



Residual current circuit breaker (RCCB), 40A, 4p, 100mA, type AC

Part no. PFIM-40/4/01-MW  
 Catalog No. 235411

Similar to illustration

## Delivery program

|                              |                |      |                                                                              |
|------------------------------|----------------|------|------------------------------------------------------------------------------|
| Basic function               |                |      | Residual current circuit-breakers                                            |
| Number of poles              |                |      | 4 pole                                                                       |
| Application                  |                |      | Residual current circuit-breaker for residential and commercial applications |
| Rated current                | $I_n$          | A    | 40                                                                           |
| Rated short-circuit strength | $I_{cn}$       | kA   | 10                                                                           |
| Rated fault current          | $I_{\Delta N}$ | A    | 0.1                                                                          |
| Type                         |                |      | Type AC                                                                      |
| Tripping                     |                | s... | non-delayed                                                                  |
| Product range                |                |      | PFIM                                                                         |
| Sensitivity                  |                |      | AC current sensitive                                                         |
| Impulse withstand current    |                |      | Partly surge-proof 250 A                                                     |

## Technical data

### Electrical

|                                                                                  |                      |      |                      |
|----------------------------------------------------------------------------------|----------------------|------|----------------------|
| Standards                                                                        |                      |      | IEC/EN 61008         |
| Rated operational voltage                                                        | $U_e$                | V    |                      |
|                                                                                  | $U_e$                | V AC |                      |
| Rated operating voltage                                                          | $U_e$                | V AC | 230/400              |
| Rated frequency                                                                  | f                    | Hz   | 50                   |
| Limit values of the operating voltage                                            |                      |      |                      |
| Test circuit                                                                     |                      | V AC | 196 - 456            |
| Sensitivity                                                                      |                      |      | AC current sensitive |
| Rated insulation voltage                                                         | $U_i$                | V    | 440                  |
| Rated impulse withstand voltage                                                  | $U_{imp}$            | kV   | 4                    |
| Rated short-circuit strength                                                     | $I_{cn}$             | kA   | 10                   |
| Rated making and breaking capacity / Rated residual making and breaking capacity | $I_m / I_{\Delta m}$ | A    | 500                  |
| lifespan                                                                         |                      |      |                      |
| Electrical                                                                       | Operations           |      | $\geq 4000$          |
| Mechanical                                                                       | Operations           |      | $\geq 20000$         |

### References

|                                                     |  |  |                    |
|-----------------------------------------------------|--|--|--------------------|
| Auxiliary switch for subsequent installation        |  |  | Z-HK 248432        |
| Tripping signal contact for subsequent installation |  |  | Z-NHK 248434       |
| Remote control and automatic switching device       |  |  | Z-FW/LP 248296     |
| Compact enclosure                                   |  |  | KLV-TC-4 276241    |
| Sealing cover set                                   |  |  | Z-RC/AK-4MU 101062 |

### Mechanical

|                          |  |                 |                                                                   |
|--------------------------|--|-----------------|-------------------------------------------------------------------|
| Standard front dimension |  | mm              | 45                                                                |
| Device height            |  | mm              | 80                                                                |
| Built-in width           |  | mm              | 70 (4TE)                                                          |
| Mounting                 |  |                 | Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715 |
| Degree of Protection     |  |                 | IP40, IP54 (with moisture-proof enclosure)                        |
| Terminals top and bottom |  |                 | Open mouthed/lift terminals                                       |
| Terminal protection      |  |                 | DGUV VS3, EN 50274                                                |
| Terminal cross-section   |  |                 |                                                                   |
| Solid                    |  | mm <sup>2</sup> | 1.5 - 35                                                          |

|                                                |                 |                                                           |
|------------------------------------------------|-----------------|-----------------------------------------------------------|
| Stranded                                       | mm <sup>2</sup> | 2 x 16                                                    |
| Thickness of busbar material                   | mm              | 0.8 - 2                                                   |
| Permissible storage and transport temperatures | °C              | -35 - +60                                                 |
| Climatic proofing                              |                 | 25-55°C/90-95% relative humidity according to IEC 60068-2 |
| Thickness of busbar material                   | mm              |                                                           |
| Material thickness                             | mm              | 0.8 - 2                                                   |

## Design verification as per IEC/EN 61439

|                                                                                                                        |                   |    |                                                                                                                                  |
|------------------------------------------------------------------------------------------------------------------------|-------------------|----|----------------------------------------------------------------------------------------------------------------------------------|
| Technical data for design verification                                                                                 |                   |    |                                                                                                                                  |
| Rated operational current for specified heat dissipation                                                               | I <sub>n</sub>    | A  | 40                                                                                                                               |
| Heat dissipation per pole, current-dependent                                                                           | P <sub>vid</sub>  | W  | 0                                                                                                                                |
| Equipment heat dissipation, current-dependent                                                                          | P <sub>vid</sub>  | W  | 8.4                                                                                                                              |
| 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 | 60                                                                                                                               |
|                                                                                                                        |                   |    | Starting at 40 °C, the max. permissible continuous current decreases by 2.5% for every 1 °C                                      |
| IEC/EN 61439 design verification                                                                                       |                   |    |                                                                                                                                  |
| 10.2 Strength of materials and parts                                                                                   |                   |    |                                                                                                                                  |
| 10.2.2 Corrosion resistance                                                                                            |                   |    |                                                                                                                                  |
| 10.2.2.1 Verification of thermal stability of enclosures                                                               |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.2.2 Verification of resistance of insulating materials to normal heat                                             |                   |    | Meets the product standard's requirements.                                                                                       |
| 10.2.2.3 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

|                                                                                                                                                                                                                       |  |    |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----|-----|
| Circuit breakers and fuses (EG000020) / Residual current circuit breaker (RCCB) (EC000003)                                                                                                                            |  |    |     |
| Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / Residual current circuit breaker (RCCB) (ec1@ss10.0.1-27-14-22-01 [AAB906014]) |  |    |     |
| Number of poles                                                                                                                                                                                                       |  |    | 4   |
| Rated voltage                                                                                                                                                                                                         |  | V  | 400 |
| Rated current                                                                                                                                                                                                         |  | A  | 40  |
| Rated fault current                                                                                                                                                                                                   |  | mA | 100 |
| Rated insulation voltage U <sub>i</sub>                                                                                                                                                                               |  | V  | 440 |

|                                                 |                 |          |
|-------------------------------------------------|-----------------|----------|
| Rated impulse withstand voltage Uimp            | kV              | 4        |
| Mounting method                                 |                 | DIN rail |
| Leakage current type                            |                 | AC       |
| Selective protection                            |                 | No       |
| Short-time delayed tripping                     |                 | No       |
| Short-circuit breaking capacity (Icw)           | kA              | 10       |
| Surge current capacity                          | kA              | 0.25     |
| Frequency                                       |                 | 50 Hz    |
| Additional equipment possible                   |                 | Yes      |
| With interlocking device                        |                 | Yes      |
| Degree of protection (IP)                       |                 | IP20     |
| Width in number of modular spacings             |                 | 4        |
| Built-in depth                                  | mm              | 70.5     |
| Ambient temperature during operating            | °C              | -25 - 40 |
| Pollution degree                                |                 | 2        |
| Connectable conductor cross section multi-wired | mm <sup>2</sup> | 1.5 - 16 |
| Connectable conductor cross section solid-core  | mm <sup>2</sup> | 1.5 - 35 |