

# › MAR1

## › Timers

### › DIN rail mount

### › 17.5 mm - 1 Relay 8A

- › Multi-function or mono-function
- › Multi-range
- › Multi-voltage
- › Screw or spring terminals
- › LED status indicator (relay version)
- › Possibility of external load connection in parallel to the control input
- › 3-wire PNP sensor compatible



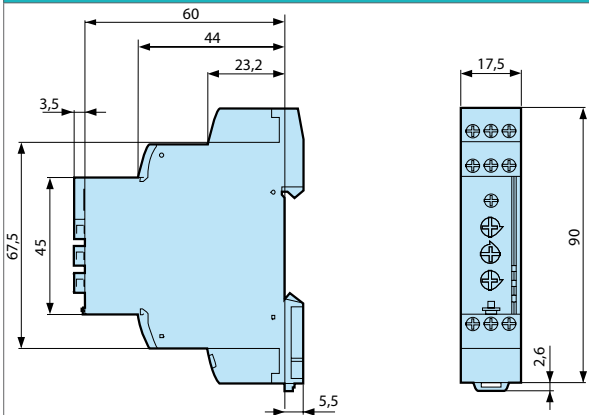
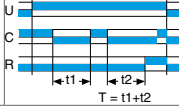
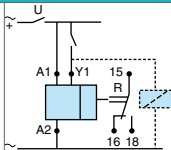
| Specifications |               |                    |                |                 |                         |          |
|----------------|---------------|--------------------|----------------|-----------------|-------------------------|----------|
| Functions      | Timing        | Output             | Nominal rating | Connections     | Supply voltage          | Code     |
| A - At         | 0,1 s → 100 h | 1 changeover relay | 8 A            | Screw terminals | 24 V DC / 24 → 240 V AC | 88827115 |

| Timing                                                                |                                                  |
|-----------------------------------------------------------------------|--------------------------------------------------|
| Timing ranges (7 ranges)                                              | 1 s - 10 s - 1 min - 10 min - 1 h - 10 h - 100 h |
| Repetition accuracy with constant parameters                          | ± 0.5 % (IEC/EN 61812-1)                         |
| Drift Temperature                                                     | ± 0,05 % / °C                                    |
| Drift Voltage                                                         | ± 0,2 % / V                                      |
| Display accuracy according to IEC/EN 61812-1                          | ± 10 % / 25 °C                                   |
| Immunity from micro power cuts : typical                              | < 10 ms                                          |
| 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)       | 120 ms                                           |
| Maximum reset time by de-energisation typically (solid state version) | 350 ms                                           |

| Supply                     |                                                                                           |
|----------------------------|-------------------------------------------------------------------------------------------|
| Multi-voltage power supply | Depending on version                                                                      |
| Frequency (Hz)             | 50 / 60                                                                                   |
| Operating factor           | 100 %                                                                                     |
| Operating range            | 85 → 110 % Un<br>85 → 120 % Un for 12 V AC / DC                                           |
| Max. absorbed power        | 32 VA (240 VAC)<br>1,5 W (240 VDC)<br>0,6 W (24 VDC)<br>0,7 VA (12 VAC)<br>0,7 W (12 VDC) |

| Output specification |              |
|----------------------|--------------|
| Rated power          | 2000 VA/80 W |

| Output specification                                                                         |                                                                                                                          |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Maximum breaking current                                                                     | 8 AAC 250 VAC resistive<br>8 ADC 30 VDC resistive                                                                        |
| Minimum breaking current                                                                     | 10 mA / 5 VDC                                                                                                            |
| Voltage breaking capacity                                                                    | 250 VAC / 8 AAC resistive<br>250 VDC / 0,3 A resistive                                                                   |
| Electrical life (operations)                                                                 | 10 <sup>5</sup><br>8 A 250 VAC resistive                                                                                 |
| Mechanical life (operations)                                                                 | 10 x 10 <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<br>wave 1.2 / 50 µs                                                                                                 |
| 1 or 2 changeover relays, AgNi (cadmium-free)                                                | 1 C/O                                                                                                                    |
| 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 (acc. to IEC/EN 60664-1)                                               | Voltage surge category III                                                                                               |
| Creepage distance and clearance acc. to IEC/EN 60664-1                                       | 4 kV / 3 mm                                                                                                              |
| Protection (IEC/EN 60529)                                                                    | IP20<br>IP40                                                                                                             |
| Degree of protection acc. to IEC/EN 60529 Front face                                         | IP50                                                                                                                     |
| Vibration resistance acc. to IEC/EN 60068-2-6                                                | 20 m/s <sup>2</sup> 10 Hz → 150 Hz                                                                                       |
| Relative humidity no condensation acc. to IEC/EN 60068-2-30                                  | 93 % non-condensing                                                                                                      |
| Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC/EN 61000-4-2 | Level III (Air 8 kV / Contact 6 kV)                                                                                      |
| Immunity to radiated, radio-frequency, electromagnetic field acc. IEC/EN 61000-4-3           | Level I (1 V/m : 2,0 G Hz → 2,7 G Hz)<br>Level II (3 V/m : 1,4 G Hz → 2,0 G Hz)<br>Level III (10 V/m : 80 M Hz → 1 G Hz) |
| Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4                                  | Level III (direct 2 kV / 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 1 kV)                                                           |
| Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6                          | Level III (10V rms : 0.15 M Hz to 80 M Hz)                                                                               |
| Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11                                | 0 % residual voltage, 1 cycle<br>70 % residual voltage, 25/30 cycles                                                     |
| Mains-borne and radiated emissions acc. to EN 55022 (CISPR22), EN55011 (CISPR11)             | Class B                                                                                                                  |
| Fixing : Symmetrical DIN rail                                                                | 35 mm                                                                                                                    |
| Terminal capacity Single-wire without ferrule                                                | 1 x 0,5 → 3,3 mm <sup>2</sup> (AWG 20 → AWG 12)<br>2 x 0,5 → 2,5 mm <sup>2</sup> (AWG 20 → AWG 14)                       |
| Terminal capacity Multi-wire with ferrule                                                    | 1 x 0,5 → 2,5 mm <sup>2</sup> (AWG 20 → AWG 14)<br>2 x 0,5 → 1,5 mm <sup>2</sup> (AWG 20 → AWG 16)                       |
| Housing material                                                                             | Self-extinguishing                                                                                                       |
| Shock test IEC/EN 60068-2-27                                                                 | 15 g - 11 ms                                                                                                             |
| Short interruption on power line acc to IEC/EN 61000-4-11                                    | 0 % residual voltage, 250/300 cycles                                                                                     |
| Spring terminals, 2 terminals per connection point - flexible wire                           | 2 x 0,5 → 1,5 mm <sup>2</sup> (AWG 20 → AWG 16)                                                                          |
| Spring terminals, 2 terminals per connection point - rigid wire                              | 2 x 0,5 → 1,5 mm <sup>2</sup> (AWG 20 → AWG 16)                                                                          |

| General characteristics                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Weight : casing 17,5 mm                                                            | 88827105 (MUR1) : 63 g<br>88827115 (MAR1) : 63 g<br>88827125 (MBR1) : 63 g<br>88827135 (MCR1) : 62 g<br>88827145 (MHR1) : 63 g<br>88827150 (MLR4) : 63 g<br>88827155 (MLR1) : 64 g<br>88827100 (MUR4) : 62 g<br>88827103 (MUR3) : 66 g<br>88827503 (MURc3) : 59 g<br>88827150 (MLR4) : 63 g<br>88827185 (MXR1) : 63 g<br>88827004 (MUS2) : 55 g<br>88827014 (MAS5) : 53 g<br>88827044 (MHS2) : 53 g<br>88827054 (MLS2) : 56 g |
| Insulation resistance according to IEC/EN 60664-1                                  | 100 MOhm(s) (500 V DC)                                                                                                                                                                                                                                                                                                                                                                                                        |
| Dimensions                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                               |
|  |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Curves                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Function A<br>Delay on energisation 1 relay                                        |                                                                                                                                                                                                                                                                                                                                            |
| Function At<br>Timing on energisation with memory 1 relay                          |                                                                                                                                                                                                                                                                                                                                            |
| Connections                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 1 changeover relay output                                                          |                                                                                                                                                                                                                                                                                                                                            |

## Connections

