



PID TEMPERATURE CONTROL UNITS



PID Temperature Control Units

- 4 digit process (PV) and 4 digit set (SV) display
- Process input (TC, RTD)
- Programmable ON/OFF, P, PI, PD and PID control forms
- Adaptation of PID Coefficients to the system with Self-Tune operation (Step Response Tuning)
- Programmable Heating or Cooling Functions for Control Output
- Selectable Alarm Functions for Alarm Output

RS ESX series temperature controllers are designed for measuring and controlling a process value. They can be used in many applications with their TC and RTD temperature measurement input, multi-function control outputs, selectable alarm functions. They are mainly used in glass, plastic, petro-chemistry, textile, automotive and machine production industries. Accurate and advanced controlling is performed with selectable ON-OFF, P, PI, PD, PID and Self Tune PID functions.

SPECIFICATIONS

Process Input: TC, RTD
 Thermocouple (TC): J, K, R, S and T (IEC584.1)(ITS90)
 Thermoresistance (RTD): PT-100 (IEC751)(ITS90)
Measurement Range: Please refer to Table-1 for selection of input type and scale.
Accuracy: ± 0.25% of scale for thermocouple and thermoresistance
Cold Junction Compensation: Automatically ±0.1°C/1°F
Line Compensation: Maximum 10 Ohm
Sensor Break Protection: Upscale
Sampling Cycle: 3 samples per second
Input Filter: 1.0 second.
Control Form: ON/OFF, P, PI, PD or PID (Control form can be programmed by the user.)

OUTPUT

Process Output: Relay (5A@250V~ at resistive load) or SSR Driver Output (Maximum 24mA, Max. 12V ---)
Alarm Output: Relay(5A@250V~ at resistive load) or SSR Driver Output(Alarm Output - 2) (Maximum 24mA, Max. 12V ---)

SUPPLY VOLTAGE

24V ~ (±15%) 50/60 Hz - 3VA or 24V--- (±%15) -3W
 230V ~ (±15%) 50/60 Hz - 3VA
 115V ~ (±15%) 50/60 Hz - 3VA
 100-240V ~ (-%15; +%10) 50/60 Hz
 24V ~ (±15%) 50/60 Hz - 3VA
 (It must be determined in order)

DISPLAY

Process Display:
 Dimension 48 x 48 : 10.1 mm Red 4 digit LED Display
 Dimension 96 x 48 : 13.2 mm Red 4 digit LED Display
 Dimension 72 x 72 : 13.2 mm Red 4 digit LED Display
 Dimension 48 x 96 : 10.1 mm Red 4 digit LED Display
 Dimension 96 x 96 : 19 mm Red 4 digit LED Display

Set Value Display:

Dimension 48 x 48 : 8 mm Green 4 digits LED Display
 Dimension 96 x 48 : 8 mm Green 4 digits LED Display
 Dimension 72 x 72 : 9.1 mm Green 4 digits LED Display
 Dimension 48 x 96 : 8 mm Green 4 digits LED Display
 Dimension 96 x 96 : 10.8 mm Green 4 digits LED Display

Leds: PS (Process Set Value), PO (Process Output Status Led), AS1, AS2 (Alarm Set Values), AO1, AO2 (Alarm Output Status

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: 48 x 48 : 220 gr. , 96 x 48 : 240 gr.
 72 x 72 : 270 gr. , 48 x 96 : 230 gr.
 96 x 96 : 340 gr.

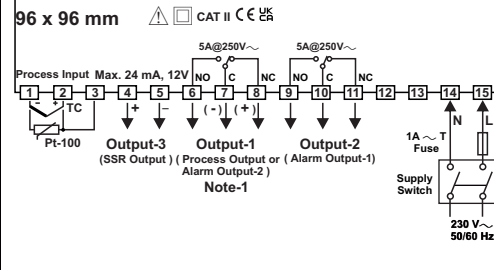
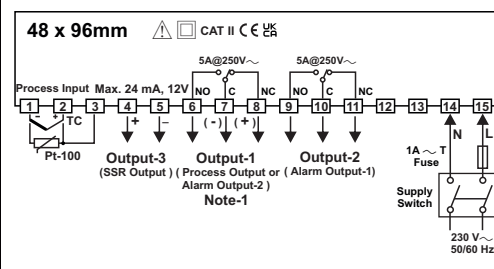
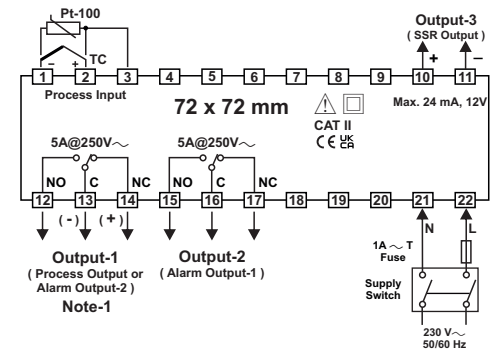
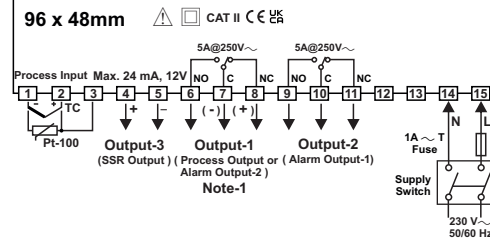
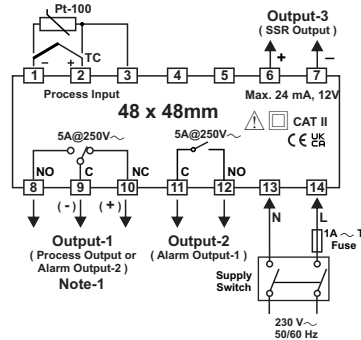
Dimension:

(48 x 48mm, Depth : 95mm)
 (96 x 48mm, Depth : 94.5mm)
 (72 x 72mm, Depth : 95.5mm)
 (48 x 96mm, Depth : 94.5mm)
 (96 x 96mm, Depth : 96mm)

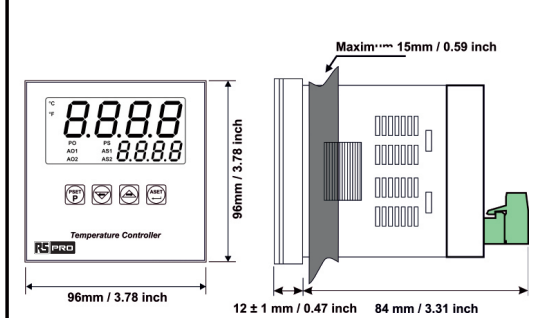
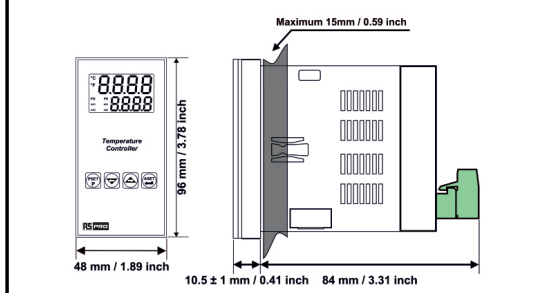
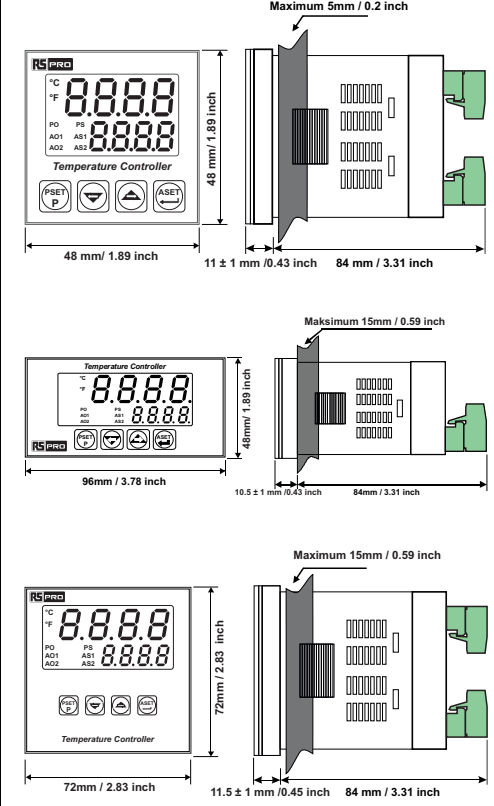
Panel CutOut:

48 x 48 : (46 x 46mm)
 96 x 48 : (92 x 46mm)
 72 x 72 : (69 x 69mm)
 48 x 96 : (46 x 92mm)
 96 x 96 : (92 x 92mm)

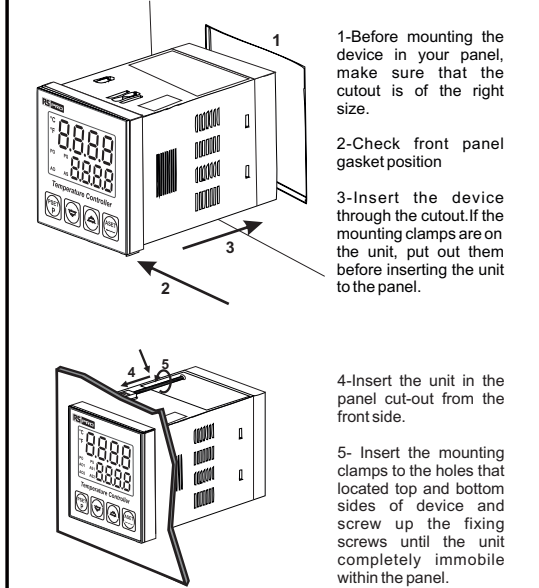
Electrical Wiring

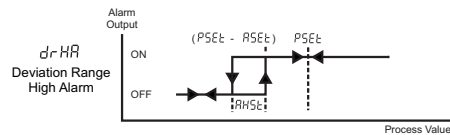


DIMENSIONS



PANEL MOUNTING





Error Messages

- 1- Sensor failure in analog inputs. Sensor connection is wrong or there is no sensor connection.
- 2- If value that is read from the analog input is lower than process set low limit parameter P_{LoL} , value on the top display starts to blink like on the picture.
- 3- If value that is read from the analog input is higher than process set high limit parameter value P_{uPL} , value on the top display starts to blink like on the picture.
- 4- If programming section entering password is different from "0" and user accesses to the parameter by ASET/OK button without entering the password and wants to change a parameter, the warning message is shown on the bottom display as shown on the left. Device does not allow to do any changes without entering the password correctly.
- 5- In programming section, when Tune operation is selected tE5 , if warning which is shown on the left blinks in operation screen for 10 seconds, it means that start conditions is not okay for Tune operation.

Installation

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

- In package ,
- One piece unit
 - Two pieces mounting clamp
 - 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 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.

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 mounting clamp. Do not do the montage of the device with inappropriate mounting clamp. 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.

