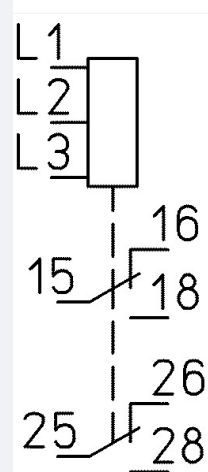




Phase imbalance monitoring relays, 300 - 500 V AC, 50/60 Hz

Part no. **EMR6-A500-D-1**
 Catalog No. **184762**
 Alternate Catalog No. **EMR6-A500-D-1**
 EL-Nummer **4101958**
 (Norway)

Delivery program

Product range			EMR Measuring and monitoring relays
Basic function			Phase imbalance monitoring relays
			Power supply from the measuring circuit On delay: None = 0 or adjustable from 0.1 to 30 s Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages
Monitoring voltage per phase	U _N	V AC	300 - 500 V AC, 50/60 Hz
Monitoring of			Phase sequence Phase failure Imbalance
Adjustable threshold values			Imbalance
Contact sequence			
Supply voltage			300 - 500 V AC, 50/60 Hz
Width		mm	22.5

Technical data

General		
Standards		IEC/EN 60255-6, IEC255-6, UL, CE
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	0.5 - 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			300 - 500 V AC, 50/60 Hz
Voltage tolerance		$x U_c$	0.85 - 1.2
Power consumption		VA	15
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
Switching hysteresis		%	20
Hysteresis		%	
Hysteresis, max.		%	20
Frequency		Hz	50
Temperature error		%/°C	0.06
Error within supply voltage		%	0.5

Status indication

Output relay energized			LED, yellow
Error			LED, red
Status indicator (LED)			Green, solid: Supply voltage Yellow, solid: Relay energized Yellow, flashing: Delay time running Red, solid (F1 & F2): Imbalance Red: F1 solid, F2 flashing: Phase failure Red, flashing (F1 & F2 alternating): Phase sequence fault

Relay output contacts

Rated operational voltage	U_e	V AC	500
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	$x 10^6$	0.3
Short-circuit rating			
max. fuse	Fast/gL	A	10

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.

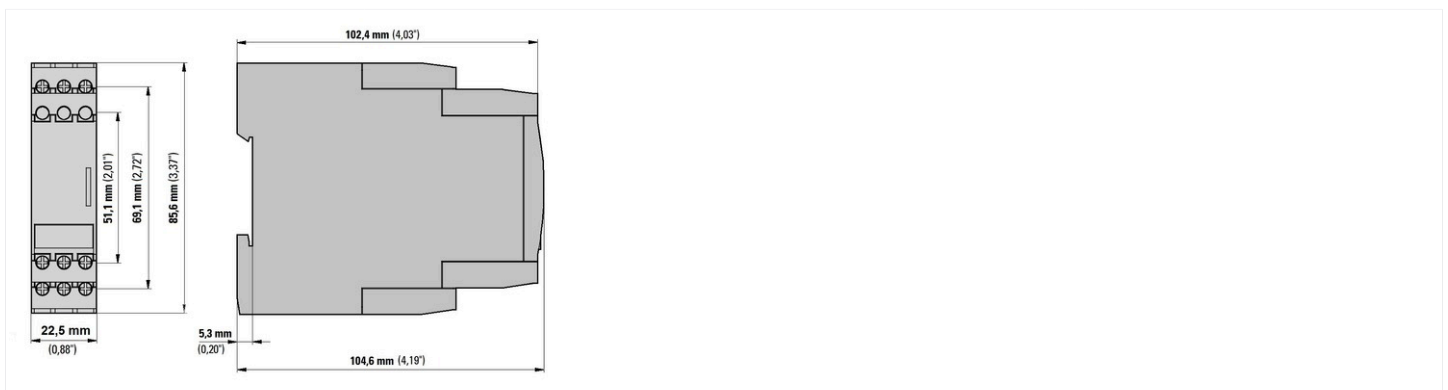
Technical data ETIM 7.0

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 (ec1@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	300 - 500
Rated control supply voltage Us at AC 60HZ	V	300 - 500
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		No
Function over voltage detection		No
Phase imbalance monitoring		Yes
Voltage measurement range	V	300 - 500
Min. adjustable delay-on energization time	s	0.1
Max. permitted delay-on energization time	s	30
Min. adjustable off-delay time	s	0
Max. permitted off-delay time	s	0
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)

IL121006ZU Single-function three-phase monitoring relays	
IL121006ZU Single-function three-phase monitoring relays	https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL121006ZU.pdf

