DATASHEET - ZB12-6



Overload relay, ZB12, Ir= 4 - 6 A, 1 N/O, 1 N/C, Direct mounting, IP20

Part no.	**ZB12-6**
	278439
EL Number (Norway)	**4131834**

General specifications

Product name	Eaton Moeller® series ZB Thermal overload relay
Part no.	ZB12-6
EAN	4015082784393
Product Length/Depth	88 millimetre
Product height	67 millimetre
Product width	45 millimetre
Product weight	0.142 kilogram
Certifications	UL Category Control No.: NKCR IEC/EN 60947-4-1 CE IEC/EN 60947 VDE 0660 UL 60947-4-1 CSA File No.: 012528 UL UL File No.: E29184 CSA CSA-C22.2 No. 60947-4-1-14 CSA Class No.: 3211-03
Product Tradename	ZB
Product Type	Thermal overload relay
Product Sub Type	None

Features & Functions

Features	Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102) Trip-free release Test/off button Reset pushbutton manual/auto

General information

Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	55 °C
Ambient operating temperature (enclosed) - min	25 °C
Ambient operating temperature (enclosed) - max	40 °C
Class	CLASS 10 A
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Degree of protection	IP20
Frame size	ZB12
Mounting method	Direct mounting
Overload release current setting - min	4 A
Overload release current setting - max	6 A
Overvoltage category	III
Pollution degree	3
Product category	Overload relay ZB up to 150 A
Protection	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
Rated impulse withstand voltage (Uimp)	4000 V (auxiliary and control circuits) 6000 V AC
Shock resistance	10 g, Mechanical, Sinusoidal, Shock duration 10 ms
Suitable for	Branch circuits, (UL/CSA)
Temperature compensation	Continuous ≤ 0.25 %/K, residual error for T > 40°

Terminal capacities

Terminal capacity (flexible with ferrule)	1 x (1 - 4) mm^2, Main cables 2 x (0.75 - 2.5) mm^2, Control circuit cables 1 x (0.75 - 2.5) mm^2, Control circuit cables

	2 x (1 - 4) mm², Main cables
Terminal capacity (solid)	2 x (0.75 - 4) mm², Control circuit cables 1 x (1 - 6) mm², Main cables 1 x (0.75 - 4) mm², Control circuit cables 2 x (1 - 6) mm², Main cables
Terminal capacity (solid/stranded AWG)	2 x (18 - 14), Control circuit cables 18 - 8, Main cables
Stripping length (main cable)	10 mm
Stripping length (control circuit cable)	8 mm
Screw size	M3.5, Terminal screw, Control circuit cables M4, Terminal screw
Screwdriver size	2, Terminal screw, Pozidriv screwdriver 1 x 6 mm, Terminal screw, Standard screwdriver
Tightening torque	1.8 Nm, Screw terminals, Main cables 1.2 Nm, Screw terminals, Control circuit cables

Electrical rating

Conventional thermal current ith of auxiliary contacts (1-pole, open)	6 A
Rated operational current (Ie) at AC-15, 120 V	1.5 A
Rated operational current (Ie) at AC-15, 220 V, 230 V, 240 V	1.5 A
Rated operational current (Ie) at AC-15, 380 V, 400 V, 415 V	0.9 A
Rated operational current (Ie) at DC-13, 110 V	0.4 A
Rated operational current (Ie) at DC-13, 220 V, 230 V	0.2 A
Rated operational current (Ie) at DC-13, 24 V	0.9 A
Rated operational current (Ie) at DC-13, 60 V	0.75 A
Rated operational voltage (Ue) - max	690 V
Safe isolation	440 V, Between auxiliary contacts and main contacts, According to EN 61140 240 V AC, Between auxiliary contacts, According to EN 61140 440 V AC, Between main circuits, According to EN 61140
Switching capacity (auxiliary contacts, pilot duty)	R300, DC operated (UL/CSA) B600 at opposite polarity, AC operated (UL/CSA) B300 at opposite polarity, AC operated (UL/CSA)
Voltage rating - max	600 V AC

Short-circuit rating

Short-circuit current rating (high fault at 600 V)	10 A, Class J/CC, max. Fuse, SCCR (UL/CSA) 100 kA, Fuse, SCCR (UL/CSA)
Short-circuit protection rating	25 A gG/gL, Fuse, Type “1” coordination 20 A gG/gL, Fuse, Type “2” coordination Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits

Contacts

Number of auxiliary contacts (change-over contacts)	0
Number of auxiliary contacts (normally closed contacts)	1
Number of auxiliary contacts (normally open contacts)	1
Number of contacts (normally closed contacts)	1
Number of contacts (normally open contacts)	1

Design verification

Equipment heat dissipation, current-dependent Pvid	5.1 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	1.7 W
Rated operational current for specified heat dissipation (In)	6 A
Static heat dissipation, non-current-dependent Pvs	0 W
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 Resist. of insul. mat. to abnormal heat/fire by internal elect. 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.
10.9.2 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 9.0

Low-voltage industrial components (EG000017) / Thermal overload relay (EC000106)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Thermal overload relay (ecl@ss13-27-37-15-01 [AKF075019])			
Adjustable current range		A	4 - 6
Max. rated operation voltage Ue		V	690
Mounting method			Direct attachment
Type of electrical connection of main circuit			Screw connection
Number of auxiliary contacts as normally closed contact			1
Number of auxiliary contacts as normally open contact			1
Number of auxiliary contacts as change-over contact			0
Release class			CLASS 10 A
Reset function input			No
Reset function automatic			Yes
Reset function push-button			Yes

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