

**RCD/MCB combination, 16 A, 300 mA, MCB trip characteristic: D, 3p+N,  
RCD trip characteristic: A**

**Part no.** FRBM6-D16/3N/03-A  
**Catalog No.** 170969  
**Alternate Catalog No.** FRBM6-D16/3N/03-A

Similar to illustration

## Delivery program

|                                                    |                |      |                                                                |
|----------------------------------------------------|----------------|------|----------------------------------------------------------------|
| Basic function                                     |                |      | Combined RCD/MCB devices                                       |
| Number of poles                                    |                |      | 3 pole+N                                                       |
| Tripping characteristic                            |                |      | D                                                              |
| Application                                        |                |      | Switchgear for industrial and advanced commercial applications |
| Rated current                                      | $I_n$          | A    | 16                                                             |
| Rated switching capacity according to IEC/EN 61009 |                | kA   | 6                                                              |
| Rated fault current                                | $I_{\Delta N}$ | A    | 0.3                                                            |
| Type                                               |                |      | Type A                                                         |
| Tripping                                           |                | s... | non-delayed                                                    |
| Product range                                      |                |      | FRBm6                                                          |
| Sensitivity                                        |                |      | Pulse-current sensitive                                        |
| Impulse withstand current                          |                |      | Partly surge-proof 250 A                                       |
| Contact sequence                                   |                |      |                                                                |

## Technical data

### Electrical

|                                           |                |      |                         |
|-------------------------------------------|----------------|------|-------------------------|
| Protected pole                            |                |      | 4                       |
| Rated voltage according to IEC/EN 60947-2 | $U_n$          | V AC | 240                     |
| Rated frequency                           | f              | Hz   | 50                      |
| Rated fault current                       | $I_{\Delta n}$ | mA   | 300                     |
| Sensitivity                               |                |      | Pulse-current sensitive |
| Rated current                             | $I_n$          | A    | 16                      |
| Tripping characteristic                   |                |      | D                       |
| Standards                                 |                |      | EN 45545-2; IEC 61373   |

## Design verification as per IEC/EN 61439

|                                                                                                                        |            |    |                                                                    |
|------------------------------------------------------------------------------------------------------------------------|------------|----|--------------------------------------------------------------------|
| Technical data for design verification                                                                                 |            |    |                                                                    |
| Rated operational current for specified heat dissipation                                                               | $I_n$      | A  | 16                                                                 |
| Heat dissipation per pole, current-dependent                                                                           | $P_{vid}$  | W  | 0                                                                  |
| Equipment heat dissipation, current-dependent                                                                          | $P_{vid}$  | W  | 3.6                                                                |
| Static heat dissipation, non-current-dependent                                                                         | $P_{vs}$   | W  | 0                                                                  |
| Heat dissipation capacity                                                                                              | $P_{diss}$ | W  | 0                                                                  |
| Operating ambient temperature min.                                                                                     |            | °C | -25                                                                |
| Operating ambient temperature max.                                                                                     |            | °C | 40                                                                 |
|                                                                                                                        |            |    | 0                                                                  |
| 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) / Earth leakage circuit breaker (EC000905)                                                                                                                   |  |     |          |
| Electric engineering, automation, process control engineering / Electrical installation, device / Residual current protection system / MCB/RCCB combination (ecl@ss10.0.1-27-14-22-07 [AFZ810015]) |  |     |          |
| Number of poles (total)                                                                                                                                                                            |  |     | 4        |
| Number of protected poles                                                                                                                                                                          |  |     | 4        |
| Rated voltage                                                                                                                                                                                      |  | V   | 415      |
| Rated insulation voltage Ui                                                                                                                                                                        |  | V   | 500      |
| Rated impulse withstand voltage Uimp                                                                                                                                                               |  | kV  | 4        |
| Rated current                                                                                                                                                                                      |  | A   | 16       |
| Rated fault current                                                                                                                                                                                |  | A   | 0.3      |
| Leakage current type                                                                                                                                                                               |  |     | A        |
| Current limiting class                                                                                                                                                                             |  |     | 3        |
| Rated short-circuit breaking capacity acc. EN 61009                                                                                                                                                |  | kA  | 6        |
| Rated short-circuit breaking capacity IEC 60947-2                                                                                                                                                  |  | kA  | 6        |
| Rated short-circuit breaking capacity Icn acc. EN 61009-1                                                                                                                                          |  | kA  | 6        |
| Disconnection characteristic                                                                                                                                                                       |  |     |          |
| Surge current capacity                                                                                                                                                                             |  | kA  | 0.25     |
| Voltage type                                                                                                                                                                                       |  |     | AC       |
| Frequency                                                                                                                                                                                          |  |     | 50 Hz    |
| Release characteristic                                                                                                                                                                             |  |     | D        |
| Concurrently switching N-neutral                                                                                                                                                                   |  |     | Yes      |
| With interlocking device                                                                                                                                                                           |  |     | No       |
| Over voltage category                                                                                                                                                                              |  |     | 3        |
| Pollution degree                                                                                                                                                                                   |  |     | 2        |
| Ambient temperature during operating                                                                                                                                                               |  | °C  | -25 - 40 |
| Width in number of modular spacings                                                                                                                                                                |  |     | 4        |
| Built-in depth                                                                                                                                                                                     |  | mm  | 75.5     |
| Suitable for flush-mounted installation                                                                                                                                                            |  |     | No       |
| Anti-nuisance tripping version                                                                                                                                                                     |  |     | No       |
| Degree of protection (IP)                                                                                                                                                                          |  |     | IP20     |
| Connectable conductor cross section solid-core                                                                                                                                                     |  | mm² | 1 - 25   |
| Connectable conductor cross section multi-wired                                                                                                                                                    |  | mm² | 1 - 25   |

## Dimensions

Additional product information (links)

|                        |                                                                                                                                                                                                                                   |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product overview (Web) | <a href="http://www.eaton.eu/Europe/Electrical/ProductsServices/CircuitProtection/DigitalCircuitBreakers/index.htm">http://www.eaton.eu/Europe/Electrical/ProductsServices/CircuitProtection/DigitalCircuitBreakers/index.htm</a> |
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