


**Miniature circuit breaker (MCB), 3 A, 1p, characteristic: B**

Part no. **mMCM-B3/1**  
 Catalog No. **138860**

## Delivery program

|  |          |    |  |
|--|----------|----|--|
| Basic function                                       |          |    | Miniature circuit-breakers                             |
| Number of poles                                      |          |    | 1 pole   |
| Tripping characteristic                              |          |    | B  |
| Application  |          |    | Switchgear for residential and commercial applications |
| Rated current  | $I_n$    | A  | 3  |
| 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 |    | ≥ 10000 |
| Mechanical   | Operations |    | ≥ 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  | 3   |
| Heat dissipation per pole, current-dependent             | $P_{vid}$  | W  | 0   |
| Equipment heat dissipation, current-dependent            | $P_{vid}$  | W  | 2.5   |
| 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)  
(ec1@ss10.0.1-27-14-19-01 [AAB905014])

|   |                 |          |
|---|-----------------|----------|
| Release characteristic  |                 | B        |
| Number of poles (total)   |                 | 1        |
| Number of protected poles   |                 | 1        |
| Rated current   | A               | 3        |
| Rated voltage   | V               | 230      |
| 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                                    |                 | No       |
| Over voltage category   |                 | 3        |
| Pollution degree  |                 | 2        |
| Additional equipment possible                                       |                 | Yes      |
| Width in number of modular spacings                                 |                 | 1        |
| 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   |