

# Sequencer

## Pump alternating relays

This device, thanks to the use of a pressure switch inserted in the circuit, permits the control and inversion of the 2 pumps in the autoclave systems.

The system depends on the state of a float, which prevents its function in the absence of water.

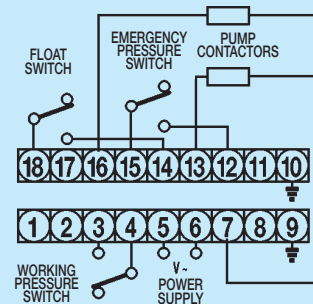
It is possible to insert a second pressure switch (or emergency pressure switch) that allows for both pumps to operate when one is insufficient to maintain the pressure of the system in the required supply conditions. Furthermore, in the event of a faulty pump the circuit recognizes the state and permits the activation of the other one thereby always allowing for water delivery.

Thanks to this device, it is possible to realize the control of the conventional autoclave system, with the sole addition of the contactor and the thermal part, at greatly reduced costs.

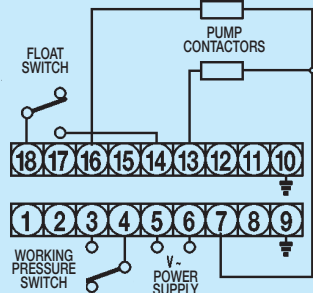
Type	100 ÷ 240 V~	24 V~
Code	TMK3000000	TMK3002400
Control voltage	117 ÷ 230V~ 50 ÷ 60 Hz	24V~ 50 ÷ 60 Hz
Power required	8 VA max	
Contact rating	250V~ 5A max AC 2500 VA inductive Cos φ = 1 AC 1875 VA inductive Cos φ = 0,4 DC 300 W resistve	
Operations	30 operations per minute	
Life expectancy	Mechanical: 2 million operations Electrical: 100.000 operations with normal load	
Operating temperature	- 10° ÷ + 60 °C	
Storage temperature	- 30° ÷ + 80 °C	
Dimensions	mm 90x54x59	
Housing	Noryl (PPO) UL 94 V0	
Weight	gr. 120 approx	
Mounting	on DIN bar	
Installation	<p>Connect the power supply of the device to terminals 5 and 6.</p> <p>The operational pressure switch to terminals 3 and 4, the 2nd pressure switch (emergency pressure switch) to terminals 15 and 12, the float (NC contacts in the presence of water) to terminals 18 and 14.</p> <p>The two contactors will have a common terminal 7 and the two powers will be connected to terminals 13 and 16 respectively.</p> <p>The two contactors must have the same power as the line.</p> <p>Pay particular attention to the connections, as the individual components are live.</p> <p>The device must be installed by trained personnel in compliance with current regulations.</p>	
Protection grade	IP 20	



Connections with 2 pressure switches and 1 float switch

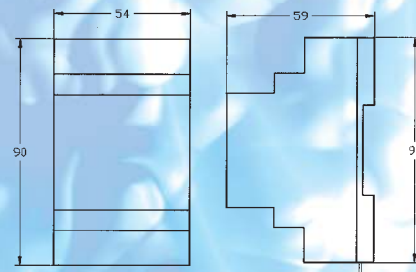


Connections with pressure switch and 1 float switch



**Note**

Should the float switch not be required, short circuit terminals 14 and 18 between each other.



# Sequencer 2Q

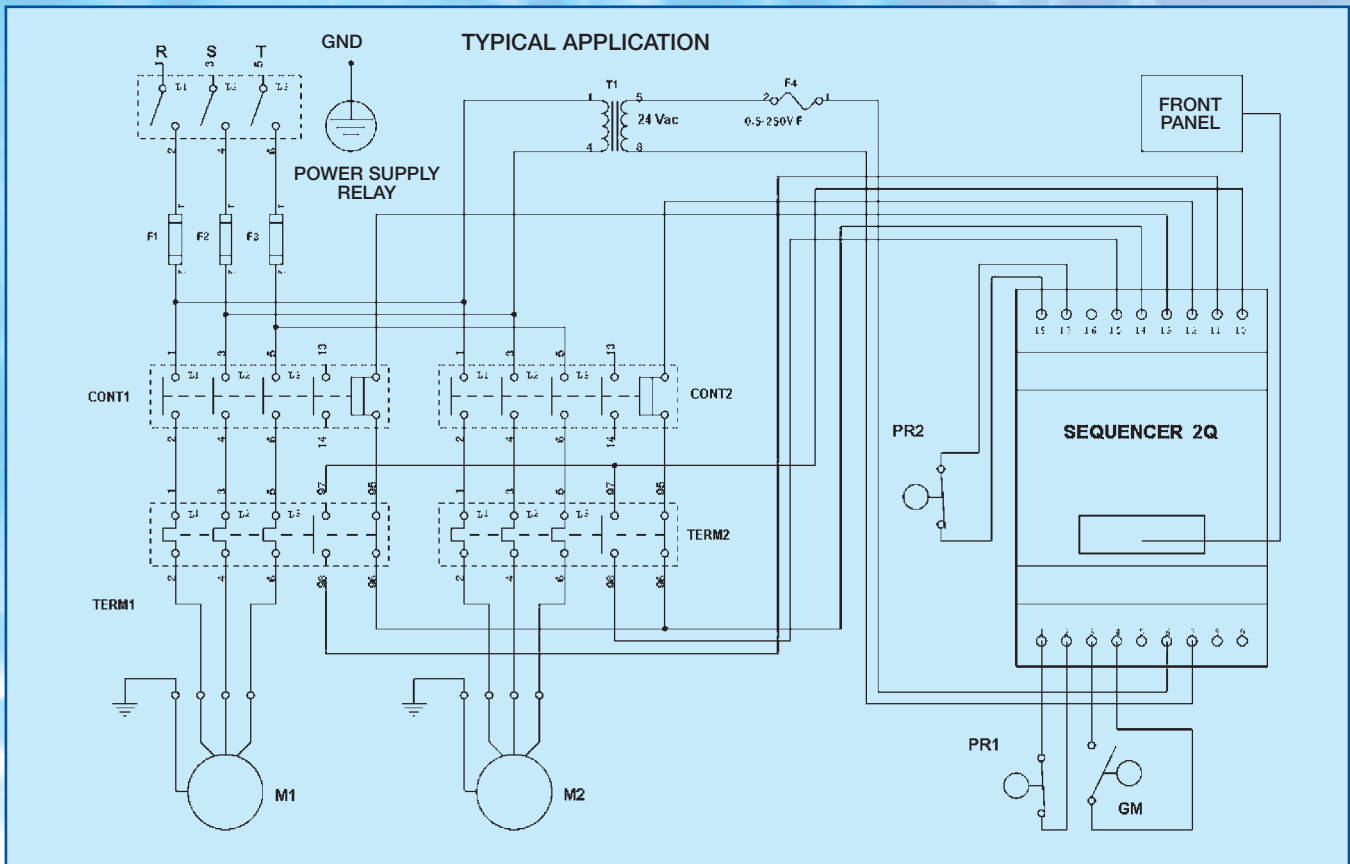
*Electronic module for control panel  
Control and exchanger for 2 electro-pumps*

This device allows to make a control panel for autoclave by only adding contactors and thermic relays.  
It consists of a base unit suitable for din guide and of a panel containing two switches for pump operation and seven led diodes that always show the autoclave status.

**General features - Cod.TMK32Q2400**

Electronic control for mounting on DIN guide (3 modules)

- Power supply 24 V ~ 50/60Hz 3 W
- Sequence exchanger and control for 2 electro pumps
- Operating temperature -5 ÷ + 40°C
- Panel dimensions h/w/d in mm. 71 x 87 x 20
- n° 1 input at 24 Vac for minimum level float switch
- n° 2 input at 24 Vac for work and emergency pressure switch
- Panel with:
  - Selectors for: automatic / off / manual operation
  - Lighting led: n° 2 operating motor - n° 2 protected motor - n° 1 main pilot - n° 1 min water level alarm - n° 1 for pressure switches



# Sequencer 3

*Electronic device for the control and command of 2 or 3 pumps*

The Sequencer3 is a device that provides the possibility to control and command 2 or 3 pumps in autoclave systems with the help of:

- No. 1 working pressure switch PW that activates in sequence (one at a time) various pumps.

- No. 2 pressure switches (PS1 - PS2) regulated at different pressures (the pressure of PS1 is higher than that of PS2), but yet inferior to that of the working pressure switch PW.

These pressure switches control the activation of two other pumps, the purpose of which is to maintain the water pressure in the system in the conditions requested when only one pump is insufficient.

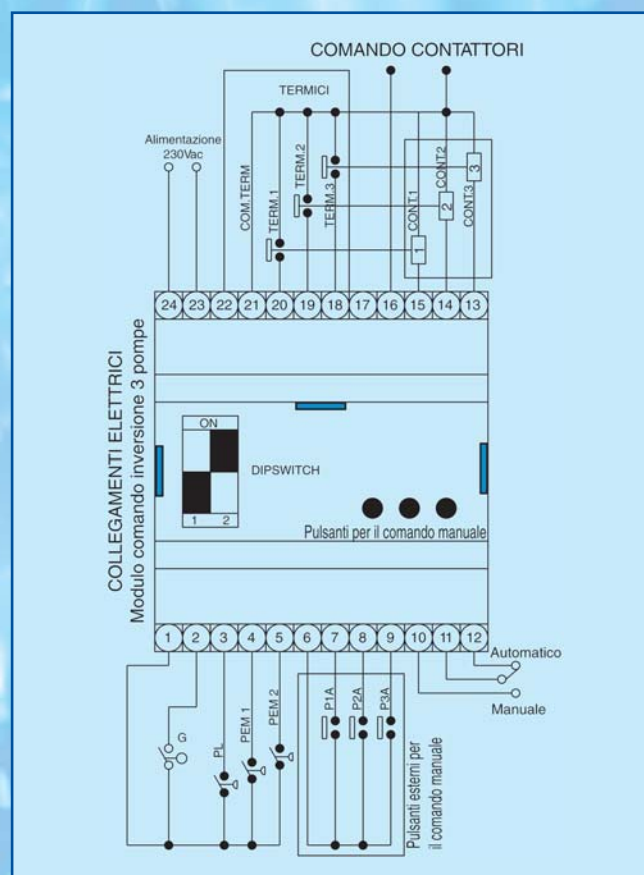
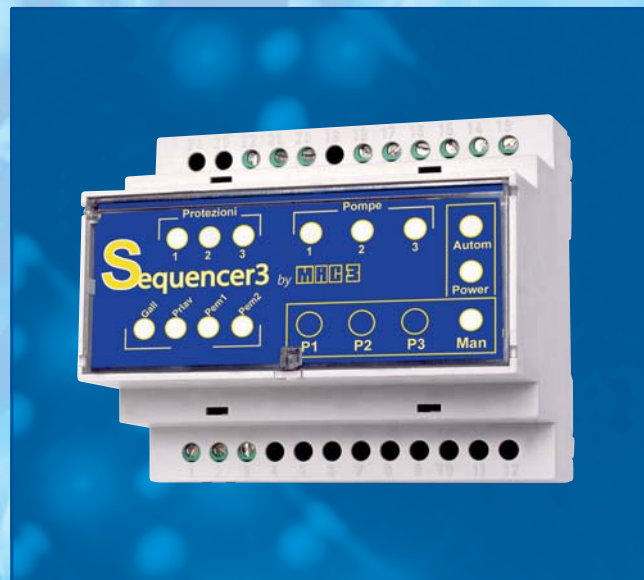
- A float switch prevents the functioning when no water is present. When there is the presence of water, the contacts of the float switch are closed (closes high).

Activation of the pumps in sequence by way of the working pressure switch means that all the pumps connected to the system are activated in rotation so that it is never the same pump that starts out first. By using this criteria, all the pumps can function in a uniform manner thus, avoiding the possibility that one or more pumps can stop working due to prolonged inactivity.

The Sequencer3 can function in the automatic or manual mode by selecting this option by means of an external switch to be connected to the the appropriate clamps. Two led on the front panel permit one to see in which mode the device is functioning; red led = Automatic; yellow led = Manual.

In the Automatic mode, the controls that come from the pressure switches are activated and consequently, automatically activate or deactivate the pumps (power on/off).

In the Manual mode, the activation of the pumps can only be done manually by way of appropriate push buttons present on the front panel of the device. By connecting to terminals 6-7-8-9, it's possible to command the Sequencer3 from a distance. The control of two or three pumps can be selected by means of a dipswitch present on inside of the front panel of the device. With a screwdriver it is possible to remove the front panel and reach the dipswitch.



Type	Sequencer 3
Code	TMK4000000
Power supply	230V- 50-60 Hz
Power consumption	8 VA max
Contact rating	250V ~ 5A max AC 1250 VA inductive Cos φ = 1 AC 500 VA inductive Cos φ = 0,4 DC 150 W resistive
Max. no. operations	10 operations/minute
Life expectancy	Mechanical: 2 million operations Electrical: 100.000 operations with normal load
Operating emperature	- 10° ÷ + 60 °C
Storage temperature	- 30° ÷ + 80 °C
Dimensions	mm 105x90x73
Housing	Noryl (PPO) UL 94 V0
Weight	gr. 420 aprox.
Mounting	on DIN rail

