



Earth-leakage circuit-breaker, 25A, 1A, type U

Part no. PFR2-1-U  
 Catalog No. 235870  
 Alternate Catalog No. PFR2-1-U

Similar to illustration

**Delivery program**

|                              |                |      |                                    |
|------------------------------|----------------|------|------------------------------------|
| Basic function               |                |      | Residual current relay             |
| Rated short-circuit strength | $I_{cn}$       | kA   | 5                                  |
| Rated fault current          | $I_{\Delta N}$ | A    | 1                                  |
| Type                         |                |      | Type U                             |
| Tripping                     |                | s... | 40 ms delay - selective switch off |
| Product range                |                |      | PFR2                               |
| Sensitivity                  |                |      | Pulse-current sensitive            |

**Technical data**

**Electrical**

|                                       |            |      |                         |
|---------------------------------------|------------|------|-------------------------|
| 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 | 184 - 440               |
| Sensitivity                           |            |      | Pulse-current sensitive |
| Rated impulse withstand voltage       | $U_{imp}$  | kV   | 4                       |
| Rated short-circuit strength          | $I_{cn}$   | kA   | 5                       |
| lifespan                              |            |      |                         |
| Electrical                            | Operations |      | ≥ 4000                  |
| Mechanical                            | Operations |      | ≥ 20000                 |

**References**

|   |  |                    |
|---|--|--------------------|
| Auxiliary switch for subsequent installation        |  | Z-HK 248432        |
| Tripping signal contact for subsequent installation |  | Z-NHK 248434       |
| Compact enclosure                                   |  | KLV-TC-4 276241    |
| Sealing cover set                                   |  | Z-RC/AK-4TE 101062 |

**Mechanical**

|  |  |                 |  |
|--|--|-----------------|--|
| Standard front dimension                       |  | mm              | 45   |
| Device height                                  |  | mm              | 80   |
| Built-in width                                 |  | mm              | 70 (4TE)   |
| Mounting                                       |  |                 | Quick attachment with 2 latch positions on top-hat rail IEC/EN 60715 |
| Degree of Protection                           |  |                 | IP40, IP54 (with moisture-proof enclosure)                           |
| Terminals top and bottom                       |  |                 | Twin-purpose terminals   |
| Terminal protection                            |  |                 | finger and hand touch safe, 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            |

**Design verification as per IEC/EN 61439**

|  |  |  |
|--|--|--|
| Technical data for design verification |  |  |
|--|--|--|

|  |            |    |  |
|--|------------|----|--|
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 25   |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 0  |
| Heat dissipation capacity  | $P_{diss}$ | 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 3% for every 1 °C  |
| 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

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                              |    | 0        |
| Rated voltage                                | V  | 400      |
| Rated current                                | A  | 25       |
| Rated fault current                          | mA | 1000     |
| Rated insulation voltage $U_i$               | V  | 440      |
| Rated impulse withstand voltage $U_{imp}$    | kV | 4        |
| Mounting method                              |    | DIN rail |
| Leakage current type                         |    | A        |
| Selective protection                         |    | Yes      |
| Short-time delayed tripping                  |    | No       |
| Short-circuit breaking capacity ( $I_{cw}$ ) | kA | 10       |
| Surge current capacity                       | kA | 5        |
| Frequency                                    |    | 50 Hz    |
| Additional equipment possible                |    | Yes      |
| With interlocking device                     |    | No       |
| Degree of protection (IP)                    |    | IP40     |
| Width in number of modular spacings          |    | 4        |

|   |                 |          |
|---|-----------------|----------|
| Built-in depth                                  | mm              | 69.5     |
| 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 |