



Miniature circuit breaker (MCB), 12 A, 1p+N, characteristic: D

Part no. **mMCM-D12/1N**  
Catalog No. **170095**

## Delivery program

Basic function			Miniature circuit-breakers
Number of poles			1 pole+N
Tripping characteristic			D
Application			Switchgear for residential and commercial applications
Rated current	$I_n$	A	12
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	12
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	2
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			
10.2.2.1 Verification of thermal stability of enclosures			
10.2.3.2 Verification of resistance of insulating materials to normal heat			
			Meets the product standard's requirements.
			Meets the product standard's requirements.
			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		D
Number of poles (total)		2
Number of protected poles		1
Rated current	A	12
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		Yes
Over voltage category		3
Pollution degree		2
Additional equipment possible		Yes
Width in number of modular spacings		2
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