



## 17.5 mm DIN rail mounting MUS2 Part number 88826004



- Relay or solid state output
- Multi-function or mono-function
- Multi-range
- Multi-voltage
- Screw or spring terminals
- LED status indicator (relay version)
- Option of connecting an external power supply to the control input
- 3-wire sensor control option

|          | Type  | Functions                                  | Timing    | Output             | Nominal rating | Connections      | Supply voltage         |
|----------|-------|--------------------------------------------|-----------|--------------------|----------------|------------------|------------------------|
| 88826105 | MUR1  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826115 | MAR1  | A - At                                     | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826125 | MBR1  | B                                          | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826135 | MCR1  | C                                          | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826145 | MHR1  | H - Ht                                     | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826155 | MLR1  | Li-L                                       | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826100 | MUR4  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 12 V AC / DC           |
| 88826103 | MUR3  | A - At - B - C - H - Ht-Di - D - Ac - Bw   | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 12→240 V AC/DC         |
| 88826503 | MURc3 | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h | 1 changeover relay | 8 A            | Spring terminals | 12 →240 V AC / DC      |
| 88826185 | MXR1  | Ad - Ah - N - O - P - Pt - Tl - Tt - W     | 0,1s→100h | 1 changeover relay | 8 A            | Screw terminals  | 24 V DC / 24 →240 V AC |
| 88826004 | MUS2  | A - At - B - C - H - Ht - Di - D - Ac - Bw | 0,1s→100h | Solid state        | 0,7 A          | Screw terminals  | 24 →240 V AC           |
| 88826014 | MAS5  | A                                          | 0,1s→100h | Solid state        | 0,7 A          | Screw terminals  | 24 →240 V AC / DC      |
| 88826044 | MHS2  | H                                          | 0,1s→100h | Solid state        | 0,7 A          | Screw terminals  | 24 →240 V AC           |
| 88826054 | MLS2  | Li - L                                     | 0,1s→100h | Solid state        | 0,7 A          | Screw terminals  | 24 →240 V AC           |

### Timing

|                                                                       |                                                                                      |
|-----------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Timing ranges (7 ranges)                                              | 1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h<br>TK2R1: 0.6s - 2.5s - 20s - 160 s |
| Repetition accuracy with constant parameters                          | ± 0.5% (IEC/EN 1812-1)                                                               |
| Drift Temperature                                                     | ± 0,05% / °C                                                                         |
| Drift Voltage                                                         | ± 0.2% / V                                                                           |
| Display accuracy according to IEC/EN 1812-1                           | ± 10% / 25°C                                                                         |
| Minimum pulse duration typically (relay version)                      | 30 ms                                                                                |
| Minimum pulse duration typically (solid state version)                | 50 ms                                                                                |
| Minimum pulse duration typically (relay version under load)           | 100 ms                                                                               |
| Maximum reset time by de-energisation typically (relay version)       | 100 ms                                                                               |
| Maximum reset time by de-energisation typically (solid state version) | 350 ms                                                                               |
| Immunity from micro power cuts: typical                               | > 10 ms                                                                              |

### Supply

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| Multi-voltage power supply | Depending on version                                 |
| Frequency (Hz)             | 50 / 60                                              |
| Operating range            | 85 to 110% Un<br>(85 to 120% Un for 12V AC/DC)       |
| Operator factor            | 100%                                                 |
| Max. absorbed power        | 0,6 W 24 V AC/DC<br>1,5 W 230 V AC<br>32 VA 230 V AC |

### Output specification

|                                                        |                                                |
|--------------------------------------------------------|------------------------------------------------|
| 1 or 2 changeover relays, AgNi (cadmium-free)          | 2000 VA/80 W                                   |
| Rated power                                            | 2000 VA/80 W                                   |
| Maximum breaking current                               | 8 A AC 8A DC                                   |
| Minimum breaking current                               | 10 mA / 5 V DC                                 |
| Voltage breaking capacity                              | 250 V AC/ DC                                   |
| Electrical life (operations)                           | 10 <sup>5</sup> operations 8 A 250 V resistive |
| Mechanical life (operations)                           | 5x10 <sup>6</sup>                              |
| Breakdown voltage acc. to IEC/EN 61812-1               | 2.5 kV / 1 min / 1 mA / 50 Hz                  |
| Impulse voltage acc. to IEC/EN 60664-1, IEC/EN 61812-1 | 5 kV, wave 1.2 / 50 µs                         |

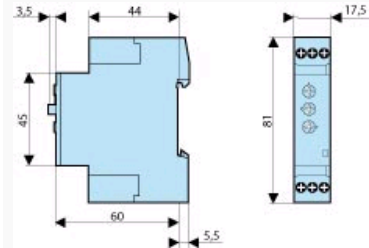
### Solid state output

|                            |                                 |
|----------------------------|---------------------------------|
| Rated power                | 0,7 A AC/DC<br>20 °C (0,5 A UL) |
| Derating                   | 5 mA / °C                       |
| Maximum admissible current | 20 A ≤ 10 ms                    |
| Minimum breaking current   | 10 mA                           |

|                                                       |                                                                                         |
|-------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Leakage current                                       | < 5 mA                                                                                  |
| Voltage breaking capacity                             | 250 V AC/ DC                                                                            |
| Maximum voltage drop at terminals                     | 3 wire 4V - 2 wire 8V                                                                   |
| Electrical life (operations)                          | 10 <sup>8</sup>                                                                         |
| Mechanical life (operations)                          | 10 <sup>8</sup>                                                                         |
| Breakdown voltage acc. to IEC/EN 60664-1, IEC 60255-5 | 2.5 kV to 1 mA / 1 min                                                                  |
| Input type                                            | Volt-free contact                                                                       |
|                                                       | 3-wire PNP output control option residual voltage: 0.4V whatever the timer power supply |

|                                                                                                 |                                                                                                |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|
| General characteristics                                                                         |                                                                                                |
| Conformity to standards                                                                         | IEC/EN 61812-1<br>IEC/EN 61000-6-1<br>IEC/EN 61000-6-2<br>IEC/EN 61000-6-3<br>IEC/EN 61000-6-4 |
| Certifications                                                                                  | CE, UL, cUL, CSA, GL                                                                           |
| Temperature limits use (°C)                                                                     | -20 →+60                                                                                       |
| Temperature limits stored (°C)                                                                  | -30 →+60                                                                                       |
| Installation category<br>(acc. to IEC/EN 60664-1 )                                              | Voltage surge category                                                                         |
| Creepage distance and clearance acc. to IEC/EN 60664-1                                          | 4 kV / 3                                                                                       |
| Protection (IEC/EN 60529)                                                                       | IP 20                                                                                          |
|                                                                                                 | IP 40                                                                                          |
| Degree of protection acc. to IEC/EN 60529 Front face<br>(except Tk2R1)                          | IP 50                                                                                          |
| Vibration resistance<br>acc. to IEC/EN 60068-2-6                                                | f = 10 ■ 55 Hz<br>A = 0,35 mm                                                                  |
| Relative humidity no condensation acc. to IEC/EN 60068-2-30                                     | 93% sans condensation                                                                          |
| Electromagnetic compatibility - Immunity to electrostatic<br>discharges acc to IEC/EN 61000-4-2 | Level III (Air 8 KV / Contact 6 KV)                                                            |
| Immunity to electrostatic fields acc. ENV 50140/204<br>CEI/EN 61000-4-3                         | Level III 10V/m (80 MHz to 1 GHz)                                                              |
| Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4                                     | Level III (direct 2kV / Capacitive coupling clamp 1 KV)                                        |
| Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5                                | Level III (2 KV / common mode 2 KV/residual current mode 1KV)                                  |
| Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6                             | Level III (10V rms: 0.15 MHz to 80 MHz)                                                        |
| Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11                                   | 30%/10 ms<br>60%/100 ms ><br>95%/5 s                                                           |
| Mains-borne and radiated emissions acc. to EN 55022<br>(CISPR22), EN55011 (CISPR11)             | Class B                                                                                        |
| Fixing: Symmetrical DIN rail                                                                    | 35 mm                                                                                          |
| Connection capacity - without ferrule                                                           | 2 x 2,5 mm <sup>2</sup>                                                                        |
| Connection capacity - with ferrule                                                              | 2 x 1,5 mm <sup>2</sup>                                                                        |
| Spring terminals, 2 terminals per connection point -<br>flexible wire                           | 1,5 mm <sup>2</sup>                                                                            |
| Spring terminals, 2 terminals per connection point - rigid<br>wire                              | 2,5 mm <sup>2</sup>                                                                            |
| Housing material                                                                                | Self-extinguishing                                                                             |
| Weight: casing 17,5 mm                                                                          | 60 g                                                                                           |
| Weight: casing 22,5 mm                                                                          | 90 g                                                                                           |
| Weight: plug-in casing                                                                          | 80 g                                                                                           |

|                                                                               |
|-------------------------------------------------------------------------------|
| Display                                                                       |
| Visualisation des états par 1 LED                                             |
| - Verte clignotante sous tension                                              |
| Indication du fonctionnement LED verte                                        |
| Flashes brefs :                                                               |
| - minuterie sous tension, pas de temporisation en cours (sauf Di-D et Li-L) * |
| Clignotement :                                                                |
| - temporisation en cours                                                      |
| Allumage permanent :                                                          |
| - relais enclenché, pas de temporisation en cours                             |

|                                                                                    |
|------------------------------------------------------------------------------------|
| Dimension Diagram :                                                                |
|  |

Curves : Function A



Function A

Delay on energisation

Curves : Function Ac



Function Ac

Timing after closing and opening of control contact 1 relay

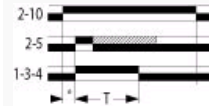
Curves : Function At



Function At

Timing on energisation with memory 1 relay

Curves : Function B



Function B

Timing on impulse one shot 1 relay

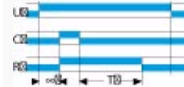
Curves : Function Bw



Function Bw

Pulse output (adjustable) 1 relay

Curves : Function C



Function C

Timing after impulse 1 timer

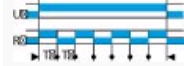
Curves : Function D



Function D

Flip-flop 1 relay Pause start

Curves : Function Di



Function Di

Flip-flop 1 relay Pulse start

Curves : Function H



Function H

Timing on energisation 1 relay

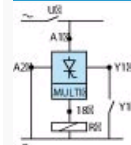
Curves : Function Ht



Function Ht

Delay on energisation with memory 1 relay

: Solid state output



Functions

A - At / H - Ht / B / C / Di - D / Ac / BW  
Ad - Ah - N - O - P - Pt - Tl - Tt - W