



Read this document carefully before using this device. The guarantee will be expired by device damages if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

ENDA ET2412 ON/OFF HEAT CONTROLLER

Thank you for choosing ENDA ET2412 ON/OFF Heat Controller.

- * 77 x 35mm sized.
- * Single NTC sensor input.
- * Zero point input shift.
- * Selectable heating or cooling control for C1 relay output.
- * A1 Relay output for alarm control.
- * Selectable independent, deviation and band alarm types.
- * In the case of sensor failure, relay state can be set to ON or OFF.
- * Upper and lower setpoint limits can be adjusted.
- * Temperature unit can be selected as °C or °F.



Order Code : ET2412 -

1 - Supply Voltage
230.....230V AC

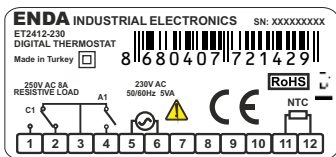
LV.....10-30V DC /
8-24V AC

CONNECTION DIAGRAM



ENDA ET2412 is intended for installation within control panels. Make sure that the device is used only for intended purpose. The shielding must be grounded on the instrument side. During an installation, all of the cables that are connected to the device must be free of electrical power. The device must be protected against inadmissible humidity, vibrations, severe soiling. Make sure that the operation temperature is not exceeded.

All input and output lines that are not connected to the supply network must be laid out as shielded and twisted cables. These cables should not be close to the power cables or components. The installation and electrical connections must be carried out by a qualified staff and must be according to the relevant locally applicable regulations.



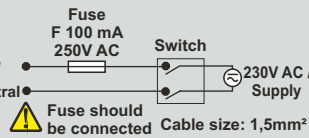
Equipment is protected throughout by DOUBLE INSULATION

Holding screw
0.4-0.5Nm.

NOTE:

SUPPLY:

184-253V AC
or
10-30V DC /
8-24V AC
50/60Hz 3VA



Note:

- 1) Mains supply cords shall meet the requirements of IEC 60227 or IEC 60245.
- 2) In accordance with the safety regulations, the power supply switch shall bring the identification of the relevant instrument and it should be easily accessible by the operator.

up to date: 07.06.2023, modification reserved and can be change any time previous notice !

TECHNICAL SPECIFICATIONS

INPUT

| Input Type | Scale Range | Accuracy |
|-----------------------|-------------|----------------------------------|
| NTC Sensor Resistance | EN 60751 | -60.0...150.0 °C -76.0...302.0°F |
| | | ± 1% (for full scale) ± 1 Digit |

ENVIRONMENTAL CONDITIONS

| | |
|-----------------------------|---|
| Ambient/Storage temperature | 0 ... +50 / °C -25... +70 °C (without icing) |
| Relative Humidity | Max. humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C. |
| Protection Class | According to EN60529; Front panel: IP65 Rear panel : IP20 |
| Height | Max. 2000m |



Do not use the device in locations subject to corrosive and flammable gases.

ELECTRICAL CHARACTERISTICS

| | |
|---------------------|---|
| Supply | 230V AC +%-10-%20 50/60Hz ; 10-30V DC / 8-24V AC SMPS |
| Power Consumption | Max. 3VA |
| Wiring | Power connector : 2.5mm² screw-terminal, Signal connector : 1,5mm² screw-terminal conenction. |
| Line Resistance | Max. 100ohm |
| Data Retention | EEPROM (Min. 10 years) |
| EMC | EN 61326-1: 2013 (Performance criterion B is satisfied for EN 61000-4-3) |
| Safety Requirements | EN 61010-1: 2010 (Pollution degree 2, overvoltage category II) |
| Indicator | 4 digits, 12.5mm, 7 segment red LED |

OUTPUT

| | |
|---------------------------|--|
| C1 Output | 250V AC, 8A (for resistive load), NO and NC control output. |
| A1 Output | 250V AC, 8A (for resistive load), NO control output. |
| Life Expectancy for Relay | 30.000.000 Switching for no-load operation; 300.000 switching for 8A resistive load at 250VAC. |

CONTROL

| | |
|-------------------|---|
| Control Type | Single-setpoint and alarm control. |
| Control Algorithm | On-Off Control. |
| A/D Converter | 12 bit resolution, 100ms sampling time. |
| Hysteresis | Adjustable between 0.1 and 20.0°C/F. |

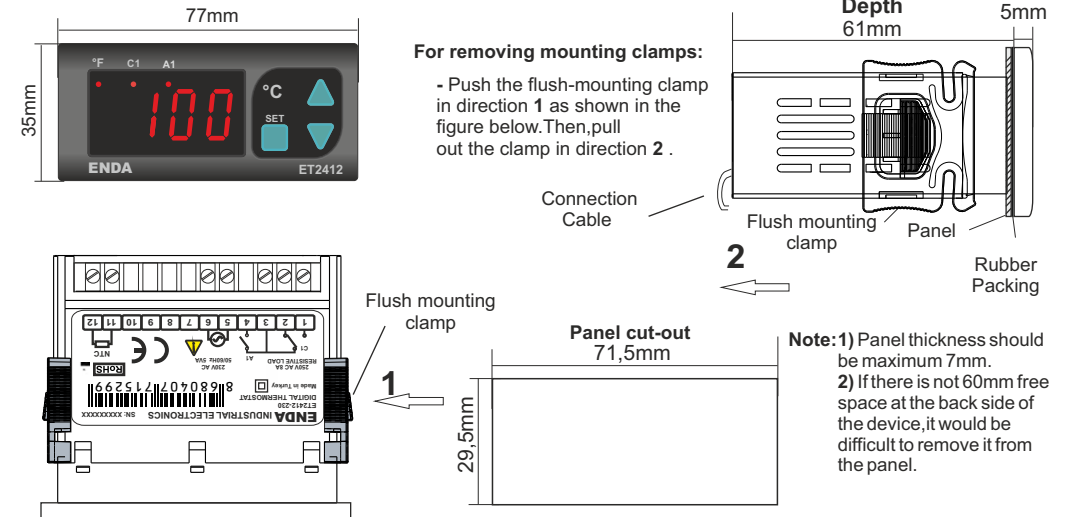
HOUSING

| | |
|---------------------|--|
| Housing Type | Suitable for flush-panel mounting according to DIN 43 700. |
| Dimensions | W77xH35xD61mm |
| Weight | Approx. 215g (After packing) |
| Enclosure Materials | Self extinguishing plastics |



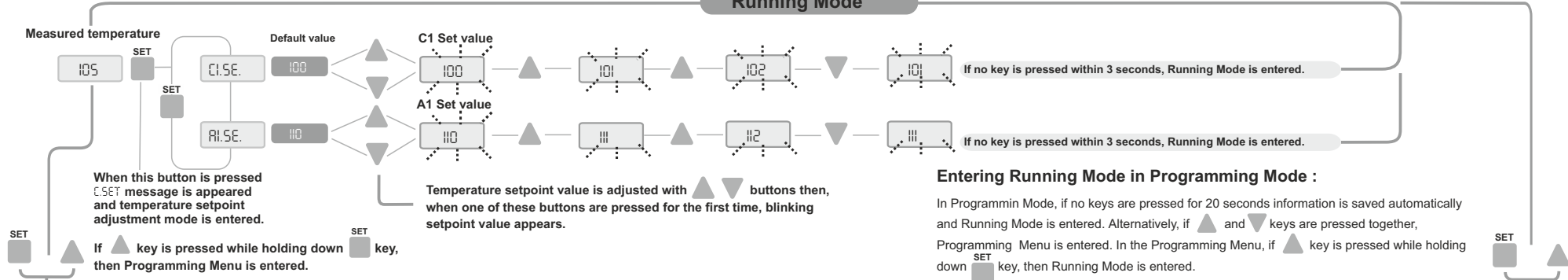
While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.

Dimensions



Programming Diagram

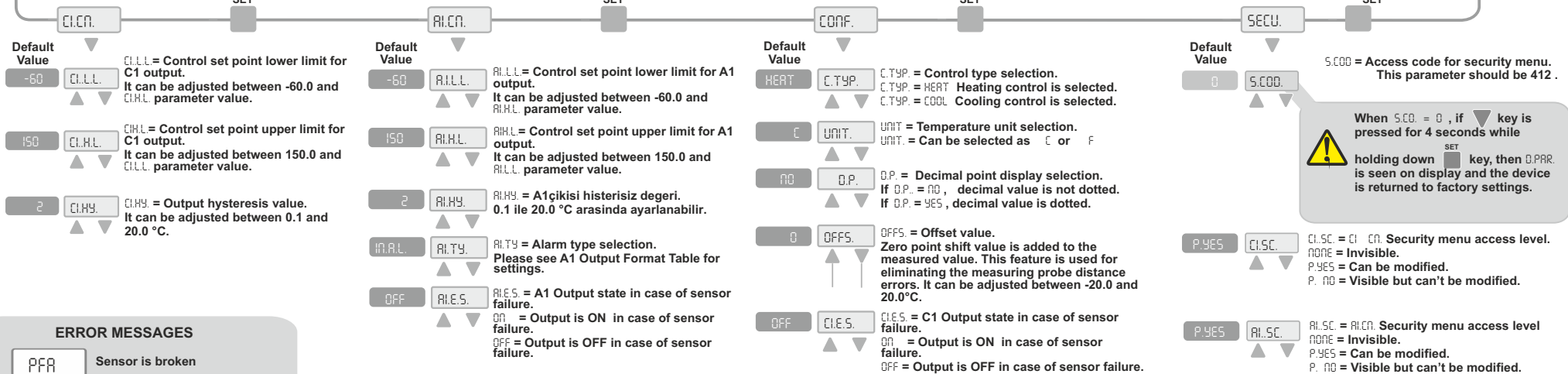
Running Mode



Entering Running Mode in Programming Mode :

In Programming Mode, if no keys are pressed for 20 seconds information is saved automatically and Running Mode is entered. Alternatively, if ▲ and ▼ keys are pressed together, Programming Menu is entered. In the Programming Menu, if ▲ key is pressed while holding down SET key, then Running Mode is entered.

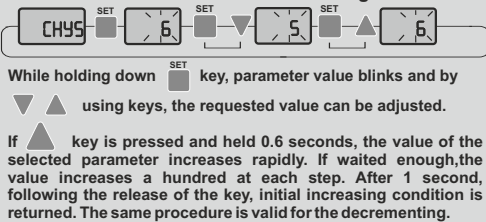
Programming Menu



ERROR MESSAGES

- P.F.F. Sensor is broken
- Temperature value is higher than the scale
- Temperature value is lower than the scale

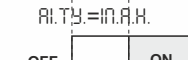
Modification Of Parameter Diagram



A1 OUTPUT FORMATS

Independent Alarm

AL.T.Y. = IN.A.L.



ASV

(ASV Min. = Beginning of Scale
ASV Max. = End of Scale)

SV = C1 output setpoint ASV = A1 output setpoint

Deviation Alarm

AL.T.Y. = DE.A.L.



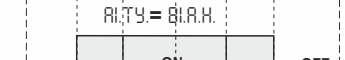
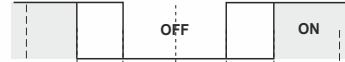
ASV

(ASV Min. = -300, ASV Max. = +300)

SV = C1 output setpoint ASV = A1 output setpoint

Band Alarm

AL.T.Y. = BI.A.L.



ASV

SV = C1 output setpoint ASV = A1 output setpoint

(ASV Min. = 0, ASV Max. = +300)