

## DIN Rail Mount 17.5 mm MUS/MUSF 80 AC/DC Part number 84872151



- Control relays monitoring their own power supply
- **MUS** : Over/undervoltage control
- Selectable latching (memory) function
- **MUSF** : Over/undervoltage control
- Adjustable time delays
- Control in 50 Hz, 60 Hz or DC
- True RMS measurement
- LED status indication

### Part numbers

|          | Type              | Functions                                | Controlled ranges |
|----------|-------------------|------------------------------------------|-------------------|
| 84872151 | MUS/MUSF 80 AC/DC | Under/Overvoltage control in window mode | 20 → 80 V AC/DC   |

### Specifications

#### Supply

|                                                |       |
|------------------------------------------------|-------|
| Polarity with DC voltage                       | ■     |
| Galvanic isolation of power supply/measurement | No    |
| Immunity from micro power cuts                 | 10 ms |

#### Inputs and measuring circuit

|                                              |                              |
|----------------------------------------------|------------------------------|
| Frequency of measured signal                 | 0 Hz, 50... 60 Hz            |
| Max. measuring cycle time                    | 250 ms/True RMS measurement  |
| Display precision                            | ±10 % of full scale          |
| Repetition accuracy with constant parameters | ± 0,5 %                      |
| Measuring error with voltage drift           | < 1 % across the whole range |
| Measuring error with temperature drift       | ± 0,05 % / °C                |

#### Timing

|                                              |                          |
|----------------------------------------------|--------------------------|
| Delay on threshold crossing Tt               | 0,1 → 10 sec (0, +10 %)  |
| Repetition accuracy with constant parameters | ± 0,5 %                  |
| Reset time                                   | 1,5 s                    |
| Delay on pick-up                             | 500 ms in AC / 1 s in DC |

#### Output

|                                               |                                                 |
|-----------------------------------------------|-------------------------------------------------|
| Type of output                                | 1 single pole changeover relay                  |
| Type of contacts                              | No cadmium                                      |
| Maximum breaking voltage                      | 250 V AC/DC                                     |
| Max. breaking current                         | 5 A AC/DC                                       |
| Min. breaking current                         | 10 mA / 5 V DC                                  |
| Electrical life (number of operations)        | 1 x 10 <sup>5</sup>                             |
| Breaking capacity (resistive)                 | 1250 VA AC                                      |
| Maximum rate                                  | 360 operations/hour at full load                |
| Operating categories acc. to IEC/EN 60947-5-1 | AC 12, AC 13, AC 14, AC 15, DC 12, DC 13, DC 14 |
| Mechanical life (operations)                  | 30 x 10 <sup>6</sup>                            |

#### Insulation

|                                                  |                                                  |
|--------------------------------------------------|--------------------------------------------------|
| Nominal insulation voltage IEC/EN 60664-1        | 250 V                                            |
| Insulation coordination (IEC/EN 60664-1)         | Overvoltage category III : degree of pollution 3 |
| Rated impulse withstand voltage (IEC/EN 60664-1) | 4 kV (1,2 / 50 µs)                               |
| Dielectric strength (IEC/EN 60664-1)             | 2 kV AC 50 Hz 1 min                              |
| Insulation resistance (IEC/EN 60664-1)           | > 500 MΩ / 500 V DC                              |

#### General characteristics

|                                                       |                                                                                                                                                                                      |
|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display power supply                                  | Green LED                                                                                                                                                                            |
| Display relay                                         | Yellow LED                                                                                                                                                                           |
| Casing                                                | 17,5 mm                                                                                                                                                                              |
| Mounting                                              | On 35 mm symmetrical DIN rail, IEC/EN 60715                                                                                                                                          |
| Mounting position                                     | All positions                                                                                                                                                                        |
| Material : enclosure plastic type VO to UL94 standard | Incandescent wire test according to IEC 60695-2-11 & NF EN 60695-2-11                                                                                                                |
| Protection (IEC/EN 60529)                             | Terminal block : IP 20<br>Casing : IP 30                                                                                                                                             |
| Connecting capacity IEC/EN 60947-1                    | Rigid : 1 x 4 <sup>2</sup> - 2 x 2,5 <sup>2</sup> mm <sup>2</sup><br>1 x 11 AWG - 2 x 14 AWG<br>Flexible with ferrules : 1 x 2,5 <sup>2</sup> - 2 x 1,5 <sup>2</sup> mm <sup>2</sup> |

|                                         |                                                         |
|-----------------------------------------|---------------------------------------------------------|
|                                         | 1 x 14 AWG - 2 x 16 AWG                                 |
| Max. tightening torques IEC/EN 60947-1  | 0,6 →1 Nm / 5,3 →8,8 Lbf.In                             |
| Operating temperature IEC/EN 60068-2    | -20 →+50 °C                                             |
| Storage temperature IEC/EN 60068-2      | -40 →70 °C                                              |
| Humidity IEC/EN 60068-2-30              | 2 x 24 hr cycle 95 % RH max. without condensation 55 °C |
| Vibrations according to IEC/EN60068-2-6 | 10 →150 Hz, A = 0.035 mm                                |
| Shocks IEC/EN 60068-2-6                 | 5 g                                                     |

Standards

|                                          |                                                                        |
|------------------------------------------|------------------------------------------------------------------------|
| Product standard                         | IEC/EN 6025561                                                         |
| Electromagnetic compatibility (EMC)      | IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4 |
| Certifications                           | UL, CSA, GL                                                            |
| Marking                                  | CE (LVD) 73/23/EEC - EMC 89/336/EEC                                    |
| Conformity with environmental directives | RoHS, WEEE                                                             |

Supply

|                             |                          |
|-----------------------------|--------------------------|
| Supply voltage Un           | 24 →48 V AC/DC           |
| Operating range             | 15 →100 V AC/DC          |
| AC supply voltage frequency | 50 / 60 Hz ± 10 %        |
| Power consumption at Un     | 3.9 VA in AC/1.6 W in DC |

Inputs and measuring circuit

|                      |                                                               |
|----------------------|---------------------------------------------------------------|
| Threshold adjustment | 20 →80 V AC/DC                                                |
| Hysteresis           | 5 →20 % of threshold (MUS)<br>3 % (fixed) of threshold (MUSF) |

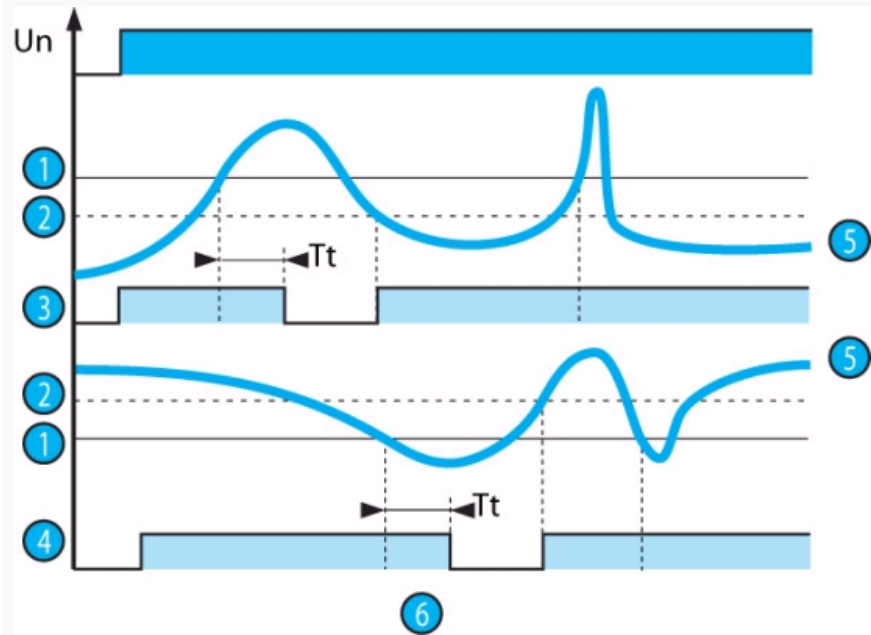
General characteristics

|        |      |
|--------|------|
| Weight | 80 g |
|--------|------|

Accessories

| Description                                 | Code     |
|---------------------------------------------|----------|
| Removable sealable cover for 17.5 mm casing | 84800000 |

Principles



The under or overvoltage threshold value is set by a graduated potentiometer by reading the Un scale to be monitored directly.

The hysteresis is set by a graduated potentiometer from 5 to 20 % of the preset threshold. The hysteresis value cannot be higher than the extremes of the measurement range.

In overvoltage mode, if the controlled voltage exceeds the preset threshold for longer than the time set on the front face (0.1 to 10 s), the output relay opens and LED R is extinguished. During the time delay, this LED flashes.

Once the voltage falls below the threshold value minus the hysteresis, the relay closes instantaneously.

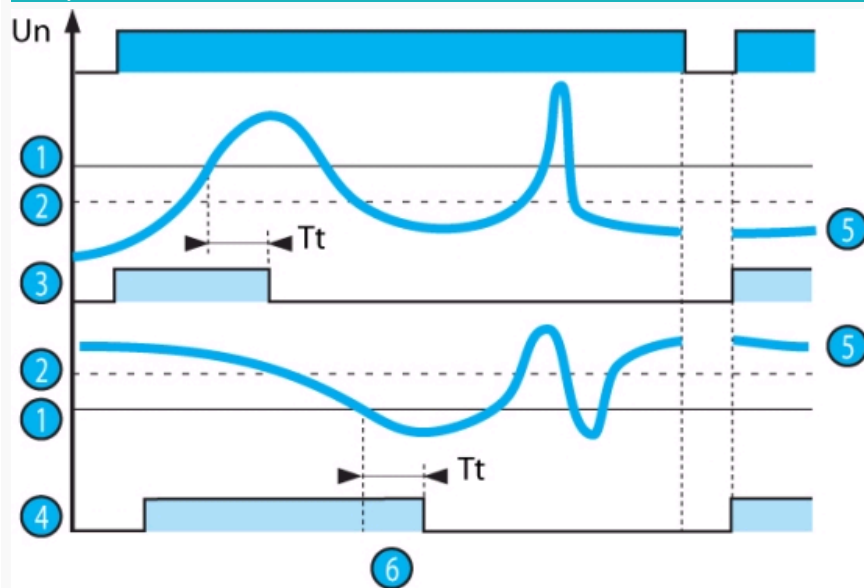
In undervoltage mode, if the controlled voltage falls below the preset threshold for longer than the time set on the front face (0.1 to 10 s), the output relay opens and LED R is extinguished. During the time delay, this LED flashes.

Once the voltage rises above the threshold value plus the hysteresis, the relay closes instantaneously.

| N° | Legend                     |
|----|----------------------------|
| 1  | Threshold                  |
| 2  | Hysteresis                 |
| 3  | Overvoltage function relay |

|   |                                       |
|---|---------------------------------------|
| ④ | Undervoltage underload function relay |
| ⑤ | Controlled signal                     |
| ⑥ | Delay on threshold crossing (Tt)      |

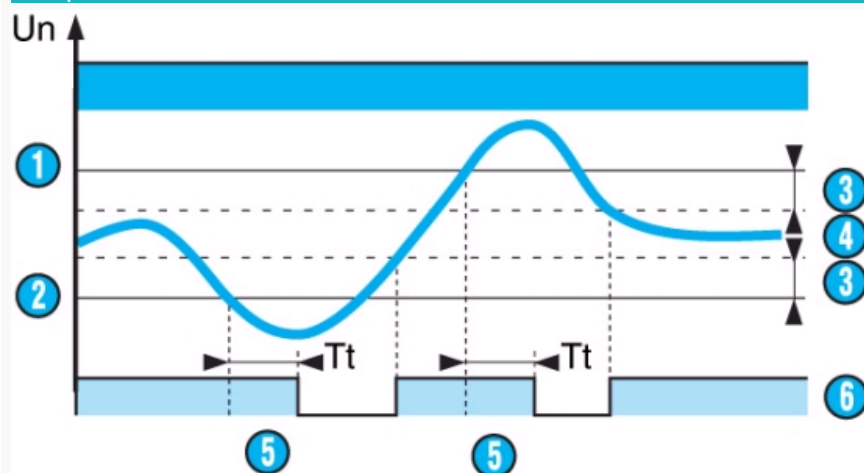
## Principles



If "with memory" mode has been selected, the relay opens and stays in this position when threshold crossing is detected. The power supply must be disconnected to reset the product.

| N° | Legend                           |
|----|----------------------------------|
| ①  | Threshold                        |
| ②  | Hysteresis                       |
| ③  | Overvoltage function relay       |
| ④  | Undervoltage function relay      |
| ⑤  | Controlled signal                |
|    | Delay on threshold crossing (Tt) |

## Principles



MUSF relays operate in window mode : they check that the controlled voltage stays between a minimum and maximum threshold.

The under and overvoltage threshold values are set by two graduated potentiometers by reading the Un scale to be monitored directly.

The hysteresis is fixed, value : 3 % of the preset thresholds.

If the controlled voltage exceeds the preset upper threshold, or falls below the preset lower threshold for longer than the time set on the front face (0.1 to 10 s), the output relay opens and LED R is extinguished. During the time delay, this LED flashes.

Once the voltage returns to below the upper threshold value minus the hysteresis, or above the lower threshold value plus the hysteresis, the relay closes instantaneously.

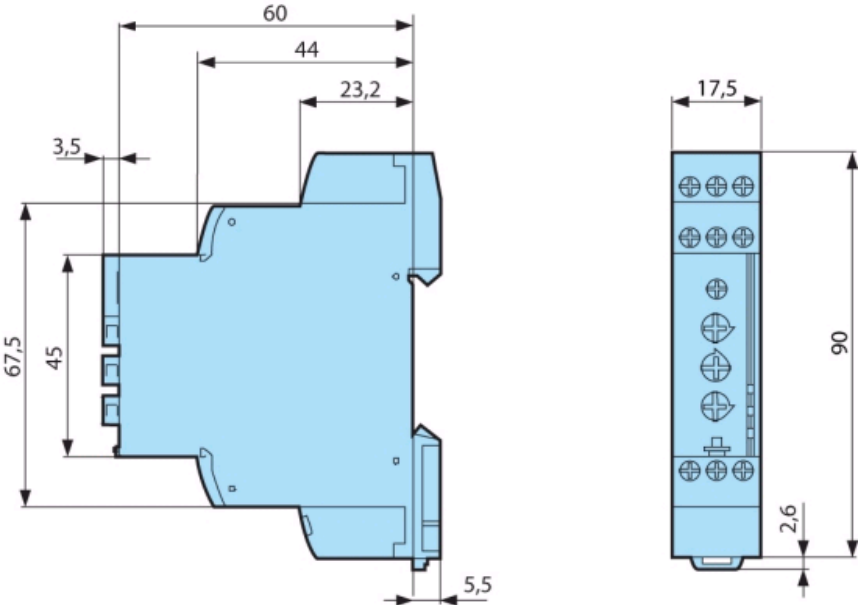
When the unit is powered up with a measured fault, the relay stays open.

| N° | Legend |
|----|--------|
|----|--------|

|   |                                  |
|---|----------------------------------|
| 1 | High threshold                   |
| 2 | Low threshold                    |
| 3 | Hysteresis                       |
| 4 | Controlled signal                |
| 5 | Delay on threshold crossing (Tt) |
| 6 | Relay                            |

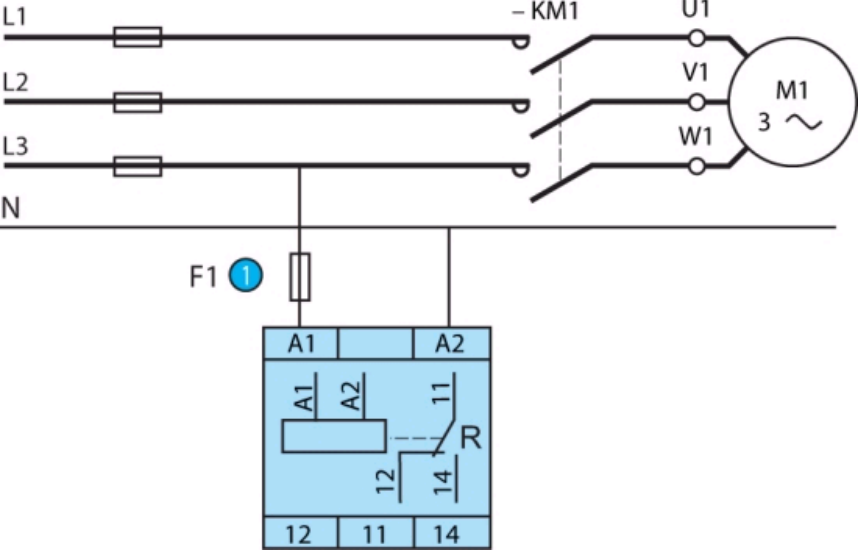
Dimensions (mm)

MUS - MUSF



Connections

MUS - MUSF



| N° | Legend                        |
|----|-------------------------------|
| 1  | 1 A fast-blow fuse or cut-out |

Product adaptations



- Customisable colours and labels
  - Fixed threshold in the generic measurement range
  - Fixed or adjustable time delay
  - Adjustable hysteresis
- Adaptations dedicated to MUS 12 DC, MUS 80 AC, MUS 260 AC :
- Possible to delete settings
  - Adjustable fixed hysteresis

## Данный компонент на территории Российской Федерации

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Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

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Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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