



Residual current circuit breaker (RCCB), 40A, 4p, 500mA, type AC

Part no. **PFIM-40/4/05-MW**  
 Catalog No. **235413**

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    | 0.5  |
| 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 | 500 |
| 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 |