



Phase monitoring relays, Multi-functional, 180 - 280 V AC, 50/60 Hz

Part no. EMR6-AWN280-D-1  
184770  
EL Number 4101966  
(Norway)

General specifications		
Product name		Eaton Moeller® series EMR6 Phase monitoring relay
Part no.		EMR6-AWN280-D-1
EAN		4015081788064
Product Length/Depth		103.7 millimetre
Product height		85.6 millimetre
Product width		22.5 millimetre
Product weight		0.16 kilogram
Certifications		CSA CCC UL GL IEC
Product Tradename		EMR6
Product Type		Phase monitoring relay
Product Sub Type		None
Features & Functions		
Electric connection type		Screw connection
Features		Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages
Functions		Under voltage detection Over voltage detection Multi-functional Phase failure detection
Monitoring function		Phase failure Imbalance Phase sequence monitoring Undervoltage Overvoltage Phase sequence (can be deactivated) Neutral cable break Phase imbalance monitoring
Voltage measurement - min		180 V
Voltage measurement - max		280 V
General information		
Degree of protection		Terminals: IP20 Enclosure: IP50
Lifespan, mechanical		30,000,000 Operations
Mounting position		As required
Overvoltage category		III
Pollution degree		3
Product category		EMR Measuring and monitoring relays
Rated impulse withstand voltage (Uimp)		4000 V AC
Shock resistance		Class 2
LED indicator		Status indication of Relay energized: Yellow, solid light (R) Status indication of Supply voltage: Yellow LED Status indication of Open neutral conductor: F1 red, solid light and F2 red, flashing light Status indication of Undervoltage: Red LED (F2 on) Status indication of Phase sequence fault: Red, flashing light (F1 and F2 alternating) Status indication of Phase failure: F1 red, solid light and F2 red, flashing light Status indication of Overvoltage: F1 red, solid light Status indication of Supply voltage: Yellow, solid light Status indication of Imbalance: Red, solid light (F1 and F2) Status indication of Delay time running: Yellow, flashing light (R/T) Status indication of Undervoltage: F2 red, solid light Status indication of Overvoltage: Red LED (F1 on)
Suitable for		Single-phase networks as well
Type		Phase monitoring relay
Voltage type		AC

<b>Climatic environmental conditions</b>		
Ambient operating temperature - min		-25 °C
Ambient operating temperature - max		60 °C
Ambient storage temperature - min		-40 °C
Ambient storage temperature - max		85 °C
Climatic proofing		Damp heat, cyclic, to IEC 60068-2-30
<b>Electro magnetic compatibility</b>		
Air discharge		Air/contact discharge, according to IEC/EN 61000-4-2, level 3
Burst impulse		According to IEC/EN 61000-4-4, level 3
Electromagnetic compatibility		According to IEC/EN 60947-6-2
Immunity to line-conducted interference		Level 3 (according to IEC/EN 61000-4-6)
Immunity to radiation		Level 3 (according to IEC/EN 61000-4-3)
Surge rating		According to IEC/EN 61000-4-5 Level 4
<b>Terminal capacities</b>		
Connection type		Snap fixing, top-hat rail IEC/EN 60715
Terminal capacity		1 x (0.5-2.5) mm <sup>2</sup> , (1 x (18-14) AWG), solid 2 x (0.5-1.5) mm <sup>2</sup> , (2 x (18-16) AWG), flexible with ferrule
Screwdriver size		5.5 x 0.8 mm, Terminal screw
Tightening torque		0.8 Nm, Screw terminals Min. 0.6 Nm, Screw terminals
<b>Timing cycle</b>		
Delay time		0.2 s, Response delay time On-delay/off-delay: none = 0 or adjustable between 0.1 - 30 s
Timing cycle		0.5 % Error within supply voltage (Measuring circuits) 0.06 %/°C, Time error within temperature range Adjustable from 0.1 – 30 s, Reset delay/Off-delay time 0.5 %, Time error within supply voltage
<b>Power supply</b>		
Duty factor		100 %, Power supply
Power consumption		3 VA
Rated control supply voltage (Us) at AC, 50 Hz - min		180 V
Rated control supply voltage (Us) at AC, 50 Hz - max		280 V
Rated control supply voltage (Us) at AC, 60 Hz - min		180 V
Rated control supply voltage (Us) at AC, 60 Hz - max		280 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
Supply voltage		180 - 280 V AC, 50/60 Hz
Voltage tolerance		1.1 x Uc 0.85 x Uc
<b>Measuring circuits</b>		
Hysteresis		0 - 5 %
Measuring cycle		50 ms
Monitoring voltage		180 - 280 V AC, 50/60 Hz (per phase)
Temperature error		0.06 %/°C, Measuring circuits
<b>Relay output contacts</b>		
Number of contacts (change-over contacts)		2
Number of contacts (normally closed contacts)		0
Number of contacts (normally open contacts)		0
Lifespan, electrical		100,000 Operation (at 230 V, AC-12, 4 A)
Rated operational current (Ie)		3 A at AC-15, 230 V 2 A at DC-13, 24 V 4 A at DC-12, 24 V 4 A at AC-12, 230 V
Rated operational voltage (Ue) at AC - max		250 V
Short-circuit protection rating		Max. 10 A Fast/gL, Fuse, Relay output contacts

Technical data ETIM 9.0

Relays (EG000019) / Phase monitoring relay (EC001441)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Asymmetry monitoring equipment (ecI@ss13-27-37-18-03 [AKF097019])			
Type of electric connection			Screw connection
With detachable clamps			No
External power supply required			No
Voltage type (supply voltage)			AC
Supply voltage AC 50 Hz		V	180 - 280
Supply voltage AC 60 Hz		V	180 - 280
Supply voltage DC		V	
Phase sequence monitoring			Yes
Phase failure detection			Yes
Function under voltage detection			Yes
Function over voltage detection			Yes
Phase imbalance monitoring			Yes
Voltage measuring range		V	180 - 280
Min. adjustable delay-on energization time		s	0.1
Max. permitted delay-on energization time		s	30
Min. adjustable off-delay time		s	0.1
Max. permitted off-delay time		s	30
Number of contacts as normally closed contact			0
Number of contacts as normally open contact			0
Number of contacts as change-over contact			2
Voltage type (operating voltage)			AC
Operating voltage AC 50 Hz		V	180 - 280
Operating voltage AC 60 Hz		V	180 - 280
Operating voltage DC		V	
Rated switch current		A	4
Width		mm	22.5
Height		mm	85.6
Depth		mm	103.7