CROUZET

High-Power Analog Timers (16A)

DIN-Rail Mount 17.5 mm

Syr-line BM1R, BL1R, BA1R Series

Syr-Line: the specialized range at Crouzet, aimed to satisfy the most unique requirements of your applications by innovating in design, engineering and development.



24-240 VAC/DC

IP40

Screw terminals

Electrical Control & Protection > Timer Relays > DIN-Rail > Analog > **Relay Output**

Highlights

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

Standards

Part Numbers

BM1R16MV1	BL1R16MV1	BA1R16MV1
		
Functions: Multifunction M (A - Ac - At - B - C - D - Di - H - Ht - N - TL) + Tt **Series:** BM1R	**Functions:** L - Li **Series:** BL1R	**Functions:** A - At **Series:** BA1R

Part numbering system

BA	1	R	08	MV1

Function:
BA: Function A
BM: Multifunction M
BL: Function L-Li

Output Qty:
1: 1 Output
2: 2 Outputs

Output Type:
R: Relay

Output Power:
08: 8 A
16: 16 A

Power Supply:
MV1: 12-240 VAC/DC

More info.

HERE

Specifications

	BM1R16MV1	BL1R16MV1	BA1R16MV1
Inputs			
Supply voltage	24-240 VAC/DC		
Voltage supply tolerance	15%, +10%		
AC supply voltage frequency	50/60 Hz ± 5%		
Galvanic isolation of supply / inputs	No		
Max power consumption at Un	Approx. 3 VA (VAC) 1.5 W (VDC)		
Immunity to power micro cuts	10 ms		
Timing			
Timing ranges	0.5 s - 10 s, 0.05 min - 1 min, 0.5 min - 10 min, 0.05 h - 1 h, 0.5 h - 10 h, 0.05 day - 1 day, 0.5 day - 10 days		
Minimum control pulse duration	IEC 1812-1: 30 ms / 100 ms with load		
Recovery time (after by de-energization)	IEC 1812-1: 120 ms		
Repeatability	IEC 1812-1: ≤ ± 0,5%		
Setting accuracy (full range)	IEC 1812-1: ≤ ± 10%		
Drift temperature	≤ ± 0.05% /°C		
Drift voltage	≤ ± 0.2% / V		
Outputs			
Output configuration	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 VAC / 16 A 30 VDC at 25°C NO/NC: 8 A 250 VAC / 8 A 30 VDC at 60°C		
Maximum switching power (resistive)	4000 VA / 90 W at 25°C		
Electrical life (operations)	$30x10^3$ cycles (NO) at 250 VAC / 16 A resistive		
Minimum breaking current	10 mA / 5 VDC		
Maximum rate (at max switching power)	360 cycles / h		
Mechanical life (operations)	$30x10^6$ cycles		
Rated impulse voltage	5 kV (1.2/50 µs)		
Dielectric strength	Between coil / contacts (IEC 60664-1): 5 kV / 1 min / 1 mA / 50 Hz Between open contacts: 1 kV / 1 min / 1 mA / 50 Hz		
Insulation			
Rated insulation voltage	IEC 60664-1: 300 V		
Insulation coordination	IEC 60664-1: Overvoltage category III; pollution degree 2		
Rated impulse voltage	IEC 60664-1: 4 kV (1.2/50 µs)		
Clearance / creepage distances	IEC 60664-1: 3 mm / 3.2 mm		
Dielectric strength	EN-61812-1: 2.5 kV / 1 min / 1 mA / 50 Hz		
Insulation resistance	NFC 93 050: > 500 MΩ / 250 VDC / 1 min		

Specifications

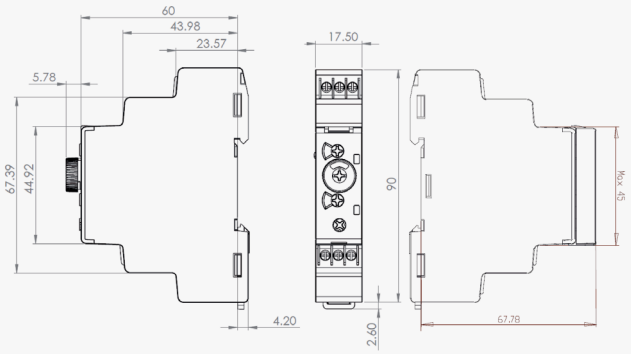
	BM1R16MV1	BL1R16MV1	BA1R16MV1
General characteristics			
Display	No, but status indication Un: green LED blinks when count, continuous ON when supplied R: yellow LED continuous ON when the relay is ON		
Casing	DIN 43880: 17.5 mm		
Mounting	EN 50122: 35 mm symmetrical DIN-Rail		
Mounting position	All positions		
Housing material	UL94: enclosure plastic type V0		
Degree of protection	IEC 60529: Housing IP40 / Terminal block IP20		
Terminal capacity	Single-wire (IEC 60947-1) without ferrule (copper conductors only): 1x0.5 - 3.3 mm² (AWG 20 - AWG 12) 2x0.5 - 1.5 mm² (AWG 20- AWG 16)		
Maximum tightening torques	IEC 60947-1: 0.5 N.m / 4.4 lbf.in		
Operating temperature	IEC 60068-2: -20°C to +60°C		
Storage temperature	IEC 60068-2: -40°C to +70°C		
Humidity	IEC 60068-2-30: 93% without condensation		
Vibration resistance	IEC 60068-2-6: ± 0.15 mm 10 Hz - 60 Hz / 2 g 60 Hz - 150 Hz		
Shock resistance	IEC 60068-2-27: 15 gn – 11 ms, 3x6 axis (Output non-energized) 5 gn – 11 ms, 3x6 axis (Output energized)		
Drop to concrete floor	IEC 60068-2-32: Height: 0.75 m		
Weight	70 g (80 g with packaging)		
Standards			
EU Directives	2014/30/EU: EMC 2014/35/EU: Low voltage		
Approvals / marking	CE, cULus Listed Industrial Control Equipment, CCC		
Security standard	IEC 60664-1: Insulation coordination for equipment within low-voltage systems		
Conformity with environmental directives	2015/863/UE: RoHS 1907/2006: Reach 2012/19/UE: WEEE		
Product standard	IEC 61812-1: Specified time relays for industrial use UL 508 (60947-4-1): Industrial Control Equipment (NRNT- Industrial Control Switches)		
Immunity to electrostatic discharges	IEC 61000-4-2: Level III Air ± 8 kV Contact ± 6 kV		
Immunity to radiated, radio-frequency, electromagnetic field	IEC 61000-4-3: Level III 10 V/m (80 MHz - 1 GHz) 80% AM (1 kHz) 3 V/m (1.4 - 2 GHz) 80% AM (1 KHz) 1 V/m (2 - 2.7 GHz) 80% AM (1 KHz)		
Immunity to rapid transient bursts	IEC 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	IEC 61000-4-5: Level III Line-to-earth ± 2 kV Line-to-line ± 1 kV		
Immunity to radiofrequency in common mode	IEC 61000-4-6: Level III, 10 Vrms (0,15 to 80 MHz) 80% AM (1 kHz)		

Specifications

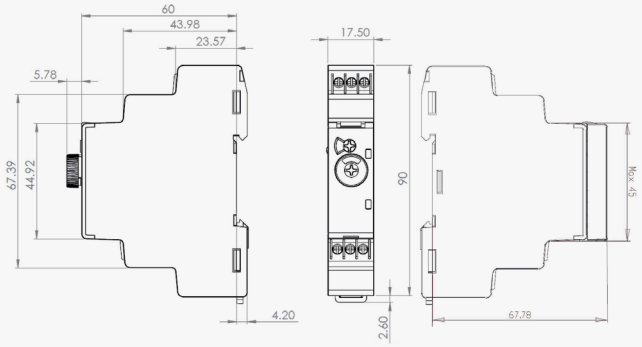
	BM1R16MV1	BL1R16MV1	BA1R16MV1
Standards			
Immunity to voltage dips and breaks	IEC 61000-4-11: Industrial Class II: 0% residual voltage during 1 cycle AC power ports 70% residual voltage during 25/30 cycles AC power ports 0% residual voltage, 250/300 cycles AC power ports Residential: 0% residual voltage during 10 cycle AC power ports 40% residual voltage during 10 cycles AC power ports 70% residual voltage during 10 cycles AC power ports 0% residual voltage, 250/300 cycles AC power ports		
Mains-borne and radiated emissions	EN55022 / CISPR22 Class B (IT equipment) EN 55011 / CISPR11 Class B, Group 1 (Medical equipment)		

Dimensions (mm)

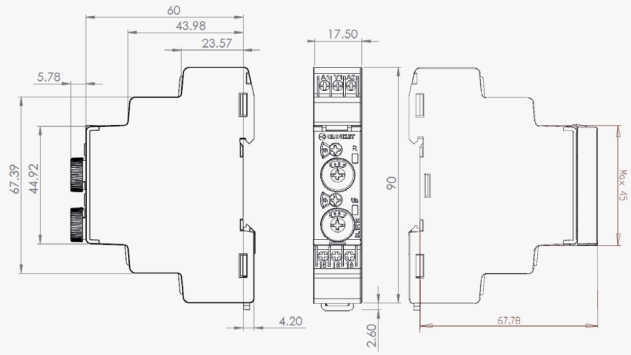
BM1R16MV1



BA1R16MV1

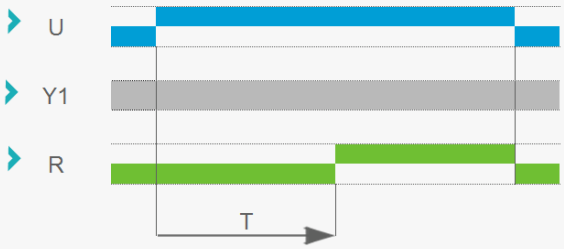


BL1R16MV1

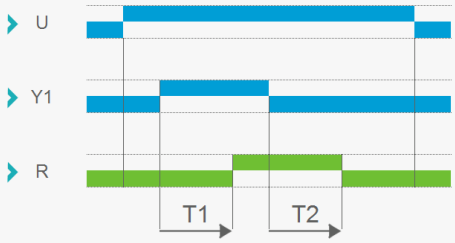


Function diagrams

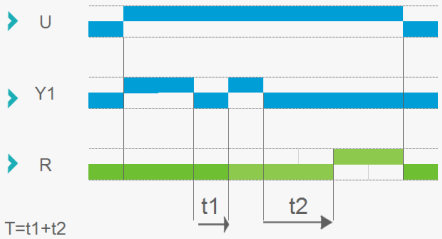
Function A: On-Delay (Delay on make)



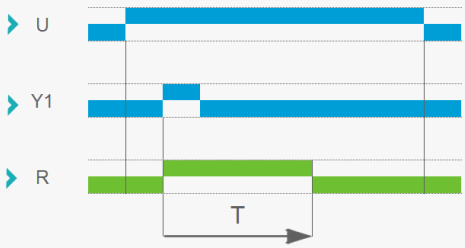
Function Ac: On/Off Delay (Delay on make/break)



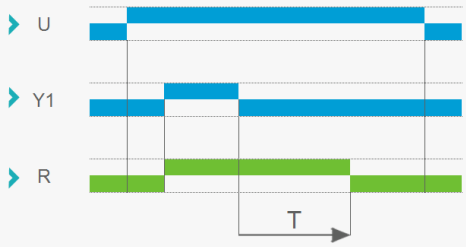
Function At: Summation Time Relay



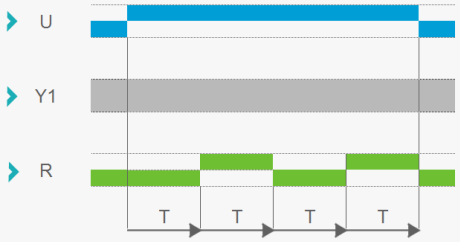
Function B: One-Shot



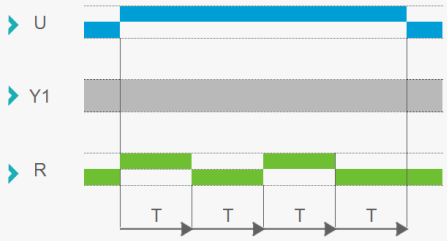
Function C: Off-Delay (Delay on brake)



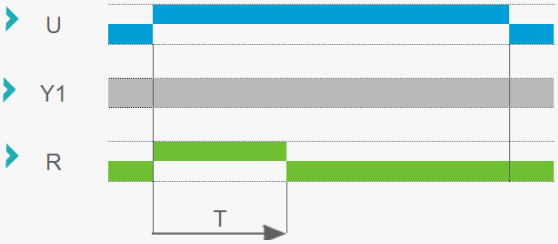
Function D: Flasher (Symmetrical) - OFF Start



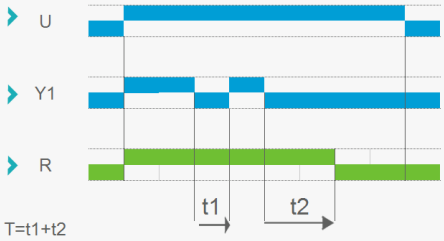
Function Di: Flasher (Symmetrical) - ON Start



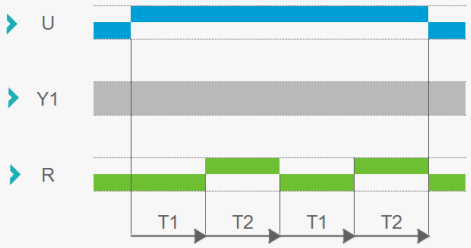
Function H: Interval



Function Ht: interval summation time relay

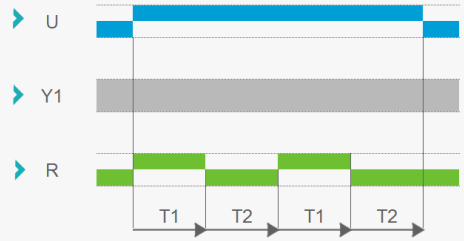


Function L: Repeat Cycle (Asymmetrical) - OFF Start

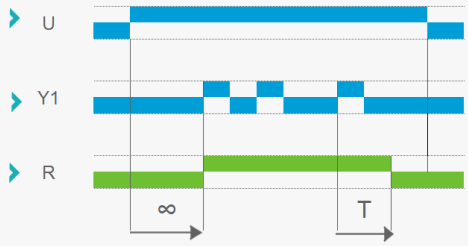


Function diagrams

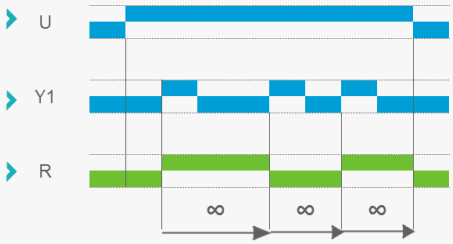
Function Li: Repeat Cycle (Asymmetrical) - ON Start



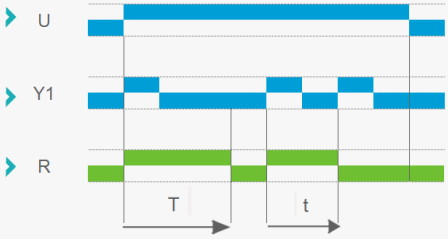
Function N: Watchdog



Function TL: Latching (Alternating) - Leading Edge

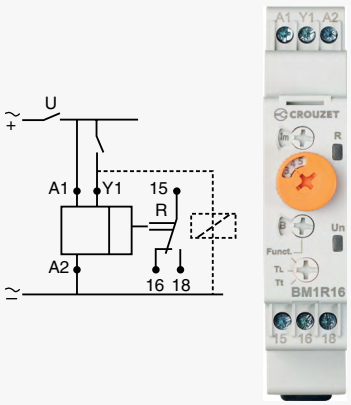


Function Tt: Delayed Latching (Alternating) - Leading Edge

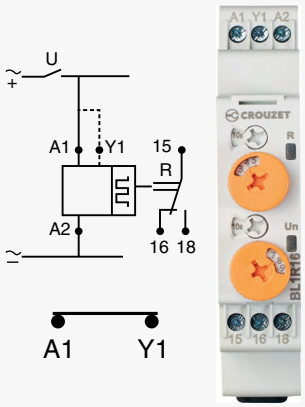


Wiring diagrams

BM1R16MV1

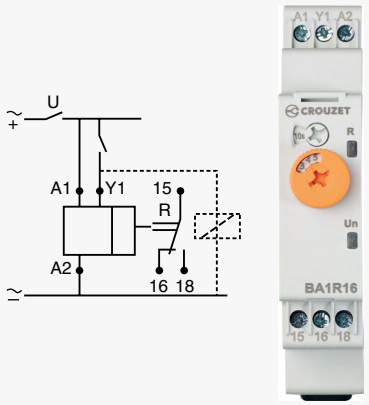


BL1R16MV1



A1 = Y1 for function L

BA1R16MV1



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