



**RCD/MCB combination switch, 20A, 10mA, miniature circuit-breaker type D trip characteristic, 2p, residual current circuit-breaker trip characteristic: A**

**Part no.** FRBDM-D20/2/001-G/A  
**Article no.** 168196  
**Catalog No.** PDC-TBD6539

Similar to illustration

## Delivery program

Basic function			Combined RCD/MCB devices
Number of poles			2 pole
Tripping characteristic			D
Application			Switchgear for industrial and advanced commercial applications
Rated current	$I_n$	A	20
Rated switching capacity according to IEC/EN 61009		kA	10
Rated fault current	$I_{\Delta N}$	A	0.01
Tripping		A	Short time-delayed
Product range			FRBdM
Sensitivity			Pulse-current sensitive
Impulse withstand current			Surge-proof, 3 kA
Contact sequence			

## Technical data

### Electrical

Sensitivity			Pulse-current sensitive
Rated current	$I_n$	A	20
Tripping characteristic			D

## Design verification as per IEC/EN 61439

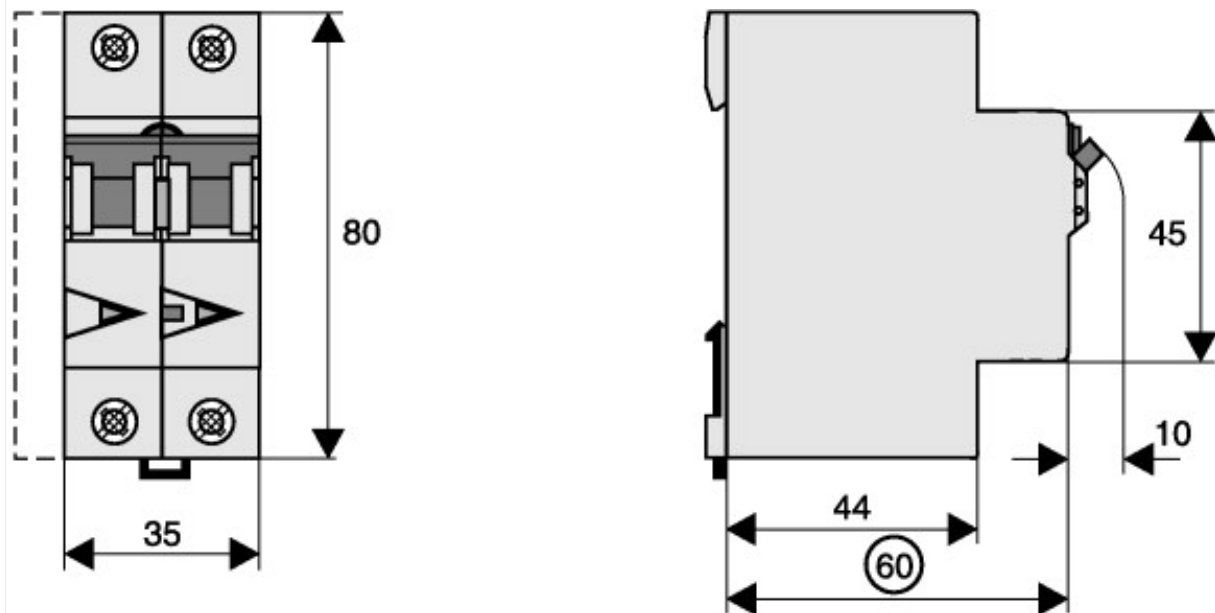
Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	20
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	5
Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Heat dissipation capacity	$P_{diss}$	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
			0
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			
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 6.0

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@ss8.1-27-14-22-07 [AFZ810012])			
Number of poles (total)		2	
Number of protected poles		2	
Nominal rated voltage	V	240	
Nominal rated current	A	20	
Rated fault current	A	0.01	
Leakage current type		A	
Current limiting class		3	
Rated short-circuit breaking capacity EN 60898	kA	10	
Rated short-circuit breaking capacity IEC 60947-2	kA	0	
Frequency		50 Hz	
Release characteristic		D	
Concurrently switching N-neutral		No	
Over voltage category		3	
Pollution degree		2	
Width in number of modular spacings		2	
Built-in depth	mm	70	
Suitable for flush-mounted installation		No	
Degree of protection (IP)		IP20	
Surge current capacity	kA	3	
Voltage type		AC	
Antinuisance tripping version		Yes	

## Dimensions



## Additional product information (links)

Product overview (Web)

<http://www.eaton.eu/Europe/Electrical/ProductsServices/CircuitProtection/DigitalCircuitBreakers/index.htm>