

# YR-LINE

## DÉCOUVREZ UNE NOUVELLE ÈRE

### PLUS DE PUISSANCE... DANS 17,5 mm

BM1R  
BM2R  
BL1R  
BL2R  
BA1R  
BA2R



2x8A  
SORTIE  
DOUBLE

16A  
SORTIE  
SIMPLE

 **CROUZET**  
CONTROL

A BRAND OF  
**INNOVISTA**  
SENSORS

**SENTRONIC** AG Produkte, Support und Service

Rugghözli 2  
CH - 5453 Busslingen

Tel. +41 (0)56 222 38 18  
Fax +41 (0)56 222 10 12

mailbox@sentronic.com  
www.sentronic.com

# PARTEZ À LA DÉCOUVERTE DES TEMPORISATEURS LES PLUS **PUISSANTS**



## À PROPOS DE LA GAMME **SYR-LINE**

La nouvelle gamme spécialisée de Crouzet Control va répondre à toutes vos exigences, grâce à une conception, une ingénierie et un développement innovant.

Faites connaissance avec le premier membre de la famille Syr-Line : **Les temporisateurs analogiques d'une largeur de 17,5 mm**, une nouvelle famille de 6 temporisateurs de puissance supérieure (sortie 16 A ou double sortie 8 A), avec des fonctions enrichies.

## PUISSANCE SUPÉRIEURE 1 x 16 A

### COMMANDER PLUS DE CHARGES OU DES CHARGES PLUS IMPORTANTES

Oubliez la combinaison Temporisateur + Contacteur pour commander un plus grand nombre de charges ou bien des charges plus puissantes. Grâce à sa capacité, le Syr-Line est votre solution tout-en-un.

### UNE DISPONIBILITÉ SUPPLÉMENTAIRE LORSQUE VOUS EN AVEZ BESOIN

Leur plus grande capacité de courant permet aux produits Syr-Line de vous proposer une meilleure réponse aux courants d'appel important que les temporisateurs classiques.

### FONCTIONS SPÉCIALES : TÉLÉRUPTEUR ET TÉLÉRUPTEUR TEMPORISÉ

En plus des fonctions courantes, la gamme Syr-Line offre les fonctions télérupteur (TL) et télérupteur temporisé (Tt), qui vous permettent d'économiser sur vos consommations électriques.

### PLAGE HORAIRE ÉTENDUE

Large plage de temporisation, allant de 0,5 seconde jusqu'à 240 heures (10 jours) !

## DOUBLE SORTIE 2 x 8 A

### RELAIS INSTANTANÉ OU TEMPORISÉ DANS UN BOÎTIER ÉTROIT

Le seul temporisateur format « 1 module » (17,5 mm) qui offre une double sortie, avec possibilité de choisir en face avant que le second relais travaille également en temporisé ou bien en instantané.

#### OPTION 1 : INSTANTANÉ

En choisissant une sortie instantané et l'autre en retardé, vous allez pouvoir piloté en cascade vos charges.

#### OPTION 2 : TEMPORISÉ

Avec ce mode, vous temporisez 2 circuits indépendants avec le même relais, réduisant ainsi votre coût d'installation.

### MONOFONCTION OU MULTIFONCTION

Le modèle multifonction comprend les 12 fonctions les plus utilisées. Les modèles Monofonction existent en version «temporisé à la mise sous tension» ou en «clignotant à cycle asymétrique».

### CERTIFICATIONS INTERNATIONALES

Conformes aux normes les plus strictes, les temporisateurs Syr-Line sont certifiés cULus, CE, RoHS et CCC.

### L'EXPERTISE DE NOS INGÉNIEURS POUR VOS BESOINS SPÉCIFIQUES

Possibilité d'adapter les produits de la gamme à vos contraintes particulières.

#### › Référence

Fonction A : Temporisation à la mise sous tension L : Clignotant M : Multifonction	Type de sortie R : Relais	Alimentation électrique MV1 : 12-240 V $\approx$
<b>B</b>	<b>M</b>	<b>1</b>
Type B : 17,5 mm analogique	Nombre de sorties 1 : 1 sortie 2 : 2 sorties	Puissance de sortie 08 : 8 A 16 : 16 A
	<b>R</b>	<b>16</b>
		<b>MV1</b>

# PRÉSENTATION PRODUIT

## CAPOT DE PROTECTION

- › Protège les boutons et la face avant de l'environnement et évite toute manœuvre accidentelle

## FORMAT MODULAIRE

- › S'intègre aux tableaux modulaires

## COMMUTATEUR À VIS

- › Pour une configuration simple de la plage de votre temporisateur

## POTENTIOMÈTRE DE GRANDE TAILLE

- › Pour un réglage précis de votre temporisation

## FONCTIONS SPÉCIALES

- › Sélection des fonctions spéciales : télérupteur et télérupteur temporisé. Dans les modèles à double sortie, choix pour la seconde sortie temporisée ou instantanée

## ALIMENTATION ÉLECTRIQUE UNIVERSELLE

- › Les temporisateurs Syr-Line s'adaptent à toutes les tensions de 12 à 240 V $\sphericalangle$
- › Connexion similaires à la plupart des produits du marché

## ENTRÉE DE COMMANDE

- › Pour les fonctions nécessitant une commande externe

## MONTAGE SUR RAIL DIN

- › Pour une installation simple dans votre tableau

## BOÎTIER ÉTROIT

- › Boîtier plastique d'une largeur de 17,5 mm, vous permet de gagner de la place dans votre tableau

## MARQUAGE DES FONCTIONS

- › Schémas des fonctions disponibles dans le produit, ainsi que le schéma de câblage sont sérigraphié sur le côté

## 2 VOYANTS LED

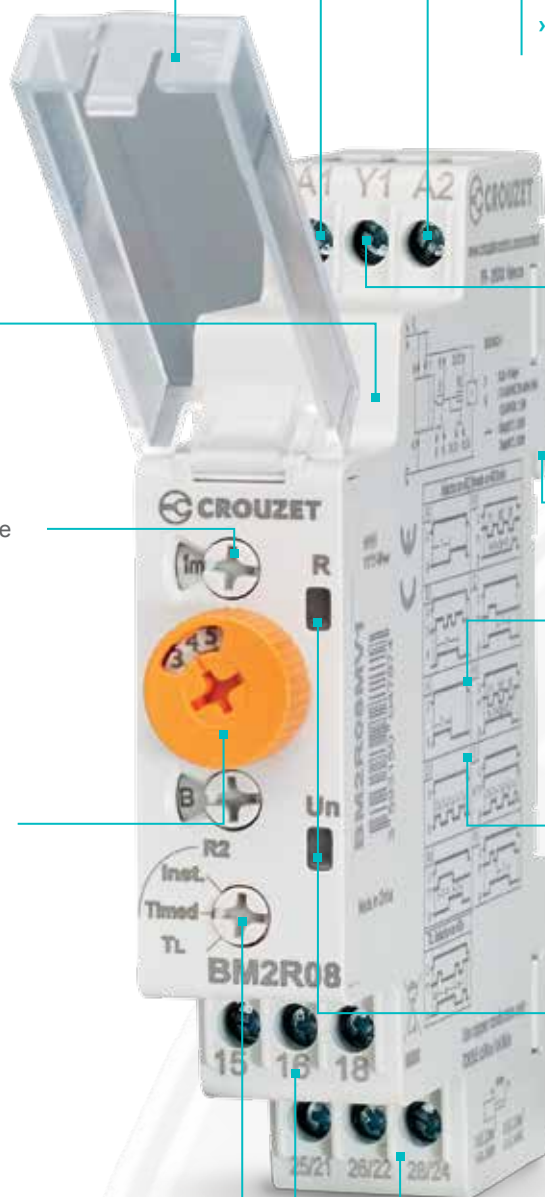
- › Pour visualiser l'état de votre équipement

## PUISSANCE SUPÉRIEURE 1 x 16 A

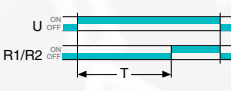

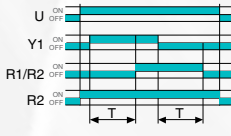
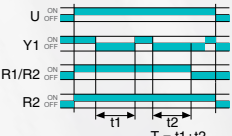
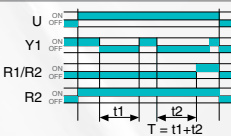
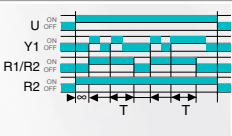
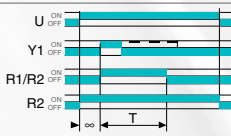
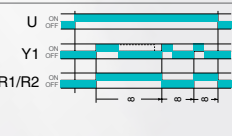
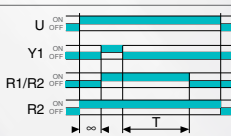
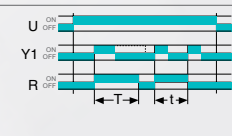
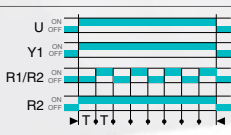
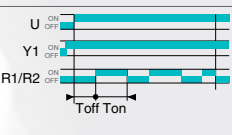
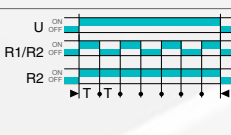
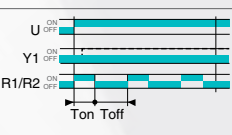
- › Sortie relais 16 A pour les applications à forte puissance

## DOUBLE 2 x 8 A

- › 2 Sortie relais 8 A pour les applications nécessitant 2 circuits indépendants ou un pilotage décalé













# FONCTIONNEMENT PRODUIT

	BM1R	BM2R	BA1R	BA2R	BL1R	BL2R		BM1R	BM2R	BA1R	BA2R	BL1R	BL2R
<b>A</b>  Relais temporisé à la mise sous tension (Temporisation ON)	✓	✓	✓	✓			<b>H</b>  Relais d'intervalle	✓	✓				
<b>Ac</b>  Temporisé à la mise sous tension et à la coupure avec signal de commande	✓	✓					<b>Ht</b>  Relais d'intervalle à addition de temps	✓	✓				
<b>At</b>  Relais temporisé à addition de temps	✓	✓	✓	✓			<b>N</b>  Relais de surveillance (watchdog)	✓	✓				
<b>B</b>  Relais d'intervalle avec signal de commande	✓	✓					<b>TL</b>  Télérupteur	✓	✓				
<b>C</b>  Relais temporisé à la coupure avec signal de commande	✓	✓					<b>Tt</b>  Télérupteur temporisé	✓					
<b>D</b>  Clignotant à cycle symétrique (départ OFF)	✓	✓					<b>L</b>  Relais clignotant à cycle asymétrique (départ OFF)					✓	✓
<b>Di</b>  Clignotant à cycle symétrique (départ ON)	✓	✓					<b>Li</b>  Relais clignotant à cycle asymétrique (départ ON)					✓	✓

U : Alimentation électrique (A1/A2)  
 Y1 : Signal de commande (A1/Y1)  
 R1/R2 : Sorties relais temporisées → R1 (15/16/18) → R2 (25/26/28)

R2 : Sorties relais instantanées (21/22/24)  
 T : Temps  
 ∞ : Infini

# OFFRE PRODUIT

	BM1R		BM2R		BA1R		BA2R		BL1R		BL2R	
												
	<b>BM1R16MV1</b>		<b>BM2R08MV1</b>		<b>BA1R16MV1</b>		<b>BA2R08MV1</b>		<b>BL1R16MV1</b>		<b>BL2R08MV1</b>	
	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~	
	Multifonction		Multifonction		Temporisé à la mise sous tension A : Temporisation ON At : + Mémoire		Temporisé à la mise sous tension A : Temporisation ON At : + Mémoire		Clignotant à cycle asymétrique L : Départ OFF Li : Départ ON		Clignotant à cycle asymétrique L : Départ OFF Li : Départ ON	
	R1 : Temporisé		R1 : Temporisé R2 : Temporisé/ Instantané		R1 : Temporisé		R1/R2 : Temporisé		R1 : Temporisé		R1/R2 : Temporisé	

# MARCHÉ PRODUIT

## ÉNERGIE ET INFRASTRUCTURES

- › Traitement des eaux usées et des déchets
- › Filtration de l'eau
- › Désinfection de l'eau
- › Compacteurs

## INDUSTRIE ALIMENTAIRE

- › Fours de cuisson
- › Réfrigération
- › Distributeurs automatiques de boissons et de nourriture
- › Transformation alimentaire

## TRANSPORTS

- › Camions, autocars et autobus
- › Véhicules spécialisés
- › Machine de chantier

## INDUSTRIES

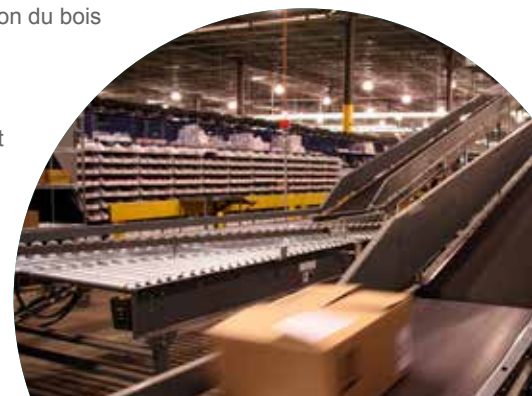
- › Machines de montage
- › Machines-outils
- › Manipulation de matériaux
- › Procédé d'usinage
- › Moteurs et entraînements
- › Équipements d'emballage
- › Machines de plasturgie
- › Appareillage d'essai
- › Industrie du textile
- › Transformation du bois
- › Autres

## PUBLICITÉ

- › Impression et autres

## IMMEUBLES

- › Contrôle d'accès
- › Barrière de parking
- › Contrôle de portes
- › HVAC
- › Ventilation
- › Filtration
- › Éclairage
- › Automatisation des bâtiments



# 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 <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 (1.2/50 $\mu$ 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 $\mu$ 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 $_{rms}$ / 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 <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: 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;"><math>T = t1 + t2</math></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 <sup>5</sup> cycles min at 250 VAC/ 8 A resistive					
Maximum rate (at max switching power)	360 cycles /hour					
Mechanical life	10 x 10 <sup>6</sup> cycles					
Rated impulse voltage	5 kV (1.2/50 $\mu$ 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 ( $V_{\sim}$ ) 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 $\mu$ 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 $_{DC}$ / 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 <sup>2</sup> (AWG 20 → AWG 12) 2 x 0.5 → 1.5 mm <sup>2</sup> (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 $\pm 2$ 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 $\pm 1$ 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;"><math>T = t_1 + t_2</math></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 $\sim$ / $\overline{\text{=}}$	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 <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 (1.2/50 $\mu$ 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 $\sim$ / $\overline{\text{=}}$
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 $\mu$ 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 $\overline{\text{m}}$ / 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 <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)

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 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)

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 <sup>5</sup> cycles min at 250 VAC/ 8 A resistive
Maximum rate (at max switching power)	360 cycles /hour
Mechanical life	10 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	2,5 kV /1 min / 1 mA / 50 Hz

#### Timing

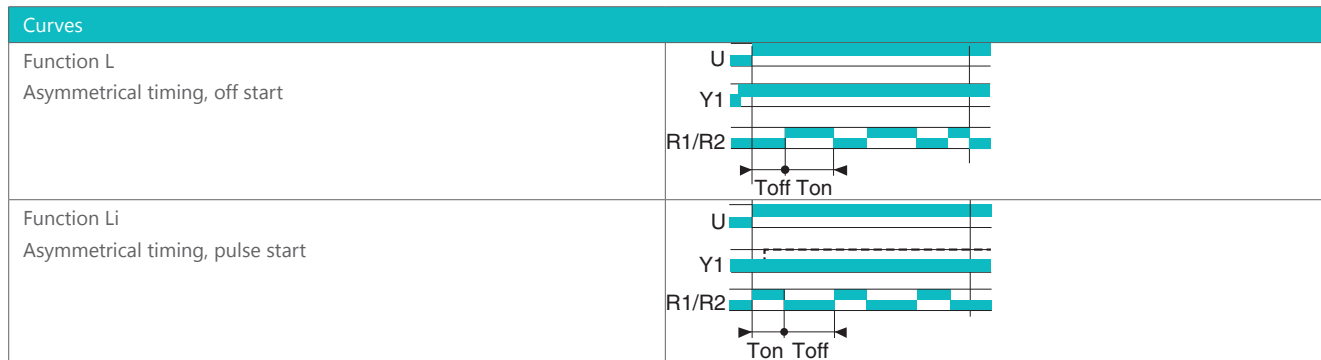
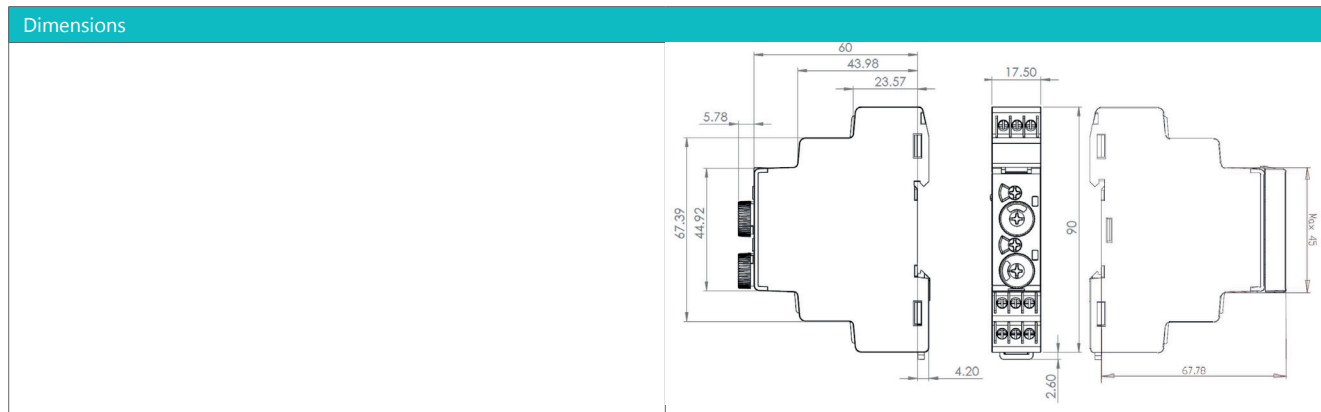
Timing ranges (7 ranges)	0.5→10s, 0.05→1min, 0.5→10min, 0.05→1h, 0.5→10h, 0.05→1day, 0.5→10days
Minimum pulse duration typically (relay version)	IEC 1812-1: 30 ms / 100 ms with load
Maximum reset time by de-energisation typically (relay version)	IEC 1812-1: 120 ms
Repeatability	IEC 1812-1: $\leq \pm 0,5 \%$
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 $\sim$ / $\overline{\text{m}}$
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 $\overline{\text{m}}$ )
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 $\mu$ 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 $\overline{\text{m}}$ / 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 →3.3 mm <sup>2</sup> (AWG 20 →AWG 12) 2 x 0.5 →1.5 mm <sup>2</sup> (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	$\pm$ 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 $\pm$ 8 kV / Contact $\pm$ 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 <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

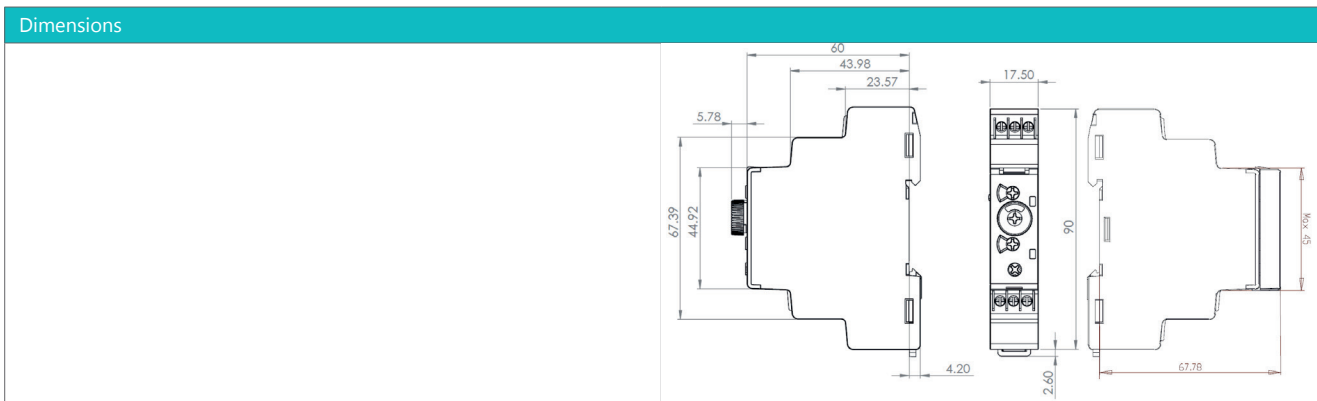
Timing	
Timing ranges (7 ranges)	0.5→10s, 0.05→1min, 0.5→10min, 0.05→1h, 0.5→10h, 0.05→1day, 0.5→10days
Minimum pulse duration typically (relay version)	IEC 1812-1: 30 ms / 100 ms with load
Maximum reset time by de-energisation typically (relay version)	IEC 1812-1: 120 ms
Repeatability	IEC 1812-1: ≤ ± 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 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 93050: > 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 <sup>2</sup> (AWG 20 → AWG 12) 2 x 0.5 → 1.5 mm <sup>2</sup> (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 $\pm 2$ 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	
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

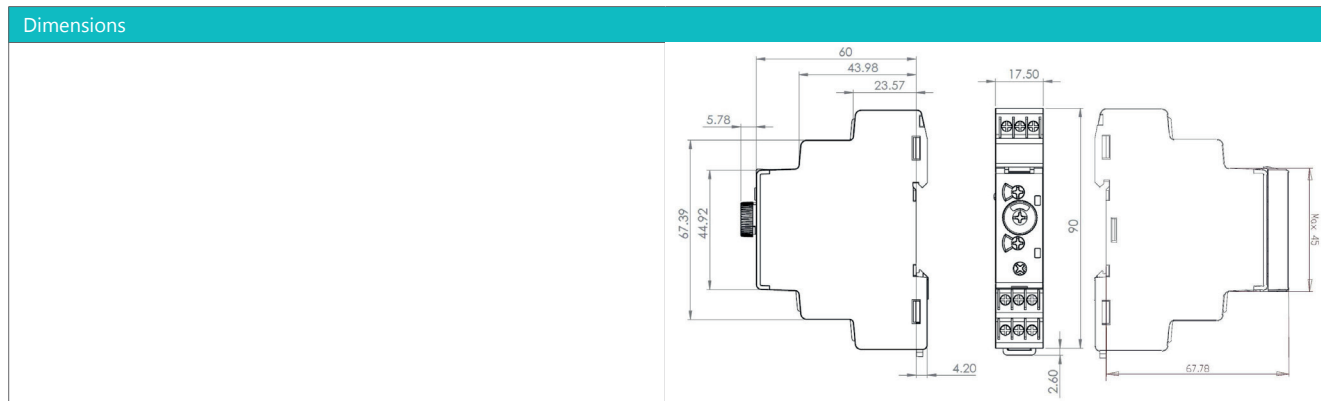
Output relay	
Contact arrangement	2 CO (SPDT) (Changeover -Single Pole Double Throw-) R1: Follow timing function R2: Follow timing function / Instantaneous
Maximum switching voltage	250 VAC / 8 A resistive / 250 VDC / 0.3 A resistive
Switching current rate (resistive)	NO / NC : 8A 250 V AC / 8 A 30 VDC @ 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 <sup>5</sup> cycles min at 250 VAC/ 8 A resistive
Maximum rate (at max switching power)	360 cycles /hour
Mechanical life	10 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	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 <sub>~</sub> /V <sub>DC</sub>
Operating range	15 %, +10 %
Operating frequency (Hz)	50 / 60 Hz ± 5 %
Galvanic isolation	No
Max. absorbed power	Approx. 3 VA (V <sub>~</sub> ) 1.5 W (V <sub>DC</sub> )
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 <sub>DC</sub> / 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 <sup>2</sup> (AWG 20 → AWG 12) 2 x 0.5 → 1.5 mm <sup>2</sup> (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	