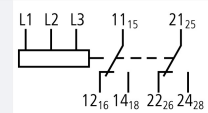




Phase sequence relays, 200 - 500 V AC, 50/60 Hz

Part no. **EMR6-F500-G-1**  
 Catalog No. **184789**  
 Alternate Catalog No. **EMR6-F500-G-1**  
 EL-Nummer (Norway) **4101985**

Delivery program

Product range			EMR Measuring and monitoring relays
Basic function			Phase sequence relays
			Monitoring of three-phase networks Phase failure detection at $< 0.6 \times U_b$ Power supply from the measuring circuit Fixed response delay
Monitoring voltage per phase	$U_N$	V AC	200 - 500 V AC, 50/60 Hz
Monitoring of			Phase failure Phase sequence
Contact sequence			
Supply voltage			200 - 500 V AC, 50/60 Hz
Width		mm	22.5

Technical data

General

Standards			IEC/EN 60255-6,
Lifespan, mechanical	Operations	$\times 10^6$	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	-20
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 <sup>2</sup>	
Solid		mm <sup>2</sup>	2 x 2.5
Flexible with ferrule		mm <sup>2</sup>	2 x 2.5/2 x AWG14
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)			628571 h

Contacts

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

Power supply

Supply voltage			200 - 500 V AC, 50/60 Hz
Voltage tolerance		$\times U_c$	0.85 - 1.1
Power consumption		VA	11
Rated frequency	f	Hz	50 - 60

Duty factor		% DF	100
<b>Measuring circuits</b>			
Monitoring voltage	U <sub>n</sub>	V AC	
Monitoring voltage, min.		V AC	200
Monitoring voltage, max.		V AC	500
Frequency		Hz	
Min. frequency range		Hz	50
Max. frequency range		Hz	60
Frequency		Hz	50 - 60
Frequency		Hz	50 - 60
Measuring cycle		ms	500
Temperature error		%/°C	0.06
Error within supply voltage		%	0.5

### Status indication

Output relay energized			LED, yellow
Status indicator (LED)			Red, solid: Phase failure Red, flashing: Phase sequence fault

### Relay output contacts

Rated operational voltage	U <sub>e</sub>	V AC	500
Rated operational current	I <sub>e</sub>	A	
AC-12 at 230 V	I <sub>e</sub>	A	4
AC-15 with 230 V	I <sub>e</sub>	A	3
DC-12 at 24 V	I <sub>e</sub>	A	4
DC-13 at 24 V	I <sub>e</sub>	A	2
Minimum Switching capacity			10 mA / 24 V
Lifespan, electrical (AC-12/230 V/4 A)	Operations	x 10 <sup>6</sup>	
Lifespan, electrical	Operations	x 10 <sup>6</sup>	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	-20
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

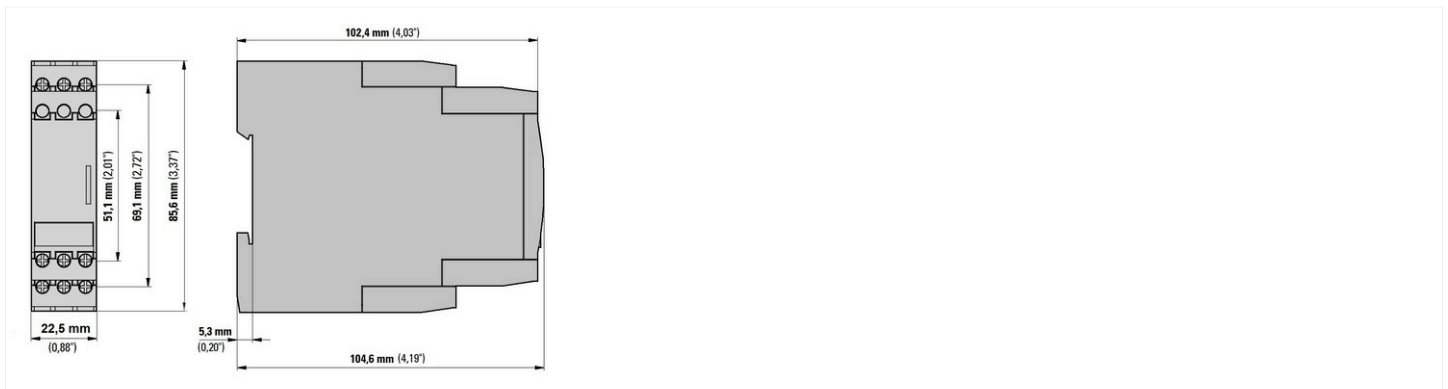
Relays (EG000019) / Phase monitoring relay (EC001441)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Asymmetry monitoring equipment (ecl@ss10.0.1-27-37-18-03 [AKF097014])			
Type of electric connection			Screw connection
With detachable clamps			No
Rated control supply voltage U <sub>s</sub> at AC 50HZ		V	200 - 500
Rated control supply voltage U <sub>s</sub> at AC 60HZ		V	200 - 500
Rated control supply voltage U <sub>s</sub> 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		No
Voltage measurement range	V	200 - 500
Min. adjustable delay-on energization time	s	0
Max. permitted delay-on energization time	s	0
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	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL121006ZU.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL121006ZU.pdf</a>
IL121006ZU Single-function three-phase monitoring relays	<a href="https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL121006ZU2018_07.pdf">https://es-assets.eaton.com/DOCUMENTATION/AWA_INSTRUCTIONS/IL121006ZU2018_07.pdf</a>
Phase sequence relays	<a href="http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=11.25">http://ecat.moeller.net/flip-cat/?edition=HPLEN&amp;startpage=11.25</a>