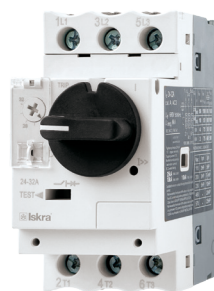


Low Voltage Switchgear Industrial



MS25

motor protection circuit breakers

Motor protection circuit breakers are special type of circuit breakers designed for protection of wide range of single-phase and three-phase ac motors against overload and short circuit. They are used in industry, small machines, agricultural machines, compressors etc.



For motor protection

- ▶ All kind of AC induction motors
- ▶ For three-phase motors up to 22 kW

Protection of other loads

- ▶ Various low-inductive loads
- ▶ Version with a thermal overload release for single-phase consumers MST20
- ▶ Version with thermal and magnetic release for single phase consumers MS20
- ▶ Version for short-circuit protection MSZ25
- ▶ Version for transformer protection MS25TR

Other Benefits

- ▶ Manual control:
 - START, STOP, push-buttons - Test of release function (TEST)
- ▶ Automatic switch-off at over-current with thermal or magnetic release
- ▶ Control with under-voltage release or shunt release
- ▶ An auxiliary switch for side mounting or flush mounting used for indication of the switching state
- ▶ Indication of release with trip indicating auxiliary switch
- ▶ ON/OFF buttons positions unequivocally indicates switching position of main contacts
- ▶ Contact material :
 - resistant to contact welding
 - enables low contact heating
- ▶ Isolating distance between contacts: 4.5 mm per contact place
- ▶ Connection of a rigid or flexible conductor
- ▶ Assembly to 35 mm wide mounting rail in compliance with EN 60715
- ▶ Vertical or horizontal operational position

Motor protection circuit breakers with overload and short-circuit release AC-3 acc. to IEC/EN 60947-4-1

| Type | Setting range (A) | Motor power (3-phase, 400 V) (kW) | Ordering No. | Weight (g) | Quantity / Box |
|-----------|-------------------|-----------------------------------|--------------|------------|----------------|
| MS25-0.16 | 0.1 ... 0.16 | 0.02 | 30.107.955 | 252 | 1 |
| MS25-0.25 | 0.16 ... 0.25 | 0.06 | 30.107.956 | 252 | 1 |
| MS25-0.4 | 0.25 ... 0.4 | 0.09 | 30.107.957 | 252 | 1 |
| MS25-0.63 | 0.4 ... 0.63 | 0.12 | 30.107.958 | 252 | 1 |
| MS25-1 | 0.63 ... 1 | 0.18 ... 0.25 | 30.107.959 | 252 | 1 |
| MS25-1.6 | 1 ... 1.6 | 0.37 ... 0.55 | 30.107.960 | 252 | 1 |
| MS25-2.5 | 1.6 ... 2.5 | 0.75 ... 1.1 | 30.107.961 | 252 | 1 |
| MS25-4 | 2.5 ... 4 | 1.1 ... 1.5 | 30.107.962 | 252 | 1 |
| MS25-6.3 | 4 ... 6.3 | 2.2 ... 2.5 | 30.107.963 | 252 | 1 |
| MS25-10 | 6.3 ... 10 | 3 ... 4 | 30.107.964 | 252 | 1 |
| MS25-16 | 10 ... 16 | 5 ... 7.5 | 30.107.965 | 252 | 1 |
| MS25-20 | 16 ... 20 | 9 | 30.107.966 | 252 | 1 |
| MS25-25 | 20 ... 25 | 11 ... 12.5 | 30.107.967 | 252 | 1 |
| MS25-32 | 25 ... 32 | 15 | 30.109.475 | 252 | 1 |



Motor protection circuit breakers for single-phase consumers MS20 with overload and short-circuit release AC-3 acc. to IEC/EN 60947-4-1

| Type | Setting range (A) | Motor power (single-phase, 220-240 V) (kW) | Ordering No. | Weight (g) | Quantity / Box |
|-----------|-------------------|--|--------------|------------|----------------|
| MS20-0.16 | 0.1 ... 0.16 | - | 30.108.523 | 252 | 1 |
| MS20-0.25 | 0.16 ... 0.25 | - | 30.108.524 | 252 | 1 |
| MS20-0.4 | 0.25 ... 0.4 | - | 30.108.525 | 252 | 1 |
| MS20-0.63 | 0.4 ... 0.63 | - | 30.108.526 | 252 | 1 |
| MS20-1 | 0.63 ... 1 | 0.06 ... 0.09 | 30.108.527 | 252 | 1 |
| MS20-1.6 | 1 ... 1.6 | 0.12 | 30.108.528 | 252 | 1 |
| MS20-2.5 | 1.6 ... 2.5 | 0.18 ... 0.25 | 30.108.529 | 252 | 1 |
| MS20-4 | 2.5 ... 4 | 0.37 | 30.108.513 | 252 | 1 |
| MS20-6.3 | 4 ... 6.3 | 0.55 ... 0.75 | 30.108.514 | 252 | 1 |
| MS20-10 | 6.3 ... 10 | 1.1 ... 1.5 | 30.108.515 | 252 | 1 |
| MS20-16 | 10 ... 16 | 2.2 | 30.108.516 | 252 | 1 |
| MS20-20 | 16 ... 20 | 3 | 30.108.517 | 252 | 1 |



Accessories for MS25

Auxiliary contact block for lateral mounting PS

| Type | Number of contacts | | Wiring diagram | Ordering No. | Weight (g) | Quantity / Box |
|------|--------------------|----|----------------|--------------|------------|----------------|
| | NO | NC | | | | |
| PS01 | 0 | 1 | | 38.901.670 | 35 | 1 |
| PS10 | 1 | 0 | | 38.901.669 | 35 | 1 |
| PS11 | 1 | 1 | | 38.901.501 | 35 | 1 |
| PS20 | 2 | 0 | | 38.901.500 | 35 | 1 |



Under-voltage release U

| Voltage (V)* | Frequency (Hz) | Ordering No. | Weight (g) | Quantity / Box |
|--------------|----------------|--------------|------------|----------------|
| 24 | 50/60 | 38.901.502 | 62 | 1 |
| 24 | 60 | 38.901.952 | 62 | 1 |
| 48 | 50 | 38.901.904 | 62 | 1 |
| 48 | 60 | 38.902.956 | 62 | 1 |
| 60 | 50 | 38.901.504 | 62 | 1 |
| 110 | 50 | 38.901.505 | 62 | 1 |
| 120 | 60 | 38.903.035 | 62 | 1 |
| 120 | 50 | 38.903.035 | 62 | 1 |
| 220 - 240 | 50 | 38.901.506 | 62 | 1 |
| 240 | 60 | 38.901.506 | 62 | 1 |
| 380 - 415 | 50 | 38.901.508 | 62 | 1 |
| 440 | 60 | 38.902.964 | 62 | 1 |
| 415 | 60 | 38.902.964 | 62 | 1 |
| 480 | 50 | 38.902.966 | 62 | 1 |
| 480 | 60 | 38.901.863 | 62 | 1 |
| 500 | 50 | 38.902.968 | 62 | 1 |
| 500 | 60 | 38.902.970 | 62 | 1 |
| 600 | 50 | 38.902.972 | 62 | 1 |
| 600 | 60 | 38.901.870 | 62 | 1 |



* U release for other control voltage/frequencies are on request.

Shunt release A

| Voltage (V)* | Frequency (Hz) | Ordering No. | Weight (g) | Quantity / Box |
|--------------|----------------|--------------|------------|----------------|
| 24 | 50/60 | 38.901.510 | 62 | 1 |
| 24 | 60 | 38.901.953 | 62 | 1 |
| 48 | 50 | 38.901.905 | 62 | 1 |
| 48 | 60 | 38.902.957 | 62 | 1 |
| 60 | 50 | 38.901.504 | 62 | 1 |
| 110 | 50 | | | |
| 120 | 60 | 38.901.513 | 62 | 1 |
| 120 | 50 | 38.901.727 | 62 | 1 |
| 220 - 240 | 50 | | | |
| 240 | 60 | 38.901.514 | 62 | 1 |
| 380 - 415 | 50 | | | |
| 440 | 60 | 38.901.516 | 62 | 1 |
| 415 | 60 | 38.902.965 | 62 | 1 |
| 480 | 50 | 38.902.967 | 62 | 1 |
| 480 | 60 | 38.901.864 | 62 | 1 |
| 500 | 50 | 38.902.969 | 62 | 1 |
| 500 | 60 | 38.902.971 | 62 | 1 |
| 600 | 50 | 38.902.973 | 62 | 1 |
| 600 | 60 | 38.901.872 | 62 | 1 |



* A releases for other control voltage/frequencies are on request.

Trip-indicating auxiliary contact block RS

| Type | Number of contacts | | Wiring diagram | Ordering No. | Weight (g) | Quantity / Box |
|------|--------------------|----|----------------|--------------|------------|----------------|
| | NO | NC | | | | |
| RS01 | 0 | 1 | | 38.902.149 | 35 | 1 |
| RS10 | 1 | 0 | | 38.902.150 | 35 | 1 |



Note RS contact changes position from its normal state when the MS25 MPCB trips due to overload, short-circuit or the manual depression of the TEST lever.

Adapters for connection of MS25 with a contactor

| Type | Conductor length (mm) | Conductor cross-section (mm ²) | Thermal current (A) | Ordering No. | Weight (g) | Quantity / Box |
|-------------|-----------------------|--|---------------------|--------------|------------|----------------|
| DST-U-2.5 | 40 | 2.5 | 20 | 665.200.020 | 12 | 10 |
| DST-U-4 | 40 | 4 | 35 | 665.200.021 | 16 | 10 |
| DST-U-2.5 L | 70 | 2.5 | 20 | 665.200.022 | 14 | 10 |



Enclosures for MS25

| Type | Degree of protection | Ordering No. | Weight (g) | Quantity / Box |
|---------------------|----------------------|--------------|------------|----------------|
| Enclosures | | | | |
| O-41 | IP41 | 38.422.509 | 222 | 1 |
| O-55 | IP55 | 38.422.510 | 222 | 1 |
| Front Plates | | | | |
| CP-41 | IP41 | 38.422.035 | 150 | 1 |
| CP-55 | IP55 | 38.421.994 | 150 | 1 |



Accessories for enclosures O-41/55 and CP-41/55

| Type | Voltage | Ordering No. | Weight (g) | Quantity / Box |
|--|---------|--------------|------------|----------------|
| Emergency stop push-button NAT | / | 38.901.665 | 40 | 1 |
| Emergency stop push-button with keylock NAT-K | / | 38.902.488 | 40 | 1 |
| Padlocking feature Z | / | 38.901.632 | 95 | 1 |
| Push-button diaphragm IP55 | / | 38.422.130 | 12 | 1 |
| Neutral link NL | / | 38.552.076 | 525 | 25 |
| Signal lamp SSr (Red) | 250 V | 623.000.131 | 175 | 25 |
| | 400 V | 623.009.261 | | |
| Signal lamp SSr (Green) | 250 V | 623.009.257 | 175 | 25 |
| | 400 V | 623.009.262 | | |
| Signal lamp SSb (Transparent) | 250 V | 623.009.256 | 175 | 25 |
| | 400 V | 623.009.263 | | |
| Cable inlet M25 x 1.5 | / | 315.609.520 | 15 | 100 |



MS32

motor protection circuit breakers

Motor protection circuit breakers are special type of circuit breakers designed for protection of wide range of single-phase and three-phase ac motors against overload and short circuit. They are used in industry, small machines, agricultural machines, compressors etc.

For motor protection

- ▶ All kind of AC induction motors
- ▶ For three-phase motors up to 22 kW

Protection of other loads

- ▶ Various low-inductive loads
- ▶ Version for transformer protection MS32TR

Other Benefits

- ▶ Manual control:
 - START, STOP, push-buttons - with a trip indication (i.e. push-buttons stay in the middle position)
- ▶ Automatic switch-off at over-current with thermal or magnetic release
- ▶ Control with under-voltage release or shunt release
- ▶ An auxiliary switch for side mounting or flush mounting used for indication of the switching state
- ▶ Indication of release with trip indicating auxiliary switch
- ▶ ON/OFF buttons positions unequivocally indicates switching position of main contacts
- ▶ Contact material :
 - resistant to contact welding
 - enables low contact heating
- ▶ Isolating distance between contacts: 4.5 mm per contact place
- ▶ Connection of a rigid or flexible conductor
- ▶ Assembly to 35 mm wide mounting rail in compliance with EN 60715
- ▶ Vertical or horizontal operational position



**Motor protection circuit breakers with overload and short-circuit release
AC-3 acc. to IEC/EN 60947-4-1**

| Type | Setting range (A) | Motor power (3-phase, 400 V) (kW) | Ordering No. | Weight (g) | Quantity / Box |
|-----------|-------------------|-----------------------------------|--------------|------------|----------------|
| MS32-0.16 | 0.1 ... 0.16 | | 30.108.757 | 279 | 1 |
| MS32-0.25 | 0.16 ... 0.25 | 0.06 | 30.108.758 | 279 | 1 |
| MS32-0.4 | 0.25 ... 0.4 | 0.09 | 30.108.759 | 279 | 1 |
| MS32-0.63 | 0.4 ... 0.63 | 0.12 ... 0.18 | 30.108.760 | 279 | 1 |
| MS32-1 | 0.63 ... 1 | 0.18 ... 0.25 | 30.108.761 | 279 | 1 |
| MS32-1.6 | 1 ... 1.6 | 0.37 ... 0.55 | 30.108.762 | 279 | 1 |
| MS32-2.5 | 1.6 ... 2.5 | 0.75 | 30.108.763 | 279 | 1 |
| MS32-4 | 2.5 ... 4 | 1.1 ... 1.5 | 30.108.764 | 279 | 1 |
| MS32-6.3 | 4 ... 6.3 | 2.2 | 30.108.765 | 279 | 1 |
| MS32-10 | 6.3 ... 10 | 3 ... 4 | 30.108.766 | 279 | 1 |
| MS32-14 | 9 ... 14 | 5.5 | 30.108.767 | 279 | 1 |
| MS32-18 | 13 ... 18 | 7.5 | 30.108.768 | 279 | 1 |
| MS32-23 | 17 ... 23 | 9 ... 11 | 30.108.769 | 279 | 1 |
| MS32-27 | 23 ... 27 | 11 | 30.108.770 | 279 | 1 |
| MS32-32 | 25 ... 32 | 15 | 30.108.771 | 279 | 1 |



Accessories for MS32

Auxiliary contact block HSV, AC-15, DC-13 acc. to IEC/EN 60947-5-1

| Type | Number of contacts | | Wiring diagram | Ordering No. | Weight (g) | Quantity / Box |
|-------|--------------------|----|----------------|--------------|------------|----------------|
| | NO | NC | | | | |
| HSV10 | 1 | 0 | | 38.902.521 | 32 | 1 |
| HSV01 | 0 | 1 | | 38.902.520 | 32 | 1 |



HSV contact changes position from its normal state when the MS32 MPCB is switched on.

Trip-indicating contact block HRS, AC-15, DC-13 acc. to IEC/EN 60947-5-1

| Type | Number of contacts | | Wiring diagram | Ordering No. | Weight (g) | Quantity / Box |
|-------|--------------------|----|----------------|--------------|------------|----------------|
| | NO | NC | | | | |
| HRS10 | 1 | 0 | | 38.902.523 | 32 | 1 |
| HRS01 | 0 | 1 | | 38.902.522 | 32 | 1 |



HRS contact changes position from its normal state when the MS32/MS18 MPCB trips due to overload, short-circuit or manual depression of the TEST lever.

Auxiliary contact block for lateral mounting HS, AC-15, DC-13 acc. to IEC/EN 60947-5-1

| Type | Number of contacts | | Wiring diagram | Ordering No. | Weight (g) | Quantity / Box |
|------|--------------------|----|----------------|--------------|------------|----------------|
| | NO | NC | | | | |
| HS10 | 1 | 0 | | 38.902.456 | 32 | 1 |
| HS11 | 1 | 1 | | 38.902.458 | 32 | 1 |
| HS20 | 2 | 0 | | 38.902.460 | 32 | 1 |



Adapters for connection of MS32 with a contactor

| Type | Used for | Ordering No. | Weight (g) | Quantity / Box |
|---------|-----------------|--------------|------------|----------------|
| MSK07 | K07 | 30.018.211 | 10 | 10 |
| MSKNL9 | KNL9 ... KNL18 | 30.018.212 | 10 | 10 |
| MSKNL22 | KNL22 ... KNL30 | 30.018.213 | 10 | 10 |



Under-voltage release UR

| Voltage (V)* | Frequency (Hz) | Ordering No. | Weight (g) | Quantity / Box |
|--------------|----------------|--------------|------------|----------------|
| 24 | 50 | 38.902.534 | 62 | 1 |
| 24 | 60 | 38.902.535 | 62 | 1 |
| 110 | 50 | 38.902.941 | 62 | 1 |
| 110 | 60 | 38.902.536 | 62 | 1 |
| 230 | 50 | 38.902.461 | 62 | 1 |
| 230 | 60 | 38.902.943 | 62 | 1 |
| 240 | 50 | 38.902.524 | 62 | 1 |
| 240 | 60 | 38.902.537 | 62 | 1 |
| 400 | 50 | 38.902.634 | 62 | 1 |
| 400 | 60 | 38.902.947 | 62 | 1 |
| 415 | 50 | 38.902.533 | 62 | 1 |
| 415 | 60 | 38.902.949 | 62 | 1 |
| 480 | 50 | 38.902.951 | 62 | 1 |
| 480 | 60 | 38.902.538 | 62 | 1 |
| 500 | 50 | 38.902.952 | 62 | 1 |
| 500 | 60 | 38.902.939 | 62 | 1 |
| 600 | 50 | 38.902.954 | 62 | 1 |
| 600 | 60 | 38.902.539 | 62 | 1 |



* UR release for other control voltage/frequencies are on request.

Shunt release AR

| Voltage (V)* | Frequency (Hz) | Ordering No. | Weight (g) | Quantity / Box |
|--------------|----------------|--------------|------------|----------------|
| 24 | 50 | 38.902.574 | 62 | 1 |
| 24 | 60 | 38.902.575 | 62 | 1 |
| 110 | 50 | 38.902.940 | 62 | 1 |
| 110 | 60 | 38.902.576 | 62 | 1 |
| 230 | 50 | 38.902.462 | 62 | 1 |
| 230 | 60 | 38.902.942 | 62 | 1 |
| 240 | 50 | 38.902.525 | 62 | 1 |
| 240 | 60 | 38.902.944 | 62 | 1 |
| 400 | 50 | 38.902.945 | 62 | 1 |
| 400 | 60 | 38.902.946 | 62 | 1 |
| 415 | 50 | 38.902.573 | 62 | 1 |
| 415 | 60 | 38.902.948 | 62 | 1 |
| 480 | 50 | 38.902.950 | 62 | 1 |
| 480 | 60 | 38.902.578 | 62 | 1 |
| 500 | 50 | 38.902.579 | 62 | 1 |
| 500 | 60 | 38.902.938 | 62 | 1 |
| 600 | 50 | 38.902.953 | 62 | 1 |
| 600 | 60 | 38.902.955 | 62 | 1 |



* AR release for other control voltage/frequencies are on request.

Enclosures for MS32

| Type | Degree of protection | Ordering No. | Weight (g) | Quantity / Box |
|---------------------|----------------------|--------------|------------|----------------|
| Enclosures | | | | |
| HO-41 | IP41 | 38.423.019 | 222 | 1 |
| HO-55 | IP55 | 38.423.020 | 222 | 1 |
| Frames | | | | |
| FP-41 | IP41 | 38.423.111 | 158 | 1 |
| FP-55 | IP55 | 38.423.112 | 158 | 1 |
| Front Plates | | | | |
| P-41 | IP41 | 37.425.102 | 200 | 1 |
| P-55 | IP55 | 38.423.137 | 200 | 1 |



Accessories for enclosures HO-41/55, FP-41/55, P-41/55

| Type | Voltage | Ordering No. | Weight (g) | Quantity / Box |
|--|---------|--------------|------------|----------------|
| Emergency stop push-button E | / | 38.902.528 | 40 | 1 |
| Emergency stop push-button with keylock E-K | / | 38.902.530 | 40 | 1 |
| Padlocking feature HZ | / | 38.423.095 | 95 | 1 |
| Push-button diaphragm IP55 | / | 38.423.113 | 12 | 1 |
| Neutral link NL | / | 38.552.076 | 525 | 25 |
| Signal lamp SSr (Red) | 250 V | 623.000.131 | 175 | 25 |
| | 400 V | 623.009.261 | | |
| Signal lamp SSr (Green) | 250 V | 623.009.257 | 175 | 25 |
| | 400 V | 623.009.262 | | |
| Signal lamp SSb (Transparent) | 250 V | 623.009.256 | 175 | 25 |
| | 400 V | 623.009.263 | | |
| Cable inlet M25 x 1.5 | / | 315.609.520 | 15 | 100 |

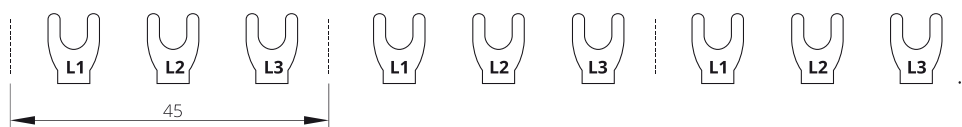


Connection blocks MSS-3L

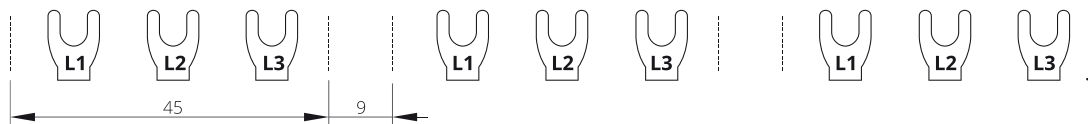
| Type | Number of MPCB | Length (mm) | Ordering No. | Weight (g) | Quantity / Box |
|-----------------------|----------------|-------------|--------------|------------|----------------|
| MSS-3L-M2-45 | 2 | 80 | 655.200.001 | 26 | 10 |
| MSS-3L-M3-45 | 3 | 125 | 655.200.002 | 48 | 10 |
| MSS-3L-M4-45 | 4 | 170 | 655.200.003 | 68 | 10 |
| MSS-3L-M5-45 | 5 | 215 | 655.200.004 | 90 | 10 |
| MSS-3L-M2 + Hi-45 + 9 | 2 | 90 | 655.200.005 | 30 | 10 |
| MSS-3L-M3 + Hi-45 + 9 | 3 | 145 | 655.200.006 | 54 | 10 |
| MSS-3L-M4 + Hi-45 + 9 | 4 | 200 | 655.200.007 | 78 | 10 |
| MSS-3L-M5 + Hi-45 + 9 | 5 | 250 | 655.200.008 | 111 | 10 |



MSS-3L-MX-45 connection blocks

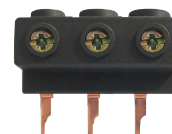


**MSS-3L-MX-45 + 9 connection blocks
(for MPCB with side-mounted accessories)**



Supply block (25 mm²)

| Type | Ordering No. | Weight (g) | Quantity / Box |
|------------|--------------|------------|----------------|
| ESB-S/V-MS | 655.200.009 | 40 | 10 |



Protection for connection cable

| Type | Ordering No. | Weight (g) | Quantity / Box |
|---------|--------------|------------|----------------|
| BS-MS 0 | 655.200.010 | 2 | 10 |



MSR motor protection circuit breakers



MSR series motor protection circuit breaker is suitable for AC 50/60Hz, rated voltage to 690V, rated current 0.1A to 32A circuit, as a three-phase motor overload, short circuit, open-phase protection and infrequent starting control, can be used for power distribution line protection and infrequent load conversion, can also be used as an isolator.

Types

0.16A - 32A Rotary handle type

Benefits

- ▶ Accessory portable design: It can easily and reliably insert, buckle and install a variety of auxiliary accessories outside the body.
- ▶ Can simulate mechanism tripping design: The mechanism can be tripped through Test, which is convenient for simulating and testing the cooperating alarm accessories.
- ▶ Laser marking on the front: the marking content is clear and durable.



MSR

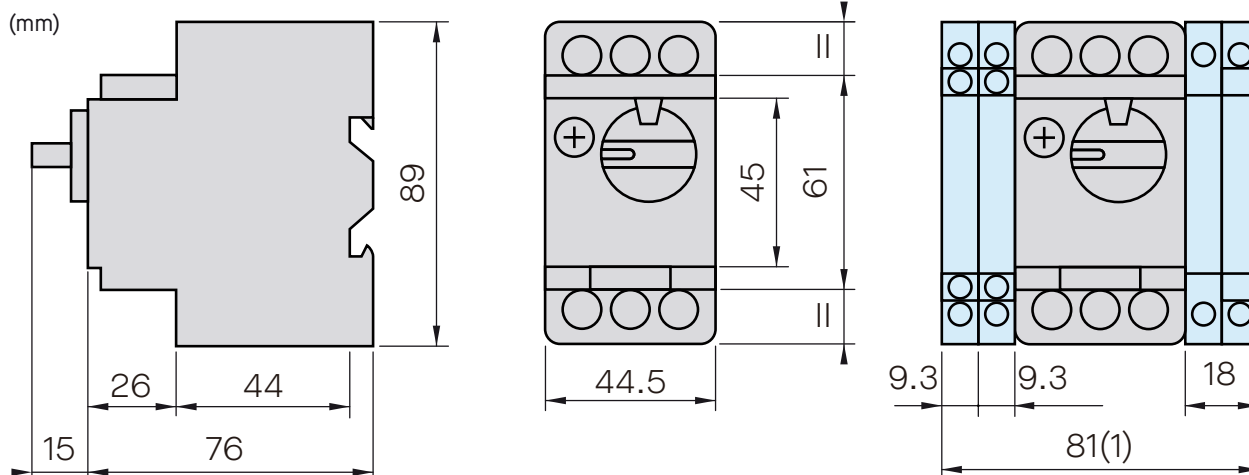
| Type | 50/60Hz, AC-3 three-phase motor standard rated power | | | | Thermal trip setting range | Magnetic trip current $I_d \pm 20\%$ | Ordering No. | Weight (kg) |
|----------|--|---------|---------|---------|----------------------------|--------------------------------------|--------------|-------------|
| | 230V kW | 400V kW | 415V kW | 440V kW | A | A | | |
| MSR-0.16 | | | | | 0.1 ... 0.16 | 1.5 | 786.201.576 | 0.28 |
| MSR-0.25 | | | | | 0.16 ... 0.25 | 2.4 | 786.201.577 | 0.28 |
| MSR-0.40 | | | | | 0.25 ... 0.40 | 5 | 786.201.578 | 0.28 |
| MSR-0.63 | | | | | 0.40 ... 0.63 | 8 | 786.201.579 | 0.28 |
| MSR-1 | | | | 0.37 | 0.63 ... 1 | 13 | 786.201.580 | 0.28 |
| MSR-1.6 | | 0.37 | | 0.55 | 1 ... 1.6 | 22.5 | 786.201.581 | 0.28 |
| MSR-2.5 | 0.37 | 0.75 | 0.75 | 1.1 | 1.6 ... 2.5 | 33.5 | 786.201.582 | 0.28 |
| MSR-4 | 0.75 | 1.5 | 1.5 | 1.5 | 2.5 ... 4 | 51 | 786.201.583 | 0.28 |
| MSR-6.3 | 1.1 | 2.2 | 2.2 | 3 | 4 ... 6.3 | 78 | 786.201.584 | 0.28 |
| MSR-10 | 2.2 | 4 | 4 | 4 | 6 ... 10 | 138 | 786.201.585 | 0.28 |
| MSR-14 | 3 | 5.5 | 5.5 | 7.5 | 9 ... 14 | 170 | 786.201.586 | 0.28 |
| MSR-18 | 4 | 7.5 | 9 | 9 | 13 ... 18 | 223 | 786.201.587 | 0.28 |
| MSR-23 | 5.5 | 11 | 11 | 11 | 17 ... 23 | 327 | 786.201.588 | 0.28 |
| MSR-25 | 5.5 | 11 | 11 | 11 | 20 ... 25 | 350 | 786.201.589 | 0.28 |
| MSR-32 | 7.5 | 15 | 15 | 15 | 24 ... 32 | 416 | 786.201.590 | 0.28 |

Accessories

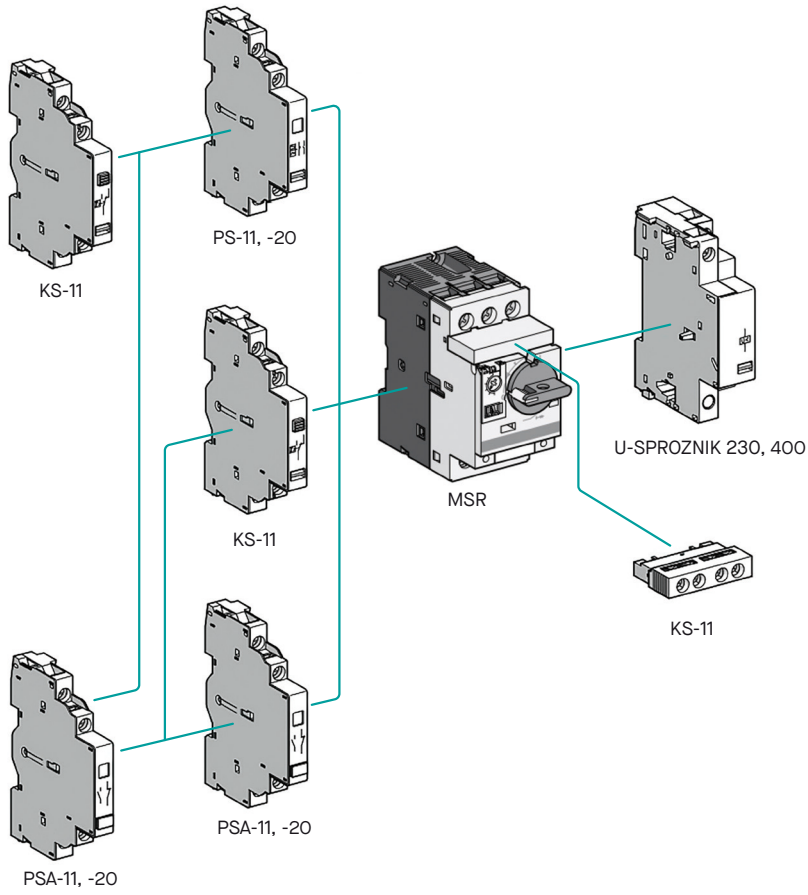
| Type | Model | Mounting | Contact | Ordering No. | Weight (kg) |
|----------------|------------------------------|----------|---------|--------------|-------------|
| PSS-11 | Momentary auxiliary contact | side | 1NO+1NC | 786.201.591 | 0.041 |
| PSS-20 | Momentary auxiliary contact | side | 2NO | 786.201.592 | 0.041 |
| PSA-11 | Momentary auxiliary alarm | side | 1NO+1NC | 786.201.596 | 0.041 |
| PSA-20 | Momentary auxiliary alarm | side | 2NO | 786.201.599 | 0.041 |
| KS-11 | Short circuit signal contact | | C/O | 786.201.593 | 0.041 |
| U-SPROZNIK 230 | Low voltage trip | | C/O | 786.201.594 | 0.058 |
| U-SPROZNIK 400 | Low voltage trip | | C/O | 786.201.595 | 0.058 |
| PSF-11 | Momentary auxiliary contact | front | 1NO+1NC | 786.201.597 | 0.05 |
| PSF-20 | Momentary auxiliary contact | | 2NO | 786.201.598 | 0.05 |

Dimensions

(mm)



Connections



MOD

molded case circuit breakers



MOD series molded case circuit breakers are used for switching and protecting lowvoltage installations in large residential properties and business as well as industrial buildings. they ensure reliable protection against overload and short circuits and they can be used as a main disconnection switch, too.

Benefits

- ▶ Rated currents range from 40 to 1250 A
- ▶ Three- or four-pole versions
- ▶ High short-circuit breaking capacity (up to 85 kA)
- ▶ Easy adjustable overload and short-circuit release
- ▶ Micro-processor release (e-version)
- ▶ Compact mechanical design
- ▶ They can be installed vertically or horizontally
- ▶ Many additional accessories

Types

- MOD 1 three-pole, four-pole
- MOD 2 three-pole, four-pole
- MOD 3 three-pole, four-pole
- MOD 4 three-pole, four-pole
- MOD 5 three-pole, four-pole
- MOD 6 three-pole, four-pole

Standards

- ▶ IEC 60947-2
- ▶ IEC 60947-5-1



MOD 1 - Three-pole, adjustable type

| Type | Rated Current I_n (A) | Number of Poles | Ordering No. | Weight (kg) | Packaging (pcs) |
|---------------------------------|----------------------------|--------------------|--------------|----------------|--------------------|
| Standard rated short capability | | | | | |
| MOD1 3NL 32A | 32 | 3 | 786.103.961 | 1.1 | 1 |
| MOD1 3NL 40A | 40 | 3 | 786.103.960 | 1.1 | 1 |
| MOD1 3NL 50A | 50 | 3 | 786.103.970 | 1.1 | 1 |
| MOD1 3NL 63A | 63 | 3 | 786.103.980 | 1.1 | 1 |
| MOD1 3NL 80A | 80 | 3 | 786.103.990 | 1.1 | 1 |
| MOD1 3NM 80A | 80 | 3 | 786.103.992 | 1.3 | 1 |
| MOD1 3NL 100A | 100 | 3 | 786.104.000 | 1.1 | 1 |



MOD 1 - Four-pole, adjustable type

| | | | | | |
|---------------------------------|-----|---|-------------|-----|---|
| Standard rated short capability | | | | | |
| MOD1 4NL 63A | 63 | 4 | 786.104.910 | 1.4 | 1 |
| MOD1 4NL 80A | 80 | 4 | 786.104.920 | 1.4 | 1 |
| MOD1 4NL 100A | 100 | 4 | 786.104.930 | 1.4 | 1 |

MOD 2 - Three-pole, adjustable type

| | | | | | |
|---------------------------------|-----|---|-------------|-----|---|
| Standard rated short capability | | | | | |
| MOD2 3NL 125A | 125 | 3 | 786.104.100 | 1.8 | 1 |
| MOD2 3NM 125A | 125 | 3 | 786.103.930 | 2.1 | 1 |
| MOD2 3NL 160A | 160 | 3 | 786.104.200 | 1.8 | 1 |
| MOD2 3NM 160A | 160 | 3 | 786.103.798 | 2.1 | 1 |
| MOD2 3NL 200A | 200 | 3 | 786.104.300 | 1.8 | 1 |
| MOD2 3NM 200A | 200 | 3 | 786.103.790 | 2.1 | 1 |
| MOD2 3NL 250A | 250 | 3 | 786.103.792 | 1.8 | 1 |
| MOD2 3NM 250A | 250 | 3 | 786.103.791 | 2.1 | 1 |



MOD 2 - Four-pole, adjustable type

| | | | | | |
|---------------------------------|-----|---|-------------|-----|---|
| Standard rated short capability | | | | | |
| MOD2 4NL 125A | 125 | 4 | 786.104.940 | 2.3 | 1 |
| MOD2 4NL 200A | 200 | 4 | 786.104.950 | 2.3 | 1 |
| MOD2 4NL 250A | 250 | 4 | 786.104.960 | 2.3 | 1 |

MOD 3 - Three-pole, adjustable type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD3 3NM 250A | 250 | 3 | 786.103.940 | 5.1 | 1 |
| MOD3 3NM 315A | 315 | 3 | 786.104.400 | 5.1 | 1 |
| MOD3 3NM 400A | 400 | 3 | 786.104.500 | 5.1 | 1 |



MOD 3 - Four-pole, adjustable type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD3 4NM 315A | 315 | 3 | 786.103.537 | 5.1 | 1 |
| MOD3 4NM 400A | 400 | 3 | 786.103.631 | 5.1 | 1 |

MOD 3 - Three-pole, electronic type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD3 3EM 250A | 250 | 3 | 786.104.180 | 5.5 | 1 |
| MOD3 3EM 400A | 400 | 3 | 786.103.799 | 5.5 | 1 |

MOD 4 - Three-pole, adjustable type

| Type | Rated Current I_n (A) | Number of Poles | Ordering No. | Weight (kg) | Packaging (pcs) |
|-------------------------------|----------------------------|--------------------|--------------|----------------|--------------------|
| Middle rated short capability | | | | | |
| MOD4 3NM 500A | 500 | 3 | 786.104.600 | 6.9 | 1 |
| MOD4 3NM 630A | 630 | 3 | 786.104.700 | 6.9 | 1 |

MOD 4 - Four-pole, adjustable type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD4 4NM 500A | 500 | 3 | 786.103.536 | 6.9 | 1 |
| MOD4 4NM 630A | 630 | 3 | 786.103.646 | 6.9 | 1 |

MOD 4 - Three-pole, electronic type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD4 3EM 630A | 630 | 3 | 786.103.781 | 6.9 | 1 |
| MOD4 3EM 800A | 800 | 3 | 786.104.190 | 6.9 | 1 |

MOD 5 - Three-pole, adjustable type

| | | | | | |
|-------------------------------|-----|---|-------------|-----|---|
| Middle rated short capability | | | | | |
| MOD5 3NM 800A | 800 | 3 | 786.104.800 | 8.0 | 1 |
| High rated short capability | | | | | |
| MOD5 3NH 800A | 800 | 3 | 786.103.810 | 8.0 | 1 |

MOD 5 - Three-pole, electronic type

| | | | | | |
|-------------------------------|------|---|-------------|------|---|
| Middle rated short capability | | | | | |
| MOD5 3EM 1000A | 1000 | 3 | 786.103.782 | 15.8 | 1 |
| MOD5 3EM 1250A | 1250 | 3 | 786.103.783 | 15.8 | 1 |



Technical characteristics for thermal-adjustable type

| Technical data | Symbol | Unit | MOD 1 | | MOD 2 | | MOD 3 | | MOD 4 | | MOD 5 | |
|--|-----------|----------|----------------------------|----|---------------------------------|----|---------------|-----|------------|-----|-------|-----|
| Frame | | | up to 100 A | | up to 250 A | | up to 400 A | | 500, 630 A | | 800 A | |
| Standard | | | IEC 60947-2, IEC 60947-5-1 | | | | | | | | | |
| Approvals | | | KEMA*, CE | | | | | | | | | |
| Rated current (at 40 °C) | I_n | A | 40, 50, 63, 80, 100 | | 125, 160, 200, 250 | | 250, 315, 400 | | 630 | | 800 | |
| Magnetic tripping current | I_i | A | $10 \cdot I_n$ | | | | | | | | | |
| Number of poles | | | 3 and 4 | | | | | | | | | |
| Rated operational voltage | U_e | V | 380 / 415 | | | | | | | | | |
| Rated insulation voltage | U_i | V | 690 | | 690 | | 690 | | 1000 | | 1000 | |
| Rated impulse withstand voltage | U_{imp} | kV | 8 | | | | | | | | | |
| Pollution degree | | | III | | | | | | | | | |
| Rated frequency | f | Hz | 50/60 | | | | | | | | | |
| Altitude | | m | <2000 | | | | | | | | | |
| Breaking capacity level * | | | L | M | L | M | M | H | M | H | M | H |
| Rated ultimate short-circuit breaking capacity 400 V | I_{cu} | kA | 36 | 50 | 36 | 50 | 85 | 100 | 85 | 100 | 85 | 100 |
| Rated ultimate short-circuit breaking capacity 400 V | I_{cs} | kA | 25 | 36 | 25 | 36 | 60 | 75 | 60 | 75 | 60 | 75 |
| Temperature range | | °C | -25 ... +55 | | | | | | | | | |
| Storage temperature range | | °C | -40 ... +70 | | | | | | | | | |
| Mechanical durability | | op. c. | 10.000 | | 10.000 | | 10.000 | | 10.000 | | 2.500 | |
| Electrical durability | | op. c. | 5.000 | | 5.000 | | 4.000 | | 4.000 | | 500 | |
| Instantaneous tripping 0.8-1.0 x I_n | F | | fixed | | | | | | | | | |
| | N | I_{cs} | kA | | adjustable from 0.8 - 1 x I_n | | | | | | | |
| Screws | | | M8 | | M8 | | M10 | | M12 | | | |
| Head | | | M8 | | M8 | | M10 | | M12 | | | |
| Width of copper connection | | mm | 16 | | 22 | | 24 | | 35 | | | |

*Selected models only: MOD1 3NM, MOD2 3NM, MOD1 3NL, MOD2 3NL, MOD1 4NM, MOD2 4NM, MOD1 4NL, MOD2 4NL

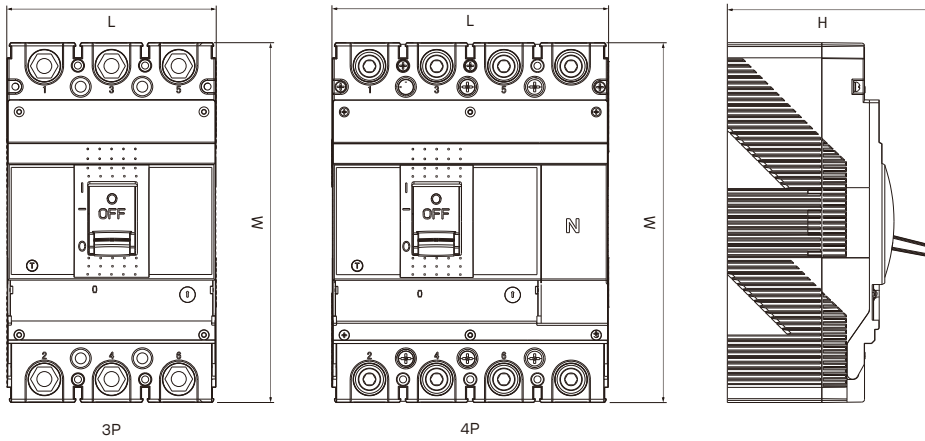
Technical characteristics for electronic type

| Technical data | Symbol | Unit | MOD 3 | | MOD 4 | | MOD 5 | |
|--|-----------|--------|----------------------------|-----|------------|-----|--------------|--|
| Frame | | | 250, 400 A | | 630, 800 A | | 1000, 1250 A | |
| Standard | | | IEC 60947-2, IEC 60947-5-1 | | | | | |
| Approvals | | | CE | | | | | |
| Rated current (at 40 °C) | I_n | A | 250, 400 | | 630, 800 | | 1000, 1250 | |
| Number of poles | | | 3 and 4 | | | | | |
| Rated operational voltage | U_e | V | 380 / 415 | | | | | |
| Rated insulation voltage | U_i | V | 1000 | | | | | |
| Rated impulse withstand voltage | U_{imp} | kV | 8 | | | | | |
| Pollution degree | | | III | | | | | |
| Rated frequency | f | Hz | 50 / 60 | | | | | |
| Altitude | | m | < 2000 | | | | | |
| Breaking capacity level * | | | M | H | M | H | M | |
| Rated ultimate short-circuit breaking capacity 400 V | I_{cu} | kA | 85 | 100 | 85 | 100 | 70 | |
| Rated ultimate short-circuit breaking capacity 400 V | I_{cs} | kA | 60 | 75 | 60 | 75 | 50 | |
| Temperature range | | °C | -25 ... +55 | | | | | |
| Storage temperature range | | °C | -40 ... +70 | | | | | |
| Mechanical durability | | op. c. | 8.500 | | 4.000 | | 2.500 | |
| Electrical durability | | op. c. | 3.000 | | 1.000 | | 500 | |

Dimensions

(mm)

| Type | | MOD 1 | MOD 2 | MOD 3 | MOD 4 | MOD 5 |
|-----------|----|----------------|----------------|-----------------|-----------------|-----------------|
| L × W × H | 3P | 92 × 155 × 92 | 106 × 155 × 99 | 150 × 257 × 148 | 150 × 257 × 148 | 210 × 280 × 155 |
| | 4P | 122 × 155 × 92 | 142 × 165 × 99 | 198 × 257 × 148 | 198 × 257 × 148 | 280 × 280 × 155 |



Accessory installation manuals for 3-pole MCCB



PS11
(Auxiliary contact)



AL11
(Alarm switch)



SHT
(Shunt trip)



QT38
(Under-voltage release)



| Item | Accessories | 125 A 3P | 160 Aw 3P | 250 A 3P | 400 A 3P | 630 A 3P | 800 A 3P |
|-----------------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| AL11 | | □□□ | □□□ | □□□ | □□□ | □□□ | □□□ |
| SHT | | ○●○ | ○●○ | ○●○ | ○●○ | ○●○ | ○●○ |
| PS11 | | ■□■ | ■□■ | ■□■ | ■□■ | ■□■ | ■□■ |
| QT38 | | ○□○ | ○□○ | ○□○ | ○□○ | ○□○ | ○□○ |
| AL11 + PS11 | | △□△ | △□△ | △□△ | △□△ | △□△ | △□△ |
| TWO PS11 | | ▲□▲ | ▲□▲ | ▲□▲ | ▲□▲ | ▲□▲ | ▲□▲ |
| SHT, PS11 | | ○●■ | ○●■ | ○●■ | ○●■ | ○●■ | ○●■ |
| SHT, AL11 | | ○●□ | ○●□ | ○●□ | ○●□ | ○●□ | ○●□ |
| SHT, AL11 + PS11 | | ○●△ | ○●△ | ○●△ | ○●△ | ○●△ | ○●△ |
| SHT, TWO PS11 | | ○●▲ | ○●▲ | ○●▲ | ○●▲ | ○●▲ | ○●▲ |
| SHT, QT38 | | ○●○ | - | - | ○●○ | ○●○ | ○●○ |
| QT38, SHT | | ○□● | ○□● | ○□● | ○□● | ○□● | ○□● |
| QT38, PS11 | | ○□■ | ○□■ | ○□■ | ○□■ | ○□■ | ○□■ |
| QT38, AL11 | | ○□□ | ○□□ | ○□□ | ○□□ | ○□□ | ○□□ |
| QT38, AL11 + PS11 | | ○□△ | ○□△ | ○□△ | ○□△ | ○□△ | ○□△ |
| QT38, TWO PS11 | | ○□▲ | ○□▲ | ○□▲ | ○□▲ | ○□▲ | ○□▲ |
| PS11, AL11 | | ■□□ | ■□□ | ■□□ | ■□□ | ■□□ | ■□□ |
| PS11, SHT | | ■□○ | ■□○ | ■□○ | ■□○ | ■□○ | ■□○ |
| PS11, AL11 + PS11 | | ■□△ | ■□△ | ■□△ | ■□△ | ■□△ | ■□△ |
| PS11, TWO PS11 | | ■□▲ | ■□▲ | ■□▲ | ■□▲ | ■□▲ | ■□▲ |
| PS11, QT38 | | ■□○ | - | - | ■□○ | ■□○ | ■□○ |
| AL11, PS11 | | □□■ | □□■ | □□■ | □□■ | □□■ | □□■ |
| AL11, SHT | | □□○ | □□○ | □□○ | □□○ | □□○ | □□○ |
| AL11, AL11 + PS11 | | □□△ | □□△ | □□△ | □□△ | □□△ | □□△ |
| AL11, TWO PS11 | | □□▲ | □□▲ | □□▲ | □□▲ | □□▲ | □□▲ |
| AL11, QT38 | | □□○ | - | - | □□○ | □□○ | □□○ |
| AL11 + PS11, PS11 | | △□■ | △□■ | △□■ | △□■ | △□■ | △□■ |
| AL11 + PS11, AL11 | | △□□ | △□□ | △□□ | △□□ | △□□ | △□□ |
| AL11 + PS11, SHT | | △□○ | △□○ | △□○ | △□○ | △□○ | △□○ |
| AL11 + PS11, TWO PS11 | | △□▲ | △□▲ | △□▲ | △□▲ | △□▲ | △□▲ |
| AL11 + PS11, QT38 | | △□○ | - | - | △□○ | △□○ | △□○ |
| TWO PS11, PS11 | | ▲□■ | ▲□■ | ▲□■ | ▲□■ | ▲□■ | ▲□■ |
| TWO PS11, AL11 | | ▲□□ | ▲□□ | ▲□□ | ▲□□ | ▲□□ | ▲□□ |
| TWO PS11, SHT | | ▲□○ | ▲□○ | ▲□○ | ▲□○ | ▲□○ | ▲□○ |
| TWO PS11, AL11 + PS11 | | ▲□△ | ▲□△ | ▲□△ | ▲□△ | ▲□△ | ▲□△ |
| TWO PS11, QT38 | | ▲□○ | - | - | ▲□○ | ▲□○ | ▲□○ |

Valid for all
3-pole versions
of Iskra MOD



Accessory installation manuals for 4-pole MCCB



PS11
(Auxiliary contact)



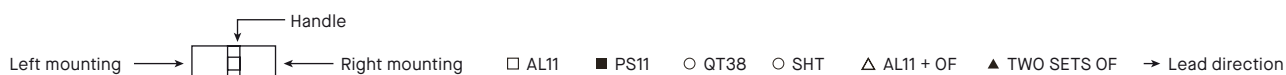
AL11
(Alarm switch)



SHT
(Shunt trip)



QT38
(Under-voltage release)



| Item | Accessories | 125 A 4P | 160 Aw 4P | 250 A 4P | 400 A 4P | 630 A 4P | 800 A 4P |
|-----------------------|-------------|-------------|--------------|-------------|-------------|-------------|-------------|
| AL11 | | □□□□ | □□□□ | □□□□ | □□□□ | □□□□ | □□□□ |
| SHT | | ○●○● | ○●○● | ○●○● | ○●○● | ○●○● | ○●○● |
| PS11 | | ■□■□ | ■□■□ | ■□■□ | ■□■□ | ■□■□ | ■□■□ |
| QT38 | | ○□○□ | ○□○□ | ○□○□ | ○□○□ | ○□○□ | ○□○□ |
| AL11 + PS11 | | △□△□ | △□△□ | △□△□ | △□△□ | △□△□ | △□△□ |
| TWO PS11 | | ▲□▲□ | ▲□▲□ | ▲□▲□ | ▲□▲□ | ▲□▲□ | ▲□▲□ |
| SHT, PS11 | | ○●■□ | ○●■□ | ○●■□ | ○●■□ | ○●■□ | ○●■□ |
| SHT, AL11 | | ○●□□ | ○●□□ | ○●□□ | ○●□□ | ○●□□ | ○●□□ |
| SHT, AL11 + PS11 | | ○●△□ | ○●△□ | ○●△□ | ○●△□ | ○●△□ | ○●△□ |
| SHT, TWO PS11 | | ○●▲□ | ○●▲□ | ○●▲□ | ○●▲□ | ○●▲□ | ○●▲□ |
| SHT, QT38 | | ○●○□ | - | - | ○●○□ | ○●○□ | ○●○□ |
| QT38, SHT | | ○□○● | ○□○● | ○□○● | ○□○● | ○□○● | ○□○● |
| QT38, PS11 | | ○□■□ | ○□■□ | ○□■□ | ○□■□ | ○□■□ | ○□■□ |
| QT38, AL11 | | ○□□□ | ○□□□ | ○□□□ | ○□□□ | ○□□□ | ○□□□ |
| QT38, AL11 + PS11 | | ○□△□ | ○□△□ | ○□△□ | ○□△□ | ○□△□ | ○□△□ |
| QT38, TWO PS11 | | ○□▲□ | ○□▲□ | ○□▲□ | ○□▲□ | ○□▲□ | ○□▲□ |
| PS11, AL11 | | ■□□□ | ■□□□ | ■□□□ | ■□□□ | ■□□□ | ■□□□ |
| PS11, SHT | | ■□○● | ■□○● | ■□○● | ■□○● | ■□○● | ■□○● |
| PS11, AL11 + PS11 | | ■□△□ | ■□△□ | ■□△□ | ■□△□ | ■□△□ | ■□△□ |
| PS11, TWO PS11 | | ■□▲□ | ■□▲□ | ■□▲□ | ■□▲□ | ■□▲□ | ■□▲□ |
| PS11, QT38 | | ■□○□ | - | - | ■□○□ | ■□○□ | ■□○□ |
| AL11, PS11 | | □□■□ | □□■□ | □□■□ | □□■□ | □□■□ | □□■□ |
| AL11, SHT | | □□○● | □□○● | □□○● | □□○● | □□○● | □□○● |
| AL11, AL11 + PS11 | | □□△□ | □□△□ | □□△□ | □□△□ | □□△□ | □□△□ |
| AL11, TWO PS11 | | □□▲□ | □□▲□ | □□▲□ | □□▲□ | □□▲□ | □□▲□ |
| AL11, QT38 | | □□○□ | □□○□ | □□○□ | □□○□ | □□○□ | □□○□ |
| AL11 + PS11, PS11 | | △□■□ | △□■□ | △□■□ | △□■□ | △□■□ | △□■□ |
| AL11 + PS11, AL11 | | △□□□ | △□□□ | △□□□ | △□□□ | △□□□ | △□□□ |
| AL11 + PS11, SHT | | △□○● | △□○● | △□○● | △□○● | △□○● | △□○● |
| AL11 + PS11, TWO PS11 | | △□▲□ | △□▲□ | △□▲□ | △□▲□ | △□▲□ | △□▲□ |
| AL11 + PS11, QT38 | | △□○□ | - | - | △□○□ | △□○□ | △□○□ |
| TWO PS11, PS11 | | ▲□■□ | ▲□■□ | ▲□■□ | ▲□■□ | ▲□■□ | ▲□■□ |
| TWO PS11, AL11 | | ▲□□□ | ▲□□□ | ▲□□□ | ▲□□□ | ▲□□□ | ▲□□□ |
| TWO PS11, SHT | | ▲□○● | ▲□○● | ▲□○● | ▲□○● | ▲□○● | ▲□○● |
| TWO PS11, AL11 + PS11 | | ▲□△□ | ▲□△□ | ▲□△□ | ▲□△□ | ▲□△□ | ▲□△□ |
| TWO PS11, QT38 | | ▲□○□ | ▲□○□ | ▲□○□ | ▲□○□ | ▲□○□ | ▲□○□ |

Valid for all 4-pole versions of Iskra MOD



Note:
R2 can be installed with PS11, TWO PS11

Accessories for MOD

Motor operated mechanism

| Type | Rated Voltage U _n (V) | Ordering No. | Weight (kg) | Packaging (pcs) |
|--------------------|-------------------------------------|--------------|----------------|--------------------|
| MOD1 3N ACM 230VAC | 230 | 786.103.789 | 1.2 | 1 |
| MOD2 3N ACM 230VAC | 230 | 786.103.795 | 1.2 | 1 |
| MOD3 3N ACM 230VAC | 230 | 786.103.793 | 3.4 | 1 |
| MOD4 3N ACM 230VAC | 230 | 786.103.796 | 3.4 | 1 |
| MOD5 3N ACM 230VAC | 230 | 786.103.794 | 3.8 | 1 |



Extended rotary handle

| | | | |
|-------------|-------------|-----|---|
| MOD1 3N ERH | 786.103.784 | 0.3 | 1 |
| MOD2 3N ERH | 786.103.785 | 0.3 | 1 |
| MOD3 3N ERH | 786.103.786 | 0.3 | 1 |
| MOD4 3N ERH | 786.103.787 | 0.3 | 1 |
| MOD5 3N ERH | 786.103.788 | 0.3 | 1 |



Shunt trip

| | | | | |
|---------------|-----|-------------|-------|---|
| MOD1 A230 SHT | 230 | 786.104.900 | 0.032 | 1 |
| MOD2 A230 SHT | 230 | 786.104.110 | 0.108 | 1 |
| MOD3 A230 SHT | 230 | 786.104.120 | 0.175 | 1 |
| MOD4 A230 SHT | 230 | 786.103.900 | 0.250 | 1 |
| MOD5 A230 SHT | 230 | 786.103.910 | 0.250 | 1 |



Under-voltage release

| | | | | |
|-------------------|-----|-------------|-------|---|
| MOD1 U230VAC QT38 | 230 | 786.104.130 | 0.075 | 1 |
| MOD2 U230VAC QT38 | 230 | 786.104.140 | 0.172 | 1 |
| MOD3 U230VAC QT38 | 230 | 786.104.150 | 0.250 | 1 |
| MOD4 U230VAC QT38 | 230 | 786.103.840 | 0.250 | 1 |
| MOD5 U230VAC QT38 | 230 | 786.103.850 | 0.250 | 1 |



Alarm switch

| | | | |
|-----------|-------------|------|---|
| MOD1 AL11 | 786.103.820 | 0.06 | 1 |
| MOD2 AL11 | 786.103.860 | 0.06 | 1 |
| MOD3 AL11 | 786.103.870 | 0.06 | 1 |
| MOD4 AL11 | 786.103.880 | 0.06 | 1 |
| MOD5 AL11 | 786.103.890 | 0.06 | 1 |



Auxiliary contact

| | | | |
|-----------|-------------|------|---|
| MOD1 PS11 | 786.104.160 | 0.06 | 1 |
| MOD2 PS11 | 786.103.950 | 0.06 | 1 |
| MOD3 PS11 | 786.104.170 | 0.12 | 1 |
| MOD4 PS11 | 786.103.920 | 0.12 | 1 |
| MOD5 PS11 | 786.103.830 | 0.12 | 1 |



4P Straight bar

| | | |
|-----------|-------------|-------|
| 4P 160BAR | 786.103.881 | 0.102 |
| 4P 250BAR | 786.103.882 | 0.203 |
| 4P 400BAR | 786.103.883 | 0.370 |
| 4P 630BAR | 786.103.884 | 0.491 |
| 4P 800BAR | 786.103.885 | 0.491 |



Accessories for MOD

ACM Motor operated mechanism

- ▶ Remote operation of MCCBs
- ▶ Motor mounts directly on MCCB with screws (included) without removal of midcover
- ▶ Manual operation possible
- ▶ Clear ON/OFF/TRIP indication
- ▶ Trip function

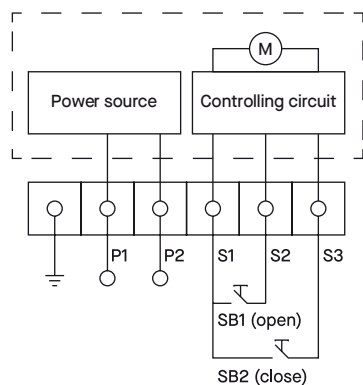
- ▶ Rated voltages: AC: 230 V, 400 V
DC: 24 V, 100 V, 220 V



Technical details

| Type | | MOD 1 | MOD 2 | MOD 3 | MOD 4 | MOD 5 |
|-------------------------------|-------|---------------|-------|-------|-------|-------|
| Rated operational voltage | | 220 - 240 VAC | | | | |
| Operation current | | 0.17 | 0.23 | 0.33 | 0.47 | 0.44 |
| Starting current - Peak value | A | 1.05 | 1.5 | 2.09 | 2.15 | 2.32 |
| Operation method | | direct drive | | | | |
| Operation time (s) | ON | 0.31 | 0.36 | 0.63 | 0.56 | 0.62 |
| | OFF | 0.27 | 0.25 | 0.51 | 0.45 | 0.51 |
| | Reset | 0.27 | 0.25 | 0.51 | 0.45 | 0.51 |

Wiring diagram



Instructions

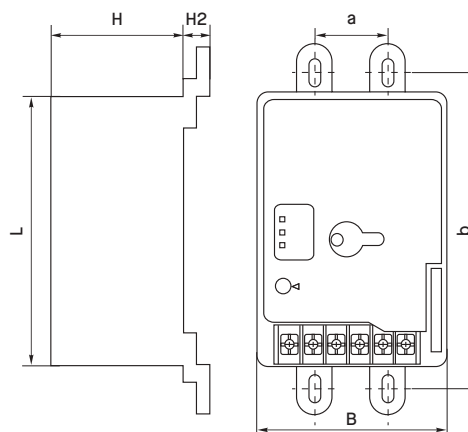
P1-P2: DC IN;
SB1,SB2: operating button (equipped by user)

Notes

In the dotted box is the circuit breaker inner wiring diagram.

Dimensions

| Type | Shape size | | | Installation size | | |
|----------|------------|-----|-----|-------------------|----|-----|
| | L | B | H | H1 | a | b |
| MOD1-100 | 116 | 90 | 77 | 12.5 | 30 | 129 |
| MOD2-250 | 116 | 90 | 77 | 15 | 35 | 126 |
| MOD3-400 | 176 | 130 | 115 | 27 | 44 | 215 |
| MOD4-630 | 176 | 130 | 115 | 31 | 70 | 243 |
| MOD5-800 | 176 | 130 | 115 | 31 | 70 | 243 |



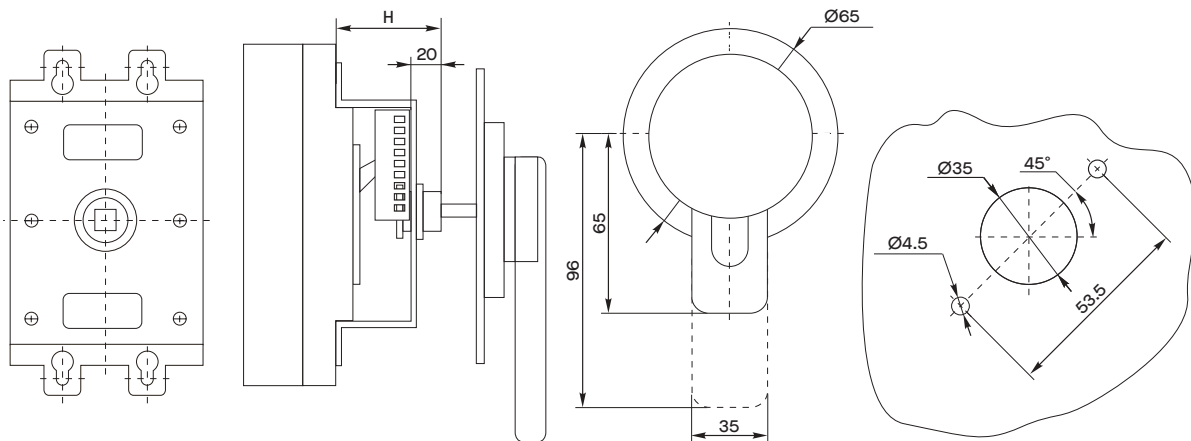
ERH Extended rotary handle

- ▶ Rotary handle mounts directly on MCCB with screws (included) without removal of midcover
- ▶ Clear ON/OFF/TRIP indication
- ▶ Direct access to push to trip button with rotary handle mounted



Dimensions

| Type | MOD1-100 | MOD2-250 | MOD3-400 | MOD4-630 | MOD5-800 | |
|--------------------------|----------|----------|----------|----------|----------|----|
| Installation size H (mm) | 3P | 49 | 55 | 74 | 66 | 66 |

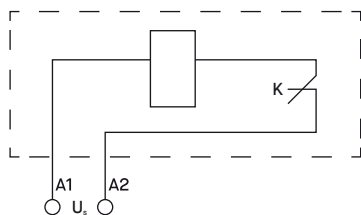


SHT Shunt trip

- ▶ Rated supply voltages U_s : AC: 230 V, 400 V
DC: 24 V, 100 V, 220 V
- ▶ Operation voltages: 0.7 - 1.1 U_s



Wiring diagram



Notes

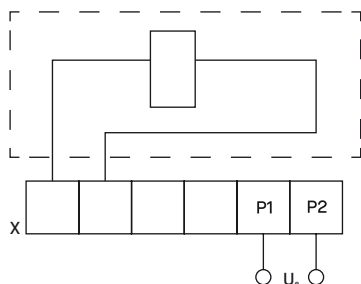
K-the microswitch in series with coil in the shunt release is the normally closed contact, when circuit breaker opening, the contact disconnects automatically, switches on when closing; in the dotted box is the circuit breaker inner wiring diagram.

QT38 Under-voltage release

- ▶ Rated supply voltages U_s : AC: 230 V, 400 V
- ▶ Operation voltages:
When the voltage is 35% - 70% of rated operational voltage, the circuit breaker trips stably; When 85% - 110%, guarantee the circuit breaker switches on, when lower than 35% should prevent switch on.



Wiring diagram



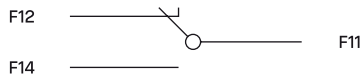
Notes

X-terminal blocks, in the dotted box is the circuit breaker inner wiring diagram.

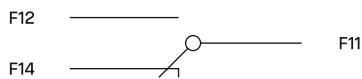
Auxiliary contact

- ▶ Conventional thermal current I_{th} : 3 A / 230 V
- ▶ Rated operational current I_e : $I_e \leq 225$ A: 0.26 A
 $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under "OFF" position



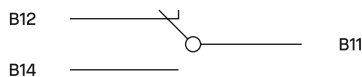
The state of circuit breaker under "ON" position



Alarm contact

- ▶ Conventional thermal current I_{th} : 3 A / 230 V
- ▶ Rated operational current I_e : $I_e \leq 225$ A: 0.26 A
 $I_e \geq 400$ A: 0.3 A

Wiring diagram



The state of circuit breaker under "OFF" "ON" position



The state of circuit breaker under trip free position (alarm)

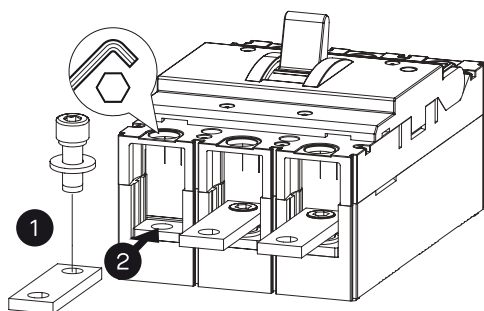


Straight bar 4P

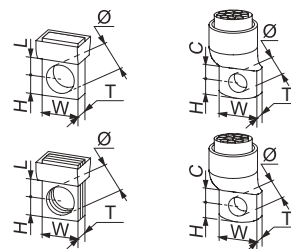


| Type | Ordering No. | Weight (kg) |
|-----------|--------------|-------------|
| 4P 160BAR | 786.103.881 | 0.102 |
| 4P 250BAR | 786.103.882 | 0.203 |
| 4P 400BAR | 786.103.883 | 0.370 |
| 4P 630BAR | 786.103.884 | 0.491 |
| 4P 800BAR | 786.103.885 | 0.491 |

Mounting



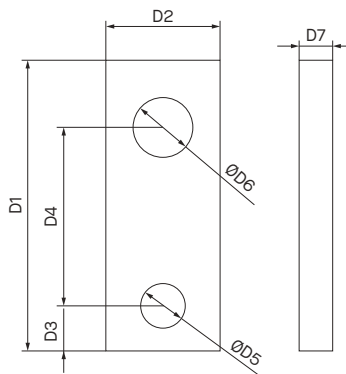
| | Wmax (mm) | T (mm) | Lx (mm) | Cmin (mm) | Ø (mm) | H (mm) | Screw (mm) | Torque (Nm) |
|-----|-----------|--------|---------|-----------|--------|--------|------------|-------------|
| 100 | 16 | 4.5 | 9.5 | / | 8.1 | 7 | 6 | 6 |
| 160 | 16 | 4.5 | 10.5 | / | 8.1 | 7 | 6 | 6 |
| 250 | 20 | 5 | 10.5 | / | 9 | 8.75 | 6 | 6 |
| 400 | 28 | 8.5 | 20 | / | 12.5 | 17 | 10 | 10 |
| 630 | 28 | 10.5 | 20 | / | 12.5 | 17 | 10 | 10 |



Dimensions

(mm)

| | 100 | 160 | 250 | 400 | 630 |
|----|-----|------|-----|------|------|
| D1 | 41 | 50 | 60 | 70 | 70 |
| D2 | 15 | 15 | 20 | 28 | 28 |
| D3 | 7.3 | 8 | 9 | 11 | 11 |
| D4 | 26 | 32.5 | 42 | 43 | 43 |
| D5 | 8.5 | 8.5 | 9 | 10.8 | 10.8 |
| D6 | 8.5 | 8.5 | 9 | 14.5 | 14.5 |
| D7 | 4 | 4 | 5 | 6 | 8 |



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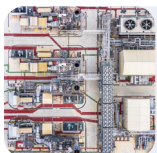
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