

# EMD-FL-RP-480 - Monitoring relay



2900177

<https://www.phoenixcontact.com/us/products/2900177>

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Monitoring relay for active power monitoring in 1- and 3-phase networks of 0...7.2 kW, underload, overload, window, motor winding temperature, error memory, supply voltage can be selected via power module, 2 changeover contacts

## Product description

Requirements pertaining to safety and system availability increase constantly – regardless of the industry. Processes are becoming more and more complex, not only in the mechanical engineering and chemical industry but also in system and automation technology. Demands on power engineering are also constantly on the rise.

Error-free and therefore cost-effective operation can only be achieved through continuous monitoring of important network and system parameters. The electronic monitoring relays of the EMD series are available for various monitoring tasks.

The operating states are indicated using colored LEDs, errors that may occur can be sent to a controller via a floating contact or can shut down a part of the system. Some device versions are equipped with startup and response delays in order to briefly tolerate measured values outside the set monitoring range.

## Your advantages

- Temperature monitoring of the motor winding
- Monitoring range up to 7.2 kW
- Variable supply voltage range
- Detection of switched off loads
- Separately adjustable startup and response delays

## Commercial data

Item number	2900177
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	C440
Product key	CK4131
Catalog page	Page 254 (C-5-2019)
GTIN	4046356522632
Weight per piece (including packing)	310 g
Weight per piece (excluding packing)	243.5 g
Customs tariff number	85364900
Country of origin	AT

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## Technical data

### Product properties

Product type	Real power monitoring relay
Operating mode	100% operating factor
Mechanical service life	approx. $2 \times 10^7$ cycles

### Insulation characteristics

Insulation	Basic insulation
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### Insulation characteristics

Insulation	Basic insulation
Overvoltage category	III
Pollution degree	2

### Electrical properties

Service life electrical	$2 \times 10^5$ cycles at ohmic load, 1000 VA
Mains type	1 and 3-phase
Rated insulation voltage	300 V
Rated surge voltage	4 kV

### Supply

Supply voltage range	110 V AC ... 500 V AC (see Power modules)
Nominal power consumption	3.5 VA (3 W)

### Input data

Input name	Measuring input
Description of the input	Voltage input
Measured value	AC sine (10 Hz ... 400 Hz)
Nominal input voltage $U_N$	480 V (3 N ~ 480/277 V)
Input voltage range	0 V AC ... 480 V AC (1(N) ~, single-phase load) 0 V AC ... 480 V AC (3(N) ~, 3-phase load)
Maximum input voltage	550 V AC (/3~550/318)
Input current range	0.15 A ... 6 A (Range: 0.75 kW and 1.5 kW) 0.3 A ... 12 A (Range: 3 kW and 6 kW)
Overload capacity	12 A permanent
Input resistance of voltage input	1.25 M $\Omega$
Input resistance current input	< 10 m $\Omega$
Frequency range	48 Hz ... 63 Hz (see Power modules)
Maximum temperature coefficient	$\leq 0.02$ %/K
Setting range for response delay	0.1 s ... 50 s
Setting range for starting delay	1 s ... 100 s
Min. setting range	5 % ... 110 % (of $P_N$ )
Max. setting range	10 % ... 120 % (of $P_N$ )
Response value	$\geq 3.6$ k $\Omega$ (Relay drops out)

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Function	Underload
	Overload
	Window
	Error memory
	Winding temperature monitoring
Basic accuracy	± 2 % (of scale end value)
Setting accuracy	≤ 5 % (of scale end value)
Repeat accuracy	± 2 %
Total cold resistance	< 1.5 kΩ
Release value	≤ 1.8 kΩ (Relay picks up)
Recovery time	500 ms

## Flow interruption

Measuring ranges 0.75 kW and 1.5 kW	150 mA
Measuring ranges 3 kW and 6 kW	180 mA

## Current flow detection

Measuring ranges 0.75 kW and 1.5 kW	300 mA
Measuring ranges 3 kW and 6 kW	360 mA

## Control

Function	Error memory (bridge Y1-Y2)
Load capacity	No
Conductor length Y1-Y2	max. 10 m (twisted)
Reset	N/C contact in supply circuit

## Wave form

AC Sinus	10 Hz ... 400 Hz
Sinus-evaluated PWM	10 Hz ... 100 Hz

## Output data

### Switching

Contact switching type	2 floating changeover contacts
Maximum switching voltage	250 V AC (in acc. with IEC 60664-1)
Interrupting rating (ohmic load) max.	750 VA (3 A/250 V AC, module aligned, ≤ 5 mm spacing)
	1250 VA (5 A/250 V AC, module not aligned, ≥ 5 mm spacing)
Output fuse	5 A (fast-blow)

## Connection data

Connection method	Screw connection
Stripping length	8 mm
Conductor cross section rigid	0.5 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section flexible	0.25 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Conductor cross section AWG	20 ... 14

## Dimensions

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Width	45 mm
Height	90 mm
Depth	113 mm

## Material specifications

Color	green (RAL 6021)
Housing insulation material	Polyamide PA, self-extinguishing

## Environmental and real-life conditions

### Ambient conditions

Degree of protection (Housing)	IP40 (Housing)
Degree of protection (Connection terminal blocks)	IP20 (Connection terminal blocks)
Ambient temperature (operation)	-25 °C ... 55 °C -25 °C ... 40 °C (corresponds to UL 508)
Ambient temperature (storage/transport)	-25 °C ... 70 °C
Climatic class	3K3 (in acc. with EN 60721)
Permissible humidity (operation)	15 % ... 85 %

## Approvals

### CE

Certificate	CE-compliant
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### UL, USA/Canada

Identification	applied for
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## Standards and regulations

Standards/regulations	EN 50178
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## Mounting

Mounting type	DIN rail mounting
Assembly instructions	on standard DIN rail NS 35 in accordance with EN 60715
Mounting position	any

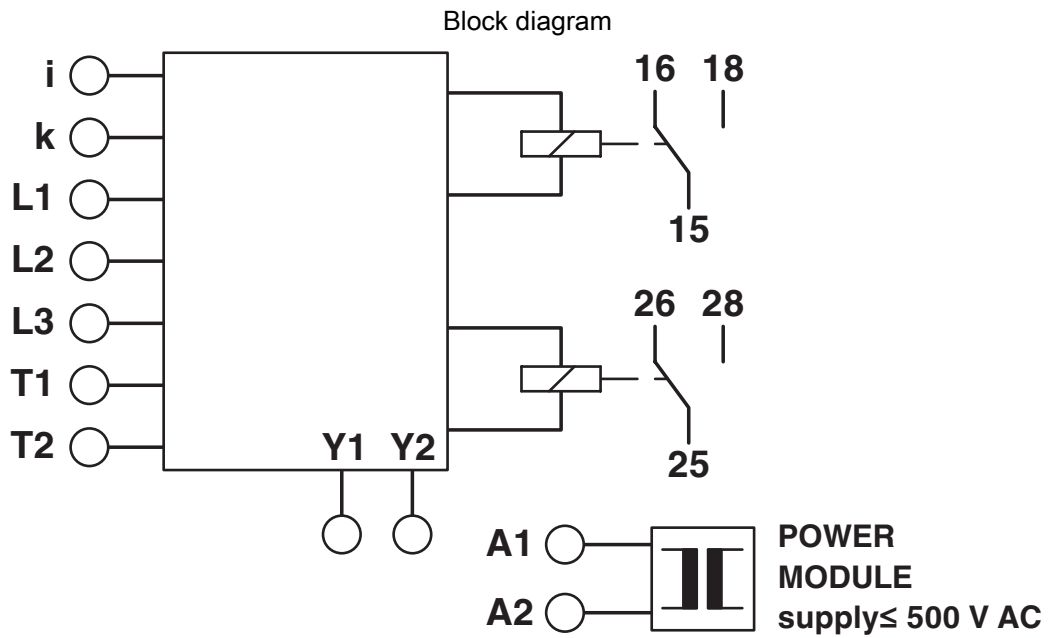
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## Drawings



# EMD-FL-RP-480 - Monitoring relay



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## Approvals

🔗 To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2900177>



**EAC**

Approval ID: TR\_TS\_D\_00573\_c



**EAC**

Approval ID: RU\*C-DE.\*08.B.00010

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## Classifications

### ECLASS

ECLASS-11.0	27371806
ECLASS-12.0	27371806

### ETIM

ETIM 8.0	EC001443
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### UNSPSC

UNSPSC 21.0	39121100
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## Environmental product compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e No hazardous substances above threshold values
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