DATASHEET - ZEB150-175-GF

Overload relay, Direct mounting, Earth-fault protection: with, Ir= 35 - 175 A, 1 N/O, 1 N/C

Part no.	**ZEB150-175-GF**
	164304
EL Number (Norway)	**4137382**

General specifications

Product name	Eaton Moeller® series ZEB Electronic overload relay
Part no.	ZEB150-175-GF
EAN	4015081608355
Product Length/Depth	157 millimetre
Product height	208 millimetre
Product width	108 millimetre
Product weight	1.915 kilogram
Certifications	IEC/EN 60947-4-1 CSA-C22.2 No. 14 UL Category Control No.: NKCR IEC/EN 60947 UL CSA Class No.: 3211-03 UL 508 VDE 0660 CSA CE UL File No.: E1230 CSA File No.: 2290956
Product Tradename	ZEB
Product Type	Electronic overload relay
Product Sub Type	None
Catalog Notes	Rated operational current: Switch-on and switch-off conditions based on DC-13, time constant as specified.

Features & Functions

Earth fault protection	Yes Trip at approx. > 1.5 x Ir in 1 s Trip at approx. > 0.5 x Ir in 2 s
Features	Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)
Functions	Filament bulb (24 V)

General information

Class	Adjustable
Degree of protection	IP20
Mounting method	Direct mounting Direct attachment
Overload release current setting - min	35 A
Overload release current setting - max	175 A
Overvoltage category	III
Pollution degree	3
Protection	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
Rated impulse withstand voltage (Uimp)	6000 V AC 6000 V (auxiliary circuits)
Shock resistance	Mechanical, According to IEC/EN 60068-2-27 15 g, Mechanical, According to IEC/EN 60068-2-27, Shock duration 10 ms
Suitable for	Branch circuits, (UL/CSA)
Voltage type	Self powered

Climatic environmental conditions

Ambient operating temperature - min	-25 °C
Ambient operating temperature - max	65 °C
Ambient operating temperature (enclosed) - max	45 °C
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30

Terminal capacities

Terminal capacity (copper band)	6 x 18 x 0.8 mm Number of segments x width x thickness, Main cables
Terminal capacity (flexible with ferrule)	2 x (0.75 - 2.5) mm^2, Control circuit cables
Terminal capacity (solid)	1 x (10 - 95) mm^2, Main cables 2 x (0.75 - 4) mm^2, Control circuit cables
Terminal capacity (solid/stranded AWG)	1 x (8 - 4/0), Main cables 2 x (18 - 12), Control circuit cables
Stripping length (main cable)	22 mm
Stripping length (control circuit cable)	8 mm
Screw size	M3.5, Terminal screw, Control circuit cables
Screwdriver size	2, Terminal screw, Control circuit cables, Pozidriv screwdriver 1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver
Tightening torque	0.8 - 1.2 Nm, Screw terminals, Control circuit cables 7 lb-in, Screw terminals

Electrical rating

Conventional thermal current ith of auxiliary contacts (1-pole, open)	5 A
Rated control supply voltage (Us) at AC, 50 Hz - min	0 V
Rated control supply voltage (Us) at AC, 50 Hz - max	0 V
Rated control supply voltage (Us) at AC, 60 Hz - min	0 V
Rated control supply voltage (Us) at AC, 60 Hz - max	0 V
Rated control supply voltage (Us) at DC - min	0 V
Rated control supply voltage (Us) at DC - max	0 V
Rated frequency - min	50 Hz
Rated frequency - max	60 Hz
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) at AC - max	690 V
Safe isolation	600 V AC, Between main circuits, According to EN 61140 240 V AC, Between auxiliary contacts, According to EN 61140 440 V, Between auxiliary contacts and main contacts, According to EN 61140
Short-circuit protection rating	Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits
Short-circuit current rating (high fault at 600 V)	400 A, Class J, max. Fuse, SCCR (UL/CSA) 100 kA, Fuse, SCCR (UL/CSA)
Switching capacity (auxiliary contacts, pilot duty)	B600, AC operated (UL/CSA) R300, DC operated (UL/CSA)
Voltage rating - max	600 V

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	35.6 W
Heat dissipation capacity Pdiss	0 W
Heat dissipation per pole, current-dependent Pvid	11.86 W
Rated operational current for specified heat dissipation (In)	175 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) / Electronic overload relay (EC001080)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Overload protection device / Electronic overload relay (ecl@ss13-27-37-15-02 [AKF076019])

Mounting method			Direct attachment
Type of electrical connection of main circuit			Screw connection
Adjustable current range		A	0 - 175
External power supply required			No
Rated control supply voltage AC 50 Hz		V	0 - 0
Rated control supply voltage AC 60 Hz		V	0 - 0
Rated control supply voltage DC		V	0 - 0
Voltage type for actuating			
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
Voltage type (operating voltage)			AC
Operating voltage AC 50 Hz		V	230 - 690
Operating voltage AC 60 Hz		V	230 - 690
Operating voltage DC		V	0 - 0
Rated switch current		A	
Release class			Adjustable
Reset function automatic			Yes
Reset function input			No
Reset function push-button			Yes
Width		mm	108
Height		mm	208
Depth		mm	157

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