



**Contact element, Screw terminals, Front fixing, 1 NC, 24 V 3 A, 220 V 230 V 240 V 6 A**

**Part no.** M22-K01  
**Catalog No.** 216378  
**Alternate Catalog No.** M22-K01Q  
**EL-Nummer (Norway)** 4355364

## Delivery program

|                                                                             |    |                                                                                                                                                |
|-----------------------------------------------------------------------------|----|------------------------------------------------------------------------------------------------------------------------------------------------|
| Product range                                                               |    | Accessories                                                                                                                                    |
| Basic function accessories                                                  |    | Contact elements                                                                                                                               |
| Accessories                                                                 |    | Auxiliary contact                                                                                                                              |
| Accessories                                                                 |    | Standard auxiliary contact, trip-indicating auxiliary switch                                                                                   |
| Standard/Approval                                                           |    | UL/CSA, IEC                                                                                                                                    |
| Construction size                                                           |    | NZM1/2/3/4                                                                                                                                     |
| Connection technique                                                        |    | Screw terminals                                                                                                                                |
| Fixing                                                                      |    | Front fixing                                                                                                                                   |
| Degree of Protection                                                        |    | IP20                                                                                                                                           |
| Connection to SmartWire-DT                                                  |    | no                                                                                                                                             |
| For use with                                                                |    | NZM1(-4), 2(-4), 3(-4), 4(-4)<br>PN1(-4), 2(-4), 3(-4)<br>N(S)1(-4), 2(-4), 3(-4), 4(-4)                                                       |
| Approval                                                                    |    |                                                            |
| <b>Contacts</b>                                                             |    |                                                                                                                                                |
| N/C = Normally closed                                                       |    | 1 NC                                                        |
| Notes                                                                       |    |  = safety function, by positive opening to IEC/EN 60947-5-1 |
| <b>Actuator travel and actuation force as per DIN EN 60947-5-1, K.5.4.1</b> |    |                                                                                                                                                |
|                                                                             | mm | 4.8                                                                                                                                            |
| Maximum travel                                                              | mm | 5.7                                                                                                                                            |
| Minimum force for positive opening                                          | N  | 15                                                                                                                                             |

Contact diagram



0 1.2 5.5

[illegible]

|                 |                |
|-----------------|----------------|
| Connection type | Single contact |
|-----------------|----------------|

|                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Description of HIA trip-indicating auxiliary contact</p> | <p>General trip indication '+', when tripped by shunt release, overload release, short-circuit release or by the residual-current release due to residual-current.</p> <p>Can be used with NZM1, 2, 3 circuit-breaker: a trip-indicating auxiliary contact can be clipped into the circuit-breaker.</p> <p>Can be used with NZM4 circuit-breaker: up to two standard auxiliary contacts can be clipped into the circuit-breaker.</p> <p>Any combinations of the auxiliary contact types are possible.</p> <p>Not in combination with switch-disconnector PN...</p> <p>Marking on switch: HIA</p> <p>Labeling in FI-Block: HIAFI.</p> <p>If the trip-indicating auxiliary switch in the fault current block is used, the NC contacts operates as a N/O contact and the NC contact operates as an N/O contact.</p> |
|-------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Description standard auxiliary contact HIN</p> | <p>Switching with the main contacts Used for indicating and interlocking tasks.<br/>         Can be used with NZM1 circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker.<br/>         Can be used with NZM2 size circuit-breaker: a standard auxiliary contact can be clipped into the circuit-breaker.<br/>         Can be used with NZM3, 4 circuit-breaker: up to three standard auxiliary contacts can be clipped into the circuit-breaker.<br/>         Any combinations of the auxiliary contact types are possible.<br/>         Marking on switch: HIN.<br/>         On combination with remote operator NZM-XR... the right mounting location of standard auxiliary contact HIN can be fitted only with individual contacts.</p> |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                      |  |  |                 |
|----------------------|--|--|-----------------|
| Connection technique |  |  | Screw terminals |
|----------------------|--|--|-----------------|

**Notes**

The following can be clipped into the switches:

- NZM1: a standard auxiliary contact
- NZM2: up to two M22-(C)K... standard auxiliary contacts
- NZM3: up to three M22-(C)K... standard auxiliary contacts
- NZM4: up to three M22-(C)K... standard auxiliary contacts

Any combinations of the auxiliary contact types are possible.

Marking on switch: HIN

In combination with remote operator NZM-XR... only single contacts can be fitted to some installation locations of the standard auxiliary contact.

**NZM2:** Only single contact can be fitted in left installation location of standard auxiliary contact.

**NZM3:** Only single contact can be fitted in installation locations of standard auxiliary contact.

NZM4: Only single contact can be fitted in right installation location of standard auxiliary contact.

## Technical data

### General

|                                                                                     |              |                 |                                                                                |
|-------------------------------------------------------------------------------------|--------------|-----------------|--------------------------------------------------------------------------------|
| Standards                                                                           |              |                 | IEC 60947-5-1                                                                  |
| Lifespan, mechanical                                                                | Operations   | $\times 10^6$   | > 5                                                                            |
| Operating frequency                                                                 | Operations/h |                 | $\leq 3600$                                                                    |
| Actuating force                                                                     |              | n               | $\leq 5$                                                                       |
| Operating torque (screw terminals)                                                  |              | Nm              | $\leq 0.8$                                                                     |
| Degree of Protection                                                                |              |                 | IP20                                                                           |
| Climatic proofing                                                                   |              |                 | Damp heat, constant, to IEC 60068-2-78<br>Damp heat, cyclic, to IEC 60068-2-30 |
| Ambient temperature                                                                 |              |                 |                                                                                |
| Open                                                                                |              | °C              | -25 - +70                                                                      |
| Mechanical shock resistance to IEC 60068-2-27 Shock duration 11 ms, half-sinusoidal |              | g               | > 30                                                                           |
| Terminal capacities                                                                 |              | mm <sup>2</sup> |                                                                                |
| Solid                                                                               |              | mm <sup>2</sup> | 0.75 - 2.5                                                                     |
| Stranded                                                                            |              | mm <sup>2</sup> | 0.5 - 2.5                                                                      |
| Flexible with ferrule                                                               |              | mm <sup>2</sup> | 0.5 - 1.5                                                                      |

### Contacts

|                                       |                  |                   |                                                                     |
|---------------------------------------|------------------|-------------------|---------------------------------------------------------------------|
| Rated impulse withstand voltage       | U <sub>imp</sub> | V AC              | 6000                                                                |
| Rated insulation voltage              | U <sub>i</sub>   | V                 | 500                                                                 |
| Overvoltage category/pollution degree |                  |                   | III/3                                                               |
| Control circuit reliability           |                  |                   |                                                                     |
| at 24 V DC/5 mA                       | H <sub>F</sub>   | Fault probability | $< 10^{-7}$ (i.e. 1 failure to $10^7$ operations)                   |
| at 5 V DC/1 mA                        | H <sub>F</sub>   | Fault probability | $< 5 \times 10^{-6}$ (i.e. 1 failure in $5 \times 10^6$ operations) |
| Max. short-circuit protective device  |                  |                   |                                                                     |
| Fuseless                              |                  | Type              | PKZM0-10/FAZ-B6/1                                                   |
| Fuse                                  | gG/gL            | A                 | 10                                                                  |

### Switching capacity

|                           |                |               |     |
|---------------------------|----------------|---------------|-----|
| Rated operational current | I <sub>e</sub> | A             |     |
| AC-15                     |                |               |     |
| 115 V                     | I <sub>e</sub> | A             | 6   |
| 220 V 230 V 240 V         | I <sub>e</sub> | A             | 6   |
| 380 V 400 V 415 V         | I <sub>e</sub> | A             | 4   |
| 500 V                     | I <sub>e</sub> | A             | 2   |
| DC-13                     |                |               |     |
| 24 V                      | I <sub>e</sub> | A             | 3   |
| 42 V                      | I <sub>e</sub> | A             | 1.7 |
| 60 V                      | I <sub>e</sub> | A             | 1.2 |
| 110 V                     | I <sub>e</sub> | A             | 0.6 |
| 220 V                     | I <sub>e</sub> | A             | 0.3 |
| Lifespan, electrical      |                |               |     |
| AC-15                     |                |               |     |
| 230 V/0.5 A               | Operations     | $\times 10^6$ | 1.6 |
| 230 V/1.0 A               | Operations     | $\times 10^6$ | 1   |
| 230 V/3.0 A               | Operations     | $\times 10^6$ | 0.7 |
| DV-13                     |                |               |     |
| 12 V/2.8 A                | Operations     | $\times 10^6$ | 1.2 |

### Auxiliary contacts

|                           |                |      |     |
|---------------------------|----------------|------|-----|
| Rated operational voltage | U <sub>e</sub> | V    |     |
| Rated operational voltage | U <sub>e</sub> | V AC | 500 |

|                                                                                                    |                                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------|----------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated operational voltage, max.                                                                    | U <sub>e</sub>                   | V DC            | 220                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Conventional thermal current                                                                       | I <sub>th</sub> = I <sub>e</sub> | CSA             | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Rated operational current                                                                          | I <sub>e</sub>                   | A               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Different rated operational currents</b> when used as auxiliary contact for NZM circuit-breaker |                                  |                 | <div> <div>bei<br/>AC =<br/>50/60<br/>Hz</div> <div> <div>Bemessungs-<br/>betriebsstrom</div> <div>AC-15</div> <div>15 V</div> <div>230 V</div> <div>400 V</div> <div>500 V</div> <div>DC-14</div> <div>14 V</div> <div>42 V</div> <div>60 V</div> <div>110 V</div> <div>220 V</div> </div> <div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> <div>I<sub>e</sub></div> </div> <div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> <div>A</div> </div> <div> <div>4</div> <div>4</div> <div>2</div> <div>1</div> <div>3</div> <div>1.7</div> <div>1.2</div> <div>0.6</div> <div>0.3</div> </div> <div> <div>4</div> <div>4</div> <div>-</div> <div>-</div> <div>3</div> <div>1</div> <div>0.8</div> <div>0.5</div> <div>0.2</div> </div> <div> <div>4</div> <div>4</div> <div>2</div> <div>1</div> <div>3</div> <div>1.5</div> <div>0.8</div> <div>0.5</div> <div>0.2</div> </div> </div> <div> <div>M22-<br/>(C)K10(01)</div> <div>M22-<br/>CK11(02)<br/>(20)</div> <div>XHIV</div> </div> |
| Rated conditional short-circuit current                                                            | I <sub>q</sub>                   | kA              | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Short-circuit protection                                                                           |                                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| max. fuse                                                                                          |                                  | A gG/gL         | 10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Max. miniature circuit-breaker                                                                     |                                  | A               | FAZ-B6/B1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Operating times                                                                                    |                                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                                                    |                                  |                 | <p>Early-make time of the HIV compared to the main contacts during with make and break switching.</p> <p>(switch times with manual operation):</p> <p>NZM1, PN1, N(S)1: ca. 20 ms</p> <p>NZM2, PN2, N(S)2: ca. 20 ms</p> <p>NZM3, PN3, N(S)3: ca. 20 ms</p> <p>NZM4, N(S)4: approx. 90 ms, the HIV switch early <b>Off</b>switching <b>not</b> forward.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Terminal capacities                                                                                |                                  | mm <sup>2</sup> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Solid or flexible conductor, with ferrule                                                          |                                  | mm <sup>2</sup> | 1 x (0,75 - 2,5)<br>2 x (0,75 - 2,5)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| UL/CSA                                                                                             |                                  |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Rated operational current                                                                          | I <sub>e</sub>                   | A               | 5 A – 600 V AC<br>1 A - 250 V DC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Other technical data (sheet catalogue)                                                             |                                  |                 | Maximum equipment and position of the internal accessories                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 6                                                                  |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 0.11                                                               |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 0                                                                  |
| Static heat dissipation, non-current-dependent                                                                         | P <sub>vs</sub>   | W  | 0                                                                  |
| Heat dissipation capacity                                                                                              | P <sub>diss</sub> | W  | 0                                                                  |
| Operating ambient temperature min.                                                                                     |                   | °C | -25                                                                |
| Operating ambient temperature max.                                                                                     |                   | °C | 70                                                                 |
| IEC/EN 61439 design verification                                                                                       |                   |    |                                                                    |
| 10.2 Strength of materials and parts                                                                                   |                   |    |                                                                    |
| 10.2.2 Corrosion resistance                                                                                            |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.1 Verification of thermal stability of enclosures                                                               |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.2 Verification of resistance of insulating materials to normal heat                                             |                   |    | Meets the product standard's requirements.                         |
| 10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects |                   |    | Meets the product standard's requirements.                         |
| 10.2.4 Resistance to ultra-violet (UV) radiation                                                                       |                   |    | Meets the product standard's requirements.                         |
| 10.2.5 Lifting                                                                                                         |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |
| 10.2.6 Mechanical impact                                                                                               |                   |    | Does not apply, since the entire switchgear needs to be evaluated. |

|                                                          |  |  |                                                                                                                                  |
|----------------------------------------------------------|--|--|----------------------------------------------------------------------------------------------------------------------------------|
| 10.2.7 Inscriptions                                      |  |  | Meets the product standard's requirements.                                                                                       |
| 10.3 Degree of protection of ASSEMBLIES                  |  |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.4 Clearances and creepage distances                   |  |  | Meets the product standard's requirements.                                                                                       |
| 10.5 Protection against electric shock                   |  |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.6 Incorporation of switching devices and components   |  |  | Does not apply, since the entire switchgear needs to be evaluated.                                                               |
| 10.7 Internal electrical circuits and connections        |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.8 Connections for external conductors                 |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9 Insulation properties                               |  |  |                                                                                                                                  |
| 10.9.2 Power-frequency electric strength                 |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.3 Impulse withstand voltage                         |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.9.4 Testing of enclosures made of insulating material |  |  | Is the panel builder's responsibility.                                                                                           |
| 10.10 Temperature rise                                   |  |  | The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices. |
| 10.11 Short-circuit rating                               |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.12 Electromagnetic compatibility                      |  |  | Is the panel builder's responsibility. The specifications for the switchgear must be observed.                                   |
| 10.13 Mechanical function                                |  |  | The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.                         |

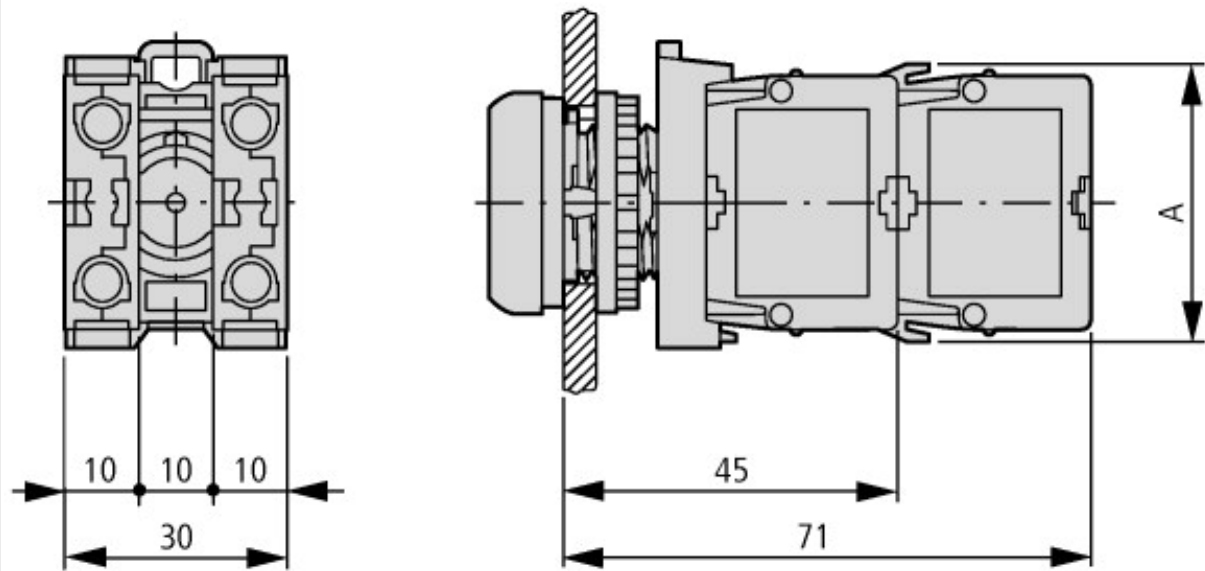
## Technical data ETIM 7.0

|                                                                                                                                                                                                                |  |   |                             |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---|-----------------------------|
| Low-voltage industrial components (EG000017) / Auxiliary contact block (EC000041)                                                                                                                              |  |   |                             |
| Electric engineering, automation, process control engineering / Low-voltage switch technology / Component for low-voltage switching technology / Auxiliary switch block (ecI@ss10.0.1-27-37-13-02 [AKN342013]) |  |   |                             |
| Number of contacts as change-over contact                                                                                                                                                                      |  |   | 0                           |
| Number of contacts as normally open contact                                                                                                                                                                    |  |   | 0                           |
| Number of contacts as normally closed contact                                                                                                                                                                  |  |   | 1                           |
| Number of fault-signal switches                                                                                                                                                                                |  |   | 0                           |
| Rated operation current I <sub>e</sub> at AC-15, 230 V                                                                                                                                                         |  | A | 6                           |
| Type of electric connection                                                                                                                                                                                    |  |   | Screw connection            |
| Model                                                                                                                                                                                                          |  |   | Top mounting and integrable |
| Mounting method                                                                                                                                                                                                |  |   | Front fastening             |
| Lamp holder                                                                                                                                                                                                    |  |   | None                        |

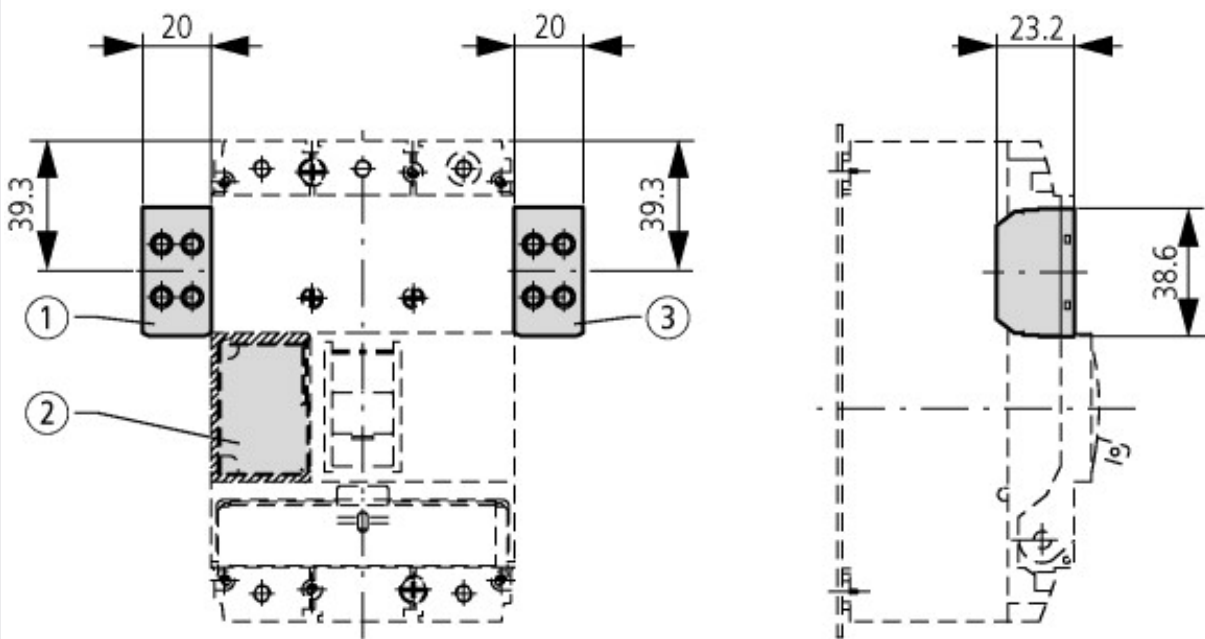
## Approvals

|                             |  |  |                                                                              |
|-----------------------------|--|--|------------------------------------------------------------------------------|
| Product Standards           |  |  | IEC/EN 60947-5; UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94-91; CE marking |
| UL File No.                 |  |  | E29184                                                                       |
| UL Category Control No.     |  |  | NKCR                                                                         |
| CSA File No.                |  |  | 012528                                                                       |
| CSA Class No.               |  |  | 3211-03                                                                      |
| North America Certification |  |  | UL listed, CSA certified                                                     |
| Degree of Protection        |  |  | UL/CSA Type: -                                                               |

Dimensions



A = 37.2



Pushbutton with M22-(C)K...  
Pushbutton with M22-(C) LED... + M22-XLED...

Additional product information (links)

IL04716002Z (AWA1160-1745) RMQ-Titan System

IL04716002Z (AWA1160-1745) RMQ-Titan System

[https://es-assets.eaton.com/DOCUMENTATION/AWA\\_INSTRUCTIONS/IL04716002Z2020\\_09.pdf](https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL04716002Z2020_09.pdf)

DGUV Test Mark Customer Information

[http://www.dguv.de/medien/dguv-test-medien/\\_pdf\\_zip\\_doc\\_ppt/agb-und-pzo/dguv\\_test\\_zeichen\\_infoblatt\\_kunden.pdf](http://www.dguv.de/medien/dguv-test-medien/_pdf_zip_doc_ppt/agb-und-pzo/dguv_test_zeichen_infoblatt_kunden.pdf)

Maximum equipment and position of the internal accessories

<http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=17.178>