

## Monitoring relay - EMD-FL-3V-500 - 2867979

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Monitoring relay for monitoring 3-phase voltages of 350...650 V AC, undervoltage, window, phase sequence, phase failure, asymmetry, supply voltage can be selected using power module, 2 PDTs

### Product Description

Increasingly higher demands are being placed on safety and system availability - across all sectors. Processes are becoming more and more complex, not only in mechanical engineering and the chemical industry, but also in plant and automation technology. Demands on power engineering are also increasing constantly. Error-free and therefore cost-effective operation can only be achieved through continuous monitoring of important network and system parameters. Electronic monitoring relays in the EMD series are available for a wide range of monitoring tasks to avoid the consequences of errors or to keep them within limits.

The operating states are indicated using colored LEDs, errors that may occur can be sent to a control system 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

- ✓ Adjustable asymmetry
- ✓ Adjustable via potentiometer on the front
- ✓ Adjustable response delay
- ✓ Variable supply voltage range



### Key Commercial Data

|              |                                                                                      |
|--------------|--------------------------------------------------------------------------------------|
| Packing unit | 1 pc                                                                                 |
| GTIN         |  |
| GTIN         | 4046356046985                                                                        |

### Technical data

#### Dimensions

|        |        |
|--------|--------|
| Width  | 45 mm  |
| Height | 90 mm  |
| Depth  | 113 mm |

#### Ambient conditions

|                                 |                  |
|---------------------------------|------------------|
| Ambient temperature (operation) | -25 °C ... 55 °C |
|---------------------------------|------------------|

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## Technical data

### Ambient conditions

|                                         |                                          |
|-----------------------------------------|------------------------------------------|
|                                         | -25 °C ... 40 °C (corresponds to UL 508) |
| Ambient temperature (storage/transport) | -25 °C ... 70 °C                         |
| Permissible humidity (operation)        | 15 % ... 85 %                            |
| Degree of protection                    | IP40 (Housing)                           |
|                                         | IP20 (Connection terminal blocks)        |
| Noise immunity                          | EN 61000-6-2                             |

### Input data

|                                                   |                                                                |
|---------------------------------------------------|----------------------------------------------------------------|
| Nominal input voltage $U_N$                       | 3 ~ 500 V                                                      |
| Maximum temperature coefficient                   | < 0.1 %/K                                                      |
| Function                                          | Undervoltage, window, asymmetry, phase sequence, phase failure |
| Min. setting range                                | -30 % ... 20 % (From $U_N$ )                                   |
| Max. setting range                                | -20 % ... 30 % (From $U_N$ )                                   |
| Min setting range of the voltage threshold value  | 350 V AC ... 600 V AC                                          |
| Max. setting range of the voltage threshold value | 400 V AC ... 650 V AC                                          |
| Setting range for response delay                  | 0.1 s ... 10 s                                                 |
| Basic accuracy                                    | ± 5 % (of scale end value)                                     |
| Setting accuracy                                  | ≤ 5 % (of scale end value)                                     |
| Repeat accuracy                                   | ≤ 2 %                                                          |
| Asymmetry                                         | 5 % ... 25% / OFF                                              |
| Recovery time                                     | 500 ms                                                         |

### Contact side

|                                       |                                                            |
|---------------------------------------|------------------------------------------------------------|
| Contact type                          | 2 floating PDT 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)                                            |

### Power supply

|                      |                                           |
|----------------------|-------------------------------------------|
| Supply voltage range | 230 V AC ... 500 V AC (see Power modules) |
|----------------------|-------------------------------------------|

### General

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| Mechanical service life       | approx. $2 \times 10^7$ cycles                         |
| Operating mode                | 100% operating factor                                  |
| Mounting position             | any                                                    |
| Assembly instructions         | on standard DIN rail NS 35 in accordance with EN 60715 |
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC             |
| Housing insulation material   | Polyamide PA, self-extinguishing                       |
| Color                         | green                                                  |

### Connection data

|                   |                  |
|-------------------|------------------|
| Connection method | Screw connection |
|-------------------|------------------|

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## Technical data

### Connection data

|                                  |                      |
|----------------------------------|----------------------|
| Stripping length                 | 8 mm                 |
| Conductor cross section solid    | 0.5 mm² ... 2.5 mm²  |
| Conductor cross section flexible | 0.25 mm² ... 2.5 mm² |
| Conductor cross section AWG      | 20 ... 14            |
| Tightening torque                | 1 Nm                 |

### Standards and Regulations

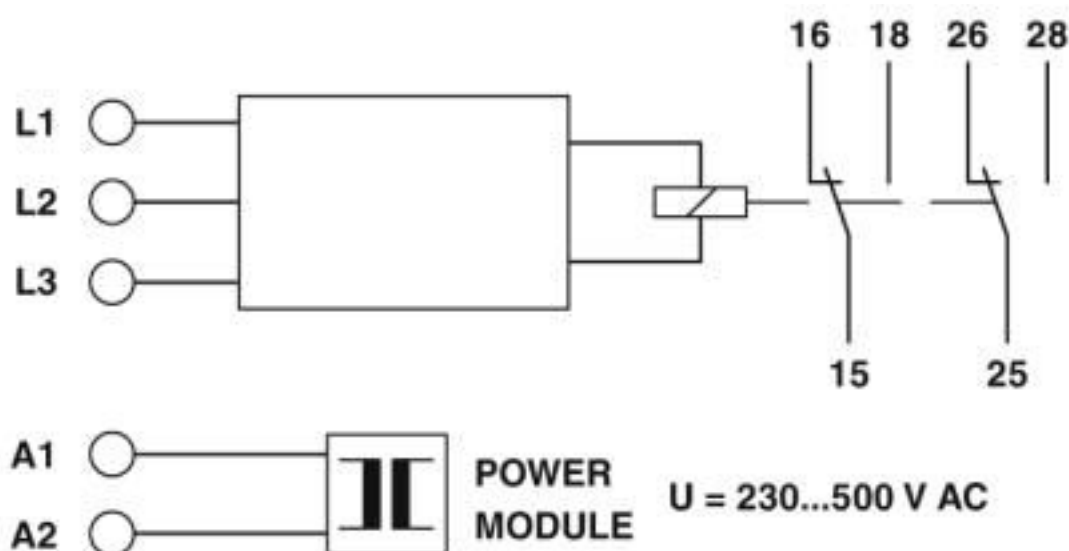
|                               |                                            |
|-------------------------------|--------------------------------------------|
| Electromagnetic compatibility | Conformance with EMC Directive 2004/108/EC |
| Noise emission                | EN 61000-6-3                               |
| Noise immunity                | EN 61000-6-2                               |
| Standards/regulations         | EN 50178                                   |
| Rated insulation voltage      | 600 V                                      |
| Insulation                    | Basic insulation                           |
| Pollution degree              | 2                                          |
| Overvoltage category          | III                                        |
| Low Voltage Directive         | Conformance with LV directive 2006/95/EC   |

### Environmental Product Compliance

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

## Drawings

Block diagram



## Monitoring relay - EMD-FL-3V-500 - 2867979

### Classifications

#### eCl@ss

|               |          |
|---------------|----------|
| eCl@ss 10.0.1 | 27371801 |
| eCl@ss 4.0    | 27371100 |
| eCl@ss 4.1    | 27371100 |
| eCl@ss 5.0    | 27371800 |
| eCl@ss 5.1    | 27371800 |
| eCl@ss 6.0    | 27371800 |
| eCl@ss 7.0    | 27371801 |
| eCl@ss 8.0    | 27371801 |
| eCl@ss 9.0    | 27371801 |

#### ETIM

|          |          |
|----------|----------|
| ETIM 2.0 | EC001438 |
| ETIM 3.0 | EC001438 |
| ETIM 4.0 | EC001438 |
| ETIM 5.0 | EC001438 |
| ETIM 6.0 | EC001438 |
| ETIM 7.0 | EC001438 |

#### UNSPSC

|               |          |
|---------------|----------|
| UNSPSC 6.01   | 30211916 |
| UNSPSC 7.0901 | 39121535 |
| UNSPSC 11     | 39121535 |
| UNSPSC 12.01  | 39121535 |
| UNSPSC 13.2   | 41113620 |
| UNSPSC 18.0   | 41113620 |
| UNSPSC 19.0   | 41113620 |
| UNSPSC 20.0   | 41113620 |
| UNSPSC 21.0   | 41113620 |

### Approvals

#### Approvals

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##### Approvals

UL Listed / cUL Listed / EAC / EAC / cULus Listed

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##### Ex Approvals

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#### Approval details

## Monitoring relay - EMD-FL-3V-500 - 2867979

### Approvals

UL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 172140

cUL Listed



<http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm>

FILE E 172140

EAC



TR\_TS\_D\_00573\_c

EAC



RU\*C-  
DE.\*08.B.00010

cULus Listed



### Accessories

#### Additional products

Power module - EMD-SL-PS45-110AC - 2885281



Power modules, pluggable, for EMD-FL-..., supply voltage: 88 V AC ... 121 V AC

Power module - EMD-SL-PS45-120AC - 2885744



Power modules, pluggable, for EMD-FL-..., supply voltage: 108 V AC ... 132 V AC

## Monitoring relay - EMD-FL-3V-500 - 2867979

### Accessories

Power module - EMD-SL-PS45-230AC - 2885294



Power modules, pluggable, for EMD-FL-..., supply voltage: 195 V AC ... 264 V AC

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Power module - EMD-SL-PS45-400AC - 2885304



Power modules, pluggable, for EMD-FL-..., supply voltage: 323...456 V AC

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Power module - EMD-SL-PS45-500AC - 2885317



Power modules, pluggable, for EMD-FL-..., supply voltage: 425...550 V AC

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