

# BL1R

## Timers

### Syrline

#### 17.5 mm - 1 Relay 16A

- › 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



| Specifications |                |                    |                |                 |                     |           |
|----------------|----------------|--------------------|----------------|-----------------|---------------------|-----------|
| Functions      | Delay          | Output             | Nominal rating | Connections     | Supply voltage      | Code      |
| L - Li         | 0,1 s →10 days | 1 changeover relay | 16 A           | Screw terminals | 12 →240 V $\sim$ /= | BL1R16MV1 |

| Output relay                                |                                                                                          |
|---------------------------------------------|------------------------------------------------------------------------------------------|
| Contact arrangement                         | 1 CO (SPDT) (Changeover -Single Pole Double Throw-)                                      |
| Maximum switching voltage                   | 250 VAC/ 16 A resistive / 250 VDC / 0.3 A resistive                                      |
| Switching current rate (resistive)          | NO / NC: 16 A 250 V AC / 16 A 30 VDC @ 25°C<br>NO / NC: 8 A 250 V AC / 8 A 30 VDC @ 60°C |
| Minimum switching contact                   | 10 mA / 5 VDC                                                                            |
| Maximum switching power (resistive)         | 4000 VA / 90 W @ 25°C                                                                    |
| Electrical life                             | 30x10 <sup>3</sup> cycles (NO) at 250 VAC/ 16 A resistive                                |
| Maximum rate (at max switching power)       | 360 cycles /hour                                                                         |
| Mechanical life                             | 30 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   | 1 kV /1 min / 1 mA / 50 Hz                                                               |

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

| Supply                     |                      |
|----------------------------|----------------------|
| Multi-voltage power supply | 12→240 V $\sim$ /=   |
| Operating range            | 15 %, +10 %          |
| Operating frequency (Hz)   | 50 / 60 Hz $\pm 5\%$ |

| Supply                                                                                       |                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Galvanic isolation                                                                           | No                                                                                                                                                                                                                       |
| Max. absorbed power                                                                          | Approx. 3 VA (V~) 1.5 W (V~)                                                                                                                                                                                             |
| 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 $\mu$ s)                                                                                                                                                                                                  |
| 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 M $\Omega$ / 250 V~ / 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<br>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                                                                                                                                                                                    |
| 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)                                                                                     |

| General characteristics                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Immunity to rapid transient bursts acc. to IEC/EN 61000-4-4                      | Level III direct $\pm 2$ kV (power supply) / capacitive coupling clamp $\pm 1$ 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 $\pm 2$ kV / line-to-line $\pm 1$ kV                                                                                                                                                                                                                                                                                                                                                                                                 |
| Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6              | Level III<br>10 Vrms (0,15 $\rightarrow$ 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 1 cycle 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)                                                                                                                                                                                                                                                                                                                                                            |

| Dimensions |  |
|------------|--|
|            |  |

| Curves                                          |  |
|-------------------------------------------------|--|
| Function L<br>Asymmetrical timing, off start    |  |
| Function Li<br>Asymmetrical timing, pulse start |  |

| Connections                                         |  |
|-----------------------------------------------------|--|
| 1 changeover relay output<br>A1 = Y1 for function L |  |

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