

## DESCRIPTION

The SYROS series regulators are ideal instruments for temperature regulation in processes where stability is critical, as they incorporate algorithms to improve the control loop behaviour.

Thanks to their numerous functions available and to their interconnection possibilities they can be considered as universal equipments for control and regulation.

## CHARACTERISTICS

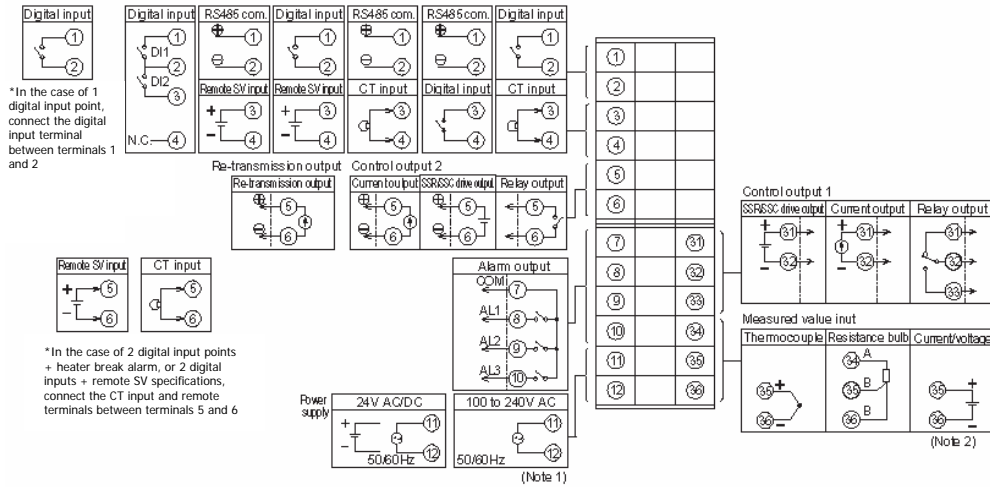
- Frontal size:
  - 1/8 DIN 48x96 mm depth 78 mm
- Excellent visibility, thanks to the height of its digits:
  - Process value 13 mm red
  - Setpoint value 11 mm green
- Frontal protection IP66
- Easy programming (3 levels)
- Inputs for the following sensors:
  - Pt100
  - Thermocouples J, K, R, B, S, T, E, N, PL-II
- Signals inputs 1-5 V dc or 4-20 mA
- Control outputs via:
  - Relay SPDT
  - SSR/ SSC (static relay)
  - 4-20 mA
- Several regulation modes selectable via programming:
  - On/ Off
  - PID with auto tuning
  - Fuzzy PID with auto tuning
  - PID with self-tuning
  - Heating / Cooling (PID, Fuzzy PID)
- Numerous range of options available:
  - Re-transmission output 4-20 mA for:
    - Process value
    - Set value
    - Control Output
    - Deviation value
  - 8-step ramp/soak function
  - Digital Inputs
  - RS485 Communication (Modbus/SYROS protocol)
  - Heating and cooling control
  - Second Control output via:
    - Relay SPST
    - SSR/ SSC (static relay)
    - 4-20 mA
  - Alarm for heater break
  - 3 Alarm outputs
  - Remote setpoint input
- Settable Alarms (31 different modes)
- Universal power supply 85 - 265 Vac
- 24 V ac/dc power supply
- Auto diagnostic
- Sampling cycle 0,5 s
- Control cycle 0,5 s
- 6 lock-out levels



Input (A)	
① Pt100/TC	SY49-1_ _ _ _ _
② 1-5V/4-20mA	SY49-2_ _ _ _ _
③ 0-10V	SY49-3_ _ _ _ _
④ 0-5V/0-20mA	SY49-4_ _ _ _ _
Control Output 1 (B)	
① 1 Relay	SY49-__1_ _ _ _ _
② Pulse	SY49-__2_ _ _ _ _
③ 4-20mA/1-5V	SY49-__3_ _ _ _ _
④ 0-10V	SY49-__4_ _ _ _ _
⑤ 0-20mA/0-5V	SY49-__5_ _ _ _ _
Control Output 2 (C)	
None	SY49-__0_ _ _ _ _
① Relay	SY49-__1_ _ _ _ _
② Pulse	SY49-__2_ _ _ _ _
③ 4-20mA/1-5V	SY49-__3_ _ _ _ _
④ Re-transmission (4-20mA)	SY49-__4_ _ _ _ _
⑤ 0-10V	SY49-__5_ _ _ _ _
⑥ Re-transmission (0-10V)	SY49-__6_ _ _ _ _
⑦ 0-20mA/0-5V	SY49-__7_ _ _ _ _
⑧ Re-transmission (0-20mA)	SY49-__8_ _ _ _ _
Alarms/Setpoint (D)	
None	SY49-__0_ _ _ _ _
① 1 alarm	SY49-__1_ _ _ _ _
② 2 alarms	SY49-__2_ _ _ _ _
③ 3 alarms	SY49-__3_ _ _ _ _
④ Remote set. (4-20mA)	SY49-__4_ _ _ _ _
⑤ Rem.set.(4-20mA)+2 alarms.	SY49-__5_ _ _ _ _
⑥ Remote setpoint (0-10V)	SY49-__6_ _ _ _ _
⑦ Rem.setpoint(0-10V)+2 alarms.	SY49-__7_ _ _ _ _
⑧ Remote setpoint (0-20mA)	SY49-__8_ _ _ _ _
⑨ Rem.set.(0-20mA)+2 alarms.	SY49-__9_ _ _ _ _
Optional functions (E)	
None	SY49-__0_ _ _ _ _
① Heater break (*)	SY49-__1_ _ _ _ _
② Ramp	SY49-__2_ _ _ _ _
③ Heater break (*)+ Ramp	SY49-__3_ _ _ _ _
Interface (F)	
None	SY49-__0_ _ _ _ _
① RS485 (Modbus)	SY49-__1_ _ _ _ _
③ 1 digital input	SY49-__3_ _ _ _ _
④ 2 digital inputs	SY49-__4_ _ _ _ _
⑤ 1 digital input+RS(1)	SY49-__5_ _ _ _ _
Power supply (G)	
① 85 a 265VAC	SY49-__1_ _ _ _ _
② 24VAC/DC	SY49-__2_ _ _ _ _

# SY49

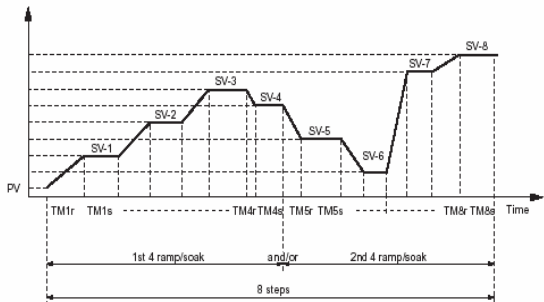
## WIRING



## Various alarm function

	Type of alarm	Action diagram
Absolute value alarms	Upper-limit absolute alarm	
	Lower-limit absolute alarm	
	Upper-limit absolute alarm (with hold)	
	Lower-limit absolute alarm (with hold)	
Deviation value alarms	Upper-limit deviation alarm	
	Lower-limit deviation alarm	
	Upper and Lower limits deviation alarm	
	Upper-limit deviation alarm (with hold)	
	Lower-limit deviation alarm (with hold)	
	Upper and Lower limits deviation alarm (with hold)	
Range alarms	Range upper and lower limits deviation (ALM1/2 independent operation)	
	Range upper and lower limits absolute value	
	Range upper and lower limits deviation	
	Range upper limit absolute value and lower limit deviation	
	Range upper limit deviation and lower limit absolute value	

## Example of 8 ramp/soak programming



## Outline Dimensions (unit: mm)

