



ENTDECKEN SIE EINE NEUE WELT

MEHR LEISTUNG ... SCHMALERES GEHÄUSE

BM1R
BM2R
BL1R
BL2R
BA1R
BA2R



2x8A
DOPPELTER
AUSGANG

16A
EIN
AUSGANG



ENTDECKEN SIE DIE **LEISTUNGSSTÄRKSTEN** ZEITRELAIS



ÜBER **SYR-LINE**

Mit Innovation in Design, Technik und Entwicklung erfüllt die neue spezialisierte Serie von Crouzet Control höchste Ansprüche Ihrer Anwendungen.

Begegnen Sie dem ersten Vertreter der Syr-Line Serie:

17,5 mm breite Analoge Zeitrelais, eine neue leistungsstärkere Familie mit 6 Zeitrelais, alternativ mit einem Ausgang 16 A oder zwei Ausgängen 8 A sowie allen üblichen Funktionen + 2 Sonderfunktionen..

HOHE STROMSTÄRKE 1 x 16 A

STEUERN SIE MEHR ODER GRÖßERE LASTEN

Die Kombination aus Zeitrelais und Schaltschütz war gestern - mit ihren Leistungsmerkmalen ist Syr-Line Ihre Gesamtlösung zur Steuerung von größeren oder vielen Lasten.

ZUSÄTZLICHER SCHUTZ BEI BEDARF

Aufgrund ihrer höheren zulässigen Stromstärke können Syr-Line Produkte höheren Stromspitzen oder Einschaltströmen standhalten als herkömmliche Zeitrelais.

SONDERFUNKTIONEN: STROMSTOSSFUNKTION UND STROMSTOSSFUNKTION MIT RÜCKFALLVERZÖGERUNG

Neben den klassischen Funktionen bietet Syr-Line die Sonderfunktionen Stromstoßfunktion (TL) und Stromstoßfunktion mit Rückfallverzögerung (Tt) zum Ein- und Ausschalten des Ausgangsrelais mit einem Spannungssignal.

AUSGEDEHNTER ZEITBEREICH

Mit dem ausgedehnten Zeitbereich des Relais können Sie die Verzögerung Ihres Zeitrelais von 0,5 Sekunden bis 10 Tage (240 Stunden) einstellen.

ZWEI AUSGÄNGE 2 x 8 A

VERZÖGERTES ODER UNVERZÖGERTES RELAIS IN EINEM SCHLANKEN GEHÄUSE

Das einzige 17,5 mm breite Zeitrelais auf dem Markt mit zwei Ausgängen, auf dessen Vorderseite bequem ausgewählt werden kann, ob beide Ausgänge gemeinsam gleichzeitig arbeiten sollen oder der eine Ausgang verzögert und der andere unverzögert.

OPTION 1: UNVERZÖGERT

Stellen Sie das Relais so ein, dass ein Ausgang sofort einschaltet und der zweite mit Verzögerung, um verschiedene Lasten schrittweise einzuschalten.

OPTION 2: VERZÖGERT

Stellen Sie das Relais so ein, dass beide Ausgänge gemeinsam arbeiten, und senken Sie Ihre Kosten durch Steuerung verschiedener Lasten mit demselben Gerät.

MONO- ODER MULTIFUNKTION

Wählen Sie zwischen einer Multifunktionsversion mit den 12 gängigsten Funktionen oder einer Monofunktionsversion mit Einschaltverzögerung oder Impulsrelais.

INTERNATIONALE ZERTIFIZIERUNGEN

Die 17,5 mm breiten Syrlin Zeitrelais erfüllen strengste Anforderungen und besitzen die cULus-, CE, RoHS - und CCC-Zulassung.

PLANUNGSKOMPETENZ FÜR MASSGESCHNEIDERTEN BEDARF

Leichte Anpassung der Produkte an Ihre ganz spezifischen Anforderungen.



› Bestellbezeichnung



PRODUKT **AUFBAU**

ABDECKUNG

- › Schützt die Stellknöpfe und die Vorderseite vor äußeren Einflüssen und vor unbeabsichtigtem Verstellen

MODULFORM

- › Zum Einsetzen in Modultafeln

KLEINE POTENTIOMETER-SCHRAUBEN

- › Zur Einstellung der Zeitbereiche

POTENTIOMETER FÜR SONDERFUNKTIONEN

- › Zur Feineinstellung der richtigen Konfiguration des Zeitrelais mit den Fingern

SONDERFUNKTIONEN

- › Für die Auswahl der Sonderfunktionen Ausschaltwischer und Verzögerter Ausschaltwischer oder bei Versionen mit zwei Ausgängen Auswahl der verzögerten oder unverzögerten Arbeitsweise des zweiten Relais

UNIVERSELLE STROMVERSORGUNG

- › Die Syr-line Zeitrelais arbeiten mit allen gängigen Spannungen von 12 → 240 V $\overline{\sim}$
- › Anschluss kompatibel mit der industriellen Standardanordnung

SIGNALEINGANG

- › Für Funktionen, bei denen die Steuerung des Zeitrelais mit einem Signal erforderlich ist

DIN-SCHIENEN MONTAGE

- › Für einfache Installation in Ihrer Schalttafel

SCHLANKES GEHÄUSE

- › Das 17,5 mm breite Kunststoffgehäuse spart Platz in Ihrer Schalttafel

AUFDRUCK DER FUNKTIONEN

- › Mit allen für das jeweilige Produkt verfügbaren Funktionsdiagrammen

2 LED-ANZEIGEN

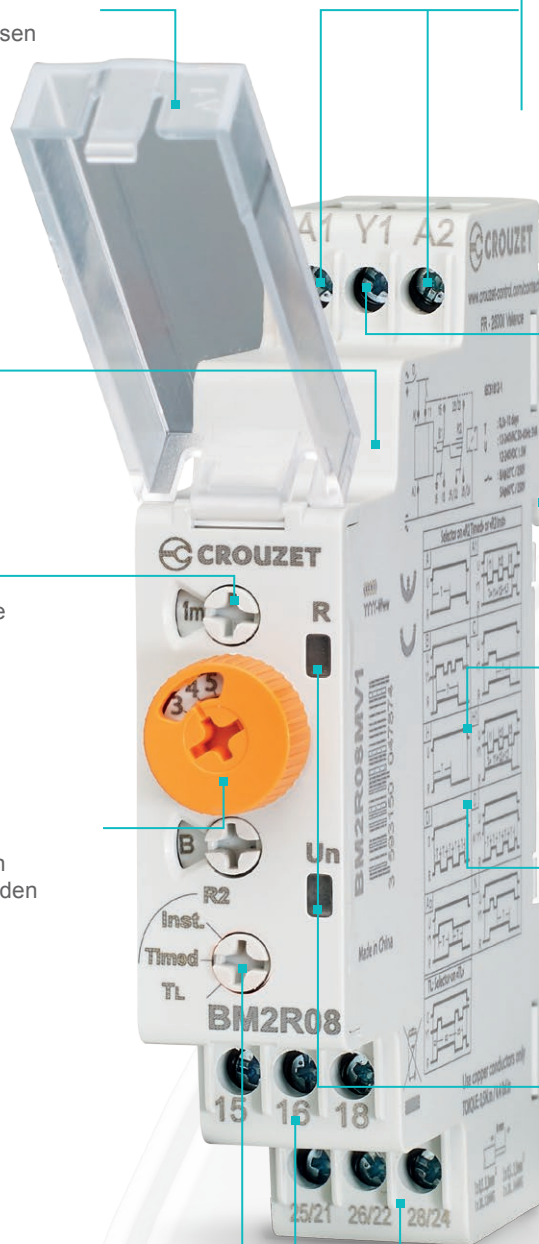
- › Zur Statusanzeige Ihres Zeitrelais

HOHE STROMSTÄRKE 1 x 16 A

- › Version mit Relaisausgang für Hochstromanwendungen

DOPPELT 2 x 8 A

- › Version mit Relaisausgang für Anwendungen die 2 Relaisausgänge erfordern



PRODUKT FUNKTIONEN

	BM1R	BM2R	BA1R	BA2R	BL1R	BL2R		BM1R	BM2R	BA1R	BA2R	BL1R	BL2R
A Ansprechverzögerung	✓	✓	✓	✓			H Einschaltwischend	✓	✓				
Ac Ansprech- und Rückfallverzögerung	✓	✓					Ht Additive Einschaltwischend	✓	✓				
At Additive Ansprechverzögerung	✓	✓	✓	✓			N Impulsüberwachung über Rückfallverzögerung (Watchdog)	✓	✓				
B Impulsformer	✓	✓					TL Stromstoßfunktion	✓	✓				
C Rückfallverzögerung mit Hilfsspannung	✓	✓					Tt Stromstoßfunktion mit Rückfallverzögerung	✓					
D Symmetrischer Taktgeber Beginn in Ruhestellung	✓	✓					L Asymmetrischer Taktgeber Beginn in Ruhestellung					✓	✓
Di Symmetrischer Taktgeber Beginn in Wirkstellung	✓	✓					Li Asymmetrischer Taktgeber Beginn in Wirkstellung					✓	✓

U: Stromversorgung (A1/A2)
 Y1: Steuersignal (A1/Y1)
 R1/R2: Relais Verzögerte Ausgänge → R1 (15/16/18) → R2 (25/26/28)

R2: Relais Unverzögerter Ausgang (21/22/24)
 T: Verzögerungszeit
 ∞: Unendlich

PRODUKT ANGEBOT

BM1R		BM2R		BA1R		BA2R		BL1R		BL2R	
BM1R16MV1		BM2R08MV1		BA1R16MV1		BA2R08MV1		BL1R16MV1		BL2R08MV1	
	1 X 16 A	2 X 8 A		1 X 16 A	2 X 8 A		1 X 16 A	2 X 8 A		1 X 16 A	2 X 8 A
	12-240 V~	12-240 V~		12-240 V~	12-240 V~		12-240 V~	12-240 V~		12-240 V~	12-240 V~
	Multifunktion	Multifunktion		Ansprechverzögerung A: Verzögerung beim Einschalten At: + Speicher	Ansprechverzögerung A: Verzögerung beim Einschalten At: + Speicher		Asymmetrischer Taktgeber L: Pause beginnend Li: Impuls beginnend	Asymmetrischer Taktgeber L: Pause beginnend Li: Impuls beginnend		Asymmetrischer Taktgeber L: Pause beginnend Li: Impuls beginnend	Asymmetrischer Taktgeber L: Pause beginnend Li: Impuls beginnend
	R1: Verzögert	R1: Verzögert R2: Verzögert/ Unverzögert		R1: Verzögert	R1/R2: Verzögert		R1: Verzögert	R1/R2: Verzögert		R1: Verzögert	R1/R2: Verzögert

PRODUKT MARKT

ENERGIE UND INFRASTRUKTUR

- › Wasseraufbereitung und Müllentsorgung
- › Wasserfiltration
- › Wasserdesinfektion
- › Pressen

LEBENSMITTEL UND GETRÄNKE

- › Backöfen
- › Kühltechnik
- › Lebensmittel- und Getränkeautomaten
- › Lebensmittelverarbeitung

TRANSPORT

- › Lastwagen und Busse
- › Sonderfahrzeuge
- › Baumaschinen

INDUSTRIE

- › Montagemaschinen
- › Werkzeugmaschinen
- › Materialtransport
- › Metallverarbeitungsprozesse
- › Motoren und Getriebe
- › Verpackungsgeräte
- › Kunststoffmaschinen
- › Prüfgeräte
- › Textilherstellung
- › Holzprozesse
- › Sonstiges

GEWERBE

- › Druckerei und Sonstige

GEBÄUDE

- › Zugangskontrollen
- › Parkplatzschranken
- › Türsteuerung
- › Heizungsanlagen
- › Lüftung
- › Filteranlagen
- › Beleuchtung
- › Gebäudeautomatisierung



BA1R

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-At	0,1 s →10 days	1 changeover relay	16 A	Screw terminals	12 →240 V \sim / $\overline{\sim}$	BA1R16MV1
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 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 (1.2/50 μ s)			
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: $\leq \pm 0,5\%$			
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 / $\overline{\sim}$			
Operating range			15%, +10%			
Operating frequency (Hz)			50 / 60 Hz $\pm 5\%$			
Galvanic isolation			No			
Max. absorbed power			Approx. 3 VA (V \sim) 1.5 W (V $\overline{\sim}$)			
Immunity from micro power cuts			10 ms			



General characteristics	
Insulation voltage, IEC 60664-1	300 V
Installation category (acc. to IEC/EN 60664-1)	Overtoltage category III; pollution degree 2
Impulse voltage CEI/EN 60664-1	4 kV (1,2 / 50 μ 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 Ω / 250 V $_{rms}$ / 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 ² (AWG 20 \rightarrow AWG 12) 2 x 0.5 \rightarrow 1.5 mm ² (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: igh: 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)
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 1kV

General characteristics	
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 At Timing on Energisation with memory	<p style="text-align: center;">$T = t1 + t2$</p>

Connections	
1 changeover relay output	

BA2R

Timers

Syrline

17.5 mm - 2 Relays 8A

- › 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-At	0,1 s →10 days	2 changeover relays	2 x 8A	Screw terminals	12 →240 V \sim / $\overline{\text{=}}$	BA2R08MV1
Output relay						
Contact arrangement	2 CO (SPDT) (Changeover -Single Pole Double Throw-) R1: Follow timing function R2: Follow timing function					
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 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 ⁵ cycles min at 250 VAC/ 8 A resistive					
Maximum rate (at max switching power)	360 cycles /hour					
Mechanical life	10 x 10 ⁶ cycles					
Rated impulse voltage	5 kV (1.2/50 μ s)					
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 / 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 / $\overline{\text{=}}$					
Operating range	15%, +10%					
Operating frequency (Hz)	50 / 60 Hz $\pm 5\%$					
Galvanic isolation	No					



Supply	
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: igh: 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)

General characteristics	
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 line-to-earth ± 2 kV / line-to-line ± 1 kV
Immunity to radio frequency in common mode acc. to IEC/EN 61000-4-6	Level III 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: 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 At Timing on Energisation with memory	<p style="text-align: center;">$T = t1 + t2$</p>

Connections	
1 changeover relay output	

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



SYR-LINE

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 / $\overline{\text{DC}}$	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 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 (1.2/50 μ s)
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: $\leq \pm 0,5\%$
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 / $\overline{\text{DC}}$
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 $\overline{\text{m}}$)
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 μ 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 Ω / 250 V $\overline{\text{m}}$ / 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 ² (AWG 20 \rightarrow AWG 12) 2 x 0.5 \rightarrow 1.5 mm ² (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)

General characteristics	
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 line-to-earth ± 2 kV / line-to-line ± 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)

Dimensions	

Curves	
Function L Asymmetrical timing, off start	
Function Li Asymmetrical timing, pulse start	

Connections	
1 changeover relay output A1 = Y1 for function L	

BL2R

Timers

Syrline

17.5 mm - 2 Relays 8A

- › Multi-voltage 12 →240 V AC/DC
- › LED status indicator
- › 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
L - Li	0,1 s →10 days	2 changeover relays	8 A	Screw terminals	12 →240 V \sim / $\overline{\sim}$	BL2R08MV1

Output relay

Contact arrangement	2 CO (SPDT) (Changeover -Single Pole Double Throw-) R1: Follow timing function R2: Follow timing function
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 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 ⁵ cycles min at 250 VAC/ 8 A resistive
Maximum rate (at max switching power)	360 cycles /hour
Mechanical life	10 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	2,5 kV /1 min / 1 mA / 50 Hz

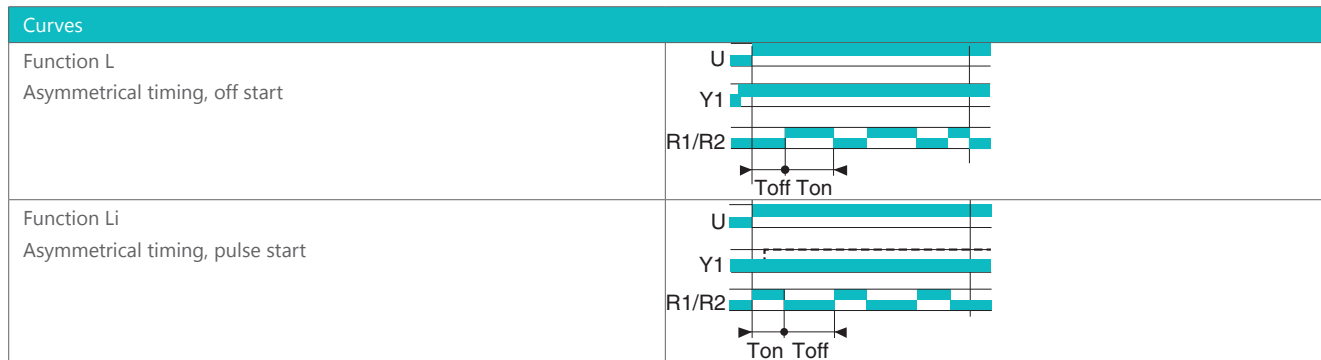
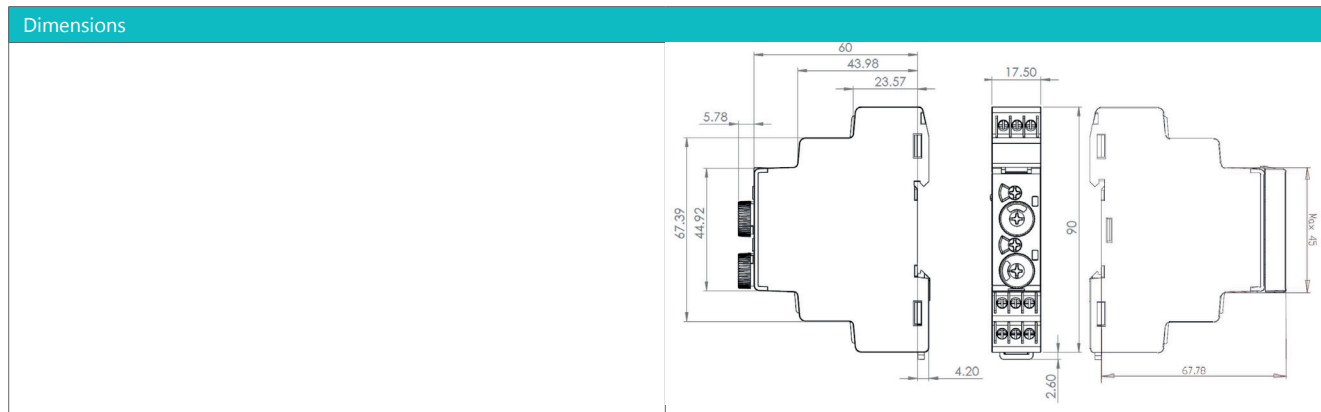
Timing

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 / 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 _~ /V _{DC}
Operating range	15 %, +10 %
Operating frequency (Hz)	50 / 60 Hz ± 5 %
Galvanic isolation	No
Max. absorbed power	Approx. 3 VA (V _~) 1.5 W (V _{DC})
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 _{DC} / 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

General characteristics	
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)
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)



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



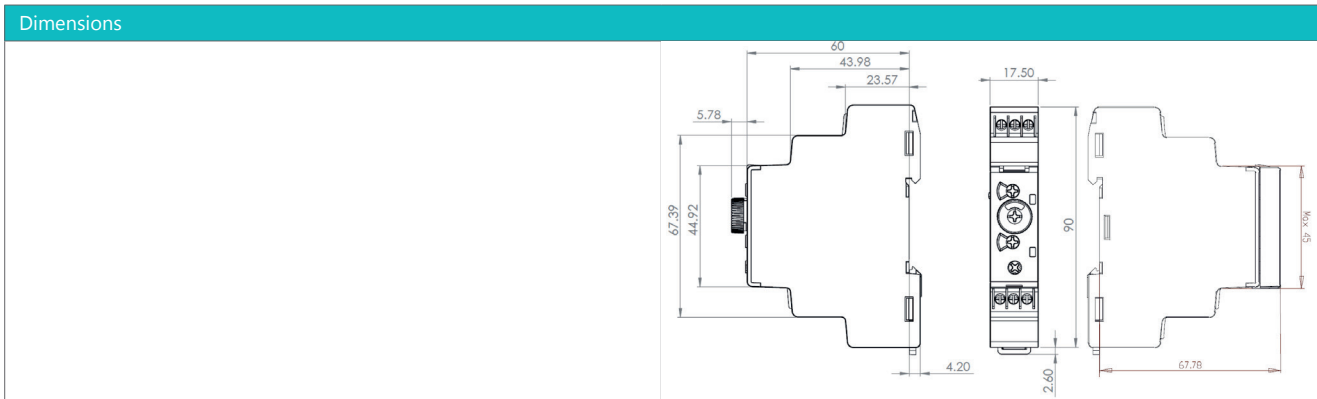
SYR-LINE

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 -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 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%					



Supply	
Galvanic isolation	No
Max. absorbed power	Approx. 3 VA (V~) 1.5 W (V $\overline{\text{m}}$)
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 μ 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 Ω / 250 V $\overline{\text{m}}$ / 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 ² (AWG 20 \rightarrow AWG 12) 2 x 0.5 \rightarrow 1.5 mm ² (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 ± 2 kV / line-to-line ± 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	
Function N Watchdog	
Function TI Timed impulse relay	
Function TL Impulse relay	

Connections	
1 changeover relay output	

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 - Tt	0,5 s →10 days	2 changeover relays	2 x 8 A	Screw terminals	12 →240 V ~/∞	BM2R08MV1

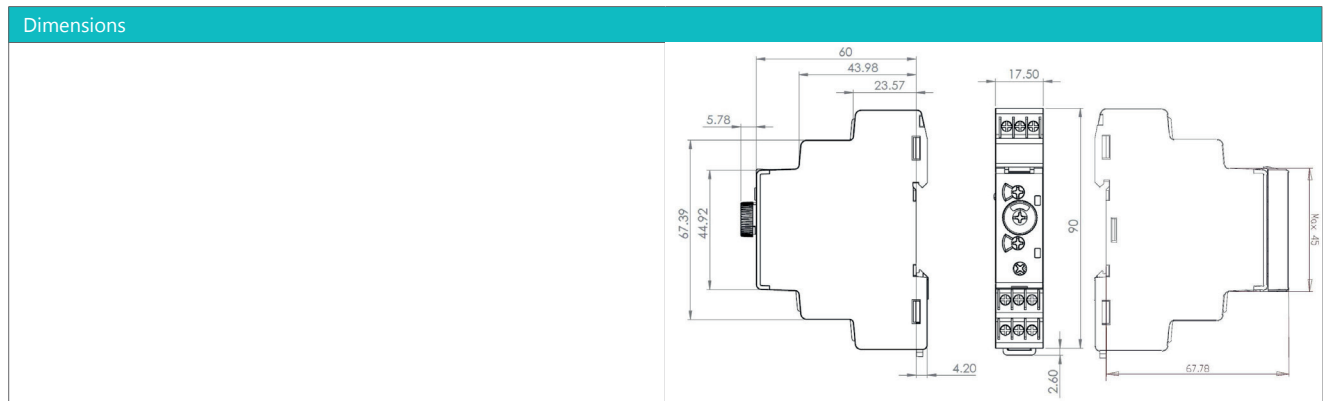
Output relay	
Contact arrangement	2 CO (SPDT) (Changeover -Single Pole Double Throw-) R1: Follow timing function R2: Follow timing function / Instantaneous
Maximum switching voltage	250 VAC / 8 A resistive / 250 VDC / 0.3 A resistive
Switching current rate (resistive)	NO / NC : 8A 250 V AC / 8 A 30 VDC @ 25°C 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 ⁵ cycles min at 250 VAC/ 8 A resistive
Maximum rate (at max switching power)	360 cycles /hour
Mechanical life	10 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	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 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 _~ /V _{DC}
Operating range	15 %, +10 %
Operating frequency (Hz)	50 / 60 Hz ± 5 %
Galvanic isolation	No
Max. absorbed power	Approx. 3 VA (V _~) 1.5 W (V _{DC})
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 _{DC} / 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

General characteristics	
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)
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)



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

Curves	
Function D Flip-flop Pause start R1: Follow timing function R2: Follow timing function / Instantaneous	
Function Di Flip-flop Pulse start R1: Follow timing function R2: Follow timing function / Instantaneous	
Function H Timing on energisation R1: Follow timing function R2: Follow timing function / Instantaneous	
Function Ht Delay on energisation with memory R1: Follow timing function R2: Follow timing function / Instantaneous	
Function N Watchdog R1: Follow timing function R2: Follow timing function / Instantaneous	
Function TL Impulse relay R1: Follow timing function R2: Follow timing function	
Connections	
2 changeover relay output	