DATASHEET - HLR15/1(DC)600V

Solid-state relay, 1-phase, 20 A, 600 - 600 V, DC

Part no. **HLR15/1(DC)600V**
360040

Powering Business Worldwide™

General specifications	
Product name	Eaton Moeller series HLR solid state relay
Part no.	HLR15/1(DC)600V
EAN	4015081998081
Product Length/Depth	103.5 millimetre
Product height	110 millimetre
Product width	17.8 millimetre
Product weight	0.205 kilogram
Compliances	CE Marked RoHS Compliant
Certifications	UL 508 EAC CE UL-File No.: E251034, UL report applies to both US and Canada
Product Tradename	HLR
Product Type	Solid-state relay
Product Sub Type	None
General information	
Degree of protection	IP20
Frequency rating	45 Hz - 65 Hz
Mounting position	Mount device in specified orientation and do not obstruct the heatsink
Number of phases	1
Number of pilot lights	1
Overvoltage category	III
Pollution degree	2
Rated impulse withstand voltage (Uimp)	6 kV (1.2/50 µs)
Series	HLR
Shock resistance	15/11 g/ms (according to EN 50155, EN 61373)
Type	Solid-state relay
Vibration resistance	2 g/axis (2-100 Hz, IEC 60068-2-6, EN 50155, EN 61373)
Voltage type	DC
Features & Functions	
Features	Modular version
Functions	Switching at zero-crossing
Electrical connection type for auxiliary- and control-current circuit	Screw connection
Electrical connection type of main circuit	Screw connection
Climatic environmental conditions	
Altitude	9
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	100 °C
Climatic proofing	95% relative humidity non-condensing at 40°C
Operating temperature - min	-40 °C
Operating temperature - max	80 °C
Electro magnetic compatibility	
Air discharge	8 kV (according to IEC/EN 61000-4-2)
Burst Impulse	Main: 2 kV, 5 kHz PC 1 (according to IEC/EN 61000-4-4) Control: 1 kV, 5 kHz PC 1 (according to IEC/EN 61000-4-4)
Contact discharge	4 kV (according to IEC/EN 61000-4-2)
Electromagnetic fields	10 V/m, 80 - 1000 MHz and 1.4 - 2.0 GHz, PC 1 3 V/m, 2.0 - 2.7 GHz, PC 1

Immunity to line-conducted interference	10 V/m, 0.15 - 80 MHz, PC 1 (according to IEC/EN 61000-4-6)
Radio interference class	Class A
Terminal capacities	
Terminal capacity (flexible with ferrule)	Main: 1 x 1-4 mm^2, 2 x 1-4 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Terminal capacity (solid)	Main: 1 x 2.5-6 mm^2, 2 x 2.5-6 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Terminal capacity (solid/stranded AWG)	Main: 1 x 14-10, 2 x 14-10 Control: 1 x 18-12, 2 x 18-12
Terminal capacity (stranded)	Main: 1 x 2.5-6 mm^2, 2 x 2.5-6 mm^2 Control: 1 x 0.5-2.5 mm^2, 2 x 0.5-2.5 mm^2
Tightening torque	Main: 2 Nm (17.7 lb-in) Control: 0.5 Nm (4.4 lb-in)
Screwdriver size	Main: Pozidriv 2 Control: Pozidriv 1
Electrical rating	
Operating voltage - max.	600 V
Operating voltage - min.	600 V
Rated operational current (Ie) at AC-1	0 A
Rated operational current (Ie) at AC-3	0 A
Rated operational current (Ie) at AC-51	20 A
Rated operational current (Ie) at AC-53A	5 A
Rated operational current (Ie) at AC-53B	0 A
Rated operational voltage (Ue) at AC - min	600 V
Rated operational voltage (Ue) at AC - max	600 V
Short-circuit rating	
Rated conditional short-circuit current, type 1, 600 Y/347 V	kA
Rated conditional short-circuit current (Iq), type 2, 230 V	kA
Rated conditional short-circuit current (Iq), type 2, 380 V, 400 V, 415 V	kA
Control circuit	
Delay time	1/2 period + 500 microseconds at 24 V DC
Drop-out time	1/2 period + 500 microseconds at 24 V DC
Drop-out voltage	1 V DC
Input current	10.3 mA at 24 V DC
Pick-up voltage	3.8 V DC
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	4 V
Rated control supply voltage (Us) at DC - max	32 V
Motor rating	
Rated operational power at 220/230 V, 50 Hz	0.37 kW
Rated operational power at 400 V, 50 Hz	0.75 kW
Design verification	
Equipment heat dissipation, current-dependent Pvid	21 W
Heat dissipation per pole, current-dependent Pvid	21 W
Rated operational current for specified heat dissipation (In)	20 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	Please enquire
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 8.0

Relays (EG000019) / Solid state relay (EC002055)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Contactor (LV) / Solid state relay (ecl@ss10.0.1-27-37-10-14 [ACN970011])			
Rated control supply voltage Us at AC 50HZ		V	0 - 0
Rated control supply voltage Us at AC 60HZ		V	0 - 0
Rated control supply voltage Us at DC		V	4 - 32
Voltage type for actuating			DC
Operating voltage		V	600 - 600
Rated operation current Ie at AC-1		A	0
Rated operation current Ie at AC-3		A	0
Rated operation current Ie at AC-51		A	20
Rated operation current Ie at AC-53a		A	5
Rated operation current Ie at AC-53b		A	0
Number of phases			1
Modular version			Yes
Switching at zero-crossing			Yes