



**Current monitoring relays, 3 - 30 mA, 10 - 100 mA, 0.1 - 1 A, 24 - 240 V AC, 50/60 Hz, 24 - 240 V DC**

**Part no. EMR6-IM1-A-1**  
**Catalog No. 184780**  
**Eaton Catalog No. EMR6-IM1-A-1**

## Technical data

### General

Standards			UL 508, CAN/CSA C22.2 No.14, GL, EAC, CCC, RMRS
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	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)			395178 h

### Contacts

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

### Power supply

Supply voltage			24 - 240 V AC, 50/60 Hz 24 - 240 V DC
Voltage tolerance		x U <sub>c</sub>	0.85 - 1.1
Power consumption		VA	2.6
Rated frequency	f	Hz	50 - 60
Duty factor		% DF	100

### Timing cycle

Response delay time		s	Adjustable from 0.1 - 30
Reset delay/Off-delay time		s	30
On-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
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### Status indication

Supply voltage		LED, green
Output relay energized		LED, yellow
Measured value		LED, red
Status indicator (LED)		Green, solid: Supply voltage Other states depending on fault (see IL): Measured value

### 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
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 7.0

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 $U_s$ at AC 50HZ		V	24 - 240
Rated control supply voltage $U_s$ at AC 60HZ		V	24 - 240
Rated control supply voltage $U_s$ at DC		V	24 - 240
Voltage type for actuating			AC/DC
Current measurement 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		
Width	mm	23
Height	mm	85
Depth	mm	110

## Dimensions

