CROUZET

# Front Panel Digital Timers TMR48 D

## Standard Version 48x48 mm

Syr-line MDE1 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.*




24 VAC/DC or 100-240 VAC/DC

IP66

8 Pins

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)
- 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 connections

## Standards

CE

UKCA

cULus LISTED

RoHS REACH COMPLIANT

## Part Number

| MDE1R0524U | MDE1R0524U |
|---|---|
|  |  |
| Functions: A - B - C - D - Di - H | Functions: A - B - C - D - Di - H |
| Series: MDE1 | Series: MDE1 |

## Part numbering system

| GD | S | 1 | R | 10 | MV2 |
|---|---|---|---|---|---|

**Type:**
**MD:** Digital 8 Pins
**GD:** Digital 11 Pins

**Function:**
**A:** ON-Delay
**E:** Multifunction E
**F:** Multifunction F
**S:** Multifunction S

**Output Qty:**
**1:** 1 Output
**2:** 2 Outputs

**Output Type:**
**R:** Relay

**Output Power:**
**10:** 10 A
**05:** 5 A

**Power Supply:**
**MV2:** 24-240 VAC/DC
**MVA:** 100-240 VAC/DC
**24U:** 24 VAC/DC

## More Info.

HERE

## Specifications

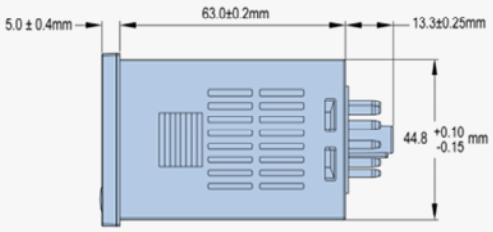
| | MDE1R0524U | MDE1R05MVA |
|---|---|---|
| **Inputs** | | |
| Supply voltage | 24 VAC/DC | 100-240 VAC/DC |
| Voltage supply tolerance | -15%, +10% | |
| AC supply voltage frequency | 50/60 Hz ± 5% | |
| Galvanic isolation of supply / inputs | No | |
| Max power consumption at Un | 2.5 VA (VAC) 1 W (VDC) | |
| Immunity to power micro cuts | 10 ms | |
| **Timing** | | |
| 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: ≤ ± 0.03% ± 20 ms (VDC) / 50 ms (VAC) | |
| Setting accuracy (full range) | IEC 1812-1: ≤ ± 0.03% ± 20 ms (VDC) / 50 ms (VAC) | |
| Drift temperature | ≤ ± 0.03% ± 20 ms (VDC) / 50 ms (VAC) | |
| Drift voltage | ≤ ± 0.03% ± 20 ms (VDC) / 50 ms (VAC) | |
| **Outputs** | | |
| Outputs configuration | 1 CO (SPDT) | |
| Maximum switching voltage | 250 VAC / 30 VDC | |
| Switching current rate (resistive) | NO: 5 A 250 VAC / 5 A 30 VDC<br>NC: 3 A 250 VAC / 3 A 30 VDC | |
| Maximum switching power (resistive) | NO: 1250 VA / 150 W<br>NC: 750 VA / 90 W | |
| Electrical life (operations) | $1x10^5$ cycles NO<br>$7x10^4$ cycles NC | |
| Minimum breaking current | 10 mA / 12 VDC | |
| Maximum rate (at max switching power) | 360 cycles / h | |
| Mechanical life (operations) | $10x10^6$ cycles | |
| Dielectric strength | Between open contacts: 1 kV / 1 min / 1 mA / 50 Hz | |
| **Insulation** | | |
| Rated insulation voltage | IEC 60664-1: 300 V | |
| Insulation coordination | IEC 60664-1: Overvoltage category III; pollution degree 2 | |
| Rated impulse voltage | IEC 60664-1: 4 kV (1.2/50 µs) | |
| Clearance / creepage distances | IEC 60664-1: 3 mm / 3.2 mm | |
| Dielectric strength | EN-61812-1: 2.5 kV / 1 min / 1 mA / 50 Hz | |
| Insulation resistance | NFC 93 050: > 500 MΩ / 250 VDC / 1 min | |

## Specifications

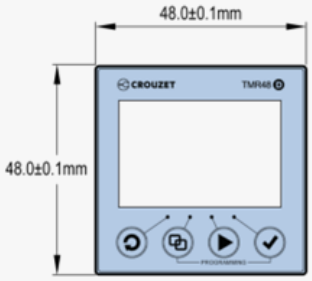
| | MDE1R0524U | MDE1R05MVA |
|---|---|---|
| **General characteristics** | | |
| Display | 4 digits per value<br>7 segments LCD | |
| Memory backup | EEPROM (rewrite 1 000 000 times min, 40 years data hold min) | |
| Casing | 48x48 mm (1/16 DIN) | |
| Mounting | Front panel, by clip<br>Base-mounted 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: ± 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) | |
| **Standards** | | |
| EU Directives | 2014/30/EU: EMC<br>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<br>1907/2006: Reach<br>2012/19/UE: WEEE | |
| Product standard | IEC 61812-1: Specified time relays for industrial use<br>UL 508 (60947-4-1): Industrial Control Equipment (NRNT- Industrial Control Switches) | |
| Immunity to electrostatic discharges | IEC 61000-4-2: Level III<br>Air ± 8 kV<br>Contact ± 6 kV | |
| Immunity to radiated, radio-frequency, electromagnetic field | IEC 61000-4-3: Level III<br>10 V/m (80 MHz - 1 GHz) 80% AM (1 kHz)<br>3 V/m (1.4 - 2 GHz) 80% AM (1 KHz)<br>1 V/m (2 - 2.7 GHz) 80% AM (1 KHz) | |
| Immunity to rapid transient bursts | IEC 61000-4-4: Level IV<br>Direct ± 4 kV (power supply)<br>Capacitive coupling clamp ± 2 KV (command input and outputs) | |
| Immunity to shock waves on power supply | IEC 61000-4-5: Level III<br>Line-to-earth ± 2 kV<br>Line-to-line ± 1 kV | |
| Immunity to radiofrequency in common mode | IEC 61000-4-6: Level III<br>10 Vrms (0,15 - 80 MHz) 80% AM (1 kHz) | |
| Immunity to voltage dips and breaks | IEC 61000-4-11:<br>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.<br>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<br>EN 55011 / CISPR11 Class B, Group 1 | |
| Radiated emissions | EN55022 / CISPR22 Class B<br>EN 55011 / CISPR11 Class B, Group 1 | |

## Dimensions (mm)

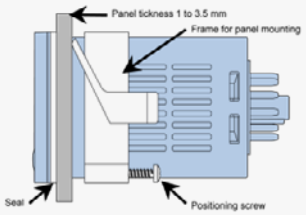
### Side view



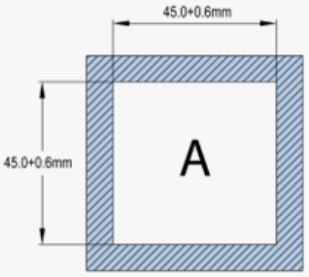

### Front view




### Mounting




### Panel cut-out



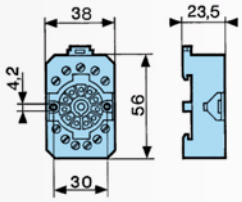

## Accessories



**Socket for DIN Rail or Panel Mount**

Plug-In 8 Pins

25622130






**Socket with Screw Terminal**

Plug-In 8 Pins

25622203

## Function diagrams

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




### Function B: One-Shot




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




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




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

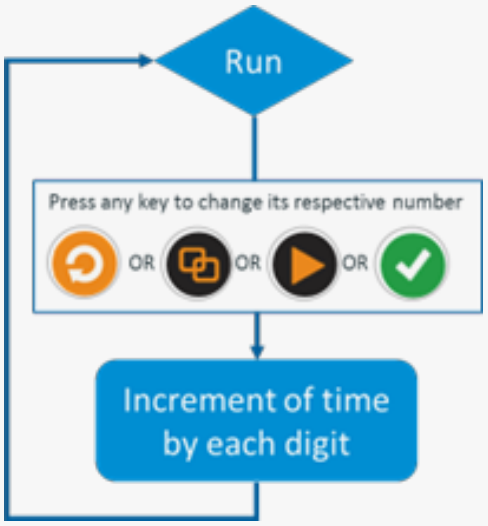



### Function H: Interval

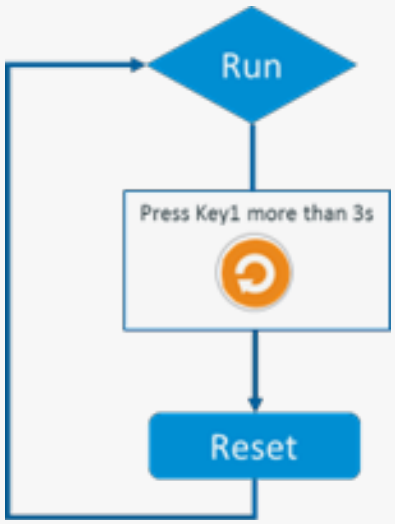


## Key functions

### Set time



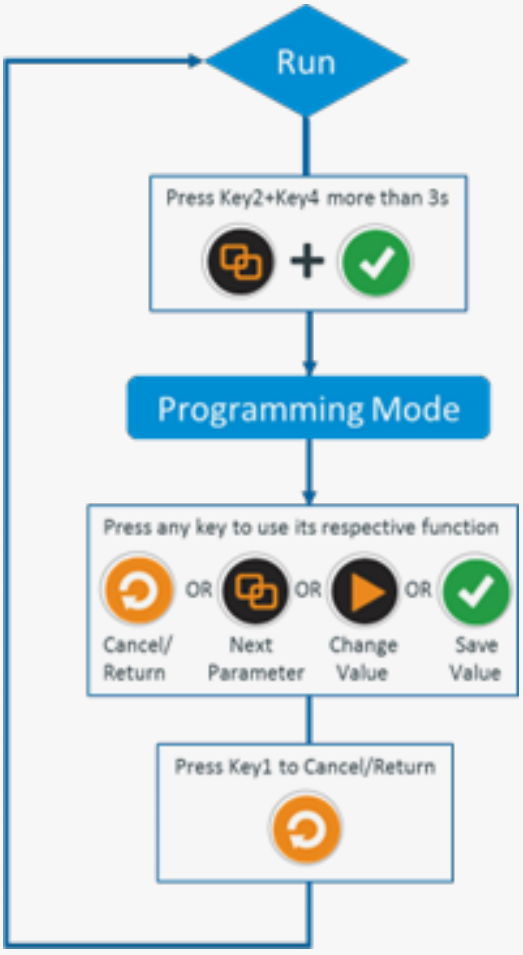

### Reset time




### Check configured time and function




### Programming mode



# Programming mode

## Programming main menu

| # | Parameter | Value |
|---|---|---|
| 1 | PASS<br>**Pass**<br>If "Lock" function is on, pass needs to be entered | 0000<br>0000 |
| 2 | bASI C_PrOG<br>**Basic Prog**<br>Enter to Basic Programming Mode | |
| 3 | AdUAnCEd_PrO G<br>**Advanced Prog**<br>Enter to Advanced Programming Mode | |
| 4 | tESt<br>**Test**<br>Enter to Test Mode | |

## Basic programmation menu

| # | Parameter | Value |
|---|---|---|
| 1 | FUnCtI on<br>**Function**<br>Select the timing function | A Ab Ac Ad AMt At b C<br>A Ab Ac Ad AMt At B C<br>H Ht L Li d di t W<br>H Ht L Li D Di T W |
| 2 | tI ME_rAnGE<br>**Time Range**<br>Select the timing range | -.---s --.--s ---.-s ----s --m--s<br>-.---s --.--s ---.-s ----s --m--s<br>---.-m -----m --h--m ---.-h -----h<br>---.-m -----m --h--m ---.-h -----h |
| 3 | CoUnt<br>**Count**<br>Select the timing count up or down | UP doWn<br>Up Down |
| 4 | MEMory<br>**Memory**<br>Activate memory option (save timing after power off) | oFF on<br>Off On |
| 5 | oUtPUt_2<br>**Output 2**<br>Select if Out 2 works timed or instantaneous (MDA2, GDS2) | tI ME InSt<br>Timed Instantaneous |

## Programming mode

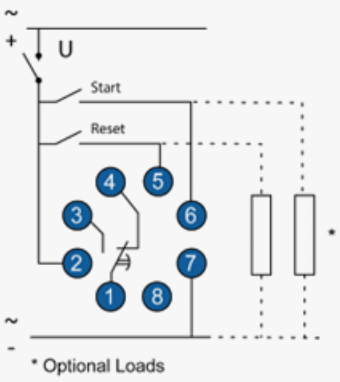
### Advanced programmation menu

| # | Parameter | Value |
|---|---|---|
| 1 | **inPUt_tIME**<br>**Input Time**<br>Select input time wave | 0.020s 0.020s<br>0.001s 0.001s |
| 2 | **inPUt_tYPE**<br>**Input Type**<br>Select input to work with a NPN or PNP signal | PnP PNP<br>nPn NPN |
| 3 | **tIME_LIMIt**<br>**Time Limit**<br>Select upper time limit | 9999 9999<br>0000 0000 |
| 4 | **brIGHtnESS**<br>**Brightness**<br>Select screen brightness | 100 100%<br>50 50% |
| 5 | **SLEEP AFtEr**<br>**Sleep After**<br>Select the time needed to turn off the screen | oFF Off<br>5s 5s<br>10s 10s<br>30s 30s<br>60s 60s |
| 6 | **LoCY**<br>**Lock**<br>Select security level 1 (lock configuration) or 2 (lock all) | oFF Off<br>1 1<br>2 2 |
| 6.1 | **PASS**<br>**Pass**<br>Set password for lock option | 0000 0000 |
| 6.2 | **donE**<br>**Done**<br>Indication that the lock is on | |
| 7 | **dEFAULt_SEttInGS**<br>**Default Settings**<br>Reset settings to default values | no No<br>YES Yes |
| 7.1 | **SUrE**<br>**Sure**<br>Confirm if reset settings to default values | no No<br>YES Yes |
| 7.2 | **donE**<br>**Done**<br>Indication that settings have been reset | |

### Test mode menu

| # | Parameter | Value |
|---|---|---|
| 1 | **oUt 1**<br>**Out 1**<br>Turn on/off Relay Output 1 | oFF Off<br>on On |
| 2 | **oUt2**<br>**Out 2**<br>Turn on/off Relay Output 2 (MDA2, GDS2) | oFF Off<br>on On |
| 3 | **dISPLAY**<br>**Display**<br>Turn on/off all display segments | oFF Off<br>on On |
| 4 | **MEMorY**<br>**Memory**<br>Test the memory of the timer | oFF Off<br>tESt Test |
| 4.1 | **Good**<br>**Good**<br>Indication that the memory is working properly | |
| 4.2 | **Err.**<br>**Error**<br>Indication that the memory is not working properly | |

## Wiring diagrams




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