



**THE DATASHEET OF**  
**25622130**

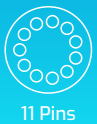
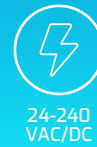


# Front Panel Digital Timers TMR48 D

## Performance Version 48x48 mm

Syr-line MDA2, MDF1, GDF1, GDS2 Series

*Syr-line Digital Timers: higher precision and many programming features with the biggest screen ever seen in the timer relays' market and the most intuitive programming for ease to use and fast configuration.*



Electrical Control & Protection > Timer Relays > Front Panel > Digital

### Highlights

- Large LED or LCD Screen (13.2 mm)
- Multi-function and single-function
- Basic & Advance configuration modes
- Multi-range (0.05 s – 9999 h)
- Multi-voltage (24-240 VAC/DC)
- 1 or 2 relay outputs (Changeover)
- Memory option in event of a break in supply
- Lock function
- Up or down timing
- DIN Sized (48x48 mm) Housing
- Compact body (63 mm long)
- Water & Dust-proof (IP66)
- 8 Pins & 11 Pins connections

### Standards



### Part Numbers

MDA2R10MV2	MDF1R10MV2	GDF1R10MV2	GDS2R10MV2
Functions A Series: MDA2	Functions: A - Ac - Ad - B - C - H - L - Li - D - Di Series: MDF1	Functions: A - Ac - Ad - B - C - H - L - Li - D - Di Series: GDF1	Functions: A - Ab - Ac - Ad - AMt - At - B - C - H - Ht - L - Li - T - W - D - Di Series: GDS2

### Part numbering system

<b>Type:</b> MD: Digital 8 Pins GD: Digital 11 Pins	<b>Output Qty:</b> 1: 1 Output 2: 2 Outputs	<b>Output Power:</b> 10: 10 A 05: 5 A
<b>GD</b>	<b>S</b>	<b>1</b>
<b>R</b>	<b>10</b>	<b>MV2</b>
<b>Function:</b> A: ON-Delay E: Multifunction E F: Multifunction F S: Multifunction S	<b>Output Type:</b> R: Relay	<b>Power Supply:</b> MV2: 24-240 VAC/DC MVA: 100-240 VAC/DC 24U: 24 VAC/DC

### More Info.



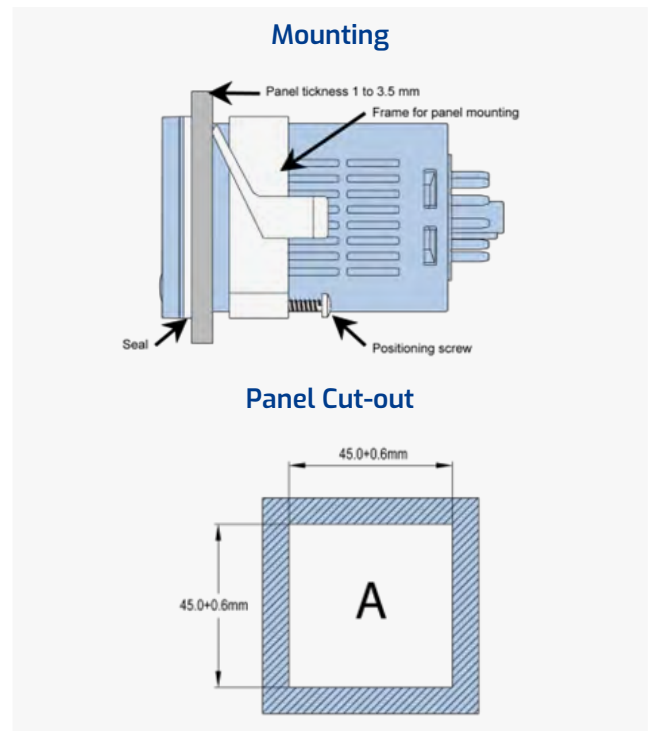
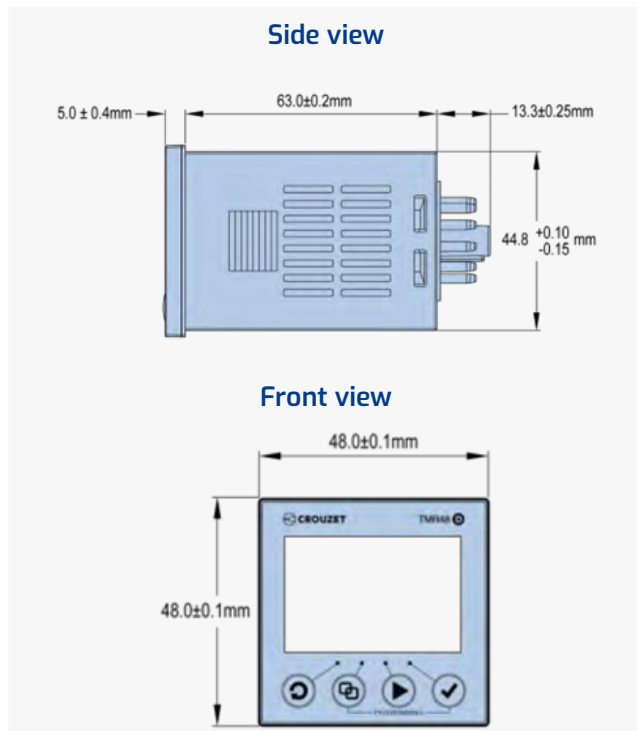
## Specifications

	MDA2R10MV2	MDF1R10MV2	GDF1R10MV2	GDS2R10MV2
<b>Inputs</b>				
Supply voltage	24-240 VAC/DC			
Voltage supply tolerance	-15%, +10%			
AC supply voltage frequency	50/60 Hz $\pm$ 5%			
Galvanic isolation of supply / inputs	No			
Max power consumption at Un	2.5 VA (VAC) 1 W (VDC)			
Immunity to power micro cuts	10 ms			
<b>Timing</b>				
Timing ranges	IEC 1812-1: 0.001 s - 9.999 s, 0.01 s - 99.99 s, 0.1 s - 999.9 s, 1 s - 9999 s, 1 s - 99 min 59 s, 0.1 min - 999.9 min, 1 min - 9999 min, 1 min - 99 h 59 min, 0.1 h - 999.9 h, 1 h - 9999 h			
Minimum control pulse duration	IEC 1812-1: 1 ms or 20 ms selectable			
Recovery time (after by de-energization)	IEC 1812-1: 120 ms max			
Repeatability	IEC 1812-1: $\leq \pm 0.03\%$ $\pm 20$ ms (VDC) / 50 ms (VAC)			
Setting accuracy (full range)	IEC 1812-1: $\leq \pm 0.03\%$ $\pm 20$ ms (VDC) / 50 ms (VAC)			
Drift temperature	$\leq \pm 0.03\%$ $\pm 20$ ms (VDC) / 50 ms (VAC)			
Drift voltage	$\leq \pm 0.03\%$ $\pm 20$ ms (VDC) / 50 ms (VAC)			
<b>Outputs</b>				
Output configuration	2 CO (SPDT)	1 CO (SPDT)		2 CO (SPDT)
Maximum switching voltage	250 VAC / 10 A resistive / 125 VDC / 0.3 A resistive			
Switching current rate (resistive)	NO/NC: 2x10 A at 40°C 250 VAC / 2x10 A at 40°C 30 VDC NO/NC: 2x8 A at 60°C 250 VAC / 2x8A at 60°C 30 VDC	NO/NC: 10 A 250 VAC / 10 A 30 VDC		NO/NC: 2x10 A at 40°C 250 VAC / 2x10 A at 40°C 30 VDC NO/NC: 2x8 A at 60°C 250 VAC / 2x8A at 60°C 30 VDC
Maximum switching power (resistive)	2x2500 VA / 2x300 W	2500 VA / 300 W		2x2500 VA / 2x300 W
Electrical life (operations)	1x10 <sup>5</sup> cycles (10 A 250 VAC resistive)			
Minimum breaking current	10 mA / 12 VDC			
Maximum rate (at max switching power)	360 cycles / h			
Mechanical life (operations)	10x10 <sup>6</sup> cycles			
Dielectric strength	Between open contacts: 1 kV / 1 min / 1 mA / 50 Hz			
<b>Insulation</b>				
Rated insulation voltage	IEC 60664-1: 300 V			
Insulation coordination	IEC 60664-1: Overvoltage category III; pollution degree 2			
Rated impulse voltage	IEC 60664-1: 4 kV (1.2/50 $\mu$ s)			
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 M $\Omega$ / 250 VDC / 1 min			

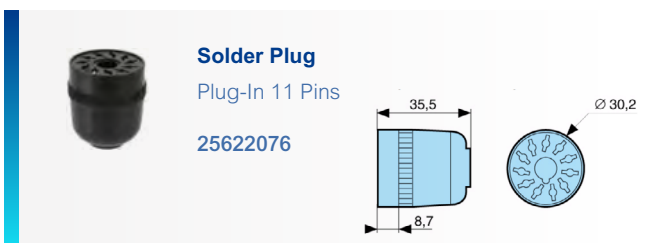
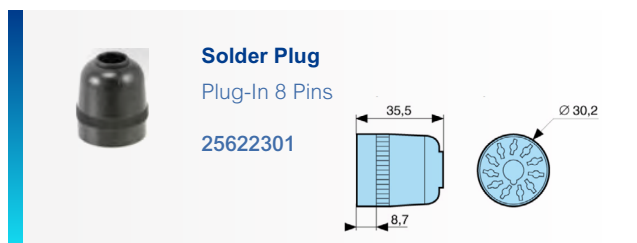
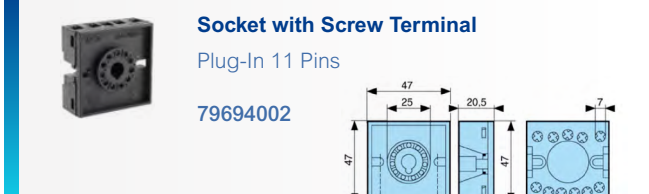
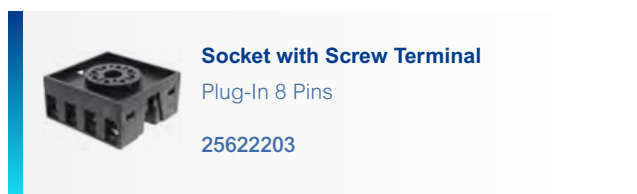
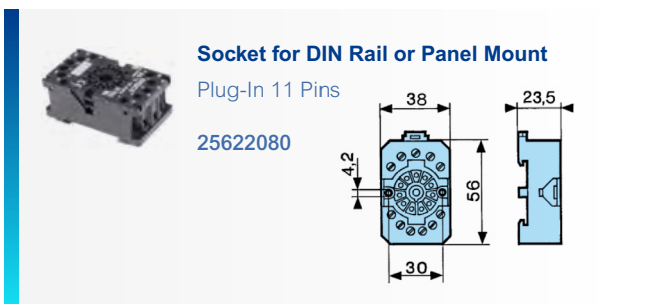
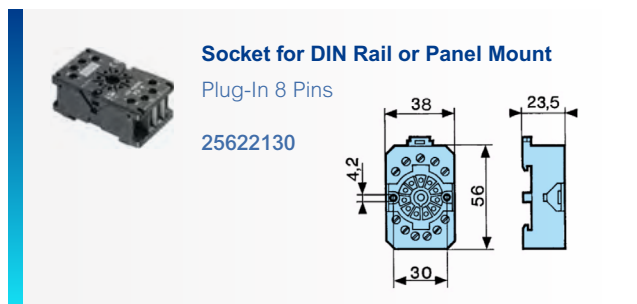
## Specifications

	MDA2R10MV2	MDF1R10MV2	GDF1R10MV2	GDS2R10MV2
<b>General characteristics</b>				
Display	4 digits per value 7 segments LCD			
Memory backup	EEPROM (rewrite 1 000 000 times min, 40 years data hold min)			
Casing	48x48 mm (1/16 DIN)			
Mounting	Front panel, by clip Base-mounted on socket			
Mounting position	All positions			
Housing material	UL94: enclosure plastic type V0			
Degree of protection	IEC 60529: Front Face IP66 with front panel seal / Housing IP20			
Operating temperature	IEC 60068-2: -10°C to +60°C			
Storage temperature	IEC 60068-2: -30°C to +70°C			
Humidity	IEC 60068-2-30: 93% without condensation			
Vibration resistance	IEC 60068-2-6: $\pm 0.15$ mm 10 Hz - 60 Hz / 2 g 60 Hz - 150 Hz			
Shock resistance	IEC 60068-2-27: 15 gn – 11 ms, 3x6 axis (Output non-energized) / 5 gn – 11 ms, 3x6 axis (Output energized)			
Drop to concrete floor	IEC 60068-2-32: Height: 0.75 m			
Weight	Approx. 105 g (150 g with packing)			
<b>Standards</b>				
EU Directives	2014/30/EU: EMC 2014/35/EU: Low voltage			
Approvals / marking	CE, cULus Listed Industrial Control Equipment			
Security standard	IEC 60664-1: Insulation coordination for equipment within low-voltage systems			
Conformity with environmental directives	2015/863/UE: RoHS 1907/2006: Reach 2012/19/UE: WEEE			
Product standard	IEC 61812-1: Specified time relays for industrial use UL 508 (60947-4-1): Industrial Control Equipment (NRNT- Industrial Control Switches) IEC 61000-4-2: Level III			
Immunity to electrostatic discharges	Air $\pm 8$ kV Contact $\pm 6$ kV			
Immunity to radiated, radio-frequency, electromagnetic field	IEC 61000-4-3: Level III 10 V/m (80 MHz - 1 GHz) 80% AM (1 kHz) 3 V/m (1.4 - 2 GHz) 80% AM (1 kHz) 1 V/m (2 - 2.7 GHz) 80% AM (1 kHz)			
Immunity to rapid transient bursts	IEC 61000-4-4: Level IV Direct $\pm 4$ kV (power supply) Capacitive coupling clamp $\pm 2$ kV (command input and outputs)			
Immunity to shock waves on power supply	IEC 61000-4-5: Level III Line-to-earth $\pm 2$ kV Line-to-line $\pm 1$ kV			
Immunity to radiofrequency in common mode	IEC 61000-4-6: Level III 10 Vrms (0,15 - 80 MHz) 80% AM (1 kHz)			
Immunity to voltage dips and breaks	IEC 61000-4-11: Industrial Class II, 0% residual voltage during 1 cycle AC power ports, 70% residual voltage during 25/30 cycles AC power ports, 0% residual voltage, 250/300 cycles AC power ports. Residential: 0% residual voltage during 10 cycle AC power ports, 40% residual voltage during 10 cycles AC power ports, 70% residual voltage during 10 cycles AC power ports, 0% residual voltage, 250/300 cycles AC power ports.			
AC/DC main port emissions	EN55022 / CISPR22 Class B EN 55011 / CISPR11 Class B, Group 1			
Radiated emissions	EN55022 / CISPR22 Class B EN 55011 / CISPR11 Class B, Group 1			

**Dimensions (mm)**

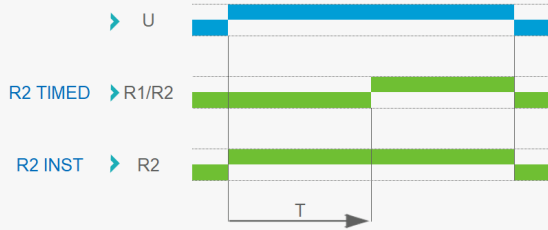


**Accessories**

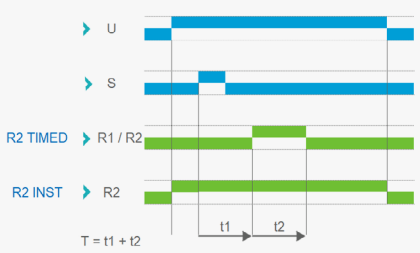


**Function diagrams**

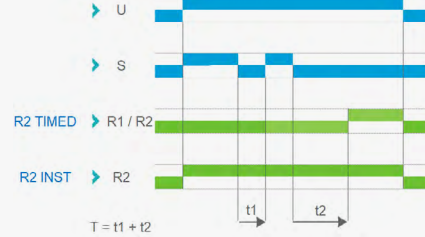
**Function A: On-Delay (Delay on make)**



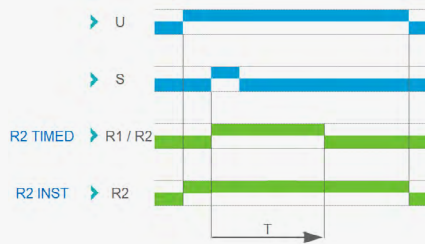
**Function Ab: Delayed Interval**



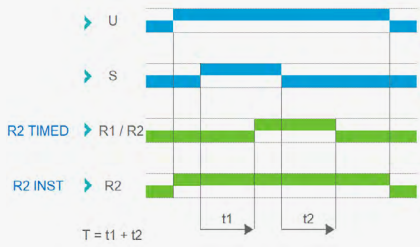
**Function At: Summation Time Relay**



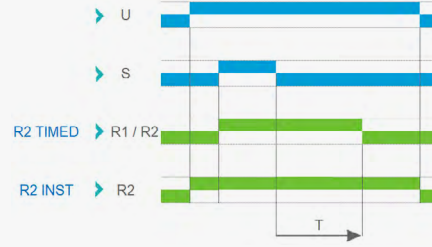
**Function B: One-Shot**



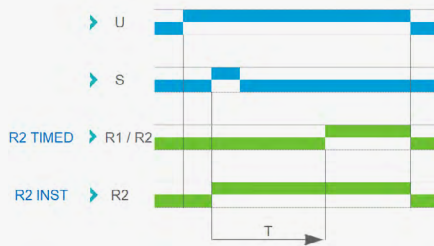
**Function Ac: On/Off Delay (Delay on make/break)**



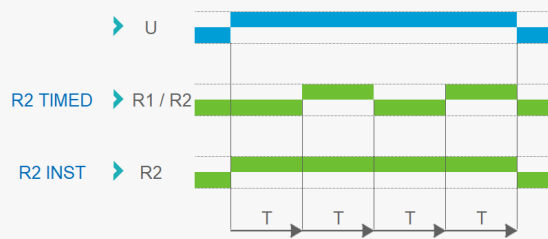
**Function C: Off-Delay (Delay on brake)**



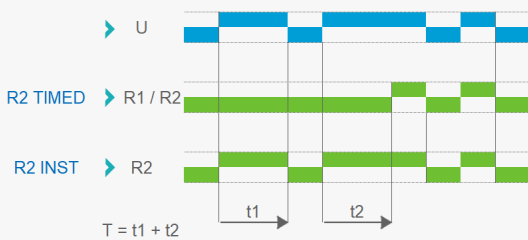
**Function Ad: Delay on Start**



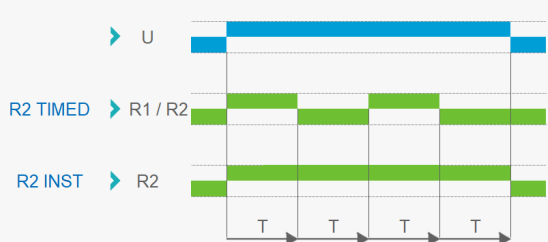
**Function D: Flasher (Symmetrical) - OFF Start**



**Function AMt: On-Delay (Delay on make, Total memory: one delay)**

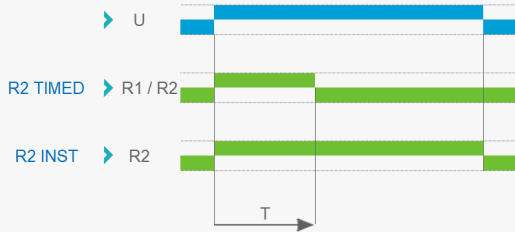


**Function Di: Flasher (Symmetrical) - ON Start**

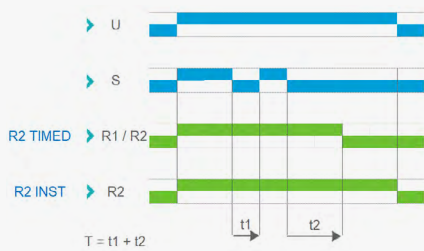


## Function diagrams

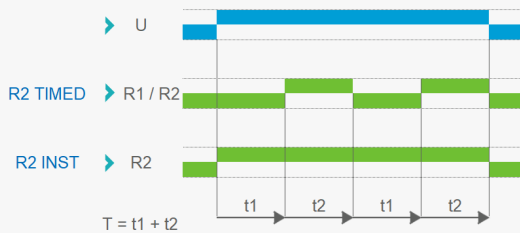
### Function H: Interval



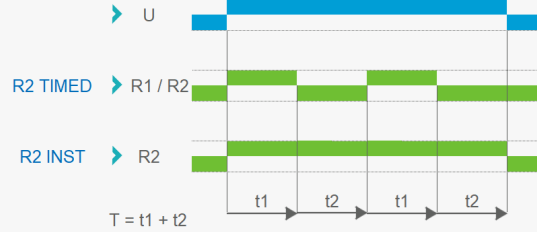
### Function Ht: interval summation time relay



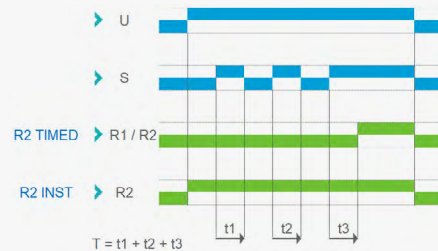
### Function L: Recycler (OFF Start)



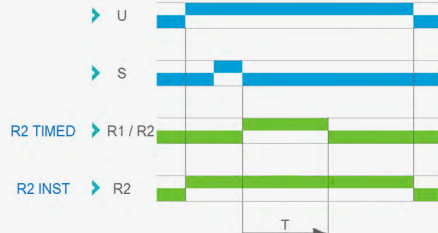
### Function Li: Recycler (ON Start)



### Function T: On-Delay (Delay on make): sum of times

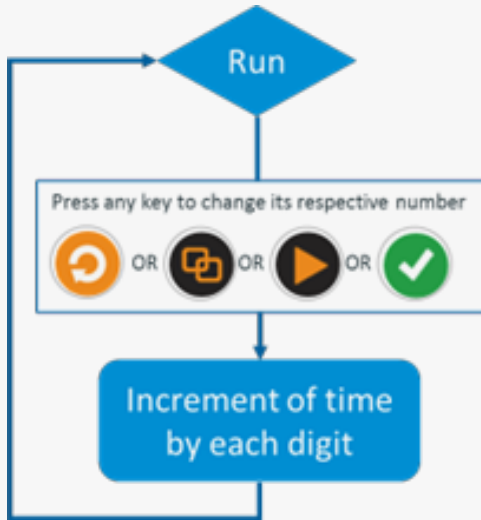


### Function W: Timing after pulse of control contact

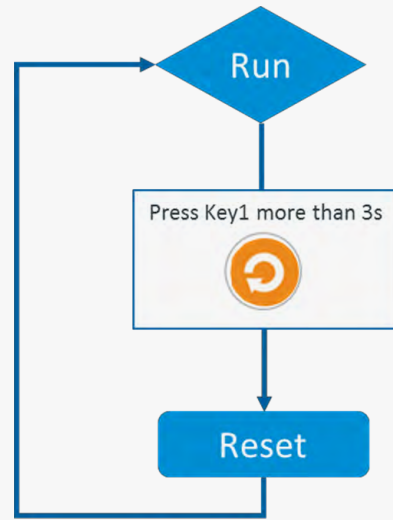


**Key functions**

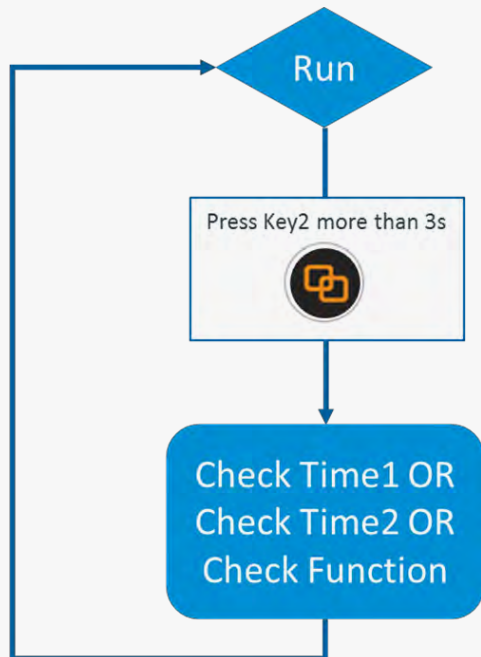
Set time



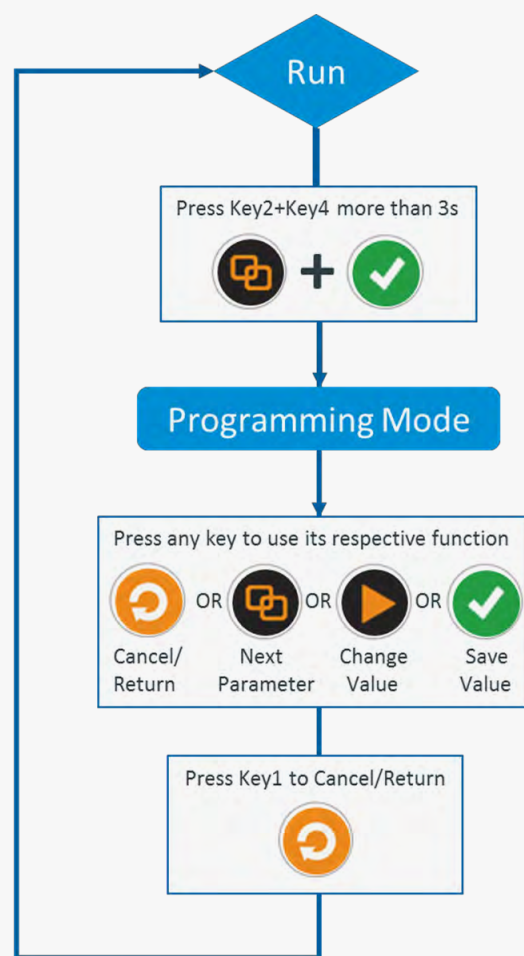
Reset time



Check configured time and function



Programming mode



## Programming mode

### Programming main menu

#	Parameter	Value
1	<b>PASS</b> Pass If "Lock" function is on, pass needs to be entered	0000 0000
2	<b>bASIC_ProG</b> Basic Prog Enter to Basic Programming Mode	
3	<b>AdVAnCED_ProG</b> Advanced Prog Enter to Advanced Programming Mode	
4	<b>tEst</b> Test Enter to Test Mode	

### Basic programming menu

#	Parameter	Value
1	<b>FUncti on</b> Function Select the timing function	A Ab AC Ad ANt At b C A Ab Ac Ad AMt At B C H Ht L Li d di t ũ H Ht L Li D Di T W
2	<b>tI NE_rAnGE</b> Time Range Select the timing range	-.---s --.---s ---.---s ----s ---m---s ---s ---s ---s ---s ---m-s ---.m ---m ---h---m ---.h ---h ---m ---m -h-m ---h ---h
3	<b>CoUnt</b> Count Select the timing count up or down	UP Down Up Down
4	<b>MEmory</b> Memory Activate memory option (save timing after power off)	off on Off On
5	<b>oUtP Ut_2</b> Output 2 Select if Out 2 works timed or instantaneous (MDA2, GDS2)	tI NE i nSt Timed Instantaneous

## Programming mode

### Advanced programming menu

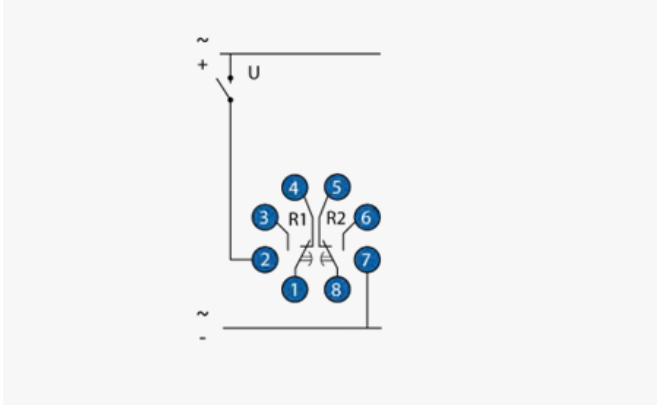
#	Parameter	Value
1	<b>I N P U T _ T I M E</b> Input Time Select input time wave	<b>0020s 0001s</b> 0.020s 0.001s
2	<b>I N P U T _ T Y P E</b> Input Type Select input to work with a NPN or PNP signal	<b>P n P n P n</b> PNP NPN
3	<b>T I M E _ L I M I T</b> Time Limit Select upper time limit	<b>9999 0000</b> 9999 0000
4	<b>b r i g h t n e s s</b> Brightness Select screen brightness	<b>100 50</b> 100% 50%
5	<b>S L E E P _ A F T E R</b> Sleep After Select the time needed to turn off the screen	<b>o f f 5 s 10 s 30 s 60 s</b> Off 5s 10s 30s 60s
6	<b>L o c k</b> Lock Select security level 1 (lock configuration) or 2 (lock all)	<b>o f f 1 2</b> Off 1 2
6.1	<b>P A S S</b> Pass Set password for lock option	<b>0000</b> 0000
6.2	<b>d o n e</b> Done Indication that the lock is on	
7	<b>d E F A U L T _ S E T T I N G S</b> Default Settings Reset settings to default values	<b>n o Y E S</b> No Yes
7.1	<b>S U R E</b> Sure Confirm if reset settings to default values	<b>n o Y E S</b> No Yes
7.2	<b>d o n e</b> Done Indication that settings have been reset	

### Test mode menu

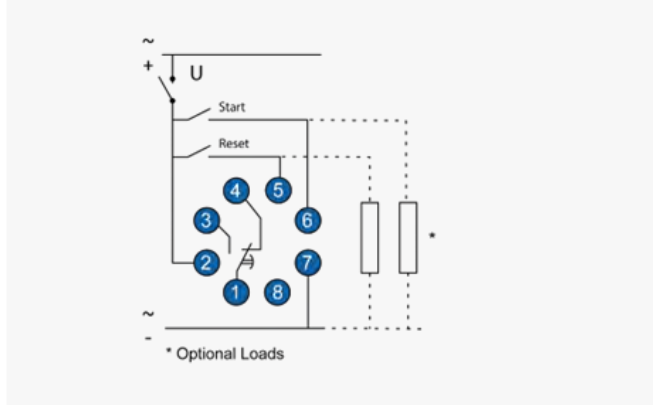
#	Parameter	Value
1	<b>o U T 1</b> Out 1 Turn on/off Relay Output 1	<b>o f f o n</b> Off On
2	<b>o U T 2</b> Out 2 Turn on/off Relay Output 2 (MDA2, GDS2)	<b>o f f o n</b> Off On
3	<b>d I S P L A Y</b> Display Turn on/off all display segments	<b>o f f o n</b> Off On
4	<b>M E M O R Y</b> Memory Test the memory of the timer	<b>o f f t E S T</b> Off Test
4.1	<b>G o o d</b> Good Indication that the memory is working properly	
4.2	<b>E r r .</b> Error Indication that the memory is not working property	

**Wiring diagrams**

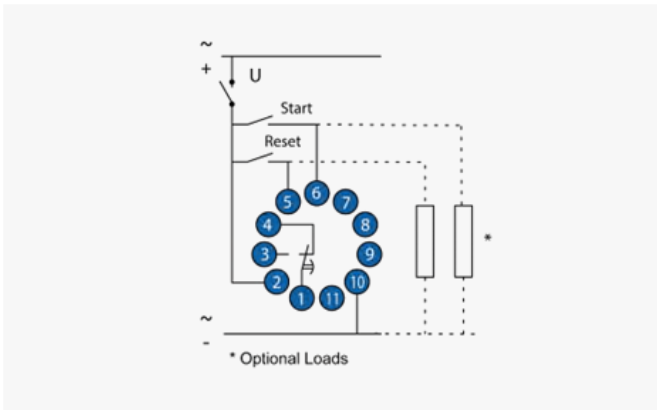
**MDA2R10MV2**



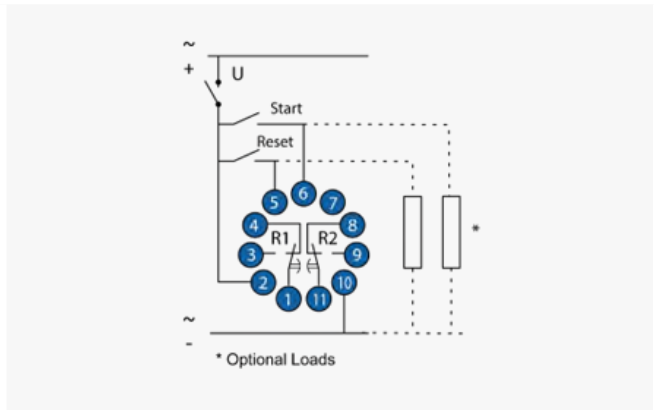
**MDF1R10MV2**



**GDF1R10MV2**



**GDS2R10MV2**



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