

ANALOGUE TEMPERATURE CONTROLLER



Analogue Set, Analog Temperature Controller
- J type Thermocouple Input or,
K type Thermocouple Input or,
R type Thermocouple Input or,
S type Thermocouple Input or,
2 or 3-wire PT 100 Input (It must be determined in order)
- ON/OFF Operation
- Hysteresis value configurable with Jumper
(It must be determined in order)

ES Analogue Temperature Controllers are designed for measuring and controlling temperature. They can be used in many applications with their simple and easy to use properties, On / Off and time proportional control form. They are mainly used in glass, plastic, petro-chemistry, textile, automotive and machine production industries.

SPECIFICATIONS

INPUT
Thermocouple(TC): J, K,R,S (IEC 584.1) (ITS90)
Thermoresistance(RTD): 2 or 3-wire Pt100 (IEC 751)(ITS90)
Measurement Range: It is in ordering information
Accuracy: ± 1% of full scale
Cold Junction Compensation: Automatically ±0.1°C/1°C
Sensor Break Protection:Upscale
Sampling Cycle: 3 samples per second

CONTROL
Control Form: ON/OFF.
ON/OFF Hysteresis : It can be adjust %1 or %2 of full scale with JUMPER.

OUTPUT
Control Output: Relay(5A@250V~ at resistive load)

SETTINGS
Resolution of Set Point: ± %0.2 of full scale
Accuracy of Set Point: ± %1 of full scale

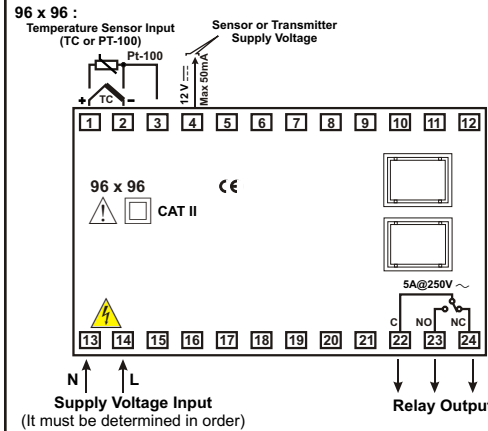
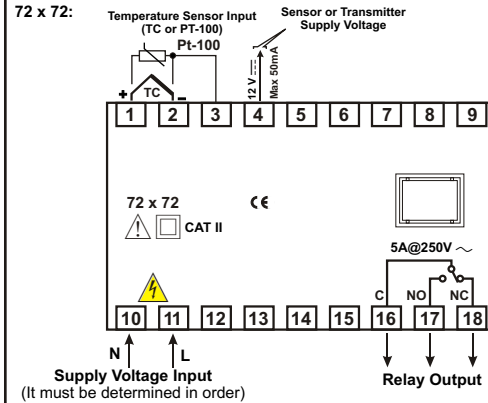
DISPLAY
LED Indicators : PWR(Green), Out(Red)

POWER SUPPLY
Power Supply Voltage :
 230 V ~ (±%15) 50/60 Hz 4VA
 115 V ~ (±%15) 50/60 Hz 4VA
 24 V ~ (±%15) 50/60 Hz 4VA
(It must be determined in order.)

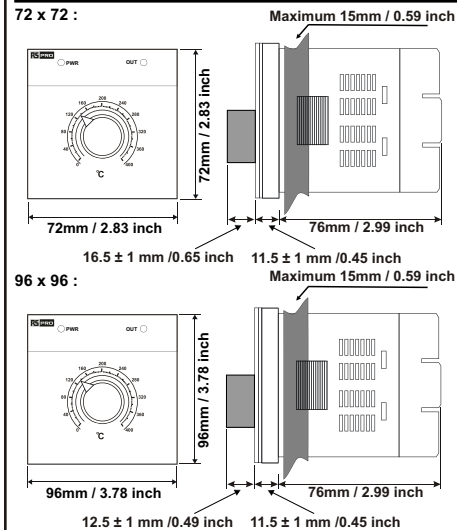
ENVIRONMENTAL RATINGS and PHYSICAL SPECIFICATIONS:
Operating Temperature : 0...50°C
Humidity : 0-90%RH (none condensing)
Protection Class : IP65 at front, IP20 at rear

Weight:
 72 x 72 : 300gr.
 96 x 96 : 400gr.
Dimensions:
 72 x 72mm,Depth:104 mm
 96 x 96mm,Depth:100 mm
Panel Cut-Out:
 72 x 72 : (69 x 69 mm)
 96 x 96 : (92 x 92 mm)

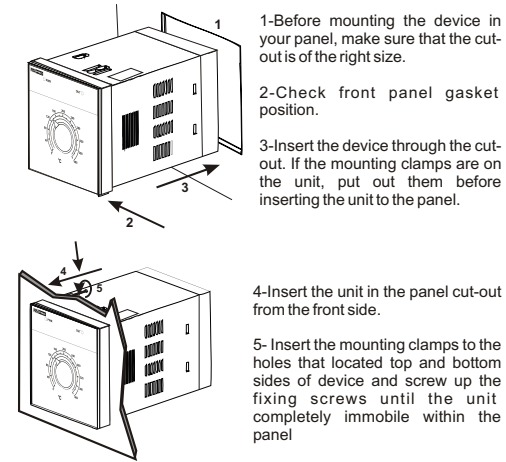
Electrical Wiring



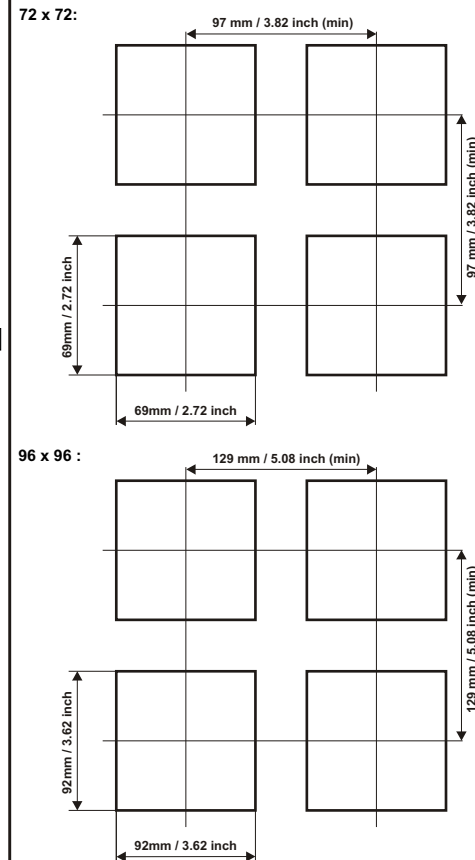
Dimensions



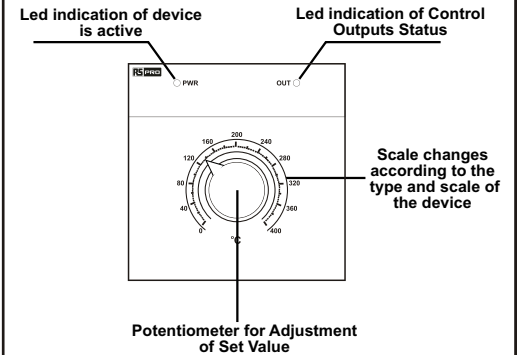
Panel Mounting



Panel Cut-out



Front Panel Definition



Operation Settings

Set Values

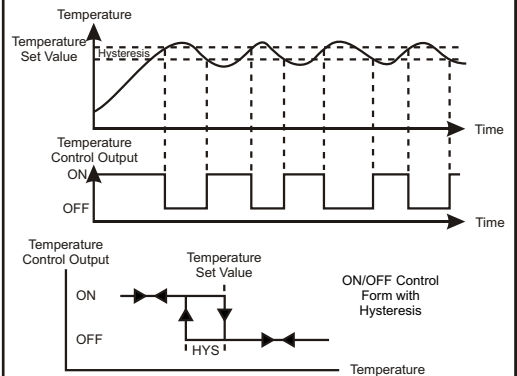
Set value can be adjusted with Set Value Adjustment Potentiometer that is on the front panel. Set value range changes according to the type and scale of the device. Minimum and maximum values of Set value according to the device type are given below:

Set Values according to the Type and Scale of the Device

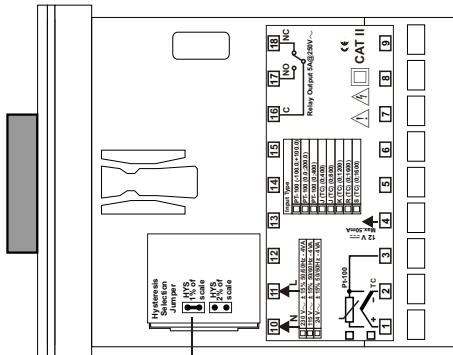
For PT-100 (-100.0 to 100.0) °C
For PT-100 (0.0 to 200.0) °C
For PT-100 (0 to 400) °C
For J Type TC (0 to 400) °C
For J Type TC (0 to 800) °C
For K Type TC (0 to 1200) °C
For R Type TC (0 to 1600) °C
For S Type TC (0 to 1600) °C

Adjustment of Hysteresis Value for ON/OFF Control

In ON/OFF control algorithm, temperature value is tried to keep equal to set value by opening or closing completely last control element. ON/OFF controlled system, temperature value oscillates continuously. Temperature value's oscillation period or amplitude around set value changes according to controlled system. For reducing oscillation period of temperature value, a threshold zone is formed below or around set value and this zone is named hysteresis. Action of control output is described with figures below.

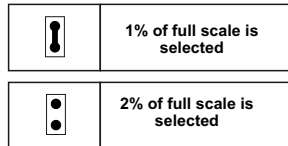


i In operation with ON/OFF Control form; hysteresis value can be adjusted with Jumper on the device. *(It must be determined in order)*



Jumper is under cover and cover is on top side of the device

Hysteresis Value Selection



Minimum and maximum value of hysteresis according to the type and scale of the device are given below:

Input Type	Jumper Selection	
	%1.0	%2.0
For PT-100 (-100.0 to 100.0)°C :	2.0°C	4.0°C
For PT-100 (0.0 to 200.0)°C :	2.0°C	4.0°C
For PT-100 (0 to 400)°C :	4.0°C	8.0°C
For J Type TC (0 to 400)°C :	4.0°C	8.0°C
For J Type TC (0 to 800)°C :	8.0°C	16.0°C
For K Type TC (0 to 1200)°C :	12.0°C	24.0°C
For R Type TC (0 to 1600)°C :	16.0°C	32.0°C
For S Type TC (0 to 1600)°C :	16.0°C	32.0°C

Installation

Before beginning installation of this product, please read the instruction manual and warnings below carefully.

- In package,
- One piece unit
 - Two pieces mounting clamps
 - One piece instruction manual

A visual inspection of this product for possible damage occurred during shipment is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product.

If there is danger of serious accident resulting from a failure or defect in this unit, power off the system and separate the electrical connection of the device from the system.

The unit is normally supplied without a power switch or a fuse. Use power switch and fuse as required.

Be sure to use the rated power supply voltage to protect the unit against damage and to prevent failure.

Keep the power off until all of the wiring is completed so that electric shock and trouble with the unit can be prevented.

Never attempt to disassemble, modify or repair this unit. Tampering with the unit may results in malfunction, electric shock or fire.

Installation

Do not use the unit in combustible or explosive gaseous atmospheres.

During the equipment is putted in hole on the metal panel while mechanical installation some metal burrs can cause injury on hands, you must be careful.

Montage of the product on a system must be done with it's own fixing clamps. Do not do the montage of the device with inappropriate fixing clamps. Be sure that device will not fall while doing the montage.

It is your responsibility if this equipment is used in a manner not specified in this instruction manual.

Warranty

Warrants that the equipment delivered is free from defects in material and workmanship. This warranty is provided for a period of two years. The warranty period starts from the delivery date. This warranty is in force if duty and responsibilities which are determined in warranty document and instruction manual performs by the customer completely.

Maintenance

Repairs should only be performed by trained and specialized personnel. Cut power to the device before accessing internal parts. Do not clean the case with hydrocarbon-based solvents (Petrol, Trichlorethylene etc.). Use of these solvents can reduce the mechanical reliability of the device. Use a cloth dampened in ethyl alcohol or water to clean the external plastic case.

