

## › Plug-In Timer 11 pins

- › Multifunction or monofunction
- › Compact body for space saving
- › Wide time range (from 0.5 seconds to 10 days delay)
- › Universal power supply (12-240 V $\sim$ )
- › 1 or 2 relay outputs (SPDT / Changeover)
- › Protective cover
- › LED status indicator
- › 3-wire PNP sensor compatible
- › 11-pins connections



*PU2R10MV1*  
Multifunctions U -  
Monofunction Ad -  
Instantaneous



*PA2R10MV1*  
Monofunction A, At



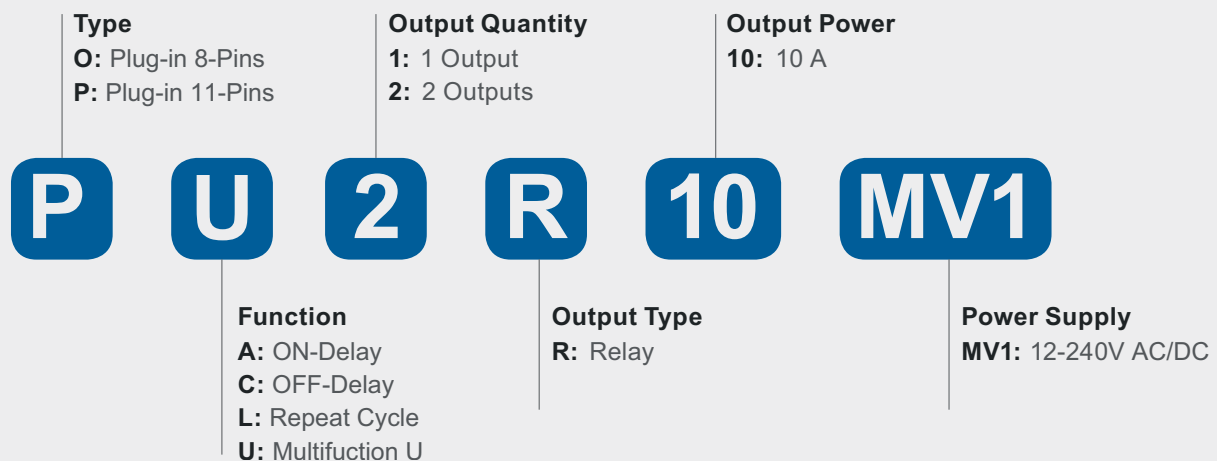
*PC2R10MV1*  
Monofunction C



*PL2R10MV1*  
Monofunction L, Li

| Product selection                                                                 |          |                    |                  |
|-----------------------------------------------------------------------------------|----------|--------------------|------------------|
| Function                                                                          | Output   | Supply Voltage     | Part Number      |
| <b>Multifunction U:</b> (A, At, B, C, H, Ht, D, Di, Ac, Bw)<br>Ad - Instantaneous | 2 relays | 12 to 240 V $\sim$ | <b>PU2R10MV1</b> |
| A, At                                                                             | 2 relays | 12 to 240 V $\sim$ | <b>PA2R10MV1</b> |
| C                                                                                 | 2 relays | 12 to 240 V $\sim$ | <b>PC2R10MV1</b> |
| L, Li                                                                             | 2 relays | 12 to 240 V $\sim$ | <b>PL2R10MV1</b> |

## PART NUMBERING SYSTEM



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### Description:

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

The Plug in Analog Timers, a new family of 11 timers with multifunction or monofunction, universal power supply, wide time range, with all the classic functions.

For more information about Crouzet's Syr-line range, please visit [www.crouzet.com](http://www.crouzet.com).

|                                                           | PU2R10MV1                                                                                                                                                                              | PA2R10MV1                                           | PC2R10MV1 | PL2R10MV1 |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------|-----------|
| Power Supply                                              |                                                                                                                                                                                        |                                                     |           |           |
| Rated supply voltage Un                                   | 12 to 240 V~                                                                                                                                                                           |                                                     |           |           |
| Voltage supply tolerance                                  | -15 %, +10 %                                                                                                                                                                           |                                                     |           |           |
| AC supply voltage frequency                               | 50 / 60 Hz ± 5%                                                                                                                                                                        |                                                     |           |           |
| Galvanic isolation of supply / inputs                     | No                                                                                                                                                                                     |                                                     |           |           |
| Power consumption @ Un                                    | Approx. 3 VA (V~) 1.5 W (V---                                                                                                                                                          |                                                     |           |           |
| Immunity to power micro cuts                              | 10 ms                                                                                                                                                                                  |                                                     |           |           |
| Timing Control                                            |                                                                                                                                                                                        |                                                     |           |           |
| Specified time ranges (7) (IEC 1812-1)                    | 0.5..10 s, 0.05..1 min, 0.5..10 min, 0.05..1 h, 0.5..10 h, 0.05..1 day, 0.5..10 days                                                                                                   |                                                     |           |           |
| Minimum control pulse duration (IEC 1812-1)               | 40 ms<br>100 ms with load                                                                                                                                                              |                                                     |           |           |
| Recovery time (after by de-energisation) (IEC 1812-1)     | 120 ms                                                                                                                                                                                 |                                                     |           |           |
| Repeatability (IEC 1812-1)                                | ≤ ± 0.5 %                                                                                                                                                                              |                                                     |           |           |
| Setting Accuracy (IEC 1812-1)                             | ≤ ± 10 %                                                                                                                                                                               |                                                     |           |           |
| Temperature drift                                         | ≤ ± 0.05 % / °C                                                                                                                                                                        |                                                     |           |           |
| Voltage drift                                             | ≤ ± 0.2 % / V                                                                                                                                                                          |                                                     |           |           |
| Relay output                                              |                                                                                                                                                                                        |                                                     |           |           |
| Contact arrangement                                       | 2 CO (SPDT) (ChangeOver -Single Pole Double Throw-) R1: Follow timing function R2: Follow timing function / Instantenous                                                               | 2 CO (SPDT) (ChangeOver -Single Pole Double Throw-) |           |           |
| Maximum switching voltage                                 | 250 V~ / 10 A resistive / 125 V--- / 0.3 A resistive                                                                                                                                   |                                                     |           |           |
| Switching current rate (resistive)                        | NO / NC: 10 A 250 V~ / 10 A 30 V--- @ 25 °C<br>NO / NC: 5 A 250 V~ / 5 A 30 V--- @ 60 °C                                                                                               |                                                     |           |           |
| Minimum switching contact                                 | 10 mA / 5 V---                                                                                                                                                                         |                                                     |           |           |
| Maximum switching power (resistive)                       | 2500 VA / 300 W                                                                                                                                                                        |                                                     |           |           |
| Electrical life                                           | 10 <sup>5</sup> cycles min at 250 V~/ 10 A resistive (NO only)                                                                                                                         |                                                     |           |           |
| Maximum rate (at max switching power)                     | 360 cycles /hour                                                                                                                                                                       |                                                     |           |           |
| Mechanical life                                           | 10 x 10 <sup>6</sup> cycles                                                                                                                                                            |                                                     |           |           |
| Rated impulse voltage                                     | 4 kV (1.2/50 µs)                                                                                                                                                                       |                                                     |           |           |
| Dielectric strength between coil / contacts (IEC 60664-1) | 2.5 kV / 1 min / 1 mA / 50 Hz                                                                                                                                                          |                                                     |           |           |
| Dielectric strength between open contacts                 | 1 kV / 1 min / 1 mA / 50 Hz                                                                                                                                                            |                                                     |           |           |
| Insulation                                                |                                                                                                                                                                                        |                                                     |           |           |
| Rated Insulation voltage (IEC 60664-1)                    | 250 V                                                                                                                                                                                  |                                                     |           |           |
| Insulation coordination (IEC 60664-1)                     | Overvoltage category III; pollution degree 2; up to 2000 m above sea level                                                                                                             |                                                     |           |           |
| Rated impulse voltage (IEC 60664-1)                       | 4 kV (1.2/50 µs)                                                                                                                                                                       |                                                     |           |           |
| Clearance / Creepage distances (IEC 60664-1)              | 3 mm / 3.2 mm                                                                                                                                                                          |                                                     |           |           |
| Dielectric strength (EN-61812-1)                          | 2.5 kV / 1 min / 1 mA / 50 Hz                                                                                                                                                          |                                                     |           |           |
| Insulation Resistance (NFC 93 050)                        | > 500 MOhms / 250 V--- / 1 min                                                                                                                                                         |                                                     |           |           |
| General specifications                                    |                                                                                                                                                                                        |                                                     |           |           |
| Status indication (LED)                                   | Un: green LED blinks when count, flash when waiting Y1, continuous ON when supplied<br>R: yellow LED blink when only R2 is ON (instantaneous), continuous ON when the 2 relays are ON. |                                                     |           |           |
| Casing                                                    | 35 mm                                                                                                                                                                                  |                                                     |           |           |
| Mounting                                                  | Mounting base-mounted on socket                                                                                                                                                        |                                                     |           |           |
| Housing material (UL94)                                   | Enclosure plastic type V0                                                                                                                                                              |                                                     |           |           |
| Degree of protection (IEC 60529)                          | IP40                                                                                                                                                                                   |                                                     |           |           |
| Operating temperature (IEC 60068-2)                       | -20 °C to +60 °C                                                                                                                                                                       |                                                     |           |           |

|                                                                                     | PU2R10MV1                                                                                                                                                                                                                                                                                                                                                                                                                                                         | PA2R10MV1 | PC2R10MV1 | PL2R10MV1 |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|-----------|
| Storage temperature (IEC 60068-2)                                                   | -40 °C to +70 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                  |           |           |           |
| Humidity (IEC 60068-2-30)                                                           | 93 % without condensation                                                                                                                                                                                                                                                                                                                                                                                                                                         |           |           |           |
| Vibration resistance (IEC 60068-2-6)                                                | ±0.15mm from 10 Hz...60 Hz 2 g from 60 Hz..150 Hz                                                                                                                                                                                                                                                                                                                                                                                                                 |           |           |           |
| Shock resistance (IEC60068-2-27)                                                    | 10 gn - 11 ms; 3 X 6 axis (Output non-energized) 5 gn - 11 ms; 3 X 6 axis (Output energized)                                                                                                                                                                                                                                                                                                                                                                      |           |           |           |
| Drop to concrete floor (IEC 60068-2-32)                                             | High: 0.75 m                                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |           |           |
| Weight                                                                              | 90 g<br>110 g with packaging                                                                                                                                                                                                                                                                                                                                                                                                                                      |           |           |           |
| Standards                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |           |
| CEE Directive: 2014/30/EU<br>2014/35/EU                                             | EMC<br>Low voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                |           |           |           |
| Approvals / Marking                                                                 | CE<br>cULus Listed Industrial Control Equipment                                                                                                                                                                                                                                                                                                                                                                                                                   |           |           |           |
| Security standard (IEC 60664-1)                                                     | Insulation coordination for equipment within low-voltage systems                                                                                                                                                                                                                                                                                                                                                                                                  |           |           |           |
| Conformity with environmental directives:<br>2015/863/UE<br>1907/2006<br>2012/19/UE | RoHS<br>Reach<br>WEEE                                                                                                                                                                                                                                                                                                                                                                                                                                             |           |           |           |
| Product standard<br>(IEC 61812-1 / UL 60947-4-1)                                    | Specified time relays for industrial use<br>Industrial Control Equipment (NRNT- Industrial Control Switches)<br>Refer to UL840 Insulation Coordination for Electrical Equipment                                                                                                                                                                                                                                                                                   |           |           |           |
| Electromagnetic compatibility:<br>IEC 61000-6-2<br>IEC 61000-6-3<br>IEC 61000-6-4   | Generic standards<br>Immunity for industrial environment<br>Emission residential environment<br>Emission industrial environment                                                                                                                                                                                                                                                                                                                                   |           |           |           |
| Immunity to electrostatic discharges<br>(IEC61000-4-2)                              | Level III Air ±8 kV / Contact ±6 kV                                                                                                                                                                                                                                                                                                                                                                                                                               |           |           |           |
| Immunity to radiated, radio-frequency,<br>electromagnetic field (IEC61000-4-3)      | Level III<br>10 V/m (80 MHz to 1 GHz) 80 % AM (1 kHz)<br>3 V/m (1.4 to 2 GHz) 80 % AM (1 KHz)<br>1 V/m (2 to 2.7 GHz) 80 % AM (1 KHz)                                                                                                                                                                                                                                                                                                                             |           |           |           |
| Immunity to rapid transient bursts (IEC<br>61000-4-4)                               | direct ±4 kV 5/50 Tr/Th ns 5 KHz & 100 KHz<br>Capacitive coupling clamp ± 2 kV 5/50 Tr/Th ns 5 KHz & 100 KHz                                                                                                                                                                                                                                                                                                                                                      |           |           |           |
| Immunity to shock waves on power supply<br>(IEC 61000-4-5)                          | Level III: line-to-earth ±2 kV / line-to-line ±1 kV                                                                                                                                                                                                                                                                                                                                                                                                               |           |           |           |
| Immunity to radiofrequency in common<br>mode (IEC 61000-4-6)                        | Level III: 10 Vrms (0.15 to 80 MHz) 80 % AM (1 kHz)                                                                                                                                                                                                                                                                                                                                                                                                               |           |           |           |
| Immunity to voltage dips and breaks<br>(IEC 61000-4-11)                             | 0 % residual voltage during 1 cycle (Crit. B)<br>40 % residual voltage / 10 cycles 50 Hz / 12 cycles 60 Hz (Crit. C)<br>70 % residual voltage / 25 cycles 50 Hz / 30 cycles 60 Hz (Crit. C)<br>Short interruptions:<br>0 % residual voltage / 250 cycles 50 Hz / 300 cycles 60 Hz (Crit. C)                                                                                                                                                                       |           |           |           |
| AC/DC main port emissions<br>(IEC 61000-6-3 IEC 61000-6-4)                          | CISPR 16-2-1 (7.4.1), CISPR 16-1-2 (4.3)<br>0.15 MHz – 0.5 MHz, 66 dB(µV) – 56 dB(µV) quasi-peak, 56 dB(µV) – 46 dB(µV) average<br>0.5 MHz – 5 MHz, 56 dB(µV) quasi-peak, 46 dB(µV) average<br>5 MHz – 30 MHz, 60 dB(µV) quasi-peak, 50 dB(µV) average<br>CISPR 14-1<br>0.15 MHz – 30 MHz<br>CISPR 16-2-1 (7.4.1), CISPR 16-1-2 (4.3)<br>0.15 MHz – 0.5 MHz, 79 dB(µV) quasi-peak, 66 dB(µV) average<br>0.5 MHz – 30 MHz, 73 dB(µV) quasi-peak, 60 dB(µV) average |           |           |           |
| Radiated emissions<br>(IEC 61000-6-3 IEC 61000-6-4)                                 | CISPR 16-2-3<br>30 MHz – 230 MHz, 30 dB(µV/m) Quasi-peak at 10 m<br>230 MHz – 1 000 MHz, 37 dB(µV/m) Quasi-peak at 10 m<br>Or: 30 MHz – 230 MHz, 40 dB(µV/m) Quasi-peak at 3 m in a semi-anechoic chamber<br>230 MHz – 1 000 MHz, 47 dB(µV/m) Quasi-peak at 3 m in a semi-anechoic chamber                                                                                                                                                                        |           |           |           |

PU2R10MV1

PA2R10MV1

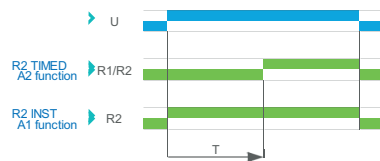
PC2R10MV1

PL2R10MV1

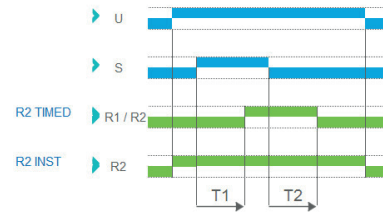
## Function Diagrams

## Basic Time Chart

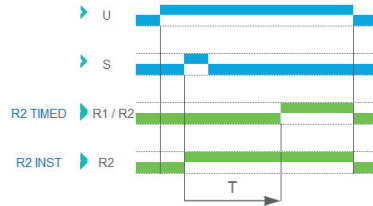
Function A - On-Delay (Delay on make)



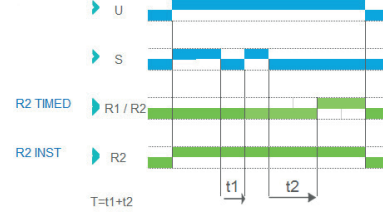
Function Ac - On/Off Delay (Delay on make/break)



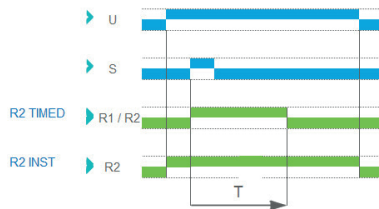
Function Ad - Delay on Start



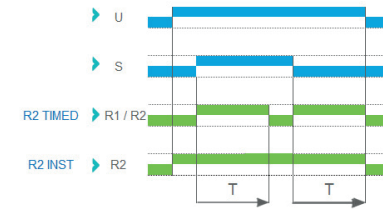
Function At - Summation time relay



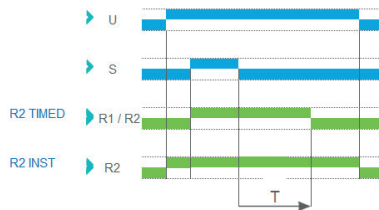
Function B - One-Shot



Function Bw



Function C - Off-Delay (Delay on break)



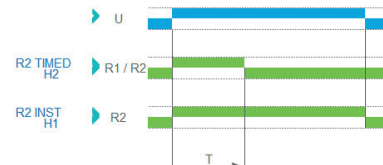
Function D - Symmetrical flashing (OFF Start)



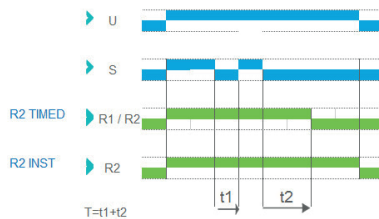
Function Di - Symmetrical flashing (ON Start)



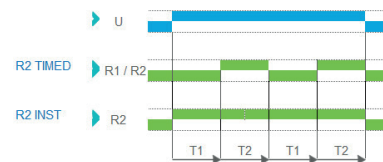
Function H - Interval



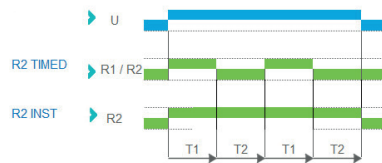
Function Ht - Interval summation time relay



Function L - Recycler (OFF Start)



Function Li - Recycler (ON Start)

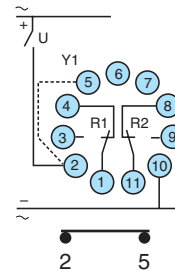
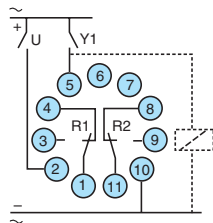


| PU2R10MV1 | PA2R10MV1 | PC2R10MV1 | PL2R10MV1 |
|-----------|-----------|-----------|-----------|
|-----------|-----------|-----------|-----------|

Connections

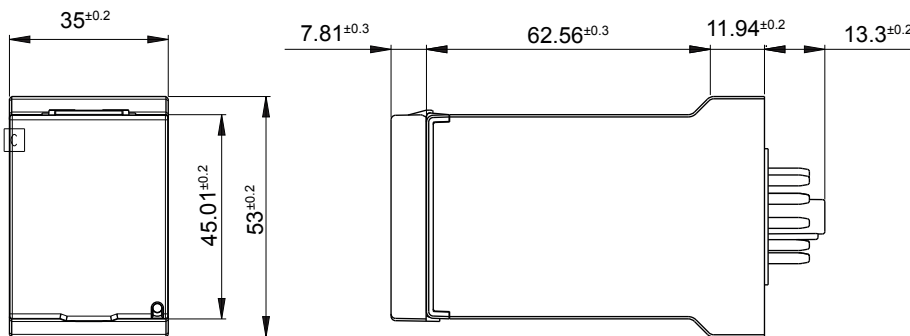
PU2R10MV1 - PA2R10MV1 - PC2R10MV1

PL2R10MV1



| PU2R10MV1 | PA2R10MV1 | PC2R10MV1 | PL2R10MV1 |
|-----------|-----------|-----------|-----------|
|-----------|-----------|-----------|-----------|

Outline dimensions (mm)



| PU2R10MV1 | PA2R10MV1 | PC2R10MV1 | PL2R10MV1 |
|-----------|-----------|-----------|-----------|
|-----------|-----------|-----------|-----------|

Socket

RECOMENDED SOCKET

11 Pins for DIN Rail or Panel Mount (P/N: 25 622 080)



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