

Overcurrent and undercurrent monitor, Current measuring range: 3 - 30 mA, 10 - 100 mA, 0.1 - 1 A, Supply voltage: 24 - 240 V AC, 50/60 Hz, 24 - 240 V DC



**Part no.** EMR6-I1-A-1  
**Catalog No.** 184790  
**Alternate Catalog No.** EMR6-I1-A-1  
**EL-Nummer (Norway)** 4101986

## Delivery program

Product range			EMR Measuring and monitoring relays
Basic function			Current monitoring relays
			Monitoring of single-phase DC and AC networks On delay: None = 0 or adjustable from 0.1 to 30 s Extension of the measurement range possible with current transformers
Monitoring of			Overcurrent Undercurrent
Current measuring range	I~/I=	A	3 - 30 mA 10 - 100 mA 0.1 - 1 A
Supply voltage			24 - 240 V AC, 50/60 Hz 24 - 240 V DC
Width		mm	22.5

## Technical data

General			
Standards			UL 508, CAN/CSA C22.2 No.14, GL, EAC, CCC, RMRS
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	-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 <sup>2</sup>	
Solid		mm <sup>2</sup>	1 x 0.5-2.5 (1 x 18-14 AWG)
Flexible with ferrule		mm <sup>2</sup>	2 x 0.5-1.5 (2 x 18-16 AWG)
Standard screwdriver		mm	4 x 0.8
Tightening torque		Nm	0.6 - 0.8
Fixing			Snap fixing, top-hat rail IEC/EN 60715
MTBF (mean time between failures)			382467 h

### Contacts

Rated impulse withstand voltage	U <sub>imp</sub>	V AC	4000
Overtoltage category/pollution degree			III/3

### Power supply

Supply voltage			24 - 240 V AC, 50/60 Hz 24 - 240 V DC
Voltage tolerance		$\times U_c$	0.85 - 1.1
Power consumption		VA	2.6
Rated frequency	f	Hz	50 - 60
Duty factor		% DF	100

## Timing cycle

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

Inputs	Number	
B1-C	A	0.003 - 0.03
B2-C	A	0.01 - 0.1
B3-C	A	0.1 - 1
Hysteresis	%	3 ... 30
Measuring cycle	ms	80
Temperature error	%/°C	0.06
Error within supply voltage	%	0.5

## Status indication

Supply voltage	LED, green
Output relay energized	LED, yellow
Measured value	LED, red
Status indicator (LED)	Green, solid: Supply voltage Green, flashing: Release delay active Yellow, solid: Output relay excited Red, flashing: Undercurrent

## Relay output contacts

Rated operational voltage	U <sub>e</sub>	V AC	250
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	$\times 10^6$	
Lifespan, electrical	Operations	$\times 10^6$	0.1
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	

## Technical data ETIM 8.0

Relays (EG000019) / Current monitoring relay (EC001440)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Current monitoring equipment (ecl@ss10.0.1-27-37-18-02 [AKF096014])		
Type of electric connection		Screw connection
With detachable clamps		No
Single-phase under current possible		Yes
Three-phase under current possible		No
Single-phase over current possible		Yes
Three-phase over current possible		No
Single-phase hysteresis possible		No

Three-phase hysteresis possible		No
Contains function DC-voltage under current		Yes
Contains function DC-voltage over current		Yes
Function DC-current hysteresis		No
Rated control supply voltage Us at AC 50HZ	V	24 - 240
Rated control supply voltage Us at AC 60HZ	V	24 - 240
Rated control supply voltage Us at DC	V	24 - 240
Voltage type for actuating		AC/DC
Current measuring range	A	0.01 - 1
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
External current transformer		No
Width	mm	22.5
Height	mm	85.6
Depth	mm	103.7