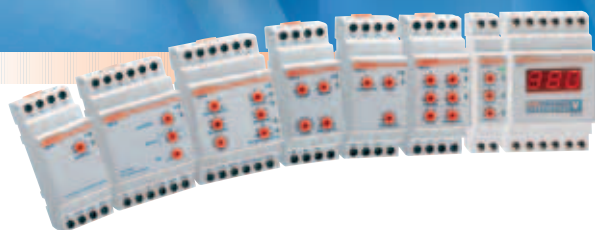





Modular time relays TM series



moduLo

 **Lovato**
electric
100% electricity

Modular time relays



moduLo

LOVATO Electric extends the range of electronic time relays with new modular models of the TM series, **moduLo** line.

- Models with multiscale 0.1 seconds ... 100 days
- Wide supply voltage range 12 ... 240VAC/DC
- Excellent time accuracy and stability
- Immunity to industrial ambient noise
- Operating temperature -20 ... +60°C
- Robust modular DIN43880 housing, one 17.5mm module
- 35mm DIN rail mounting or screw fixing by extractible clips
- Conductor section 0.2 ... 4mm²
- Reliable in most severe operating conditions.

Time relays



moduLo



ORDER CODE	TM P	TM M1	TM M2	TM PL	TM D	TM ST
DESCRIPTION						
	On delay	Programmable multifunction	Programmable multifunction	Asymmetrical recycle	True off delay	For star- delta starting
CONTROL CIRCUIT						
Rated supply voltage (Us)	24-48VDC 24-240VAC	12-240VAC/DC			24-240VAC/DC	24-48VDC 24-240VAC
TIMING CIRCUIT						
Timing setting range	Multiscale 0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1-10h 0.1-1 day 1-10 days ON only OFF only	Multiscale 0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1-10h 0.1-1 day 1-10 days ON only OFF only	Multiscale 0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1-10h 0.1-1 day 1-10 days ON only OFF only	Multiscale 0.1-1s 1-10s 6s-1min 1-10min 6min-1h 1-10h 0.1-1 day 1-10 days 3-30 days 10-100 days	Multiscale 0.06-0,6s 0.6-6s 6s-1min 12s-2min	Multiscale 0.1-1s 1-10s 6s-1min 1-10min
OUTPUT CONTACTS						
Contact arrangement	1 delayed changeover	1 delayed changeover	1 instantaneous/delayed N/O + 1 delayed c/o	1 delayed changeover	1 delayed changeover	2 delayed N/O
Maximum switching voltage	250VAC					
Conventional free air thermal current (Ith)	8A				5A	8A
OTHER INFORMATION						
Operating ambient temperature	-20...+60°C					
Quantity per package [n°]	1					
Net weight [kg]	0.048	0.053	0.078	0.060		

Staircase time relay

DESCRIPTION		OUTPUT CONTACTS	
	Staircase illumination	Contact arrangement	1 delayed N/O
		Maximum switching voltage	250VAC
CONTROL CIRCUIT		Conventional free air thermal current (Ith)	16A
Rated supply voltage (Us)	220-240VAC	OTHER INFORMATION	
TIMING CIRCUIT		Operating ambient temperature	-20...+60°C
Time setting range	Single scale 0.5-20min	Quantity per package [n°]	1
		Net weight [kg]	0.060

- Connection with up to 50 light-up switches maximum
- Suitable for 3 or 4-wire systems
- 1 slide switch for manual or automatic operation (constant lighting)
- Extra lighting time function: when the button is pressed for more than 3s, the time relay remains energised for 1 hour. By pressing it again for additional 3s, the time relay de-energises.



ORDER CODE

TM LS

Operational and wiring diagrams



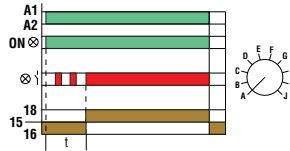
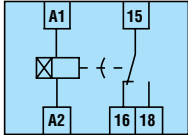
A1-A2 = Power ON

ON ⊗ = LED indicator for power on

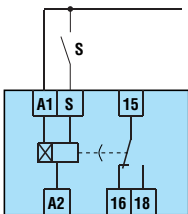
⊗ ∩ = LED indicator for relay state

TM P

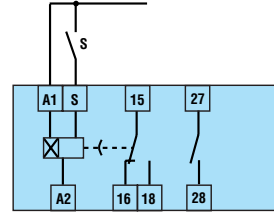
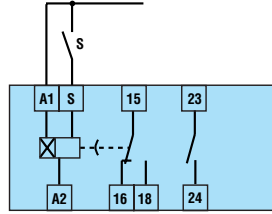
On delay. Delay on make, with start at relay energising



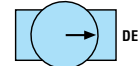
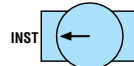
TM M1



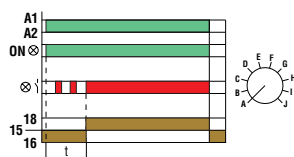
TM M2



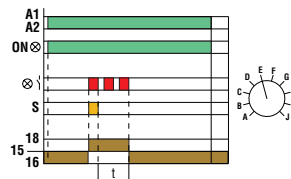
With the rotary switch on INST, the configurable contact (23 - 24) instantaneous switches at relay energising.
With the rotary switch on DEL, the configurable contact (27 - 28) replicates the same operation of the first contact (15 - 18).



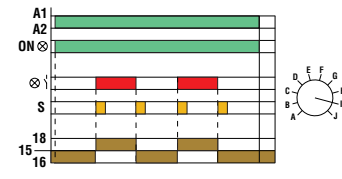
On delay. Delay on make, with start at relay energising



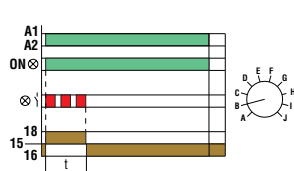
Off delay. Relay energising at external contact closing with start on break



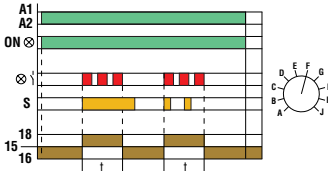
Pulse former, single shot. Relay contact either opens or closes at each external contact closing



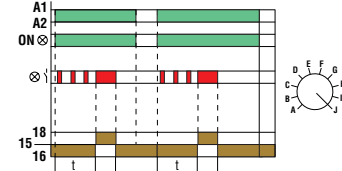
Pulse on relay energising with start on energising



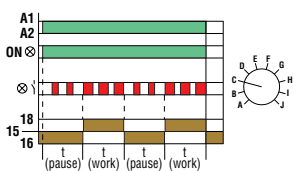
Pulse on relay energising with start at external contact closing



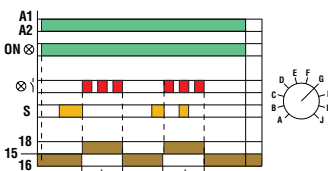
Pulse generator. Unequal timing recycle, starting with ON pulse time and 0.5sec OFF time



Flasher, starting with OFF (pause) interval. Equal timing recycle, OFF first

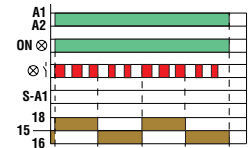
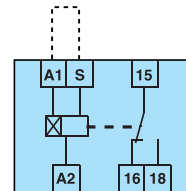


Pulse on relay energising with start at external contact opening

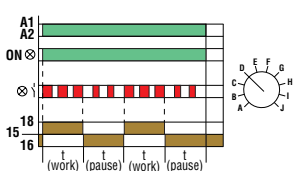


TM PL

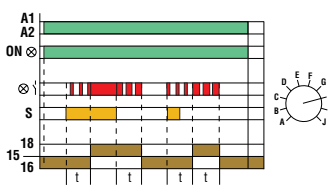
ON first



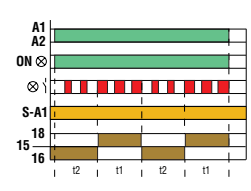
Flasher, starting with ON (pause) interval. Equal timing recycle, ON first



On-Off delay. Delay on make, with start at external contact closing, and delay at break, with start at external contact opening



OFF first



Operational and wiring diagrams



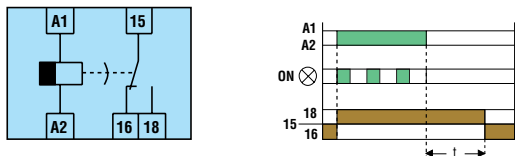
A1-A2 = Power ON

ON ⊗ = LED indicator for power on

⊗ ⊘ = LED indicator for relay state

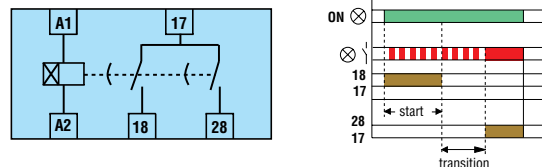
TM D

True off delay. Delay on break, starting at relay de-energising



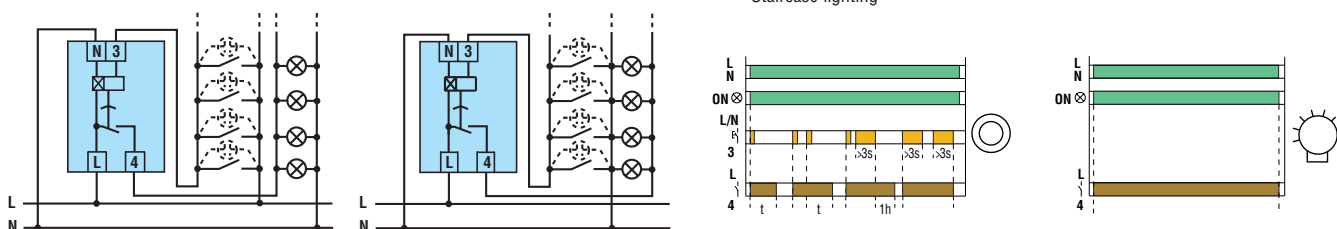
TM ST

For star-delta starting



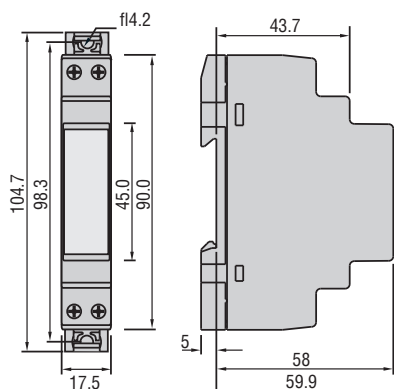
TM LS

Staircase lighting



Dimensions [mm]

moduLo



Certifications and compliance

Certifications:
cULus pending.

Compliant with standards:
IEC/EN 61812-1.

LOVATO Electric can also offer a complete range of time relays in the following versions.

DIN mount time relays

- 31 AT1P... On delay. Multiscale. Multivoltage in AC. 1 changeover contact.
- 31 AT1CP... On delay. Multiscale. Multivoltage in AC and DC. 1 changeover contact.
- 31 ATD... Off delay. Multiscale. Single voltage in AC and DC. 1 changeover contact.
- 31 AT1DP... Off delay at external contact opening. Multiscale. Single voltage in AC and DC. 1 changeover contact.
- 31 BTM1 ... Multifunction. Multiscale. Multivoltage in AC and DC. 1 changeover contact.
- 31 BTM ... Multifunction. Multiscale. Multivoltage in AC and DC. 2 independent changeover contacts.
- 31 DRPL 220 Asymmetrical recycle. Multiscale. Multivoltage in AC and DC. 2 independent changeover contacts.
- 31 BT2N... For starting. Dual voltage in AC and DC.



Plug-in and flush-mount time relays, 48x48mm

- 31 L48T... On delay. Single scale. Single voltage. 1 changeover contact.
- 31 L48TP... On delay. Multiscale. Multivoltage. 1 changeover contact.
- 31 L48TPB... On delay. Multiscale. Single voltage. 2 independent changeover contacts.
- 31 L48M... Multifunction. Multiscale. Multivoltage. 2 changeover contacts.



The above-indicated order codes must be completed with the end-scale time values, if any, and the supply voltage. Contact our Customer Service (Tel. +39 035 4282422; E-mail service@LovatoElectric.com).



Prewired limit switches type KP...



Micro switches type KS...

moduLo



PM series protection relays

moduLo



Digital ammeter and voltmeter
type DMK7... and DMK8...

moduLo



Digital multimeters
DMK21, DMK22, DMK51 and DMK52



Soft starters type ADX...BP

moduLo



LRD series programmable logic relays



100% electricity

Planet-SWITCH

- Motor protection circuit breakers
- Switch disconnectors
- Contactors
- Motor protection relays
- Electromechanical starters
- Push buttons and selectors
- Limit, micro and foot switches
- Rotary cam switches

Planet-DIN

- Modular contactors
- Time relays
- Protection relays
- Level control relays
- Earth leakage relays

Planet-LOGIC

- Digital metering instruments and current transformers
- Soft starters
- AC motor drives
- Automatic power factor controllers
- Automatic battery chargers
- Automatic transfer switches
- Programmable logic relays

The products described in this documentation are subject to be revised or improved at any moment. Catalogue descriptions and details, such as technical and operational data, drawings, diagrams and instructions, etc., do not have any contractual value. In addition, products should be installed and used by qualified personnel and in compliance with the regulations in force for electrical systems in order to avoid damages and safety hazards.

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FOR INDUSTRY

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