



Overload relay, Ir= 120 - 160 A, 1 N/O, 1 N/C, For use with: DILM250

**Part no.** Z5-160/FF250

210073

**EL Number** 4134170  
(Norway)

General specifications		
Product name		Eaton Moeller® series Z5 Thermal overload relay
Part no.		Z5-160/FF250
EAN		4015082100735
Product Length/Depth		146 millimetre
Product height		167 millimetre
Product width		128 millimetre
Product weight		1.728 kilogram
Certifications		CSA VDE 0660 UL File No.: E29184 UL 60947-4-1 CSA-C22.2 No. 60947-4-1-14 CSA Class No.: 3211-03 IEC/EN 60947-4-1 IEC/EN 60947 UL Category Control No.: NKCR CSA File No.: 012528 UL CE
Product Tradename		Z5
Product Type		Thermal overload relay
Product Sub Type		None
Catalog Notes		Ambient air temperature: Operating range to IEC/EN 60947 Rated operational current: Switch-on and switch-off conditions based on DC-13, time constant as specified.
Features & Functions		
Features		Trip-free release Test/off button Reset pushbutton manual/auto Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)
General information		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		60 °C
Ambient operating temperature (enclosed) - min		-25 °C
Ambient operating temperature (enclosed) - max		40 °C
Class		CLASS 10 A
Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
Degree of protection		IP00
Mounting method		Direct mounting Separate mounting Direct attachment
Overload release current setting - min		120 A
Overload release current setting - max		160 A
Overvoltage category		III
Pollution degree		3
Product category		Overload relay Z5
Protection		With terminal cover, Protection against direct contact when actuated from front (EN 50274)
Rated impulse withstand voltage (Uimp)		4000 V (auxiliary and control circuits) 8000 V AC
Shock resistance		10 g, Mechanical, Sinusoidal, Shock duration 10 ms
Suitable for		Branch circuits, (UL/CSA)
Temperature compensation		≤ 0.25 %/K, residual error for T > 40° Continuous

<b>Terminal capacities</b>		
Terminal capacity (busbar)		25 mm width, Main connection
Terminal capacity (flexible with cable lug)		185 mm <sup>2</sup>
Terminal capacity (flexible with ferrule)		2 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables 1 x (0.75 - 2.5) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid)		1 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables 2 x (0.75 - 4) mm <sup>2</sup> , Control circuit cables
Terminal capacity (solid/stranded AWG)		2 x (18 - 14), Control circuit cables 2/0 - 500 MCM, Main cables
Terminal capacity (stranded with cable lug)		185 mm <sup>2</sup>
Width across flats		16 mm (Hexagon head spanner SW)
Stripping length (control circuit cable)		8 mm
Screw size		M10 x 35, Terminal screw, Main connections 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		1.2 Nm, Screw terminals, Control circuit cables 18 Nm, Main cable connection screw/bolt
<b>Electrical rating</b>		
Conventional thermal current <i>I</i> <sub>th</sub> of auxiliary contacts (1-pole, open)		6 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at AC-15, 120 V		1.5 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at AC-15, 220 V, 230 V, 240 V		1.5 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at AC-15, 380 V, 400 V, 415 V		0.9 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at DC-13, 110 V		0.4 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at DC-13, 220 V, 230 V		0.2 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at DC-13, 24 V		0.9 A
Rated operational current ( <i>I</i> <sub>e</sub> ) at DC-13, 60 V		0.75 A
Rated operational voltage ( <i>U</i> <sub>e</sub> ) - max		1000 V
Safe isolation		440 V, Between auxiliary contacts and main contacts, According to EN 61140 500 V AC, Between main circuits, According to EN 61140 240 V AC, Between auxiliary contacts, According to EN 61140
Switching capacity (auxiliary contacts, pilot duty)		B600 at opposite polarity, AC operated (UL/CSA) R300, DC operated (UL/CSA) B300 at opposite polarity, AC operated (UL/CSA)
Voltage rating - max		600 V AC
<b>Short-circuit rating</b>		
Short-circuit current rating (basic rating)		10 kA, SCCR (UL/CSA) 600 A Class J, max. Fuse, SCCR (UL/CSA) 600 A, max. CB, SCCR (UL/CSA)
Short-circuit protection rating		Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits 400 A gG/gL, Fuse, Type "1" coordination 250 A gG/gL, Fuse, Type "2" coordination
<b>Contacts</b>		
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
<b>Design verification</b>		
Equipment heat dissipation, current-dependent <i>P</i> <sub>vid</sub>		24 W
Heat dissipation capacity <i>P</i> <sub>diss</sub>		0 W
Heat dissipation per pole, current-dependent <i>P</i> <sub>vid</sub>		8 W
Rated operational current for specified heat dissipation ( <i>I</i> <sub>n</sub> )		160 A
Static heat dissipation, non-current-dependent <i>P</i> <sub>vs</sub>		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 (ecI@ss13-27-37-15-01 [AKF075019])		
Adjustable current range	A	120 - 160
Max. rated operation voltage Ue	V	1000
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