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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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# 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

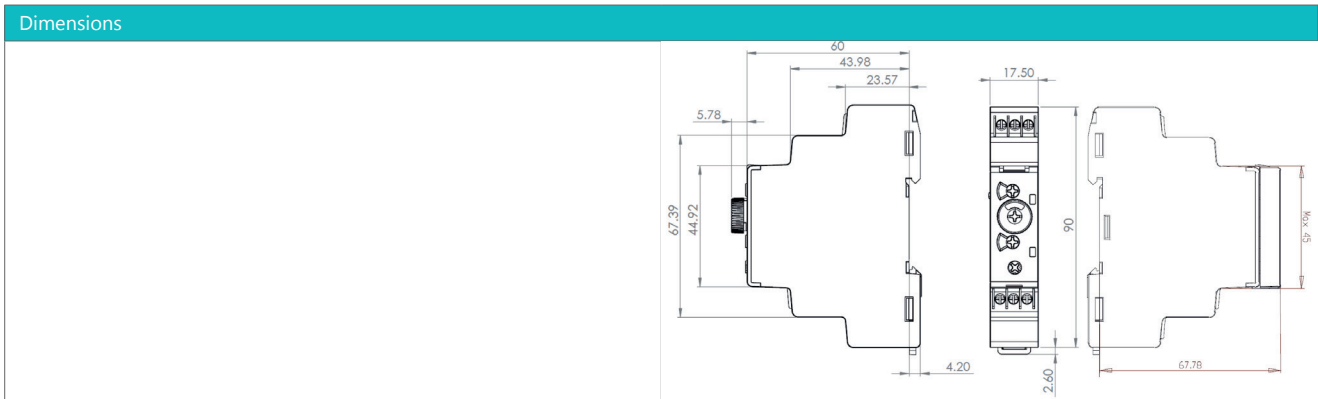


**SYR-LINE**

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 <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, 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%					

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 93050: > 500 M $\Omega$ / 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 $\rightarrow$ 3.3 mm <sup>2</sup> (AWG 20 $\rightarrow$ AWG 12) 2 x 0.5 $\rightarrow$ 1.5 mm <sup>2</sup> (AWG 20 $\rightarrow$ 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 $\rightarrow$ +60 °C
Storage temperature range (°C)	IEC 60068-2: -40 °C $\rightarrow$ +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	$\pm$ 0.15 mm from 10 Hz $\rightarrow$ 60 Hz 2g from 60 Hz $\rightarrow$ 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 $\pm$ 8 kV / Contact $\pm$ 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 $\rightarrow$ 2 G Hz) 80% AM (1K Hz) 1V/m (2 $\rightarrow$ 2.7 G Hz) 80% AM (1K Hz)
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)

General characteristics	
Immunity to shock waves on power supply acc. to IEC/EN 61000-4-5	Level III 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 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)



**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	<p>Timing diagram for Function Ht: U (input) has a pulse. Y1 (output) shows a delay t1 before rising. R (output) shows a delay t2 before falling. Total time T = t1 + t2.</p>
Function N Watchdog	<p>Timing diagram for Function N: U (input) has a pulse. Y1 (output) shows a delay T before rising. R (output) shows a delay T before falling. The pulse width of U is indicated as infinity.</p>
Function TI Timed impulse relay	<p>Timing diagram for Function TI: U (input) has a pulse of width t. Y1 (output) shows a delay T before rising. R (output) shows a delay T before falling.</p>
Function TL Impulse relay	<p>Timing diagram for Function TL: U (input) has a pulse of width t. Y1 (output) shows a delay T before rising. R (output) shows a delay T before falling.</p>

Connections	
1 changeover relay output	<p>Photograph of the timer module and a schematic diagram showing the electrical connections for a changeover relay output. The schematic shows a power supply U connected to terminals A1 and A2. Terminal Y1 is connected to terminal 15, and terminal R is connected to terminals 16 and 18.</p>