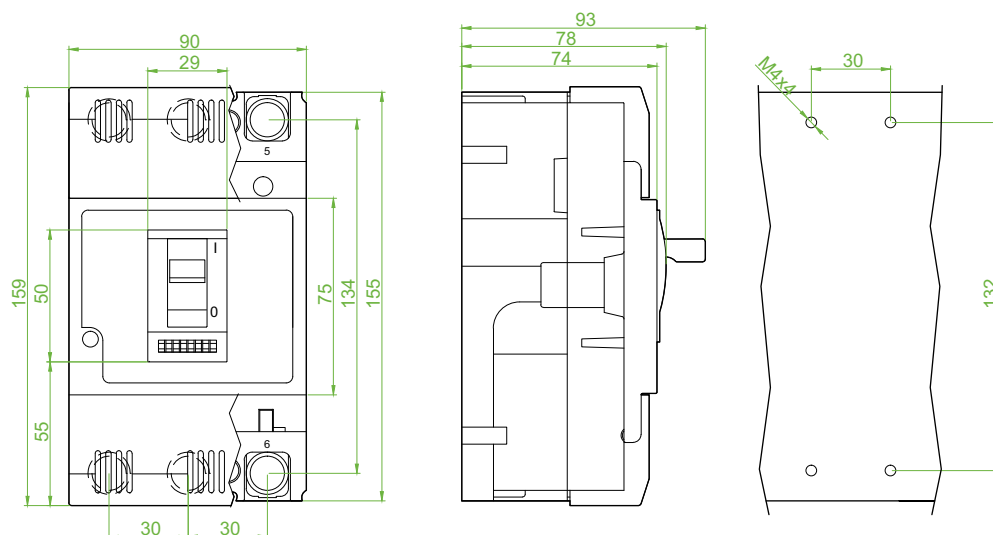
## M800-S800



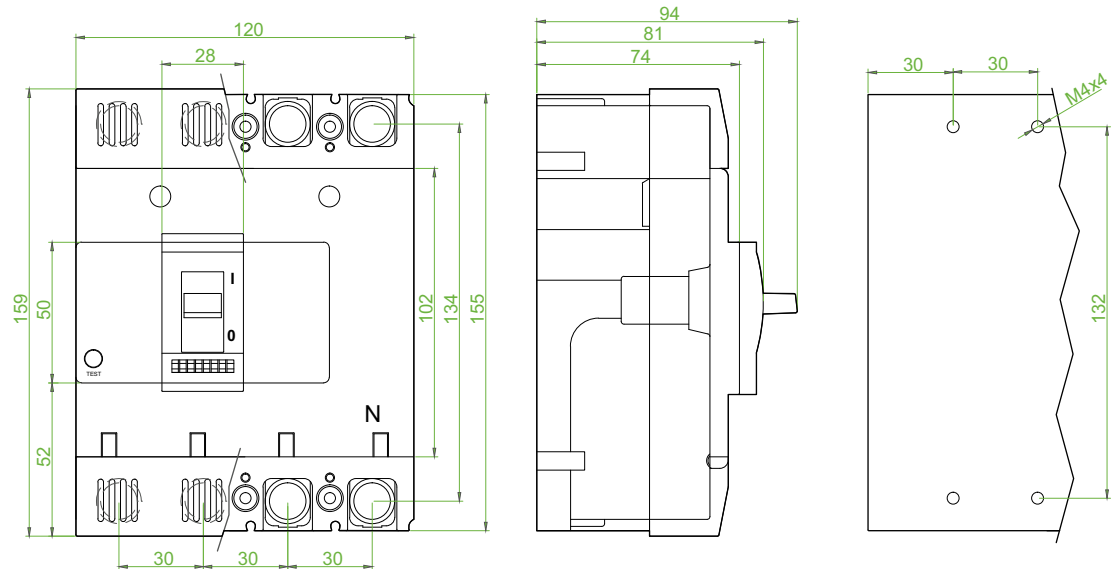
## U1600



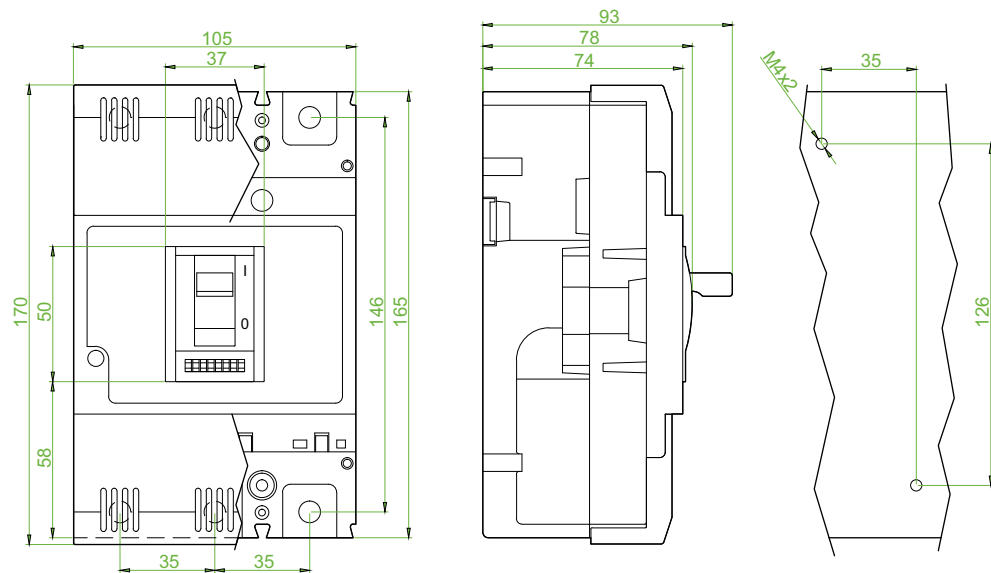
## A160



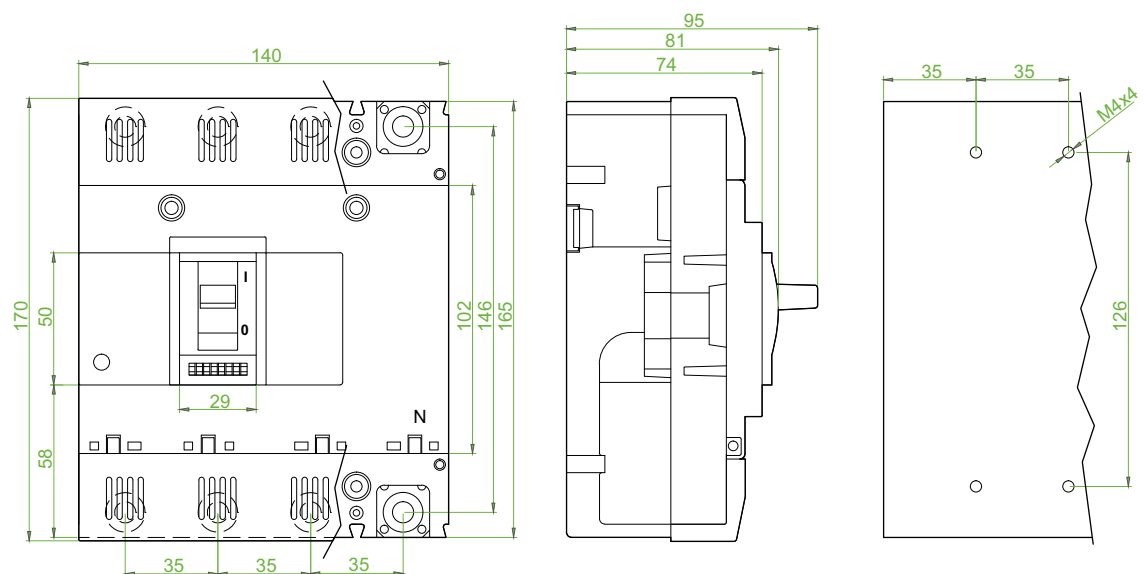
**A160N**



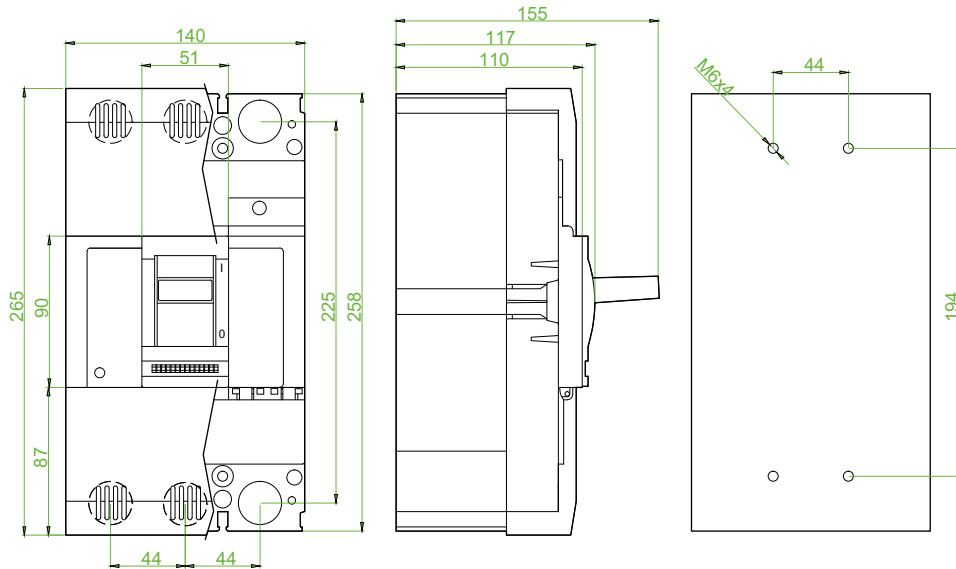
**A250**



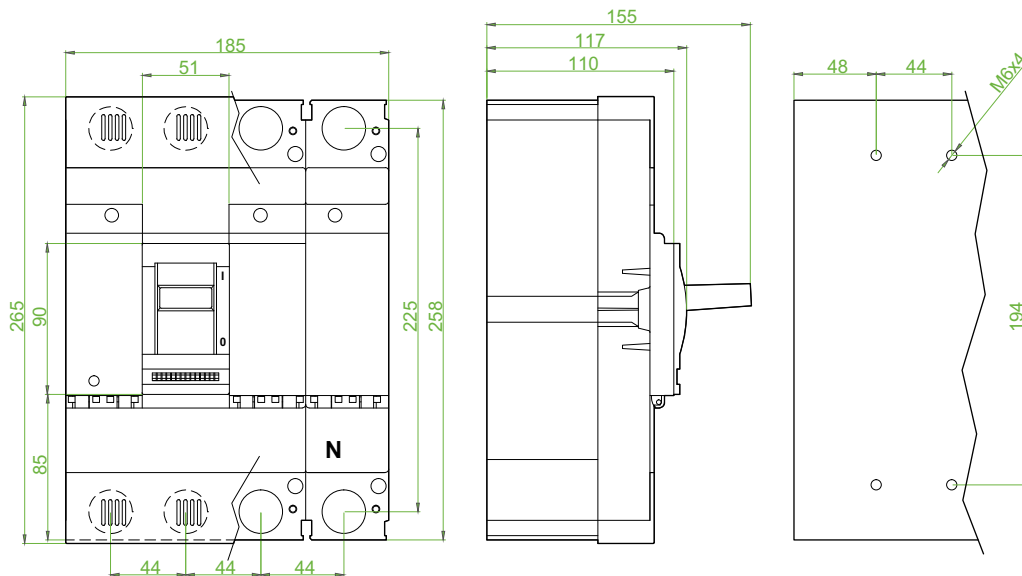
**A250N**



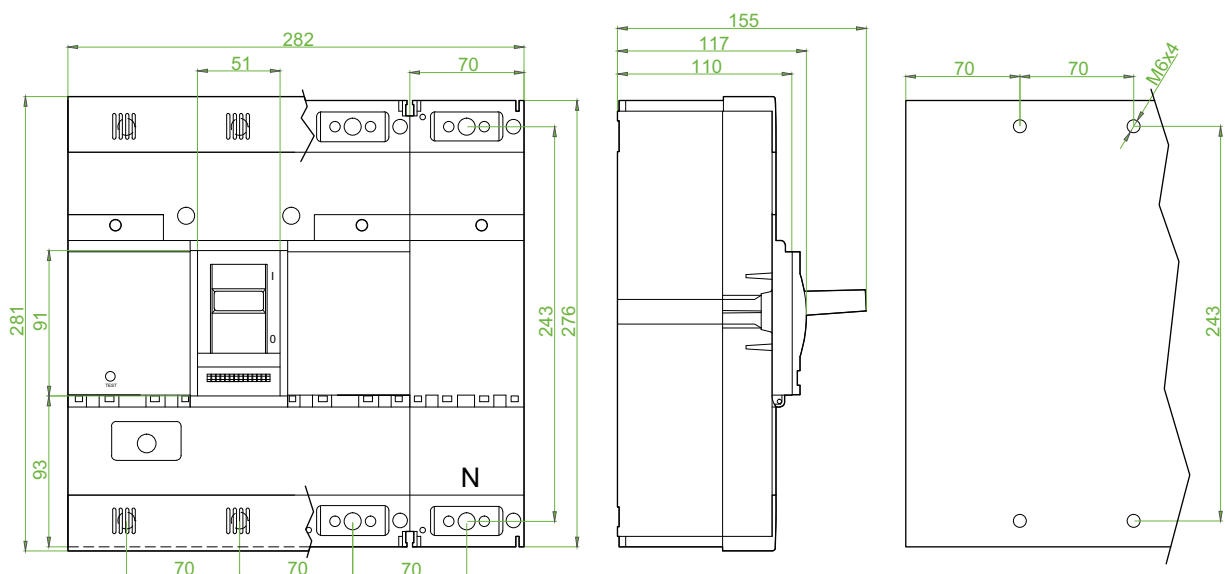
## A400



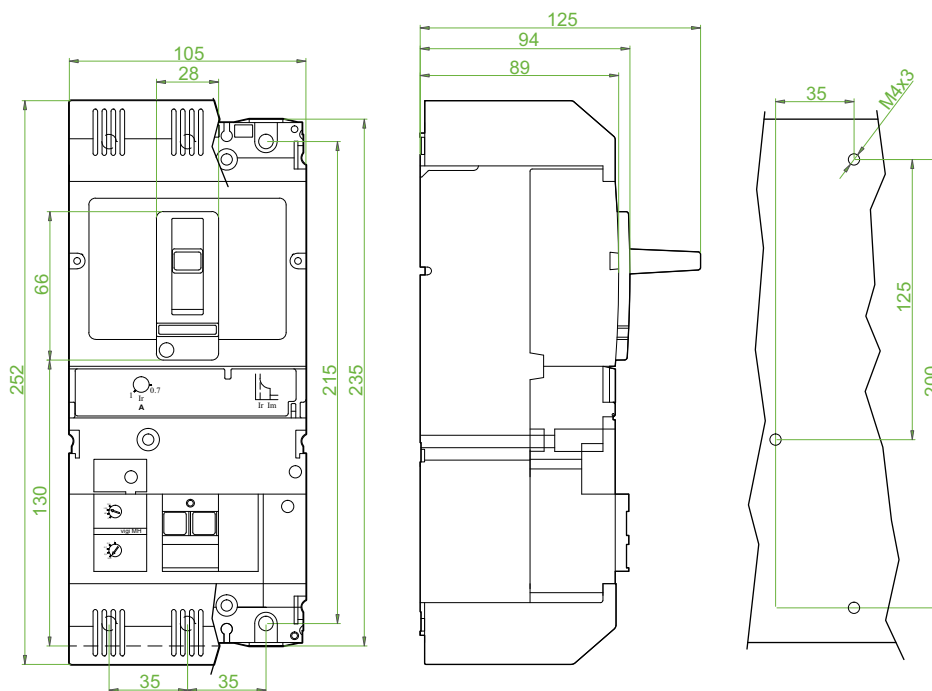
## A400N



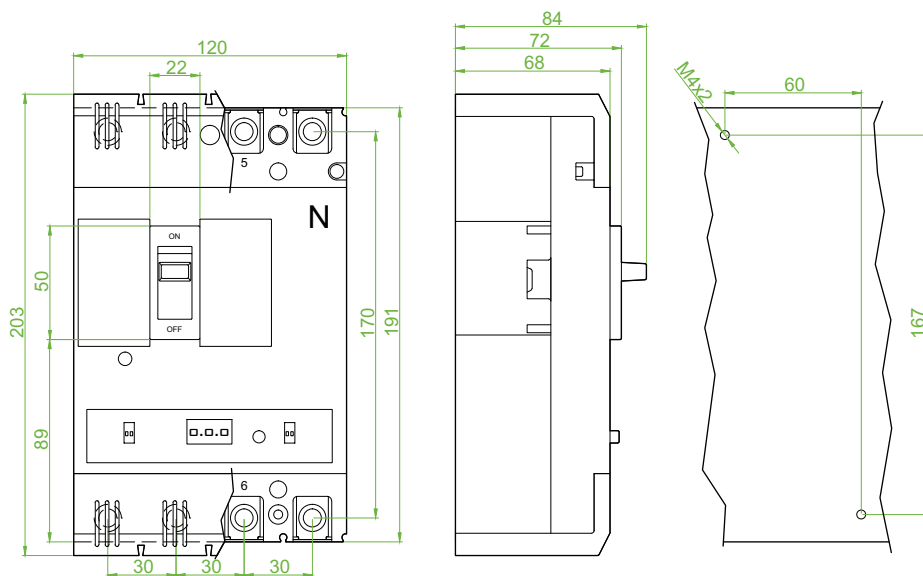
## A630N-A800N



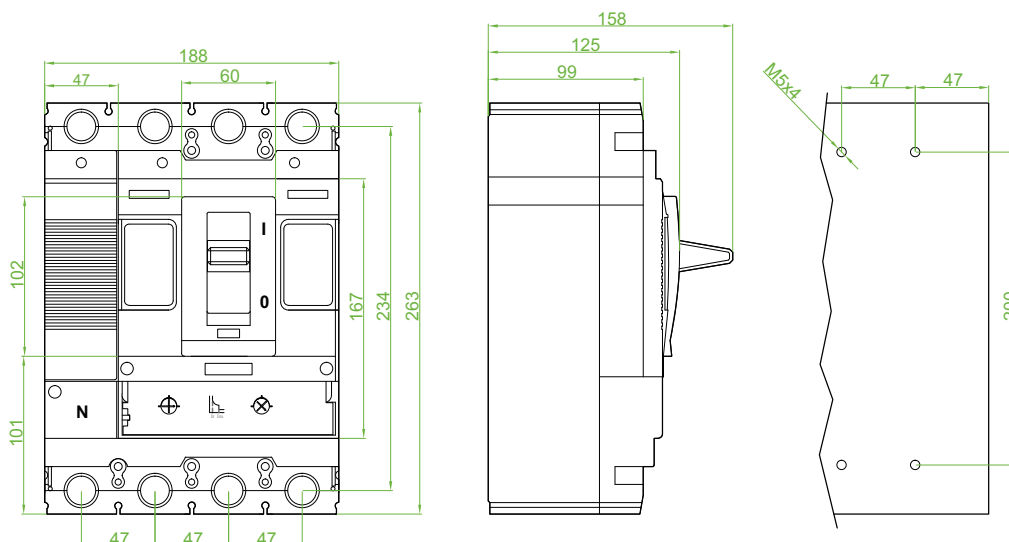
**F250**



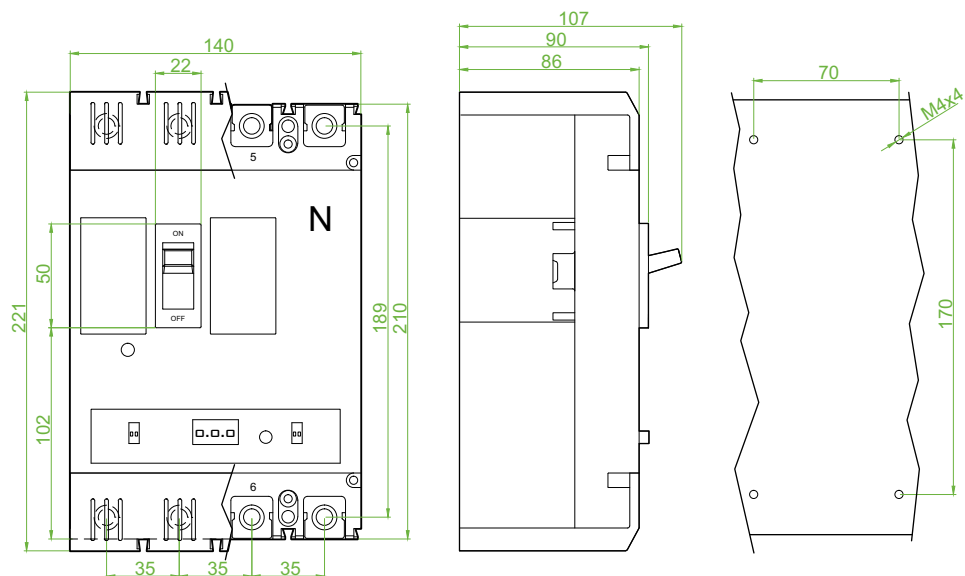
**D100**



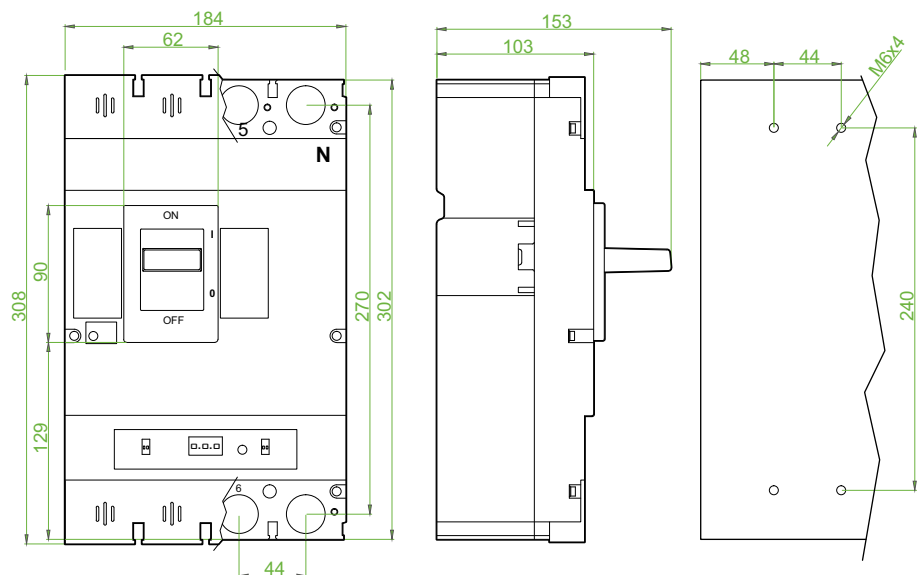
**S630N**



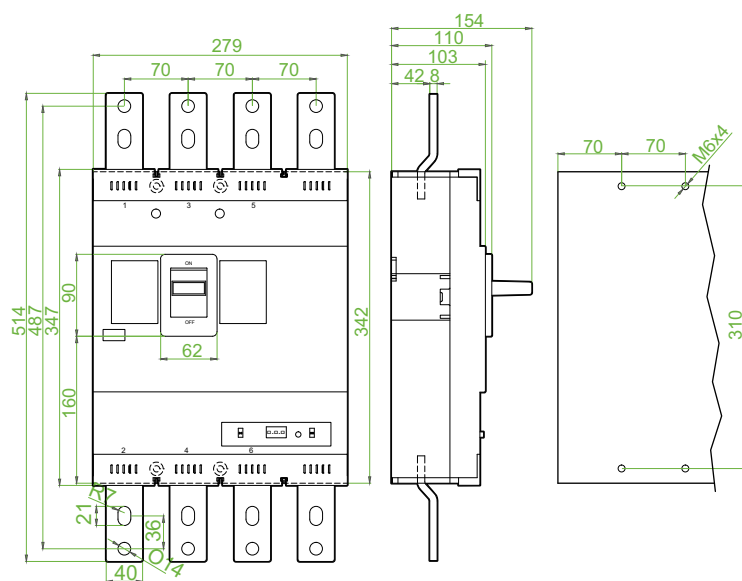
## D250



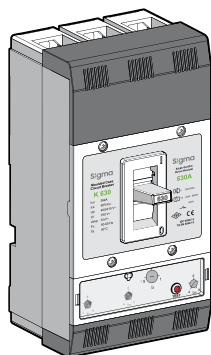
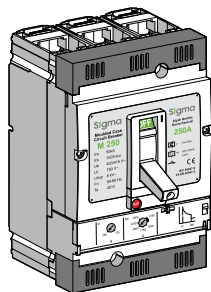
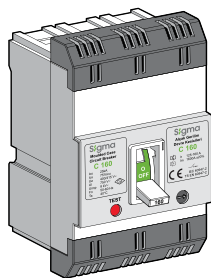
## D400



## D630

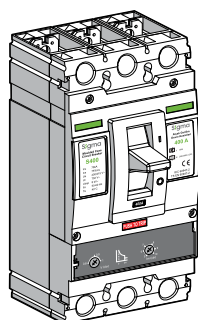
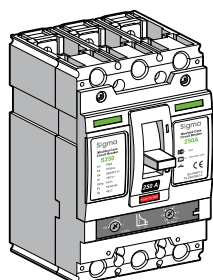
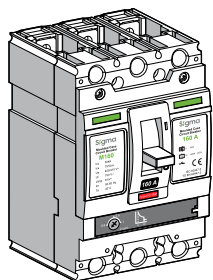


### 3 Poles, Thermal-Magnetic Adjustable Type, MCCB (Protection for Power Distribution & Network)



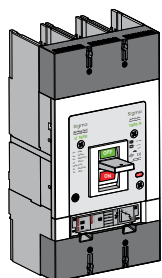
| Type Code | Rated Current<br>In (A) | Thermal Adj. Current<br>Range Ir (A) | Instantaneous<br>Tripping Current (Im) | Breaking Capacity<br>Icu (kA) | Number in<br>Cartoon | Order Code |
|-----------|-------------------------|--------------------------------------|----------------------------------------|-------------------------------|----------------------|------------|
| B160      | 25                      | 20-25                                | 10xIn                                  | 25                            | 8                    | 3B160025   |
|           | 32                      | 25-32                                | 10xIn                                  | 25                            | 8                    | 3B160032   |
|           | 40                      | 32-40                                | 10xIn                                  | 25                            | 8                    | 3B160040   |
|           | 50                      | 40-50                                | 10xIn                                  | 25                            | 8                    | 3B160050   |
|           | 63                      | 50-63                                | 10xIn                                  | 25                            | 8                    | 3B160063   |
|           | 80                      | 63-80                                | 10xIn                                  | 25                            | 8                    | 3B160080   |
|           | 100                     | 80-100                               | 10xIn                                  | 25                            | 8                    | 3B160100   |
|           | 125                     | 100-125                              | 10xIn                                  | 25                            | 8                    | 3B160125   |
|           | 160                     | 125-160                              | 10xIn                                  | 25                            | 8                    | 3B160160   |
| C160      | 16                      | 10-16                                | 15xIn                                  | 25                            | 8                    | 3C160016   |
|           | 20                      | 16-20                                | 12xIn                                  | 25                            | 8                    | 3C160020   |
|           | 25                      | 20-25                                | 12xIn                                  | 25                            | 8                    | 3C160025   |
|           | 32                      | 25-32                                | 10xIn                                  | 25                            | 8                    | 3C160032   |
|           | 40                      | 32-40                                | 10xIn                                  | 25                            | 8                    | 3C160040   |
|           | 50                      | 40-50                                | 10xIn                                  | 25                            | 8                    | 3C160050   |
|           | 63                      | 50-63                                | 10xIn                                  | 25                            | 8                    | 3C160063   |
|           | 80                      | 63-80                                | 10xIn                                  | 25                            | 8                    | 3C160080   |
|           | 100                     | 80-100                               | 10xIn                                  | 25                            | 8                    | 3C160100   |
|           | 125                     | 100-125                              | 10xIn                                  | 25                            | 8                    | 3C160125   |
|           | 160                     | 125-160                              | 10xIn                                  | 25                            | 8                    | 3C160160   |
| K160      | 16                      | 11-16                                | 15xIn                                  | 36                            | 6                    | 3K160016   |
|           | 20                      | 14-20                                | 12xIn                                  | 36                            | 6                    | 3K160020   |
|           | 25                      | 18-25                                | 10xIn                                  | 36                            | 6                    | 3K160025   |
|           | 32                      | 23-32                                | 10xIn                                  | 36                            | 6                    | 3K160032   |
|           | 40                      | 28-40                                | 10xIn                                  | 36                            | 6                    | 3K160040   |
|           | 50                      | 35-50                                | 10xIn                                  | 36                            | 6                    | 3K160050   |
|           | 63                      | 44-63                                | 10xIn                                  | 36                            | 6                    | 3K160063   |
|           | 80                      | 56-80                                | 10xIn                                  | 36                            | 6                    | 3K160080   |
|           | 100                     | 70-100                               | 10xIn                                  | 36                            | 6                    | 3K160100   |
|           | 125                     | 88-125                               | 10xIn                                  | 36                            | 6                    | 3K160125   |
|           | 160                     | 112-160                              | 10xIn                                  | 36                            | 6                    | 3K160160   |
| K250      | 63                      | 44-63                                | (5-10)xIn                              | 36                            | 6                    | 3K250063   |
|           | 80                      | 56-80                                | (5-10)xIn                              | 36                            | 6                    | 3K250080   |
|           | 100                     | 70-100                               | (5-10)xIn                              | 36                            | 6                    | 3K250100   |
|           | 125                     | 88-125                               | (5-10)xIn                              | 36                            | 6                    | 3K250125   |
|           | 160                     | 112-160                              | (5-10)xIn                              | 36                            | 6                    | 3K250160   |
|           | 200                     | 140-200                              | (5-10)xIn                              | 36                            | 6                    | 3K250200   |
|           | 250                     | 175-250                              | (5-10)xIn                              | 36                            | 6                    | 3K250250   |
| K400      | 315                     | 250-315                              | (5-10)xIn                              | 36                            | 2                    | 3K400315   |
|           | 400                     | 315-400                              | (5-10)xIn                              | 36                            | 2                    | 3K400400   |
| K630      | 500                     | 400-500                              | (5-10)xIn                              | 36                            | 2                    | 3K630500   |
|           | 630                     | 500-630                              | (5-10)xIn                              | 36                            | 2                    | 3K630630   |

### 3 Poles, Thermal-Magnetic Adjustable Type, MCCB (Protection for Power Distribution & Network)



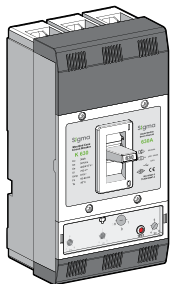
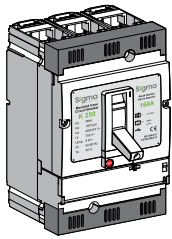
| Type Code | Rated Current<br>In (A) | Thermal Adj. Current<br>Range Ir (A) | Instantaneous<br>Tripping Current (Im) | Breaking Capacity<br>Icu (kA) | Number in<br>Cartoon | Order Code |
|-----------|-------------------------|--------------------------------------|----------------------------------------|-------------------------------|----------------------|------------|
| M160      | 40                      | 32-40                                | 10xIn                                  | 50                            | 6                    | 3M160040   |
|           | 50                      | 40-50                                | 10xIn                                  | 50                            | 6                    | 3M160050   |
|           | 63                      | 50-63                                | 10xIn                                  | 50                            | 6                    | 3M160063   |
|           | 80                      | 63-80                                | 10xIn                                  | 50                            | 6                    | 3M160080   |
|           | 100                     | 80-100                               | 10xIn                                  | 50                            | 6                    | 3M160100   |
|           | 125                     | 100-125                              | 10xIn                                  | 50                            | 6                    | 3M160125   |
|           | 160                     | 125-160                              | 10xIn                                  | 50                            | 6                    | 3M160160   |
| M250      | 63                      | 44-63                                | (5-10)xIn                              | 50                            | 6                    | 3M250063   |
|           | 80                      | 56-80                                | (5-10)xIn                              | 50                            | 6                    | 3M250080   |
|           | 100                     | 70-100                               | (5-10)xIn                              | 50                            | 6                    | 3M250100   |
|           | 125                     | 88-125                               | (5-10)xIn                              | 50                            | 6                    | 3M250125   |
|           | 160                     | 112-160                              | (5-10)xIn                              | 50                            | 6                    | 3M250160   |
|           | 200                     | 140-200                              | (5-10)xIn                              | 50                            | 6                    | 3M250200   |
|           | 250                     | 175-250                              | (5-10)xIn                              | 50                            | 6                    | 3M250250   |
| M400      | 315                     | 250-315                              | (5-10)xIn                              | 50                            | 2                    | 3M400315   |
|           | 400                     | 315-400                              | (5-10)xIn                              | 50                            | 2                    | 3M400400   |
| M630      | 500                     | 400-500                              | (5-10)xIn                              | 50                            | 2                    | 3M630500   |
|           | 630                     | 500-630                              | (5-10)xIn                              | 50                            | 2                    | 3M630630   |
| M800      | 800                     | 630-800                              | (5-10)xIn                              | 50                            | 2                    | 3M800800   |
| S250      | 100                     | 80-100                               | (5-10)xIn                              | 70                            | 6                    | 3S250100   |
|           | 125                     | 100-125                              | (5-10)xIn                              | 70                            | 6                    | 3S250125   |
|           | 160                     | 125-160                              | (5-10)xIn                              | 70                            | 6                    | 3S250160   |
|           | 200                     | 160-200                              | (5-10)xIn                              | 70                            | 6                    | 3S250200   |
|           | 250                     | 200-250                              | (5-10)xIn                              | 70                            | 6                    | 3S250250   |
| S400      | 315                     | 250-315                              | (5-10)xIn                              | 70                            | 2                    | 3S400315   |
|           | 400                     | 315-400                              | (5-10)xIn                              | 70                            | 2                    | 3S400400   |
| S630      | 500                     | 400-500                              | (5-10)xIn                              | 70                            | 2                    | 3S630500   |
|           | 630                     | 500-630                              | (5-10)xIn                              | 70                            | 2                    | 3S630630   |
| S800      | 800                     | 630-800                              | (5-10)xIn                              | 70                            | 2                    | 3S800800   |

### 3 Poles, Electronic Type, MCCB



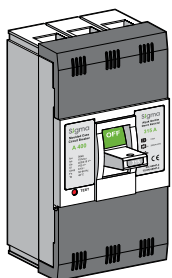
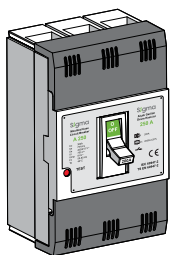
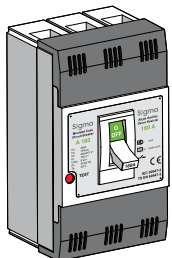
| Type Code | Rated Current<br>In (A) | Thermal Adj. Current<br>Range Ir (A) | Instantaneous Trip-<br>ping Current (Im) | Breaking<br>Capacity Icu (kA) | Number in<br>Cartoon | Order Code |
|-----------|-------------------------|--------------------------------------|------------------------------------------|-------------------------------|----------------------|------------|
| U250      | 100                     | 40-100                               | (1,5-10)xIn                              | 36                            | 6                    | 3U250100   |
|           | 160                     | 64-160                               | (1,5-10)xIn                              | 36                            | 6                    | 3U250160   |
|           | 250                     | 100-250                              | (1,5-10)xIn                              | 36                            | 6                    | 3U250250   |
| U1600     | 1000                    | 400-1000                             | (1,5-12)xIn                              | 70                            | 1                    | 3U160010   |
|           | 1250                    | 500-1250                             | (1,5-12)xIn                              | 70                            | 1                    | 3U160012   |
|           | 1600                    | 640-1600                             | (1,5-12)xIn                              | 70                            | 1                    | 3U160016   |

### 3 Poles, Thermal-Magnetic Adjustable Type, MCCB (For Motor Protection)



| Type Code | Rated Current In (A) | Thermal Adj. Current Ir(A) | Instantaneous Tripping Current (Im) | Breaking Capacity Icu (kA) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|-------------------------------------|----------------------------|-------------------|------------|
| K160      | 25                   | 18-25                      | 15xIn                               | 36                         | 8                 | MK160025   |
|           | 32                   | 23-32                      | 15xIn                               | 36                         | 8                 | MK160032   |
|           | 40                   | 28-40                      | 15xIn                               | 36                         | 8                 | MK160040   |
|           | 50                   | 35-50                      | 15xIn                               | 36                         | 8                 | MK160050   |
|           | 63                   | 44-63                      | 15xIn                               | 36                         | 8                 | MK160063   |
|           | 80                   | 56-80                      | 15xIn                               | 36                         | 8                 | MK160080   |
|           | 100                  | 70-100                     | 15xIn                               | 36                         | 8                 | MK160100   |
|           | 125                  | 88-125                     | 15xIn                               | 36                         | 8                 | MK160125   |
| K250      | 160                  | 112-160                    | 15xIn                               | 36                         | 8                 | MK160160   |
|           | 200                  | 140-200                    | (10-15)xIn                          | 36                         | 6                 | MK250200   |
| K400      | 250                  | 175-250                    | (10-15)xIn                          | 36                         | 6                 | MK250250   |
|           | 315                  | 250-315                    | (8-12)xIn                           | 36                         | 4                 | MK400315   |
| K630      | 400                  | 315-400                    | (8-12)xIn                           | 36                         | 4                 | MK400400   |
|           | 500                  | 400-500                    | (8-12)xIn                           | 36                         | 2                 | MK630500   |
|           | 630                  | 500-630                    | (8-12)xIn                           | 36                         | 2                 | MK630630   |

### 3 Poles, Thermal-Magnetic Fixed Type, MCCB (Protection for Power Distribution & Network)



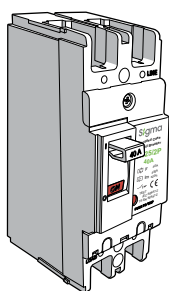
| Type Code | Rated Current In (A) | Thermal Adj. Current Ir(A) | Instantaneous Tripping Current (Im) | Breaking Capacity Icu (kA) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|-------------------------------------|----------------------------|-------------------|------------|
| A125      | 20                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125020   |
|           | 25                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125025   |
|           | 32                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125032   |
|           | 40                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125040   |
|           | 50                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125050   |
|           | 63                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125063   |
|           | 80                   | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125080   |
|           | 100                  | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125100   |
| A160      | 125                  | Fixed                      | 10xIn                               | 20                         | 8                 | 3A125125   |
|           | 20                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160020   |
|           | 25                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160025   |
|           | 32                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160032   |
|           | 40                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160040   |
|           | 50                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160050   |
|           | 63                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160063   |
|           | 80                   | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160080   |
| A250      | 100                  | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160100   |
|           | 125                  | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160125   |
| A400      | 160                  | Fixed                      | 10xIn                               | 25                         | 6                 | 3A160160   |
|           | 200                  | Fixed                      | 10xIn                               | 36                         | 6                 | 3A250200   |
| A630      | 250                  | Fixed                      | 10xIn                               | 36                         | 6                 | 3A250250   |
|           | 315                  | Fixed                      | 10xIn                               | 36                         | 2                 | 3A400315   |
| A630      | 400                  | Fixed                      | 10xIn                               | 36                         | 2                 | 3A400400   |
|           | 500                  | Sabit                      | 10xIn                               | 36                         | 2                 | 3A630500   |
|           | 630                  | Sabit                      | 10xIn                               | 36                         | 2                 | 3A630630   |

## 1 Pole, Fixed Type, MCCB



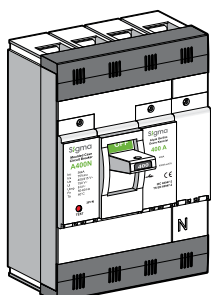
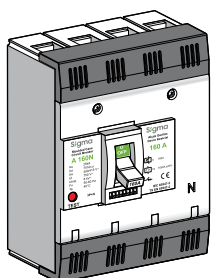
| Type Code | Rated Current In (A) | Thermal Adj. Current Ir (A) | Instantaneous Tripping Current (Im) | Breaking Capacity Icu (kA) | Number in Cartoon | Order Code |
|-----------|----------------------|-----------------------------|-------------------------------------|----------------------------|-------------------|------------|
| KM200     | 16                   | Fixed                       | 12xIn                               | 36                         | 20                | 1K200016   |
|           | 20                   | Fixed                       | 12xIn                               | 36                         | 20                | 1K200020   |
|           | 25                   | Fixed                       | 12xIn                               | 36                         | 20                | 1K200025   |
|           | 32                   | Fixed                       | 10xIn                               | 36                         | 20                | 1K200032   |
|           | 40                   | Fixed                       | 10xIn                               | 36                         | 20                | 1K200040   |
|           | 50                   | Fixed                       | 10xIn                               | 36                         | 20                | 1K200050   |
|           | 63                   | Fixed                       | 10xIn                               | 36                         | 20                | 1K200063   |
|           | 80                   | Fixed                       | 10xIn                               | 36                         | 20                | 1K200080   |
|           | 100                  | Fixed                       | 10xIn                               | 36                         | 20                | 1K200100   |
|           | 125                  | Fixed                       | 10xIn                               | 36                         | 20                | 1K200125   |
|           | 160                  | Fixed                       | 10xIn                               | 36                         | 20                | 1K200160   |
|           | 200                  | Fixed                       | 10xIn                               | 36                         | 20                | 1K200200   |

## 2 Poles, Thermal-Magnetic Fixed Type, MCCB



| Type Code | Rated Current In (A) | Thermal Adj. Current Ir(A) | Instantaneous Tripping Current (Im) | Breaking Capacity Icu (kA) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|-------------------------------------|----------------------------|-------------------|------------|
| A125/2P   | 20                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125020   |
|           | 25                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125025   |
|           | 32                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125032   |
|           | 40                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125040   |
|           | 50                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125050   |
|           | 63                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125063   |
|           | 80                   | Fixed                      | 10xIn                               | 20                         | 24                | 2A125080   |
|           | 100                  | Fixed                      | 10xIn                               | 20                         | 24                | 2A125100   |
|           | 125                  | Fixed                      | 10xIn                               | 20                         | 24                | 2A125125   |

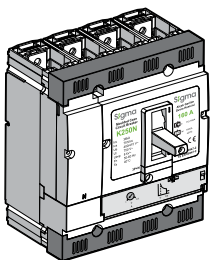
## 4 Poles, Thermal-Magnetic Fixed Type, MCCB (Protection for Power Distribution & Network)



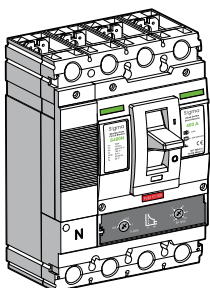
| Type Code | Rated Current In (A) | Thermal Adj. Current Ir(A) | Instantaneous Tripping Current (Im) | Breaking Capacity Icu (kA) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|-------------------------------------|----------------------------|-------------------|------------|
| A160N     | 25                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160025   |
|           | 32                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160032   |
|           | 40                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160040   |
|           | 50                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160050   |
|           | 63                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160063   |
|           | 80                   | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160080   |
|           | 100                  | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160100   |
|           | 125                  | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160125   |
|           | 160                  | Fixed                      | 10xIn                               | 25                         | 6                 | 4A160160   |
| A250N     | 200                  | Fixed                      | 10xIn                               | 36                         | 6                 | 4A250200   |
|           | 250                  | Fixed                      | 10xIn                               | 36                         | 6                 | 4A250250   |
| A400N     | 315                  | Fixed                      | 10xIn                               | 36                         | 2                 | 4A400315   |
|           | 400                  | Fixed                      | 10xIn                               | 36                         | 2                 | 4A400400   |
| A630N     | 500                  | Fixed                      | 10xIn                               | 36                         | 2                 | 4A630500   |
|           | 630                  | Fixed                      | 10xIn                               | 36                         | 2                 | 4A630630   |
| A800N     | 800                  | Fixed                      | 10xIn                               | 36                         | 1                 | 4A800800   |

## 4 Poles, Thermal-Magnetic Adjustable Type, MCCB (Protection for Power Distribution &amp; Network)

**NEW  
PRODUCT**

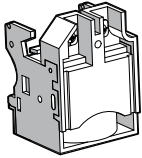


**NEW  
PRODUCT**



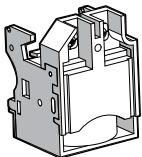
| Type Code | Rated Current<br>In (A) | Thermal Adj.<br>Current Ir(A) | Instantaneous Trip-<br>ping Current (Im) | Breaking Capa-<br>city Icu (kA) | Number in<br>Cartoon | Order Code |
|-----------|-------------------------|-------------------------------|------------------------------------------|---------------------------------|----------------------|------------|
| B160N     | 25                      | 20-25                         | 10xIn                                    | 25                              | 4                    | 4B160025   |
|           | 32                      | 25-32                         | 10xIn                                    | 25                              | 4                    | 4B160032   |
|           | 40                      | 32-40                         | 10xIn                                    | 25                              | 4                    | 4B160040   |
|           | 50                      | 40-50                         | 10xIn                                    | 25                              | 4                    | 4B160050   |
|           | 63                      | 50-63                         | 10xIn                                    | 25                              | 4                    | 4B160063   |
|           | 80                      | 63-80                         | 10xIn                                    | 25                              | 4                    | 4B160080   |
|           | 100                     | 80-100                        | 10xIn                                    | 25                              | 4                    | 4B160100   |
|           | 125                     | 100-125                       | 10xIn                                    | 25                              | 4                    | 4B160125   |
| K160N     | 16                      | 11-16                         | 15xIn                                    | 36                              | 4                    | 4K160016   |
|           | 20                      | 14-20                         | 12xIn                                    | 36                              | 4                    | 4K160020   |
|           | 25                      | 18-25                         | 10xIn                                    | 36                              | 4                    | 4K160025   |
|           | 32                      | 23-32                         | 10xIn                                    | 36                              | 4                    | 4K160032   |
|           | 40                      | 28-40                         | 10xIn                                    | 36                              | 4                    | 4K160040   |
|           | 50                      | 35-50                         | 10xIn                                    | 36                              | 4                    | 4K160050   |
|           | 63                      | 44-63                         | 10xIn                                    | 36                              | 4                    | 4K160063   |
|           | 80                      | 56-80                         | 10xIn                                    | 36                              | 4                    | 4K160080   |
|           | 100                     | 70-100                        | 10xIn                                    | 36                              | 4                    | 4K160100   |
|           | 125                     | 88-125                        | 10xIn                                    | 36                              | 4                    | 4K160125   |
|           | 160                     | 112-160                       | 10xIn                                    | 36                              | 4                    | 4K160160   |
| B250N     | 200                     | 160-200                       | 10xIn                                    | 25                              | 4                    | 4B250200   |
|           | 250                     | 200-250                       | 10xIn                                    | 25                              | 4                    | 4B250250   |
| K250N     | 200                     | 140-200                       | (5-10)xIn                                | 36                              | 4                    | 4K250200   |
|           | 250                     | 175-250                       | (5-10)xIn                                | 36                              | 4                    | 4K250250   |
| M250N     | 200                     | 140-200                       | (5-10)xIn                                | 50                              | 4                    | 4M250200   |
|           | 250                     | 175-250                       | (5-10)xIn                                | 50                              | 4                    | 4M250250   |
| S400N     | 315                     | 250-315                       | (5-10)xIn                                | 70                              | 2                    | 4S400315   |
|           | 400                     | 315-400                       | (5-10)xIn                                | 70                              | 2                    | 4S400400   |
| S630N     | 500                     | 400-500                       | (5-10)xIn                                | 70                              | 2                    | 4S630500   |
|           | 630                     | 500-630                       | (5-10)xIn                                | 70                              | 2                    | 4S630630   |

## Shunt Trip Release



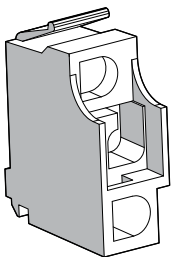
| Applicable MCCB                                   | Coil Voltage (V) | Order Code   |
|---------------------------------------------------|------------------|--------------|
| C160                                              | 230 AC           | C0160AB230AC |
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 230 AC           | K0250AB230AC |
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 24- 30 DC        | K0250AB030DC |
| M160 - S250 - S400 - S630 - S400N - S630N         | 230 AC           | S0630AB230AC |
| K400 - M400 - K630 - M630                         | 230 AC           | K0630AB230AC |
| A160 - A160N                                      | 230 AC           | A0160AB230AC |
| A250 - A250N                                      | 230 AC           | A0250AB230AC |
| A400 - A400N - A630N - M800 - S800 - A800N        | 230 AC           | A0800AB230AC |
| U1600                                             | 230 AC           | U1600AB230AC |

## Under Voltage Release



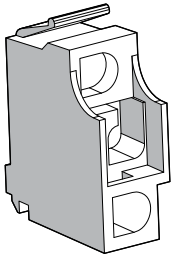
| Applicable MCCB                                   | Coil Voltage (V) | Order Code   |
|---------------------------------------------------|------------------|--------------|
| C160                                              | 400 AC           | C0160DG400AC |
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 400 AC           | K0250DG400AC |
| M160 - S250 - S400 - S630 - S400N - S630N         | 400 AC           | S0630DG400AC |
| M160 - S250 - S400 - S630 - S400N - S630N         | 240 AC           | S0630DG240AC |
| K400 - M400 - K630 - M630                         | 400 AC           | K0630DG400AC |
| A160 - A160N                                      | 400 AC           | A0160DG400AC |
| A250 - A250N                                      | 400 AC           | A0250DG400AC |
| A400 - A400N - A630N - M800 - S800 - A800N        | 400 AC           | A0800DG400AC |
| U1600                                             | 400 AC           | U1600DG400AC |

## Auxiliary Contact



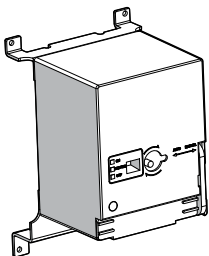
| Applicable MCCB                                   | Auxiliary Contact | Order Code |
|---------------------------------------------------|-------------------|------------|
| C160                                              | 1NO+1NC           | C0160YK    |
| C160                                              | 2NO+2NC           | C0160YL    |
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 1NO+1NC           | K0250YK    |
| M160 - S250 - S400 - S630 - S400N - S630N         | 1NO+1NC           | S0630YK    |
| K400 - M400 - K630 - M630                         | 1NO+1NC           | K0630YK    |
| A160 - A160N                                      | 1NO+1NC           | A0160YK    |
| A250 - A250N                                      | 1NO+1NC           | A0250YK    |
| A400 - A400N - A630N - M800 - S800 - A800N        | 1NO+1NC           | A0800YK    |
| U1600                                             | 1NO+1NC           | U1600YK    |

## Alarm Contact



| Applicable MCCB                                   | Auxiliary Contact | Order Code |
|---------------------------------------------------|-------------------|------------|
| C160                                              | 1NO+1NC           | C0160AK    |
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 1NO+1NC           | K0250AK    |
| M160 - S250 - S400 - S630 - S400N - S630N         | 1NO+1NC           | S0630AK    |
| K400 - M400 - K630 - M630                         | 1NO+1NC           | K0630AK    |
| A160 - A160N                                      | 1NO+1NC           | A0160AK    |
| A250 - A250N                                      | 1NO+1NC           | A0250AK    |
| A400 - A400N - A630N - M800 - S800 - A800N        | 1NO+1NC           | A0800AK    |
| U1600                                             | 1NO+1NC           | U1600AK    |

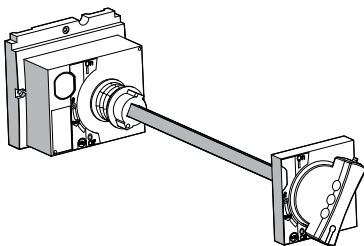
## Motor Operator



**NEW  
PRODUCT**

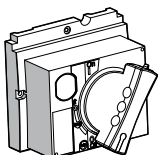
| Applicable MCCB                                   | Coil Voltage (V) | Order Code |
|---------------------------------------------------|------------------|------------|
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | 230 AC           | K0250MM    |
| K400 - M400 - K630 - M630                         | 230 AC           | K0630MM    |
| S250                                              | 230 AC           | S0250MM    |
| S400-S630                                         | 230 AC           | S0400MM    |
| M160                                              | 230 AC           | M0160MM    |
| A160 - A160N                                      | 230 AC           | A0160MM    |
| A250 - A250N                                      | 230 AC           | A0250MM    |
| A400 - A400N                                      | 230 AC           | A0400MM    |
| A630N - M800 - S800 - A800N                       | 230 AC           | M0800MM    |
| U1600                                             | 230 AC           | U1600MM    |

## Extension Rotary Handle (with extension shaft)



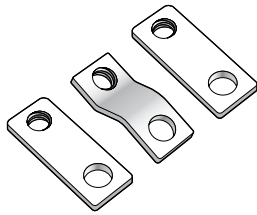
| Applicable MCCB                            | Order Code |
|--------------------------------------------|------------|
| K160 - K250 - M250 - K160N - K250N - M250N | K0250DK    |
| M160                                       | M0160DK    |
| S250                                       | S0250DK    |
| K400 - M400 - K630 - M630                  | K0630DK    |
| A160 - A160N                               | A0160DK    |
| A250 - A250N                               | A0250DK    |
| A400 - A400N                               | A0400DK    |
| A630N - M800 - S800 - A800N                | M0800DK    |
| U1600                                      | U1600DK    |

## Rotary Handle (Direct Assembly)



| Applicable MCCB                                   | Order Code |
|---------------------------------------------------|------------|
| K160 - K250 - M250 - K160N - K250N - M250N - U250 | K0250DU    |
| M160                                              | M0160DU    |
| S250                                              | S0250DU    |

## Extension Bus Bar Set (6 Pcs/Set)



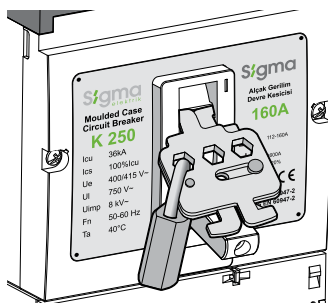
| Applicable MCCB                         | Number in Carton (Pcs) | Order Code |
|-----------------------------------------|------------------------|------------|
| K160 - K250 - M250 - S250 - A250 - U250 | 6                      | K0250UB    |
| K160N - K250N - M250N - A250N           | 8                      | K0250UN    |
| A160 - M160                             | 6                      | A0160UB    |
| A160N                                   | 8                      | A0160UN    |
| A400 - S400                             | 6                      | A0400UB    |
| A400N - S400N                           | 8                      | A0400UN    |
| S630                                    | 6                      | S0630UB    |
| S630N                                   | 8                      | S0630UN    |
| U1600                                   | 6                      | U1600UB    |

## Connection Terminals



| Applicable MCCB           | Piece | Order Code |
|---------------------------|-------|------------|
| K160 - K250 - M250 - U250 | 6     | K0250BK    |
| A160-B160                 | 6     | A3160BK    |
| A160N-B160N               | 8     | A4160BK    |
| B250                      | 6     | B3250BK    |
| B250N                     | 8     | B4250BK    |

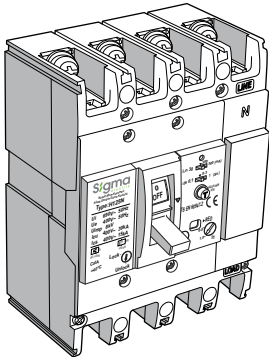
## Mechanical Pad Lock



| Applicable MCCB                                                      | Order Code |
|----------------------------------------------------------------------|------------|
| KM160 - C160 - K160 - K250 - M250 - K400 - M400 - K630 - M630 - U250 | SEMK101    |

Note: Padlock is not included offered price.

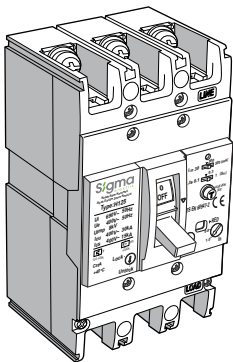
## 4 Poles Earth Leakage Circuit Breakers, Thermal Adjustable



| Type Code | Rated Current<br>In (A) | No of Poles | Residual Current<br>I <sub>Δn</sub> (mA) | Threshold Tripping<br>Time (s) | Order Code |
|-----------|-------------------------|-------------|------------------------------------------|--------------------------------|------------|
| H125N     | 40                      | 4           | 30-300-500                               | 0.1-0.3-1                      | 4H125040   |
|           | 50                      |             |                                          |                                | 4H125050   |
|           | 63                      |             |                                          |                                | 4H125063   |
|           | 80                      |             |                                          |                                | 4H125080   |
|           | 100                     |             |                                          |                                | 4H125100   |
|           | 125                     |             |                                          |                                | 4H125125   |
| H250N     | 160                     | 4           | 30-300-500                               | 0.1-0.3-1                      | 4H250160   |
|           | 200                     |             |                                          |                                | 4H250200   |
|           | 250                     |             |                                          |                                | 4H250250   |

Note: Please ask delivery period for 160-200-250 A.

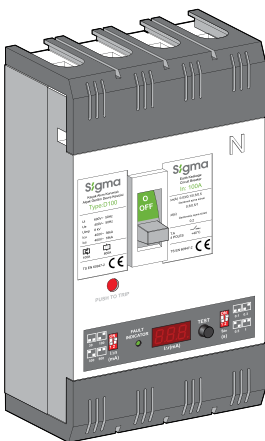
## 3 Poles Earth Leakage Circuit Breakers, Thermal Adjustable



| Type Code | Rated Current<br>In (A) | No of Poles | Residual Current<br>I <sub>Δn</sub> (mA) | Threshold Tripping<br>Time (s) | Order Code |
|-----------|-------------------------|-------------|------------------------------------------|--------------------------------|------------|
| H125      | 40                      | 3           | 30-300-500                               | 0.1-0.3-0.5                    | 3H125040   |
|           | 50                      |             |                                          |                                | 3H125050   |
|           | 63                      |             |                                          |                                | 3H125063   |
|           | 80                      |             |                                          |                                | 3H125080   |
|           | 100                     |             |                                          |                                | 3H125100   |
|           | 125                     |             |                                          |                                | 3H125125   |
| H250      | 160                     | 3           | 30-300-500                               | 0.1-0.3-0.5                    | 3H250160   |
|           | 200                     |             |                                          |                                | 3H250200   |
|           | 250                     |             |                                          |                                | 3H250250   |

Note: Please ask delivery period for 160-200-250 A.

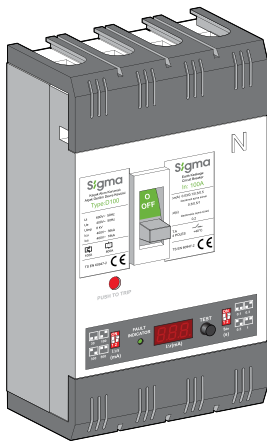
## 4 Poles, Earth Leakage Circuit Breakers



| Type Code | Rated Current<br>In (A) | Breaking Capacity<br>I <sub>cu</sub> (kA) | Threshold Current<br>(mA) | Threshold Trip-<br>ping Time (sec) | Number in<br>Cartoon | Order Code |
|-----------|-------------------------|-------------------------------------------|---------------------------|------------------------------------|----------------------|------------|
| D100      | 40                      | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 4                    | 4D100040   |
|           | 50                      | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 4                    | 4D100050   |
|           | 63                      | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 4                    | 4D100063   |
|           | 80                      | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 4                    | 4D100080   |
|           | 100                     | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 4                    | 4D100100   |
| D250      | 125                     | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 2                    | 4D250125   |
|           | 160                     | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 2                    | 4D250160   |
|           | 200                     | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 2                    | 4D250200   |
|           | 250                     | 36                                        | 0,03-0,1-0,3-0,5          | 0,1-0,3-0,5-1                      | 2                    | 4D250250   |
| D400      | 250                     | 50                                        | 0,1-0,2-0,3-0,5           | 0,1-0,3-0,5-1                      | 2                    | 4D400250   |
|           | 315                     | 50                                        | 0,1-0,2-0,3-0,5           | 0,1-0,3-0,5-1                      | 2                    | 4D400315   |
|           | 400                     | 50                                        | 0,1-0,2-0,3-0,5           | 0,1-0,3-0,5-1                      | 2                    | 4D400400   |
| D630      | 630                     | 50                                        | 0,1-0,2-0,3-0,5           | 0,1-0,3-0,5-1                      | 1                    | 4D630630   |

Note: D400 and D630 type LV Circuit breakers are dispatched with bus bars as standard.  
Please ask delivery period for D250 250A LV MCCB.

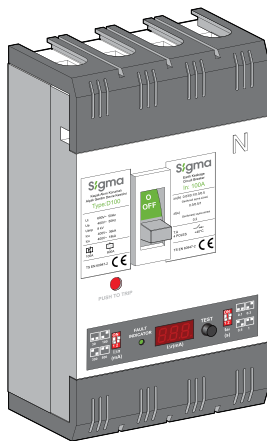
## 4 Poles, Earth Leakage Circuit Breakers (Shunt Trip Release +Auxiliary Contacts)



| Type Code | Rated Current In (A) | Breaking Capacity Icu (kA) | Threshold Current (mA) | Threshold Tripping Time (sec) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|------------------------|-------------------------------|-------------------|------------|
| D100      | 40                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4F100040   |
|           | 50                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4F100050   |
|           | 63                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4F100063   |
|           | 80                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4F100080   |
|           | 100                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4F100100   |
| D250      | 125                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4F250125   |
|           | 160                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4F250160   |
|           | 200                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4F250200   |
|           | 250                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4F250250   |
| D400      | 250                  | 50                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4F400250   |
|           | 315                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 2                 | 4F400315   |
|           | 400                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 2                 | 4F400400   |
| D630      | 630                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 1                 | 4F630630   |

**Note:** D400 and D630 type LV Circuit breakers are dispatched with bus bars as standard.  
Please ask delivery period for D250 250A

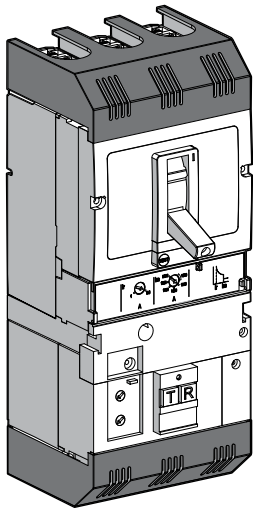
## 4 Poles, Earth Leakage Circuit Breakers (with Shunt Trip Release)



| Type Code | Rated Current In (A) | Breaking Capacity Icu (kA) | Threshold Current (mA) | Threshold Tripping Time (sec) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|------------------------|-------------------------------|-------------------|------------|
| D100      | 40                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4E100040   |
|           | 50                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4E100050   |
|           | 63                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4E100063   |
|           | 80                   | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4E100080   |
|           | 100                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 4                 | 4E100100   |
| D250      | 125                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4E250125   |
|           | 160                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4E250160   |
|           | 200                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4E250200   |
|           | 250                  | 36                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4E250250   |
| D400      | 250                  | 50                         | 0,03-0,1-0,3-0,5       | 0,1-0,3-0,5-1                 | 2                 | 4E400250   |
|           | 315                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 2                 | 4E400315   |
|           | 400                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 2                 | 4E400400   |
| D630      | 630                  | 50                         | 0,1-0,2-0,3-0,5        | 0,1-0,3-0,5-1                 | 1                 | 4E630630   |

**Note:** D400 and D630 type LV Circuit breakers are dispatched with bus bars as standard.  
Please ask delivery period for D250 250A

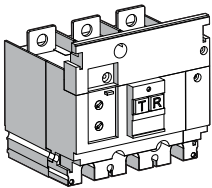
### 3 Poles, Earth Leakage Circuit Breakers



| Type Code | Rated Current In (A) | Breaking Capacity Icu (kA) | Threshold Current (mA) | Threshold Tripping Time (sec) | Number in Cartoon | Order Code |
|-----------|----------------------|----------------------------|------------------------|-------------------------------|-------------------|------------|
| F250      | 25                   | 36                         | 0,03-0,3-0,5-1-3       | 0-0,1-0,5-1                   | 4                 | 3F250025   |
|           | 32                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250032   |
|           | 40                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250040   |
|           | 50                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250050   |
|           | 63                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250063   |
|           | 80                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250080   |
|           | 100                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3F250100   |
|           | 125                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3F250125   |
|           | 160                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3F250160   |
|           | 200                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3F250200   |
|           | 250                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3F250250   |

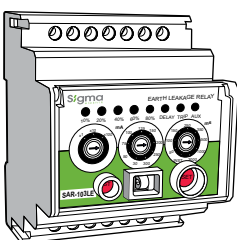
| Type Code                      | Rated Current In (A) | Breaking Capacity Icu (kA) | Threshold Current (mA) | Threshold Tripping Time (sec) | Number in Cartoon | Order Code |
|--------------------------------|----------------------|----------------------------|------------------------|-------------------------------|-------------------|------------|
| F250 (With Shunt Trip Release) | 25                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250025   |
|                                | 32                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250032   |
|                                | 40                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250040   |
|                                | 50                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250050   |
|                                | 63                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250063   |
|                                | 80                   | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250080   |
|                                | 100                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 4                 | 3G250100   |
|                                | 125                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3G250125   |
|                                | 160                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3G250160   |
|                                | 200                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3G250200   |
|                                | 250                  | 36                         | 0,03-0,3-0,5-1-3       | 0,1-0,3-0,5-1                 | 2                 | 3G250250   |

### Earth Leakage Module



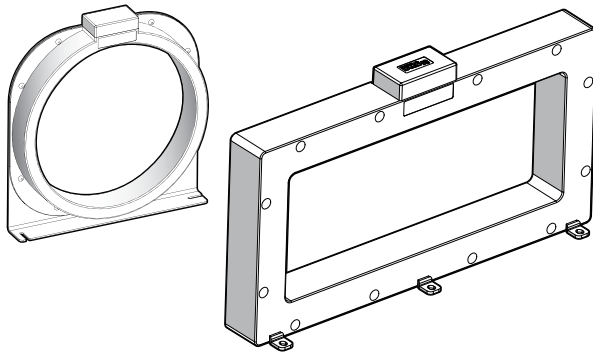
| Applicable MCCB           | Threshold Current (mA) | Threshold Tripping Time (sec) | Order Code |
|---------------------------|------------------------|-------------------------------|------------|
| K160 - K250 - M250 - U250 | 0,03-0,3-0,5-1-3       | 0-0,1-0,5-1                   | 3F250      |

### Earth Leakage Protection Relay



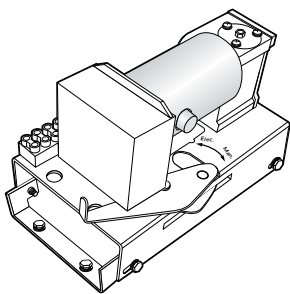
| Threshold Current (mA) | Threshold Tripping Time (sec) | Order Code |
|------------------------|-------------------------------|------------|
| 0,03 - 30              | 0,03-3                        | SAR103LE   |

## Toroidal Current Transformer



| Type                   | Inner Diameter $\Phi$ (mm) | Order Code |
|------------------------|----------------------------|------------|
| ST-55                  | 55                         | ST055      |
| ST-80                  | 80                         | ST080      |
| ST-110                 | 110                        | ST110      |
| ST-160                 | 160                        | ST160      |
| ST-210                 | 210                        | ST210      |
| ST-300                 | 300                        | ST300      |
| ST-280x115 (Rectangle) | 280x115                    | STD280     |
| ST-470x160 (Rectangle) | 470x160                    | STD470     |

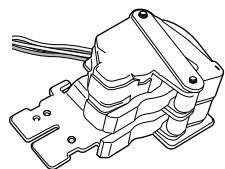
## Motor Operator



| Applicable MCCB | Coil Voltage (V) | Order Code |
|-----------------|------------------|------------|
| D100            | 230 AC           | D0100MM    |
| D250            | 230 AC           | D0250MM    |
| D400            | 230 AC           | D0400MM    |
| D630            | 230 AC           | D0630MM    |

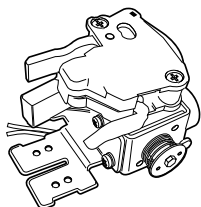
Note: Ask delivery time for Motor Mechanism to be used in D Type AG Circuit Breakers.

## Auxiliary Contacts



| Applicable MCCB | Auxiliary Contact | Order Code |
|-----------------|-------------------|------------|
| D100            | 1NO+1NC           | D0100YK    |
| D250            | 1NO+1NC           | D0250YK    |
| D400            | 1NO+1NC           | D0400YK    |
| D630            | 1NO+1NC           | D0630YK    |
| F250            | 1NO+1NC           | K0250YK    |

## Shunt Trip Release



| Applicable MCCB | Coil Voltage (V) | Order Code |
|-----------------|------------------|------------|
| D100            | 230 AC           | D0100AB    |
| D250            | 230 AC           | D0250AB    |
| D400            | 230 AC           | D0400AB    |
| D630            | 230 AC           | D0630AB    |
| F250            | 230 AC           | K0250AB    |

## Shunt Trip Release



| Type Code | Rated Current In (A) | Applicable MCCB | Order Code |
|-----------|----------------------|-----------------|------------|
| H125AB    | 230                  | 40-250 A        | H125AB     |

## LV Air Circuit Breakers - Technical Specifications

| Type                                           |        |    |          | SDA-2000/<br>SFA-2000            | SDA-3200/<br>SFA-3200 | SDA-4000/<br>SFA-4000 | SDA-6300         |
|------------------------------------------------|--------|----|----------|----------------------------------|-----------------------|-----------------------|------------------|
| Type Of Structure                              |        |    |          | Draw-Out/Fixed                   | Draw-Out/Fixed        | Draw-Out/Fixed        | Draw-Out/Fixed   |
| No of Poles                                    |        |    |          | 3/4                              | 3/4                   | 3/4                   | 3/4              |
| Electrical Specifications                      |        |    |          |                                  |                       |                       |                  |
| Rated Current (at 40°C)                        |        | A  |          | 630, 800, 1000, 1250, 1600, 2000 | 2500, 3200            | 4000                  | 5000, 6300       |
| Rated Operating Voltage                        | Ue     | V  | AC       | 415                              | 415                   | 415                   | 415              |
| Rated Insulation Voltage                       | Ui     | V  |          | 1000                             | 1000                  | 1000                  | 1000             |
| Rated Impulse Withstand Voltage                | Uimp   | kV |          | 8                                | 8                     | 8                     | 8                |
| Disconnecting Capacity                         |        |    |          |                                  |                       |                       |                  |
| Rated Ultimate Short Circuit Breaking Capacity | Icu    | kA | 690 V AC | 50                               | 65                    | 65                    | 65               |
|                                                |        |    | 415 V AC | 80                               | 100                   | 100                   | 100              |
| Rated Service Short Circuit Breaking Capacity  | Ics    | kA | 690 V AC | 40                               | 50                    | 50                    | 50               |
|                                                |        |    | 415 V AC | 50                               | 65                    | 65                    | 65               |
| Utilization Category                           |        |    |          | A, B                             | A, B                  | A, B                  | A, B             |
| Pollution Degree                               |        |    |          | 3                                | 3                     | 3                     | 3                |
| Electrical Life                                | ON-OFF |    | 415 V    | 1000                             | 500                   | 500                   | 500              |
| Mechanical Life                                | ON-OFF |    |          | 10000                            | 10000                 | 8000                  | 8000             |
| Protection Unit                                |        |    |          | Electronic                       | Electronic            | Electronic            | Electronic       |
| Long Time Delay Current                        | Ir1    | A  |          | (0,4-1)xIn                       | (0,4-1)xIn            | (0,4-1)xIn            | (0,4-1)xIn       |
| Long Time Delay Time                           | t1     | sn |          | 0-480                            | 0-480                 | 0-480                 | 0-480            |
| Short Time Delay Current                       | Ir2    | A  |          | (0,4-15)xIn                      | (0,4-15)xIn           | (0,4-15)xIn           | (0,4-15)xIn      |
| Short Time Delay Time                          | t1     | sn |          | 0,1-1                            | 0,1-1                 | 0,1-1                 | 0,1-1            |
| Instantaneous Breaking Current                 | Ir3    | A  |          | In..50 kA +OFF                   | In..50 kA +OFF        | In..50 kA +OFF        | In..50 kA +OFF   |
| Earth Fault Current                            | Ir4    | A  |          | (0,2-0,8)xIn+OFF                 | (0,2-0,8)xIn+OFF      | (0,2-0,8)xIn.OFF      | (0,2-0,8)xIn.OFF |
| Ambient Temperature                            |        |    |          |                                  |                       |                       |                  |
| Max. Operational Ambient Temperature           |        | °C |          | -25 to +70                       | -25 to +70            | -25 to +70            | -25 to +70       |
| Max. Storage Temperature                       |        | °C |          | -40 to +80                       | -40 to +80            | -40 to +80            | -40 to +80       |
| Accessories                                    |        |    |          |                                  |                       |                       |                  |
| Shunt Trip Coil (230 V AC)                     |        |    |          | On Request                       | On Request            | On Request            | On Request       |
| Under Voltage Coil (230 V AC)                  |        |    |          | On Request                       | On Request            | On Request            | On Request       |
| Delay Type Under Voltage Coil (230 V AC)       |        |    |          | On Request                       | On Request            | On Request            | On Request       |
| Closing Coil (230 V AC)                        |        |    |          | On Request                       | On Request            | On Request            | On Request       |
| Auxiliary Contact (2NO+2NC)                    |        |    |          | standard                         | standard              | standard              | standard         |
| Motor Operator (230 V AC)                      |        |    |          | On Request                       | On Request            | On Request            | On Request       |
| Mechanical Interlock                           |        |    |          | On Request                       | On Request            | On Request            | On Request       |

## Protection Properties for Air Circuit Breakers

### Long-Time Delay Overcurrent Protection

| Setting Current (Ir1) | Error | Current       | Tripping Time (s) |         |         |         |        |        | Time Error |
|-----------------------|-------|---------------|-------------------|---------|---------|---------|--------|--------|------------|
| (0.4~1)xIn            | ±%10  | 1.05xIr1      | <2h non-tripping  |         |         |         |        |        |            |
|                       |       | 1.30xIr1      | <1h trip          |         |         |         |        |        |            |
|                       |       | 1.5x Ir1 (t1) | 15 sn             | 30 sn   | 60 sn   | 120 sn  | 240 sn | 480 sn | ±10%       |
|                       |       | 2.0xIr1       | 8.4 sn            | 16.9 sn | 33.7 sn | 67.5 sn | 135 sn | 270 sn | ±10%       |

### Short-Time Delay Overcurrent Protection

| Setting Current (Ir1) | Error | Current            | Tripping Time (s) |         |         |         |  |  | Time Error |
|-----------------------|-------|--------------------|-------------------|---------|---------|---------|--|--|------------|
| (0.4~15)xIr2          | ±%10  | ≤0.9xIr2           | <2h non-tripping  |         |         |         |  |  |            |
|                       |       | >1.1xIr2           | <1h trip          |         |         |         |  |  |            |
|                       |       | Delay setting (ts) | 0.1sn             | 0.2 sn  | 0.3 sn  | 0.4 sn  |  |  | ±15%       |
|                       |       | >8xIr2             | 0.06 sn           | 0.14 sn | 0.23 sn | 0.35 sn |  |  | ±15%       |

### Instantaneous Tripping Protection

| Setting Current (Ir1) | Error | Current  | Time Error   |
|-----------------------|-------|----------|--------------|
| 1.0 In~50kA           | ±%15  | ≤0.85Ir3 | non-tripping |
|                       |       | >1.15Ir3 | trip         |

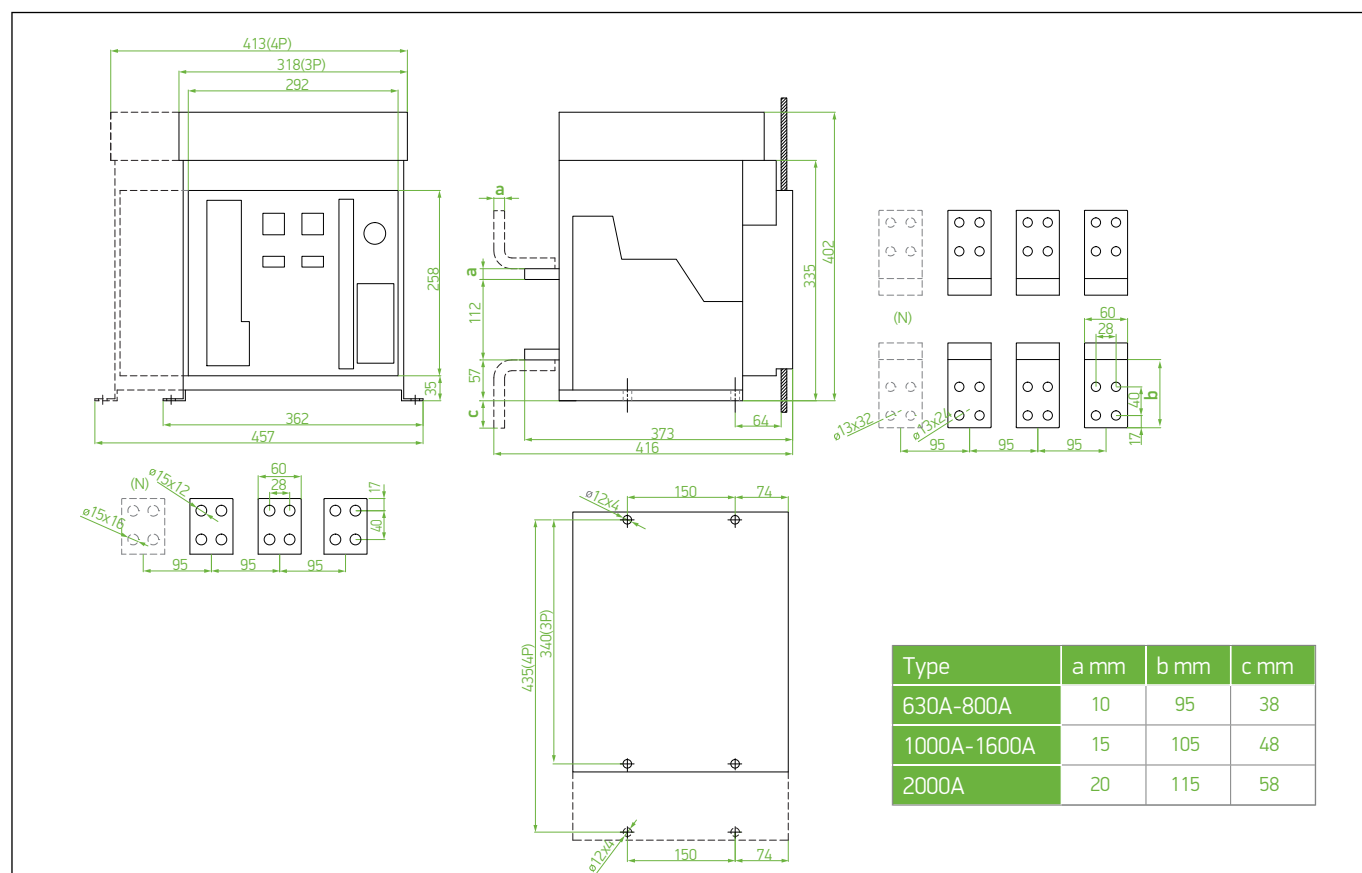
### Earthing Fault Protection

| Setting Current (Ir1) | Error | Current            | Tripping Time (s)   |        |        |        |  |  | Time Error |
|-----------------------|-------|--------------------|---------------------|--------|--------|--------|--|--|------------|
| (0.2~0.8)Ir4          | ±%10  | ≤0.9xIr4           | non-tripping        |        |        |        |  |  |            |
|                       |       | >1.10Ir4           | Tripping Time (sec) |        |        |        |  |  |            |
|                       |       | Tripping time (TG) | 0.1 sn              | 0.2 sn | 0.3 sn | 0.4 sn |  |  | ±15%       |

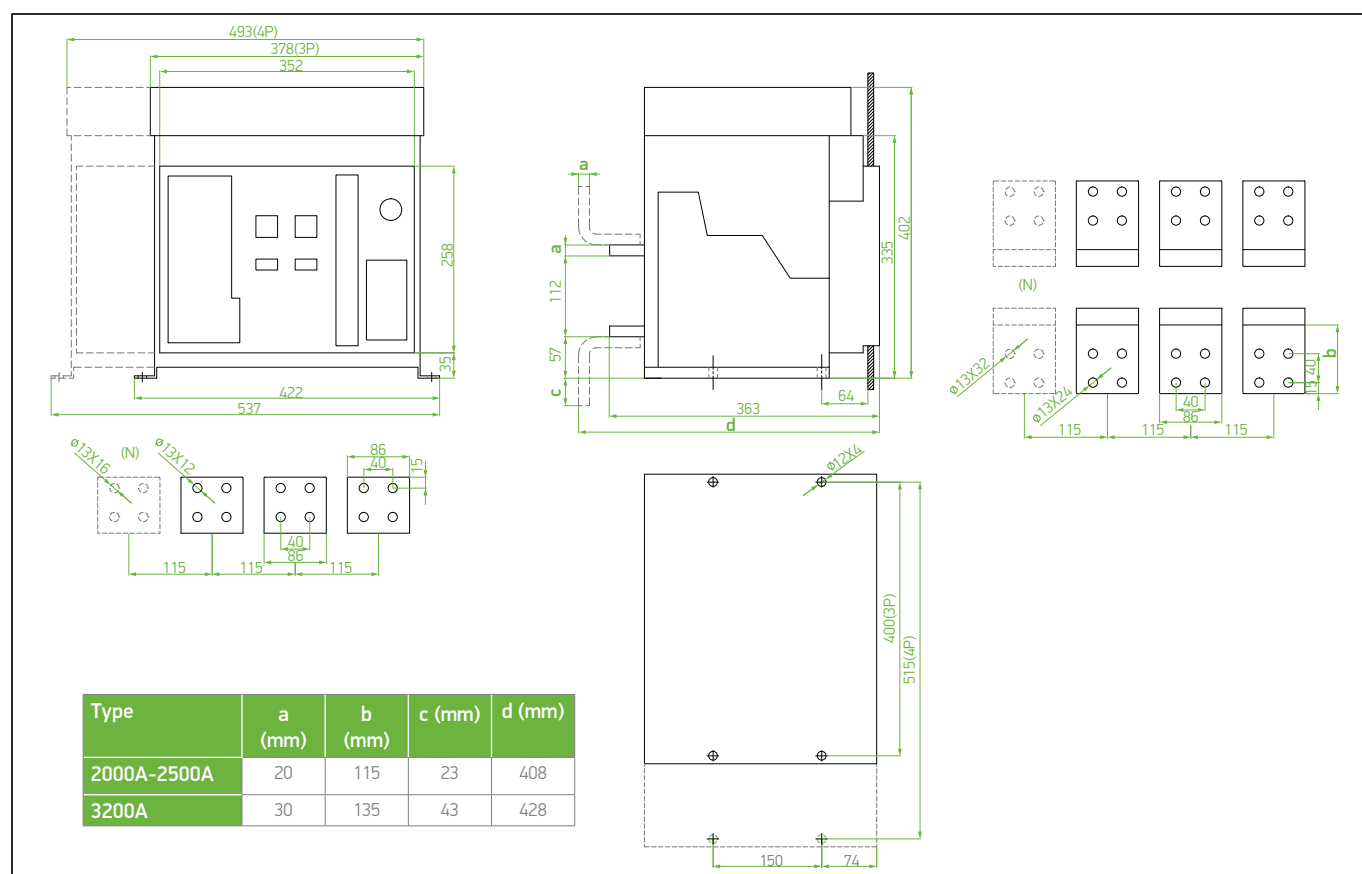


## Dimensions

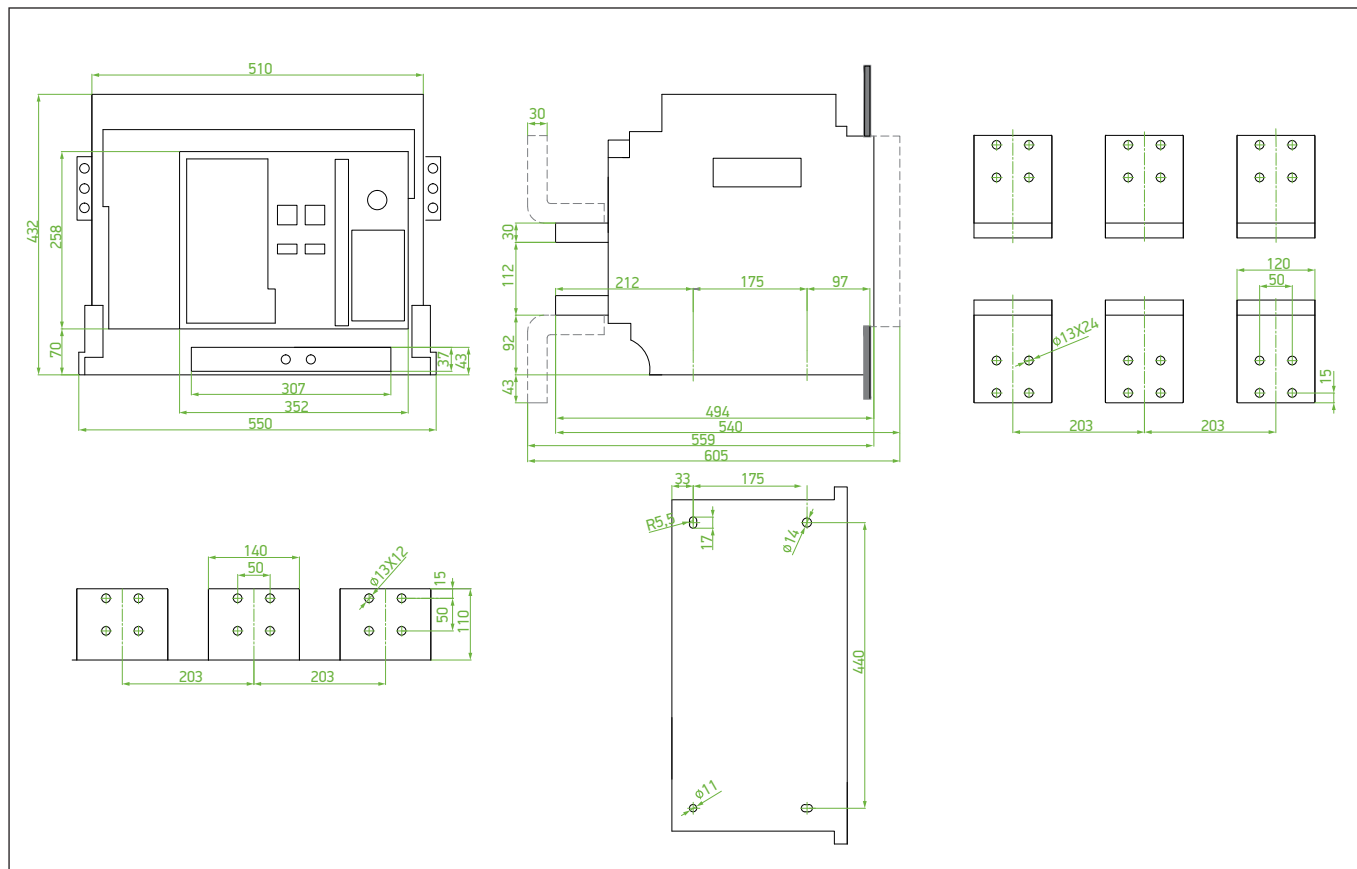
### SFA-2000 SFA-2000(N)



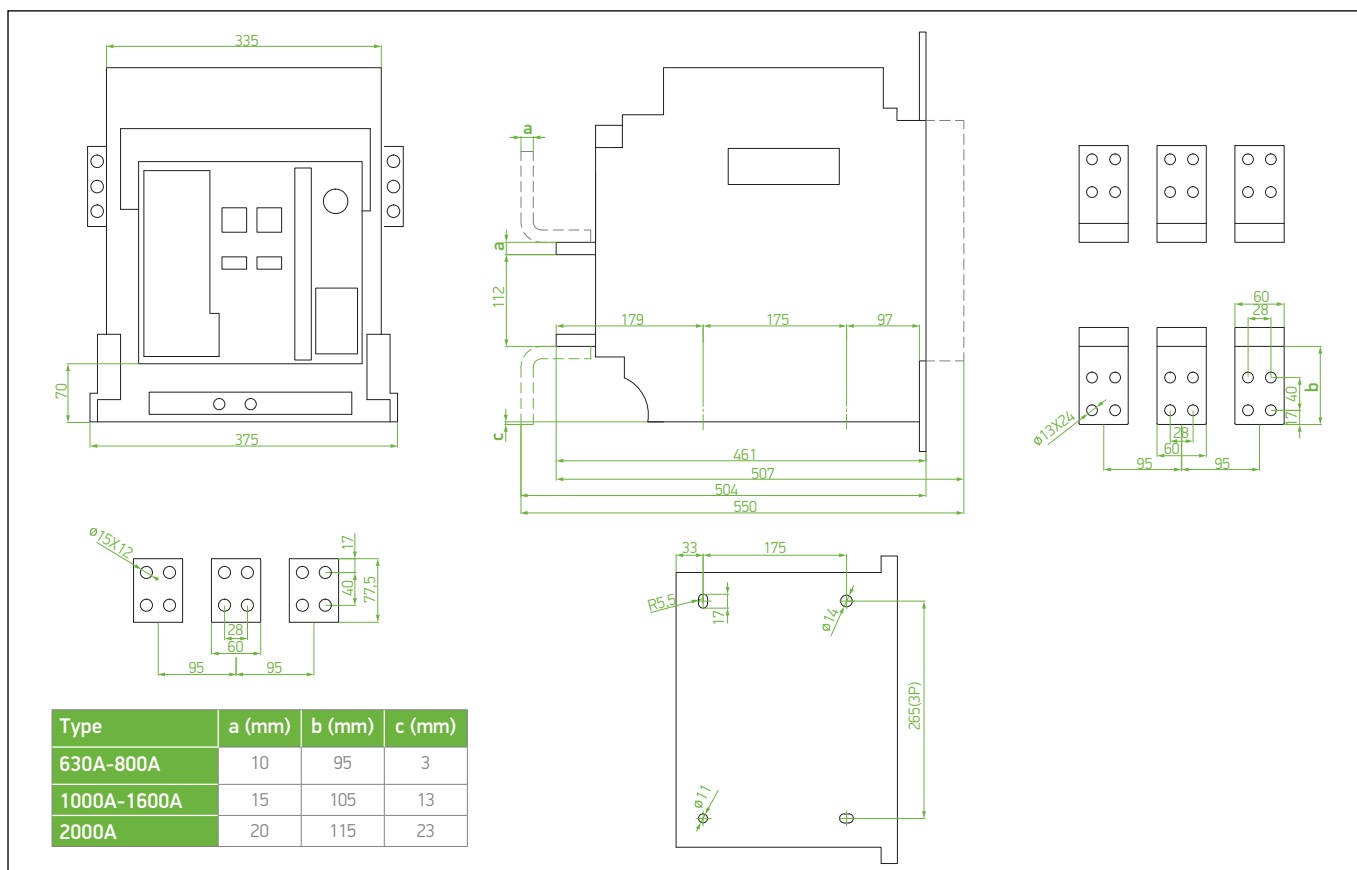
### SFA-3200 SFA-3200(N)



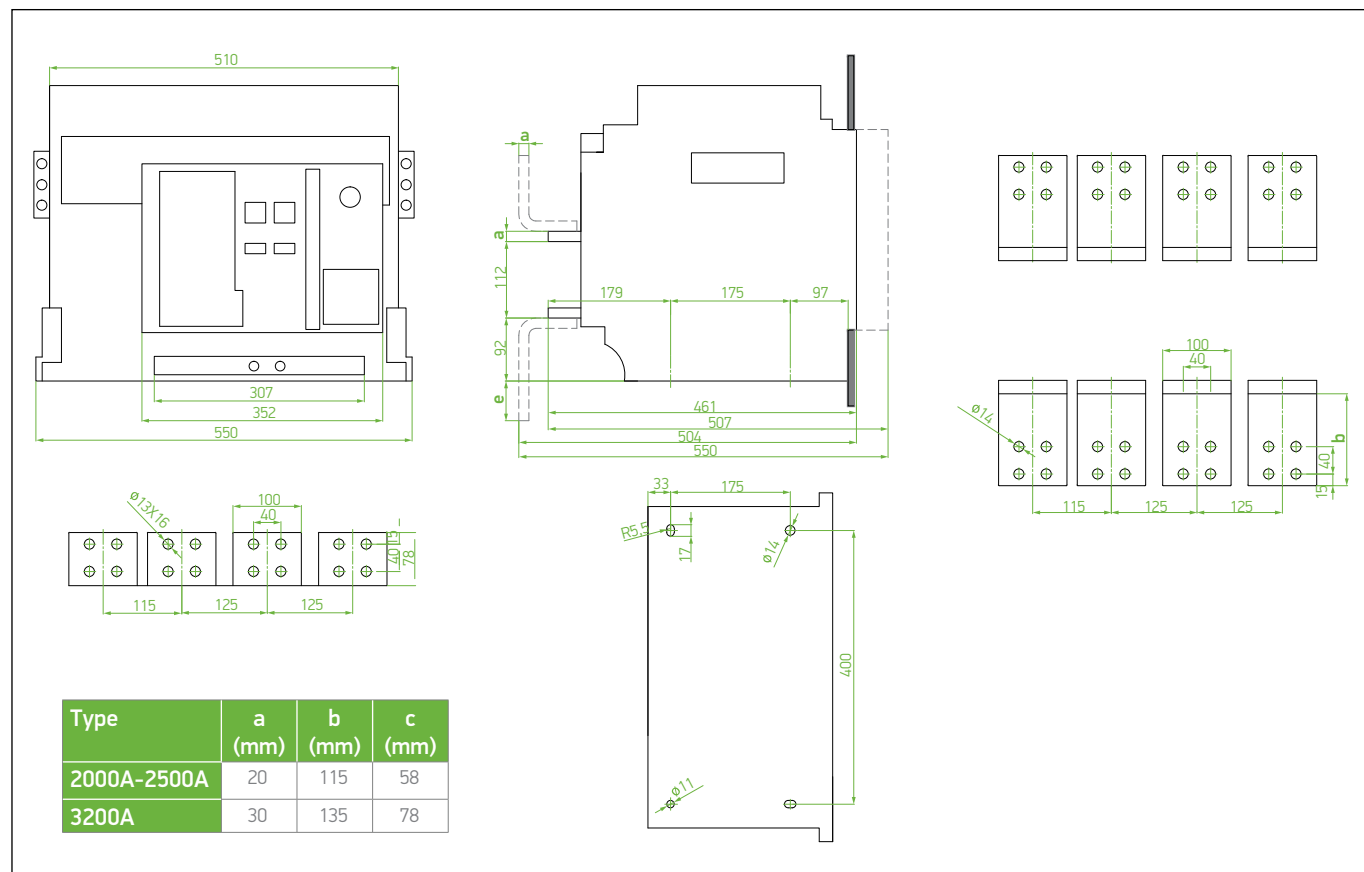
### SFA-4000



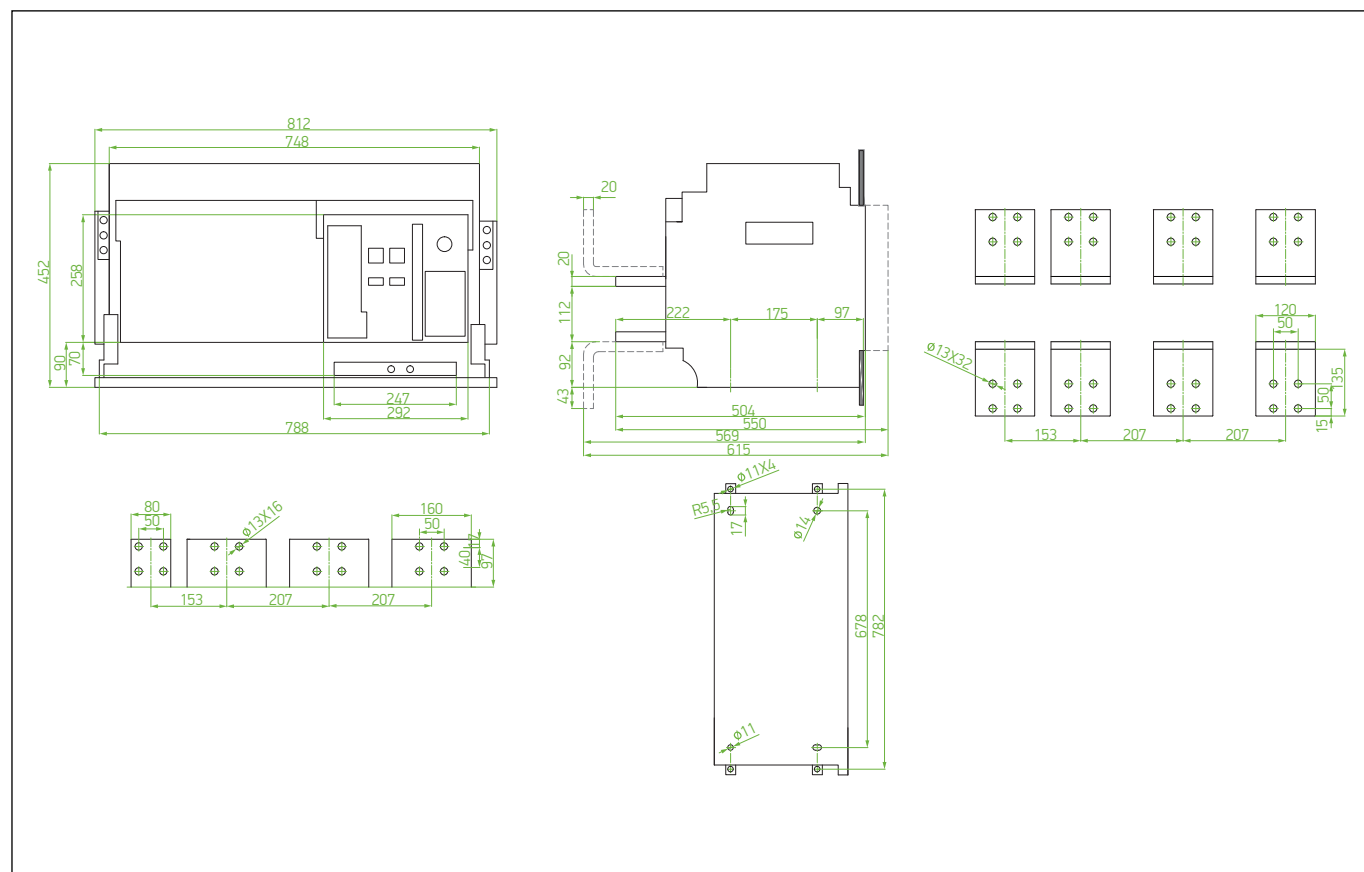
### SDA-2000



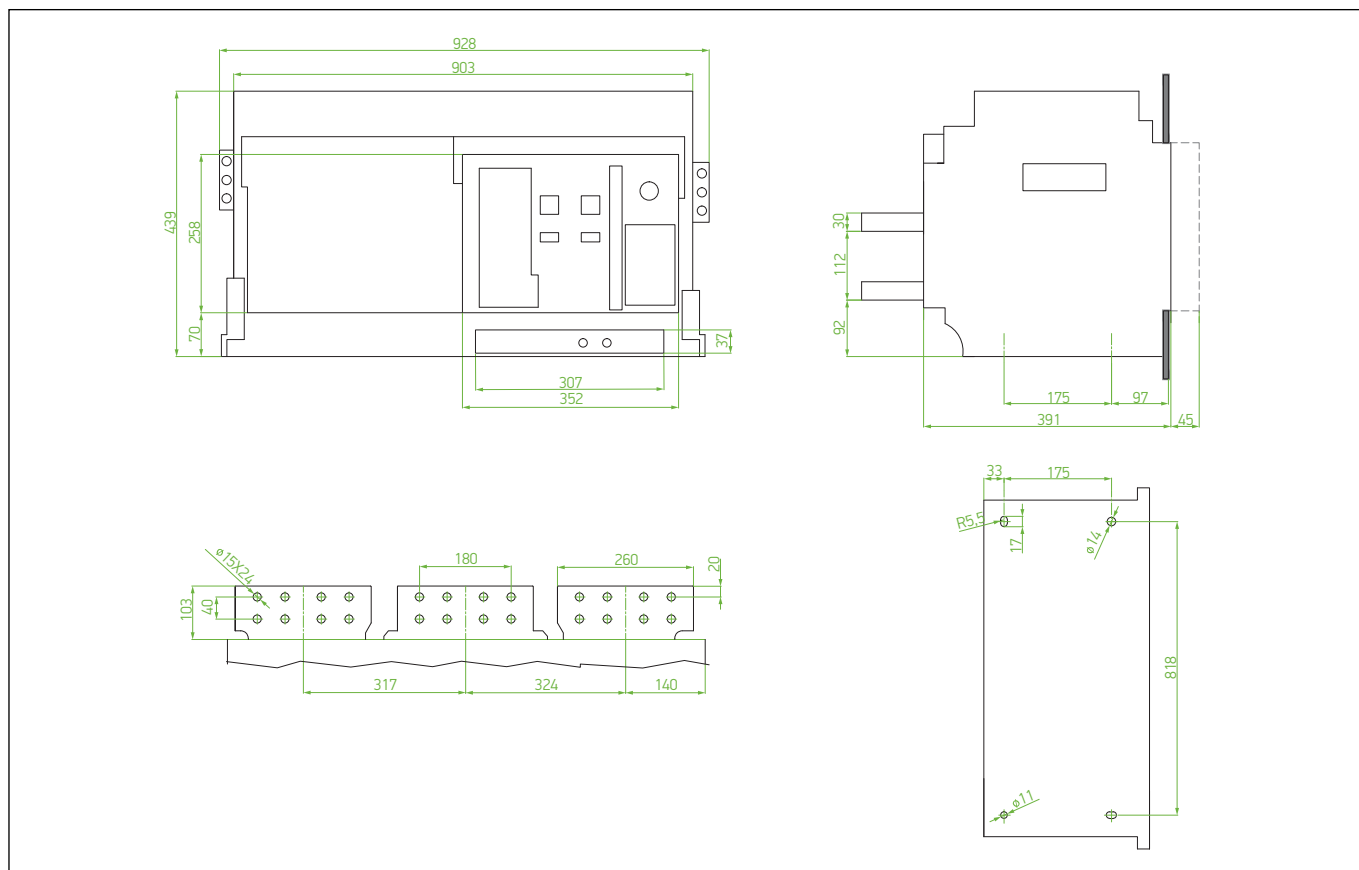
## SDA-3000



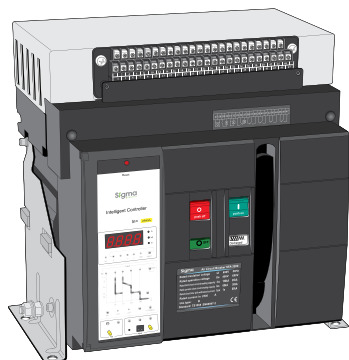
## SDA-4000



SDA-6300



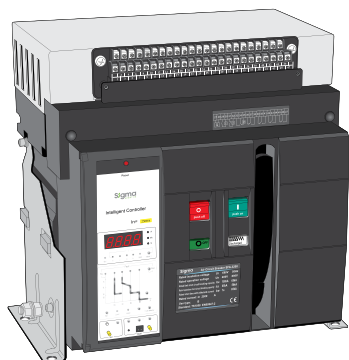
### 3 Poles, Fixed Type, Air Circuit Breakers



| Type Code | Rated Current In (A) | Rated Current Adjustment (Ir1) | Breaking Capacity Icu (kA) | Operation Mechanism | Order Code |
|-----------|----------------------|--------------------------------|----------------------------|---------------------|------------|
| SFA-1600  | 630                  | 252-630                        | 80                         | Manuel              | SFA0630H3  |
|           | 800                  | 320-800                        | 80                         | Manuel              | SFA0800H3  |
|           | 1000                 | 400-1000                       | 80                         | Manuel              | SFA1000H3  |
|           | 1250                 | 500-1250                       | 80                         | Manuel              | SFA1250H3  |
|           | 1600                 | 640-1600                       | 80                         | Manuel              | SFA1600H3  |
| SFA-2000  | 2000                 | 1200-2000                      | 80                         | Manuel              | SFA2000H3  |
| SFA-2500  | 2500                 | 1000-2500                      | 100                        | Manuel              | SFA2500H3  |
| SFA-3200  | 3200                 | 1280-3200                      | 100                        | Manuel              | SFA3200H3  |
| SFA-4000  | 4000                 | 1600-4000                      | 100                        | Manuel              | SFA4000H3  |
| SFA-1600  | 630                  | 252-630                        | 80                         | Motorized           | SFA0630M3  |
|           | 800                  | 320-800                        | 80                         | Motorized           | SFA0800M3  |
|           | 1000                 | 400-1000                       | 80                         | Motorized           | SFA1000M3  |
|           | 1250                 | 500-1250                       | 80                         | Motorized           | SFA1250M3  |
|           | 1600                 | 640-1600                       | 80                         | Motorized           | SFA1600M3  |
| SFA-2000  | 2000                 | 1200-2000                      | 80                         | Motorized           | SFA2000M3  |
| SFA-2500  | 2500                 | 1000-2500                      | 100                        | Motorized           | SFA2500M3  |
| SFA-3200  | 3200                 | 1280-3200                      | 100                        | Motorized           | SFA3200M3  |
| SFA-4000  | 4000                 | 1600-4000                      | 100                        | Motorized           | SFA4000M3  |

Note: All Acbs have 4NO+4NC auxiliary contacts as standard product.

### 4 Poles, Fixed Type, Air Circuit Breakers



| Type Code    | Rated Current In (A) | Breaking Capacity Icu (kA) | Operation Mechanism | Order Code |
|--------------|----------------------|----------------------------|---------------------|------------|
| SFA-1600     | 400-1000             | 80                         | Manuel              | SFA1000H4  |
|              | 500-1250             | 80                         | Manuel              | SFA1250H4  |
|              | 640-1600             | 80                         | Manuel              | SFA1600H4  |
| SFA-2000     | 1200-2000            | 80                         | Manuel              | SFA2000H4  |
| SFA-2500     | 1000-2500            | 100                        | Manuel              | SFA2500H4  |
| SFA-3200     | 1280-3200            | 100                        | Manuel              | SFA3200H4  |
| (*)SDA-4000  | 1600-4000            | 100                        | Manuel              | SDA4000H4  |
| SFA-1600     | 400-1000             | 80                         | Motorized           | SFA1000M4  |
|              | 500-1250             | 80                         | Motorized           | SFA1250M4  |
|              | 640-1600             | 80                         | Motorized           | SFA1600M4  |
| SFA-2000     | 1200-2000            | 80                         | Motorized           | SFA2000M4  |
| SFA-3200     | 1000-2500            | 100                        | Motorized           | SFA2500M4  |
| SFA-3200     | 1280-3200            | 100                        | Motorized           | SFA3200M4  |
| (**)SDA-4000 | 1600-4000            | 100                        | Motorized           | SDA4000M4  |

Note: (\*) All Acbs have 4NO+4NC auxiliary contacts as standard product.

(\*\*) 4 Poles 4000 A ACBs are Draw Out Type.

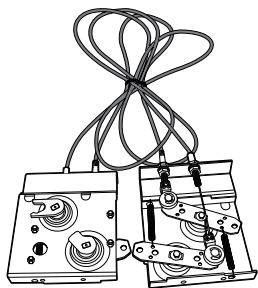
### 3 Poles Draw-Out Type Air Circuit Breakers



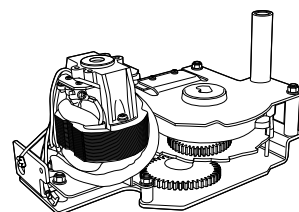
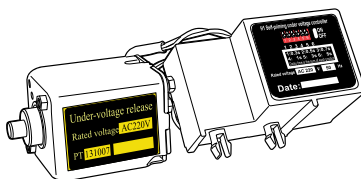
| Type Code | Rated Current In (A) | Rated Current Adjustment (Ir1) | Breaking Capacity Icu (kA) | Operation Mechanism | Order Code |
|-----------|----------------------|--------------------------------|----------------------------|---------------------|------------|
| SDA-1000  | 1000                 | 400-1000                       | 80                         | Manuel              | SDA1000H3  |
| SDA-1250  | 1250                 | 500-1250                       | 80                         | Manuel              | SDA1250H3  |
| SDA-1600  | 1600                 | 640-1600                       | 80                         | Manuel              | SDA1600H3  |
| SDA-2000  | 2000                 | 1200-2000                      | 80                         | Manuel              | SDA2000H3  |
| SDA-2500  | 2500                 | 1000-2500                      | 100                        | Manuel              | SDA2500H3  |
| SDA-3200  | 3200                 | 1280-3200                      | 100                        | Manuel              | SDA3200H3  |
| SDA-4000  | 4000                 | 1600-4000                      | 100                        | Manuel              | SDA4000H3  |
| SDA-5000  | 5000                 | 2000-5000                      | 100                        | Manuel              | SDA5000H3  |
| SDA-6300  | 6300                 | 2560-6300                      | 100                        | Manuel              | SDA6300H3  |
| SDA-1000  | 1000                 | 400-1000                       | 80                         | Motorized           | SDA1000M3  |
| SDA-1250  | 1250                 | 500-1250                       | 80                         | Motorized           | SDA1250M3  |
| SDA-1600  | 1600                 | 640-1600                       | 80                         | Motorized           | SDA1600M3  |
| SDA-2000  | 2000                 | 1200-2000                      | 80                         | Motorized           | SDA2000M3  |
| SDA-2500  | 2500                 | 1000-2500                      | 100                        | Motorized           | SDA2500M3  |
| SDA-3200  | 3200                 | 1280-3200                      | 100                        | Motorized           | SDA3200M3  |
| SDA-4000  | 4000                 | 1600-4000                      | 100                        | Motorized           | SDA4000M3  |
| SDA-5000  | 5000                 | 2000-5000                      | 100                        | Motorized           | SDA5000M3  |
| SDA-6300  | 6300                 | 2560-6300                      | 100                        | Motorized           | SDA6300M3  |

Note: (\*) All Acbs have 4NO+4NC auxiliary contacts as standard product.

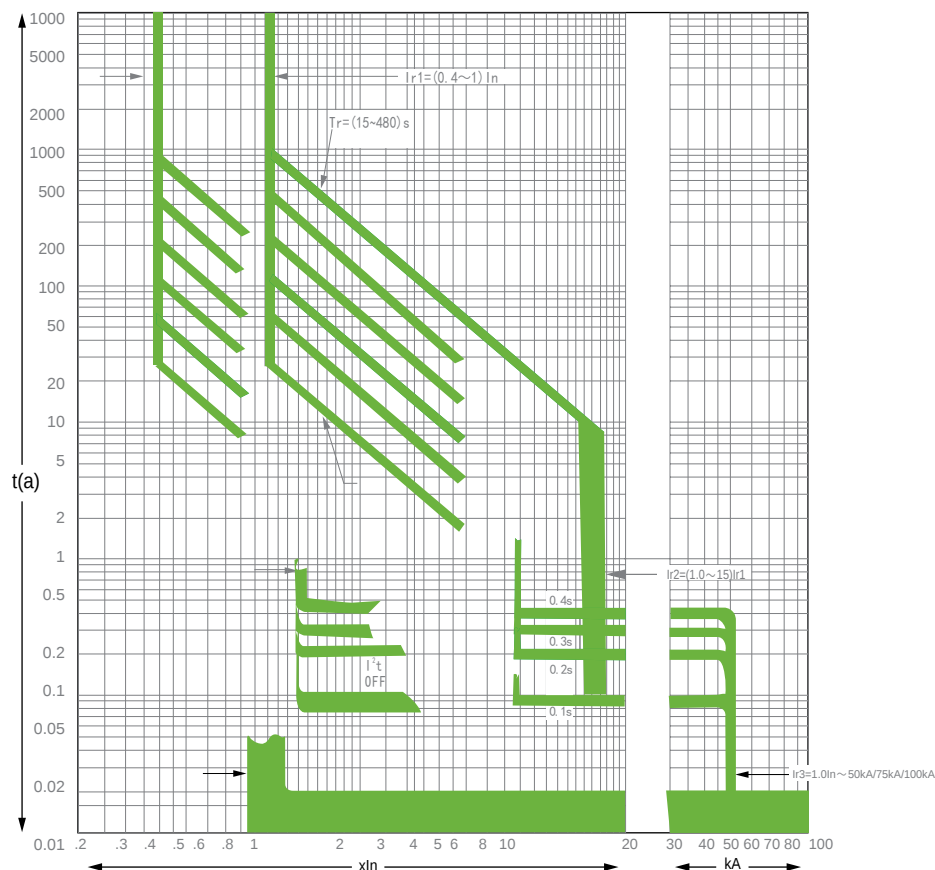
### Accessories for Air Circuit Breakers



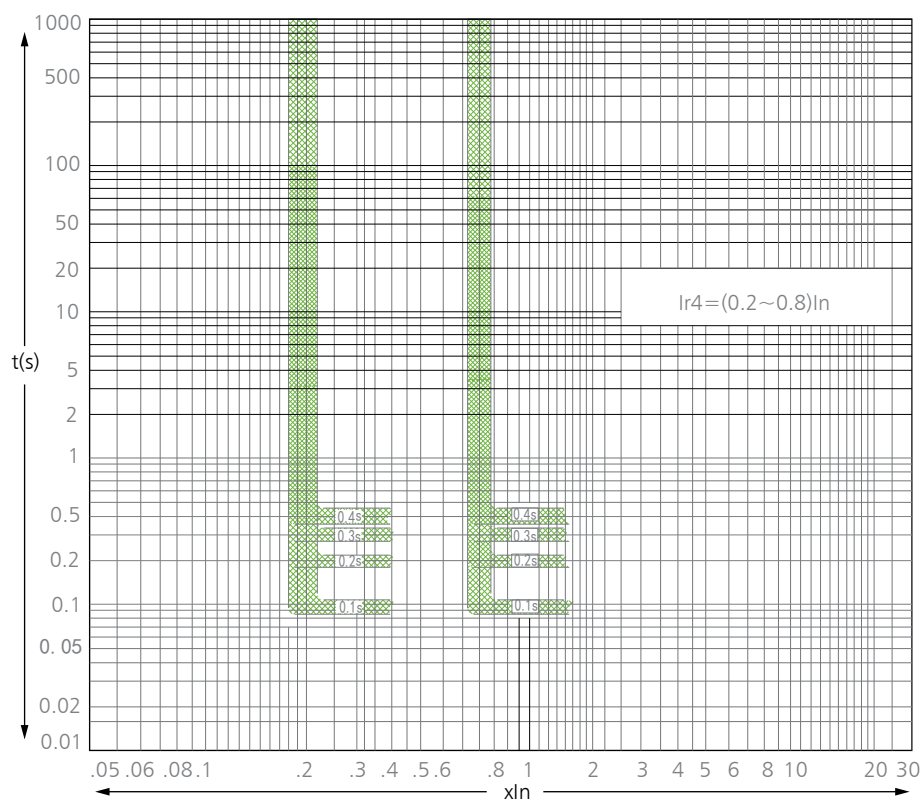
| Type Code | Description                           | Features  | Order Code |
|-----------|---------------------------------------|-----------|------------|
| SADG      | Under Voltage Release - Without Delay | 230 V AC  | SADG230    |
|           | Under Voltage Release - Without Delay | 380 V AC  | SADG380    |
| SAGDG     | Under Voltage Release - With Delay    | 230 V AC  | SAGDG230   |
|           | Under Voltage Release - With Delay    | 380 V AC  | SAGDG380   |
| SAAB      | Shunt Trip Coil                       | 230 V AC  | SAAB       |
| SAKB      | Closing Coil                          | 230 V AC  | SAKB       |
| SAMM-1    | Motor Operator (630...2000 A)         | 230 V AC  | SAM1       |
| SAMM-2    | Motor Operator (2500...6300 A)        | 230 V AC  | SAM2       |
| SAMK      | Mechanical Interlock                  | Wire Type | SAMK       |



## Overload Current Time-Current Characteristic for ACB



## Earth Fault Protection Time-Current Characteristic for ACB



## Automatic Transfer Switches - Technical Specifications

| Type                                        | SATS-100    | SATS-250 |       |       |       | SATS-400 | SATS-630 | SATS-800 |
|---------------------------------------------|-------------|----------|-------|-------|-------|----------|----------|----------|
| Nominal current I <sub>th</sub> (40°C)      | 100 A       | 125 A    | 160 A | 200 A | 250 A | 400 A    | 630 A    | 800 A    |
| Ambient operating temperature range         | -5°C~+40°C  |          |       |       |       |          |          |          |
| Ambient storage temperature range           | -20°C~+60°C |          |       |       |       |          |          |          |
| Altitude                                    | 2000m       |          |       |       |       |          |          |          |
| Contamination degree                        | 3           |          |       |       |       |          |          |          |
| Nominal operating voltage (U <sub>e</sub> ) | 400VAC 50Hz |          |       |       |       |          |          |          |

| Electrical Specifications                                       |                     |                     |                     |                     |                     |                     |                     |                     |
|-----------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Number of poles                                                 | 4P                  | 4P                  | 4P                  | 4P                  | 4P                  | 4P                  | 4P                  | 4P                  |
| Nominal current I <sub>th</sub> (40°C)                          | 100 A               | 125 A               | 160 A               | 200 A               | 250 A               | 400 A               | 630 A               | 800 A               |
| Nominal insulation voltage U <sub>i</sub> (V)                   | 800                 | 800                 | 800                 | 800                 | 800                 | 800                 | 1000                | 1000                |
| Nominal lightning impulse voltage U <sub>imp</sub> (kV)         | 8                   | 8                   | 8                   | 8                   | 8                   | 8                   | 12                  | 12                  |
| Nominal short circuit breaking capacity (I <sub>cu</sub> ) (kA) | 35                  | 35                  | 35                  | 50                  | 50                  | 70                  | 70                  | 70                  |
| Short circuit protection                                        | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   | 10xI <sub>n</sub>   |
| Over load protection                                            | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> | >1.3xI <sub>n</sub> |

| Switching Time                    |      |      |      |      |      |      |      |      |
|-----------------------------------|------|------|------|------|------|------|------|------|
| UN-UR or UR-UN Switching Time (s) | 3.2s | 3.5s | 3.6s | 3.6s | 4s   | 4s   | 5s   | 5s   |
| UN-0 or UR-0 Switching Time (s)   | 2s   | 2s   | 2s   | 2s   | 2,2s | 2,2s | 2,5s | 2,5s |

| Mechanical Properties   |                             |      |      |      |      |      |      |      |
|-------------------------|-----------------------------|------|------|------|------|------|------|------|
| Mechanical Service Life | 6000                        | 6000 | 6000 | 6000 | 4000 | 4000 | 3000 | 3000 |
| Protection degree       | IP30 (Other than Terminals) |      |      |      |      |      |      |      |
| Weight (kg)             |                             |      |      |      |      |      |      |      |

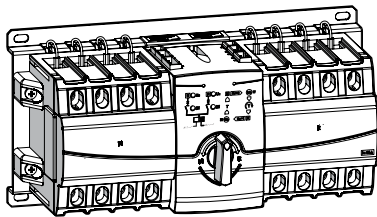
| Electrical Connection                           |      |      |      |       |       |       |       |       |
|-------------------------------------------------|------|------|------|-------|-------|-------|-------|-------|
| Minimum copper bar section (mm <sup>2</sup> )   | ■    | ■    | ■    | ■     | ■     | ■     | ■     | ■     |
| Maximum copper cable section (mm <sup>2</sup> ) | 35   | 35   | 50   | 85    | 95    | 185   | 2x150 | 2x240 |
| Tightening torque min / max (Nm)                | 9/13 | 9/13 | 9/13 | 20/26 | 20/26 | 20/26 | 20/26 | 20/26 |

| Control Unit Properties     |                    |  |  |  |  |  |  |  |
|-----------------------------|--------------------|--|--|--|--|--|--|--|
| Nominal application voltage | 230V               |  |  |  |  |  |  |  |
| Power consumption           | 10W                |  |  |  |  |  |  |  |
| Installation mode           | Fixed Type         |  |  |  |  |  |  |  |
| Connection mode             | Frontal            |  |  |  |  |  |  |  |
| Operating frequency         | 50/60Hz            |  |  |  |  |  |  |  |
| Auxiliary power supply      | 24VDC (-10%, +15%) |  |  |  |  |  |  |  |

## Automatic Transfer Switches - (Motorized Switch Fuse)

| I <sub>th</sub>                 | MATS-100     | MATS-250 | MATS-630 |
|---------------------------------|--------------|----------|----------|
| I <sub>n</sub> (A)              | 100          | 250      | 630      |
| U <sub>i</sub> (V)              | 500          | 500      | 500      |
| (V)                             | 5000         | 5000     | 5000     |
| U <sub>imp</sub> kV             | 8            | 8        | 12       |
| (A) AC-33iB                     | 100          | 250      | 630      |
| I <sub>cw</sub> (kA Rms)0.1S/1S | 9/5          | 12/25    | 50/25    |
| (A Rms) AC-33iB 380V            | 800          | 2000     | 5000     |
| (A Rms) AC-33iB 380V            | 1000         | 2500     | 6300     |
|                                 | 0.5          | 1.1      | 1.2      |
|                                 | 0.3          | 0.7      | 0.8      |
| 3 poles                         | 4.45         | 10.4     | 19       |
| 4 poles                         | 4.5          | 11.3     | 22       |
|                                 | AC-33iB (PC) |          |          |

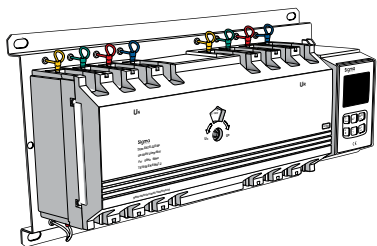
## Automatic Transfer Switches (with MCB)



| Type Code | Rated Current In (A) | Breaking Capacity Icu (kA) | Order Code |
|-----------|----------------------|----------------------------|------------|
| SATS-32   | 32                   | 6                          | SATS032    |
| SATS-40   | 40                   | 6                          | SATS040    |
| SATS-50   | 50                   | 6                          | SATS050    |
| SATS-63   | 63                   | 6                          | SATS063    |

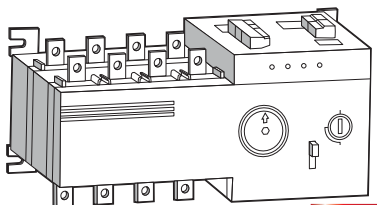
Note: Automatic transferring and protection between 32A and 63A are made by using MCB.

## Automatic Transfer Switches (with MCCB)



| Type Code | Rated Current In (A) | Breaking Capacity Icu (kA) | Order Code |
|-----------|----------------------|----------------------------|------------|
| SATS-100  | 100                  | 25                         | SATS100    |
| SATS-125  | 125                  | 36                         | SATS125    |
| SATS-160  | 160                  | 36                         | SATS160    |
| SATS-200  | 200                  | 36                         | SATS200    |
| SATS-250  | 250                  | 36                         | SATS250    |
| SATS-400  | 400                  | 36                         | SATS400    |
| SATS-630  | 630                  | 36                         | SATS630    |
| SATS-800  | 800                  | 36                         | SATS800    |

## Automatic Transfer Switches (Switch Fuse)

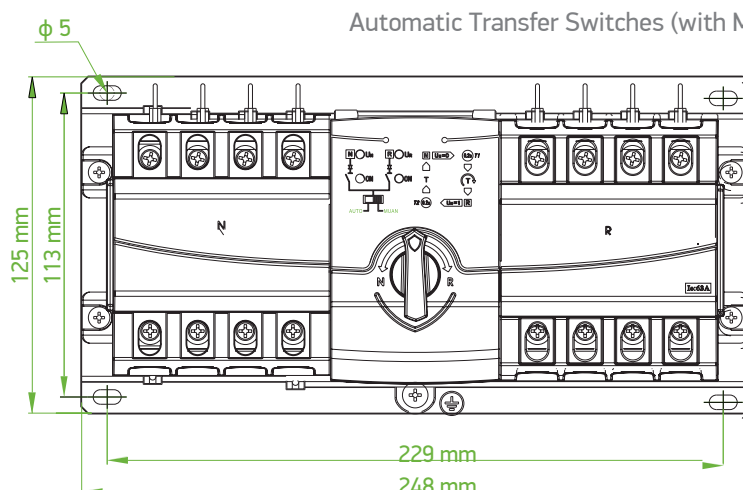


**NEW  
PRODUCT**

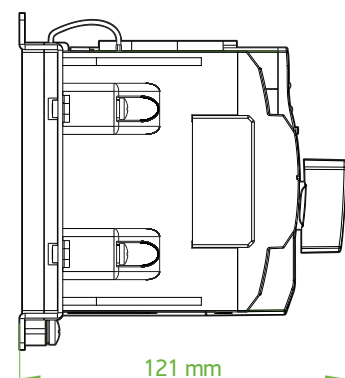
| Type Code | Rated Current In (A) | Short Circuit Resistance Capacity Icw (kA/1sn) | Order Code |
|-----------|----------------------|------------------------------------------------|------------|
| MATS-100  | 100                  |                                                | MATS100    |
| MATS-250  | 250                  |                                                | MATS250    |
| MATS-630  | 630                  |                                                | MATS630    |
| MATS-1000 | 1000                 |                                                | MATS1000   |
| MATS-1600 | 1600                 |                                                | MATS1600   |
| MATS-2000 | 2000                 |                                                | MATS2000   |

Note: There are no thermal and magnetic protection function in MATS type Automatic Transfer switch.

## Dimensions

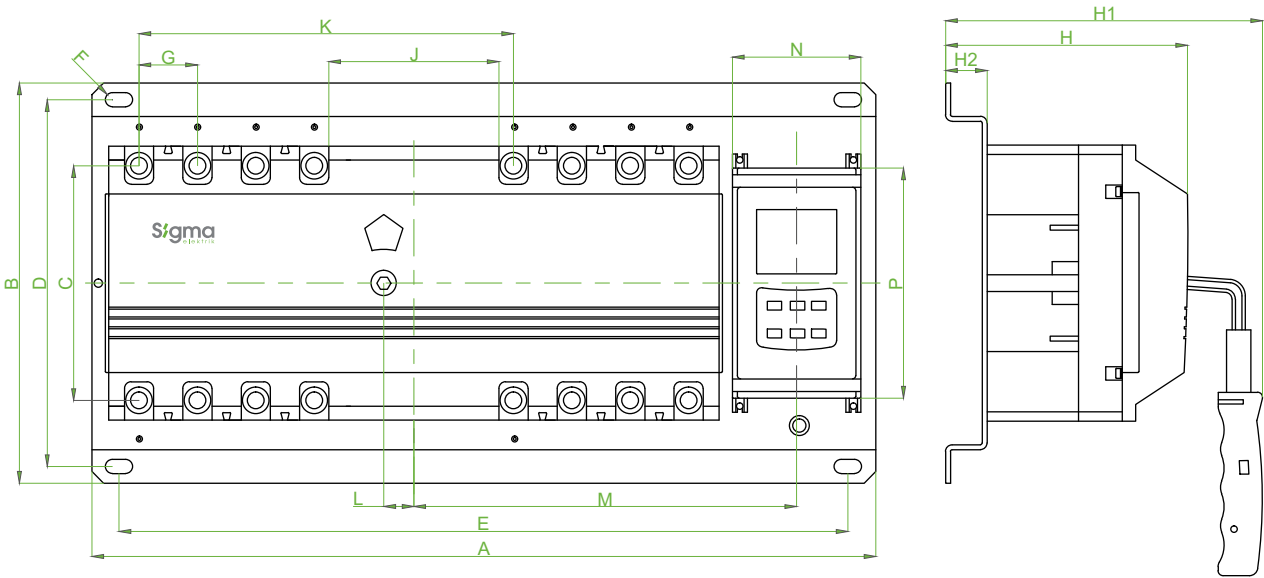


Automatic Transfer Switches (with MCB)



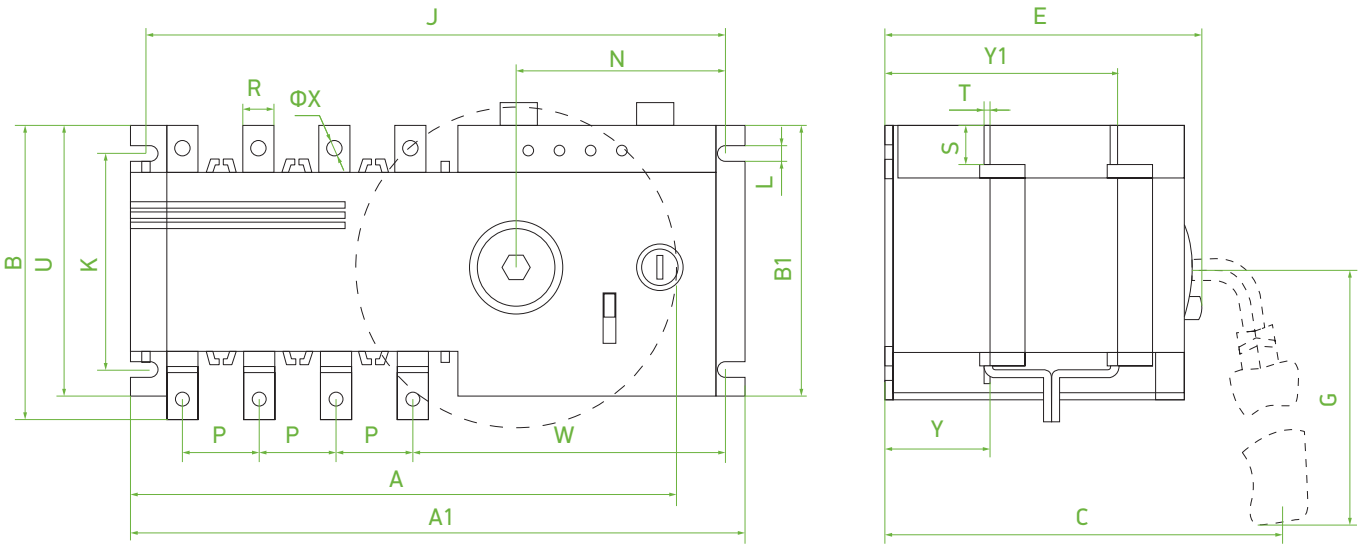
Automatic Transfer Switches

Automatic Transfer Switches (with MCCB)



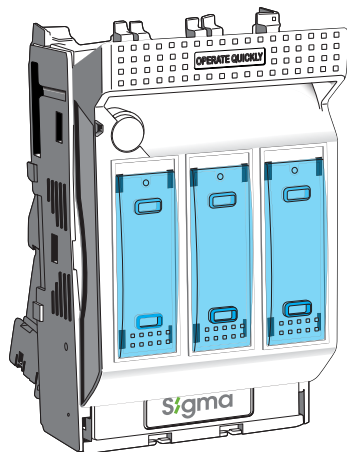
| Type         | A (mm) | B (mm) | C (mm) | D (mm) | E (mm) | F (mm) | G (mm) | J (mm) | K (mm) | L (mm) | M (mm) | N (mm) | P (mm) | H (mm) | H1 (mm) | H2 (mm) |
|--------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|
| SATS 100     | 420    | 240    | 135    | 220    | 387    | M8     | 30     | 86     | 194    | 16     | 205    | 77     | 140    | 145    | 190     | 25      |
| SATS 125-250 | 470    | 240    | 141    | 220    | 437    | M8     | 35     | 102    | 225    | 18     | 230    | 77     | 140    | 145    | 190     | 25      |
| SATS 400     | 615    | 330    | 224    | 300    | 555    | M10    | 48     | 133    | 303    | 25     | 303    | 82     | 260    | 200    | 235     | 24      |
| SATS 630     | 740    | 330    | 234    | 300    | 680    | M10    | 58     | 180    | 385    | 34     | 360    | 82     | 260    | 200    | 259     | 24      |
| SATS 800     | 790    | 350    | 243    | 320    | 735    | M10    | 70     | 155    | 395    | 38     | 390    | 82     | 260    | 200    | 262     | 24      |

Automatic Transfer Switches (Switch Fuse)



| Rated Current In | Dimensions (mm) |         |        |         |        |        |        |        |        |        |        |        |        |        |        |        |        |         |        |         |
|------------------|-----------------|---------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|---------|
|                  | A (mm)          | A1 (mm) | B (mm) | B1 (mm) | C (mm) | E (mm) | G (mm) | J (mm) | K (mm) | L (mm) | N (mm) | P (mm) | R (mm) | S (mm) | T (mm) | U (mm) | W (mm) | ΦX (mm) | Y (mm) | Y1 (mm) |
| 100 A            | 330             | 244     | 115    | 107     | 182    | 125    | 174    | 228    | 85     | 6.5    | 83     | 30     | 12     | 18     | (2.5)5 | 99     | 125    | 6.2     | 42     | 92      |
| 250 A            | 436             | 373     | 178    | 134     | 240    | 198    | 174    | 344    | 108    | 7      | 99     | 50     | 24     | 30     | (3.5)7 | 148    | 173    | 11      | 72     | 157     |
| 630 A            | 502             | 433     | 260    | 222     | 282    | 244    | 174    | 416    | 180    | 9      | 101    | 65     | 40     | 50     | (5)10  | 222    | 185    | 12      | 83     | 193     |

## Fuse Switch Disconnectors - Technical Specifications



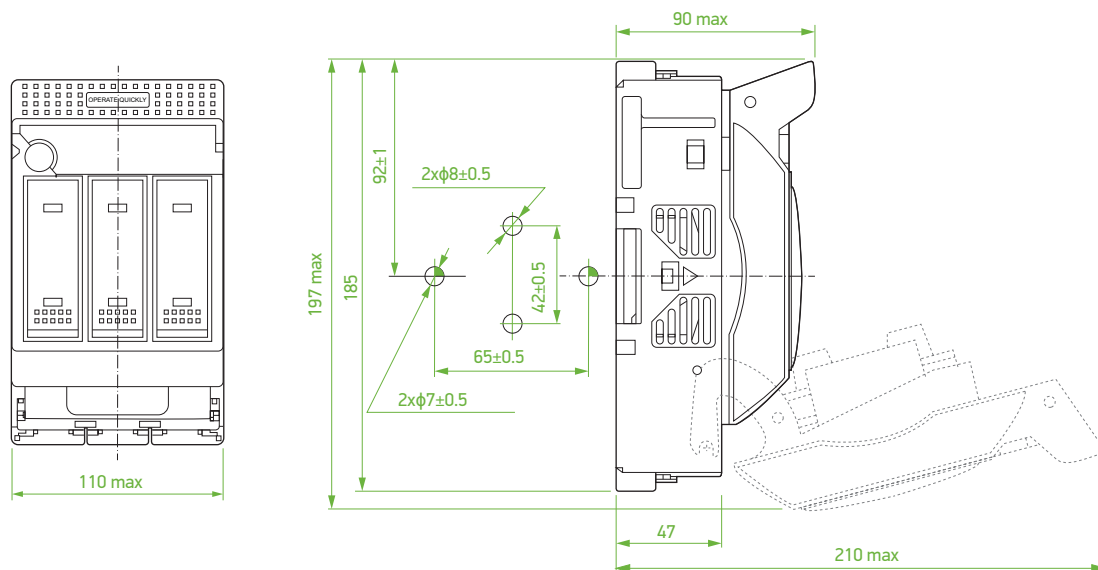
| Type                           |    | SFH 160                   | SFH 250 | SFH 400 |
|--------------------------------|----|---------------------------|---------|---------|
| Standard                       |    | TS EN 60947-3, EN 60947-3 |         |         |
| NH Fuse Link Size              |    | NH00C- NH00               | NH1     | NH2     |
| No of Poles                    |    | 3                         | 3       | 3       |
| Rated Operational Current      | A  | 160                       | 250     | 400     |
| Rated Voltage                  | V  | 690                       | 690     | 690     |
| Rated Insulation Voltage       | V  | 800                       | 800     | 800     |
| Breaking Capacity of Fuse Link | kA | 120                       | 120     | 120     |
| Utilization Category           |    | AC23B                     | AC23B   | AC23B   |
| Weight                         | kg | 0,7                       | 1,5     | 3,3     |

| Size    | Rated Current In (A) | Fuse Size  | Minimum Order (pcs) | Number in Cartoon (pcs) | Order Code |
|---------|----------------------|------------|---------------------|-------------------------|------------|
| SFH-160 | 160                  | NH00C/NH00 | 1                   | 9                       | SFH160     |
| SFH-250 | 250                  | NH1        | 1                   | 3                       | SFH250     |
| SFH-400 | 400                  | NH2        | 1                   | 1                       | SFH400     |

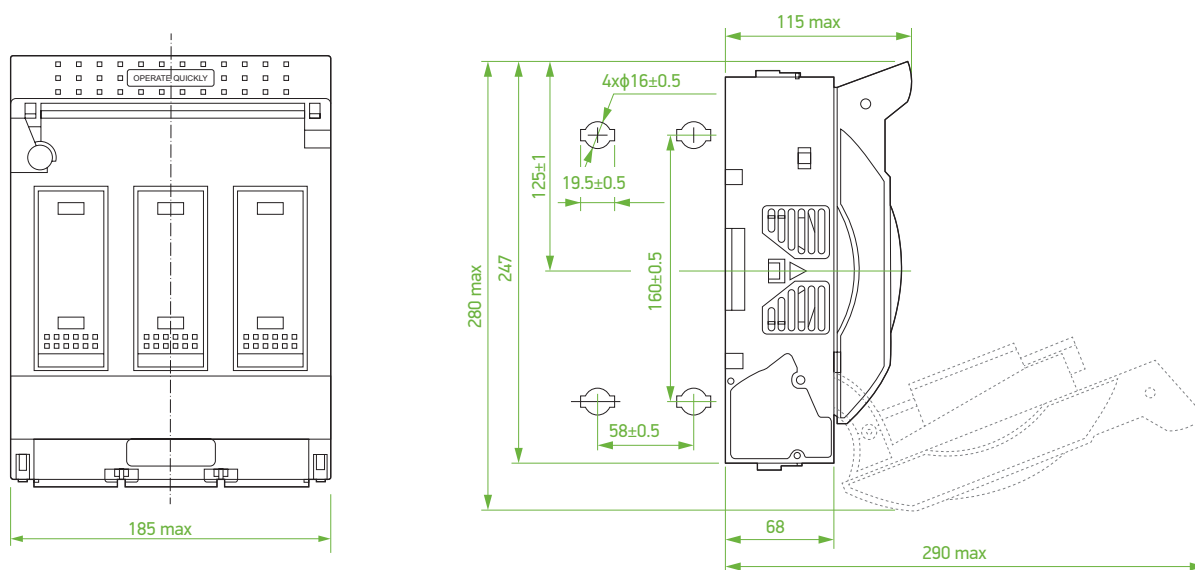


## Dimensions

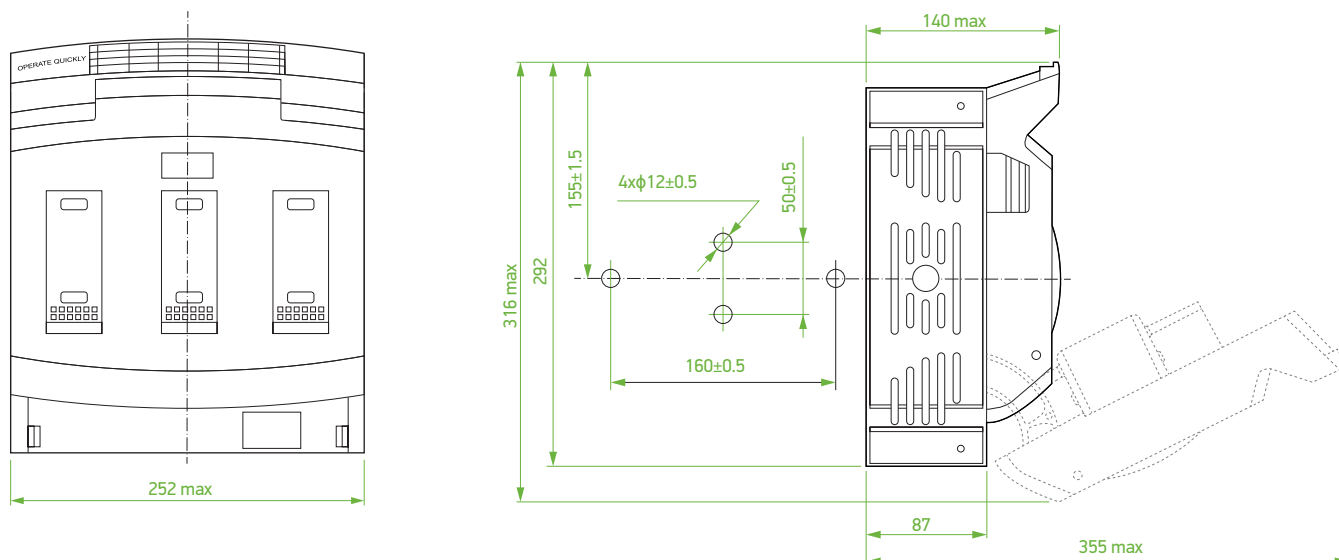
### SFH160



### SFH250

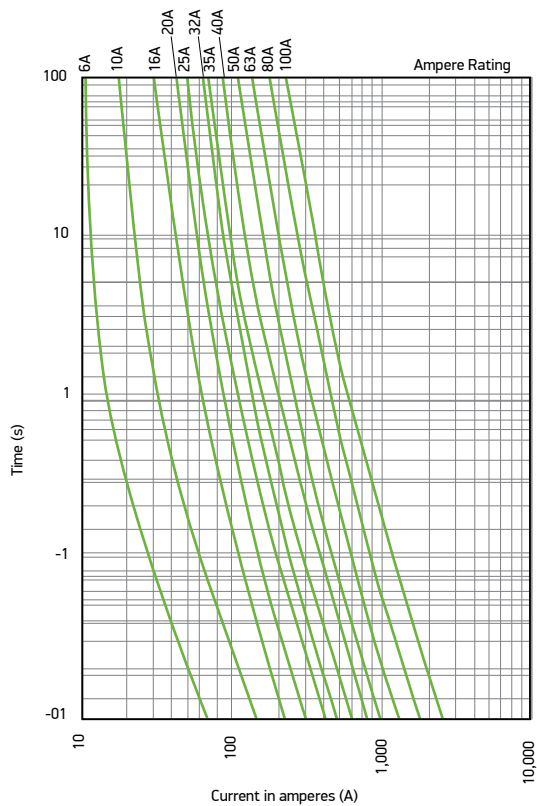


### SFH400

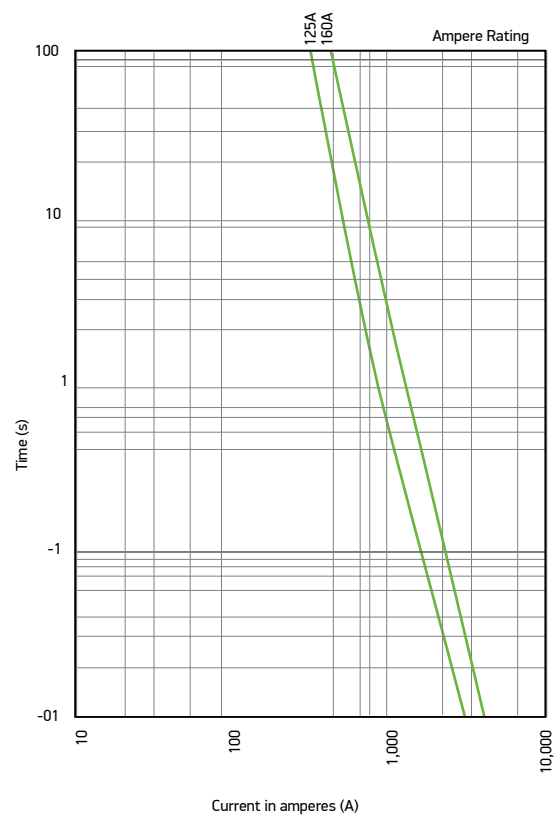


## Time-Current Curves

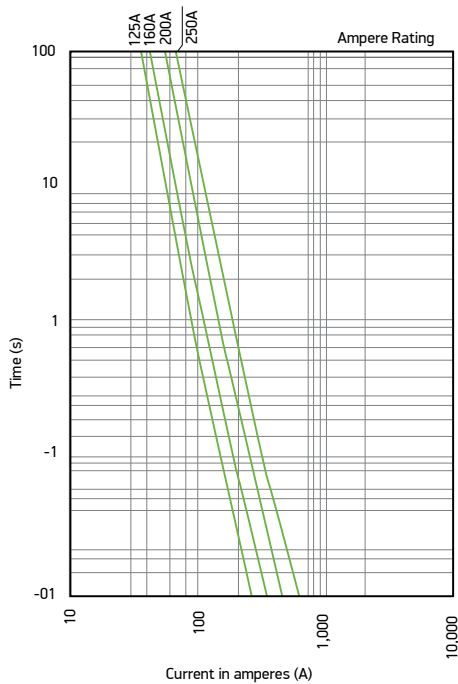
NH00C



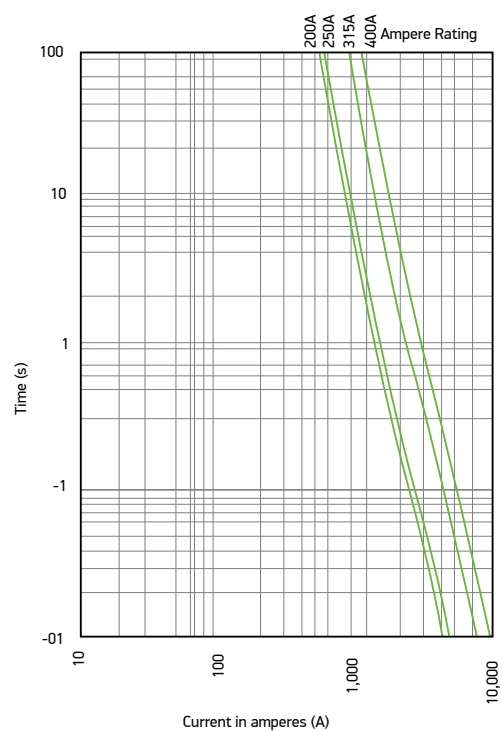
NH00



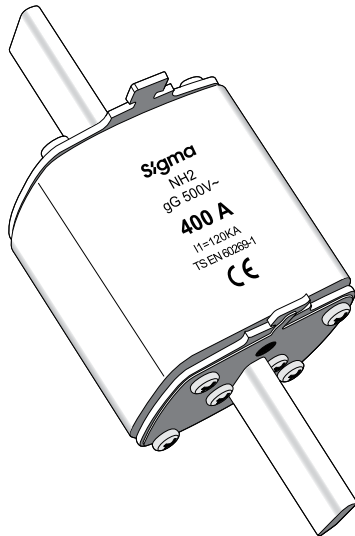
NH1



NH2

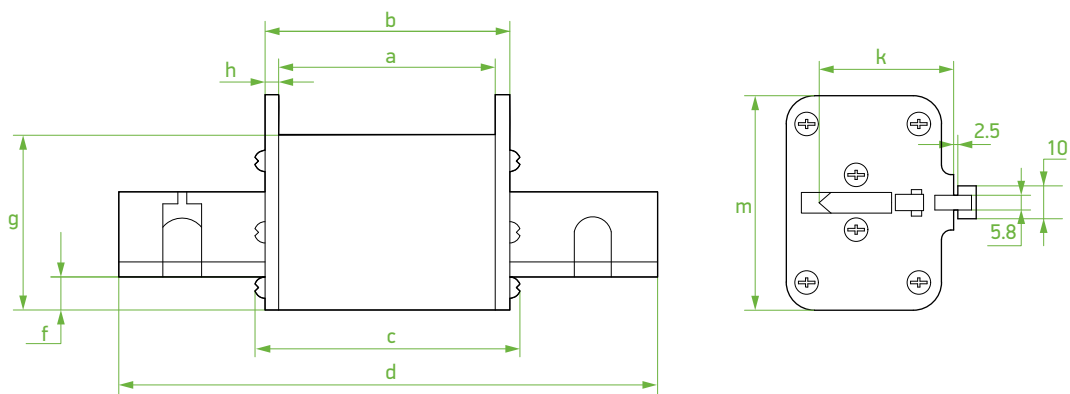


## NH (H.R.C) Fuse Links (Steatit Body)



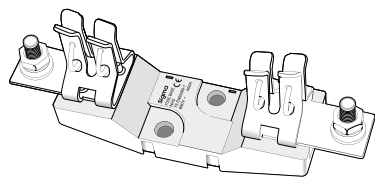
| Size  | Rated Current<br>I <sub>n</sub> (A) | Breaking Cap.<br>(kA) | Minimum Order | Number in<br>Cartoon | Order Code |
|-------|-------------------------------------|-----------------------|---------------|----------------------|------------|
| NHC00 | 6                                   | 120                   | 3             | 180                  | SNH00006   |
|       | 10                                  | 120                   | 3             | 180                  | SNH00010   |
|       | 16                                  | 120                   | 3             | 180                  | SNH00016   |
|       | 20                                  | 120                   | 3             | 180                  | SNH00020   |
|       | 25                                  | 120                   | 3             | 180                  | SNH00025   |
|       | 32                                  | 120                   | 3             | 180                  | SNH00032   |
|       | 40                                  | 120                   | 3             | 180                  | SNH00040   |
|       | 50                                  | 120                   | 3             | 180                  | SNH00050   |
|       | 63                                  | 120                   | 3             | 180                  | SNH00063   |
|       | 80                                  | 120                   | 3             | 180                  | SNH00080   |
| NH00  | 100                                 | 120                   | 3             | 180                  | SNH00100   |
|       | 125                                 | 120                   | 3             | 96                   | SNH00125   |
| NH01  | 160                                 | 120                   | 3             | 96                   | SNH00160   |
|       | 125                                 | 120                   | 3             | 36                   | SNH10125   |
|       | 160                                 | 120                   | 3             | 36                   | SNH10160   |
|       | 200                                 | 120                   | 3             | 36                   | SNH10200   |
| NH02  | 250                                 | 120                   | 3             | 36                   | SNH10250   |
|       | 200                                 | 120                   | 3             | 24                   | SNH20200   |
|       | 250                                 | 120                   | 3             | 24                   | SNH20250   |
|       | 315                                 | 120                   | 3             | 24                   | SNH20315   |
|       | 400                                 | 120                   | 3             | 24                   | SNH20400   |

## Dimensions



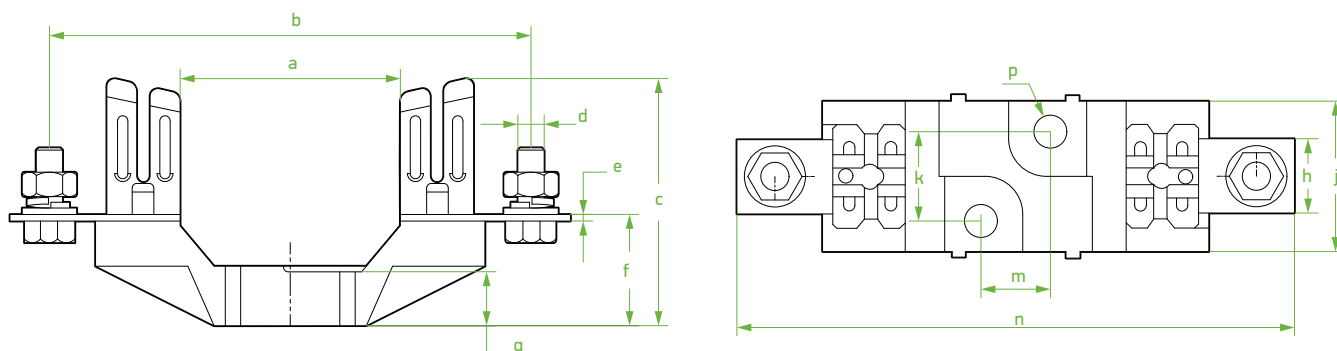
| Type  | a  | b  | c  | d   | e  | f  | g  | h   | k  | m  |
|-------|----|----|----|-----|----|----|----|-----|----|----|
| NH00C | 45 | 48 | 52 | 79  | 15 | 6  | 36 | 1,5 | 35 | 21 |
| NH000 | 47 | 50 | 54 | 79  | 15 | 12 | 45 | 1,5 | 35 | 29 |
| NH01  | 62 | 66 | 72 | 135 | 20 | 11 | 48 | 2   | 40 | 48 |
| NH02  | 62 | 66 | 72 | 150 | 25 | 14 | 58 | 2   | 48 | 58 |

## NH (H.R.C.) Fuse Base



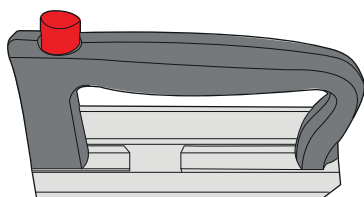
| Size | Rated Current In (A) | Body Material | Minimum Order | Box Qty | Order Code |
|------|----------------------|---------------|---------------|---------|------------|
| NH00 | 160                  | Steatit       | 5             | 60      | SNB00      |
| NH1  | 250                  | BMC           | 5             | 60      | SNB01      |
| NH2  | 400                  | BMC           | 5             | 60      | SNB02      |

## Dimensions



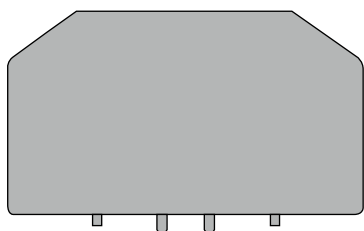
| Size | a  | b   | c  | d   | e   | f  | g  | h  | j  | k  | m  | n   | p    |
|------|----|-----|----|-----|-----|----|----|----|----|----|----|-----|------|
| NH00 | 59 | 102 | 56 | M8  | 2   | 23 | 13 | 21 | 32 | 0  | 25 | 118 | 7,5  |
| NH1  | 82 | 175 | 82 | M10 | 2   | 36 | 19 | 25 | 50 | 30 | 25 | 199 | 10,5 |
| NH2  | 82 | 200 | 96 | M10 | 2,5 | 37 | 19 | 31 | 50 | 30 | 25 | 225 | 10,5 |

## NH Fuse Handle



| Type Code | Rated Voltage | Order Code |
|-----------|---------------|------------|
| SNHE      | 1000          | SNHE       |

## NH Fuse Base Separator



| Size | Order Code |
|------|------------|
| NH00 | SNBS       |

Note: When used 3 pcs NH00 Fuse Base together, it is used for isolation between Phases.

## Maximum Power Dissipation for NH Fuse Links

| Size   | Rated Current In (A) | TS EN 60269-1 | SIGMA  |
|--------|----------------------|---------------|--------|
| SNH00C | 6                    | 12 W          | 1.8 W  |
|        | 10                   | 12 W          | 2.1 W  |
|        | 16                   | 12 W          | 2.4 W  |
|        | 20                   | 12 W          | 2.7 W  |
|        | 25                   | 12 W          | 2.9 W  |
|        | 32                   | 12 W          | 3.7 W  |
|        | 40                   | 12 W          | 4.3 W  |
|        | 50                   | 12 W          | 4.7 W  |
|        | 63                   | 12 W          | 6 W    |
|        | 80                   | 12 W          | 6.8 W  |
|        | 100                  | 12 W          | 8.8 W  |
| SNH00  | 125                  | 12 W          | 10.2 W |
|        | 160                  | 12 W          | 12 W   |
| SNH1   | 125                  | 23 W          | 10.2 W |
|        | 160                  | 23 W          | 13.1 W |
|        | 200                  | 23 W          | 17.6 W |
|        | 250                  | 23 W          | 23 W   |
| SNH2   | 200                  | 34 W          | 17.8 W |
|        | 250                  | 34 W          | 20.5 W |
|        | 315                  | 34 W          | 25.4 W |
|        | 400                  | 34 W          | 31 W   |



## Miniature Circuit Breaker - Technical Specifications

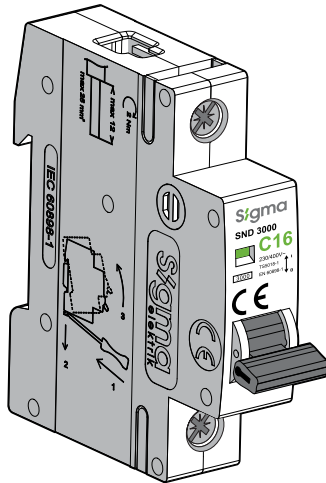
| Type                                  |      |        | SND 3000                                |     |   |   | SND 4500                                         |           |     |   | SND 6000                                        |   |           |     | SDC 6000                          |     |     |
|---------------------------------------|------|--------|-----------------------------------------|-----|---|---|--------------------------------------------------|-----------|-----|---|-------------------------------------------------|---|-----------|-----|-----------------------------------|-----|-----|
| No of Poles                           |      |        | 1                                       | 2   | 3 | 4 | 1                                                | 2         | 3   | 4 | 1                                               | 2 | 3         | 4   | 1                                 | 2   |     |
| Rated Nominal Current<br>(At 30°C)    | In   | A      | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63 |           |     |   | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50,63 |   |           |     | 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |     |
| Instantaneous Tripping Class          |      |        | B : (3-5)xIn<br>C : (5-10)xIn           |     |   |   | B : (3-5)xIn<br>C : (5-10)xIn<br>D : (10-20)xIn  |           |     |   | B : (3-5)xIn<br>C : (5-10)xIn<br>D : (10-20)xIn |   |           |     | C : (7-14)xIn                     |     |     |
| Power Supply                          |      |        | AC                                      |     |   |   |                                                  |           |     |   |                                                 |   |           |     | DC                                |     |     |
| Rated Operating Voltage               | Ue   | AC (V) | 230/400                                 | 400 |   |   |                                                  | 230 / 400 | 400 |   |                                                 |   | 230 / 400 | 400 |                                   | 250 | 500 |
| Rated Insulation Voltage              | Ui   | V      | 690                                     |     |   |   |                                                  |           |     |   |                                                 |   |           |     | 440                               |     |     |
| Rated Impulse Withstanding Voltage    | Uimp | kV     | 6                                       |     |   |   |                                                  |           |     |   |                                                 |   |           |     | 4                                 |     |     |
| Rated Short Circuit Breaking Capacity | Ics  | kA     | 3                                       |     |   |   | 4,5                                              |           |     |   | 6                                               |   |           |     |                                   |     |     |
| Energy Class                          |      |        | 3                                       |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Electrical Life (Operation)           | op.  | 230 V  | 3000                                    |     |   |   | 4000                                             |           |     |   | 5000                                            |   |           |     | 3000                              |     |     |
| Mechanical Life (Operation)           | op.  |        | 20000                                   |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Protection Class                      |      |        | IP 20                                   |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Operation Temperature                 | °C   |        | -30 to +60                              |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Storage Temperature                   | °C   |        | -40 to +70                              |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Colour                                |      |        | RAL 7035                                |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Assembly (EN 60715)                   |      |        | 35 mm. DIN Rail                         |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Min. max. Connection Section          | mm²  |        | 1 – 25                                  |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |
| Min. max. Clamping Torque             | Nm   |        | 2                                       |     |   |   |                                                  |           |     |   |                                                 |   |           |     |                                   |     |     |



| SLD 6000        |     |   |   | SMD 10000                                       |     |   |   | SND 10000                                       |     |   |   | SLD 10000     |     |   |       | SND 16000                |
|-----------------|-----|---|---|-------------------------------------------------|-----|---|---|-------------------------------------------------|-----|---|---|---------------|-----|---|-------|--------------------------|
| 1               | 2   | 3 | 4 | 1                                               | 2   | 3 | 4 | 1                                               | 2   | 3 | 4 | 1             | 2   | 3 | 4     | 1                        |
| 80, 100, 125    |     |   |   | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63         |     |   |   | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63         |     |   |   | 80, 100, 125  |     |   |       | 40, 50, 63, 80, 100, 125 |
| C : (5-10)xln   |     |   |   | B : (3-5)xln<br>C : (5-10)xln<br>D : (10-20)xln |     |   |   | B : (3-5)xln<br>C : (5-10)xln<br>D : (10-20)xln |     |   |   | C : (5-10)xln |     |   |       | C : (5-10)xln            |
| AC              |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 230 / 400       | 400 |   |   | 230 / 400                                       | 400 |   |   | 230 / 400                                       | 400 |   |   | 230 / 400     | 400 |   |       | 230 / 400                |
| 690             |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 6               |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 6               |     |   |   | 10                                              |     |   |   |                                                 |     |   |   |               |     |   |       | 16                       |
| 3               |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 4000            |     |   |   | 5000                                            |     |   |   |                                                 |     |   |   | 4000          |     |   |       | 4000                     |
| 20000           |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   | 15000 |                          |
| IP 20           |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| -30 to +60      |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| -40 to +70      |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| RAL 7035        |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 35 mm. DIN Rail |     |   |   |                                                 |     |   |   |                                                 |     |   |   |               |     |   |       |                          |
| 25 – 50         |     |   |   | 1 – 25                                          |     |   |   |                                                 |     |   |   | 25 – 50       |     |   |       | 10 – 50                  |
| 3,5             |     |   |   | 2                                               |     |   |   |                                                 |     |   |   | 3,5           |     |   |       | 3,5                      |

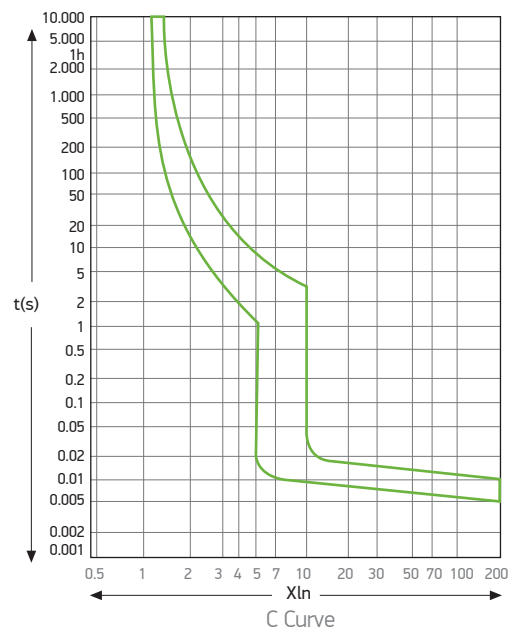
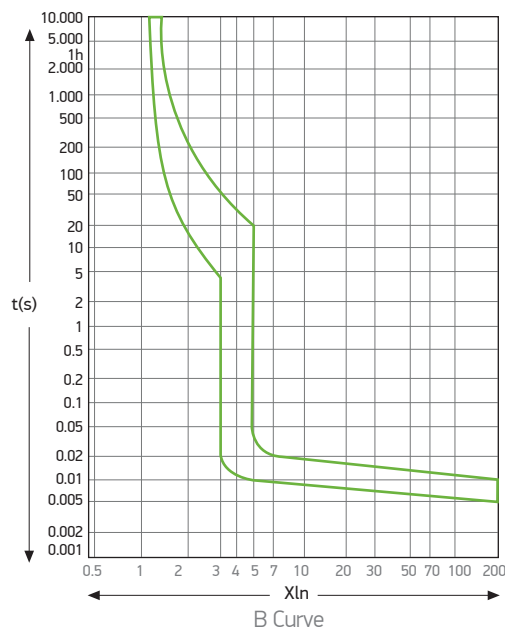


## 3 kA Miniature Circuit Breakers

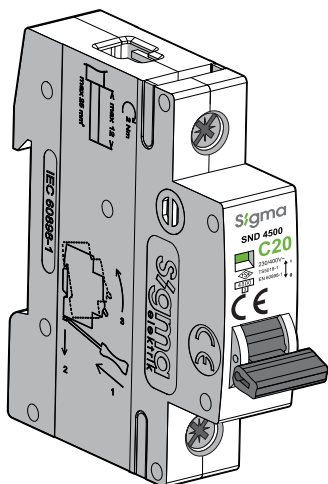


| Type                            |        |        | SND 3000                                |     |   |   |
|---------------------------------|--------|--------|-----------------------------------------|-----|---|---|
| No of Poles                     |        |        | 1                                       | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400                                 | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690                                     |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6                                       |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 3                                       |     |   |   |
| Frequency                       |        | Hz     | 50-60                                   |     |   |   |
| Energy Class                    |        |        | 3                                       |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 3.000                                   |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000                                  |     |   |   |
| Protection Class                |        |        | IP 20                                   |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60                              |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70                              |     |   |   |
| Colour                          |        |        | RAL 7035                                |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail                          |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 1 – 25                                  |     |   |   |
| Max. Tightening Torque          |        | Nm     | 2                                       |     |   |   |

## Time- Current Characteristic

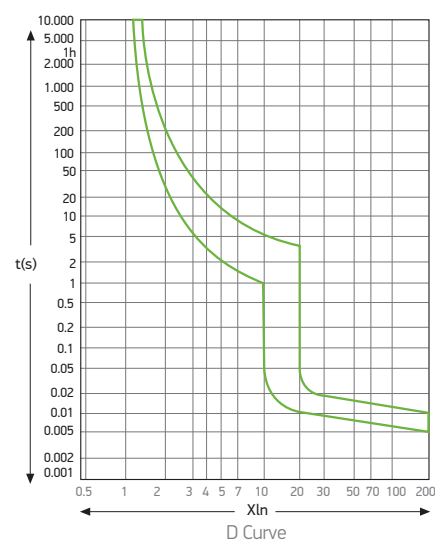
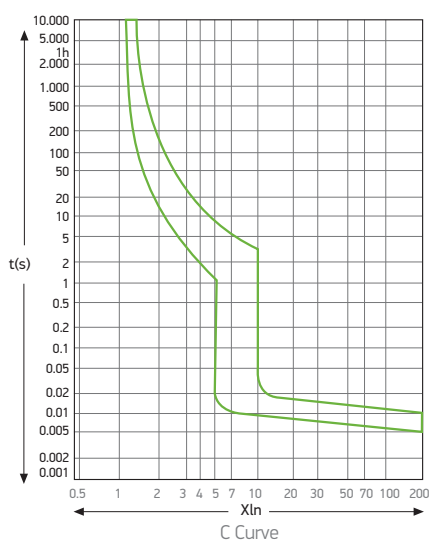
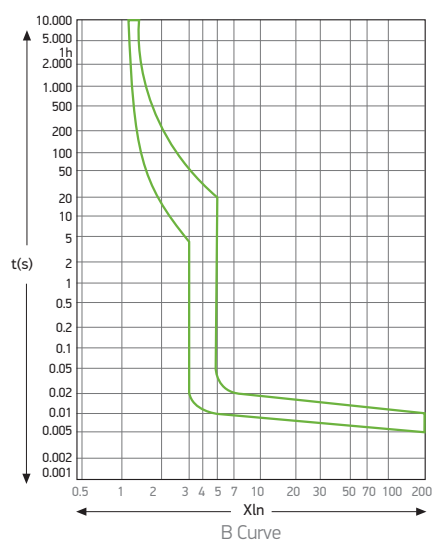


## 4,5 kA Miniature Circuit Breakers

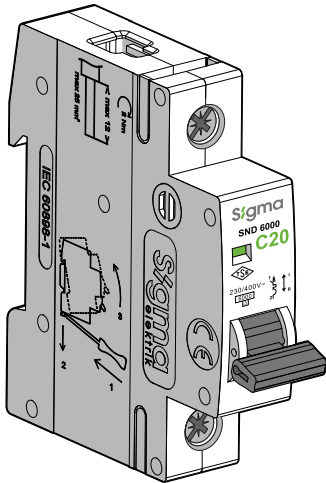


| Type                            |        |        | SND 4500                                         |     |   |   |
|---------------------------------|--------|--------|--------------------------------------------------|-----|---|---|
| No of Poles                     |        |        | 1                                                | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 1, 2, 3, 4, 5, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400                                          | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690                                              |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6                                                |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 4,5                                              |     |   |   |
| Frequency                       |        | Hz     | 50-60                                            |     |   |   |
| Energy Class                    |        |        | 3                                                |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 4.000                                            |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000                                           |     |   |   |
| Protection Class                |        |        | IP 20                                            |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60                                       |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70                                       |     |   |   |
| Colour                          |        |        | RAL 7035                                         |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail                                   |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 1 – 25                                           |     |   |   |
| Max. Tightening Torque          |        | Nm     | 2                                                |     |   |   |

### Time- Current Characteristic

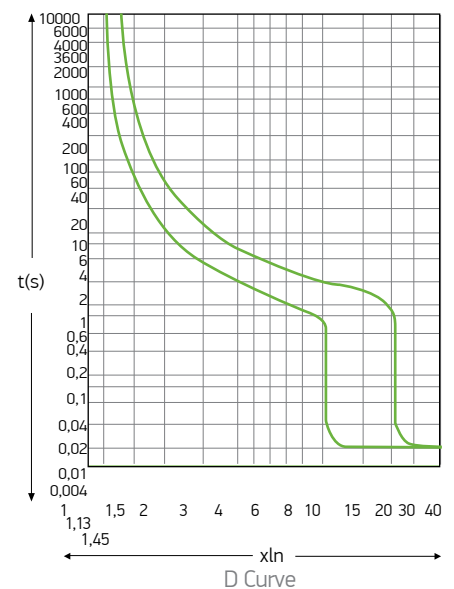
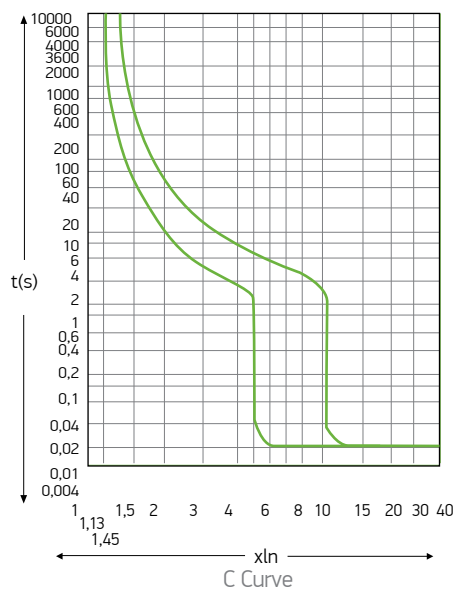
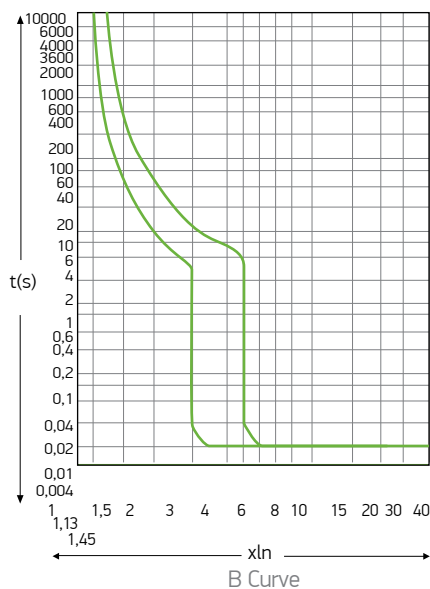


## 6 kA Miniature Circuit Breakers

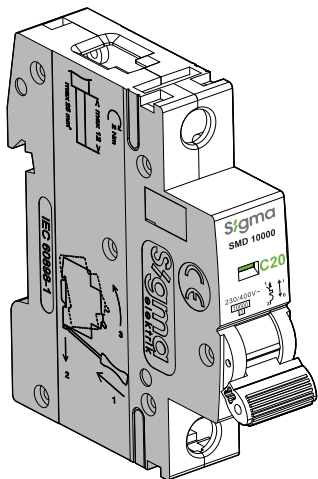


| Type                            |        |        | SND 6000                                |     |   |   |
|---------------------------------|--------|--------|-----------------------------------------|-----|---|---|
| No of Poles                     |        |        | 1                                       | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400                                 | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690                                     |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6                                       |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 6                                       |     |   |   |
| Frequency                       |        | Hz     | 50-60                                   |     |   |   |
| Energy Class                    |        |        | 3                                       |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 5.000                                   |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000                                  |     |   |   |
| Protection Class                |        |        | IP 20                                   |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60                              |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70                              |     |   |   |
| Colour                          |        |        | RAL 7035                                |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail                          |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 1 – 25                                  |     |   |   |
| Max. Tightening Torque          |        | Nm     | 2                                       |     |   |   |

### Time- Current Characteristic

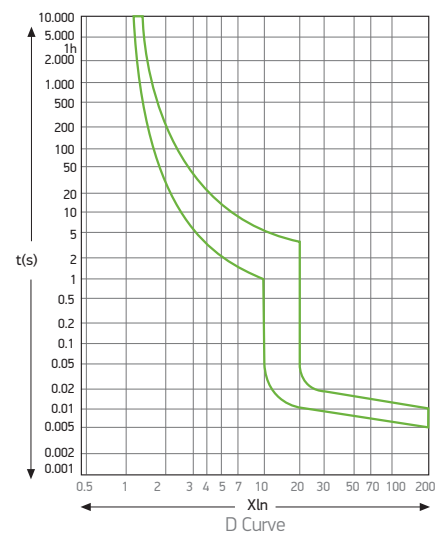
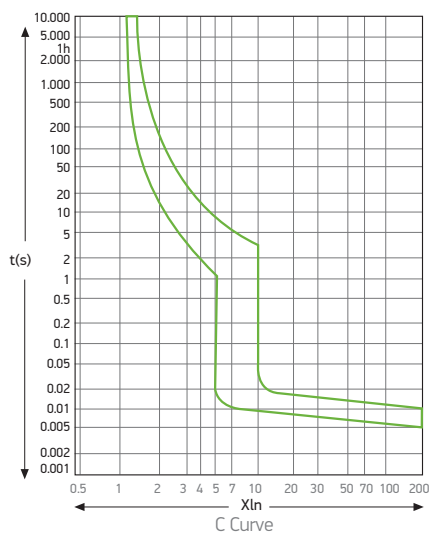
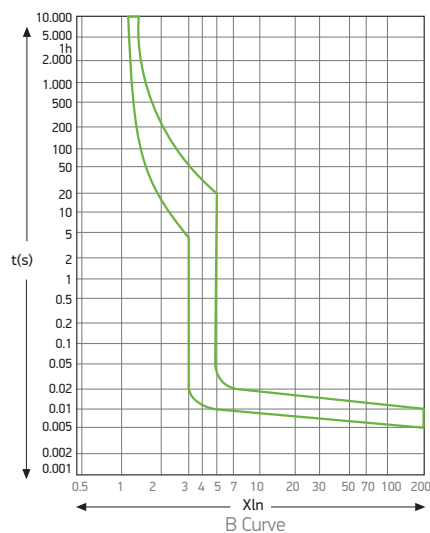


## 10 kA Miniature Circuit Breakers (SMD 10000)

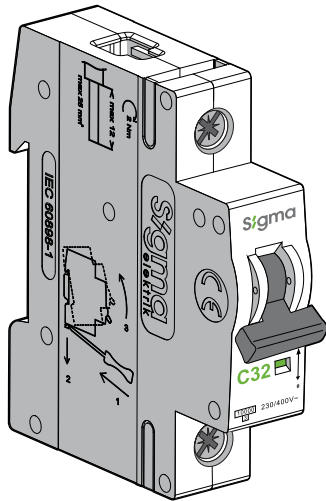


| Type                            |        |        | SMD 10000 (TÜV Approved)                |     |   |   |
|---------------------------------|--------|--------|-----------------------------------------|-----|---|---|
| No of Poles                     |        |        | 1                                       | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400                                 | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690                                     |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6                                       |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 10                                      |     |   |   |
| Frequency                       |        | Hz     | 50-60                                   |     |   |   |
| Energy Class                    |        |        | 3                                       |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 5.000                                   |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000                                  |     |   |   |
| Protection Class                |        |        | IP 20                                   |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60                              |     |   |   |
| Ambient Operating Temperature   |        | °C     | -40 to +70                              |     |   |   |
| Colour                          |        |        | RAL 7035                                |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail                          |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 1 – 25                                  |     |   |   |
| Max. Tightening Torque          |        | Nm     | 2                                       |     |   |   |

### Time- Current Characteristic

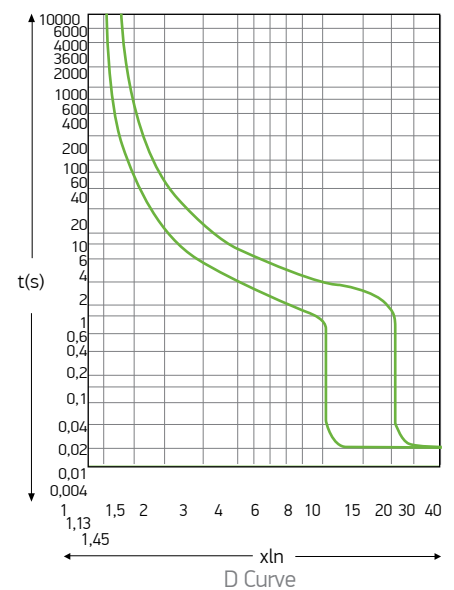
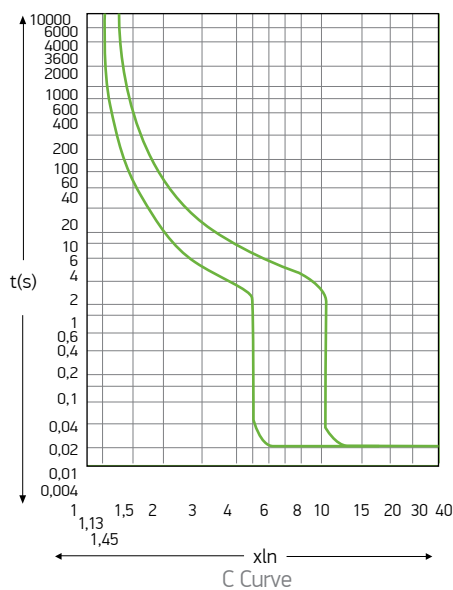
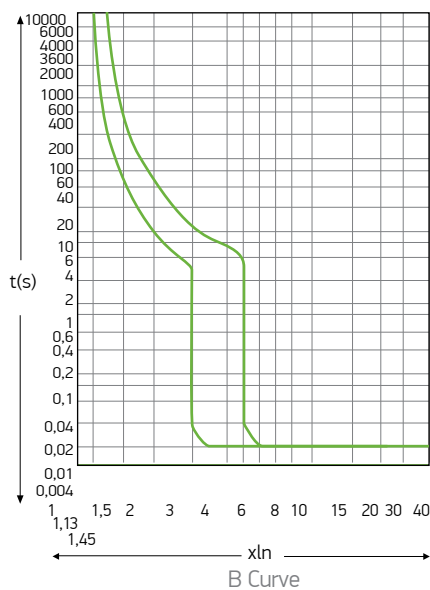


## 10 kA Miniature Circuit Breakers (SND 10000)

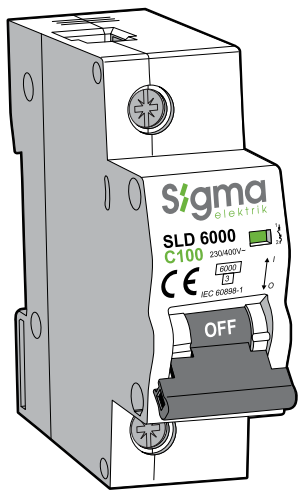


| Type                            |        |        | SND 10000                               |     |   |   |
|---------------------------------|--------|--------|-----------------------------------------|-----|---|---|
| No of Poles                     |        |        | 1                                       | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 2, 4, 6, 10, 16, 20, 25, 32, 40, 50, 63 |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400                                 | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690                                     |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6                                       |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 10                                      |     |   |   |
| Frequency                       |        | Hz     | 50-60                                   |     |   |   |
| Energy Class                    |        |        | 3                                       |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 5.000                                   |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000                                  |     |   |   |
| Protection Class                |        |        | IP 20                                   |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60                              |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70                              |     |   |   |
| Colour                          |        |        | RAL 7035                                |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail                          |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 1 – 25                                  |     |   |   |
| Max. Tightening Torque          |        | Nm     | 2                                       |     |   |   |

### Time- Current Characteristic

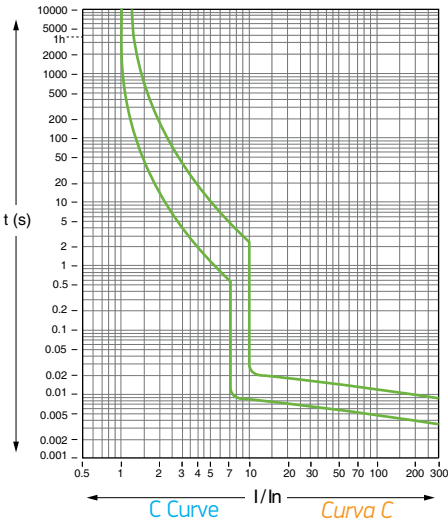


6 kA Miniature Circuit Breakers (80-100-125 A)

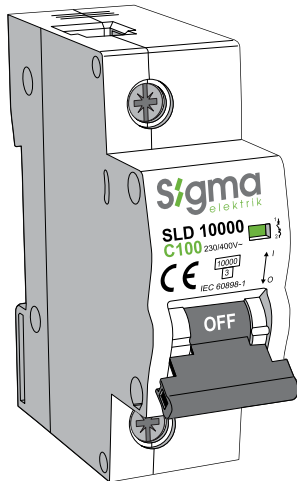


| Type                            |        |        | SLD 6000       |     |   |   |
|---------------------------------|--------|--------|----------------|-----|---|---|
| No of Poles                     |        |        | 1              | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 80, 100, 125   |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400        | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690            |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6              |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 6              |     |   |   |
| Frequency                       |        | Hz     | 50-60          |     |   |   |
| Energy Class                    |        |        | 3              |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 4.000          |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000         |     |   |   |
| Protection Class                |        |        | IP 20          |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60     |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70     |     |   |   |
| Colour                          |        |        | RAL 7035       |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 25 – 50        |     |   |   |
| Max. Tightening Torque          |        | Nm     | 3,5            |     |   |   |

Time- Current Characteristic

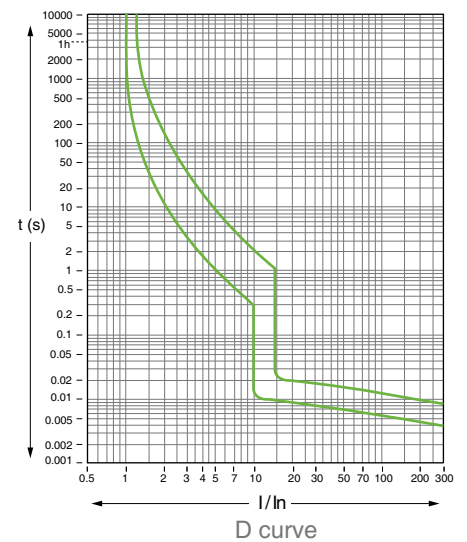
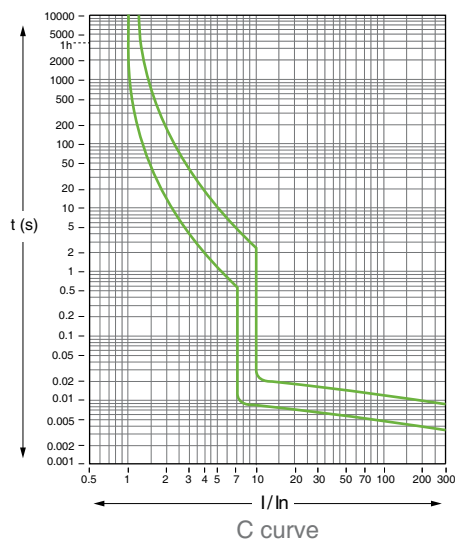
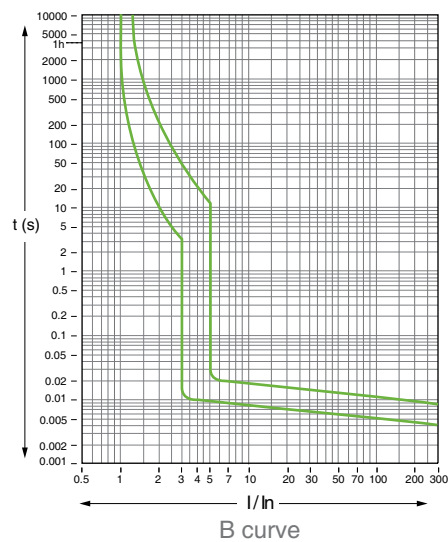


## 10 kA Miniature Circuit Breakers (80-100-125 A)

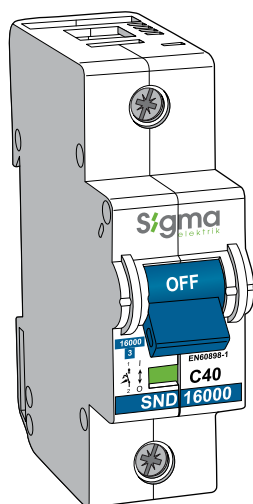


| Type                            |        |        | SLD 10000      |     |   |   |
|---------------------------------|--------|--------|----------------|-----|---|---|
| No of Poles                     |        |        | 1              | 2   | 3 | 4 |
| Rated Current (at 30°C)         |        | A      | 80, 100, 125   |     |   |   |
| Rated Voltage                   | Ue     | AC (V) | 230/400        | 400 |   |   |
| Rated Insulation Voltage        | AC (V) |        | 690            |     |   |   |
| Rated Impulse Voltage           | Uimp   | kV     | 6              |     |   |   |
| Rated Breaking Capacity         | Ics    | kA     | 10             |     |   |   |
| Frequency                       |        | Hz     | 50-60          |     |   |   |
| Energy Class                    |        |        | 3              |     |   |   |
| Electrical Life                 | ope.   | 230 V  | 4.000          |     |   |   |
| Mechanical Life                 | ope.   |        | 20.000         |     |   |   |
| Protection Class                |        |        | IP 20          |     |   |   |
| Ambient Operating Temperature   |        | °C     | -30 to +60     |     |   |   |
| Storage Temperature             |        | °C     | -40 to +70     |     |   |   |
| Colour                          |        |        | RAL 7035       |     |   |   |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail |     |   |   |
| Connection Capacity (min - max) |        | mm²    | 25 – 50        |     |   |   |
| Max. Tightening Torque          |        | Nm     | 3,5            |     |   |   |

### Time- Current Characteristic

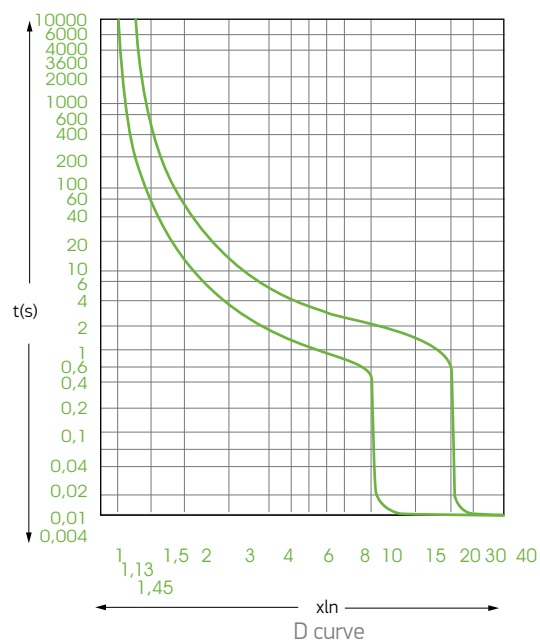
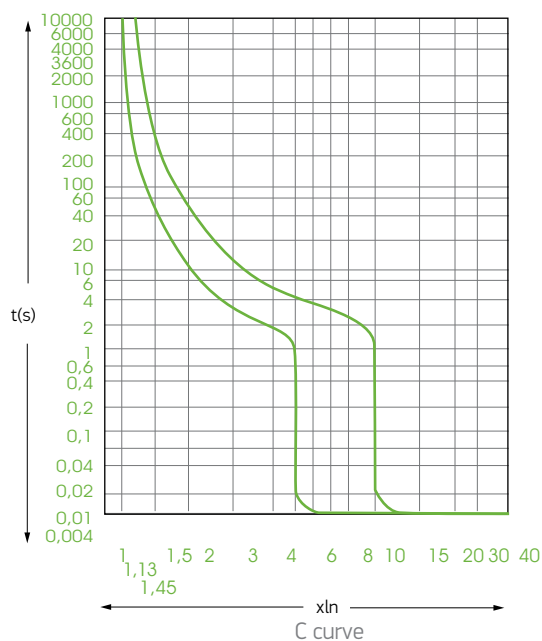


## 16 kA Miniature Circuit Breakers

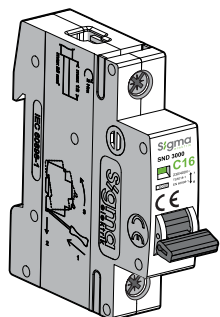


|                                 |        |        |                          |
|---------------------------------|--------|--------|--------------------------|
| Type                            |        |        | SND 16000                |
| No of Poles                     |        |        | 1                        |
| Rated Current (at 30°C)         |        | A      | 40, 50, 63, 80, 100, 125 |
| Rated Voltage                   | Ue     | AC (V) | 230/400                  |
| Rated Insulation Voltage        | AC (V) |        | 690                      |
| Rated Impulse Voltage           | Uimp   | kV     | 6                        |
| Rated Breaking Capacity         | Ics    | kA     | 16                       |
| Frequency                       |        | Hz     | 50-60                    |
| Energy Class                    |        |        | 3                        |
| Electrical Life                 | ope.   | 230 V  | 4,000                    |
| Mechanical Life                 | ope.   |        | 15,000                   |
| Protection Class                |        |        | IP 20                    |
| Ambient Operating Temperature   |        | °C     | -30 to +60               |
| Storage Temperature             |        | °C     | -40 to +70               |
| Colour                          |        |        | RAL 7035                 |
| Assembly (EN 60715)             |        |        | 35 mm DIN Rail           |
| Connection Capacity (min - max) |        | mm²    | 10 – 50                  |
| Max. Tightening Torque          |        | Nm     | 3,5                      |

### Time- Current Characteristic



3 kA / SNB 3000

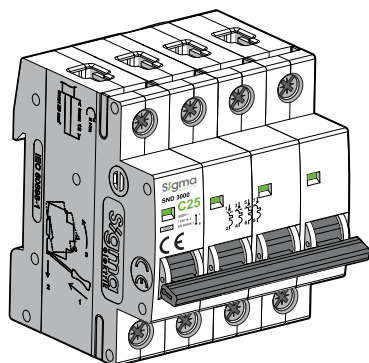
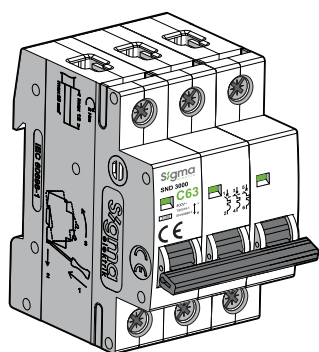
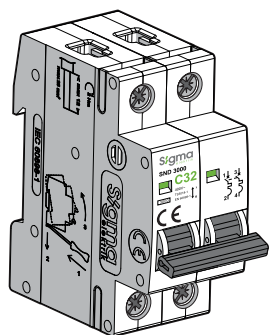
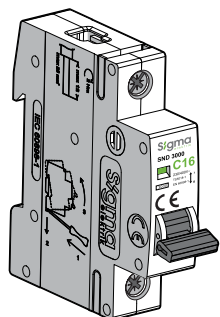


| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for B Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|
| 1P          | 2                    | 12                  | 240               | 3SM102B               |
|             | 4                    | 12                  | 240               | 3SM104B               |
|             | 6                    | 12                  | 240               | 3SM106B               |
|             | 10                   | 12                  | 240               | 3SM110B               |
|             | 16                   | 12                  | 240               | 3SM116B               |
|             | 20                   | 12                  | 240               | 3SM120B               |
|             | 25                   | 12                  | 240               | 3SM125B               |
|             | 32                   | 12                  | 240               | 3SM132B               |
|             | 40                   | 12                  | 240               | 3SM140B               |
|             | 50                   | 12                  | 240               | 3SM150B               |
|             | 63                   | 12                  | 240               | 3SM163B               |

Note: Pls kindly ask delivery time and prices for RoHS approved MCBs



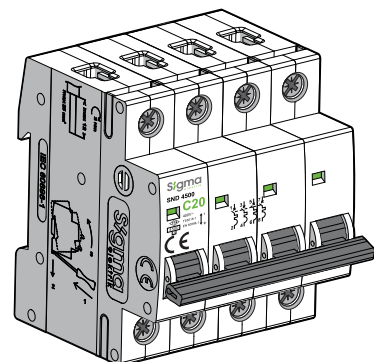
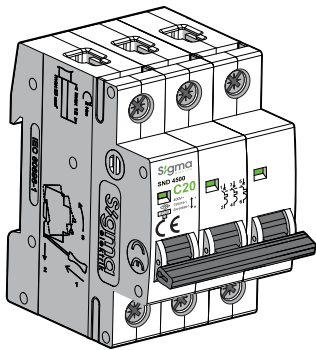
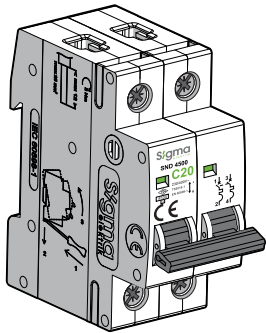
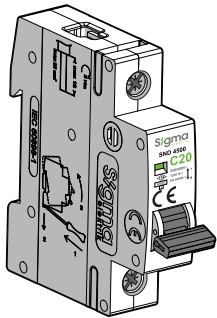
## 3 kA / SND 3000



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for C Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|
| 1P          | 2                    | 12                  | 240               | 3SM102C               |
|             | 4                    | 12                  | 240               | 3SM104C               |
|             | 6                    | 12                  | 240               | 3SM106C               |
|             | 10                   | 12                  | 240               | 3SM110C               |
|             | 16                   | 12                  | 240               | 3SM116C               |
|             | 20                   | 12                  | 240               | 3SM120C               |
|             | 25                   | 12                  | 240               | 3SM125C               |
|             | 32                   | 12                  | 240               | 3SM132C               |
|             | 40                   | 12                  | 240               | 3SM140C               |
|             | 50                   | 12                  | 240               | 3SM150C               |
|             | 63                   | 12                  | 240               | 3SM163C               |
| 2P          | 2                    | 6                   | 120               | 3SM202C               |
|             | 4                    | 6                   | 120               | 3SM204C               |
|             | 6                    | 6                   | 120               | 3SM206C               |
|             | 10                   | 6                   | 120               | 3SM210C               |
|             | 16                   | 6                   | 120               | 3SM216C               |
|             | 20                   | 6                   | 120               | 3SM220C               |
|             | 25                   | 6                   | 120               | 3SM225C               |
|             | 32                   | 6                   | 120               | 3SM232C               |
|             | 40                   | 6                   | 120               | 3SM240C               |
|             | 50                   | 6                   | 120               | 3SM250C               |
|             | 63                   | 6                   | 120               | 3SM263C               |
| 3P          | 2                    | 4                   | 80                | 3SM302C               |
|             | 4                    | 4                   | 80                | 3SM304C               |
|             | 6                    | 4                   | 80                | 3SM306C               |
|             | 10                   | 4                   | 80                | 3SM310C               |
|             | 16                   | 4                   | 80                | 3SM316C               |
|             | 20                   | 4                   | 80                | 3SM320C               |
|             | 25                   | 4                   | 80                | 3SM325C               |
|             | 32                   | 4                   | 80                | 3SM332C               |
|             | 40                   | 4                   | 80                | 3SM340C               |
|             | 50                   | 4                   | 80                | 3SM350C               |
|             | 63                   | 4                   | 80                | 3SM363C               |
| 4P          | 2                    | 3                   | 60                | 3SM402C               |
|             | 4                    | 3                   | 60                | 3SM404C               |
|             | 6                    | 3                   | 60                | 3SM406C               |
|             | 10                   | 3                   | 60                | 3SM410C               |
|             | 16                   | 3                   | 60                | 3SM416C               |
|             | 20                   | 3                   | 60                | 3SM420C               |
|             | 25                   | 3                   | 60                | 3SM425C               |
|             | 32                   | 3                   | 60                | 3SM432C               |
|             | 40                   | 3                   | 60                | 3SM440C               |
|             | 50                   | 3                   | 60                | 3SM450C               |
|             | 63                   | 3                   | 60                | 3SM463C               |

Note: Pls kindly ask delivery time and prices for RoHS approved MCBs

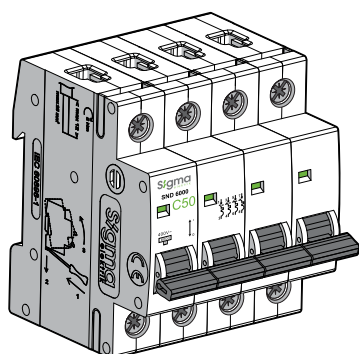
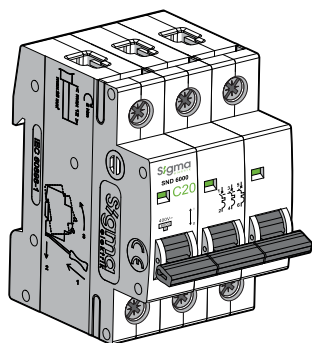
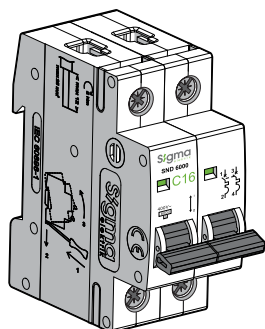
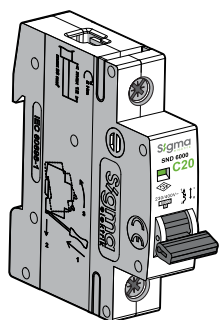
4,5 kA / SND 4500



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for B Type | Order Code for C Type | Order Code for D Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|-----------------------|-----------------------|
| 1P          | 1                    | 12                  | 240               | 4SM101B               | 4SM101C               | 4SM101D               |
|             | 2                    | 12                  | 240               | 4SM102B               | 4SM102C               | 4SM102D               |
|             | 3                    | 12                  | 240               | 4SM103B               | 4SM103C               | 4SM103D               |
|             | 4                    | 12                  | 240               | 4SM104B               | 4SM104C               | 4SM104D               |
|             | 5                    | 12                  | 240               | 4SM105B               | 4SM105C               | 4SM105D               |
|             | 6                    | 12                  | 240               | 4SM106B               | 4SM106C               | 4SM106D               |
|             | 10                   | 12                  | 240               | 4SM110B               | 4SM110C               | 4SM110D               |
|             | 16                   | 12                  | 240               | 4SM116B               | 4SM116C               | 4SM116D               |
|             | 20                   | 12                  | 240               | 4SM120B               | 4SM120C               | 4SM120D               |
|             | 25                   | 12                  | 240               | 4SM125B               | 4SM125C               | 4SM125D               |
|             | 32                   | 12                  | 240               | 4SM132B               | 4SM132C               | 4SM132D               |
|             | 40                   | 12                  | 240               | 4SM140B               | 4SM140C               | 4SM140D               |
|             | 50                   | 12                  | 240               | 4SM150B               | 4SM150C               | 4SM150D               |
|             | 63                   | 12                  | 240               | 4SM163B               | 4SM163C               | 4SM163D               |
| 2P          | 2                    | 6                   | 120               |                       | 4SM202C               | 4SM202D               |
|             | 4                    | 6                   | 120               |                       | 4SM204C               | 4SM204D               |
|             | 6                    | 6                   | 120               |                       | 4SM206C               | 4SM206D               |
|             | 10                   | 6                   | 120               |                       | 4SM210C               | 4SM210D               |
|             | 16                   | 6                   | 120               |                       | 4SM216C               | 4SM216D               |
|             | 20                   | 6                   | 120               |                       | 4SM220C               | 4SM220D               |
|             | 25                   | 6                   | 120               |                       | 4SM225C               | 4SM225D               |
|             | 32                   | 6                   | 120               |                       | 4SM232C               | 4SM232D               |
|             | 40                   | 6                   | 120               |                       | 4SM240C               | 4SM240D               |
|             | 50                   | 6                   | 120               |                       | 4SM250C               | 4SM250D               |
|             | 63                   | 6                   | 120               |                       | 4SM263C               | 4SM263D               |
| 3P          | 2                    | 4                   | 80                |                       | 4SM302C               | 4SM302D               |
|             | 4                    | 4                   | 80                |                       | 4SM304C               | 4SM304D               |
|             | 6                    | 4                   | 80                |                       | 4SM306C               | 4SM306D               |
|             | 10                   | 4                   | 80                |                       | 4SM310C               | 4SM310D               |
|             | 16                   | 4                   | 80                |                       | 4SM316C               | 4SM316D               |
|             | 20                   | 4                   | 80                |                       | 4SM320C               | 4SM320D               |
|             | 25                   | 4                   | 80                |                       | 4SM325C               | 4SM325D               |
|             | 32                   | 4                   | 80                |                       | 4SM332C               | 4SM332D               |
|             | 40                   | 4                   | 80                |                       | 4SM340C               | 4SM340D               |
|             | 50                   | 4                   | 80                |                       | 4SM350C               | 4SM350D               |
|             | 63                   | 4                   | 80                |                       | 4SM363C               | 4SM363D               |
| 4P          | 2                    | 3                   | 60                |                       | 4SM402C               | 4SM402D               |
|             | 4                    | 3                   | 60                |                       | 4SM404C               | 4SM404D               |
|             | 6                    | 3                   | 60                |                       | 4SM406C               | 4SM406D               |
|             | 10                   | 3                   | 60                |                       | 4SM410C               | 4SM410D               |
|             | 16                   | 3                   | 60                |                       | 4SM416C               | 4SM416D               |
|             | 20                   | 3                   | 60                |                       | 4SM420C               | 4SM420D               |
|             | 25                   | 3                   | 60                |                       | 4SM425C               | 4SM425D               |
|             | 32                   | 3                   | 60                |                       | 4SM432C               | 4SM432D               |
|             | 40                   | 3                   | 60                |                       | 4SM440C               | 4SM440D               |
|             | 50                   | 3                   | 60                |                       | 4SM450C               | 4SM450D               |
|             | 63                   | 3                   | 60                |                       | 4SM463C               | 4SM463D               |

Note: Pls kindly ask delivery time and prices for RoHS approved MCBs

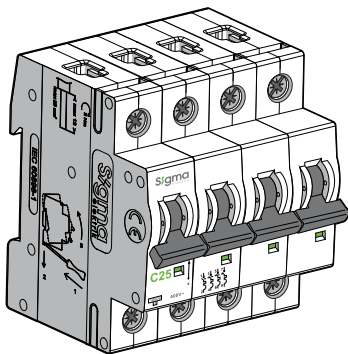
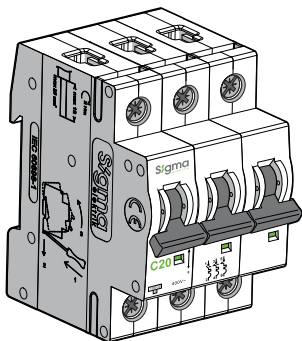
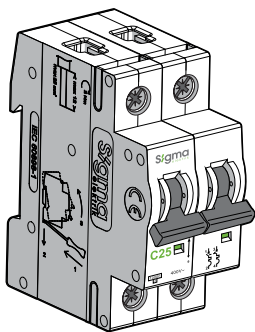
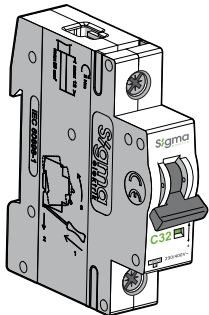
## 6 kA / SND 6000



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for B Type | Order Code for C Type | Order Code for D Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|-----------------------|-----------------------|
| 1P          | 1                    | 12                  | 240               | 6SM101B               | 6SM101C               | 6SM101D               |
|             | 2                    | 12                  | 240               | 6SM102B               | 6SM102C               | 6SM102D               |
|             | 3                    | 12                  | 240               | 6SM103B               | 6SM103C               | 6SM103D               |
|             | 4                    | 12                  | 240               | 6SM104B               | 6SM104C               | 6SM104D               |
|             | 5                    | 12                  | 240               | 6SM105B               | 6SM105C               | 6SM105D               |
|             | 6                    | 12                  | 240               | 6SM106B               | 6SM106C               | 6SM106D               |
|             | 10                   | 12                  | 240               | 6SM110B               | 6SM110C               | 6SM110D               |
|             | 16                   | 12                  | 240               | 6SM116B               | 6SM116C               | 6SM116D               |
|             | 20                   | 12                  | 240               | 6SM120B               | 6SM120C               | 6SM120D               |
|             | 25                   | 12                  | 240               | 6SM125B               | 6SM125C               | 6SM125D               |
|             | 32                   | 12                  | 240               | 6SM132B               | 6SM132C               | 6SM132D               |
|             | 40                   | 12                  | 240               | 6SM140B               | 6SM140C               | 6SM140D               |
|             | 50                   | 12                  | 240               | 6SM150B               | 6SM150C               | 6SM150D               |
|             | 63                   | 12                  | 240               | 6SM163B               | 6SM163C               | 6SM163D               |
| 2P          | 2                    | 6                   | 120               |                       | 6SM202C               | 6SM202D               |
|             | 4                    | 6                   | 120               |                       | 6SM204C               | 6SM204D               |
|             | 6                    | 6                   | 120               |                       | 6SM206C               | 6SM206D               |
|             | 10                   | 6                   | 120               |                       | 6SM210C               | 6SM210D               |
|             | 16                   | 6                   | 120               |                       | 6SM216C               | 6SM216D               |
|             | 20                   | 6                   | 120               |                       | 6SM220C               | 6SM220D               |
|             | 25                   | 6                   | 120               |                       | 6SM225C               | 6SM225D               |
|             | 32                   | 6                   | 120               |                       | 6SM232C               | 6SM232D               |
|             | 40                   | 6                   | 120               |                       | 6SM240C               | 6SM240D               |
|             | 50                   | 6                   | 120               |                       | 6SM250C               | 6SM250D               |
|             | 63                   | 6                   | 120               |                       | 6SM263C               | 6SM263D               |
| 3P          | 2                    | 4                   | 80                |                       | 6SM302C               | 6SM302D               |
|             | 4                    | 4                   | 80                |                       | 6SM304C               | 6SM304D               |
|             | 6                    | 4                   | 80                |                       | 6SM306C               | 6SM306D               |
|             | 10                   | 4                   | 80                |                       | 6SM310C               | 6SM310D               |
|             | 16                   | 4                   | 80                |                       | 6SM316C               | 6SM316D               |
|             | 20                   | 4                   | 80                |                       | 6SM320C               | 6SM320D               |
|             | 25                   | 4                   | 80                |                       | 6SM325C               | 6SM325D               |
|             | 32                   | 4                   | 80                |                       | 6SM332C               | 6SM332D               |
|             | 40                   | 4                   | 80                |                       | 6SM340C               | 6SM340D               |
|             | 50                   | 4                   | 80                |                       | 6SM350C               | 6SM350D               |
|             | 63                   | 4                   | 80                |                       | 6SM363C               | 6SM363D               |
| 4P          | 2                    | 3                   | 60                |                       | 6SM402C               | 6SM402D               |
|             | 4                    | 3                   | 60                |                       | 6SM404C               | 6SM404D               |
|             | 6                    | 3                   | 60                |                       | 6SM406C               | 6SM406D               |
|             | 10                   | 3                   | 60                |                       | 6SM410C               | 6SM410D               |
|             | 16                   | 3                   | 60                |                       | 6SM416C               | 6SM416D               |
|             | 20                   | 3                   | 60                |                       | 6SM420C               | 6SM420D               |
|             | 25                   | 3                   | 60                |                       | 6SM425C               | 6SM425D               |
|             | 32                   | 3                   | 60                |                       | 6SM432C               | 6SM432D               |
|             | 40                   | 3                   | 60                |                       | 6SM440C               | 6SM440D               |
|             | 50                   | 3                   | 60                |                       | 6SM450C               | 6SM450D               |
|             | 63                   | 3                   | 60                |                       | 6SM463C               | 6SM463D               |

Note: Pls kindly ask delivery time and prices for RoHS approved MCBs

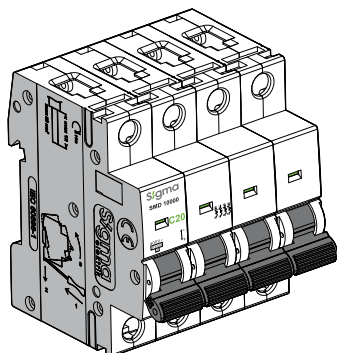
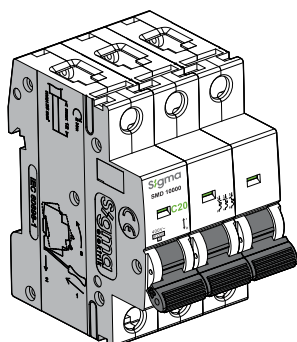
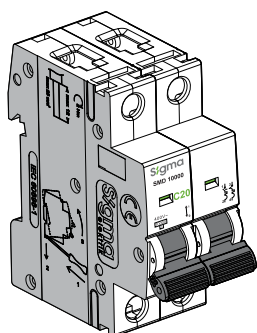
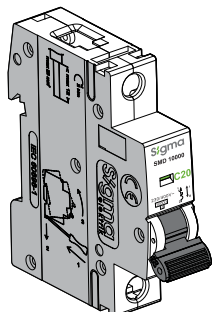
## 10 kA / SND 10000



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for B Type | Order Code for C Type | Order Code for D Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|-----------------------|-----------------------|
| 1P          | 2                    | 12                  | 240               | 1SM102B               | 1SM102C               | 1SM102D               |
|             | 4                    | 12                  | 240               | 1SM104B               | 1SM104C               | 1SM104D               |
|             | 6                    | 12                  | 240               | 1SM106B               | 1SM106C               | 1SM106D               |
|             | 10                   | 12                  | 240               | 1SM110B               | 1SM110C               | 1SM110D               |
|             | 16                   | 12                  | 240               | 1SM116B               | 1SM116C               | 1SM116D               |
|             | 20                   | 12                  | 240               | 1SM120B               | 1SM120C               | 1SM120D               |
|             | 25                   | 12                  | 240               | 1SM125B               | 1SM125C               | 1SM125D               |
|             | 32                   | 12                  | 240               | 1SM132B               | 1SM132C               | 1SM132D               |
|             | 40                   | 12                  | 240               | 1SM140B               | 1SM140C               | 1SM140D               |
|             | 50                   | 12                  | 240               | 1SM150B               | 1SM150C               | 1SM150D               |
|             | 63                   | 12                  | 240               | 1SM163B               | 1SM163C               | 1SM163D               |
| 2P          | 2                    | 6                   | 120               |                       | 1SM202C               | 1SM202D               |
|             | 4                    | 6                   | 120               |                       | 1SM204C               | 1SM204D               |
|             | 6                    | 6                   | 120               |                       | 1SM206C               | 1SM206D               |
|             | 10                   | 6                   | 120               |                       | 1SM210C               | 1SM210D               |
|             | 16                   | 6                   | 120               |                       | 1SM216C               | 1SM216D               |
|             | 20                   | 6                   | 120               |                       | 1SM220C               | 1SM220D               |
|             | 25                   | 6                   | 120               |                       | 1SM225C               | 1SM225D               |
|             | 32                   | 6                   | 120               |                       | 1SM232C               | 1SM232D               |
|             | 40                   | 6                   | 120               |                       | 1SM240C               | 1SM240D               |
|             | 50                   | 6                   | 120               |                       | 1SM250C               | 1SM250D               |
|             | 63                   | 6                   | 120               |                       | 1SM263C               | 1SM263D               |
| 3P          | 2                    | 4                   | 80                |                       | 1SM302C               | 1SM302D               |
|             | 4                    | 4                   | 80                |                       | 1SM304C               | 1SM304D               |
|             | 6                    | 4                   | 80                |                       | 1SM306C               | 1SM306D               |
|             | 10                   | 4                   | 80                |                       | 1SM310C               | 1SM310D               |
|             | 16                   | 4                   | 80                |                       | 1SM316C               | 1SM316D               |
|             | 20                   | 4                   | 80                |                       | 1SM320C               | 1SM320D               |
|             | 25                   | 4                   | 80                |                       | 1SM325C               | 1SM325D               |
|             | 32                   | 4                   | 80                |                       | 1SM332C               | 1SM332D               |
|             | 40                   | 4                   | 80                |                       | 1SM340C               | 1SM340D               |
|             | 50                   | 4                   | 80                |                       | 1SM350C               | 1SM350D               |
|             | 63                   | 4                   | 80                |                       | 1SM363C               | 1SM363D               |
| 4P          | 2                    | 3                   | 60                |                       | 1SM402C               | 1SM402D               |
|             | 4                    | 3                   | 60                |                       | 1SM404C               | 1SM404D               |
|             | 6                    | 3                   | 60                |                       | 1SM406C               | 1SM406D               |
|             | 10                   | 3                   | 60                |                       | 1SM410C               | 1SM410D               |
|             | 16                   | 3                   | 60                |                       | 1SM416C               | 1SM416D               |
|             | 20                   | 3                   | 60                |                       | 1SM420C               | 1SM420D               |
|             | 25                   | 3                   | 60                |                       | 1SM425C               | 1SM425D               |
|             | 32                   | 3                   | 60                |                       | 1SM432C               | 1SM432D               |
|             | 40                   | 3                   | 60                |                       | 1SM440C               | 1SM440D               |
|             | 50                   | 3                   | 60                |                       | 1SM450C               | 1SM450D               |
|             | 63                   | 3                   | 60                |                       | 1SM463C               | 1SM463D               |

Note: Pls kindly ask delivery time and prices for RoHS approved MCBs

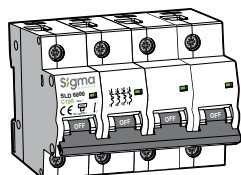
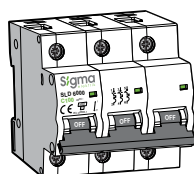
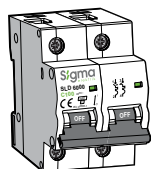
# 10 kA / SMD 10000 (TÜV Approved)



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code for B Type | Order Code for C Type | Order Code for D Type |
|-------------|----------------------|---------------------|-------------------|-----------------------|-----------------------|-----------------------|
| 1P          | 2                    | 12                  | 240               | 1SMD102B              | 1SMD102C              | 1SMD102D              |
|             | 4                    | 12                  | 240               | 1SMD104B              | 1SMD104C              | 1SMD104D              |
|             | 6                    | 12                  | 240               | 1SMD106B              | 1SMD106C              | 1SMD106D              |
|             | 10                   | 12                  | 240               | 1SMD110B              | 1SMD110C              | 1SMD110D              |
|             | 16                   | 12                  | 240               | 1SMD116B              | 1SMD116C              | 1SMD116D              |
|             | 20                   | 12                  | 240               | 1SMD120B              | 1SMD120C              | 1SMD120D              |
|             | 25                   | 12                  | 240               | 1SMD125B              | 1SMD125C              | 1SMD125D              |
|             | 32                   | 12                  | 240               | 1SMD132B              | 1SMD132C              | 1SMD132D              |
|             | 40                   | 12                  | 240               | 1SMD140B              | 1SMD140C              | 1SMD140D              |
|             | 50                   | 12                  | 240               | 1SMD150B              | 1SMD150C              | 1SMD150D              |
|             | 63                   | 12                  | 240               | 1SMD163B              | 1SMD163C              | 1SMD163D              |
| 2P          | 2                    | 6                   | 120               |                       | 1SMD202C              | 1SMD202D              |
|             | 4                    | 6                   | 120               |                       | 1SMD204C              | 1SMD204D              |
|             | 6                    | 6                   | 120               |                       | 1SMD206C              | 1SMD206D              |
|             | 10                   | 6                   | 120               |                       | 1SMD210C              | 1SMD210D              |
|             | 16                   | 6                   | 120               |                       | 1SMD216C              | 1SMD216D              |
|             | 20                   | 6                   | 120               |                       | 1SMD220C              | 1SMD220D              |
|             | 25                   | 6                   | 120               |                       | 1SMD225C              | 1SMD225D              |
|             | 32                   | 6                   | 120               |                       | 1SMD232C              | 1SMD232D              |
|             | 40                   | 6                   | 120               |                       | 1SMD240C              | 1SMD240D              |
|             | 50                   | 6                   | 120               |                       | 1SMD250C              | 1SMD250D              |
|             | 63                   | 6                   | 120               |                       | 1SMD263C              | 1SMD263D              |
| 3P          | 2                    | 4                   | 80                |                       | 1SMD302C              | 1SMD302D              |
|             | 4                    | 4                   | 80                |                       | 1SMD304C              | 1SMD304D              |
|             | 6                    | 4                   | 80                |                       | 1SMD306C              | 1SMD306D              |
|             | 10                   | 4                   | 80                |                       | 1SMD310C              | 1SMD310D              |
|             | 16                   | 4                   | 80                |                       | 1SMD316C              | 1SMD316D              |
|             | 20                   | 4                   | 80                |                       | 1SMD320C              | 1SMD320D              |
|             | 25                   | 4                   | 80                |                       | 1SMD325C              | 1SMD325D              |
|             | 32                   | 4                   | 80                |                       | 1SMD332C              | 1SMD332D              |
|             | 40                   | 4                   | 80                |                       | 1SMD340C              | 1SMD340D              |
|             | 50                   | 4                   | 80                |                       | 1SMD350C              | 1SMD350D              |
|             | 63                   | 4                   | 80                |                       | 1SMD363C              | 1SMD363D              |
| 4P          | 2                    | 3                   | 60                |                       | 1SMD402C              | 1SMD402D              |
|             | 4                    | 3                   | 60                |                       | 1SMD404C              | 1SMD404D              |
|             | 6                    | 3                   | 60                |                       | 1SMD406C              | 1SMD406D              |
|             | 10                   | 3                   | 60                |                       | 1SMD410C              | 1SMD410D              |
|             | 16                   | 3                   | 60                |                       | 1SMD416C              | 1SMD416D              |
|             | 20                   | 3                   | 60                |                       | 1SMD420C              | 1SMD420D              |
|             | 25                   | 3                   | 60                |                       | 1SMD425C              | 1SMD425D              |
|             | 32                   | 3                   | 60                |                       | 1SMD432C              | 1SMD432D              |
|             | 40                   | 3                   | 60                |                       | 1SMD440C              | 1SMD440D              |
|             | 50                   | 3                   | 60                |                       | 1SMD450C              | 1SMD450D              |
|             | 63                   | 3                   | 60                |                       | 1SMD463C              | 1SMD463D              |

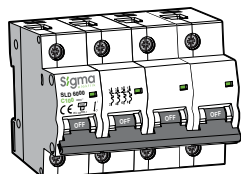
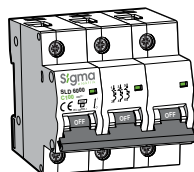
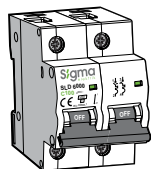
Note: Pls kindly ask delivery time and prices for RoHS approved MCBs

## 80-100-125A Miniature Circuit Breakers 6 kA / SLD 6000



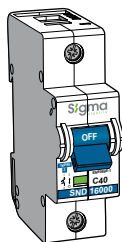
| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-------------|----------------------|---------------------|-------------------|------------|
| 1P          | 80                   | 12                  | 120               | 6SL180C    |
|             | 100                  | 12                  | 120               | 6SL100C    |
|             | 125                  | 12                  | 120               | 6SL112C    |
| 2P          | 80                   | 6                   | 60                | 6SL280C    |
|             | 100                  | 6                   | 60                | 6SL200C    |
|             | 125                  | 6                   | 60                | 6SL212C    |
| 3P          | 80                   | 4                   | 40                | 6SL380C    |
|             | 100                  | 4                   | 40                | 6SL300C    |
|             | 125                  | 4                   | 40                | 6SL312C    |
| 4P          | 80                   | 3                   | 30                | 6SL480C    |
|             | 100                  | 3                   | 30                | 6SL400C    |
|             | 125                  | 3                   | 30                | 6SL412C    |

## 80-100-125A Miniature Circuit Breakers 10 kA / SLD 10000



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-------------|----------------------|---------------------|-------------------|------------|
| 1P          | 80                   | 12                  | 120               | 1SL180C    |
|             | 100                  | 12                  | 120               | 1SL100C    |
|             | 125                  | 12                  | 120               | 1SL112C    |
| 2P          | 80                   | 6                   | 60                | 1SL280C    |
|             | 100                  | 6                   | 60                | 1SL200C    |
|             | 125                  | 6                   | 60                | 1SL212C    |
| 3P          | 80                   | 4                   | 40                | 1SL380C    |
|             | 100                  | 4                   | 40                | 1SL300C    |
|             | 125                  | 4                   | 40                | 1SL312C    |
| 4P          | 80                   | 3                   | 30                | 1SL480C    |
|             | 100                  | 3                   | 30                | 1SL400C    |
|             | 125                  | 3                   | 30                | 1SL412C    |

## 16 kA / SND 16000



| No of Poles | Rated Current In (A) | Min. Order Quantity | Order Code |
|-------------|----------------------|---------------------|------------|
| 1P          | C40                  | 1                   | 5SM140C    |
|             | C50                  | 1                   | 5SM150C    |
|             | C63                  | 1                   | 5SM163C    |
|             | C80                  | 1                   | 5SM180C    |
|             | C100                 | 1                   | 5SM100C    |
|             | C125                 | 1                   | 5SM125C    |

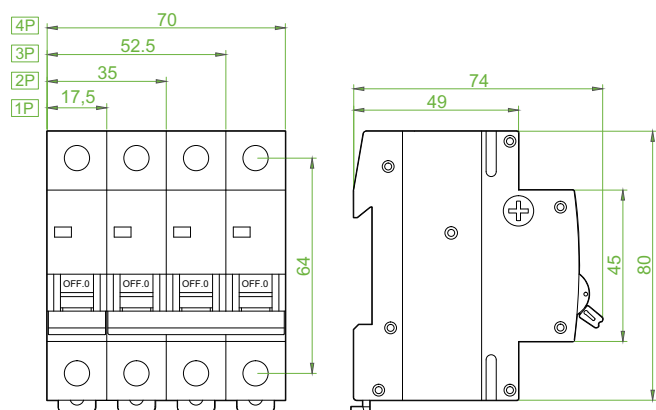
## 4.5 kA Phase-Neutral Miniature Circuit Breakers 1P+N (18 mm)



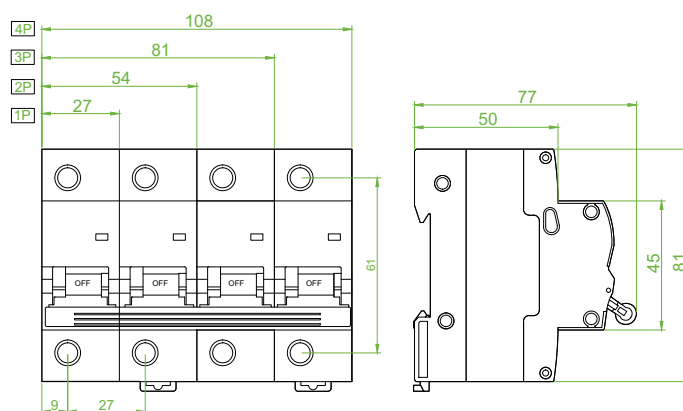
| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-------------|----------------------|---------------------|-------------------|------------|
| 1P+N        | 6                    | 12                  | 240               | 4SN106C    |
|             | 10                   | 12                  | 240               | 4SN110C    |
|             | 16                   | 12                  | 240               | 4SN116C    |
|             | 20                   | 12                  | 240               | 4SN120C    |
|             | 25                   | 12                  | 240               | 4SN125C    |
|             | 32                   | 12                  | 240               | 4SN132C    |

## Dimensions

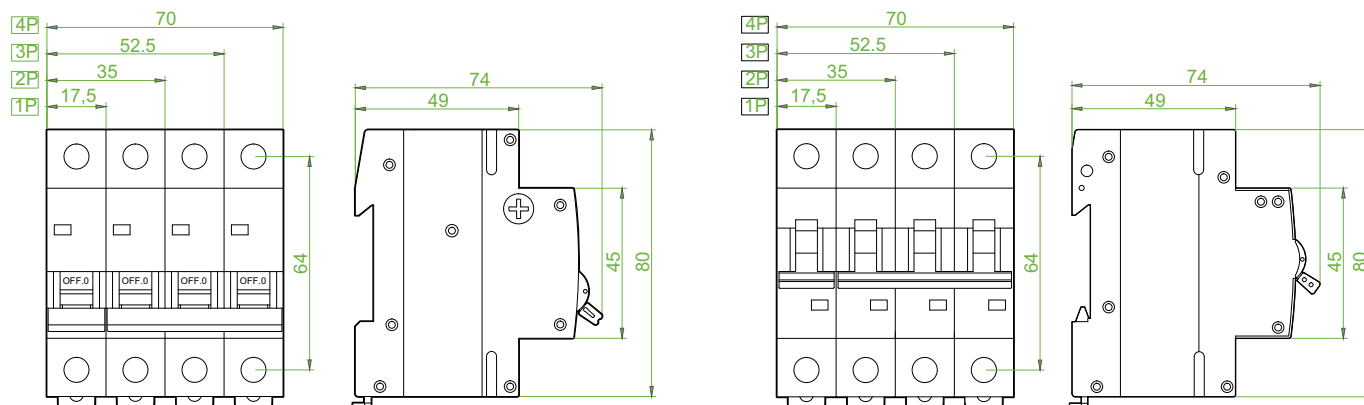
### 3 kA - 4,5 kA - 6 kA (1A-63A)



### 6kA - 10kA (80A-100A-125A)

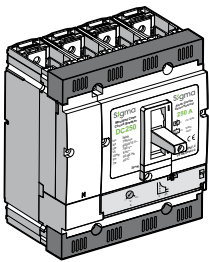


### 10 kA (2A-63A)



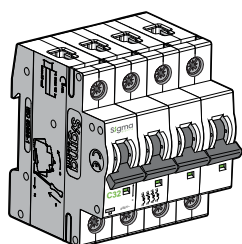
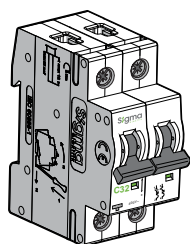
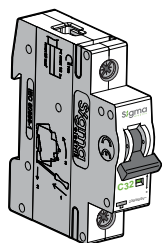


DC LV MCCB - 1000 V



| Tip Kodu | Anma Akımı<br>In (A) | Termik Ayar<br>Akımı Ir (A) | Ani Açma Akımı<br>Im (A) | Kesme Kap. Icu<br>(kA) | Koli Adedi | Sipariş Kodu |
|----------|----------------------|-----------------------------|--------------------------|------------------------|------------|--------------|
| DC160    | 16                   | 11-16                       | 15xIn                    | 36                     | 4          | DC160016     |
|          | 20                   | 14-20                       | 12xIn                    | 36                     | 4          | DC160020     |
|          | 25                   | 18-25                       | 10xIn                    | 36                     | 4          | DC160025     |
|          | 32                   | 23-32                       | 10xIn                    | 36                     | 4          | DC160032     |
|          | 40                   | 28-40                       | 10xIn                    | 36                     | 4          | DC160040     |
|          | 50                   | 35-50                       | 10xIn                    | 36                     | 4          | DC160050     |
|          | 63                   | 44-63                       | 10xIn                    | 36                     | 4          | DC160063     |
|          | 80                   | 56-80                       | 10xIn                    | 36                     | 4          | DC160080     |
|          | 100                  | 70-100                      | 10xIn                    | 36                     | 4          | DC160100     |
|          | 125                  | 88-125                      | 10xIn                    | 36                     | 4          | DC160125     |
|          | 160                  | 112-160                     | 10xIn                    | 36                     | 4          | DC160160     |
| DC250    | 200                  | 140-200                     | (5-10)xIn                | 36                     | 4          | DC250200     |
|          | 250                  | 175-250                     | (5-10)xIn                | 36                     | 4          | DC250250     |

## DC Miniature Circuit Breakers - 6 kA



| No of Poles | Rated Current In (A) | Rated Operation Voltage DC (V) | Min. Order Quantity | Number in Cartoon | Order Code |
|-------------|----------------------|--------------------------------|---------------------|-------------------|------------|
| 1P          | 6                    | 250                            | 12                  | 240               | 6SD106C    |
|             | 10                   |                                | 12                  | 240               | 6SD110C    |
|             | 16                   |                                | 12                  | 240               | 6SD116C    |
|             | 20                   |                                | 12                  | 240               | 6SD120C    |
|             | 25                   |                                | 12                  | 240               | 6SD125C    |
|             | 32                   |                                | 12                  | 240               | 6SD132C    |
|             | 40                   |                                | 12                  | 240               | 6SD140C    |
|             | 50                   |                                | 12                  | 240               | 6SD150C    |
|             | 63                   |                                | 12                  | 240               | 6SD163C    |
| 2P          | 6                    | 500                            | 6                   | 120               | 6SD206C    |
|             | 10                   |                                | 6                   | 120               | 6SD210C    |
|             | 16                   |                                | 6                   | 120               | 6SD216C    |
|             | 20                   |                                | 6                   | 120               | 6SD220C    |
|             | 25                   |                                | 6                   | 120               | 6SD225C    |
|             | 32                   |                                | 6                   | 120               | 6SD232C    |
|             | 40                   |                                | 6                   | 120               | 6SD240C    |
|             | 50                   |                                | 6                   | 120               | 6SD250C    |
|             | 63                   |                                | 6                   | 120               | 6SD263C    |
| 4P          | 6                    | 1000                           | 3                   | 60                | 6SD406C    |
|             | 10                   |                                | 3                   | 60                | 6SD410C    |
|             | 16                   |                                | 3                   | 60                | 6SD416C    |
|             | 20                   |                                | 3                   | 60                | 6SD420C    |
|             | 25                   |                                | 3                   | 60                | 6SD425C    |
|             | 32                   |                                | 3                   | 60                | 6SD432C    |
|             | 40                   |                                | 3                   | 60                | 6SD440C    |
|             | 50                   |                                | 3                   | 60                | 6SD450C    |
|             | 63                   |                                | 3                   | 60                | 6SD463C    |

## DC Low Voltage Surge Arresters

| Type     | Un(V) AC | I <sub>max</sub> (kA) | I <sub>n</sub> (kA) | Up (kV) | Order Code |
|----------|----------|-----------------------|---------------------|---------|------------|
| SP3-DC40 | 1000     | 40                    | 20                  | <3      | SP3-DC40   |

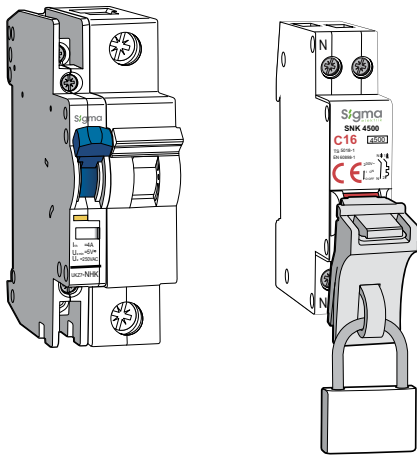
## DC Cylindrical (Cartridge) Fuse Bases

| Type    | Rated Current (A) | Rated Voltage DC (V) | No of Poles | Cartridge (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|---------|-------------------|----------------------|-------------|----------------|---------------------|-------------------|------------|
| SDC-125 | 25                | 1000                 | 1           | 10x38          | 12                  | 360               | SDC125     |

## 10x38 mm DC Cylindrical (Cartridge) Fuses

| Type                  | Rated Current (A) | I <sub>1</sub> (kA) | Rated Voltage DC (V) | Cartridge (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------------------|-------------------|---------------------|----------------------|----------------|---------------------|-------------------|------------|
| DC systems protection | 8                 | 25                  | 1000                 | 10x38          | 10                  | 2000              | SFDC08     |
|                       | 20                | 25                  | 1000                 | 10x38          | 10                  | 2000              | SFDC20     |
|                       | 25                | 25                  | 1000                 | 10x38          | 10                  | 2000              | SFDC25     |

## Accessories



| Type Code | Description                                                             | Order Code |
|-----------|-------------------------------------------------------------------------|------------|
| SNAB      | AC-DC 110-400 V Shunt Trip Release (For 4.5-6 kA Mcb)                   | SNAB220    |
|           | AC-DC 24-48 V Shunt Trip Release (For 4.5-6 kA Mcb)                     | SNAB024    |
| SNYK      | 11NO+1NC Auxiliary Contact (For 4.5-6 Ka Mcb)                           | SNYK011    |
| SMAB      | 110-415 V AC / 110-220 V DC Shunt Trip Release (For 10 kA Mcb)          | SMAB220    |
|           | 24 V AC Shunt Trip Release (For 10 kA Mcb)                              | SMAB024    |
| SMYK      | 1NO+1NC Aux Contact + Alarm Contact (Ith:6 A, 250 V AC) (For 10 kA Mcb) | SMYK011    |
| SMDAB     | 110-415 V AC/110-220 V DC Shunt Trip Release (For SMD 10000)            | SMDAB      |
| SMDYK     | 1NO+1NC Aux Contact (Ith:4 A, 250 V AC) (For SMD 10000)                 | SMDYK      |
| SMDAK     | 1NO+1NC Alarm Contact (Ith:4 A, 250 V AC) (For SMD 10000)               | SMDAK      |
| SMEK      | Safety Lock (For all type Mcb)*                                         | SMEK       |
| RD1       | Motor operator (for 1 P SMD 10000)                                      | SMDRD1     |
| RD2       | Motor operator (for 2 P SMD 10000)                                      | SMDRD2     |
| RD3       | Motor operator (for 3 P SMD 10000)                                      | SMDRD3     |
| RD4       | Motor operator (for 4 P SMD 10000)                                      | SMDRD4     |

\*Pedlock is NOT included our offer.

### Required Data for Mcb Order

- Rated Current (1...125A)
- Rated Breaking Capacity (3kA - 4.5kA - 6kA - 10kA - 16kA)
- Required No of Poles (1P-2P-3P-4P)
- Tripping Curve Type (B-C-D)

### Mcb Selection According to Instantaneous Tripping Curve

**B Curve:** It is used for protection of illumination of houses, plugs, heaters, PLC and control circuits.

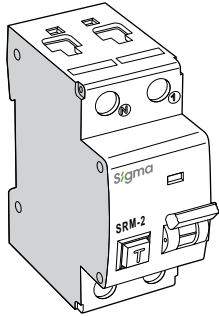
**C Curve:** It is used for protection of inductive loads like fluorescent lamps, transformers, power socket plugs, machines, lower power motors, air-conditions, cooling machines, power distribution panels.

**D Curve:** It is used for protection of motor starters, pumps, compressors, capacitors and welding machines.

### Miniature Circuit Breakers Tripping and Non-Tripping Conditions

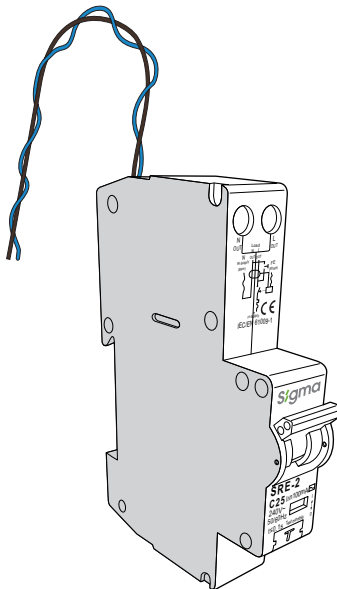
| Tripping Curve | Rated Current | Applied Test Current | Tripping Time   | Result (should be) |
|----------------|---------------|----------------------|-----------------|--------------------|
| B, C, D        | $I_n \leq 63$ | $1.13 I_n$           | $t \geq 3600s$  | Non trip           |
| B, C, D        | $I_n \leq 63$ | $1.45 I_n$           | $t < 3600s$     | Trip               |
| B, C, D        | $I_n > 63$    | $1.13 I_n$           | $t \geq 7200s$  | Non trip           |
| B, C, D        | $I_n > 63$    | $1.45 I_n$           | $t < 7200s$     | Trip               |
| B, C, D        | $I_n \leq 32$ | $2.55 I_n$           | $1s < t < 60s$  | Trip               |
| B, C, D        | $I_n > 32$    | $2.55 I_n$           | $1s < t < 120s$ | Trip               |
| B              | All           | $3 I_n$              | $t \geq 0.1s$   | Non trip           |
| B              | All           | $5 I_n$              | $t < 0.1s$      | Trip               |
| C              | All           | $5 I_n$              | $t \geq 0.1s$   | Non trip           |
| C              | All           | $10 I_n$             | $t < 0.1s$      | Trip               |
| D              | All           | $10 I_n$             | $t \geq 0.1s$   | Non trip           |
| D              | All           | $20 I_n$             | $t < 0.1s$      | Trip               |

## Residual Current Circuit Breaker with Over Current Protection



| Type Code | No of Pole | Rated Current<br>$I_n$ (A) | Residual Current<br>$I_{\Delta n}$ (mA) | Order Code |
|-----------|------------|----------------------------|-----------------------------------------|------------|
| SRM-2     | 2          | 6                          | 30mA                                    | SRM2006030 |
|           |            | 10                         |                                         | SRM2010030 |
|           |            | 16                         |                                         | SRM2016030 |
|           |            | 20                         |                                         | SRM2020030 |
|           |            | 25                         |                                         | SRM2025030 |
|           |            | 32                         |                                         | SRM2032030 |
|           |            | 40                         |                                         | SRM2040030 |
|           |            | 6                          | 300mA                                   | SRM2006300 |
|           |            | 10                         |                                         | SRM2010300 |
|           |            | 16                         |                                         | SRM2016300 |
|           |            | 20                         |                                         | SRM2020300 |
|           |            | 25                         |                                         | SRM2025300 |
|           |            | 32                         |                                         | SRM2032300 |
|           |            | 40                         |                                         | SRM2040300 |

## Residual Current Circuit Breaker with Over Current Protection (Wired)



| Type Code | No of Pole | Rated Current<br>$I_n$ (A) | Residual Current<br>$I_{\Delta n}$ (mA) | Order Code |
|-----------|------------|----------------------------|-----------------------------------------|------------|
| SRE-2     | 2          | 6                          | 30mA                                    | SRE2006030 |
|           |            | 10                         |                                         | SRE2010030 |
|           |            | 16                         |                                         | SRE2016030 |
|           |            | 20                         |                                         | SRE2020030 |
|           |            | 25                         |                                         | SRE2025030 |
|           |            | 32                         |                                         | SRE2032030 |
|           |            | 40                         |                                         | SRE2040030 |
|           |            | 6                          | 100mA                                   | SRE2006100 |
|           |            | 10                         |                                         | SRE2010100 |
|           |            | 16                         |                                         | SRE2016100 |
|           |            | 20                         |                                         | SRE2020100 |
|           |            | 25                         |                                         | SRE2025100 |
|           |            | 32                         |                                         | SRE2032100 |
|           |            | 40                         |                                         | SRE2040100 |
|           |            | 6                          | 300mA                                   | SRE2006300 |
|           |            | 10                         |                                         | SRE2010300 |
|           |            | 16                         |                                         | SRE2016300 |
|           |            | 20                         |                                         | SRE2020300 |
|           |            | 25                         |                                         | SRE2025300 |
|           |            | 32                         |                                         | SRE2032300 |
|           |            | 40                         |                                         | SRE2040300 |

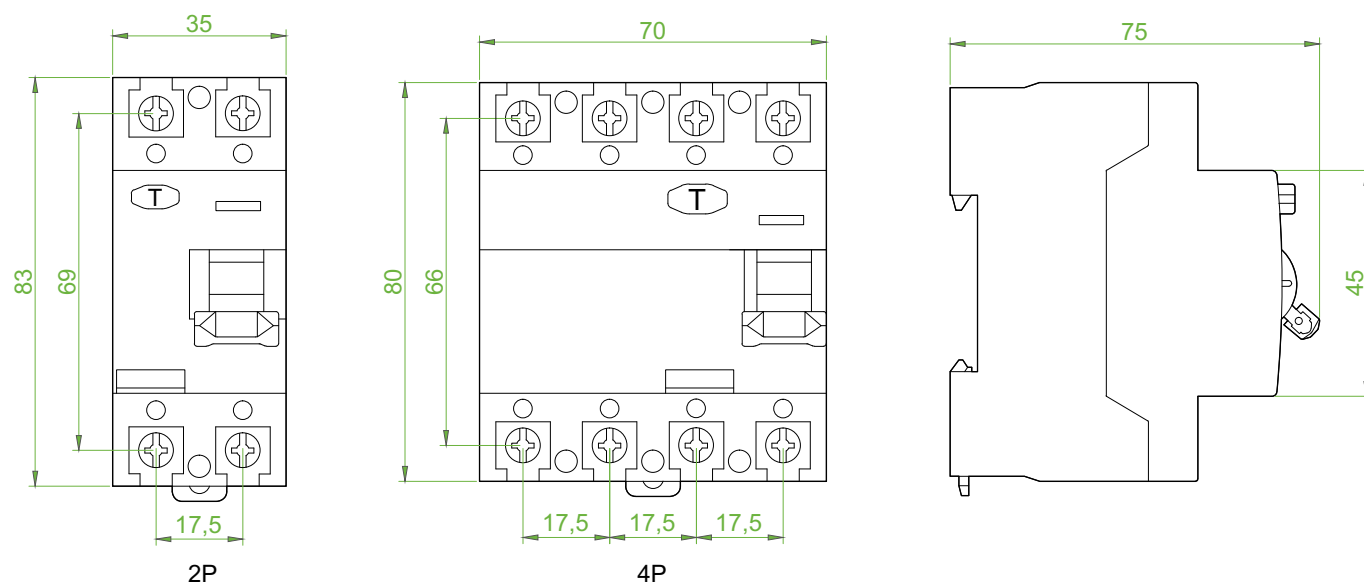
## Residual Current Circuit Breakers - Technical Specification

| Type                                                      |           |         | SGM-2               | SGM-4 | SFM-2              | SFM-4 | SHM-2           | SHM-4 | SDM-2                  | SDM-4 |
|-----------------------------------------------------------|-----------|---------|---------------------|-------|--------------------|-------|-----------------|-------|------------------------|-------|
| No of Poles                                               |           |         | 2                   | 4     | 2                  | 4     | 2               | 4     | 2                      | 4     |
| Rated Current                                             | In        | A       | 25, 40, 63, 80, 100 |       |                    |       |                 |       |                        |       |
| Rated Residual Current                                    | IΔ        | mA      | 30, 300             |       |                    |       |                 |       |                        |       |
| Rated Frequency                                           |           | Hz      | 50-60               |       |                    |       |                 |       |                        |       |
| Current Selectivity                                       |           |         | AC                  |       | A                  |       | AC              |       |                        |       |
| Tripping Unit                                             |           |         | Electro-mechanic    |       |                    |       |                 |       |                        |       |
| Tripping Time                                             |           |         | 0.5.....1 x IΔn     |       | 0.11.....1.4 x IΔn |       | 0.5.....1 x IΔn |       |                        |       |
| Breaking Time at Residual Current (IΔn)                   |           | ms      | < 200               |       |                    |       |                 |       | 130 < t < 500          |       |
| Delay Type according to Residual Current                  |           |         | General             |       |                    |       |                 |       | Delay Time Selectivity |       |
| Rated Operating Voltage                                   | Ue        | (AC) V  | 240                 | 415   | 240                | 415   | 240             | 415   | 240                    | 415   |
| Rated Insulation Voltage                                  | Ui        | V       | 660                 |       |                    |       |                 |       |                        |       |
| Rated Impulse Withstand Voltage                           | Uimp      | kV      | 6                   |       |                    |       |                 |       |                        |       |
| Rated Short Circuit Withstand current with Fuse (Inc/IΔc) |           | kA      | 10                  |       |                    |       | 6               |       |                        |       |
| Electrical Life (Operation)                               | operation | (230 V) | 6000                |       |                    |       |                 |       |                        |       |
| Mechanical Life (Operation)                               | operation |         | 20000               |       |                    |       |                 |       |                        |       |
| Degree of Protection (After Assembly)                     |           |         | IP 20 (IP 40)       |       |                    |       |                 |       |                        |       |
| Ambient Operation Temperature                             |           | °C      | -25 to +60          |       |                    |       |                 |       |                        |       |
| Max. Storage Temperature                                  |           | °C      | -40 to +70          |       |                    |       |                 |       |                        |       |
| Dimensions                                                | Width     | mm      | 35                  | 70    | 35                 | 70    | 35              | 70    | 35                     | 70    |
|                                                           | Length    | mm      | 80                  |       |                    |       |                 |       |                        |       |
| Colour                                                    |           |         | RAL 7035            |       |                    |       |                 |       |                        |       |
| Assembly Type (EN 60715)                                  |           |         | 35 mm DIN Rail      |       |                    |       |                 |       |                        |       |
| Min.. Max. Connection Section                             |           | mm²     | 1.5 - 35            |       |                    |       |                 |       |                        |       |

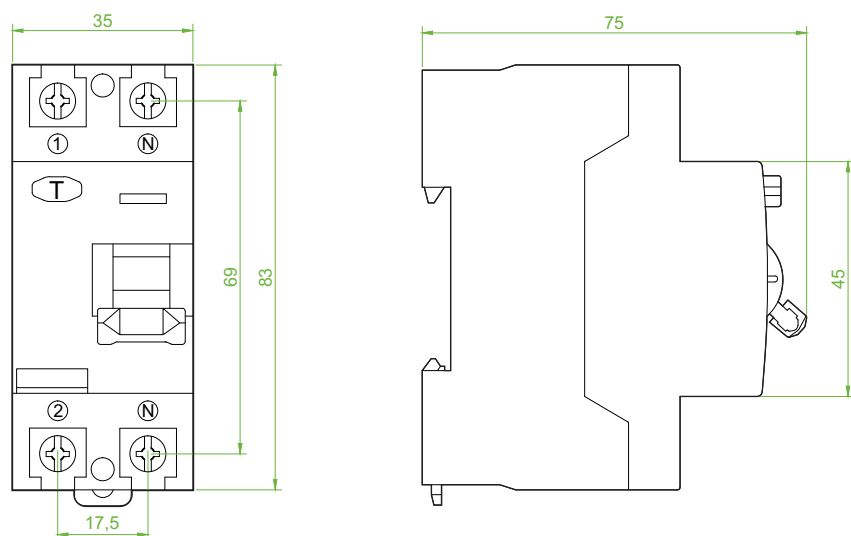


## Dimensions

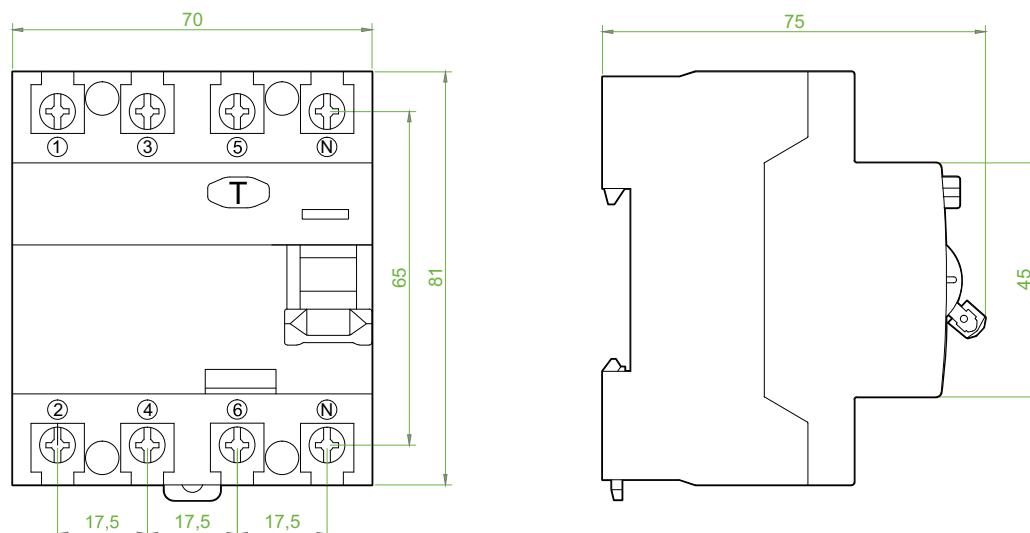
### SGM-2 / SGM-4



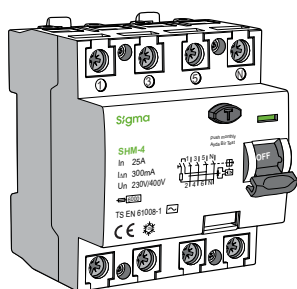
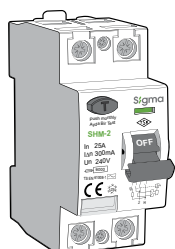
### SHM-2



### SHM-4

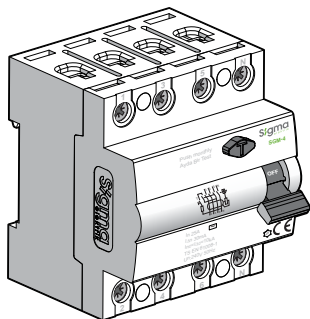
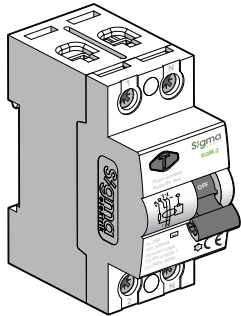


## Residual Current Circuit Breakers (AC Type) 6 kA



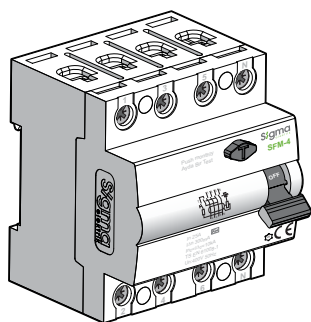
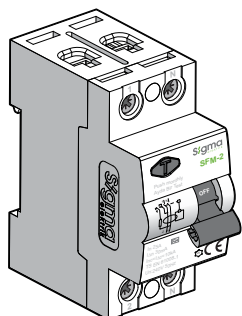
| Type Code     | Rated Current In (A) | No of Poles | Protection                           | Residual Current IΔn (mA) | Tripping Time at Residual Current (ms) | Number in Cartoon | Order Code |
|---------------|----------------------|-------------|--------------------------------------|---------------------------|----------------------------------------|-------------------|------------|
| SHM-2         | 25                   | 2           | Life Protection                      | 30                        | Instantaneously                        | 100               | SHM2025030 |
|               | 32                   |             |                                      |                           |                                        | 100               | SHM2032030 |
|               | 40                   |             |                                      |                           |                                        | 100               | SHM2040030 |
|               | 63                   |             |                                      |                           |                                        | 100               | SHM2063030 |
|               | 80                   |             |                                      |                           |                                        | 100               | SHM2080030 |
|               | 25                   | 2           | Fire Protection                      | 300                       | Instantaneously                        | 100               | SHM2025300 |
|               | 32                   |             |                                      |                           |                                        | 100               | SHM2032300 |
|               | 40                   |             |                                      |                           |                                        | 100               | SHM2040300 |
|               | 63                   |             |                                      |                           |                                        | 100               | SHM2063300 |
|               | 80                   |             |                                      |                           |                                        | 100               | SHM2080300 |
| SHM-4         | 25                   | 4           | Life Protection                      | 30                        | Instantaneously                        | 50                | SHM4025030 |
|               | 32                   |             |                                      |                           |                                        | 50                | SHM4032030 |
|               | 40                   |             |                                      |                           |                                        | 50                | SHM4040030 |
|               | 63                   |             |                                      |                           |                                        | 50                | SHM4063030 |
|               | 80                   |             |                                      |                           |                                        | 50                | SHM4080030 |
|               | 100                  |             |                                      |                           |                                        | 50                | SHM4100030 |
|               | 25                   | 4           | Fire Protection                      | 300                       | Instantaneously                        | 50                | SHM4025300 |
|               | 32                   |             |                                      |                           |                                        | 50                | SHM4032300 |
|               | 40                   |             |                                      |                           |                                        | 50                | SHM4040300 |
|               | 63                   |             |                                      |                           |                                        | 50                | SHM4063300 |
|               | 80                   |             |                                      |                           |                                        | 50                | SHM4080300 |
|               | 100                  |             |                                      |                           |                                        | 50                | SHM4100300 |
| SDM-2 (Delay) | 25                   | 2           | Fire Protection (Selectivity Option) | 300                       | Min. 130 ms                            | 100               | SDM2025300 |
|               | 32                   |             |                                      |                           |                                        | 100               | SDM2032300 |
|               | 40                   |             |                                      |                           |                                        | 100               | SDM2040300 |
|               | 63                   |             |                                      |                           |                                        | 100               | SDM2063300 |
|               | 80                   |             |                                      |                           |                                        | 100               | SDM2080300 |
| SDM-4 (Delay) | 25                   | 4           |                                      |                           |                                        | 50                | SDM4025300 |
|               | 32                   |             |                                      |                           |                                        | 50                | SDM4032300 |
|               | 40                   |             |                                      |                           |                                        | 50                | SDM4040300 |
|               | 63                   |             |                                      |                           |                                        | 50                | SDM4063300 |
|               | 80                   |             |                                      |                           |                                        | 50                | SDM4080300 |

## Residual Current Circuit Breakers (AC Type) 10 kA



| Type Code | Rated Current In (A) | No of Poles | Protection      | Residual Current I <sub>Δn</sub> (mA) | Tripping Time at Residual Current (ms) | Number in Cartoon | Sipariş Kodu |
|-----------|----------------------|-------------|-----------------|---------------------------------------|----------------------------------------|-------------------|--------------|
| SGM-2     | 25                   | 2           | Life Protection | 30                                    | Instantaneously                        | 100               | SGM2025030   |
|           | 32                   |             |                 |                                       |                                        | 100               | SGM2032030   |
|           | 40                   |             |                 |                                       |                                        | 100               | SGM2040030   |
|           | 63                   |             |                 |                                       |                                        | 100               | SGM2063030   |
|           | 80                   |             |                 |                                       |                                        | 100               | SGM2080030   |
|           | 100                  |             |                 |                                       |                                        | 100               | SGM2100030   |
|           | 125                  |             |                 |                                       |                                        | 100               | SGM2125030   |
|           | 25                   | 2           | Fire Protection | 300                                   | Instantaneously                        | 100               | SGM2025300   |
|           | 32                   |             |                 |                                       |                                        | 100               | SGM2032300   |
|           | 40                   |             |                 |                                       |                                        | 100               | SGM2040300   |
|           | 63                   |             |                 |                                       |                                        | 100               | SGM2063300   |
|           | 80                   |             |                 |                                       |                                        | 100               | SGM2080300   |
|           | 100                  |             |                 |                                       |                                        | 100               | SGM2100300   |
|           | 125                  |             |                 |                                       |                                        | 100               | SGM2125300   |
| SGM-4     | 25                   | 4           | Life Protection | 30                                    | Instantaneously                        | 50                | SGM4025030   |
|           | 32                   |             |                 |                                       |                                        | 50                | SGM4032030   |
|           | 40                   |             |                 |                                       |                                        | 50                | SGM4040030   |
|           | 63                   |             |                 |                                       |                                        | 50                | SGM4063030   |
|           | 80                   |             |                 |                                       |                                        | 50                | SGM4080030   |
|           | 100                  |             |                 |                                       |                                        | 50                | SGM4100030   |
|           | 125                  |             |                 |                                       |                                        | 50                | SGM4125030   |
|           | 25                   | 4           | Fire Protection | 300                                   | Instantaneously                        | 50                | SGM4025300   |
|           | 32                   |             |                 |                                       |                                        | 50                | SGM4032300   |
|           | 40                   |             |                 |                                       |                                        | 50                | SGM4040300   |
|           | 63                   |             |                 |                                       |                                        | 50                | SGM4063300   |
|           | 80                   |             |                 |                                       |                                        | 50                | SGM4080300   |
|           | 100                  |             |                 |                                       |                                        | 50                | SGM4100300   |
|           | 125                  |             |                 |                                       |                                        | 50                | SGM4125300   |

## Residual Current Circuit Breakers (A Type) 10 kA



| Type Code | Rated Current In (A) | No of Poles | Protection                                                           | Rated Residual Current I <sub>Δn</sub> (mA) | Tripping Time in Rated Residual Current (ms) | Number in Cartoon | Order Code |
|-----------|----------------------|-------------|----------------------------------------------------------------------|---------------------------------------------|----------------------------------------------|-------------------|------------|
| SFM-2     | 25                   | 2           | Life Protection<br>(Protection for AC and DC puls residual current). | 30                                          | Instantaneously                              | 100               | SFM2025030 |
|           | 32                   |             |                                                                      |                                             |                                              | 100               | SFM2032030 |
|           | 40                   |             |                                                                      |                                             |                                              | 100               | SFM2040030 |
|           | 63                   |             |                                                                      |                                             |                                              | 100               | SFM2063030 |
|           | 80                   |             |                                                                      |                                             |                                              | 100               | SFM2080030 |
|           | 100                  |             |                                                                      |                                             |                                              | 100               | SFM2100030 |
|           | 25                   | 2           | Fire Protection<br>(Protection for AC and DC puls residual current). | 300                                         | Instantaneously                              | 100               | SFM2025300 |
|           | 32                   |             |                                                                      |                                             |                                              | 100               | SFM2032300 |
|           | 40                   |             |                                                                      |                                             |                                              | 100               | SFM2040300 |
|           | 63                   |             |                                                                      |                                             |                                              | 100               | SFM2063300 |
|           | 80                   |             |                                                                      |                                             |                                              | 100               | SFM2080300 |
|           | 100                  |             |                                                                      |                                             |                                              | 100               | SFM2100300 |
| SFM-4     | 25                   | 4           | Life Protection<br>(Protection for AC and DC puls residual current). | 30                                          | Instantaneously                              | 50                | SFM4025030 |
|           | 32                   |             |                                                                      |                                             |                                              | 50                | SFM4032030 |
|           | 40                   |             |                                                                      |                                             |                                              | 50                | SFM4040030 |
|           | 63                   |             |                                                                      |                                             |                                              | 50                | SFM4063030 |
|           | 80                   |             |                                                                      |                                             |                                              | 50                | SFM4080030 |
|           | 100                  |             |                                                                      |                                             |                                              | 50                | SFM4100030 |
|           | 25                   | 4           | Fire Protection<br>(Protection for AC and DC puls residual current). | 300                                         | Instantaneously                              | 50                | SFM4025300 |
|           | 32                   |             |                                                                      |                                             |                                              | 50                | SFM4032300 |
|           | 40                   |             |                                                                      |                                             |                                              | 50                | SFM4040300 |
|           | 63                   |             |                                                                      |                                             |                                              | 50                | SFM4063300 |
|           | 80                   |             |                                                                      |                                             |                                              | 50                | SFM4080300 |
|           | 100                  |             |                                                                      |                                             |                                              | 50                | SFM4100300 |

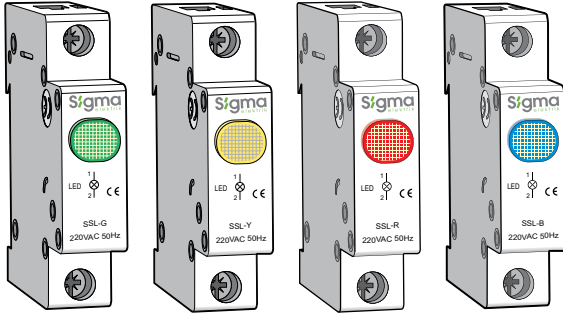
Note: A Type KAKS's are used to provide protection against residual currents of electronic devices including UPS, Power Supplies, Elevators, Thyristor and Diode

## Residual Current Circuit Breakers Test Instrument

| Residual Current Circuit Breakers Test Instrument Characteristics |                                                                                                                | Type Code |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|
| Residual Current Test Levels                                      | 15 - 30 - 50-100 - 150 -300 mA - adjustable:                                                                   | SCT-100   |
| Trip Time Measurement                                             | Trip time measurement on the basis of ms at 15 - 30 - 50-100 - 150 -300 mA                                     |           |
| Max. Signal Application Period for the Test                       | 1000ms                                                                                                         |           |
| Phase Measurement                                                 | It is possible to see on the screen with PWR Led light whether there is energy in the socket to be controlled. |           |
| Product Operating Voltage                                         | 230VAC                                                                                                         |           |
| Screen                                                            | 2x8 LCD screen                                                                                                 |           |
| Battery Life                                                      | Product may perform 1500 measurements with 9V charged battery.                                                 |           |

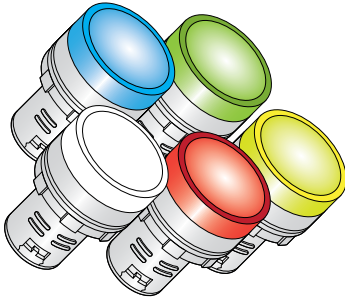


## Din Rail Type Led Signal Indicators



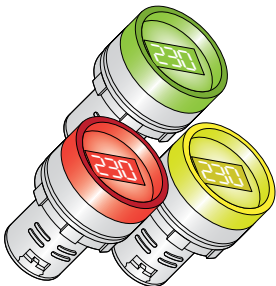
| Colour | Rated Voltage (V) | Min. Order Quantity | Number in Cartoon | Order Code |
|--------|-------------------|---------------------|-------------------|------------|
| Blue   | 220 V AC          | 12                  | 120               | SSL-B220A  |
|        | 24 V AC           | 12                  | 120               | SSL-B024A  |
|        | 24 V DC           | 12                  | 120               | SSL-B024D  |
| Red    | 220 V AC          | 12                  | 120               | SSL-R220A  |
|        | 24 V AC           | 12                  | 120               | SSL-R024A  |
|        | 24 V DC           | 12                  | 120               | SSL-R024D  |
| Green  | 220 V AC          | 12                  | 120               | SSL-G220A  |
|        | 24 V AC           | 12                  | 120               | SSL-G024A  |
|        | 24 V DC           | 12                  | 120               | SSL-G024D  |
| Yellow | 220 V AC          | 12                  | 120               | SSL-Y220A  |
|        | 24 V AC           | 12                  | 120               | SSL-Y024A  |
|        | 24 V DC           | 12                  | 120               | SSL-Y024D  |

## Led Indicators



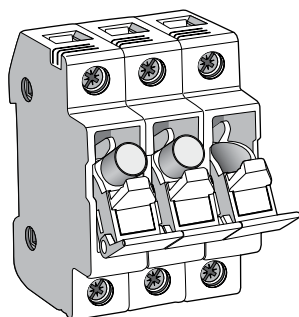
| Type       | Rated Voltage (V) | Dimensions (mm) | Colour  | Number in Cartoon | Order Code  |
|------------|-------------------|-----------------|---------|-------------------|-------------|
| SL-22-22DS | 220 V AC          | 22              | kırmızı | 10                | SL22-220DSR |
|            |                   |                 | yeşil   | 10                | SL22-220DSG |
|            |                   |                 | sarı    | 10                | SL22-220DSY |
|            |                   |                 | mavi    | 10                | SL22-220DSB |
|            |                   |                 | beyaz   | 10                | SL22-220DSW |
|            | 24 V AC/DC        |                 | kırmızı | 10                | SL22-024DSR |
|            |                   |                 | yeşil   | 10                | SL22-024DSG |
|            |                   |                 | sarı    | 10                | SL22-024DSY |
|            |                   |                 | mavi    | 10                | SL22-024DSB |
|            |                   |                 | beyaz   | 10                | SL22-024DSW |

## Led Indicators with Voltmeter



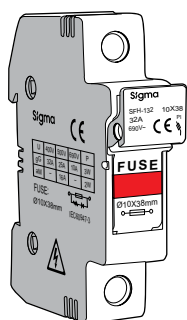
| Type       | Rated Voltage (V) | Dimensions (mm) | Colour  | Number in Cartoon | Order Code |
|------------|-------------------|-----------------|---------|-------------------|------------|
| SL-22-22VM | 12-500 V AC       | 22              | kırmızı | 10                | SL22-22VMR |
|            |                   |                 | yeşil   | 10                | SL22-22VMG |
|            |                   |                 | sarı    | 10                | SL22-22VMY |

## Cylindrical (cartridge) Fuses



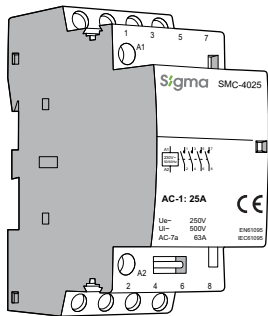
| Type                                                                                                                                                             | Rated Current (A) | Cartridge Diameter (Øxmm) | Min. Order Quantity | Number in Cartoon | Order Code |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------------|---------------------|-------------------|------------|
| gG Type cylindrical fuses<br>(General protection of cables and electrical systems against overload and short circuit).                                           | 2                 | 10x38                     | 10                  | 2000              | SFLG02     |
|                                                                                                                                                                  | 4                 | 10x38                     | 10                  | 2000              | SFLG04     |
|                                                                                                                                                                  | 6                 | 10x38                     | 10                  | 2000              | SFLG06     |
|                                                                                                                                                                  | 10                | 10x38                     | 10                  | 2000              | SFLG10     |
|                                                                                                                                                                  | 16                | 10x38                     | 10                  | 2000              | SFLG16     |
|                                                                                                                                                                  | 20                | 10x38                     | 10                  | 2000              | SFLG20     |
|                                                                                                                                                                  | 25                | 10x38                     | 10                  | 2000              | SFLG25     |
|                                                                                                                                                                  | 32                | 10x38                     | 10                  | 2000              | SFLG32     |
|                                                                                                                                                                  | 40                | 14x51                     | 10                  | 2000              | SFNG040    |
|                                                                                                                                                                  | 50                | 14x51                     | 10                  | 2000              | SFNG050    |
|                                                                                                                                                                  | 63                | 22x58                     | 10                  | 2000              | SFMG063    |
|                                                                                                                                                                  | 80                | 22x58                     | 10                  | 2000              | SFMG080    |
|                                                                                                                                                                  | 100               | 22x58                     | 10                  | 2000              | SFMG100    |
| aM Type cylindrical fuses<br>(Protection of Motor systems against short circuits)                                                                                | 2                 | 10x38                     | 10                  | 2000              | SFLM02     |
|                                                                                                                                                                  | 4                 | 10x38                     | 10                  | 2000              | SFLM04     |
|                                                                                                                                                                  | 6                 | 10x38                     | 10                  | 2000              | SFLM06     |
|                                                                                                                                                                  | 10                | 10x38                     | 10                  | 2000              | SFLM10     |
|                                                                                                                                                                  | 16                | 10x38                     | 10                  | 2000              | SFLM16     |
|                                                                                                                                                                  | 20                | 10x38                     | 10                  | 2000              | SFLM20     |
|                                                                                                                                                                  | 25                | 10x38                     | 10                  | 2000              | SFLM25     |
|                                                                                                                                                                  | 32                | 10x38                     | 10                  | 2000              | SFLM32     |
| aR Type high speed fuses<br>(Protection against short-circuit of semi-conductor and power systems ; UPS, soft starter, inverter, converter, AC/DC starters e.g.) | 2                 | 10x38                     | 10                  | 2000              | SFLR02     |
|                                                                                                                                                                  | 4                 | 10x38                     | 10                  | 2000              | SFLR04     |
|                                                                                                                                                                  | 6                 | 10x38                     | 10                  | 2000              | SFLR06     |
|                                                                                                                                                                  | 10                | 10x38                     | 10                  | 2000              | SFLR10     |
|                                                                                                                                                                  | 16                | 10x38                     | 10                  | 2000              | SFLR16     |
|                                                                                                                                                                  | 20                | 10x38                     | 10                  | 2000              | SFLR20     |
|                                                                                                                                                                  | 25                | 10x38                     | 10                  | 2000              | SFLR25     |
|                                                                                                                                                                  | 32                | 10x38                     | 10                  | 2000              | SFLR32     |

## Cylindrical (cartridge) Fuse Holders



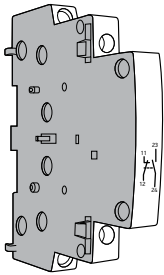
| Type   | Rated Current (A) | No of Poles | Cartridge Diameter (Øxmm) | Min. Order Quantity | Number in Cartoon | Order Code |
|--------|-------------------|-------------|---------------------------|---------------------|-------------------|------------|
| SFH032 | 32                | 1           | 10x38                     | 12                  | 144               | SFH132     |
|        | 32                | 1P+N        | 10x38                     | 6                   | 72                | SFH232     |
|        | 32                | 3           | 10x38                     | 4                   | 48                | SFH332     |
| SFH050 | 50                | 1           | 14x51                     | 1                   | 50                | SFH1050    |
|        | 50                | 1P+N        | 14x51                     | 1                   | 50                | SFH2050    |
|        | 50                | 3           | 14x51                     | 1                   | 50                | SFH3050    |
| SFH100 | 100               | 1           | 22x58                     | 1                   | 60                | SFH1100    |
|        | 100               | 1P+N        | 22x58                     | 1                   | 60                | SFH2100    |
|        | 100               | 3           | 22x58                     | 1                   | 60                | SFH3100    |

## Modular Contactors



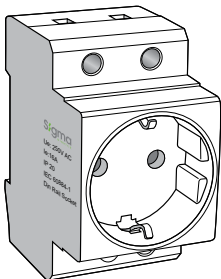
| Type Code | Rated Current (A) | No of poles | Contact Structure | Coil Voltage (V) | Order Code   |
|-----------|-------------------|-------------|-------------------|------------------|--------------|
| SMC-2025  | 25                | 2           | 2 NO              | 230              | SMC-2025-2NO |
| SMC-2063  | 63                | 2           | 2 NO              | 230              | SMC-2063-2NO |
| SMC-4025  | 25                | 4           | 4 NO              | 230              | SMC-4025-4NO |
| SMC-4063  | 63                | 4           | 4 NO              | 230              | SMC-4063-4NO |
| SMC-4100  | 100               | 4           | 4 NO              | 230              | SMC-4100-4NO |

## Auxiliary Contact for Modular Contactor



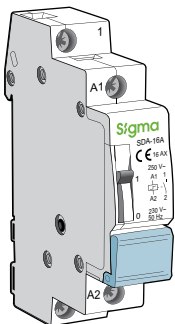
| Type Code | Contact Structure | Order Code |
|-----------|-------------------|------------|
| SMC-YK    | 1 NO + 1 NC       | SMCYK      |

## Din Rail Type Socket for Panel boards



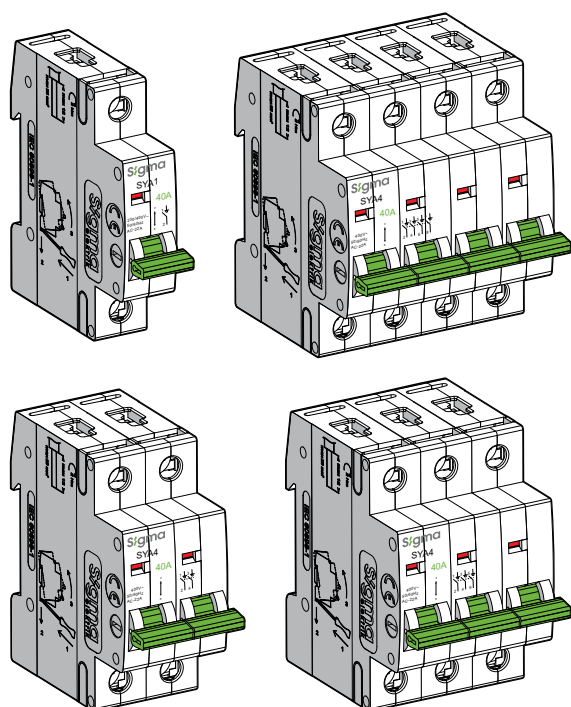
| Specification    | Min. Order Quantity | Number in Cartoon | Order Code |
|------------------|---------------------|-------------------|------------|
| Socket 6 A 230 V | 5                   | 50                | SPP-16T    |

## Impulse Relay



| Specification  | Min. Order Quantity | Order Code |
|----------------|---------------------|------------|
| 16 A 230 V 1NO | 12                  | SDA-16A    |

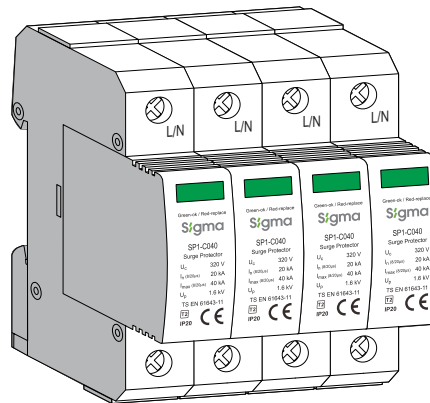
## Isolator Switch (without Protection)



| No of Poles | Rated Current In (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-------------|----------------------|---------------------|-------------------|------------|
| 1P          | 40                   | 12                  | 240               | SYA1040    |
|             | 63                   | 12                  | 240               | SYA1063    |
|             | 80                   | 12                  | 240               | SYA1080    |
|             | 100                  | 12                  | 240               | SYA1100    |
|             | 125                  | 12                  | 240               | SYA1125    |
| 2P          | 40                   | 6                   | 120               | SYA2040    |
|             | 63                   | 6                   | 120               | SYA2063    |
|             | 80                   | 6                   | 120               | SYA2080    |
|             | 100                  | 6                   | 120               | SYA2100    |
|             | 125                  | 6                   | 120               | SYA2125    |
| 3P          | 40                   | 4                   | 80                | SYA3040    |
|             | 63                   | 4                   | 80                | SYA3063    |
|             | 80                   | 4                   | 80                | SYA3080    |
|             | 100                  | 4                   | 80                | SYA3100    |
|             | 125                  | 4                   | 80                | SYA3125    |
| 4P          | 40                   | 3                   | 60                | SYA4040    |
|             | 63                   | 3                   | 60                | SYA4063    |
|             | 80                   | 3                   | 60                | SYA4080    |
|             | 100                  | 3                   | 60                | SYA4100    |
|             | 125                  | 3                   | 60                | SYA4125    |



## LV Surge Protection Devices

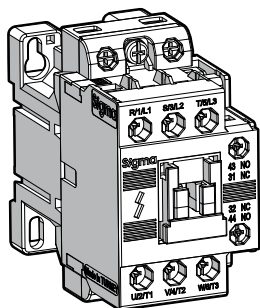

**NEW  
PRODUCT**

| Type      | Description                                    | No of Poles | Uc (V) AC | I <sub>max</sub> (kA) | I <sub>n</sub> (kA) | Up (kV) | Order Code |
|-----------|------------------------------------------------|-------------|-----------|-----------------------|---------------------|---------|------------|
| SP1-B100  | Type 1 B Class use before the counter          | 1           | 255       | 50 (10/350μs)         | 100                 | <2.5    | SP1-B100   |
| SP4-B100  | Type 1 B Class use before the counter          | 4           | 255       | 50 (10/350μs)         | 100                 | <2.5    | SP4-B100   |
| SP4-BC050 | Type 1+Type 2 B-C Class use before the counter | 4           | 385       | 50 (8/20μs)           | 50                  | <1.6    | SP4-BC050  |
| SP1-C040  | Type 2 C Class use after the counter           | 1           | 275       | 40 (8/20μs)           | 20                  | <1.4    | SP1-C040   |
| SP2-C040  | Type 2 C Class use after the counter           | 2           | 275       | 40 (8/20μs)           | 20                  | <1.4    | SP2-C040   |
| SP3-C040  | Type 2 C Class use after the counter           | 3           | 275       | 40 (8/20μs)           | 20                  | <1.4    | SP3-C040   |
| SP4-C040  | Type 2 C Class use after the counter           | 4           | 275       | 40 (8/20μs)           | 20                  | <1.4    | SP4-C040   |
|           | Spare cartridge for C Class surge protection   | 1           | 275       | 40 (8/20μs)           | 20                  | <1.4    | SP1-C040K  |
| SP1-D005  | Type 3 D Class use after the counter           | 1           | 275       | 5 (8/20μs)            | 3                   | <1      | SP1-D005   |

Note: The LV Surge Protection devices are offered with signal contact except B type.

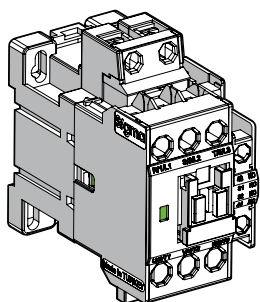


### 3 Poles Double Coil Connected Power Contactor - Coil Voltage: 230V AC



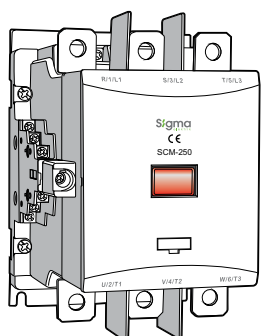
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCG-9     | 4                           | 9                      | 25                     | 1NO+1NC                   | 1                   | 42                | SCG009230  |
| SCG-12    | 5,5                         | 12                     | 25                     | 1NO+1NC                   | 1                   | 42                | SCG012230  |
| SCG-18    | 7,5                         | 18                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCG018230  |
| SCG-25    | 11                          | 25                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCG025230  |
| SCG-32    | 15                          | 32                     | 50                     | 1NO+1NC                   | 1                   | 24                | SCG032230  |
| SCG-40    | 18,5                        | 40                     | 60                     | 1NO+1NC                   | 1                   | 24                | SCG040230  |
| SCG-50    | 22                          | 50                     | 80                     | 1NO+1NC                   | 1                   | 10                | SCG050230  |
| SCG-65    | 30                          | 65                     | 100                    | 1NO+1NC                   | 1                   | 10                | SCG065230  |
| SCG-80    | 37                          | 80                     | 110                    | 1NO+1NC                   | 1                   | 10                | SCG080230  |
| SCG-95    | 45                          | 95                     | 135                    | 1NO+1NC                   | 1                   | 10                | SCG095230  |

### 3 Poles Power Contactors - Coil Voltage: 230V AC



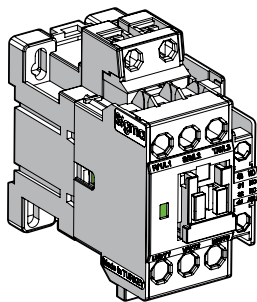
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCM-9     | 4                           | 9                      | 25                     | 1NO+1NC                   | 1                   | 42                | SCM009230  |
| SCM-12    | 5,5                         | 12                     | 25                     | 1NO+1NC                   | 1                   | 42                | SCM012230  |
| SCM-18    | 7,5                         | 18                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCM018230  |
| SCM-22    | 11                          | 22                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCM022230  |
| SCM-32    | 15                          | 32                     | 50                     | 1NO+1NC                   | 1                   | 24                | SCM032230  |
| SCM-40    | 18,5                        | 40                     | 60                     | 1NO+1NC                   | 1                   | 24                | SCM040230  |
| SCM-50    | 22                          | 50                     | 80                     | 1NO+1NC                   | 1                   | 10                | SCM050230  |
| SCM-65    | 30                          | 65                     | 100                    | 1NO+1NC                   | 1                   | 10                | SCM065230  |
| SCM-75    | 37                          | 75                     | 110                    | 1NO+1NC                   | 1                   | 10                | SCM075230  |
| SCM-85    | 45                          | 85                     | 135                    | 1NO+1NC                   | 1                   | 10                | SCM085230  |
| SCM-100   | 55                          | 100                    | 160                    | 2NO+2NC                   | 1                   | 4                 | SCM100230  |
| SCM-125   | 60                          | 120                    | 160                    | 2NO+2NC                   | 1                   | 4                 | SCM125230  |
| SCM-150   | 75                          | 150                    | 210                    | 2NO+2NC                   | 1                   | 3                 | SCM150230  |
| SCM-180   | 90                          | 180                    | 230                    | 2NO+2NC                   | 1                   | 1                 | SCM180230  |
| SCM-250   | 132                         | 250                    | 260                    | 2NO+2NC                   | 1                   | 1                 | SCM250230  |
| SCM-330   | 160                         | 330                    | 400                    | 2NO+2NC                   | 1                   | 1                 | SCM330230  |
| SCM-400   | 200                         | 400                    | 500                    | 2NO+2NC                   | 1                   | 1                 | SCM400230  |
| SCM-630   | 330                         | 630                    | 1000                   | 2NO+2NC                   | 1                   | 1                 | SCM630230  |

### 3 Poles Power Contactors - Coil Voltage: 100-240 V AC / 100-220 V DC (Common Coil)



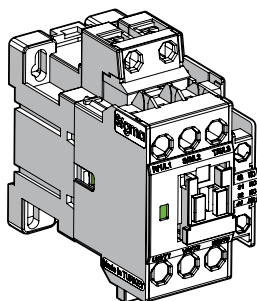
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCM-100   | 55                          | 100                    | 160                    | 2NO+2NC                   | 1                   | 4                 | SCM100ADC  |
| SCM-125   | 60                          | 120                    | 160                    | 2NO+2NC                   | 1                   | 4                 | SCM125ADC  |
| SCM-150   | 75                          | 150                    | 210                    | 2NO+2NC                   | 1                   | 3                 | SCM150ADC  |
| SCM-180   | 90                          | 180                    | 230                    | 2NO+2NC                   | 1                   | 1                 | SCM180ADC  |
| SCM-250   | 132                         | 250                    | 260                    | 2NO+2NC                   | 1                   | 1                 | SCM250ADC  |

### 3 Poles Power Contactors - Coil Voltage: 24V DC



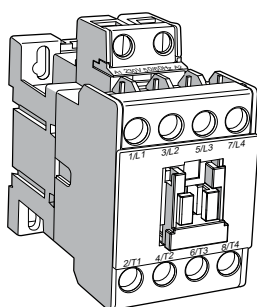
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SDM-9     | 4                           | 9                      | 25                     | 1NO+1NC                   | 1                   | 32                | SDM009024  |
| SDM-12    | 5,5                         | 12                     | 25                     | 1NO+1NC                   | 1                   | 32                | SDM012024  |
| SDM-18    | 7,5                         | 18                     | 40                     | 1NO+1NC                   | 1                   | 32                | SDM018024  |
| SDM-22    | 11                          | 22                     | 40                     | 1NO+1NC                   | 1                   | 32                | SDM022024  |
| SDM-32    | 15                          | 32                     | 50                     | 1NO+1NC                   | 1                   | 16                | SDM032024  |
| SDM-40    | 18,5                        | 40                     | 60                     | 1NO+1NC                   | 1                   | 16                | SDM040024  |

### 3 Poles Power Contactors - Coil Voltage: 48V DC



| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SDM-9     | 4                           | 9                      | 25                     | 1NO+1NC                   | 1                   | 32                | SDM009048  |
| SDM-12    | 5,5                         | 12                     | 25                     | 1NO+1NC                   | 1                   | 32                | SDM012048  |
| SDM-18    | 7,5                         | 18                     | 40                     | 1NO+1NC                   | 1                   | 32                | SDM018048  |
| SDM-22    | 11                          | 22                     | 40                     | 1NO+1NC                   | 1                   | 32                | SDM022048  |
| SDM-32    | 15                          | 32                     | 50                     | 1NO+1NC                   | 1                   | 16                | SDM032048  |
| SDM-40    | 18,5                        | 40                     | 60                     | 1NO+1NC                   | 1                   | 16                | SDM040048  |

### 4 Poles (4NO) Power Contactors - Coil Voltage: 230V AC

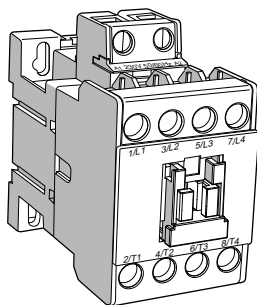


| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCF-9     | 4                           | 9                      | 25                     | 1NO+1NC                   | 1                   | 42                | SCF009230  |
| SCF-12    | 5,5                         | 12                     | 25                     | 1NO+1NC                   | 1                   | 42                | SCF012230  |
| SCF-18    | 7,5                         | 18                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCF018230  |
| SCF-22    | 11                          | 22                     | 40                     | 1NO+1NC                   | 1                   | 42                | SCF022230  |
| SCF-32    | 15                          | 32                     | 50                     | 1NO+1NC                   | 1                   | 24                | SCF032230  |
| SCF-40    | 18,5                        | 40                     | 60                     | 1NO+1NC                   | 1                   | 24                | SCF040230  |
| SCF-50    | 22                          | 50                     | 80                     | 1NO+1NC                   | 1                   | 10                | SCF050230  |
| SCF-65    | 30                          | 65                     | 100                    | 1NO+1NC                   | 1                   | 10                | SCF065230  |
| SCF-75    | 37                          | 75                     | 110                    | 1NO+1NC                   | 1                   | 10                | SCF075230  |
| SCF-85    | 45                          | 85                     | 135                    | 1NO+1NC                   | 1                   | 10                | SCF085230  |

|         |     |     |      |         |   |   |           |
|---------|-----|-----|------|---------|---|---|-----------|
| SCF-100 | 55  | 100 | 160  | 2NO+2NC | 1 | 1 | SCF100230 |
| SCF-125 | 60  | 120 | 160  | 2NO+2NC | 1 | 1 | SCF125230 |
| SCF-150 | 75  | 150 | 210  | 2NO+2NC | 1 | 1 | SCF150230 |
| SCF-180 | 90  | 180 | 230  | 2NO+2NC | 1 | 1 | SCF180230 |
| SCF-250 | 132 | 250 | 260  | 2NO+2NC | 1 | 1 | SCF250230 |
| SCF-330 | 200 | 330 | 400  | 2NO+2NC | 1 | 2 | SCF330230 |
| SCF-400 | 250 | 400 | 500  | 2NO+2NC | 1 | 2 | SCF400230 |
| SCF-630 | 400 | 630 | 1000 | 2NO+2NC | 1 | 2 | SCF630230 |

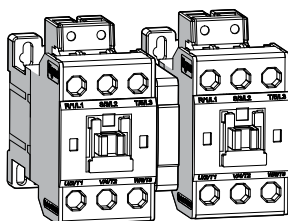
Note: Pls kindly ask delivery time for SCF-330 and above.

## 4 Poles (2NO+2NC) Power Contactors - Coil Voltage: 230V AC



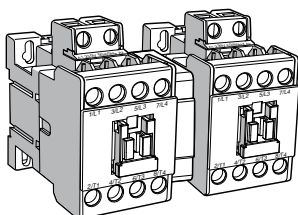
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCH-9     | 4                           | 9                      | 25                     | 2NO+2NC                   | 1                   | 42                | SCH009230  |
| SCH-12    | 5,5                         | 12                     | 25                     | 2NO+2NC                   | 1                   | 42                | SCH012230  |
| SCH-18    | 7,5                         | 18                     | 40                     | 2NO+2NC                   | 1                   | 42                | SCH018230  |
| SCH-22    | 11                          | 22                     | 40                     | 2NO+2NC                   | 1                   | 42                | SCH022230  |
| SCH-32    | 15                          | 32                     | 50                     | 2NO+2NC                   | 1                   | 24                | SCH032230  |
| SCH-40    | 18,5                        | 40                     | 60                     | 2NO+2NC                   | 1                   | 24                | SCH040230  |
| SCH-50    | 22                          | 50                     | 80                     | 2NO+2NC                   | 1                   | 10                | SCH050230  |
| SCH-65    | 30                          | 65                     | 100                    | 2NO+2NC                   | 1                   | 10                | SCH065230  |
| SCH-75    | 37                          | 75                     | 110                    | 2NO+2NC                   | 1                   | 10                | SCH075230  |
| SCH-85    | 45                          | 85                     | 135                    | 2NO+2NC                   | 1                   | 10                | SCH085230  |

## 6 Poles Reversing Contactors - Coil Voltage: 230V AC



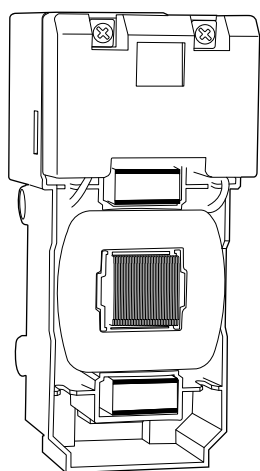
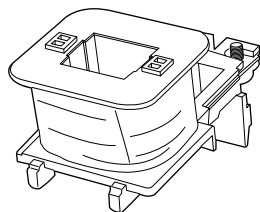
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------|-------------------|------------|
| SCR-9     | 4                           | 9                      | 25                     | 1                   | 10                | SCR009230  |
| SCR-12    | 5,5                         | 12                     | 25                     | 1                   | 10                | SCR012230  |
| SCR-18    | 7,5                         | 18                     | 40                     | 1                   | 10                | SCR018230  |
| SCR-25    | 11                          | 25                     | 40                     | 1                   | 10                | SCR022230  |
| SCR-32    | 15                          | 32                     | 50                     | 1                   | 10                | SCR032230  |
| SCR-40    | 18,5                        | 40                     | 60                     | 1                   | 10                | SCR040230  |
| SCR-50    | 22                          | 50                     | 80                     | 1                   | 4                 | SCR050230  |
| SCR-65    | 30                          | 65                     | 100                    | 1                   | 4                 | SCR065230  |
| SCR-80    | 37                          | 80                     | 110                    | 1                   | 4                 | SCR075230  |
| SCR-95    | 45                          | 95                     | 135                    | 1                   | 4                 | SCR085230  |
| SCR-100   | 55                          | 100                    | 160                    | 1                   | 1                 | SCR100230  |
| SCR-125   | 60                          | 125                    | 160                    | 1                   | 1                 | SCR125230  |
| SCR-150   | 75                          | 150                    | 210                    | 1                   | 1                 | SCR150230  |
| SCR-180   | 90                          | 180                    | 230                    | 1                   | 1                 | SCR180230  |
| SCR-250   | 132                         | 250                    | 260                    | 1                   | 1                 | SCR250230  |
| SCR-330   | 160                         | 330                    | 400                    | 1                   | 1                 | SCR330230  |
| SCR-400   | 200                         | 400                    | 500                    | 1                   | 1                 | SCR400230  |
| SCR-630   | 330                         | 630                    | 1000                   | 1                   | 1                 | SCR630230  |

## 8 Poles Reversing Contactors - Coil Voltage: 230V AC



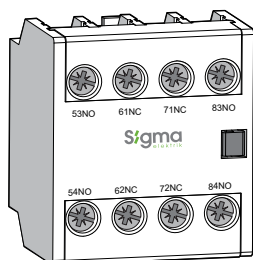
| Type Code | Rated Power at (400 V) (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-----------------------------|------------------------|------------------------|---------------------|-------------------|------------|
| SCT-9     | 4                           | 9                      | 25                     | 1                   | 10                | SCT009230  |
| SCT-12    | 5,5                         | 12                     | 25                     | 1                   | 10                | SCT012230  |
| SCT-18    | 7,5                         | 18                     | 40                     | 1                   | 10                | SCT018230  |
| SCT-22    | 11                          | 22                     | 40                     | 1                   | 10                | SCT022230  |
| SCT-32    | 15                          | 32                     | 50                     | 1                   | 10                | SCT032230  |
| SCT-40    | 18,5                        | 40                     | 60                     | 1                   | 10                | SCT040230  |
| SCT-50    | 22                          | 50                     | 80                     | 1                   | 4                 | SCT050230  |
| SCT-65    | 30                          | 65                     | 100                    | 1                   | 4                 | SCT065230  |
| SCT-75    | 37                          | 75                     | 110                    | 1                   | 4                 | SCT075230  |
| SCT-85    | 45                          | 85                     | 135                    | 1                   | 4                 | SCT085230  |

## Spare Coils



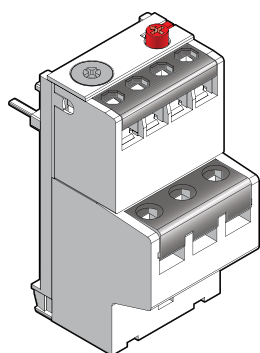
| Type Code | Compatible with    | Coil Voltage                | Order Code |
|-----------|--------------------|-----------------------------|------------|
| SYB-1     | SCM-9....SCM-40    | 24 V AC 50/60 Hz.           | SYB1-024AC |
|           | SCM-9....SCM-40    | 42 V AC 50/60 Hz.           | SYB1-042AC |
|           | SCM-9....SCM-40    | 48 V AC 50/60 Hz.           | SYB1-048AC |
|           | SCM-9....SCM-40    | 110 V AC 50/60 Hz.          | SYB1-110AC |
|           | SCM-9....SCM-40    | 230 V AC 50/60 Hz.          | SYB1-230AC |
|           | SCM-9....SCM-40    | 400 V AC 50/60 Hz.          | SYB1-400AC |
|           | SCM-9....SCM-40    | 415 V AC 50/60 Hz.          | SYB1-415AC |
| SYB-2     | SCM-50....SCM-85   | 24 V AC 50/60 Hz.           | SYB2-024AC |
|           | SCM-50....SCM-85   | 42 V AC 50/60 Hz.           | SYB2-042AC |
|           | SCM-50....SCM-85   | 48 V AC 50/60 Hz.           | SYB2-048AC |
|           | SCM-50....SCM-85   | 110 V AC 50/60 Hz.          | SYB2-110AC |
|           | SCM-50....SCM-85   | 230 V AC 50/60 Hz.          | SYB2-230AC |
|           | SCM-50....SCM-85   | 400 V AC 50/60 Hz.          | SYB2-400AC |
|           | SCM-50....SCM-85   | 415 V AC 50/60 Hz.          | SYB2-415AC |
| SYB-3     | SCM-100....SCM-150 | 230 V AC 50/60 Hz.          | SYB3-230AC |
|           | SCM-100....SCM-150 | 400 V AC 50/60 Hz.          | SYB3-400AC |
|           | SCM-100....SCM-150 | 100-240 V AC / 100-220 V DC | SYB3-0ACDC |
| SYB-4     | SCM180-SCM250      | 400 V AC 50/60 Hz.          | SYB4-400AC |
| SYB-5     | SCM330             | 400 V AC 50/60 Hz.          | SYB5-400AC |
| SYB-6     | SCM400             | 400 V AC 50/60 Hz.          | SYB6-400AC |
| SYB-7     | SCM630             | 400 V AC 50/60 Hz.          | SYB7-400AC |
| SYD-1     | SDM-9...SDM-40     | 24 V DC                     | SYD1-024DC |
|           | SDM-9...SDM-40     | 48 V DC                     | SYD1-048DC |
|           | SDM-9...SDM-40     | 60 V DC                     | SYD1-060DC |
|           | SDM-9...SDM-40     | 110 V DC                    | SYD1-110DC |

## Auxiliary Contact Blocks



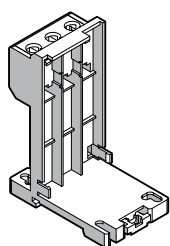
| Type Code | Compatible with    | Auxiliary Contact on Body | Type of Assembly | Order Code |
|-----------|--------------------|---------------------------|------------------|------------|
| SAC-1     | SCM-9....SCM-85    | 1NO+1NC                   | side             | SAC-1S11   |
| SAC-100   | SCM-100....SCM-250 | 1NO+1NC                   | side             | SAC-1B11   |
| SAC-2     | SCM-9....SCM-85    | 1NO+1NC                   | Top              | SAC-2S11   |
|           | SCM-9....SCM-85    | 2NO                       | Top              | SAC-2S20   |
| SAC-4     | SCM-9....SCM-85    | 2NO+2NC                   | Top              | SAC-4S22   |
|           | SCM-9....SCM-85    | 3NO+1NC                   | Top              | SAC-4S31   |
|           | SCM-9....SCM-85    | 1NO+3NC                   | Top              | SAC-4S13   |
|           | SCM-9....SCM-85    | 4NO                       | Top              | SAC-4S40   |
|           | SCM-9....SCM-85    | 4NC                       | Top              | SAC-4S04   |
| SAC-5     | SCM-330....SCM-630 | 2NO+2NC                   | Top              | SAC-5S22   |

## Thermal Overload Relays



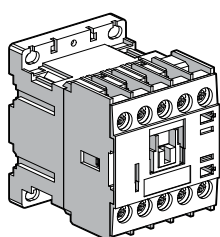
| Type Code | Rated Current In (A) | Thermal Setting (A) | Type of Contactors | Min. Order Quantity | Number in Cartoon | Order Code  |
|-----------|----------------------|---------------------|--------------------|---------------------|-------------------|-------------|
| STRP-22   | 0.16                 | 0.1-0.16            | SCM-9...SCM-22     | 1                   | 54                | STRP22-016  |
|           | 0.25                 | 0.16-0.25           | SCM-9...SCM-22     | 1                   | 54                | STRP22-025  |
|           | 0.40                 | 0.25-0.40           | SCM-9...SCM-22     | 1                   | 54                | STRP22-040  |
|           | 0.63                 | 0.40-0.63           | SCM-9...SCM-22     | 1                   | 54                | STRP22-063  |
|           | 1                    | 0.63-1              | SCM-9...SCM-22     | 1                   | 54                | STRP22-1    |
|           | 1.6                  | 1-1.6               | SCM-9...SCM-22     | 1                   | 54                | STRP22-1.6  |
|           | 2.5                  | 1.6-2.5             | SCM-9...SCM-22     | 1                   | 54                | STRP22-2.5  |
|           | 4                    | 2.5-4               | SCM-9...SCM-22     | 1                   | 54                | STRP22-4    |
|           | 6                    | 4-6                 | SCM-9...SCM-22     | 1                   | 54                | STRP22-6    |
|           | 8                    | 5-8                 | SCM-9...SCM-22     | 1                   | 54                | STRP22-8    |
|           | 10                   | 7-10                | SCM-9...SCM-22     | 1                   | 54                | STRP22-10   |
|           | 13                   | 9-13                | SCM-9...SCM-22     | 1                   | 54                | STRP22-13   |
|           | 18                   | 12-18               | SCM-9...SCM-22     | 1                   | 54                | STRP22-18   |
|           | 22                   | 16-22               | SCM-9...SCM-22     | 1                   | 54                | STRP22-22   |
| STRP-40   | 26                   | 18-26               | SCM-32, SCM-40     | 1                   | 36                | STRP40-26   |
|           | 36                   | 24-36               | SCM-32, SCM-40     | 1                   | 36                | STRP40-36   |
|           | 40                   | 28-40               | SCM-32, SCM-40     | 1                   | 36                | STRP40-40   |
| STRP-85   | 50                   | 34-50               | SCM-50...SCM-85    | 1                   | 24                | STRP85-50   |
|           | 65                   | 45-65               | SCM-50...SCM-85    | 1                   | 24                | STRP85-65   |
|           | 75                   | 54-75               | SCM-50...SCM-85    | 1                   | 24                | STRP85-75   |
|           | 85                   | 63-85               | SCM-50...SCM-85    | 1                   | 24                | STRP85-85   |
| STRP-100  | 100                  | 65-100              | SCM-100...SCM-125  | 1                   | 1                 | STRP100-100 |
|           | 125                  | 85-125              | SCM-100...SCM-125  | 1                   | 1                 | STRP100-125 |
| STRP-150  | 150                  | 100-150             | SCM-150            | 1                   | 1                 | STRP150-150 |
| STRP-220  | 180                  | 120-180             | SCM-250            | 1                   | 2                 | STRP220-180 |
|           | 240                  | 160-240             | SCM-251            | 1                   | 2                 | STRP220-240 |

## DIN RAIL Mounting Part for Thermal Overload Relays



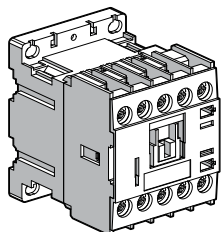
| Type Code | Compatible with | Order Code |
|-----------|-----------------|------------|
| SDR-22    | STRP-22         | SDR-22     |
| SDR-40    | STRP-40         | SDR-40     |
| SDR-85    | STRP-85         | SDR-85     |

## 3 Poles Mini Contactors - Coil Voltage: 230V AC



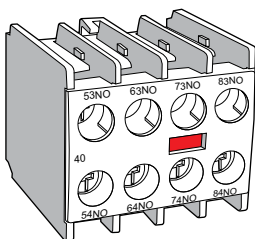
| Type Code | Rated Power at (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|---------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SCM-6M    | 2.2                 | 6                      | 20                     | 1NO                       | 1                   | 80                | SCM0610230 |
|           | 2.2                 | 6                      | 20                     | 1NC                       | 1                   | 80                | SCM0601230 |
| SCM-9M    | 4                   | 9                      | 20                     | 1NO                       | 1                   | 80                | SCM0910230 |
|           | 4                   | 9                      | 20                     | 1NC                       | 1                   | 80                | SCM0901230 |
| SCM-12M   | 5.5                 | 12                     | 20                     | 1NO                       | 1                   | 80                | SCM1210230 |
|           | 5.5                 | 12                     | 20                     | 1NC                       | 1                   | 80                | SCM1201230 |
| SCM-16M   | 7.5                 | 16                     | 20                     | 1NO                       | 1                   | 80                | SCM1610230 |
|           | 7.5                 | 16                     | 20                     | 1NC                       | 1                   | 80                | SCM1601230 |

### 3 Poles Mini Contactors - Coil Voltage: 24V DC



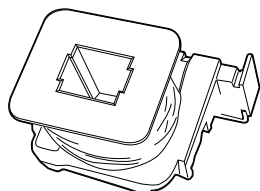
| Type Code | Rated Power at (kW) | Rated Current AC-3 (A) | Rated Current AC-1 (A) | Auxiliary Contact on Body | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|---------------------|------------------------|------------------------|---------------------------|---------------------|-------------------|------------|
| SDM-6M    | 2.2                 | 6                      | 20                     | 1NO                       | 1                   | 80                | SDM0610024 |
|           | 2.2                 | 6                      | 20                     | 1NC                       | 1                   | 80                | SDM0601024 |
| SDM-9M    | 4                   | 6                      | 20                     | 1NO                       | 1                   | 80                | SDM0910024 |
|           | 4                   | 9                      | 20                     | 1NC                       | 1                   | 80                | SDM0901024 |
| SDM-12M   | 5.5                 | 12                     | 20                     | 1NO                       | 1                   | 80                | SDM1210024 |
|           | 5.5                 | 12                     | 20                     | 1NC                       | 1                   | 80                | SDM1201024 |
| SDM-16M   | 7.5                 | 16                     | 20                     | 1NO                       | 1                   | 80                | SDM1610024 |
|           | 7.5                 | 16                     | 20                     | 1NC                       | 1                   | 80                | SDM1601024 |

### Auxiliary Contact Blocks for Mini Contactors



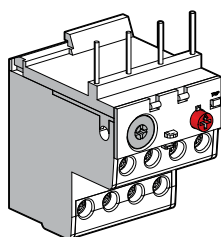
| Type Code | Auxiliary Contact on Body | Type of Assembly | Order Code |
|-----------|---------------------------|------------------|------------|
| SAC-4M    | 2NO+2NC                   | Top              | SAC-4M22   |
|           | 3NO+1NC                   | Top              | SAC-4M31   |
|           | 4NO                       | Top              | SAC-4M40   |
|           | 4NC                       | Top              | SAC-4M04   |

### Spare Coils for Mini Contactors



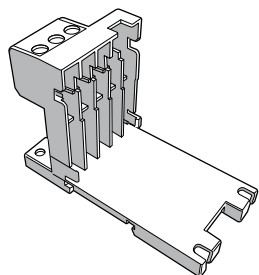
| Type Code | Coil Voltage       | Order Code |
|-----------|--------------------|------------|
| SYM-1     | 24 V AC 50/60 Hz.  | SYM1-024AC |
|           | 42 V AC 50/60 Hz.  | SYM1-042AC |
|           | 48 V AC 50/60 Hz.  | SYM1-048AC |
|           | 110 V AC 50/60 Hz. | SYM1-110AC |
|           | 230 V AC 50/60 Hz. | SYM1-230AC |
| SMD-1     | 24 V DC            | SMD1-024DC |
|           | 48 V DC            | SMD1-048DC |
|           | 110 V DC           | SMD1-110DC |

### Thermal Overload Relays for Mini Contactors



| Type Code                                                                                      | Rated Current In (A) | Thermal Setting (A) | Min. Order Quantity | Number in Cartoon | Order Code  |
|------------------------------------------------------------------------------------------------|----------------------|---------------------|---------------------|-------------------|-------------|
| <br>STRM-16 | 0.16                 | 0.1-0.16            | 1                   | 80                | STRM16-0.16 |
|                                                                                                | 0.25                 | 0.16-0.25           | 1                   | 80                | STRM16-0.25 |
|                                                                                                | 0.40                 | 0.25-0.40           | 1                   | 80                | STRM16-0.40 |
|                                                                                                | 0.63                 | 0.40-0.63           | 1                   | 80                | STRM16-0.63 |
|                                                                                                | 1                    | 0.63-1              | 1                   | 80                | STRM16-1    |
|                                                                                                | 1.6                  | 1-1.6               | 1                   | 80                | STRM16-1.6  |
|                                                                                                | 2.5                  | 1.6-2.5             | 1                   | 80                | STRM16-2.5  |
|                                                                                                | 4                    | 2.5-4               | 1                   | 80                | STRM16-4    |
|                                                                                                | 6                    | 4-6                 | 1                   | 80                | STRM16-6    |
|                                                                                                | 9                    | 6-9                 | 1                   | 80                | STRM16-9    |
|                                                                                                | 13                   | 9-13                | 1                   | 80                | STRM16-13   |
|                                                                                                | 16                   | 12-16               | 1                   | 80                | STRM16-16   |

## DIN RAIL Mounting Part for Mini-Thermal Overload Relay



| Type Code | Compatible Mini Thermal Relay | Order Code |
|-----------|-------------------------------|------------|
| SDR-16    | STRM-16                       | SDR-16     |

## Corresponding Sigma Contactors with other brands (AC-3 Class)

| 3 Phase Motor (380 V) |     | Sigma Elektrik | Federal Elektrik | Siemens | Telemecanique | ABB   | Legrand   | LG      | General Electric | K. Moeller |
|-----------------------|-----|----------------|------------------|---------|---------------|-------|-----------|---------|------------------|------------|
| kW                    | Hp  |                |                  |         |               |       |           |         |                  |            |
| 4                     | 5   | SCM-9/SCG-9    | FC-09D           | 3TF-40  | LC1-D910      | A9    | CTX1 9A   | GMC-9   | CL00             | DILM9      |
| 5.5                   | 7.5 | SCM-12/SCG-12  | FC-12D           | 3TF-41  | LC1-DI210     | A12   | CTX1 12A  | GMC-12  | CL01             | DILM12     |
| 7.5                   | 10  | SCM-18/SCG-18  | FC-18D           | 3TF-42  | LC1-D1810     | A16   | CTX1 16A  | GMC-18  | CL02             | DILM15     |
| 11                    | 15  | SCM-22/SCG-25  | FC-25D           | 3TF-43  | LC1-D2510     | A26   | CTX1 25A  | GMC-22  | CL025            | DILM25     |
| 15                    | 20  | SCM-32/SCG-32  | FC-32D           | 3TF-44  | LC1-D3210     | A30   | CTX1 32A  | GMC-32  | CL04             | DILM32     |
| 18.5                  | 25  | SCM-40/SCG-40  | FC-40D           | 3TF-45  | LC1-D4011     | A40   | CTX1 40A  | GMC-40  | CL45             | DILM40     |
| 22                    | 30  | SCM-50/SCG-50  | FC-50D           | 3TF-46  | LC1-D5011     | A50   | CTX1 50A  | GMC-50  | CL06             | DILM50     |
| 30                    | 40  | SCM-65/SCG-65  | FC-65D           | 3TF-47  | LC1-D6511     | A63   | CTX1 65A  | GMC-65  | CL07             | DILM65     |
| 37                    | 50  | SCM-75/SCG-80  | FC-80D           | 3TF-48  | LC1-D8011     | A75   | CTX1 80A  | GMC-75  | CL08             | DILM80     |
| 45                    | 60  | SCM-85/SCG-95  | FC-95D           | 3TF-49  | LC1-D9511     | A95   | CTX1 95A  | GMC-85  | CL09             | DILM95     |
| 55                    | 80  | SCM-100        | FC-115D          | 3TF-50  | LC1-F115      | A110  | CTX1 110A | GMC-100 | CL10             | DILM115    |
| 75                    | 100 | SCM-150        | FC-150D          | 3TF-51  | LC1-F150      | EH145 | CTX2 150A | GMC-150 | CK75             | DILM150    |

## Utilization Categories of Contactors

| Utilization Category | Load Characteristic                                                | Power Factor                                                               | Application Examples                                                                                                                                                                                                                                                                                                                                          | Making Current (I) | Breaking Current (Ic) |
|----------------------|--------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|
| AC-1                 | Non-Inductive loads                                                | $\cos\theta=0.8$                                                           | The most common example is heating system (When 3P contactors are used to control of 1P heating systems, contactor's pole should be serially connected. In case which 2 poles are serially connected, Rated Current (In) should be considered at 1,6 times of nominal current (Ie) and if 3 poles are serially connected, 2,25 times of nominal current (Ie). | Ie                 | Ie                    |
| AC-2                 | Driving Slip-Ring Motors, reversing, stepping operation            | $\cos\theta=0.65$                                                          | Lifting and metallurgy applications, wire drawing machines                                                                                                                                                                                                                                                                                                    | 2.5xIe             | 8xIe                  |
| AC-3                 | Driving Squirrel Cage asynchronous motors, motor stop in operation | $\cos\theta=0.45$ for $I_e < 100$ A<br>$\cos\theta=0.35$ for $I_e > 100$ A | Compressors, pumps, fans, valves, elevators, conveyors, air conditioner.                                                                                                                                                                                                                                                                                      | 6xIe               | 8xIe                  |
| AC-4                 | Driving Squirrel Cage asynchronous motors, reversing operation     | $\cos\theta=0.45$ for $I_e < 100$ A<br>$\cos\theta=0.35$ for $I_e > 100$ A | Printing press machines, wire drawing machines, stepping operation looms                                                                                                                                                                                                                                                                                      | 6xIe               | 8xIe                  |

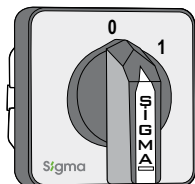
## Contactor Selection According to Utilization Categories

| Type Code     | Rated Power at<br>AC-3 (kW)<br>(400-415 V) | Rated Current<br>AC-3 (A)<br>$\theta \leq 55^{\circ}\text{C}$ | Rated Current<br>AC-1 (A)<br>$\theta \leq 40^{\circ}\text{C}$ | Rated Current<br>AC-1 (A)<br>$\theta \leq 55^{\circ}\text{C}$ | Rated Current<br>AC-1 (A)<br>(3 phases serie) | Rated Current<br>AC-5a (A) | Mechanical Life<br>(ope.) | Electrical Life<br>(ope) AC-3<br>$U_e \leq 440\text{ V}$ |
|---------------|--------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|-----------------------------------------------|----------------------------|---------------------------|----------------------------------------------------------|
| SCM-9/SCG-9   | 4                                          | 9                                                             | 25                                                            | 21                                                            | 45                                            | 9                          | 20.000.000                | 2.000.000                                                |
| SCM-12/SCG-12 | 5,5                                        | 12                                                            | 25                                                            | 21                                                            | 45                                            | 12                         | 20.000.000                | 2.000.000                                                |
| SCM-18/SCG-18 | 7,5                                        | 18                                                            | 40                                                            | 34                                                            | 75                                            | 15                         | 20.000.000                | 2.000.000                                                |
| SCM-22/SCG-25 | 11                                         | 22                                                            | 40                                                            | 34                                                            | 75                                            | 18                         | 20.000.000                | 2.000.000                                                |
| SCM-32/SCG-32 | 15                                         | 32                                                            | 50                                                            | 42                                                            | 90                                            | 25                         | 20.000.000                | 2.000.000                                                |
| SCM-40/SCG-40 | 18,5                                       | 40                                                            | 60                                                            | 50                                                            | 100                                           | 28                         | 20.000.000                | 1.500.000                                                |
| SCM-50/SCG-50 | 22                                         | 50                                                            | 80                                                            | 70                                                            | 150                                           | 38                         | 15.000.000                | 1.500.000                                                |
| SCM-65/SCG-65 | 30                                         | 65                                                            | 100                                                           | 85                                                            | 190                                           | 43                         | 15.000.000                | 1.500.000                                                |
| SCM-75/SCG-80 | 37                                         | 75                                                            | 110                                                           | 95                                                            | 210                                           | 48                         | 15.000.000                | 1.000.000                                                |
| SCM-85/SCG-95 | 45                                         | 85                                                            | 135                                                           | 115                                                           | 250                                           | 60                         | 15.000.000                | 1.000.000                                                |
| SCM-100       | 55                                         | 100                                                           | 160                                                           | 135                                                           | 300                                           | 70                         | 10.000.000                | 500.000                                                  |
| SCM-125       | 60                                         | 120                                                           | 160                                                           | 135                                                           | 300                                           | 90                         | 10.000.000                | 500.000                                                  |
| SCM-150       | 75                                         | 150                                                           | 210                                                           | 180                                                           | 400                                           | 100                        | 10.000.000                | 500.000                                                  |
| SCM-180       | 90                                         | 180                                                           | 230                                                           | 230                                                           | 500                                           |                            | 5.000.000                 | 500.000                                                  |
| SCM-250       | 132                                        | 250                                                           | 260                                                           | 260                                                           | 550                                           |                            | 5.000.000                 | 500.000                                                  |
| SCM-330       | 200                                        | 330                                                           | 400                                                           | 400                                                           | 900                                           |                            | 5.000.000                 | 500.000                                                  |
| SCM-400       | 250                                        | 400                                                           | 500                                                           | 500                                                           | 1100                                          |                            | 3.000.000                 | 300.000                                                  |
| SCM-630       | 400                                        | 630                                                           | 1000                                                          | 1000                                                          | 2200                                          |                            | 3.000.000                 | 300.000                                                  |

## Utilization Categories According to IEC/EN 60947-4-1

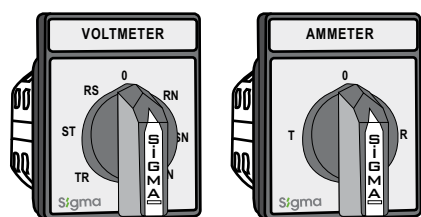
| Utilization Category | Typical Use                                                                                                                                        |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| AC-1                 | Non-Inductive or Slightly Inductive loads (heating systems, resistance furnace e.g..)                                                              |
| AC-2                 | Driving and/or stopping slip-ring motors. (Lifting and metallurgy applications, wire drawing machines e.g..)                                       |
| AC-3                 | Driving Squirrel Cage asynchronous motors, motor stop in operation (Compressors, pumps, fans, valves, elevators, conveyors, air conditioner e.g..) |
| AC-4                 | Stepping Drive Squirrel Cage asynchronous motors, reversing operation, (Printing press machines, wire drawing machines, stepping operation looms)  |
| AC-5a                | Switching of electrical discharge lamps (high or lower pressure sodium vapor lamps, mercury discharge lamps)                                       |
| AC-5b                | Switching of Incandescent lamps                                                                                                                    |
| AC-6a                | Switching of Transformers                                                                                                                          |
| AC-6b                | Switching of Capacitor groups                                                                                                                      |
| AC-8a                | Controlling of Hermetic type compressor's motors which equipped with Manuel-reset thermal overload relays.                                         |
| AC-8b                | Controlling of Hermetic type compressor's motors which equipped with Auto-reset thermal overload relays.                                           |
| DC-1                 | Non-Inductive or lower Inductive loads                                                                                                             |
| DC-3                 | Driving of Shunt Motors, Stepping, reversing, motor stop in operation, dynamic breaking of DC motors                                               |
| DC-5                 | Driving of Serial Motors, Stepping, reversing, motor stop in operation, dynamic breaking of DC motors                                              |

## 0 - 1 On - Off Cam Switches



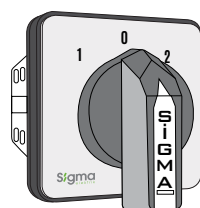
| Type Code | No of Poles | Continuous Operating Current (Ith) A | Order Code |
|-----------|-------------|--------------------------------------|------------|
| SPA1      | 1           | 10                                   | SPA1-10    |
|           | 1           | 16                                   | SPA1-16    |
|           | 1           | 20                                   | SPA1-20    |
|           | 1           | 25                                   | SPA1-25    |
|           | 1           | 32                                   | SPA1-32    |
|           | 1           | 63                                   | SPA1-63    |
| SPA3      | 3           | 10                                   | SPA3-10    |
|           | 3           | 16                                   | SPA3-16    |
|           | 3           | 20                                   | SPA3-20    |
|           | 3           | 25                                   | SPA3-25    |
|           | 3           | 32                                   | SPA3-32    |
|           | 3           | 63                                   | SPA3-63    |

## Instrument Selector Switches



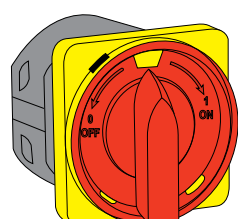
| Type Code | Stages   | Continuous Operating Current (Ith) A | Order Code |
|-----------|----------|--------------------------------------|------------|
| SPM-A     | 4 Stages | 20                                   | SPM-A      |
| SPM-V     | 7 Stages | 20                                   | SPM-V      |

## 1-0-2 Instrument Selector Switches (3 phase)



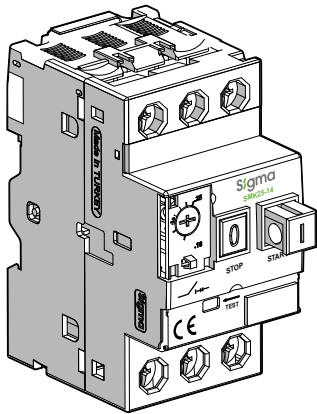
| Type Code | No of Poles | Continuous Operating Current (Ith) A | Order Code |
|-----------|-------------|--------------------------------------|------------|
| SPN1      | 1           | 16                                   | SPN1-16    |
|           | 1           | 25                                   | SPN1-25    |
|           | 1           | 32                                   | SPN1-32    |
|           | 1           | 63                                   | SPN1-63    |
| SPN3      | 3           | 16                                   | SPN3-16    |
|           | 3           | 25                                   | SPN3-25    |
|           | 3           | 32                                   | SPN3-32    |
|           | 3           | 63                                   | SPN3-63    |

## Locking Safety Switches (Red - Yellow)



| Type Code | No of Poles | Continuous Operating Current (Ith) A | Order Code |
|-----------|-------------|--------------------------------------|------------|
| SPE3      | 3           | 20                                   | SPE3-16    |
|           | 3           | 32                                   | SPE3-25    |
|           | 3           | 63                                   | SPE3-32    |

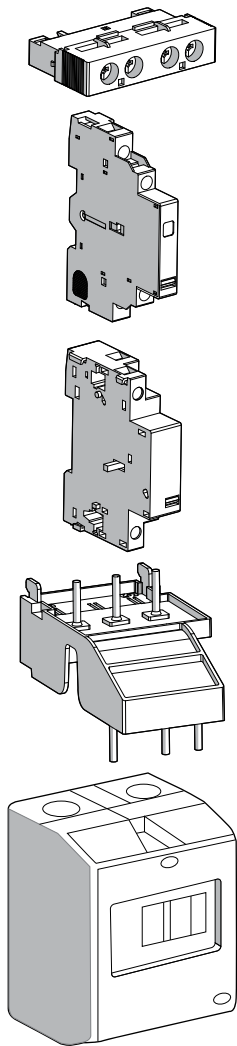
## Motor Protection Switches



| Type Code | Rated Power at AC3 400V (kW) | Thermal Adjusting Range (A) | Rated Short Circuit Breaking Capacity at 400V Icu (kA) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|------------------------------|-----------------------------|--------------------------------------------------------|---------------------|-------------------|------------|
| SMK-25    | 0,02                         | 0.1-0.16                    | 100                                                    | 1                   | 48                | SMK25-0.16 |
|           | 0,06                         | 0.16-0.25                   | 100                                                    | 1                   | 48                | SMK25-0.25 |
|           | 0,09                         | 0.25-0.4                    | 100                                                    | 1                   | 48                | SMK25-0.4  |
|           | 0,12                         | 0.4-0.63                    | 100                                                    | 1                   | 48                | SMK25-0.63 |
|           | 0,25                         | 0.63-1                      | 100                                                    | 1                   | 48                | SMK25-1    |
|           | 0,37                         | 1-1.6                       | 100                                                    | 1                   | 48                | SMK25-1.6  |
|           | 0,75                         | 1.6-2.5                     | 100                                                    | 1                   | 48                | SMK25-2.5  |
|           | 1,5                          | 2.5-4                       | 100                                                    | 1                   | 48                | SMK25-4    |
|           | 2,2                          | 4-6.3                       | 100                                                    | 1                   | 48                | SMK25-6.3  |
|           | 4                            | 6-10                        | 100                                                    | 1                   | 48                | SMK25-10   |
|           | 5,5                          | 9-14                        | 15                                                     | 1                   | 48                | SMK25-14   |
|           | 7,5                          | 13-18                       | 15                                                     | 1                   | 48                | SMK25-18   |
|           | 9                            | 17-23                       | 15                                                     | 1                   | 48                | SMK25-23   |
|           | 11                           | 20-25                       | 15                                                     | 1                   | 48                | SMK25-25   |
|           | 15                           | 24-32                       | 15                                                     | 1                   | 48                | SMK25-32   |
| SMK-80    | 18,5                         | 25-40                       | 15                                                     | 1                   | 24                | SMK80-40   |
|           | 22                           | 36-50                       | 15                                                     | 1                   | 24                | SMK80-50   |
|           | 30                           | 40-63                       | 15                                                     | 1                   | 24                | SMK80-63   |
|           | 40                           | 56-80                       | 15                                                     | 1                   | 24                | SMK80-80   |



## Accessories for Motor Protection Switches



| Type Code | Accessories                                | Order Code |
|-----------|--------------------------------------------|------------|
| SMK25-F11 | Auxiliary Contact 1NO+1NC (Front Mounting) | SMK25-F11  |
| SMK25-F20 | Auxiliary Contact 2NO (Front Mounting)     | SMK25-F20  |
| SMK25-L20 | Auxiliary Contact 2NO (Front Mounting)     | SMK25-L11  |
| SMK25-L11 | Auxiliary Contact 1NO+1NC (Side Mounting)  | SMK25-L20  |

| Type Code | Accessories                 | Order Code |
|-----------|-----------------------------|------------|
| SMK25-DG  | Under Voltage Release 380 V | SMK25-DG   |
| SMK25-AB  | Shunt Trip Release 230 V    | SMK25-AB   |

| Type Code | Accessories                               | Order Code |
|-----------|-------------------------------------------|------------|
| SMK25-A   | Combination Block for Contactor (SCM9-40) | SMK25-A    |

| Type Code | Accessories                           | Order Code |
|-----------|---------------------------------------|------------|
| SMK25-K   | Enclosure for Motor Protection Switch | SMK25-K    |

## Motor Starters with Enclosure (DOL)



| Type Code | Rated Motor Power (kW) 380 V | Setting Range (A) | Coil Voltage (V) AC | Number in Carton | Order Code |
|-----------|------------------------------|-------------------|---------------------|------------------|------------|
| SMS009230 | 0.37                         | 1-1.6             | 230                 | 1                | SMS090037  |
|           | 0.75                         | 1.6-2.5           | 230                 | 1                | SMS090075  |
|           | 1.5                          | 2.5-4             | 230                 | 1                | SMS090115  |
|           | 2.2                          | 4-6               | 230                 | 1                | SMS090220  |
|           | 3                            | 5-8               | 230                 | 1                | SMS090300  |
|           | 4                            | 7-10              | 230                 | 1                | SMS090400  |
| SMS012230 | 5.5                          | 9-13              | 230                 | 1                | SMS0120550 |
| SMS018230 | 7.5                          | 12-18             | 230                 | 1                | SMS0180750 |
| SMS022230 | 11                           | 16-22             | 230                 | 1                | SMS0221110 |
| SMS032230 | 15                           | 24-36             | 230                 | 1                | SMS0321150 |
| SMS040230 | 18.5                         | 28-40             | 230                 | 1                | SMS0401185 |
| SMS050230 | 22                           | 34-50             | 230                 | 1                | SMS0501220 |
| SMS065230 | 30                           | 45-65             | 230                 | 1                | SMS0651300 |
| SMS075230 | 37                           | 54-75             | 230                 | 1                | SMS0751370 |
| SMS085230 | 45                           | 63-85             | 230                 | 1                | SMS0851450 |

## Technical Specifications

|                                         |                                                         |
|-----------------------------------------|---------------------------------------------------------|
| Standard                                | IEC 60044-1/ 61869-2                                    |
| Rated Operational Voltage (Un)          | 720V                                                    |
| Rated Frequency                         | 50/60Hz (on demand 400 Hz)                              |
| Ambient Temperature                     | -20/75°C                                                |
| Storage Temperature                     | -50/80°C                                                |
| Operating Humidity                      | up to 95% relative humidity                             |
| Rated Thermal Continuous Current        | 1.2xIn                                                  |
| Rated Short Time Thermal Current (Ith)  | 60xIn / 1 sec. - 100xIn / 1 sec.                        |
| Rated Dynamic Current (Idyn)            | 2.5 x Ith / 1 sec.                                      |
| Rated Power-Frequency Withstand Voltage | 3kV eff. (50 Hz) / 1 min.                               |
| Thermal Class of Insulation             | E (120 deg.C max.)                                      |
| Casing                                  | Non-flammable, self extinguishing, glass reinforced PA6 |
| Degree of Protection                    | IP20                                                    |
| Instrument Security Factor(FS)          | 5                                                       |
| Secondary Terminals                     | Brass plated nickel M5 screws                           |
| Recommended Tightening Torque           | 2 Nm (for secondary terminals)                          |
| Accuracy Class                          | Metering: 0.2,0.2s,0.5,0.5s,1,3 ;<br>Protection 5P, 10P |
| Burden                                  | from 1 to 30VA                                          |
| Rated Primary Current                   | up to 5000A                                             |
| Rated Secondary Current                 | 1 or 5 A                                                |

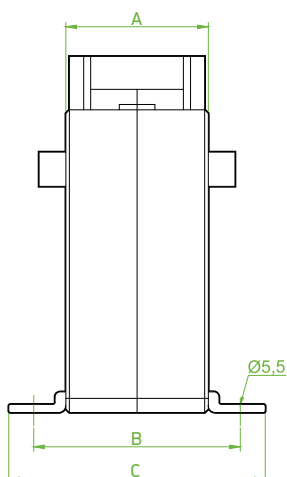
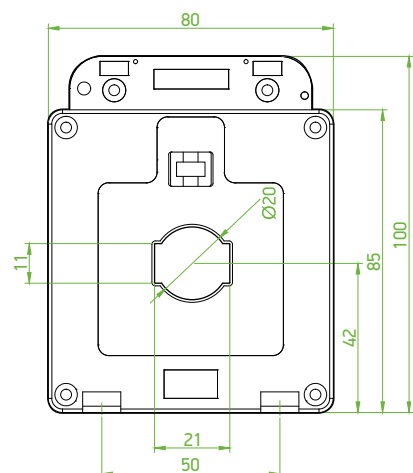
## Main Dimensions

| Type  | Cable Diameter (mm) | Window (mm) | Busbar (mm) | Cable Section (mm <sup>2</sup> ) | Outer Dimensions (mm) wxhxd |
|-------|---------------------|-------------|-------------|----------------------------------|-----------------------------|
| S25BN | —                   | —           | —           | 2,5.....50                       | 80x100x40                   |
| S20   | 20                  | 21x11       | 20x10       | 16.....95                        | 80x100x(40-60)              |
| S20M  | 20                  | 21x11       | 20x10       | 25.....95                        | 62x80x(30-45)               |
| S30   | 24                  | 31x11       | 30x10       | 35.....300                       | 80x100x(40-60)              |
| S30M  | 24                  | 31x11       | 30x10       | 50.....300                       | 62x80x(30-45)               |
| S40   | 31                  | 41x11       | 40x10       | 185.....400                      | 80x100x(40-60)              |
| S50   | 38                  | 51x11       | 50x10       | —                                | 80x100x(40-60)              |
| S60   | 46                  | 62x31       | 60x10       | —                                | 107x132x45                  |
| S60D  | 30                  | 61x31       | 60x10       | —                                | 82x134x60                   |
| S60A  | 30                  | 61x31       | 60x10       | —                                | 102x145x40                  |
| S80   | 67                  | 81x31       | 2x(80x10)   | —                                | 145x165x55                  |
| S100  | 62                  | 102x11      | 100x10      | —                                | 145x165x55                  |
| S100D | 70                  | 101x72      | 4x(100x10)  | —                                | 128x193x61                  |
| S125  | 126                 | 131x11      | 130x10      | —                                | 190x220x55                  |
|       |                     |             | 3x(125x10)  |                                  |                             |



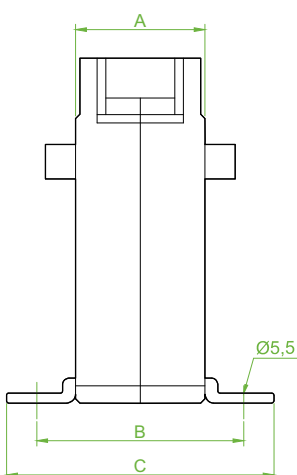
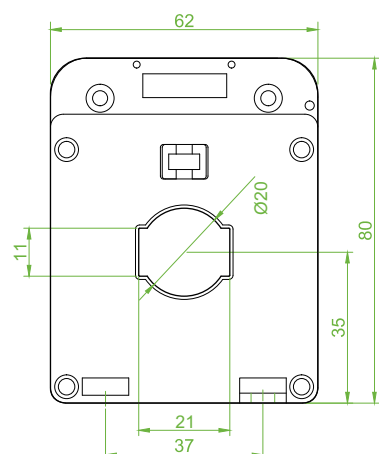
## Dimensions

### S20



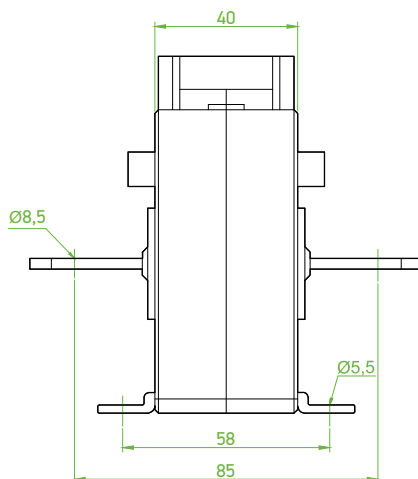
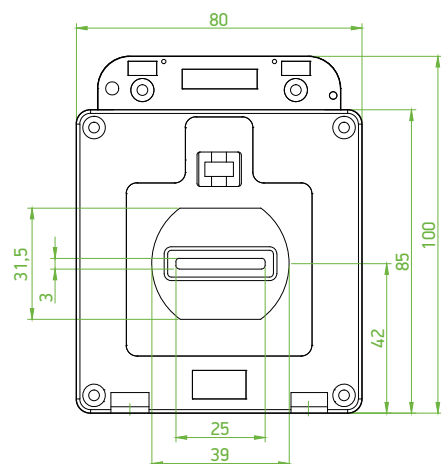
|      | A  | B  | C  |
|------|----|----|----|
| S20  | 40 | 60 | 72 |
| S20L | 60 | 80 | 92 |

### S20M

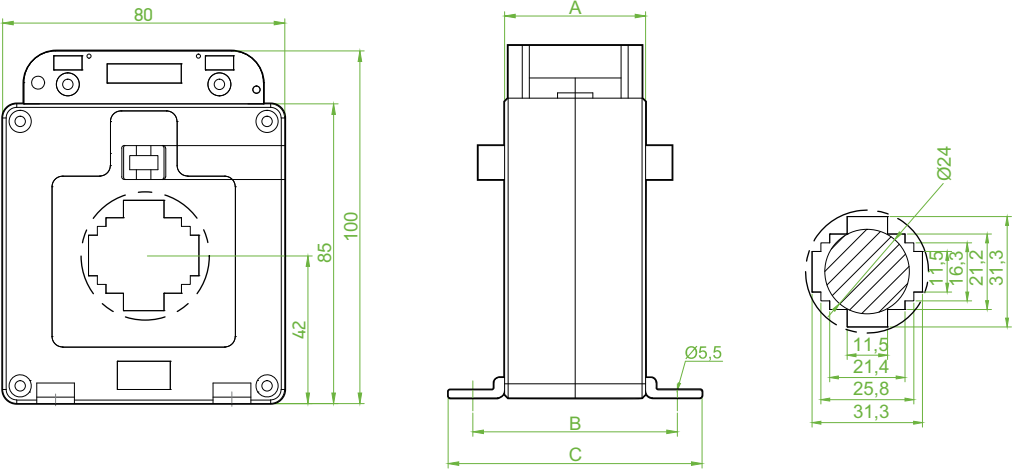


|       | A  | B  | C  |
|-------|----|----|----|
| S20M  | 30 | 50 | 62 |
| S20ML | 45 | 65 | 77 |

### S25B

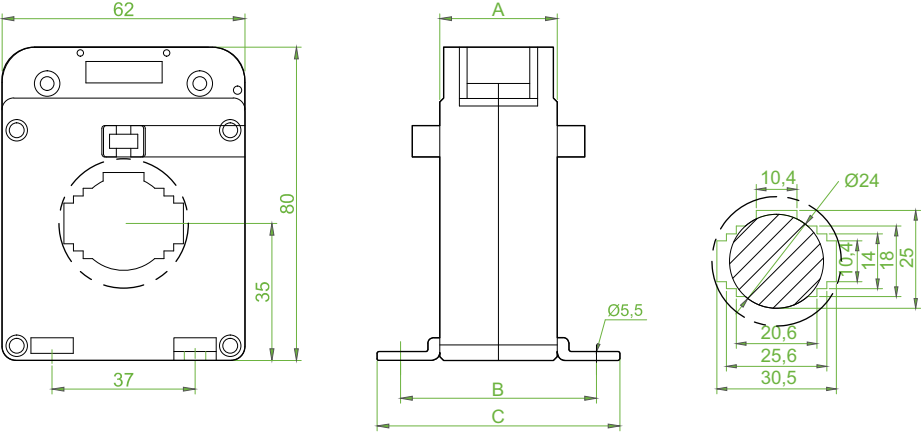


S30-S30L



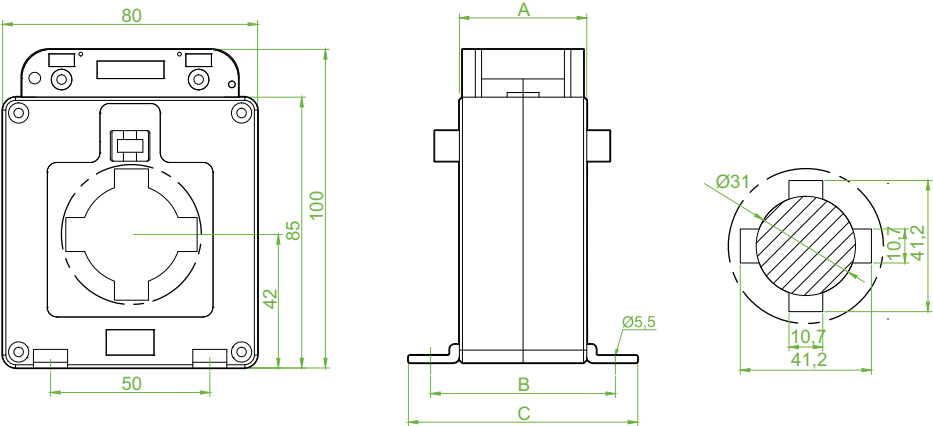
|      | A  | B  | C  |
|------|----|----|----|
| S30  | 40 | 60 | 72 |
| S30L | 60 | 80 | 92 |

S30M-S30ML



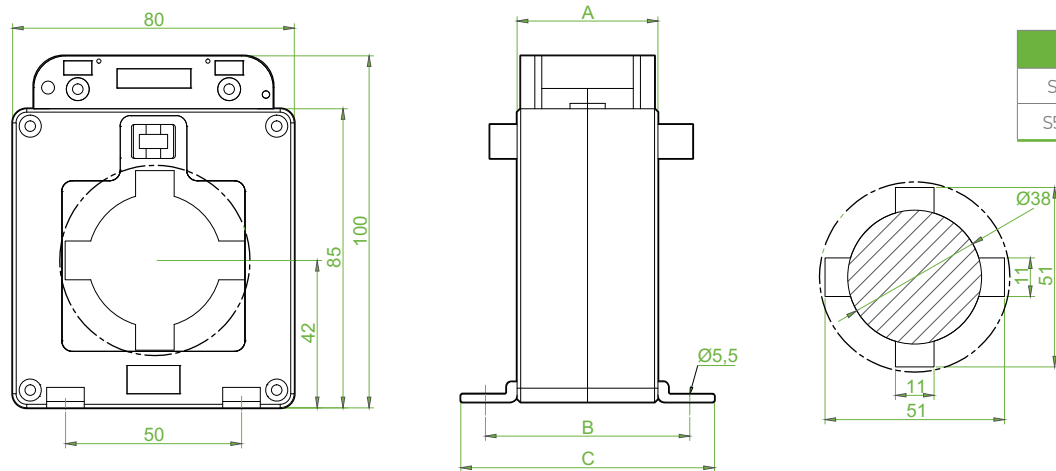
|       | A  | B  | C  |
|-------|----|----|----|
| S30M  | 30 | 50 | 62 |
| S30ML | 45 | 65 | 77 |

S40-S40L

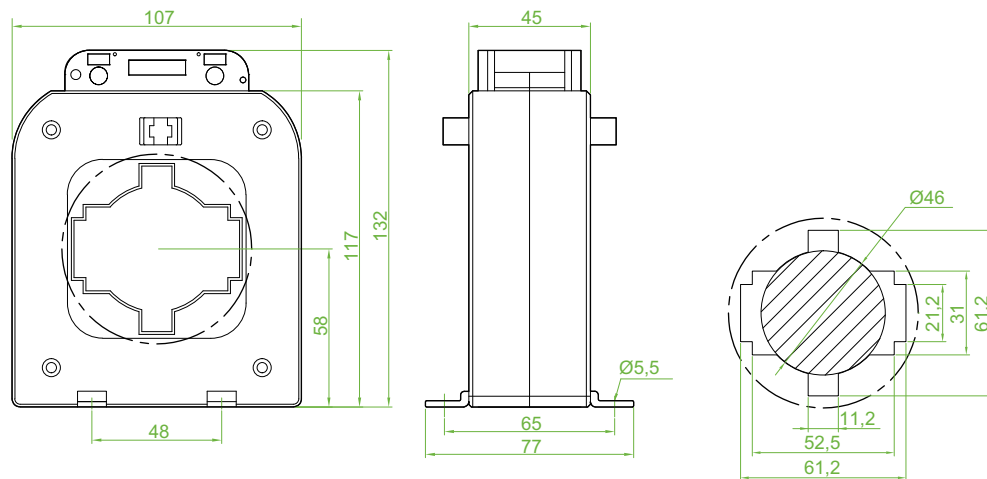


|      | A  | B  | C  |
|------|----|----|----|
| S40  | 40 | 60 | 72 |
| S40L | 60 | 80 | 92 |

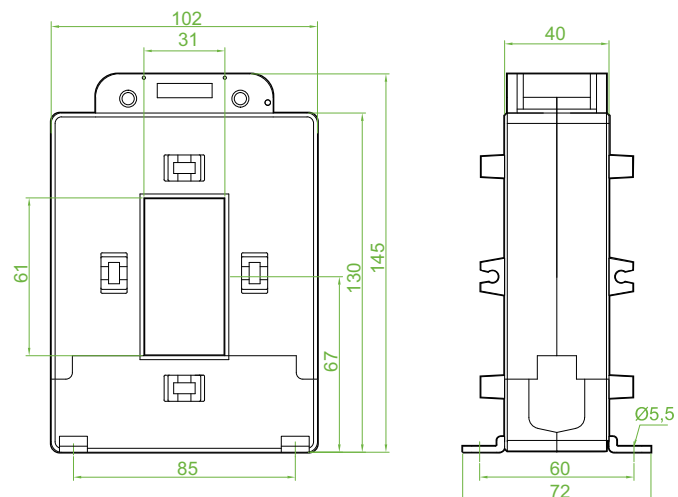
**S50-S50L**



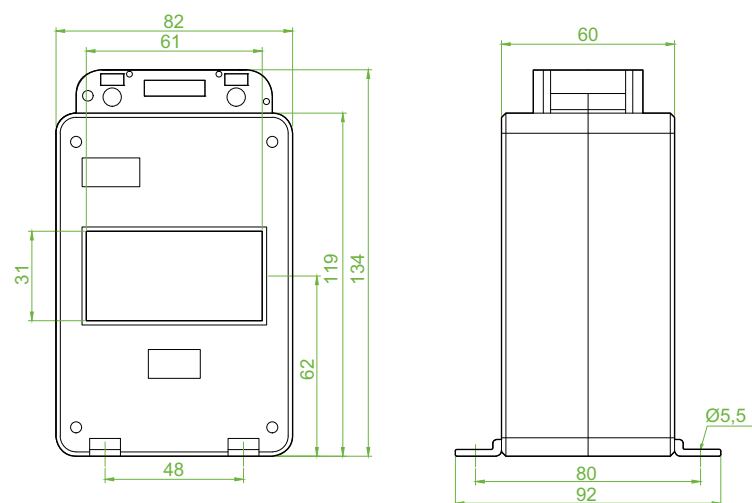
**S60**



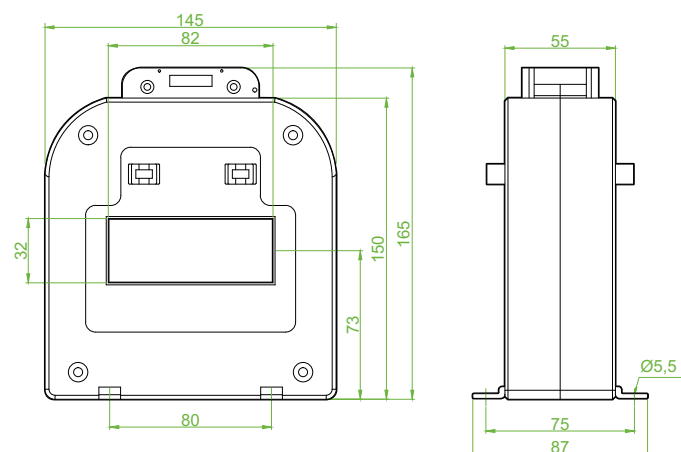
**S60A**



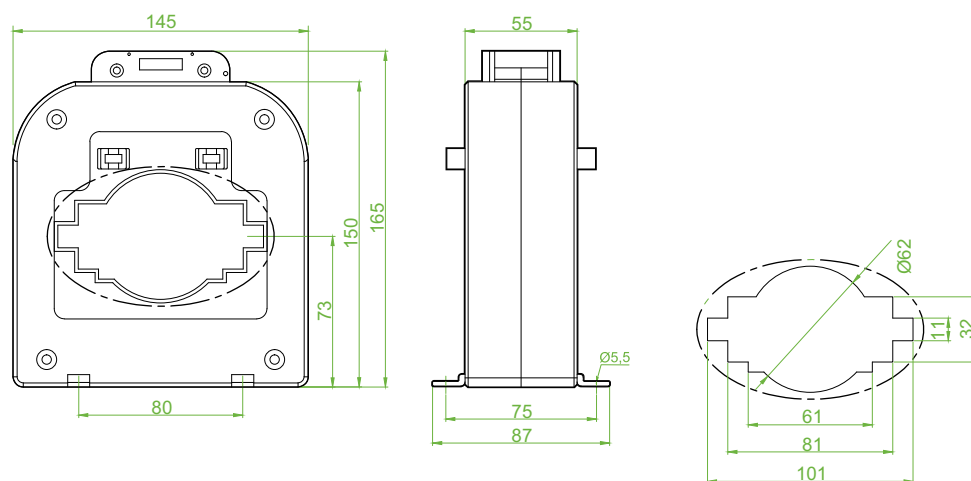
### S60D



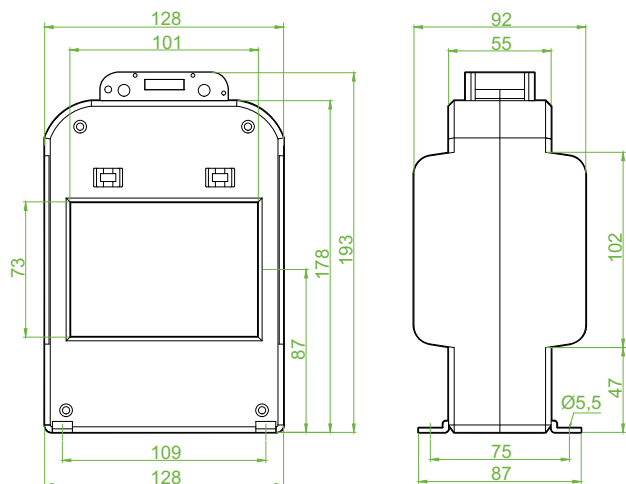
### S80



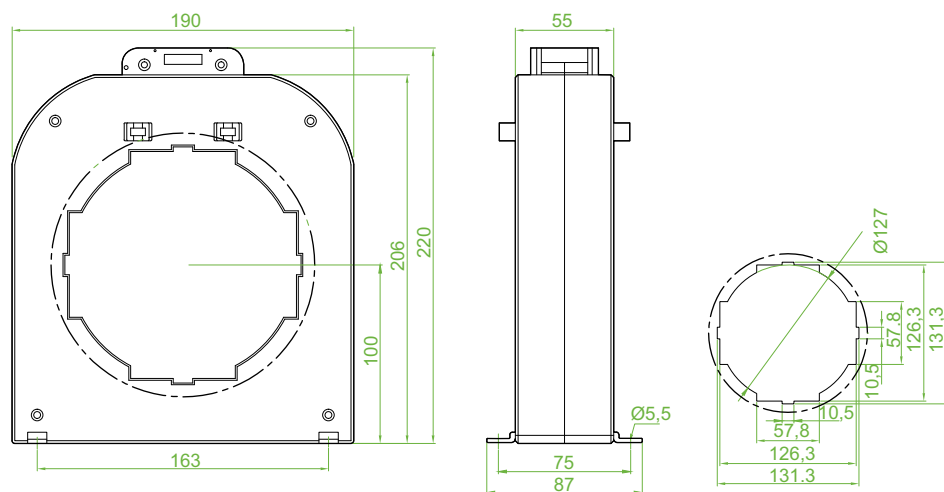
### S100



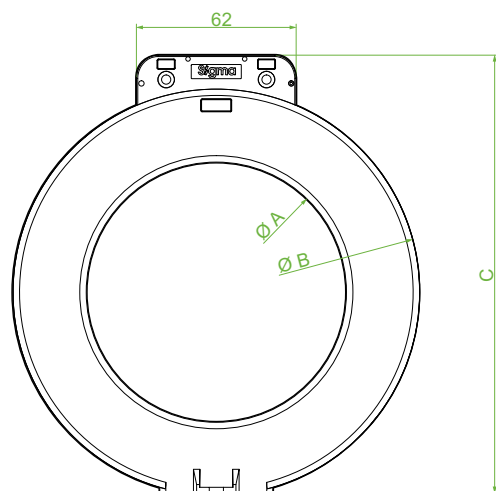
### S100D



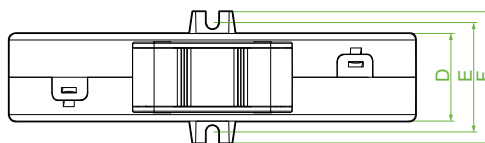
### S125



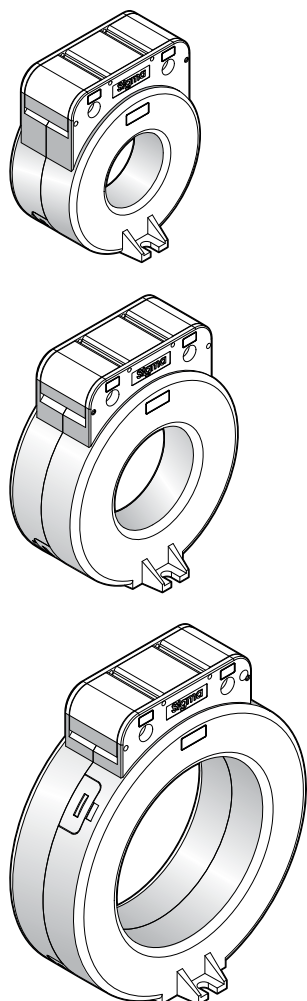
### SMT 30-40-70-100



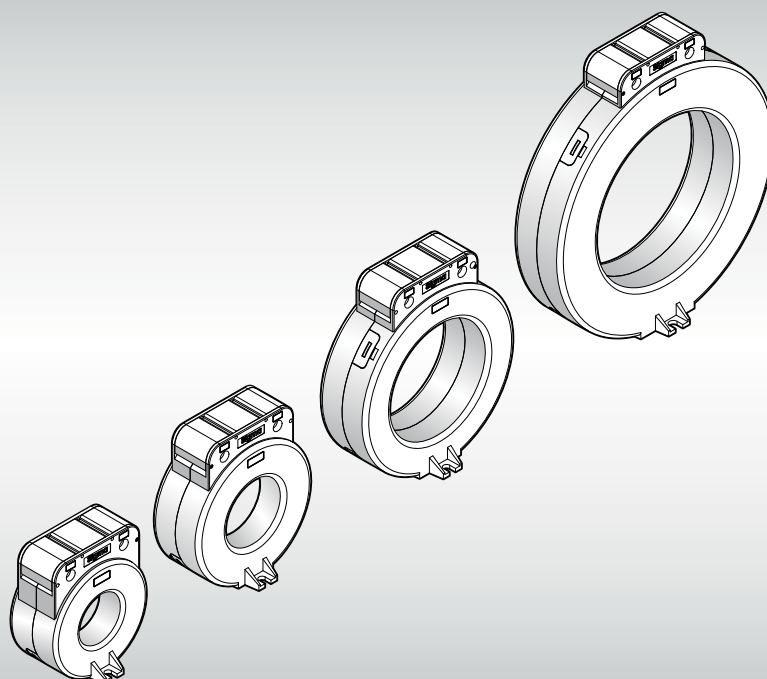
|         | A   | B   | C   | D  | E  | F  |
|---------|-----|-----|-----|----|----|----|
| SMT 30  | 31  | 68  | 79  | 34 | 44 | 52 |
| SMT 40  | 41  | 84  | 95  | 34 | 44 | 52 |
| SMT 70  | 70  | 110 | 122 | 34 | 44 | 52 |
| SMT 100 | 101 | 158 | 170 | 34 | 43 | 51 |



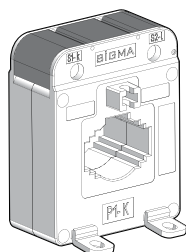
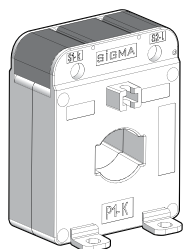
## Round Type Current Transformers



| Type Code | Primary Current (A) | Burden Rate (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Carton | Order Code    |
|-----------|---------------------|------------------|------------|-------------------------|---------------------|------------------|---------------|
| SMT30     | 50                  | 1,5              | 3          | 30                      | 3                   |                  | SMT0300050301 |
|           | 60                  | 2,5              | 3          | 30                      | 3                   |                  | SMT0300060302 |
|           | 75                  | 2,5              | 3          | 30                      | 3                   |                  | SMT0300075302 |
|           | 100                 | 2,5              | 3          | 30                      | 3                   |                  | SMT0300100302 |
|           | 125                 | 2,5              | 3          | 30                      | 3                   |                  | SMT0300125302 |
|           | 150                 | 2,5              | 3          | 30                      | 3                   |                  | SMT0300150302 |
|           | 200                 | 5                | 1          | 30                      | 3                   |                  | SMT0300200105 |
|           | 250                 | 5                | 0,5        | 30                      | 3                   |                  | SMT0300250505 |
|           | 300                 | 5                | 0,5        | 30                      | 3                   |                  | SMT0300300505 |
| SMT40     | 100                 | 2,5              | 3          | 40                      | 3                   |                  | SMT0400100302 |
|           | 150                 | 2,5              | 3          | 40                      | 3                   |                  | SMT0400150302 |
|           | 200                 | 2,5              | 1          | 40                      | 3                   |                  | SMT0400200102 |
|           | 400                 | 5                | 0,5        | 40                      | 3                   |                  | SMT0400400505 |
|           | 500                 | 5                | 0,5        | 40                      | 3                   |                  | SMT0400500505 |
|           | 600                 | 5                | 0,5        | 40                      | 3                   |                  | SMT0400600505 |
| SMT70     | 800                 | 5                | 0,5        | 70                      | 3                   |                  | SMT0700800505 |
|           | 1000                | 10               | 0,5        | 70                      | 3                   |                  | SMT0701000510 |
|           | 1200                | 10               | 0,5        | 70                      | 3                   |                  | SMT0701200510 |
|           | 1250                | 10               | 0,5        | 70                      | 3                   |                  | SMT0701250510 |
|           | 1500                | 10               | 0,5        | 70                      | 3                   |                  | SMT0701500510 |
| SMT100    | 800                 | 5                | 0,5        | 100                     | 3                   |                  | SMT1000800505 |
|           | 1000                | 5                | 0,5        | 100                     | 3                   |                  | SMT1001000505 |
|           | 1250                | 10               | 0,5        | 100                     | 3                   |                  | SMT1001250510 |
|           | 1600                | 15               | 0,5        | 100                     | 3                   |                  | SMT1001600515 |
|           | 2000                | 15               | 0,5        | 100                     | 3                   |                  | SMT1002000515 |
|           | 2500                | 15               | 0,5        | 100                     | 3                   |                  | SMT1002500515 |

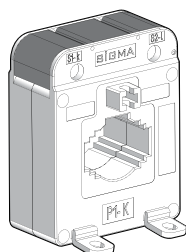


## Mini Type Current Transformers (Assembly to 35mm Din Rail)



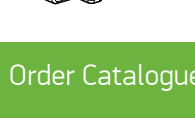
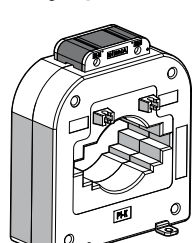
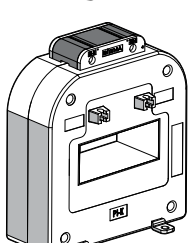
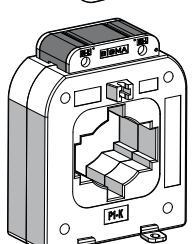
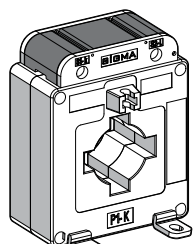
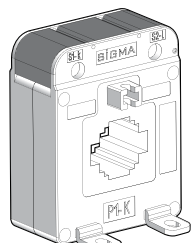
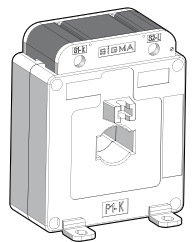
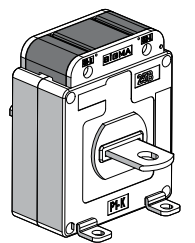
| Type Code | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S20M      | 50                  | 1,5                 | 3          | 20x10                   | 3                   | 51                | SM2000503001 |
|           | 60                  | 2,5                 | 3          | 20x10                   | 3                   | 51                | SM2000503002 |
|           | 75                  | 2,5                 | 1          | 20x10                   | 3                   | 51                | SM2000751002 |
|           | 100                 | 2,5                 | 1          | 20x10                   | 3                   | 51                | SM2001001002 |
|           | 125                 | 2,5                 | 1          | 20x10                   | 3                   | 51                | SM2001251002 |
|           | 150                 | 2,5                 | 0,5        | 20x10                   | 3                   | 51                | SM2001500502 |
|           | 200                 | 5                   | 0,5        | 20x10                   | 3                   | 51                | SM2002000503 |
|           | 150                 | 5                   | 1          | 20x10                   | 3                   | 51                | SM2001501005 |
|           | 200                 | 5                   | 1          | 20x10                   | 3                   | 51                | SM2002001005 |
| S30ML     | 150                 | 2,5                 | 0,5        | 30X10                   | 3                   | 51                | SM3001500502 |
|           | 200                 | 2,5                 | 0,5        | 30X10                   | 3                   | 51                | SM3002000502 |
|           | 200                 | 5                   | 0,5        | 30X10                   | 3                   | 51                | SM3002000505 |
|           | 250                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | SM3002500510 |
|           | 300                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | SM3003000510 |
|           | 400                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | SM3004000510 |
|           | 500                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | SM3005000510 |
|           | 600                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | SM3006000510 |
| S30M      | 150                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3001501005 |
|           | 200                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3002001005 |
|           | 250                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3002501005 |
|           | 300                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3003001005 |
|           | 400                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3004001005 |
|           | 500                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3005001005 |
|           | 600                 | 5                   | 1          | 30X10                   | 3                   | 51                | SM3006001005 |

## Mini Type Sealed Current Transformers (Assembly to 35mm Din Rail)



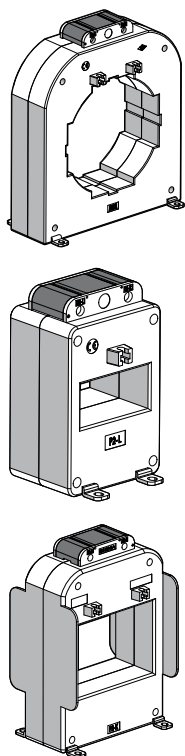
| Type Code | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code    |
|-----------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|---------------|
| S30ML     | 250                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3002500510 |
|           | 300                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3003000510 |
|           | 400                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3004000510 |
|           | 500                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3005000510 |
|           | 600                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3006000510 |
| S30M      | 500                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3005001005 |
|           | 600                 | 10                  | 0,5        | 30X10                   | 3                   | 51                | MSM3006001005 |

## Current Transformers cl: 0.5



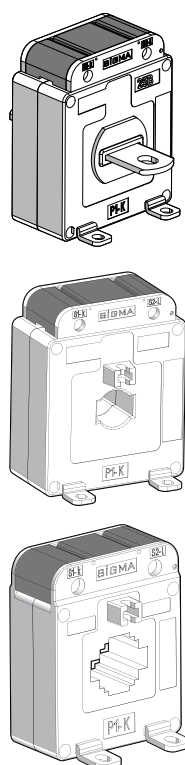
| Type Code | Primary Current (A) | Burden Rate (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S25B      | 20                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500200510 |
|           | 25                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500250510 |
|           | 30                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500300510 |
|           | 40                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500400510 |
|           | 50                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500500510 |
|           | 60                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500600510 |
|           | 75                  | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2500750510 |
|           | 100                 | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2501000510 |
|           | 125                 | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2501250510 |
|           | 150                 | 10               | 0,5        | with bus bar            | 3                   | 24                | SS2501500510 |
| S20       | 100                 | 5                | 0,5        | 20X10                   | 3                   | 30                | SS2001000505 |
|           | 125                 | 5                | 0,5        | 20X10                   | 3                   | 30                | SS2001250505 |
|           | 150                 | 10               | 0,5        | 20X10                   | 3                   | 30                | SS2001500510 |
| S30       | 150                 | 5                | 0,5        | 30 X 10                 | 3                   | 42                | SS3001500505 |
|           | 150                 | 10               | 0,5        | 30 X 10                 | 3                   | 30                | SS3001500510 |
|           | 200                 | 10               | 0,5        | 30 X 10                 | 3                   | 30                | SS3002000510 |
|           | 250                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3002500510 |
|           | 300                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3003000510 |
|           | 400                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3004000510 |
| S40       | 300                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4003000510 |
|           | 400                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4004000510 |
|           | 500                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4005000510 |
|           | 600                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4006000510 |
| S50       | 500                 | 10               | 0,5        | 50 X 10                 | 3                   | 42                | SS5005000510 |
|           | 600                 | 10               | 0,5        | 50 X 10                 | 3                   | 42                | SS5006000510 |
|           | 750                 | 10               | 0,5        | 50 X 10                 | 3                   | 42                | SS5007500510 |
|           | 800                 | 15               | 0,5        | 50 X 10                 | 3                   | 42                | SS5008000515 |
|           | 1000                | 15               | 0,5        | 50 X 10                 | 3                   | 42                | SS5001000515 |
| S60       | 750                 | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6007500515 |
|           | 800                 | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6008000515 |
|           | 1000                | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6001000515 |
| S80       | 750                 | 10               | 0,5        | 80 X 10                 | 3                   | 18                | SS8007500510 |
|           | 800                 | 10               | 0,5        | 80 X 10                 | 3                   | 18                | SS8008000510 |
|           | 1000                | 15               | 0,5        | 80 X 10                 | 3                   | 18                | SS8001000515 |
|           | 1200                | 15               | 0,5        | 80 X 10                 | 3                   | 18                | SS8001200515 |
|           | 1250                | 15               | 0,5        | 80 X 10                 | 3                   | 18                | SS8001250515 |
|           | 1500                | 15               | 0,5        | 80 X 10                 | 3                   | 18                | SS8001500515 |
| S100      | 1200                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001200515 |
|           | 1250                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001250515 |
|           | 1500                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001500515 |
|           | 1600                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001600515 |
|           | 2000                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1002000515 |
|           | 2000                | 30               | 0,5        | 100 X 10                | 3                   | 18                | SS1002000530 |
|           | 2500                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1002500515 |
|           | 2500                | 30               | 0,5        | 100 X 10                | 3                   | 18                | SS1002500530 |
|           | 3000                | 30               | 0,5        | 100 X 10                | 3                   | 18                | SS1003000530 |

## Current Transformers cl: 0.5



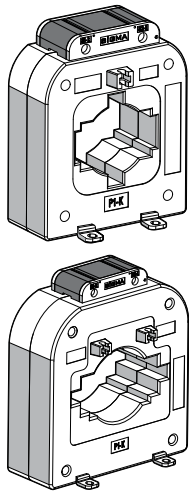
| Type Code              | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|------------------------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S125                   | 2000                | 15                  | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1252000515 |
|                        | 2500                | 15                  | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1252500515 |
|                        | 3000                | 30                  | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1253000530 |
|                        | 4000                | 30                  | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1254000530 |
|                        | 5000                | 30                  | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1255000530 |
| S60D<br>(Narrow Type)  | 600                 | 5                   | 0,5        | 60X10                   | 3                   | 18                | SD6006000505 |
|                        | 750                 | 7,5                 | 0,5        | 60X10                   | 3                   | 18                | SD6007500507 |
|                        | 1000                | 10                  | 0,5        | 60X10                   | 3                   | 18                | SD6010000510 |
|                        | 1200                | 15                  | 0,5        | 60X10                   | 3                   | 18                | SD6012000515 |
|                        | 1250                | 15                  | 0,5        | 60X10                   | 3                   | 18                | SD6012500515 |
|                        | 1600                | 15                  | 0,5        | 60X10                   | 3                   | 18                | SD6016000515 |
| S100D<br>(Narrow Type) | 600                 | 5                   | 0,5        | 4x(100x10)              | 3                   | 12                | SD1006000505 |
|                        | 800                 | 7,5                 | 0,5        | 4x(100x10)              | 3                   | 12                | SD1008000507 |
|                        | 1000                | 10                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1001000510 |
|                        | 1200                | 15                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1001200515 |
|                        | 1250                | 15                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1001250515 |
|                        | 1600                | 15                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1001600515 |
|                        | 2000                | 15                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1002000515 |
|                        | 2500                | 15                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1002500515 |
|                        | 3000                | 30                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1003000530 |
|                        | 4000                | 30                  | 0,5        | 4x(100x10)              | 3                   | 12                | SD1004000530 |

## Sealed Type Current Transformers cl: 0.5



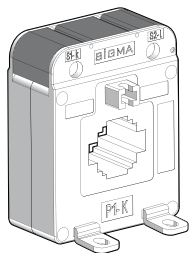
| Type Code | Primary Current (A) | Burden Rate (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S25B      | 20                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500200510 |
|           | 25                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500250510 |
|           | 30                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500300510 |
|           | 40                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500400510 |
|           | 50                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500500510 |
|           | 60                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500600510 |
|           | 75                  | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2500750510 |
|           | 100                 | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2501000510 |
|           | 125                 | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2501250510 |
|           | 150                 | 10               | 0,5        | with bus bar            | 3                   | 24                | MS2501500510 |
| S30       | 150                 | 5                | 0,5        | 30 X 10                 | 3                   | 42                | SS3001500505 |
|           | 150                 | 10               | 0,5        | 30 X 10                 | 3                   | 30                | SS3001500510 |
|           | 200                 | 10               | 0,5        | 30 X 10                 | 3                   | 30                | SS3002000510 |
|           | 250                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3002500510 |
|           | 300                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3003000510 |
|           | 400                 | 10               | 0,5        | 30 X 10                 | 3                   | 42                | SS3004000510 |
| S40       | 300                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4003000510 |
|           | 400                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4004000510 |
|           | 500                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4005000510 |
|           | 600                 | 10               | 0,5        | 40 X 10                 | 3                   | 42                | SS4006000510 |

## Sealed Type Current Transformers cl: 0.5



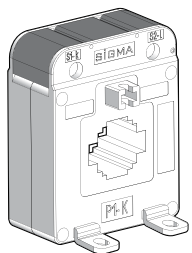
| Type Code | Primary Current (A) | Burden Rate (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S60       | 750                 | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6007500515 |
|           | 800                 | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6008000515 |
|           | 1000                | 15               | 0,5        | 60 X 10                 | 3                   | 36                | SS6001000515 |
| S100      | 1200                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001200515 |
|           | 1250                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001250515 |
|           | 1500                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001500515 |
|           | 1600                | 15               | 0,5        | 100 X 10                | 3                   | 18                | SS1001600515 |
| S125      | 2000                | 15               | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1252000515 |
|           | 2500                | 15               | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1252500515 |
|           | 3000                | 30               | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1253000530 |
|           | 4000                | 30               | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1254000530 |
|           | 5000                | 30               | 0,5        | 3x (125 X 10)           | 3                   | 12                | SS1255000530 |

cl: 1



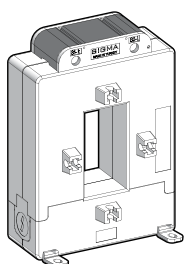
| Type Code | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S30       | 100                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3001001005 |
|           | 150                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3001501005 |
|           | 200                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3002001005 |
|           | 250                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3002501005 |
|           | 300                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3003001005 |
|           | 400                 | 5                   | 1          | 30x10                   | 3                   | 42                | SS3004001005 |
| S40       | 400                 | 5                   | 1          | 40x10                   | 3                   | 42                | SS4004001005 |
|           | 500                 | 5                   | 1          | 40x10                   | 3                   | 42                | SS4005001005 |
|           | 600                 | 5                   | 1          | 40x10                   | 3                   | 42                | SS4006001005 |

cl: 3



| Type Code | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code  |
|-----------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|-------------|
| S30       | 50                  | 2,5                 | 3          | 30x10                   | 3                   | 42                | SS300503002 |
|           | 60                  | 2,5                 | 3          | 30x10                   | 3                   | 42                | SS300603002 |
|           | 75                  | 2,5                 | 3          | 30x10                   | 3                   | 42                | SS300753002 |

## Split-Core Type Current Transformers



| Type Code | Primary Current (A) | Rated Power at (VA) | Class (cl) | Bus Bar Dimensions (mm) | Min. Order Quantity | Number in Cartoon | Order Code   |
|-----------|---------------------|---------------------|------------|-------------------------|---------------------|-------------------|--------------|
| S60A      | 400                 | 3,75                | 1          | 60x30                   | 3                   | 18                | SA6004001003 |
|           | 500                 | 5                   | 1          | 60x30                   | 3                   | 18                | SA6005000505 |
|           | 600                 | 5                   | 0,5        | 60x30                   | 3                   | 18                | SA6006000505 |
|           | 800                 | 7,5                 | 0,5        | 60x30                   | 3                   | 18                | SA6008000507 |
|           | 1000                | 10                  | 0,5        | 60x30                   | 3                   | 18                | SA6010000510 |

## Main Dimensions

| Type Code | Cable Diameter (mm) | Window (mm) | Bus Bar Dimensions (mm) | Cable Section (mm <sup>2</sup> ) | Primer Current (A) | Rated Power at (VA) | Outer Dimensions WxHxD (mm) |
|-----------|---------------------|-------------|-------------------------|----------------------------------|--------------------|---------------------|-----------------------------|
| S25B      | —                   | —           | —                       | —                                | 20...150           | 2.5...30            | 80x100x40                   |
| S20       | 20                  | 21x11       | 20x10                   | 4...95                           | 60...200           | 2.5....15           | 80x100x(40-50-60)           |
| S20M      | 20                  | 21x11       | 20x10                   | 4...95                           | 75...200           | 1....10             | 62x80x(30-45)               |
| S30       | 24                  | 31x11       | 30x10                   | 4...150                          | 100...600          | 1....30             | 80x100x(40-50-60)           |
| S30M      | 24                  | 31x11       | 30x10                   | 4...150                          | 150...600          | 1....15             | 62x80x(30-45)               |
| S40       | 31                  | 41x11       | 40x10                   | 4...240                          | 300...600          | 2.5....30           | 80x100x(40-50-60)           |
| S50       | 38                  | 51x11       | 50x10                   | 4...300                          | 500...1000         | 2.5.....30          | 80x100x(40-50-60)           |
| S60       | 46                  | 62x31       | 60x10                   | 4...300                          | 500...1000         | 5....30             | 107x132x45                  |
| S60D      | —                   | 60x72       | 60x10                   | —                                | 600...1600         | 5....15             | 82x134x60                   |
| S80       | 67                  | 81x31       | 2x (80x10)              | 4...300                          | 500...1500         | 5....30             | 145x165x55                  |
| S100      | —                   | 102x11      | 100x10                  | —                                | 500...2500         | 5....30             | 145x165x55                  |
| S100D     | —                   | 101x72      | 4x (100x10)             | —                                | 600...5000         | 10....30            | 128x193x61                  |
| S125      | 126                 | 126x11      | 3x (125x10)             | 4...300                          | 2000...5000        | 15....60            | 190x220x55                  |

## Determination of Current Transformer's Power

The below formula can be used to determine current transformer's power. The most important matter is; determined power of current transformer should not exceed from maximum load of transformer power and not less than 1/4 of rated power. Otherwise, It may cause fault measuring or create fault protection signals.

$$P_s = P_A + P_K + P_T$$

$P_s$  : Total Secondary Power (VA)

$P_A$  : Secondary rated Power (VA)

$P_K$  : Dielectric Cable Loss (VA)

$P_T$  : Contact Loss (considered 0.5 VA)

$$P_K = (I_{sn}^2 \times 2L) / S \times 56$$

$I_{sn}$  = Secondary Rated Current (A)

$L$  = Length of the cable on secondary side (m)

$S$  = Section of copper cable (mm<sup>2</sup>)

56 = Conductivity of Copper Cable (m/ohm x mm<sup>2</sup>)

| Distance Between Current Transformer and Load (meter) | Cable Loss ( $P_K$ ) According to Secondary Cable Section (VA) |                   |                   |                    |
|-------------------------------------------------------|----------------------------------------------------------------|-------------------|-------------------|--------------------|
|                                                       | 2.5 mm <sup>2</sup>                                            | 4 mm <sup>2</sup> | 6 mm <sup>2</sup> | 10 mm <sup>2</sup> |
| 1m                                                    | 0.36                                                           | 0.22              | 0.15              | 0.09               |
| 2m                                                    | 0.71                                                           | 0.45              | 0.3               | 0.18               |
| 3m                                                    | 1.07                                                           | 0.67              | 0.45              | 0.27               |
| 4m                                                    | 1.43                                                           | 0.89              | 0.6               | 0.36               |
| 5m                                                    | 1.78                                                           | 1.12              | 0.74              | 0.44               |
| 6m                                                    | 2.14                                                           | 1.34              | 0.89              | 0.54               |
| 7m                                                    | 2.5                                                            | 1.56              | 1.04              | 0.63               |
| 8m                                                    | 2.86                                                           | 1.79              | 1.19              | 0.71               |
| 9m                                                    | 3.21                                                           | 2.01              | 1.34              | 0.8                |
| 10m                                                   | 3.57                                                           | 2.24              | 1.49              | 0.89               |

**\*\*You can use this formula to calculate cable loss which apart from above mentioned cable length.**

## Power of devices connected to current transformers ( $P_A$ )

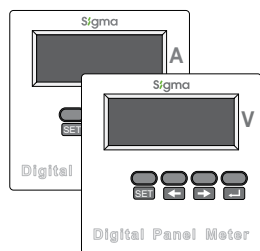
| Device                          | Power (VA)  |
|---------------------------------|-------------|
| Ammeter                         | 0,7 ... 1,5 |
| Wattmeter                       | 0,2 ... 5,0 |
| CosØmeter                       | 2,0 ... 6,0 |
| Counters (active and reactives) | 0,4 ... 1,0 |
| Reactive power control relays   | 0,5 ... 1,0 |
| Over current relays             | 0,2 ... 6,0 |
| Reverse current relays          | 1,0 ... 2,0 |
| Secondary Thermal Relays        | 7,2 ... 9,0 |

## Current error and Phase shifting limits (According to IEC 60044-1, IEC 385 class 0.1-0.2-0.5-1)

| Accuracy Class | Current (proportion) error ± percentage for the rated currents given below |      |      |      | ± Phase shifting for rated current percentages given below |     |      |      |               |      |      |      |
|----------------|----------------------------------------------------------------------------|------|------|------|------------------------------------------------------------|-----|------|------|---------------|------|------|------|
|                |                                                                            |      |      |      | Minutes                                                    |     |      |      | Centi-radians |      |      |      |
|                | %5                                                                         | %20  | %100 | %120 | %5                                                         | %20 | %100 | %120 | %5            | %20  | %100 | %120 |
| 0,1            | 0,4                                                                        | 0,2  | 0,1  | 0,1  | 15                                                         | 5   | 5    | 5    | 0,45          | 0,24 | 0,15 | 0,15 |
| 0,2            | 0,75                                                                       | 0,35 | 0,2  | 0,2  | 30                                                         | 10  | 10   | 10   | 0,9           | 0,45 | 0,3  | 0,3  |
| 0,5            | 1,5                                                                        | 0,75 | 0,5  | 0,5  | 90                                                         | 30  | 30   | 30   | 2,7           | 1,35 | 0,9  | 0,9  |
| 1,0            | 3,0                                                                        | 1,5  | 1,0  | 1,0  | 180                                                        | 90  | 60   | 60   | 5,4           | 2,7  | 1,8  | 1,8  |

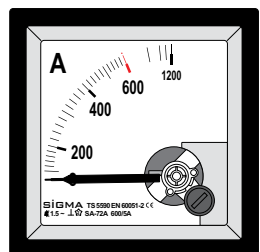
When current fault and phase shift at rated frequency varies between 1/1 and 1/4 of the secondary load, rated load, the values in the table should not be exceeded

## Digital Measurement Devices



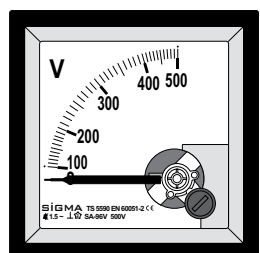
| Type Code | Description                                | Diameter (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|--------------------------------------------|---------------|---------------------|-------------------|------------|
| SD 72A    | Ammeter with Current Transformer 1-5000/5A | 72x72         | 1                   | 72                | SD72A-5000 |
| SD 96A    | Ammeter with Current Transformer 1-5000/5A | 96x96         | 1                   | 72                | SD96A-5000 |
| SD 72V    | Voltmeter 0-600 V AC                       | 72x72         | 1                   | 72                | SD72V-0600 |
| SD 96V    | Voltmeter 0-600 V AC                       | 96x96         | 1                   | 72                | SD96V-0600 |
| SD 96M    | I-V-Hz Multimeter                          | 96x96         | 1                   | 27                | SD96M-0600 |

## Analogue Ammeters



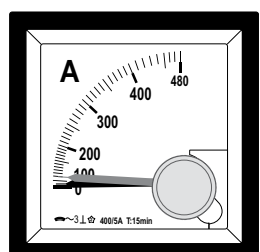
| Type Code | Description                              | Diameter (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|------------------------------------------|---------------|---------------------|-------------------|------------|
| SA 72A    | Analogue Ammeter 30A, Direct Connection  | 72x72         | 1                   | 48                | SA72A-D030 |
|           | Analogue Ammeter 50A, Direct Connection  | 72x72         | 1                   | 48                | SA72A-D050 |
|           | Analogue Ammeter 100A, Direct Connection | 72x72         | 1                   | 48                | SA72A-D100 |
|           | Ammeter for X/5 A Current Transformer    | 72x72         | 1                   | 48                | SA72A-X    |
| SA 96A    | Analogue Ammeter 30A, Direct Connection  | 96x96         | 1                   | 27                | SA96A-D030 |
|           | Analogue Ammeter 50A, Direct Connection  | 96x96         | 1                   | 27                | SA96A-D050 |
|           | Analogue Ammeter 100A, Direct Connection | 96x96         | 1                   | 27                | SA96A-D100 |
|           | Ammeter for X/5 A Current Transformer    | 96x96         | 1                   | 27                | SA96A-X    |

## Analogue Voltmeters



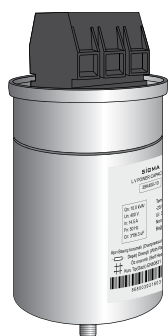
| Type Code | Description                   | Diameter (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|-------------------------------|---------------|---------------------|-------------------|------------|
| SA 72V    | Analogue Voltmeter 0-250 V AC | 72x72         | 1                   | 48                | SA72V-0250 |
|           | Analogue Voltmeter 0-500 V AC | 72x72         | 1                   | 48                | SA72V-0500 |
| SA 96V    | Analogue Voltmeter 0-250 V AC | 96x96         | 1                   | 27                | SA96V-0250 |
|           | Analogue Voltmeter 0-500 V AC | 96x96         | 1                   | 27                | SA96V-0500 |

## Analogue Ammeters with Demandmeter



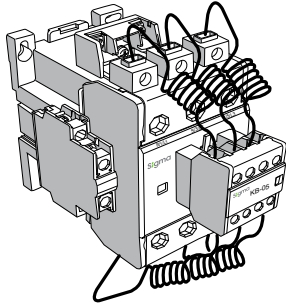
| Type Code | Description                                 | Diameter (mm) | Min. Order Quantity | Number in Cartoon | Order Code |
|-----------|---------------------------------------------|---------------|---------------------|-------------------|------------|
| SA 72D    | Ammeter with Demand meter 250/5 A (15 min)  | 72x72         | 1                   | 48                | SA72D-0250 |
|           | Ammeter with Demand meter 400/5 A (15 min)  | 72x72         | 1                   | 48                | SA72D-0400 |
|           | Ammeter with Demand meter 600/5 A (15 min)  | 72x72         | 1                   | 48                | SA72D-0600 |
|           | Ammeter with Demand meter 1000/5 A (15 min) | 72x72         | 1                   | 48                | SA72D-1000 |
| SA 96D    | Ammeter with Demand meter 250/5 A (15 min)  | 96x96         | 1                   | 27                | SA96D-0250 |
|           | Ammeter with Demand meter 400/5 A (15 min)  | 96x96         | 1                   | 27                | SA96D-0400 |
|           | Ammeter with Demand meter 600/5 A (15 min)  | 96x96         | 1                   | 27                | SA96D-0600 |
|           | Ammeter with Demand meter 1000/5 A (15 min) | 96x96         | 1                   | 27                | SA96D-1000 |

## LV Power Capacitors (Dry, cylindrical type, self healing, overpressing protection)



| Type Code | Power (kVar)<br>(230V) | Type     | Voltage (V) | Diameters<br>DxH (mm) | Min. Order<br>Quantity | Number in<br>Cartoon | Order Code  |
|-----------|------------------------|----------|-------------|-----------------------|------------------------|----------------------|-------------|
| 1SK230    | 0,25                   | 1 Phase  | 230         | 76x105                | 3                      | 10                   | 1SK230-0.25 |
|           | 0,5                    | 1 Phase  | 230         | 76x105                | 3                      | 10                   | 1SK230-0.5  |
|           | 1                      | 1 Phase  | 230         | 76x105                | 3                      | 7                    | 1SK230-1    |
|           | 1,5                    | 1 Phase  | 230         | 76x105                | 3                      | 7                    | 1SK230-1.5  |
|           | 2,5                    | 1 Phase  | 230         | 76x120                | 3                      | 7                    | 1SK230-2.5  |
| 3SK400    | 1,0                    | 3 Phases | 400         | 65x175                | 3                      | 10                   | 3SK400-1    |
|           | 1,5                    | 3 Phases | 400         | 65x175                | 3                      | 10                   | 3SK400-1.5  |
|           | 2,5                    | 3 Phases | 400         | 65x175                | 3                      | 10                   | 3SK400-2.5  |
|           | 5,0                    | 3 Phases | 400         | 76x175                | 3                      | 7                    | 3SK400-5    |
|           | 7,5                    | 3 Phases | 400         | 76x240                | 3                      | 7                    | 3SK400-7.5  |
|           | 10,00                  | 3 Phases | 400         | 76x240                | 3                      | 7                    | 3SK400-10   |
|           | 12,5                   | 3 Phases | 400         | 86x240                | 3                      | 5                    | 3SK400-12.5 |
|           | 15,0                   | 3 Phases | 400         | 96x240                | 3                      | 4                    | 3SK400-15   |
|           | 20,0                   | 3 Phases | 400         | 106x240               | 3                      | 3                    | 3SK400-20   |
|           | 25,0                   | 3 Phases | 400         | 116x240               | 3                      | 3                    | 3SK400-25   |
|           | 30,0                   | 3 Phases | 400         | 116X285               | 3                      | 3                    | 3SK400-30   |
|           | 40                     | 3 Phases | 400         | 116X325               | 3                      | 2                    | 3SK400-40   |
|           | 50                     | 3 Phases | 400         | 137X400               | 3                      | 2                    | 3SK400-50   |
| 3SK440    | 1,0                    | 3 Phases | 440         | 65x175                | 3                      | 10                   | 3SK440-1    |
|           | 1,5                    | 3 Phases | 440         | 65x175                | 3                      | 10                   | 3SK440-1.5  |
|           | 2,5                    | 3 Phases | 440         | 65x175                | 3                      | 10                   | 3SK440-2.5  |
|           | 5,0                    | 3 Phases | 440         | 65x175                | 3                      | 7                    | 3SK440-5    |
|           | 7,5                    | 3 Phases | 440         | 65x240                | 3                      | 7                    | 3SK440-7.5  |
|           | 10,00                  | 3 Phases | 440         | 76x240                | 3                      | 7                    | 3SK440-10   |
|           | 12,5                   | 3 Phases | 440         | 76x240                | 3                      | 7                    | 3SK440-12.5 |
|           | 15,0                   | 3 Phases | 440         | 86x240                | 3                      | 4                    | 3SK440-15   |
|           | 20,0                   | 3 Phases | 440         | 96x240                | 3                      | 3                    | 3SK440-20   |
|           | 25,0                   | 3 Phases | 440         | 106x240               | 3                      | 3                    | 3SK440-25   |
|           | 30,0                   | 3 Phases | 440         | 116X240               | 3                      | 3                    | 3SK440-30   |
|           | 40                     | 3 Phases | 440         | 116X325               | 3                      | 2                    | 3SK440-40   |
|           | 50                     | 3 Phases | 440         | 137X400               | 3                      | 2                    | 3SK440-50   |
| 3SK525    | 10                     | Trifaze  | 525         | 76x240                | 3                      | 7                    | 3SK525-10   |
|           | 15                     | Trifaze  | 525         | 96x260                | 3                      | 4                    | 3SK525-15   |
|           | 20                     | Trifaze  | 525         | 106x260               | 3                      | 3                    | 3SK525-20   |
|           | 25                     | Trifaze  | 525         | 116x260               | 3                      | 3                    | 3SK525-25   |
|           | 30                     | Trifaze  | 525         | 116x260               | 3                      | 3                    | 3SK525-30   |

## Contactors for Capacitor Bank - Coil Voltage: 230V AC

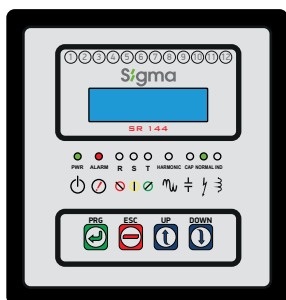


| Type Code | Ac-6b (A) | Rated Capacitor Power at 220/240V (kVAr) $\Theta \leq 55^\circ\text{C}$ | Rated Capacitor Power at 380/440V (kVAr) $\Theta \leq 55^\circ\text{C}$ | Operation /hour | Electrical Life (Cycle) | Auxiliary Contact on Body | Min. Order Quantity | Number in Carton | Order Code |
|-----------|-----------|-------------------------------------------------------------------------|-------------------------------------------------------------------------|-----------------|-------------------------|---------------------------|---------------------|------------------|------------|
| SCK-12    | 4         | 1,5                                                                     | 2,5                                                                     | 200 op/h        | 200.000                 | 1NO+1NC                   | 1                   | 20               | SCK012     |
| SCK-18    | 8         | 3                                                                       | 5                                                                       | 200 op/h        | 200.000                 | 1NO+1NC                   | 1                   | 20               | SCK018     |
| SCK-25    | 14        | 6                                                                       | 10                                                                      | 200 op/h        | 200.000                 | 1NO+1NC                   | 1                   | 20               | SCK025     |
| SCK-32    | 22        | 8                                                                       | 15                                                                      | 200 op/h        | 200.000                 | 1NO+1NC                   | 1                   | 14               | SCK032     |
| SCK-40    | 26        | 12                                                                      | 20                                                                      | 200 op/h        | 200.000                 | 1NO+1NC                   | 1                   | 14               | SCK040     |
| SCK-50    | 36        | 15                                                                      | 25                                                                      | 100 op/h        | 100.000                 | 1NO+1NC                   | 1                   | 8                | SCK050     |
| SCK-65    | 48        | 20                                                                      | 33,3                                                                    | 100 op/h        | 100.000                 | 1NO+1NC                   | 1                   | 8                | SCK065     |
| SCK-80    | 66        | 22                                                                      | 40                                                                      | 100 op/h        | 100.000                 | 1NO+1NC                   | 1                   | 8                | SCK080     |
| SCK-95    | 78        | 33,3                                                                    | 50                                                                      | 100 op/h        | 100.000                 | 1NO+1NC                   | 1                   | 8                | SCK095     |

## LV Capacitor Bank Component Selection

| 400 V AC 3 Phases Capacitor |                    |                   | Cable                      | LV Circuit Breaker |                   | MCB               | Contactor for Capacitor Bank | Power Contactor |
|-----------------------------|--------------------|-------------------|----------------------------|--------------------|-------------------|-------------------|------------------------------|-----------------|
| Type Code                   | Rated Power (kVAr) | Rated Current (A) | Section (mm <sup>2</sup> ) | Type               | Rated Current (A) | Rated Current (A) | Type                         | Type            |
| 3SK400-1                    | 1,0                | 1,4               | 2,5                        |                    |                   | C6                | SCK-12                       | SCG-18          |
| 3SK400-1.5                  | 1,5                | 2,16              | 2,5                        |                    |                   | C10               | SCK-12                       | SCG-18          |
| 3SK400-2.5                  | 2,5                | 3,6               | 2,5                        |                    |                   | C10               | SCK-12                       | SCG-18          |
| 3SK400-5                    | 5,0                | 7,2               | 2,5                        | C160, K160         | 20                | C16               | SCK-18                       | SCG-25          |
| 3SK400-7.5                  | 7,5                | 10,80             | 2,5                        | C160, K160         | 20                | C20               | SCK-25                       | SCG-32          |
| 3SK400-10                   | 10,00              | 14,40             | 4                          | C160, K160         | 32                | C25               | SCK-25                       | SCG-40          |
| 3SK400-12.5                 | 12,5               | 18,00             | 6                          | C160, K160         | 40                | C32               | SCK-32                       | SCG-50          |
| 3SK400-15                   | 15,0               | 21,60             | 6                          | C160, K160         | 40                | C40               | SCK-32                       | SCG-65          |
| 3SK400-20                   | 20,0               | 28,80             | 10                         | C160, K160         | 50                | C50               | SCK-40                       | SCG-80          |
| 3SK400-25                   | 25,0               | 36,00             | 16                         | C160, K160         | 63                | C63               | SCK-50                       | SCG-95          |
| 3SK400-30                   | 30,0               | 43,20             | 25                         | C160, K160         | 80                | C80               | SCK-65                       | SCM-100         |
| 3SK400-40                   | 40                 | 57,6              | 35                         | C160, K160         | 100               | C100              | SCK-80                       | SCM-125         |
| 3SK400-50                   | 50                 | 72                | 35                         | C160, K160         | 125               | C125              | SCK-95                       | SCM-150         |

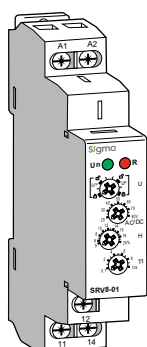
## Reactive Power Control Relay



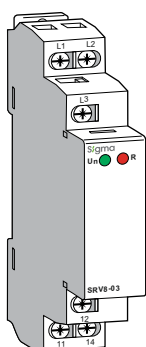
| Type Code | Description                                                                                                           | Diameter (mm) | Min. Order Quantity | Number in Carton | Order Code |
|-----------|-----------------------------------------------------------------------------------------------------------------------|---------------|---------------------|------------------|------------|
| SR144     | Reactive Power Controller, 12 Steps, Digital, controlling monophase capacitors, Led Display showing each single phase | 144x144       | 1                   | 6                | SR144-012  |

## Relays

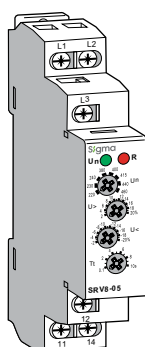
| Type      | Description                  | Explanation                                                                              | Supply Voltage | Order Code |
|-----------|------------------------------|------------------------------------------------------------------------------------------|----------------|------------|
| SRV8-01   | Monitoring Voltage Relay     | Over/High Voltage in Windows Mode                                                        | 230 V AC       | SRV801230  |
| SRV8-03   | Monitoring Voltage Relay     | Phase sequence and Phase Failure Protection                                              | 220-460 V      | SRV803460  |
| SRV8-05   | Monitoring Voltage Relay     | Over Voltage<br>Under Voltage<br>Asymmetry Time Delay<br>Phase Sequence<br>Phase Failure | 220-460 vV     | SRV805460  |
| SRT8-A30S | Single - Function Time Relay | 0.1-30 Second Delay ON                                                                   | 230 V AC       | SRT8A30S   |
| SRT8-A60S | Single - Function Time Relay | 0.1-60 Second Delay ON                                                                   | 230 V AC       | SRT8A60S   |
| SRT8-A10D | Multi-Function Time Relay    | 1×SPDT                                                                                   | 230 V AC       | SRT8A10D   |
| SRT8-M1   | Multi-Function Time Relay    | 2×SPDT                                                                                   | AC/DC 12V~240V | SRT8M1     |
| SRT8-M2   | Multi-Function Time Relay    | 0.1 s - 10 days, ON, OFF                                                                 | AC/DC 12V~240V | SRT8M2     |
| SRT8-STD  | Delay On Star/Delta Relay    | Range of time delay t1:0.1s -10min,<br>Switch time t2:0.1s-1s                            | AC/DC 12V~240V | SRT8ST240  |
| SRT8-STA  | Delay On Star/Delta Relay    | Range of time delay t1:0.1s -10min,<br>Switch time t2:0.1s-1s                            | 230 V AC       | SRT8STA    |
| SRT8-S1   | Asymmetric Cycler Relay      | 0.1 s - 10 days                                                                          | AC/DC 12V~240V | SRTSS1240  |
| SRL8-01   | Level Control Relay          | 2 level control mode                                                                     | AC/DC 12V~240V | SRL801240  |
| SRL8-LS   | Staircase Switch             | Delay off reacting to contact switching                                                  | 230 V AC       | SRT8LS230  |



SRV8-01



SRV8-03



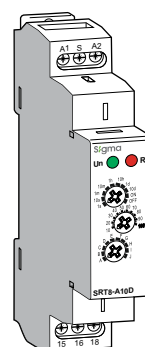
SRV8-05



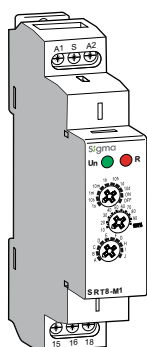
SRT8-A30S



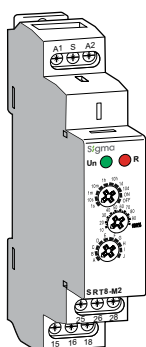
SRT8-A60S



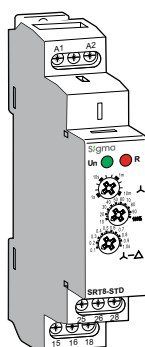
SRT8-A10D



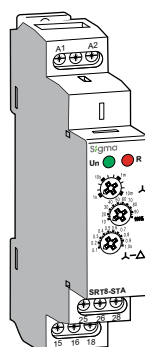
SRT8-M1



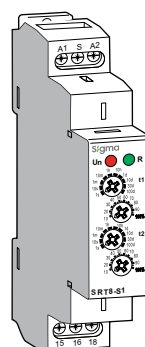
SRT8-M2



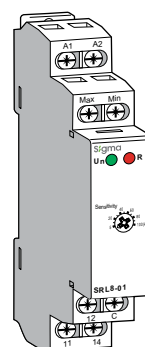
SRT8-STD



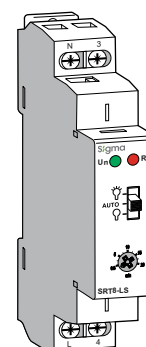
SRT8-STA



SRT8-S1



SRL8-01



SRL8-LS

ISO 9001

ISO 14001

OHSAS 18001

RoHS Certificates



ASTA Certificates

TÜV Certificates

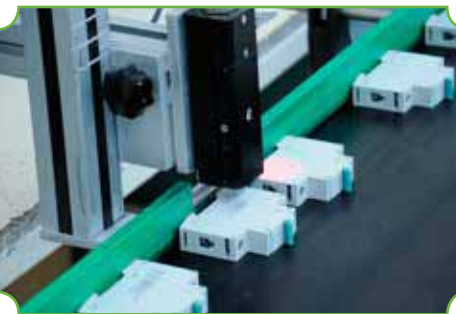


TSE Certificates



CE Certificate of Conformity







WIN İSTANBUL



IRAN



ETHIOPIA



NIGERIA



SOUTH AFRICA



HANNOVER MESSE



SPAIN



DUBAI MIDDLE EAST ELECTRICITY



# Sigma elektrik

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