#### **DATASHEET - EMR4-F500-2**



Phase sequence relay, 3p, 2W, 200-500VAC

Part no. EMR4-F500-2 Catalog No. 221784 Alternate Catalog EMR4-F500-2

No

**EL-Nummer** 4133314

(Norway)



#### **Delivery program**

zonio, program			
			This item will continue to be available for a limited time only and is being replaced by the following item: 184789, EMR4-F500-2
Product range			EMR Measuring and monitoring relays
Basic function			Phase sequence relays
			Monitoring of three-phase networks Phase failure detection at $<0.6\times U_{\text{e}}$ Power supply from the measuring circuit
Monitoring voltage per phase	$U_N$	V AC	200 - 500 V AC, 50/60 Hz
Monitoring of			Phase sequence Phase failure
Contact sequence			L1 L2 L3 11 <sub>15</sub> 21 <sub>25</sub> 12 <sub>16</sub> 14 <sub>18</sub> 22 <sub>26</sub> 24 <sub>28</sub>
Supply voltage			200 - 500 V AC, 50/60 Hz

#### **Technical data**

#### Technical data in sheet catalogue

## Design verification as per IEC/EN 61439

Design Verification as per IEC/EN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	0
Heat dissipation per pole, current-dependent	$P_{\text{vid}}$	W	0
Equipment heat dissipation, current-dependent	$P_{\text{vid}}$	W	0
Static heat dissipation, non-current-dependent	$P_{vs}$	W	2
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-20
Operating ambient temperature max.		°C	60
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			

10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 7.0**

Relays (EG000019) / Phase monitoring relay (EC001441)

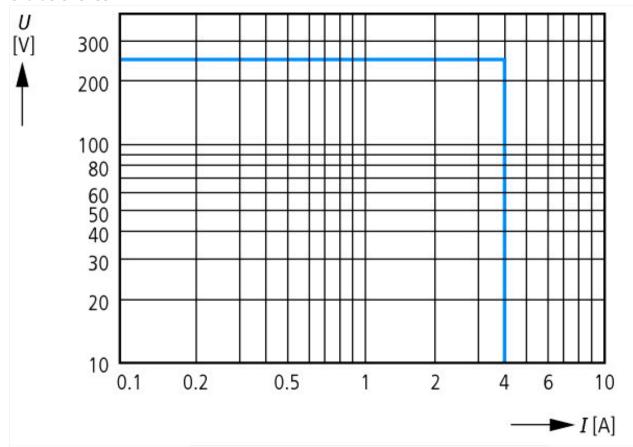
Electric engineering, automation, process control engineering / Low-voltage switch technology / Monitoring equipment (low-voltage switch technology) / Asymmetry monitoring equipment (ecl@ss10.0.1-27-37-18-03 [AKF097014])

Type of electric connection         Screw connection           With detachable clamps         V         No           Reted control supply voltage Us at AC 60HZ         V         200-500           Reted control supply voltage Us at AC 60HZ         V         200-500           Reted control supply voltage Us at AC 60HZ         V         200-500           Reted control supply voltage Us at DC         V         0           Voltage type for actuating         V         XC           Phase sequence monitoring         Yes         Yes           Function under voltage detection         Yes         Yes           Function over voltage detection         Yes         No           Voltage measurement range         Yes         No           Voltage measurement range         Yes         No           Min. adjustable delay-on energization time         Se         0           Max. permitted delay-on energization time         Se         0           Min. adjustable off-delay time         Se         0           Number of contacts as normally closed contact         Yes         0           Number of contacts as normally closed contact         Yes         0           With Horizontal Seal Sealing-over contact         Yes         0           With Horizo				
Rated control supply voltage Us at AC 50HZ         V         200 - 500           Rated control supply voltage Us at AC 60HZ         V         200 - 500           Rated control supply voltage Us at DC         V         V           Voltage type for actuating         C         Yes           Phase sequence monitoring         Yes         Yes           Function under voltage detection         Yes         Yes           Function over voltage detection         Yes         No           Phase imbalance monitoring         Yes         No           Voltage measurement range         Yes         No           Min. adjustable delay-on energization time         S         0           Max. permitted delay-on energization time         S         0           Max. permitted off-delay time         S         0           Mumber of contacts as normally closed contact         S         0           Number of contacts as normally open contact         Yes         0           Number of contacts as change-over contact         Yes         0           Width         Yes         0           Width         Yes         0           Yes         0         0           Yes         0           Yes         0	Type of electric connection			Screw connection
Rated control supply voltage Us at AC 60HZ         V         20 - 500           Rated control supply voltage Us at DC         V         0 - 0           Voltage type for actuating         AC         Passe sequence monitoring           Phase sequence monitoring         Yes         Yes           Function under voltage detection         Yes         Yes           Function over voltage detection         Yes         No           Phase imbalance monitoring         No         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         S         0           Number of contacts as normally open contact         Y         0           Number of contacts as normally open contact         Y         0           Width         M         M         2           Width         M         M         2           Width         M         M         M         2           Width <td>With detachable clamps</td> <td></td> <td></td> <td>No</td>	With detachable clamps			No
Rated control supply voltage Us at DC  Voltage type for actuating Phase sequence monitoring Phase failure detection Function ouder voltage detection Function over voltage detection Function over voltage detection Function over voltage detection Phase imbalance monitoring Voltage measurement range Voltage measurement range Min. adjustable delay-on energization time Max. permitted delay-on energization time Min. adjustable off-delay time Max. permitted off-delay time Mumber of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as normally open contact Number of contacts as change-over contact Height Height  Move the sequence monitoring Value	Rated control supply voltage Us at AC 50HZ	V	/	200 - 500
Voltage type for actuating Phase sequence monitoring Phase failure detection Pinction under voltage detection Function over voltage detection Phase imbalance monitoring Voltage measurement range Voltage measurement range Win. adjustable delay-on energization time Max. permitted delay-on energization time Since of contacts as normally closed contact Number of contacts as normally open contact Number of contacts as normally open contact Width Height Height  AC  AC  AC  AC  AC  Poss Pase  Yes  Ves  No  No  No  No  No  O  O  O  O  O  O  O  O  O  O  O  O  O	Rated control supply voltage Us at AC 60HZ	V	/	200 - 500
Phase sequence monitoring Punction under voltage detection Function over voltage detection Phase imbalance monitoring Phase imbalance monitoring Voltage measurement range Vol	Rated control supply voltage Us at DC	V	/	0 - 0
Phase failure detection Function under voltage detection Function over voltage detection Finction over voltage detection Finction over voltage detection Phase imbalance monitoring Voltage measurement range Voltage measurement range Village measuremet range Village	Voltage type for actuating			AC
Function under voltage detection Function over voltage detection Finction over voltage detecti	Phase sequence monitoring			Yes
Function over voltage detection  Phase imbalance monitoring  Voltage measurement range  Voltage measurement range  Voltage measurement range  No.  No.  Voltage measurement range  Voltage measurement range  No.  Occupance  No.  No.  Occupance  No.  No.  No.  No.  No.  No.  No.  No	Phase failure detection			Yes
Phase imbalance monitoring  Voltage measurement range  Vivus 200 - 500  Min. adjustable delay- on energization time  Susual of the delay time  Max. permitted off-delay time  Susual of	Function under voltage detection			Yes
Voltage measurement range  Voltage range range  Voltage rang	Function over voltage detection			No
Min. adjustable delay-on energization time  Max. permitted delay-on energization time  Min. adjustable off-delay time  Min. adjustable off-delay time  Max. permitted off-delay time  Max.	Phase imbalance monitoring			No
Max. permitted delay-on energization time  Max. permitted delay-on energization time  Solution  Max. permitted off-delay time  Solution  Max. permitted off-delay time  Solution  Solution  Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as change-over contact  Width  Height  Max. permitted delay-on energization time  Solution  Solution  Solution  Solution  Application  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Application  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Application  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Solution  Application  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Solution  Solution  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Solution  Solution  Max. permitted delay-on energization time  Solution  Solution  Solution  Solution  Solution  Solution  Max. permitted delay-on energization time  Solution  So	Voltage measurement range	V	1	200 - 500
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 0  Number of contacts as normally open contact 0  Number of contacts	Min. adjustable delay-on energization time	s	;	0
Max. permitted off-delay time  Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as change-over contact  Width  Height  Aux. permitted off-delay time  S  0  0  2  2  Width  mm  23  Height	Max. permitted delay-on energization time	s	;	0
Number of contacts as normally closed contact  Number of contacts as normally open contact  Number of contacts as change-over contact  Number of contacts as normally closed contact	Min. adjustable off-delay time	s	;	0
Number of contacts as normally open contact  Number of contacts as change-over contact  Width  Height  Mumber of contacts as change-over contact  Mumber of contacts as change-over contact  Mumber of contacts as change-over contact  Mumber of contacts as normally open contact  Mumber of contacts as change-over contact	Max. permitted off-delay time	s	;	0
Number of contacts as change-over contact 2 Width mm 23 Height 78	Number of contacts as normally closed contact			0
Width mm 23 Height 78	Number of contacts as normally open contact			0
Height mm 78	Number of contacts as change-over contact			2
	Width	m	nm	23
Depth mm 110	Height	m	nm	78
	Depth	m	nm	110

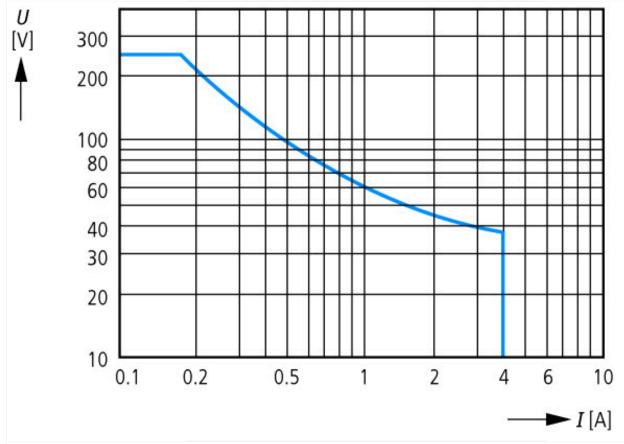
## **Approvals**

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.	203843
CSA Class No.	3211-03
North America Certification	UL listed, CSA certified
Degree of Protection	IEC: IP20, UL/CSA Type: -

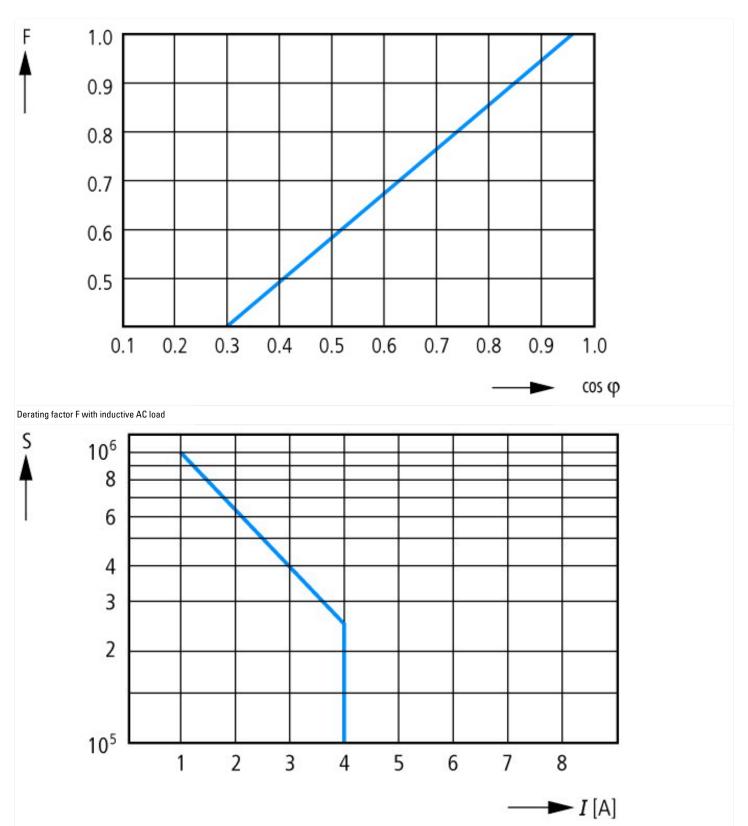
# **Characteristics**



AC load (resistive)



DC load (resistive)



Contact life S operations 220 V 50 Hz AC-1 360 operations/h

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### **Assets (links)**

**Declaration of CE Conformity** 00002814

Instruction Leaflets IL04914003Z2018\_07