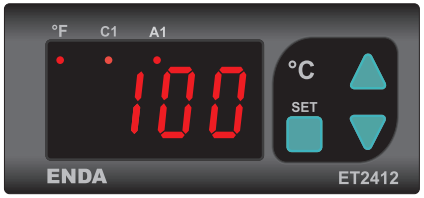
Read this document carefully before using this device. The guarantee will be expired by device demages if you don't attend to the directions in the user manual. Also we don't accept any compensations for personal injury, material damage or capital disadvantages.

ENDA ET2411 / ET2412 ON/OFF HEAT CONTROLLER

Thank you for choosing **ENDA ET2411 / 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.(**for ET2412**)
- * Selectable independent, deviation and band alarm types.(**for ET2412**)
- 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.
- CE marked according to European Norms.

CE RoHS Compliant

Order Code : ET2411 or ET2412 - □□□
(1)

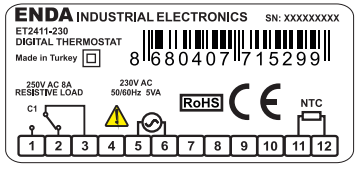
1 - Supply Voltage
230.....230V AC

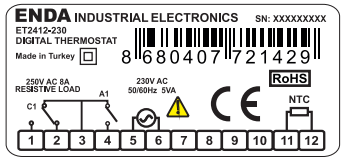
LV.....10-30V DC/
8-24V AC

CONNECTION DIAGRAM

ENDA ET2411 / 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.



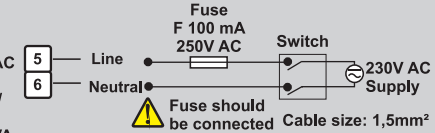


Equipment is protected throughout by DOUBLE INSULATION

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.

sisel
SİSEL MÜHENDİSLİK ELEKTRONİK SAN. VE TİC. A.Ş.
Şerifali Mah. Barbaros Cad. No:18 Y.Dudullu 34775
ÜMRANİYE/İSTANBUL-TURKEY
Tel : +90 216 499 46 64 Pbx. Fax : +90 216 365 74 01
url : www.enda.com.tr

ENDA

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 gasses.

ELECTRICAL CHARACTERISTICS

Supply	230V AC +%10-%20 50/60Hz ; 10-30V DC / 8-24V AC
Power Consumption	Max. 3VA
Wiring	Power connector : 2,5mm² screw-terminal, Signal connector : 1,5mm² screw-terminal connection.
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, over voltage 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 (for ET2412)	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

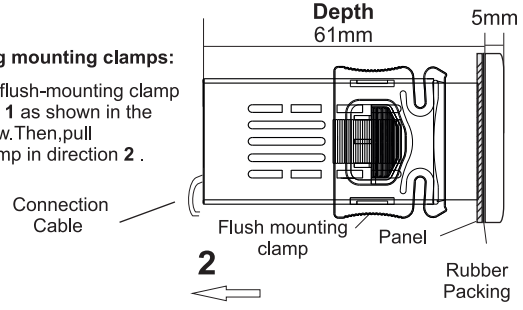
Housing Type	Suitable for flush-panel mounting according to DIN 43 700.
Dimensions	W77xH35xD61mm
Weight	Approx. 215g (After packing)
Enclosure Materials	Self extinguishing plastics

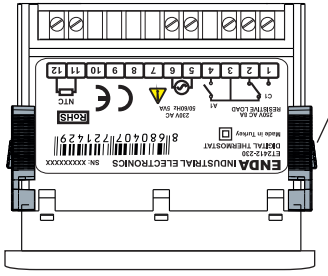
While cleaning the device, solvents (thinner, benzine, acid etc.) or corrosive materials must not be used.

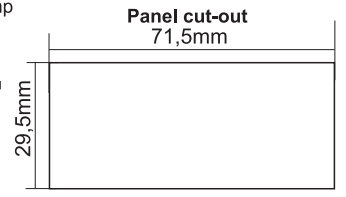
Dimensions

For removing mounting clamps:

- Push the flush-mounting clamp in direction **1** as shown in the figure below.Then,pull out the clamp in direction **2** .



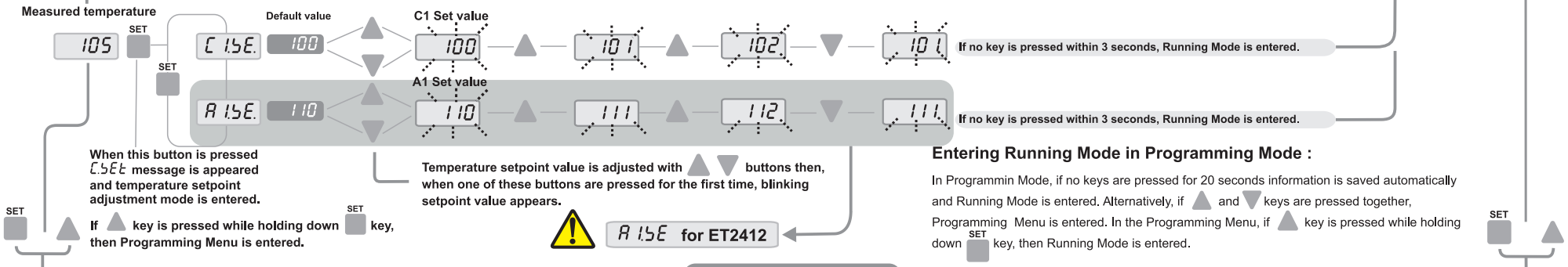




Note:1) Panel thickness should be maximum 7mm.
2) If there is not 60mm free space at the back side of the device,it would be difficult to remove it from the panel.

Programming Diagram

Running Mode



Entering Running Mode in Programming Mode :

In Programmin 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

C 1.Cn.

Default Value: -60 — **C 1.L.L.** = Control set point lower limit for C1 output. It can be adjusted between -60.0 and C 1.H.L. parameter value.

Default Value: 150 — **C 1.H.L.** = Control set point upper limit for C1 output. It can be adjusted between 150.0 and C 1.L.L. parameter value.

Default Value: 2 — **C 1.HY** = Output hysteresis value. It can be adjusted between 0.1 and 20.0 °C.

A 1.Cn.

Default Value: -60 — **A 1.L.L.** = Control set point lower limit for A1 output. It can be adjusted between -60.0 and A 1.H.L. parameter value.

Default Value: 150 — **A 1.H.L.** = Control set point upper limit for A1 output. It can be adjusted between 150.0 and A 1.L.L. parameter value.

Default Value: 2 — **A 1.HY** = A1çikisi histerisiz degeri. 0.1 ile 20.0 °C arasinda ayarlanabilir.

Default Value: inAL — **A 1.tY** = Alarm type selection. Please see A1 Output Format Table for settings.
When this parameter is changed A 1.L.L., A 1.H.L. and A 1.SE parameters are set to the new scale limits, they must be re-adjusted if desired.

Default Value: oFF — **A 1.E.S.** = A1 Output state in case of sensor failure.
on = Output is ON in case of sensor failure.
oFF = Output is OFF in case of sensor failure.

⚠ This parameters For ET2412

ConF.

Default Value: HEAt — **C.tYP.** = Control type selection.
C.tYP. = HEAt Heating control is selected.
C.tYP. = CooL Cooling control is selected.

Default Value: °C — **Un it.** = Temperature unit selection.
Un it. = Can be selected as °C or °F

Default Value: no — **d.P.** = Decimal point display selection.
If d.P. = no , decimal value is not dotted.
If d.P. = YES , decimal value is dotted.

Default Value: 0 — **oFFS.** = Offset value.
Zero point shift value is added to the measured value. This feature is used for eliminating the measuring probe distance errors. It can be adjusted between -20.0 and 20.0°C.

Default Value: oFF — **C 1.E.S.** = C1 Output state in case of sensor failure.
on = Output is ON in case of sensor failure.
oFF = Output is OFF in case of sensor failure.

SECu.

Default Value: 0 — **S.Cod.** = Access code for security menu. This parameter for ET2411 should be 411 and for ET2412 should be 412

⚠ When S.co. = 0 , if ▼ key is pressed for 4 seconds while holding down SET key, then d.PAr. is seen on display and the device is returned to factory settings.

PYES C 1.Sc. = C 1.Cn. Security menu access level.
nonE = Invisible.
PYES = Can be modified.
P. no = Visible but can't be modified.

PYES A 1.Sc. = A 1.Cn. Security menu access level
nonE = Invisible.
PYES = Can be modified.
P. no = Visible but can't be modified.
⚠ This parameters for ET2412

PYES Co.Sc. = ConF. Configuration menu access level.
nonE = Invisible.
PYES = Can be modified.
P. no = Visible but can't be modified.

PYES C.S.Sc. = C1 set value security access level.
PYES = Can be modified.
P. no = Visible but can't be modified.

PYES A.S.Sc. = Alarm set value security access level.
PYES = Can be modified.
P. no = Visible but can't be modified.
⚠ This parameters for ET2412

ERROR MESSAGES

PFA	Sensor is broken
- - - -	Temperature value is higher than the scale
- - - -	Temperature value is lower than the scale

Modification Of Parameter Diagram

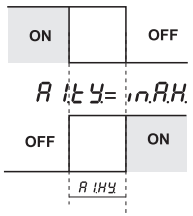
While holding down SET key, parameter value blinks and by ▼ ▲ using keys, the requested value can be adjusted.

If ▲ key is pressed and held 0.6 seconds, the value of the selected parameter increases rapidly. If waited enough,the value increases a hundred at each step. After 1 second, following the release of the key, initial increasing condition is returned. The same procedure is valid for the decrementing.

A1 OUTPUT FORMATS

Independent Alarm

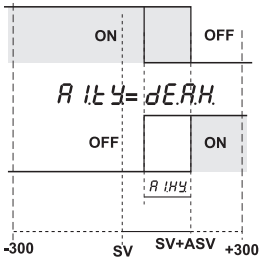
A 1.tY= inAL



(ASV Min. = Beginning of Scale
ASV Max. = End of Scale)
SV = C1 output setpoint ASV = A1 output setpoint

Deviation Alarm

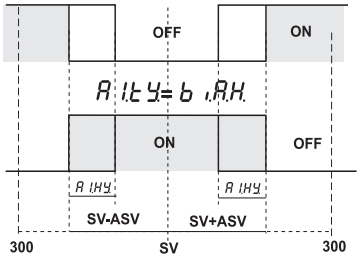
A 1.tY= dEAL



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

Band Alarm

A 1.tY= b AL



SV =C1 output setpoint ASV = A1 output setpoint
(ASV Min. = 0, ASV Max. = +300)

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SİSEL MÜHENDİSLİK ELEKTRONİK SAN. VE TİC. A.Ş.
Şerifali Mah. Barbaros Cad. No:18 Y.Dudullu 34775
ÜMRANİYE/İSTANBUL-TURKEY
Tel : +90 216 499 46 64 Pbx. Fax : +90 216 365 74 01
url : www.enda.com.tr

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