

# BM2R

## Timers

### Syrline

#### 17.5 mm - 2 Relay 8A

- › Multi-function or mono-function
- › Multi-range (12 function)
- › Multi-voltage 12 →240 V AC/DC
- › LED status indicator (relay version)
- › Possibility of external load connection in parallel to the control input
- › 3-wire PNP sensor compatible



**SYR-LINE**

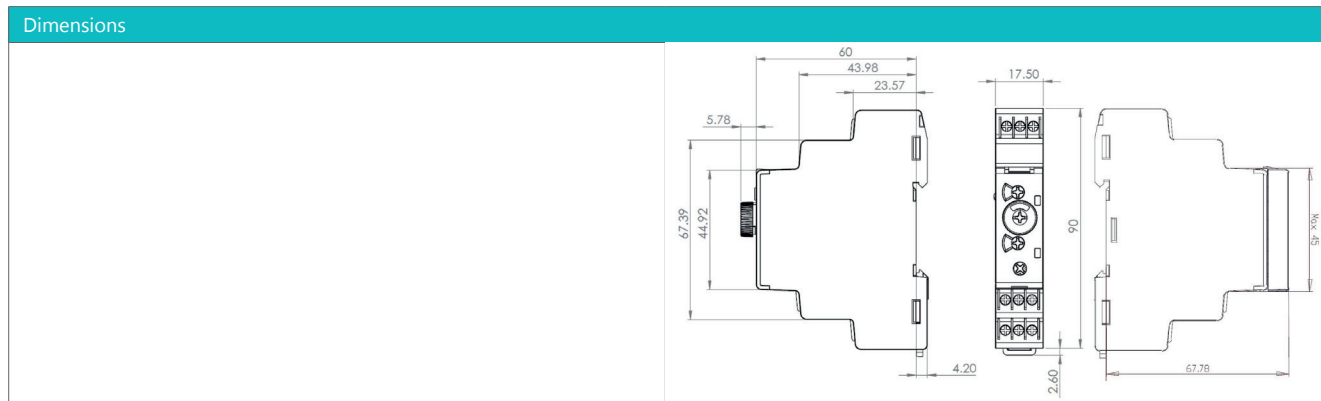
| Specifications                                |                |                     |                |                 |                |           |
|---|----------------|---------------------|----------------|-----------------|----------------|-----------|
| Functions                                     | Delay          | Output              | Nominal rating | Connections     | Supply voltage | Code      |
| A - Ac - At - B - C - D - Di - H - Ht -N - TL | 0,5 s →10 days | 2 changeover relays | 2 x 8 A        | Screw terminals | 12 →240 V ~/∞  | BM2R08MV1 |

| Output relay                                |   |
|---|---|
| Contact arrangement                         | 2 CO (SPDT) (Changeover -Single Pole Double Throw-)<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous |
| Maximum switching voltage                   | 250 VAC / 8 A resistive / 250 VDC / 0.3 A resistive   |
| Switching current rate (resistive)          | NO / NC : 8A 250 V AC / 8 A 30 VDC @ 25°C<br>NO / NC : 5A 250 V AC / 5 A 30 VDC @ 60°C  |
| Minimum switching contact                   | 10 mA / 5 VDC   |
| Maximum switching power (resistive)         | 2000 VA / 80 W @ 25°C   |
| Electrical life                             | 10 <sup>5</sup> cycles min at 250 VAC/ 8 A resistive  |
| Maximum rate (at max switching power)       | 360 cycles /hour  |
| Mechanical life                             | 10 x 10 <sup>6</sup> cycles   |
| Rated impulse voltage                       | 5 kV (1.2/50µs)   |
| Dielectric strength between coil / contacts | IEC 60664-1: 5 kV /1 min / 1 mA / 50 Hz   |
| Dielectric strength between open contacts   | 2.5 kV /1 min / 1 mA / 50 Hz  |

| Timing  |  |
|---|--|
| Timing ranges (7 ranges)  | 0.5→10s, 0.05→1min, 0.5→10min, 0.05→1h, 0.5→10h, 0.05→1day, 0.5→10days |
| Minimum pulse duration typically (relay version)                | IEC 1812-1: 30 ms<br>100 ms with load                                  |
| Maximum reset time by de-energisation typically (relay version) | IEC 1812-1: 120 ms   |
| Repeatability   | IEC 1812-1: ≤ ± 0,5 %  |
| Repetition accuracy with constant parameters                    | IEC 1812-1: ≤ ± 10 %   |
| Drift Temperature   | ≤ ± 0.05 % / °C  |
| Voltage-dependent drift   | ≤ ± 0.2 % / V  |

| Supply   |  |
|--|--|
| Multi-voltage power supply   | 12→240 V <sub>~</sub> /V <sub>DC</sub>   |
| Operating range  | 15 %, +10 %  |
| Operating frequency (Hz)   | 50 / 60 Hz ± 5 %   |
| Galvanic isolation   | No   |
| Max. absorbed power  | Approx. 3 VA (V <sub>~</sub> ) 1.5 W (V <sub>DC</sub> )  |
| Immunity from micro power cuts   | 10 ms  |
| General characteristics  |  |
| Insulation voltage, IEC 60664-1  | 300 V  |
| Installation category (acc. to IEC/EN 60664-1)   | Overvoltage category III; pollution degree 2   |
| Impulse voltage CEI/EN 60664-1   | 4 kV (1,2 / 50 µs)   |
| Clearance / Creepage distances   | IEC 60664-1: 3 mm / 3.2 mm   |
| Breakdown voltage  | EN-61812-1: 2,5 kV / 1 min / 1 mA / 50 Hz  |
| Insulation resistance  | NFC 93 050: > 500 MΩ / 250 V <sub>DC</sub> / 1min  |
| Status indication  | Un: green LED blinks when count, continuous ON when supplied<br>R: yellow LED continuous ON when the relay is ON   |
| Casing   | DIN 43880: 17,5 mm   |
| Fixing: Symmetrical DIN rail   | EN 50022: 35 mm  |
| Mounting position  | All positions  |
| Housing material   | Enclosure plastic type UL94 - V0   |
| Protection (IEC/EN 60529)  | Housing: IP40 / Terminal block: IP20   |
| Terminal capacity Single-wire without ferrule  | IEC 60947-1<br>1 x 0.5 → 3.3 mm <sup>2</sup> (AWG 20 → AWG 12)<br>2 x 0.5 → 1.5 mm <sup>2</sup> (AWG 20 → AWG 16)  |
| Max. tightening torque (Nm)  | IEC 60947-1: 0,5 N.m / 4,4 lbf.in  |
| Operating temperature range (°C)   | IEC 60068-2: -20 °C → +60 °C   |
| Storage temperature range (°C)   | IEC 60068-2: -40 °C → +70 °C   |
| Relative humidity no condensation acc. to IEC/EN 60068-2-30                                  | 93 % without condensation  |
| Vibration resistance according to IEC/EN 60068-2-6   | ± 0.15 mm from 10 Hz → 60 Hz 2g from 60 Hz → 150 Hz  |
| Impact resistance  | IEC 60068-2-27<br>15gn - 11ms; 3 x 6 axis (output OFF)<br>5gn - 11ms; 3 x 6 axis (Output ON)   |
| Drop to concrete floor   | IEC 60068-2-32<br>High: 0.75m  |
| Weight: casing 17,5 mm   | 70 g<br>80 g with packaging  |
| Directives   | 2014/30/EU: EMC<br>2014/35/EU: low voltage   |
| Certifications   | CE - cULus Listed Industrial Control Equipment - CCC   |
| Conformity to standards  | CEI 60664-1: Insulation coordination for equipment within low-voltage systems<br>CEI 61812-1/ Specified time relays for industrial use<br>UL 60947-4-1/ Industrial Control Equipment (NRNT- Industrial Control Switches) |
| Conformity with environmental directives   | 2015/863/UE: RoHS<br>1907/2006: Reach<br>2012/19/UE: WEEE  |
| Electromagnetic compatibility IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4                    | Immunity for industrial environment<br>Emission residential environment<br>Emission industrial environment   |
| Electromagnetic compatibility - Immunity to electrostatic discharges acc to IEC/EN 61000-4-2 | Level III Air ± 8 kV / Contact ± 6 kV  |

| General characteristics  |  |
|--|--|
| Immunity to radiated, radio-frequency, electromagnetic field acc. IEC/EN 61000-4-3 | Level III<br>10 V/m (80 M Hz to 1 G Hz) 80% AM (1 k Hz)<br>3 V/m (1,4 →2 G Hz) 80% AM (1K Hz)<br>1V/m (2 →2.7 G Hz) 80% AM (1K Hz)   |
| Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4                        | Level III direct ± 2 kV (power supply) / capacitive coupling clamp ± 1 kV (command input and outputs)  |
| Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5                   | Level III<br>line-to-earth ± 2 kV / line-to-line ± 1kV   |
| Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6                | Level III<br>10 Vrms (0,15 →80 M Hz) 80% AM (1 k Hz)   |
| Immunity to voltage dips and breaks acc. to IEC/EN 61000-4-11                      | Industrial Class II:<br>0% residual voltage during 1cycle a.c. power ports<br>70% residual voltage during 25/30 cycles a.c. power ports<br>0% residual voltage, 250/300 cycles a.c. power ports<br><br>Residential:<br>0% residual voltage during 10 cycle a.c.power ports<br>40% residual voltage during 10 cycles a.c. power ports<br>70% residual voltage during 10 cycles a.c. power ports<br>0% residual voltage, 250/300 cycles a.c. power ports |
| Mains-borne and radiated emissions acc. to EN 55022 (CISPR22), EN55011 (CISPR11)   | EN 55022 / CISPR22 Class B (IT equipment)<br>EN 55011 / CISPR11 Class B, Group 1 (Medical equipment)   |



| Curves  |  |
|---|--|
| Function A Delay on energisation<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous                                |  |
| Function Ac Timing after closing and opening of control contact<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous |  |
| Function At Timing on energisation with memory<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous                  |  |
| Function B Timing on impulse one shot<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous                           |  |
| Function C Timing after impulse<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous                                 |  |

| Curves  |  |
|---|--|
| Function D Flip-flop Pause start<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous              |  |
| Function Di Flip-flop Pulse start<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous             |  |
| Function H Timing on energisation<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous             |  |
| Function Ht Delay on energisation with memory<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous |  |
| Function N Watchdog<br>R1: Follow timing function<br>R2: Follow timing function / Instantaneous                           |  |
| Function TL Impulse relay<br>R1: Follow timing function<br>R2: Follow timing function                                     |  |

| Connections               |  |
|---------------------------|--|
| 2 changeover relay output |  |