



Miniature circuit breaker (MCB), 50 A, 3p+N, characteristic: C

Part no. **mMCM-C50/3N**  
 Catalog No. **139484**

### Delivery program

|  |          |    |  |
|--|----------|----|--|
| Basic function                                       |          |    | Miniature circuit-breakers                             |
| Number of poles                                      |          |    | 3 pole+N   |
| Tripping characteristic                              |          |    | C  |
| Application  |          |    | Switchgear for residential and commercial applications |
| Rated current  | $I_n$    | A  | 50   |
| Rated switching capacity according to IEC/EN 60898-1 | $I_{cn}$ | kA | 10   |
| Product range  |          |    | mMCM   |

### Technical data

#### Electrical

|  |            |            |              |
|--|------------|------------|--------------|
| Rated switching capacity according to IEC/EN 60898-1 | $I_{cn}$   | kA         | 10           |
| Rated insulation voltage                             | $U_i$      | V          | 440          |
| Rated impulse withstand voltage                      | $U_{imp}$  | kV         | 4            |
| lifespan   | Electrical | Operations | $\geq 10000$ |
|  | Mechanical | Operations | $\geq 20000$ |

#### References

|   |  |  |                     |
|---|--|--|---------------------|
| Auxiliary switch for subsequent installation        |  |  | ZP-IHK 286052       |
| Tripping signal contact for subsequent installation |  |  | ZP-NHK 248437       |
| Remote control and automatic switching device       |  |  | Z-FW/LP 248296      |
| Switching interlock                                 |  |  | Z-IS/SPE-1TE 274418 |

#### Mechanical

|                              |  |    |   |
|------------------------------|--|----|---|
| Standard front dimension     |  | mm | 45  |
| Device height                |  | mm | 80  |
| Mounting                     |  |    | Quick attachment with 3 latch positions for top-hat rail IEC/EN 60715 |
| Degree of Protection         |  |    | IP20  |
| Terminals top and bottom     |  |    | Open mouthed/lift terminals   |
| Terminal protection          |  |    | BGV A3, ÖVE-EN 6  |
| Thickness of busbar material |  | mm | 0.8 - 2   |

### Design verification as per IEC/EN 61439

|  |            |    |      |
|--|------------|----|------|
| Technical data for design verification   |            |    |      |
| Rated operational current for specified heat dissipation   | $I_n$      | A  | 50   |
| Heat dissipation per pole, current-dependent   | $P_{vid}$  | W  | 0    |
| Equipment heat dissipation, current-dependent  | $P_{vid}$  | W  | 15.3 |
| 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 | 75   |
| linear, per +1 °C, results in a 0.5% reduction of current carrying capacity  |            |    |      |
| 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) / Miniature circuit breaker (MCB) (EC000042)  |                 |          |
| Electric engineering, automation, process control engineering / Electrical installation, device / Miniature circuit breaker system (MCB) / Miniature circuit breaker (MCB) (ecl@ss10.0.1-27-14-19-01 [AAB905014]) |                 |          |
| Release characteristic  |                 | C        |
| Number of poles (total)   |                 | 4        |
| Number of protected poles   |                 | 3        |
| Rated current   | A               | 50       |
| Rated voltage   | V               | 400      |
| Rated insulation voltage $U_i$  | V               | 440      |
| Rated impulse withstand voltage $U_{imp}$   | kV              | 4        |
| Rated short-circuit breaking capacity $I_{cn}$ EN 60898 at 230 V  | kA              | 10       |
| Rated short-circuit breaking capacity $I_{cn}$ EN 60898 at 400 V  | kA              | 10       |
| Rated short-circuit breaking capacity $I_{cu}$ IEC 60947-2 at 230 V   | kA              | 15       |
| Rated short-circuit breaking capacity $I_{cu}$ IEC 60947-2 at 400 V   | kA              | 15       |
| Voltage type  |                 | AC       |
| Frequency   | Hz              | 50 - 60  |
| Current limiting class  |                 | 3        |
| Suitable for flush-mounted installation   |                 | No       |
| Concurrently switching N-neutral  |                 | Yes      |
| Over voltage category   |                 | 3        |
| Pollution degree  |                 | 2        |
| Additional equipment possible   |                 | Yes      |
| Width in number of modular spacings   |                 | 4        |
| Built-in depth  | mm              | 70.5     |
| Degree of protection (IP)   |                 | IP20     |
| Ambient temperature during operating  | °C              | -25 - 75 |
| Connectable conductor cross section multi-wired   | mm <sup>2</sup> | 1 - 25   |
| Connectable conductor cross section solid-core  | mm <sup>2</sup> | 1 - 25   |