### **DATASHEET - EMR6-I15-A-1**



Overcurrent and undercurrent monitor, Current measuring range: 0.3 - 1.5 A, 1 - 5 A, 3 - 15 A, Supply voltage: 24 - 240 V AC, 50/60 Hz, 24 - 240 V DC



EMR6-I15-A-1 Part no. 184754 Catalog No. **Alternate Catalog** EMR6-I15-A-1

No.

**EL-Nummer** 4101950

(Norway)

**Delivery program** 

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	0.3 - 1.5 A 1 - 5 A 3 - 15 A
Contact sequence			B1 B2 B3 15 25 C A1 A2 16 18 26 28
Supply voltage			24 - 240 V AC, 50/60 Hz 24 - 240 V DC
Width		mm	22.5

### **Technical data**

Voltage tolerance

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		$\mathrm{mm}^2$	
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	$U_{imp}$	V AC	4000
Overvoltage category/pollution degree			III/3
Power supply			
Supply voltage			24 - 240 V AC, 50/60 Hz 24 - 240 V DC

 $x\,U_c$ 

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		Α	0.3 - 1.5
B2-C		Α	1 - 5
B3-C		Α	3 - 15
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	le	Α	
AC-12 at 230 V	l <sub>e</sub>	Α	4
AC-15 with 230 V	l <sub>e</sub>	Α	3
DC-12 at 24 V	I <sub>e</sub>	Α	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>	0.1
Short-circuit rating			
max. fuse	Fast/gL	Α	10
Electromagnetic compatibility (EMC)			IFO/FN MONTO O
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
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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			

## **Technical data ETIM 7.0**

10.9 Insulation properties

Relay	15	(EG000019)	Current	monitoring	relay	(FC001440)
nonu	10	(E0000013//	Ouriciit	moment	I Gluy	(LUUU1770)

10.9.4 Testing of enclosures made of insulating material

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])

Is the panel builder's responsibility.

Type of electric connection Screw connection

With detachable clamps         No           Single-phase under current possible         Yes           Three-phase under current possible         Yes           Single-phase over current possible         Yes           Three-phase over current possible         Yes           Single-phase hysteresis possible         No           Single-phase hysteresis possible         Yes           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         Yes           Rated control supply voltage Us at AC 50HZ         Yes           Rated control supply voltage Us at AC 50HZ         Yes           Rated control supply voltage Us at AC 50HZ         Yes           Voltage type for actuating         Yes           Current measurement range         AC/DC           Current measurement range         A           Max. permitted delay-on energization time         S           Min. adjustable off-delay time         S           Max. permitted off-delay time         S           Number of contacts as normally closed contact         S           Number of contacts as normally open contact			
Three-phase under current possible Single-phase over current possible Three-phase over current possible Three-phase over current possible Single-phase hysteresis possible Single-phase hysteresis possible No Single-phase hysteresis possible No Contains function DC-voltage under current Ves Contains function DC-voltage over current Ves Contains function DC-voltage over current Ves Function DC-current hysteresis Rated control supply voltage Us at AC 50HZ V 24 - 240 Rated control supply voltage Us at AC 60HZ V 24 - 240 Voltage type for actuating Current measurement range A 0.3 - 15 Min. adjustable delay-on energization time Ax. permitted delay-on energization time Ax. permitted delay-on energization time Ax. permitted off-delay time Max. permitted off-delay time Number of contacts as normally closed contact  No Current measurement range Ax. permitted off-delay time Ax. permitted Ax. permitted Ax. permitted	With detachable clamps		No
Single-phase over current possible Three-phase over current possible Single-phase hysteresis possible No Three-phase hysteresis possible No Contains function DC-voltage under current Ves Contains function DC-voltage over current Yes Contains function DC-voltage over current Ves 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 Voltage type for actuating AC/DC Current measurement range A 0.3 - 15 Min. adjustable delay-on energization time S 0.1 Max. permitted delay-on energization time S 0 Min. adjustable off-delay time S 0 Max. permitted off-delay time Number of contacts as normally closed contact  Voltage type for contacts as normally closed contact	Single-phase under current possible		Yes
Three-phase over current possible  Single-phase hysteresis possible  No  Contains function DC-voltage under current  Contains function DC-voltage over current  Contains function DC-voltage over current  Function DC-current hysteresis  Rated control supply voltage Us at AC 50HZ  Rated control supply voltage Us at AC 60HZ  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  Current measurement range  A 0.3 - 15  Min. adjustable delay-on energization time  s 0.1  Max. permitted delay-on energization time  s 0  Max. permitted off-delay time  No  No  No  Acrocc  No  Acrocc  Ocurrent possible  No  No  Acrocc  Acrocc  Acrocc  Ocurrent measurement range  A 0.3 - 15  No  No  Acrocc  Ocurrent measurement range  A 0.3 - 15  No  No  Acrocc  Current measurement range  A 0.3 - 15  No  No  Acrocc  Current measurement range  A 0.3 - 15  No  No  No  Acrocc  Current measurement range  A 0.3 - 15  No  No  No  No  Acrocc  Current measurement range  A 0.3 - 15  No  No  No  No  No  No  No  Rated control supply voltage Us at DC  V 24 - 240  Voltage type for actuating  Acrocc  Current measurement range  A 0.3 - 15  No  No  No  No  No  No  No  Rated control supply voltage Us at DC  V 24 - 240  Voltage type for actuating  Acrocc  Current measurement range  A 0.3 - 15  No  No  No  No  No  No  No  No  No  N	Three-phase under current possible		No
Single-phase hysteresis possible No Contains function DC-voltage under current Contains function DC-voltage over current Yes Contains function DC-voltage over current Function DC-current hysteresis Rated control supply voltage Us at AC 50HZ V 24 - 240 Rated control supply voltage Us at AC 50HZ V 24 - 240 Rated control supply voltage Us at AC 50HZ V 24 - 240 Voltage type for actuating Current measurement range A 0.3 - 15 Min. adjustable delay-on energization time s 0.1 Max. permitted delay-on energization time s 0.0 Min. adjustable off-delay time Number of contacts as normally closed contact  No Mon.	Single-phase over current possible		Yes
Three-phase hysteresis possible Contains function DC-voltage under current Contains function DC-voltage over current Function DC-current hysteresis Rated control supply voltage Us at AC 50HZ 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 Current measurement range A 0.3-15 Min. adjustable delay-on energization time s 0.1 Max. permitted delay-on energization time s 0.0 Max. permitted off-delay time No No No Rated control supply voltage Us at DC V 24-240	Three-phase over current possible		No
Contains function DC-voltage under current Contains function DC-voltage over current Function DC-current hysteresis No Rated control supply voltage Us at AC 50HZ 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 Current measurement range A 0.3 - 15 Min. adjustable delay-on energization time S 0.1 Max. permitted delay-on energization time S 0.0 Min. adjustable off-delay time S 0.0 Number of contacts as normally closed contact  Ves Yes Yes Yes Yes Yes Yes  Ac 0.0  24 - 240  Ac 240  AC/DC  CUrrent measurement range A 0.3 - 15  0 0  Number of contacts as normally closed contact	Single-phase hysteresis possible		No
Contains function DC-voltage over current Function DC-current hysteresis No Rated control supply voltage Us at AC 50HZ Rated control supply voltage Us at AC 60HZ 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 measurement range A 0.3 - 15 Min. adjustable delay-on energization time S 0.1 Max. permitted delay-on energization time S 0.0 Min. adjustable off-delay time S 0 Number of contacts as normally closed contact  Ves  Yes  No  24 - 240  A 24 - 240  AC/DC  CUrrent measurement range A 0.3 - 15  S 0.1  Max. permitted off-delay time S 0  No  No  No  No  No  No  No  No  No  N	Three-phase hysteresis possible		No
Function DC-current hysteresis Rated control supply voltage Us at AC 50HZ  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  Current measurement range  A 0.3 - 15  Min. adjustable delay-on energization time  S 0.1  Max. permitted delay-on energization time  S 0.0  Max. permitted off-delay time  S 0.0  Number of contacts as normally closed contact  No  No  24 - 240  A 0.3 - 15  O 0  Number of contacts as normally closed contact	Contains function DC-voltage under current		Yes
Rated control supply voltage Us at AC 50HZ  Rated control supply voltage Us at AC 60HZ  Rated control supply voltage Us at AC 60HZ  Roted control supply voltage Us at DC  V 24 - 240  Voltage type for actuating  AC/DC  Current measurement range  A 0.3 - 15  Min. adjustable delay-on energization time  s 0.1  Max. permitted delay-on energization time  s 0.0  Min. adjustable off-delay time  s 0  Max. permitted off-delay time  s 0  Number of contacts as normally closed contact  o 0	Contains function DC-voltage over current		Yes
Rated control supply voltage Us at AC 60HZ  Rated control supply voltage Us at DC  V 24 - 240  Voltage type for actuating  Current measurement range  A 0.3 - 15  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  V 24 - 240  AC/DC  AC/DC  AC/DC  O 29  AC/DC  A	Function DC-current hysteresis		No
Rated control supply voltage Us at DC  Voltage type for actuating  AC/DC  Current measurement range  A 0.3 - 15  Min. adjustable delay-on energization time  S 0.1  Max. permitted delay-on energization time  S 0.0  Min. adjustable off-delay time  S 0  Max. permitted off-delay time  S 0  Number of contacts as normally closed contact  O 0	Rated control supply voltage Us at AC 50HZ	V	24 - 240
Voltage type for actuating  AC/DC  Current measurement range  A 0.3 - 15  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  O	Rated control supply voltage Us at AC 60HZ	V	24 - 240
Current measurement range A 0.3 - 15  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	Rated control supply voltage Us at DC	V	24 - 240
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  o 0	Voltage type for actuating		AC/DC
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	Current measurement range	А	0.3 - 15
Min. adjustable off-delay time s 0  Max. permitted off-delay time s 0  Number of contacts as normally closed contact 0	Min. adjustable delay-on energization time	s	0.1
Max. permitted off-delay time s 0  Number of contacts as normally closed contact 0	Max. permitted delay-on energization time	s	30
Number of contacts as normally closed contact 0	Min. adjustable off-delay time	s	0
· · · · · · · · · · · · · · · · · · ·	Max. permitted off-delay time	s	0
Number of contacts as normally open contact 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	Number of contacts as change-over contact		2
External current transformer	External current transformer		
Width mm 22.5	Width	mm	22.5
Height mm 85.6	Height	mm	85.6
Depth mm 104.6	Depth	mm	104.6

# **Approvals**

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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**

