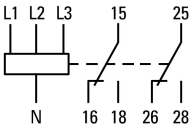
DATASHEET - EMR6-AWN280-D-1

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

Part no.	**EMR6-AWN280-D-1**
Catalog No.	**184770**
Alternate Catalog No.	**EMR6-AWN280-D-1**
EL-Nummer (Norway)	**4101966**

Powering Business Worldwide™

Delivery program

Product range			EMR Measuring and monitoring relays
Basic function			Phase monitoring relays
Function			Multi-functional
			Power supply from the measuring circuit On-delay/off-delay: none = 0 or adjustable between 0.1 - 30 s Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages Suitable for single-phase networks as well.
Monitoring voltage per phase	U_N	V AC	180 - 280 V AC, 50/60 Hz (L1-N)
Monitoring of			Phase sequence (can be deactivated) Phase failure Overvoltage Undervoltage Imbalance Neutral cable break
Contact sequence			
Supply voltage			180 - 280 V AC, 50/60 Hz
Width		mm	22.5

Technical data

General

Standards			IEC, UL, CSA, CCC, GL
Lifespan, mechanical	Operations	x 10^6	30
Climatic proofing			Damp heat, cyclical to IEC 60068-2-30: 24 h cycle, 55° C, 93% relative humidity, 96 h
Ambient temperature			
Operation		°C	
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	+ 60
Storage		°C	- 40 - 85
Mounting position			As required
Shock resistance			Class 2
Degree of protection			
Terminals			IP20
Enclosures			IP50
Terminal capacities		mm^2	
Solid		mm^2	1 x 0.5-2.5 (1 x 18-14 AWG)
Flexible with ferrule		mm^2	2 x 0.5-1.5 (2 x 18-16 AWG)
Standard screwdriver		mm	5.5 x 0.8
Tightening torque		Nm	0.6 - 0.8
Fixing			Snap fixing, top-hat rail IEC/EN 60715
MTBF (mean time between failures)			382977 h

Contacts

Rated impulse withstand voltage	U_{imp}	V AC	4000
Overvoltage category/pollution degree			III/3

Power supply

Supply voltage			180 - 280 V AC, 50/60 Hz
Voltage tolerance		x U_c	0.85 - 1.1
Power consumption		VA	3
Rated frequency	f	Hz	50 - 60
Duty factor		% DF	100

Timing cycle

Response delay time		s	0.2
Reset delay/Off-delay time		s	Adjustable from 0.1 – 30
Time error within supply voltage		%	0.5
Time error within temperature range		%/°C	0.06

Measuring circuits

Frequency		Hz	50/60 ± 10 %
Hysteresis		%	0 … 5
Frequency		Hz	50/60 ± 10 %
Measuring cycle		ms	50
Temperature error		%/°C	0.06
Error within supply voltage		%	0.5

Status indication

Supply voltage			LED yellow
Overvoltage			LED red: F1 on
Undervoltage			LED red: F2 on
Status indicator (LED)			Yellow, solid: Supply voltage Yellow, solid (R): Relay energized Yellow, flashing (R/T): Delay time running Red, solid (F1 & F2): Imbalance Red, solid (F1): Overvoltage Red, solid (F2): Undervoltage Red: F1 solid, F2 flashing: Phase failure Red, F1 solid & F2 flashing: Open neutral conductor Red, flashing (F1 & F2 alternating): Phase sequence fault

Relay output contacts

Rated operational voltage	U_e	V AC	250
Rated operational current	I_e	A	
AC-12 at 230 V	I_e	A	4
AC-15 with 230 V	I_e	A	3
DC-12 at 24 V	I_e	A	4
DC-13 at 24 V	I_e	A	2
Minimum Switching capacity			10 mA / 24 V
Lifespan, electrical (AC-12/230 V/4 A)	Operations	x 10^6	
Lifespan, electrical	Operations	x 10^6	0.1
Short-circuit rating			
max. fuse	Fast/gL	A	5

Electromagnetic compatibility (EMC)

Electromagnetic compatibility			IEC/EN 60947-6-2
ESD	Air/contact discharge	kV	IEC/EN 61000-4-2 level 3
HF-immunity to radiation			IEC/EN 61000-4-3 level 3
Burst			IEC/EN 61000-4-4 level 3
Surge			IEC/EN 61000-4-5 Level 4
HF-immunity to line-conducted interference			IEC/EN 61000-4-6 level 3

Design verification as per IEC/EN 61439

Technical data for design verification			
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.9 Insulation properties			
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.

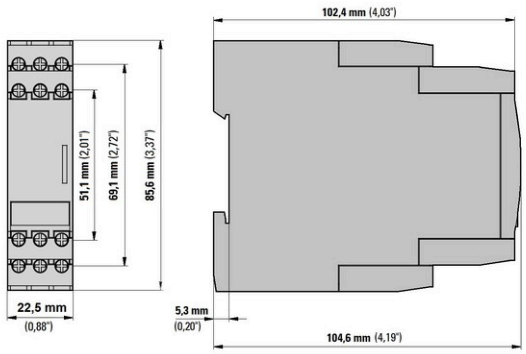
Technical data ETIM 7.0

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 (ecl@ss10.0.1-27-37-18-03 [AKF097014])			
Type of electric connection			Screw connection
With detachable clamps			No
Rated control supply voltage Us at AC 50HZ		V	180 - 280
Rated control supply voltage Us at AC 60HZ		V	180 - 280
Rated control supply voltage Us at DC		V	0 - 0
Voltage type for actuating			AC
Phase sequence monitoring			Yes
Phase failure detection			Yes
Function under voltage detection			Yes
Function over voltage detection			Yes
Phase imbalance monitoring			Yes
Voltage measurement 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
Width		mm	22.5
Height		mm	85.6
Depth		mm	104.6

Approvals

Product Standards			IEC 255-6; UL 508; CSA-22.2 No. 14-05; CE marking
UL File No.			E29184
UL Category Control No.			NKCR, NKCR7
CSA File No.			UL report valid
CSA Class No.			3211-03
North America Certification			UL listed, certified by UL for use in Canada

Dimensions



Additional product information (links)

Phase monitoring relays	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=11.36