



Main switches

A manual operated main switch must be provided for every mains circuit. It must be a switch-disconnector corresponding to utilization category AC23 (IEC 947-3) fulfils the following requirements:

- Disconnecting the electrical equipment from the main.
- Visible contact indication or a disconnection function by construction (the handle is in the "OFF" position when all contacts are open).
- If the main switch does not serve simultaneously as an emergency-stop switch, its handle should not be red. Black or grey handles are recommended.
- It should be lockable in the off-position (e.g. by padlock).
- All active conductors are to be disconnected from the main.
- The breaking capacity should be sufficient. In order to break the current of the largest motor in a blocked state together with the sum of the operating currents of the remaining motors/loads.
- The handle of the main switch must be easily accessible and must lie between 0.6 and 1.9 m above the incomer level.

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Standards

Complying with:

- IEC 60947-3
- DIN VDE 0660
- low voltage directive 73/73 EEC
- low voltage directive EMC 89/336 EEC

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Approvals



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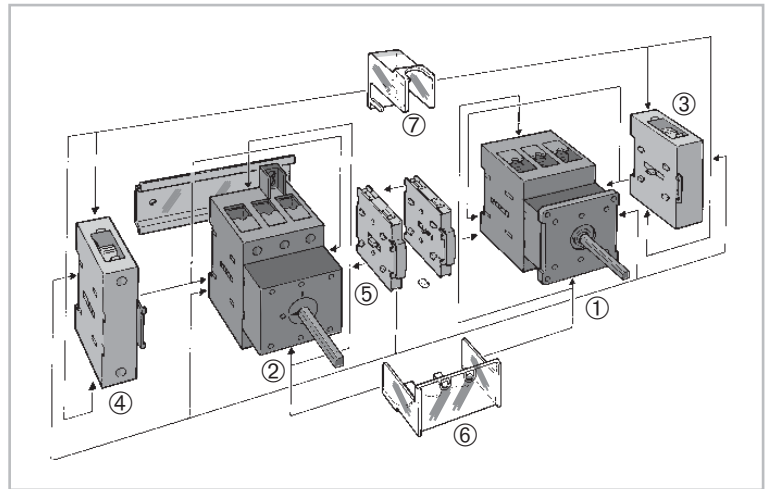
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Emergency-stop equipment

The main switch may fulfil the function of an emergency-stop switch on certain machines.

The handles must be red on a yellow background.

The contacts of manual operated emergency-stop switch has to be opened by force.



- ① Front mounting (flush mounting)
- ② Rear mounting
- ③ Main contact and PE- or N-terminals for ①
- ④ Main contact and PE- or N-terminals for ②
- ⑤ Auxiliary switch 1NO/1NG for ① and ②
- ⑥ Terminal cover triple for ① and ②
- ⑦ Terminal cover single for ③ and ④

- Mounting possibilities ● pg. I.3
- Accessories ● pg. I.6
- Technical data ● pg. I.8
- Dimensions ● pg. I.9

Mounting possibilities

| | Ith | 25A | 40A | 63A | 80A | 125A |
|------------------------------------|------------|--------|--------|--------|--------|--------|
| | Series | ML 1 | ML 1 | ML 2 | ML 2 | ML 3 |
| | Type | 640 | 650 | 660 | 670 | 680 |
| Front mounting (flush mounting) | Colour | | | | | |
| Central fixing | | | | | | |
| Ø 22.5/30.5 mm for 3 padlocks | red/yellow | 789178 | 789179 | | | |
| Ø 22.5/30.5 mm for 3 padlocks | black | 789180 | 789181 | | | |
| Ø 22.5/30.5 mm for 1 or 2 padlocks | red/yellow | 789174 | 789175 | | | |
| Ø 22.5/30.5 mm for 1 or 2 padlocks | black | 789176 | 789177 | | | |
| 4-hole fixing | | | | | | |
| With standard handle | black | 789239 | 789240 | 789241 | 789242 | 789243 |
| For 3 padlocks | red/yellow | 789186 | 789187 | 789188 | 789189 | 789190 |
| For 3 padlocks | black | 789191 | 789192 | 789193 | 789194 | 789195 |
| For 1 or 2 padlocks | red/yellow | 789182 | 789183 | | | |
| For 1 or 2 padlocks | black | 789184 | 789185 | | | |
| Rear mounting | | | | | | |
| With cover coupling | | | | | | |
| For 3 padlocks | red/yellow | 789200 | 789201 | 789202 | 789203 | 789204 |
| For 3 padlocks | black | 789205 | 789206 | 789207 | 789208 | 789209 |
| For 1 or 2 padlocks | red/yellow | 789196 | 789197 | | | |
| For 1 or 2 padlocks | black | 789198 | 789199 | | | |
| With door coupling | | | | | | |
| For 3 padlocks | red/yellow | 789214 | 789215 | 789216 | 789217 | 789218 |
| For 3 padlocks | black | 789219 | 789220 | 789221 | 789122 | 789223 |
| For 1 or 2 padlocks | red/yellow | 789210 | 789211 | | | |
| For 1 or 2 padlocks | black | 789212 | 789213 | | | |
| DIN-rail mounting | | | | | | |
| With standard handle | black | 789234 | 789235 | 789236 | 789237 | 789238 |
| For 1 or 2 padlocks | red/yellow | 789224 | 789225 | 789226 | 789227 | 789228 |
| For 1 or 2 padlocks | black | 789229 | 789230 | 789231 | 789232 | 789233 |

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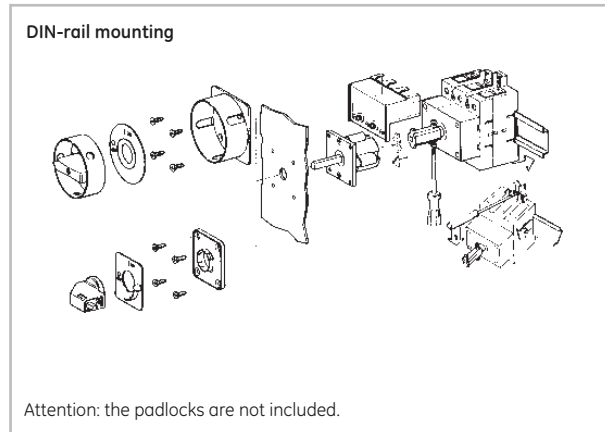
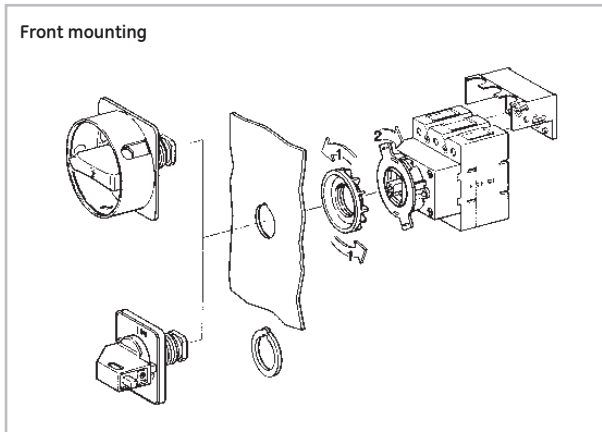
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Standard programme - Front mounting

Central fixing Ø 22.5/30.5 mm

Main switches

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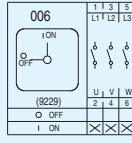

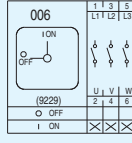

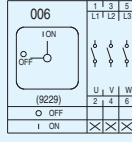

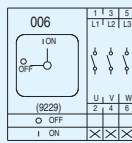

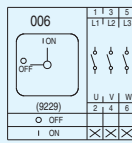
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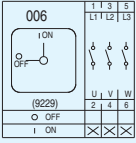

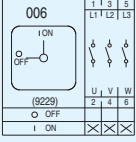
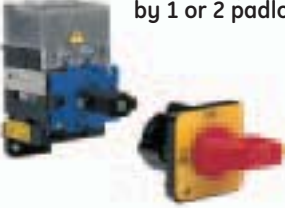
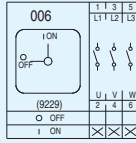

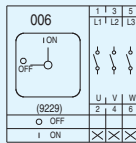

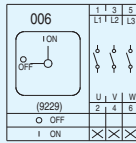

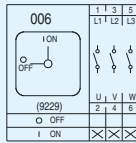
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| | | Diagram | Protection | Ithe | Type | Red/yellow Ref. no. | Black/gray Ref. no. | Pack | |
|-------------------------------------------------------------------------------------|------------------------------------------|-------------------------------------------------------------------------------------|---------------------|------|------|------------------------|------------------------|---------------|---|
|  | Locking handle by 1 or 2 padlocks |  | With terminal cover | IP65 | 25A | 640 | 789174 | 789176 | 1 |
| | | | With terminal cover | IP65 | 40A | 650 | 789175 | 789177 | 1 |
|  | Locking handle by 3 padlocks |  | With terminal cover | IP65 | 25A | 640 | 789178 | 789180 | 1 |
| | | | With terminal cover | IP65 | 40A | 650 | 789179 | 789181 | 1 |
| <p>4-hole fixing</p> | | | | | | | | | |
|  | Locking handle by 1 or 2 padlocks |  | With terminal cover | IP55 | 25A | 640 | 789182 | 789184 | 1 |
| | | | With terminal cover | IP55 | 40A | 650 | 789183 | 789185 | 1 |
|  | Locking handle by 3 padlocks |  | With terminal cover | IP55 | 25A | 640 | 789186 | 789191 | 1 |
| | | | With terminal cover | IP55 | 40A | 650 | 789187 | 789192 | 1 |
| | | | With terminal cover | IP55 | 63A | 660 | 789188 | 789193 | 1 |
| | | | With terminal cover | IP55 | 80A | 670 | 789189 | 789194 | 1 |
| | | | With terminal cover | IP55 | 125A | 680 | 789190 | 789195 | 1 |
|  | With standard black handle |  | | IP55 | 25A | 640 | | 789239 | 1 |
| | | | | IP55 | 40A | 650 | | 789240 | 1 |
| | | | | IP55 | 63A | 660 | | 789241 | 1 |
| | | | | IP55 | 80A | 670 | | 789242 | 1 |
| | | | | IP55 | 125A | 680 | | 789243 | 1 |

Accessories see I.6



Standard programme - Rear mounting

| DIN-rail mounting | | Protection | Ithe | Type | Red/yellow | Black/gray | Pack | | | |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------|------------|------------|--------|--------|--------|---|
| | | | | | Ref. no. | Ref. no. | | | | |
|  <p>Locking handle by 1 or 2 padlocks</p> |  | With terminal cover | IP30 | 25A | 640 | 789224 | 789229 | 1 | | |
| | | With terminal cover | IP30 | 40A | 650 | 789225 | 789230 | 1 | | |
| | | With terminal cover | IP30 | 63A | 660 | 789226 | 789231 | 1 | | |
| | | With terminal cover | IP30 | 80A | 670 | 789227 | 789232 | 1 | | |
| | | With terminal cover | IP30 | 125A | 680 | 789228 | 789233 | 1 | | |
|  <p>With standard black handle</p> |  | With terminal cover | IP30 | 25A | 640 | | 789234 | 1 | | |
| | | With terminal cover | IP30 | 40A | 650 | | 789235 | 1 | | |
| | | With terminal cover | IP30 | 63A | 660 | | 789236 | 1 | | |
| | | With terminal cover | IP30 | 80A | 670 | | 789237 | 1 | | |
| | | With terminal cover | IP30 | 125A | 680 | | 789238 | 1 | | |
| With door coupling | |  <p>Locking handle by 1 or 2 padlocks</p> |  | With terminal cover | IP55 | 25A | 640 | 789210 | 789212 | 1 |
| With terminal cover | IP55 | | | 40A | 650 | 789211 | 789213 | 1 | | |
|  <p>Locking handle by 3 padlocks</p> |  | With terminal cover | IP55 | 25A | 640 | 789214 | 789219 | 1 | | |
| | | With terminal cover | IP55 | 40A | 650 | 789215 | 789220 | 1 | | |
| | | With terminal cover | IP55 | 63A | 660 | 789216 | 789221 | 1 | | |
| | | With terminal cover | IP55 | 80A | 670 | 789217 | 789222 | 1 | | |
| | | With terminal cover | IP55 | 125A | 680 | 789218 | 789223 | 1 | | |
| With cover coupling | |  <p>Locking handle by 1 or 2 padlocks</p> |  | With terminal cover | IP65 | 25A | 640 | 789196 | 789198 | 1 |
| With terminal cover | IP65 | | | 40A | 650 | 789197 | 789199 | 1 | | |
|  <p>Locking handle by 3 padlocks</p> |  | With terminal cover | IP65 | 25A | 640 | 789200 | 789205 | 1 | | |
| | | With terminal cover | IP65 | 40A | 650 | 789201 | 789206 | 1 | | |
| | | With terminal cover | IP65 | 63A | 660 | 789202 | 789207 | 1 | | |
| | | With terminal cover | IP65 | 80A | 670 | 789203 | 789208 | 1 | | |
| | | With terminal cover | IP65 | 125A | 680 | 789204 | 789209 | 1 | | |

Accessories see 1.6

Main switches

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Accessories - Fitable contactblocs⁽¹⁾

Main switches

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| Neutral switched | | |
|---------------------------|--------|---|
| Front | Rear | |
| 789244 | 789245 | 1 |
| Series ML1 - Type 640/650 | | |
| 789246 | 789247 | 1 |
| Series ML2 - Type 660/670 | | |
| 789248 | 789249 | 1 |
| Series ML3 - Type 680 | | |

| Fixed neutral module | | |
|---------------------------|--------|---|
| Front | Rear | |
| 789262 | 789263 | 1 |
| Series ML1 - Type 640/650 | | |
| 789264 | 789265 | 1 |
| Series ML2 - Type 660/670 | | |
| 789266 | 789267 | 3 |
| Series ML3 - Type 680 | | |



| Switching contact | | |
|---------------------------|--------|---|
| Front | Rear | |
| 789250 | 789251 | 1 |
| Series ML1 - Type 640/650 | | |
| 789252 | 789253 | 1 |
| Series ML2 - Type 660/670 | | |
| 789254 | 789255 | 1 |
| Series ML3 - Type 680 | | |

| Auxiliary contact NO+NC Ith = 16A | | |
|-----------------------------------|--------|---|
| Front | Rear | |
| 789268 | 789269 | 1 |
| Series ML1 - Type 640/650 | | |
| 789268 | 789269 | 1 |
| Series ML2 - Type 660/670 | | |
| 789268 | 789269 | 1 |
| Series ML3 - Type 680 | | |



| PE-terminal (Fixed) | | |
|---------------------------|--------|---|
| Front | Rear | |
| 789256 | 789257 | 1 |
| Series ML1 - Type 640/650 | | |
| 789258 | 789259 | 1 |
| Series ML2 - Type 660/670 | | |
| 789260 | 789261 | 1 |
| Series ML3 - Type 680 | | |

Accessories - Terminal cover



| Single terminal cover (HS1) | | |
|-----------------------------|--------|---|
| | 789270 | 1 |
| Series ML1 - Type 640/650 | | |
| | 789271 | 1 |
| Series ML2 - Type 660/670 | | |
| | 789271 | 1 |
| Series ML3 - Type 680 | | |

| Triple terminal cover (HS3) | | |
|----------------------------------------|--------|---|
| | 789272 | 1 |
| Series ML1 - Type 640/650 | | |
| | 789273 | 1 |
| Series ML2 - Type 660/670 | | |
| | 789274 | 1 |
| Series ML3 - Type 680 | | |
| Same cover for front- or base mounting | | |



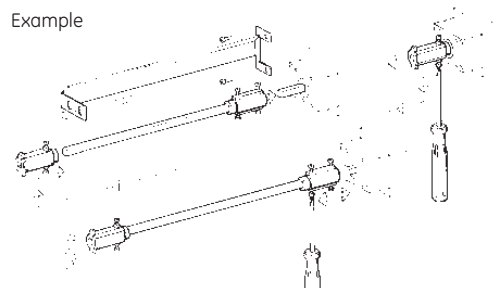
Extension shafts for door coupling



| Shaft length | Depth range between door and base (mm) | | |
|----------------------------------|----------------------------------------|------------|----------|
| | ML1 | ML2, ML3 | Cat. no. |
| AL-65 | 170-215 mm | 185-320 mm | 789275 |
| AL-165 | 265-335 mm | 280-350 mm | 789276 |
| AL-265 ⁽²⁾ | 365-435 mm | 380-450 mm | 789277 |
| AL-365 ⁽²⁾ | 465-535 mm | 480-550 mm | 789278 |
| Shaft support for 265 and 365 mm | | | 789279 |

An extension shaft is necessary when the depth is higher than the length of the standard shaft.
ML1: 105-135 mm
ML2 and ML3: 120-150 mm

- (1) ML1: max. 2 units
ML2 and ML3: max 3 units
- (2) Shaft support included.



Enclosed switches



The maintenance switch is an enclosed main switch with locking handle by 3 padlocks. With red handle and yellow front plate, if it should be used as an emergency-stop switch, otherwise black/grey.

There are six sizes of standard enclosures for the series ML. Each is equipped with a cover coupling and a double PE-terminal. Switches type 640 (3 and 4-pole) are provided with an additional N-terminal.

All enclosures have a degree of protection IP65 and are of solid impact and flame resistant polyester.

Enclosed switches

| | Diagram | Type | Ithe | Type of enclosure | Red/yellow 3 padlocks | Black/grey 3 padlocks | Pack |
|-----------------------------|---------|------|------|-------------------|--------------------------|--------------------------|------|
| | | | | | Ref. no. | Ref. no. | |
| Three poles | | 640 | 25A | E2 | 789280 | 789285 | 1 |
| | | 650 | 32A | E3 | 789281 | 789286 | 1 |
| | | 660 | 50A | E4 | 789282 | 789287 | 1 |
| | | 670 | 63A | E5 | 789283 | 789288 | 1 |
| | | 680 | 100A | E7 | 789284 | 789289 | 1 |
| | | | | | | | |
| Four poles | | 640 | 25A | E2 | 789290 | 789295 | 1 |
| | | 650 | 32A | E3 | 789291 | 789296 | 1 |
| | | 660 | 50A | E4 | 789292 | 789297 | 1 |
| | | 670 | 63A | E5 | 789293 | 789298 | 1 |
| | | 680 | 100A | E7 | 789294 | 789299 | 1 |
| | | | | | | | |
| Three poles + (1 NO + 1 NC) | | 640 | 25A | E2 | 789300 | 789305 | 1 |
| | | 650 | 32A | E3 | 789301 | 789306 | 1 |
| | | 660 | 50A | E4 | 789302 | 789307 | 1 |
| | | 670 | 63A | E5 | 789303 | 789308 | 1 |
| | | 680 | 100A | E7 | 789304 | 789309 | 1 |
| | | | | | | | |
| Four poles + (1 NO + 1 NC) | | 640 | 25A | E2 | 789310 | 789315 | 1 |
| | | 650 | 32A | E3 | 789311 | 789316 | 1 |
| | | 660 | 50A | E4 | 789312 | 789317 | 1 |
| | | 670 | 63A | E5 | 789313 | 789318 | 1 |
| | | 680 | 100A | E7 | 789314 | 789319 | 1 |
| | | | | | | | |
| Six poles | | 640 | 25A | E2 | 789320 | 789325 | 1 |
| | | 650 | 32A | E3 | 789321 | 789326 | 1 |
| | | 660 | 50A | E4 | 789322 | 789327 | 1 |
| | | 670 | 63A | E5 | 789323 | 789328 | 1 |
| | | 680 | 100A | E7 | 789324 | 789329 | 1 |
| | | | | | | | |
| Six poles + (1 NO + 1 NC) | | 640 | 25A | E2 | 789330 | 789335 | 1 |
| | | 650 | 32A | E3 | 789331 | 789336 | 1 |
| | | 660 | 50A | E4 | 789332 | 789337 | 1 |
| | | 670 | 63A | E5 | 789333 | 789338 | 1 |
| | | 680 | 100A | E7 | 789334 | 789339 | 1 |
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Main switches

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Technical data

Main switches - According to IEC 60947-3, EN 60947-3, DIN VDE 0660 part 107, UL and CSA

Main switches

| Series | | | ML 1 | ML 1 | ML 2 | ML 2 | ML 3 | |
|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------|------------|------------|------------|-------------------|-------------------|-----|
| Types | | | 640 | 650 | 660 | 670 | 680 | |
| Rated uninterrupted current | I_u open = I_{th} | (A) | 25 | 40 | 63 | 80 | 125 | |
| | I_{the} enclosed | (A) | 25 | 32 | 50 | 63 | 100 | |
| Rated insulation voltage U_i (III/3) | | (V) | 690 | 690 | 690 | 690 | 690 | |
| Rated impulse withstand voltage U_{imp} (III/3) | | (kV) | 6 | 6 | 6 | 6 | 6 | |
| Rated operational current I_e AC21 A ⁽³⁾ | | (A) | 25 | 40 | 63 | 80 | 125 | |
| Rated operational voltage U_e | | (V) | 690 | 690 | 690 | 690 | 690 | |
| Frequency | | (Hz) | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | |
| Making/breaking capacity | | | | | | | | |
| | Utilization category AC3: | 3 × 230V | (kW) | 5.5 | 7.5 | 15 | 18.5 | 22 |
| | Motor switches for | 3 × 400V | (kW) | 7.5 | 11 | 22 | 30 | 37 |
| | operational switching | 3 × 690V | (kW) | 7.5 | 11 | 22 | 30 | 45 |
| | Utilization category AC23A ⁽³⁾ | 3 × 230V | (kW) | 7.5 | 11 | 18.5 | 22 | 25 |
| | Motor switches | 3 × 400V | (kW) | 11 | 15 | 30 ⁽¹⁾ | 37 ⁽²⁾ | 45 |
| | (Main switches for machinery) | 3 × 690V | (kW) | 11 | 15 | 30 ⁽¹⁾ | 37 ⁽²⁾ | 45 |
| | Rated breaking category AC23 A ⁽³⁾ | 3 × 230V | (A) | 260 | 390 | 630 | 750 | 870 |
| | | 3 × 400V | (A) | 220 | 300 | 570 | 700 | 850 |
| | | 3 × 690V | (A) | 130 | 170 | 330 | 400 | 490 |
| Short-circuit capacity | | | | | | | | |
| | Max. fuse rating gG | (A) | 50 | 50 | 80 | 80 | 125 | |
| | Rated conditional short-circuit current | (kA _{eff}) | 10 | 10 | - | - | - | |
| | Rated short-circuit making capacity I_{cm} | (kA) | - | - | 2.1 | 2.1 | 3.4 | |
| | Rated short-time withstand I_{cw} (1s-current) | (A _{eff}) | 300 | 480 | 765 | 960 | 1500 | |
| | Disconnect function up to | (V) | 690 | 690 | 690 | 690 | 690 | |
| | Terminal screws (Pozidriv) | | M4 | M4 | M5 | M5 | M6 | |
| | Torque terminal screws | (Nm) | 2.5 | 2.5 | 4 | 4 | 6 | |
| Cable cross section | | | | | | | | |
| | Solid or multi-stranded (Cu) | min. - max. (mm ²) | 1.5-10 | 1.5-10 | 2.5-35 | 2.5-35 | 6-70 | |
| | Flexible with ferrule (DIN 46228) | min. - max. (mm ²) | 1.5-6 | 1.5-6 | 1.5-25 | 1.5-25 | 6-50 | |
| | General purpose 3-phase | (A) | 25 | 40 | 63 | 80 | 125 | |
| | | (V) | 600 | 600 | 600 | 600 | 600 | |
| |  Motor 3-phase | 240V | (HP) | 7.5 | 10 | 15 | 20 | 25 |
| | | 480V | (HP) | 10 | 20 | 30 | 40 | 50 |
| | | 600V | (HP) | 10 | 20 | 30 | 40 | 50 |
| |  Motor 1-phase (2 pole) | 120V | (HP) | 1 | 1.5 | 3 | 4 | 6 |
| | | 240V | (HP) | 2 | 3 | 7.5 | 10 | 15 |
| | Cable cross section | AWG-No | 14-7 | 14-3 | 14-2 | 14-2 | 8-1/0 | |

(1) 22 kW in enclosure
 (2) 30 kW in enclosure
 (3) ML2/ML3 according to EN 60947-3 category B

Auxiliary contact for ML 1/2/3 - According to IEC 60947-5-1

| Series | | | ML 1/2/3 |
|----------------------------------------------|-----------------------|--------------------------------|----------|
| Rated uninterrupted current | I_u open = I_{th} | (A) | 16 |
| | I_{the} enclosed | (A) | 16 |
| Rated insulation voltage U_i (III/3) | | (V) | 690 |
| Rated impulse withstand voltage U_{imp} | | (kV) | 6 |
| Rated operational current | I_e (AC15) | | |
| | 230V | (A) | 6 |
| | 400V | (A) | 4 |
| | 690V | (A) | 2 |
| Max. fuse rating gG | | (A) | 16 |
| Rated conditional short-circuit current | | (kA _{eff}) | 3 |
| Cable cross section, solid or multi-stranded | | min. - max. (mm ²) | 1-4 |
| Flexible with ferrule (DIN 46228) | | min. - max. (mm ²) | 1-2.5 |
| Terminal screws (Pozidriv) | | | M3 |
| Torque terminal screws | | (Nm) | 0.6 |

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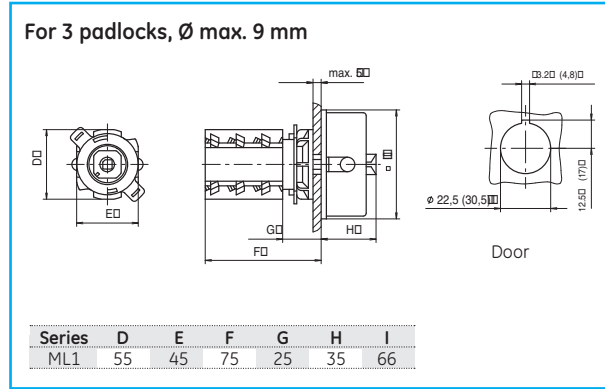
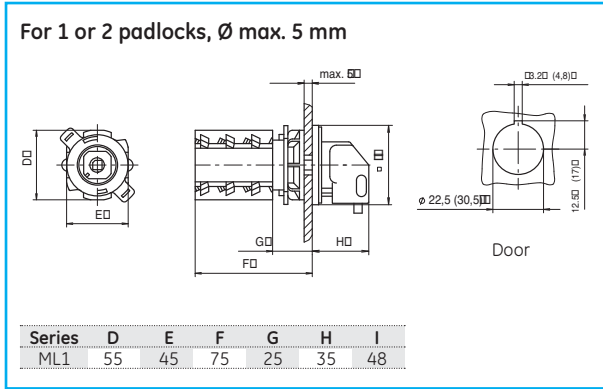
I

X

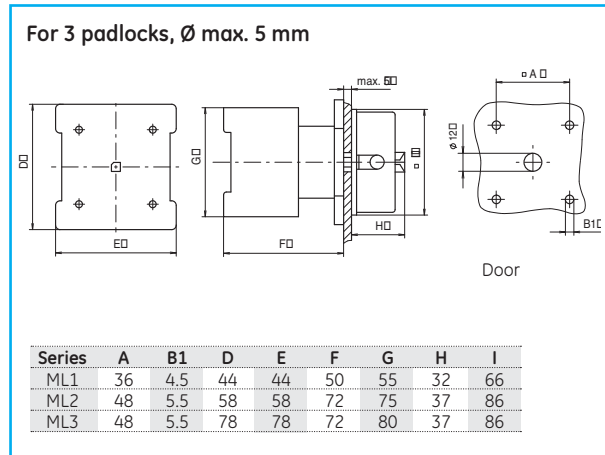
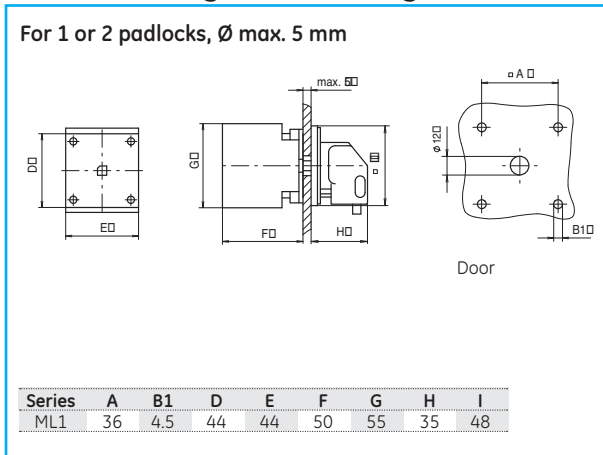


Dimensional drawings

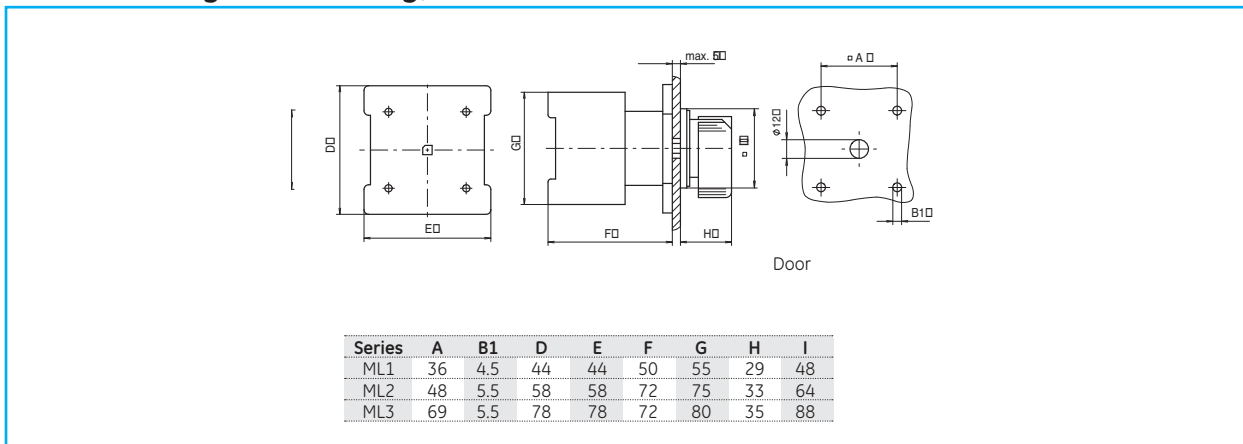
Front mounting - Central fixing \varnothing 22.5/30.5 mm



Front mounting - 4-hole fixing



Front mounting - 4-hole fixing, with standard black handle



A

B

C

D

E

F

G

H

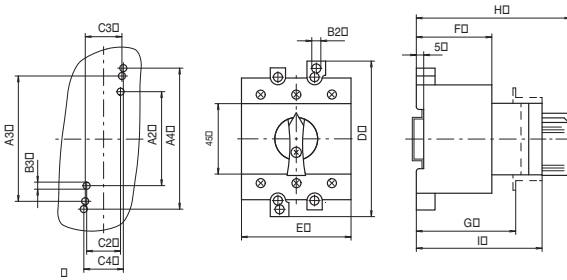
I

X

Dimensional drawings

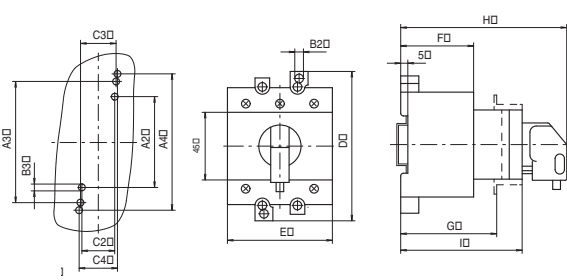
Rear mounting - DIN-rail mounting

With standard black handle



| Series | A2 | A3 | A4 | B2 | B3 | C2 | C3 |
|--------|----|-----|------|-----|------|------|------|
| ML1 | 60 | 65 | 70 | 4.2 | 3.8 | 22 | 30 |
| ML2 | - | 80 | 90 | 5.5 | 5.2 | - | 23.5 |
| ML3 | - | 80 | 90 | 5.5 | 5.2 | - | 23.5 |
| Series | C4 | D | E | F | G | H | I |
| ML1 | 25 | 78 | 52.5 | 42 | 48.5 | 87.5 | 67.5 |
| ML2 | 25 | 100 | 53.5 | 49 | - | 100 | 79 |
| ML3 | 25 | 100 | 70 | 49 | - | 100 | 79 |

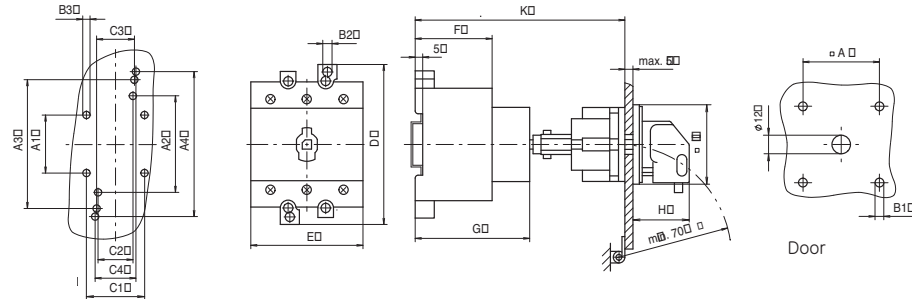
For 1 or 2 padlocks, Ø max. 5 mm



| Series | A2 | A3 | A4 | B2 | B3 | C2 | C3 |
|--------|----|-----|------|-----|------|------|------|
| ML1 | 60 | 65 | 70 | 4.2 | 3.8 | 22 | 30 |
| ML2 | - | 80 | 90 | 5.5 | 5.2 | - | 23.5 |
| ML3 | - | 80 | 90 | 5.5 | 5.2 | - | 23.5 |
| Series | C4 | D | E | F | G | H | I |
| ML1 | 25 | 78 | 52.5 | 42 | 48.5 | 91.5 | 67.5 |
| ML2 | 25 | 100 | 53.5 | 49 | - | 104 | 79 |
| ML3 | 25 | 100 | 70 | 49 | - | 104 | 79 |

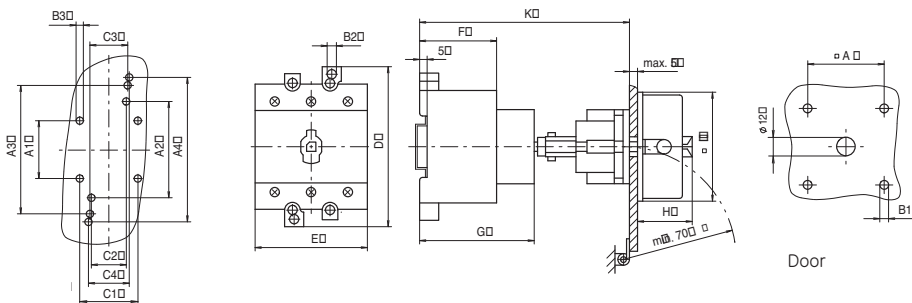
Rear mounting - With door coupling

For 1 or 2 padlocks, Ø max. 5 mm



| Series | A | A2 | A3 | A4 | B1 | B2 | B3 | C2 | C3 | C4 | D | E | F | G | H | I | K |
|--------|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|----|----|----|---------|
| ML1 | 36 | 60 | 65 | 70 | 4.5 | 4.2 | 3.8 | 22 | 30 | 25 | 78 | 45 | 42 | 55 | 35 | 48 | 105-135 |

For 3 padlocks, Ø max. 5 mm



| Series | A | A2 | A3 | A4 | B1 | B2 | B3 | C2 | C3 | C4 | D | E | F | G | H | I | K |
|--------|----|----|----|----|-----|-----|-----|----|------|----|-----|------|----|----|----|----|---------|
| ML1 | 36 | 60 | 65 | 70 | 4.5 | 4.2 | 3.8 | 22 | 30 | 25 | 78 | 45 | 42 | 55 | 32 | 66 | 105-135 |
| ML2 | 36 | - | 80 | 90 | 5.5 | 5.5 | 5.2 | - | 23.5 | 25 | 100 | 53.5 | 49 | 72 | 37 | 86 | 120-150 |
| ML3 | 36 | - | 80 | 90 | 5.5 | 5.5 | 5.2 | - | 23.5 | 25 | 100 | 70 | 49 | 72 | 37 | 86 | 120-150 |

A

B

C

D

E

F

G

H

I

X



A

B

C

D

E

F

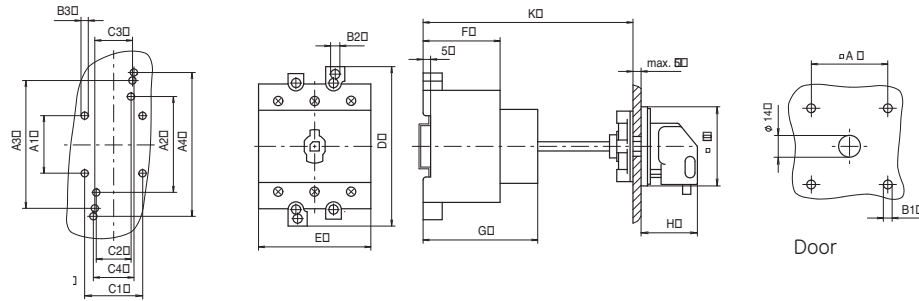
G

H

I

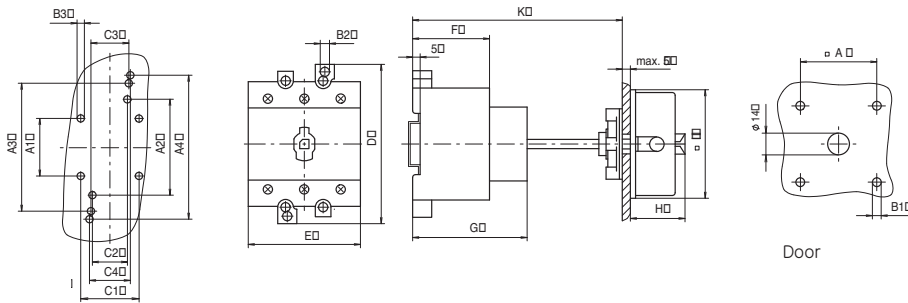
Rear mounting - With cover coupling

For 1 or 2 padlocks, Ø max. 9 mm



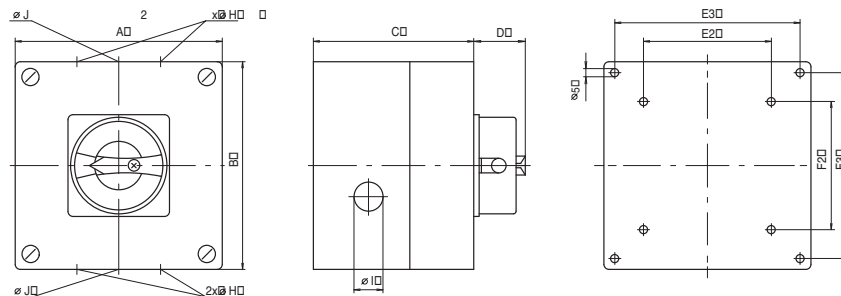
| Series | A | A2 | A3 | A4 | B1 | B2 | B3 | C2 | C3 | C4 | D | E | F | G | H | I | K |
|--------|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|----|----|----|---------|
| ML1 | 36 | 60 | 65 | 70 | 4.5 | 4.2 | 3.8 | 22 | 30 | 25 | 78 | 45 | 42 | 55 | 35 | 48 | 105-135 |

For 3 padlocks, Ø max. 9 mm



| Series | A | A2 | A3 | A4 | B1 | B2 | B3 | C2 | C3 | C4 | D | E | F | G | H | I | K |
|--------|----|----|----|----|-----|-----|-----|----|------|----|-----|------|----|----|----|----|---------|
| ML1 | 36 | 60 | 65 | 70 | 4.5 | 4.2 | 3.8 | 22 | 30 | 25 | 78 | 45 | 42 | 55 | 32 | 66 | 88-98 |
| ML2 | 36 | - | 80 | 90 | 5.5 | 5.5 | 5.2 | - | 23.5 | 25 | 100 | 53.5 | 49 | 72 | 37 | 86 | 103-113 |
| ML3 | 36 | - | 80 | 90 | 5.5 | 5.5 | 5.2 | - | 23.5 | 25 | 100 | 70 | 49 | 72 | 37 | 86 | 103-113 |

Enclosed switches



| Enclosure Type | A | B | C | D | E2 | E3 | F2 | F3 |
|----------------|-----|-----|-----|----|-----|-----|-----|-----|
| E2 | 94 | 130 | 81 | 32 | - | 79 | - | 115 |
| E3 | 130 | 130 | 99 | 32 | - | 115 | - | 115 |
| E4 | 110 | 180 | 11 | 32 | 50 | 95 | 120 | 165 |
| E5 | 180 | 182 | 111 | 37 | 120 | 165 | 120 | 167 |
| E6 | 180 | 254 | 111 | 37 | 120 | 165 | 190 | 239 |
| E7 | 265 | 265 | 140 | 37 | 194 | - | 230 | - |

| Cable entry Type | H (1) | I (1) | H (2) | I (2) | J (2) |
|------------------|----------|-------|-------|-------|-------|
| E2 | PG 16/11 | PG 11 | - | - | - |
| E3 | PG 21/16 | PG 16 | - | - | - |
| E4 | - | - | PG 21 | PG 11 | - |
| E5 | - | - | PG 29 | - | PG 11 |
| E6 | - | - | PG 29 | PG 11 | - |
| E7 | PG 36/29 | PG 29 | - | - | - |

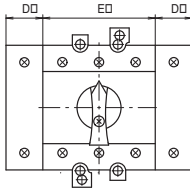
(1) Knock-out entry
(2) Cable entry



Dimensional drawings

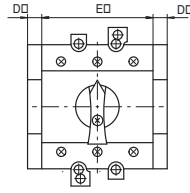
Accessories

N-module and PE-terminal



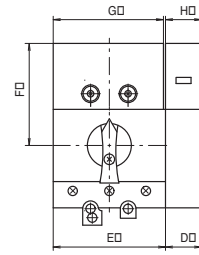
| Series | D | E |
|--------|------|------|
| ML1 | 14.5 | 45 |
| ML2 | 23 | 53.5 |
| ML3 | 23 | 70 |

Auxiliary contacts (NO + NC)



| Series | D | E |
|--------|-----|------|
| ML1 | 9.5 | 45 |
| ML2 | 9.5 | 53.5 |
| ML3 | 9.5 | 70 |

Terminal covers



| Series | D | E | F | G | H |
|--------|------|------|----|----|------|
| ML1 | 14.5 | 45 | 53 | 41 | 14 |
| ML2 | 23 | 53.5 | 61 | 52 | 22.5 |
| ML3 | 23 | 70 | 65 | 68 | 22.5 |

Main switches

A

B

C

D

E

F

G

H

I

X