BM1R
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

SYR-LINE

Specifications						
Functions	**Delay**	**Output**	**Nominal rating**	**Connections**	**Supply voltage**	**Code**
A - Ac - At - B - C - D - Di - H - Ht -N - TL - Tt	0,5 s →10 days	1 changeover relay	16 A	Screw terminals	12 →240 V ∿/⎓	BM1R16MV1

Output relay	
Contact arrangement	1 CO (SPDT) (ChangeOver -Simple 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 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	$30x10^3$ cycles (NO) at 250 VAC/ 16 A resistive
Maximum rate (at max switching power)	360 cycles /hour
Mechanical life	30 x 10^6 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, 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: ≤ ± 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∿/⎓
Operating range	15 %, +10 %
Operating frequency (Hz)	50 / 60 Hz ± 5 %

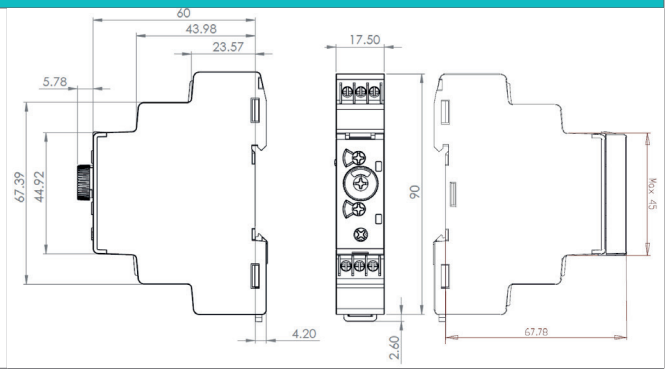
CROUZET CONTROL

Supply	
Galvanic isolation	No
Max. absorbed power	Approx. 3 VA (V∿) 1.5 W (V⎓)
Immunity from micro power cuts	10 ms

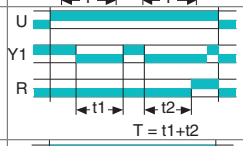
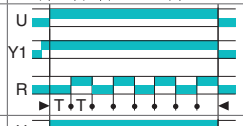
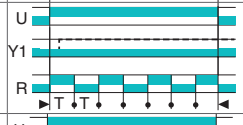
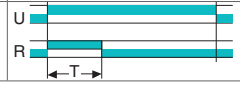
General characteristics	
Insulation voltage, IEC 60664-1	300 V
Installation category (acc. to IEC/EN 60664-1)	Overvoltage category III; pollution degree 2
Impulse voltage CEI/EN 60664-1	4 kV (1,2 / 50 µs)
Clearance / Creepage distances	IEC 60664-1: 3 mm / 3.2 mm
Breakdown voltage	EN-61812-1: 2,5 kV / 1 min / 1 mA / 50 Hz
Insulation resistance	NFC 93 050: > 500 MΩ / 250 V⎓ / 1min
Status indication	Un: green LED blinks when count, continuous ON when supplied 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 1 x 0.5 →3.3 mm^2 (AWG 20 →AWG 12) 2 x 0.5 →1.5 mm^2 (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 15gn - 11ms; 3 x 6 axis (output OFF) 5gn - 11ms; 3 x 6 axis (Output ON)
Drop to concrete floor	IEC 60068-2-32 High: 0.75m
Weight: casing 17,5 mm	70 g 80 g with packaging
Directives	2014/30/EU: EMC 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 CEI 61812-1/ Specified time relays for industrial use UL 60947-4-1/ Industrial Control Equipment (NRNT- Industrial Control Switches)
Conformity with environmental directives	2015/863/UE: RoHS 1907/2006: Reach 2012/19/UE: WEEE
Electromagnetic compatibility IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4	Immunity for industrial environment Emission residential environment 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 10 V/m (80 M Hz to 1 G Hz) 80 % AM (1 k Hz) 3 V/m (1,4 →2 G Hz) 80 % AM (1K Hz) 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)

General characteristics	
Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5	Level III 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 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: 0 % residual voltage during 1cycle a.c. power ports 70 % residual voltage during 25/30 cycles a.c. power ports 0 % residual voltage, 250/300 cycles a.c. power ports Residential: 0 % residual voltage during 10 cycle a.c.power ports 40 % residual voltage during 10 cycles a.c. power ports 70 % residual voltage during 10 cycles a.c. power ports 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) EN 55011 / CISPR11 Class B, Group 1 (Medical equipment)

Dimensions

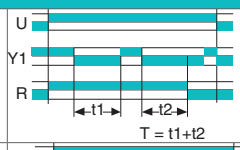


Curves

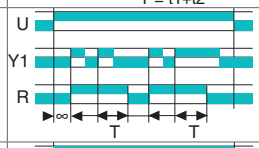
Function A Delay on energisation 1 relay	
Function Ac Timing after closing and opening of control contact 1 relay	
Function At Timing on energisation with memory 1 relay	
Function B Timing on impulse one shot 1 relay	
Function C Timing after impulse 1 relay	
Function D Flip-flop Pause start 1 relay	
Function Di Flip-flop Pulse start 1 relay	
Function H Timing on energisation 1 relay	

Curves

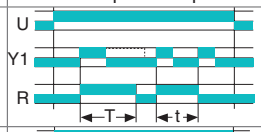
Function Ht
Delay on energisation with memory 1 relay



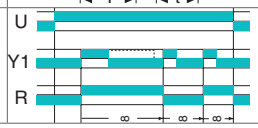
Function N
Watchdog



Function TI
Timed impulse relay



Function TL
Impulse relay



Connections

1 changeover relay output