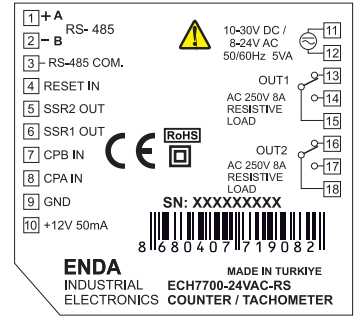
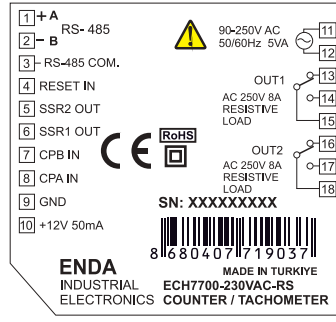
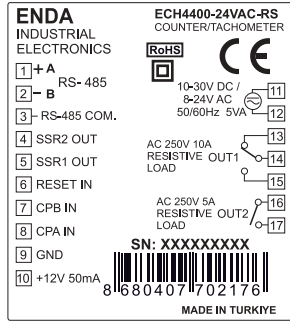
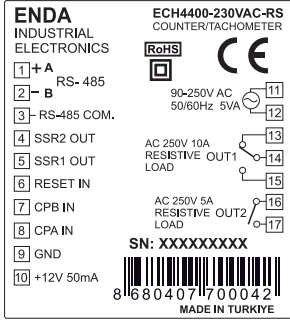
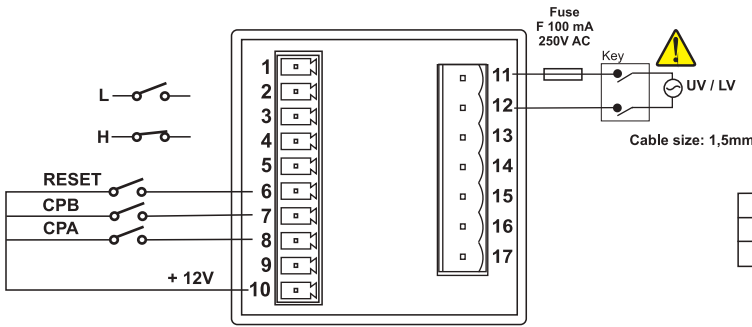


CONNECTION DIAGRAM

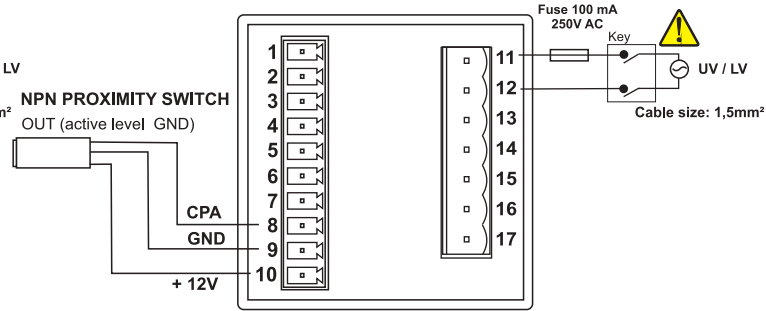
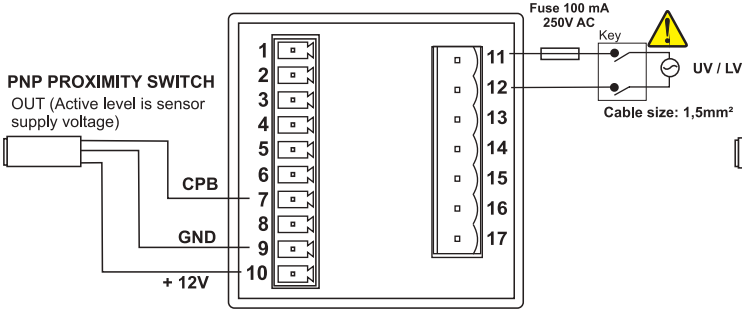
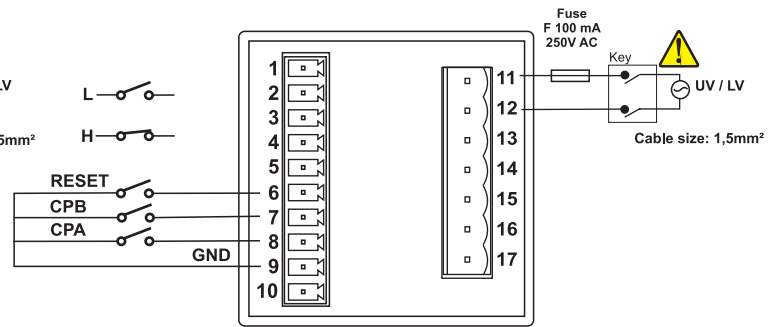


SENSOR CONNECTION SAMPLES

Connection samples for PNP sensor type



Connection samples for NPN sensor type



Logic output of the device is not electrically isolated.

- Note :**
- 1) Mains supply cords shall meet the requirements of IEC60227 or IEC60245.
 - 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.

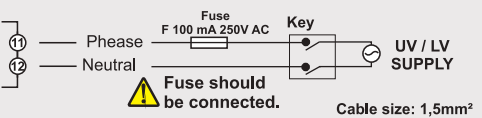
 Holding screw
0.4-0.5Nm

 Equipment is protected throughout
by DOUBLE INSULATION.

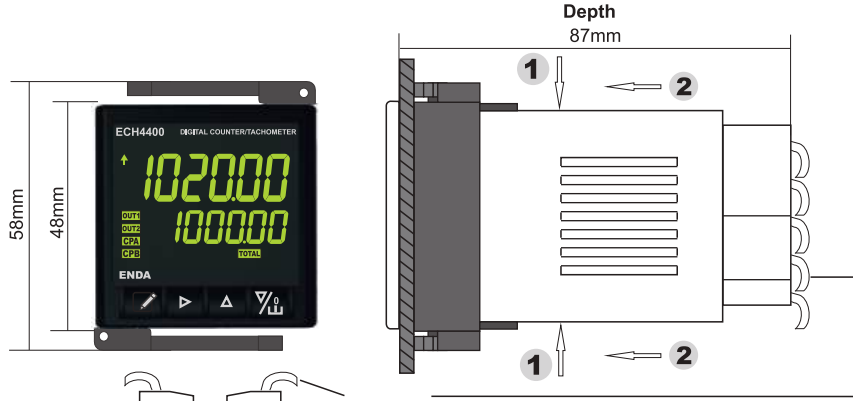
NOT :

SUPPLY :

90-250V AC
or
10-30V DC /
8-24V AC
50/60Hz 5VA



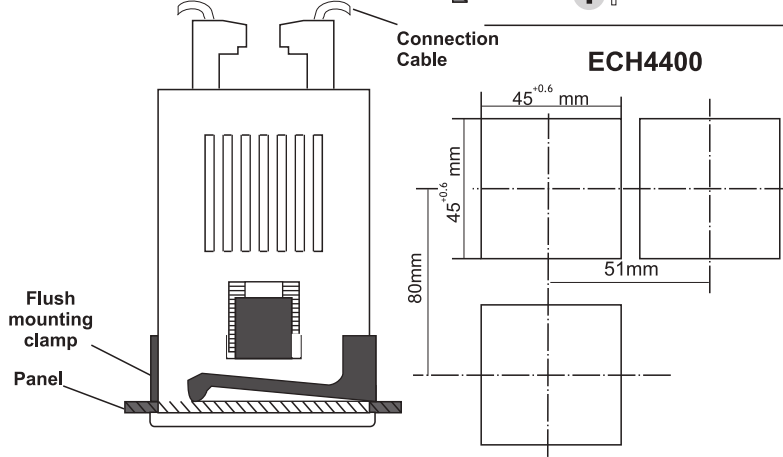
DIMENSIONS



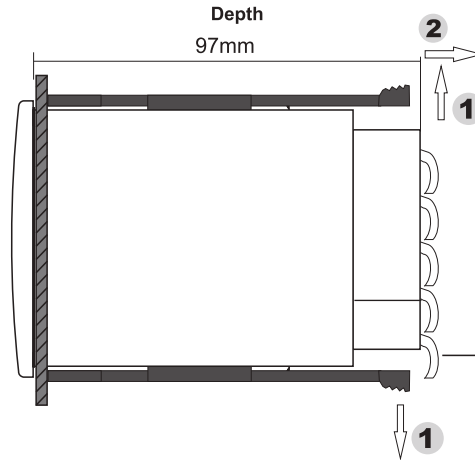
To removing the device from the panel:
- While pressing both side of the device in direction **1** and push it in direction **2**.

NOTE:

- 1) While performing panel mounting, additional space should be allocated for cables.
- 2) Panel thickness should be maximum **9mm**.
- 3) If there is no **100mm** free space at back side of the device, it would be difficult to remove it from the panel.



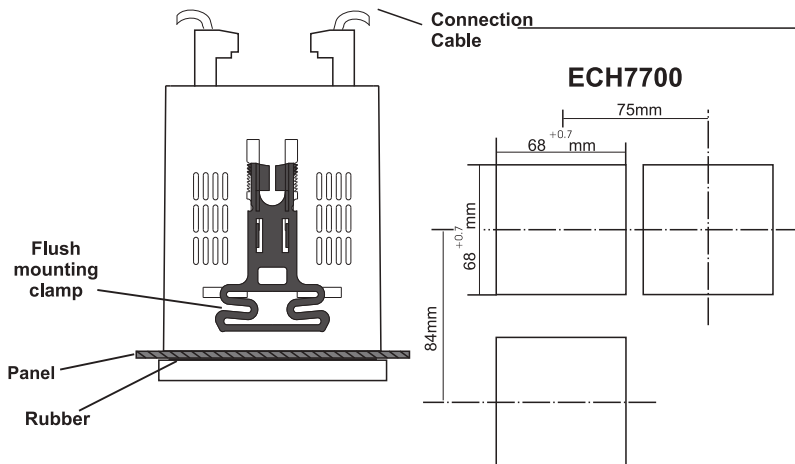
ENDA ECH Series are intended for installation within control panels. Make sure that the device is used only for intended purpose. The shielding must be grounded on the instrument side. During an installation, all of the cables that are connected to the device must be free of electrical power. The device 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.



To removing the device from the panel:
- While pressing both side of the device in direction **1** and push it in direction **2**.

NOTE:

- 1) While performing panel mounting, additional space should be allocated for cables.
- 2) Panel thickness should be maximum **9mm**.
- 3) If there is no **100mm** free space at back side of the device, it would be difficult to remove it from the panel.



2. MODBUS ERROR MESSAGES

Modbus protocol has two types error, communication error and operating error. Reason of the communication error is data corruption in transmission. Parity and CRC control should be done to prevent communication error. Receiver side checks parity and CRC of the data. If they are wrong, the message will be ignored. If format of the data is true but function doesn't perform for any reason, operating error occurs. Slave realizes error and sends error message. Most significant bit of function is changed '1' to indicate error in error message by slave. Error code is sent in data section. Master realizes error type via this message.

ModBus Error Codes

Error Code	Name	Meaning
01	ILLEGAL FUNCTION	The function code received in the query is not an allowable action for the slave. If a Poll Program Complete command was issued, this code indicates that no program function preceded it.
02	ILLEGAL DATA ADDRESS	The data address received in the query is not an allowable address for the slave.
03	ILLEGAL DATA VALUE	A value contained in the query data field is not an allowable value for the slave.

Message example;

Structure of command message (Byte Format)

Device Address	(0A)h
Function Code	(01)h
Beginning address of coils.	MSB (04)h
	LSB (A1)h
Number of coils (N)	MSB (00)h
	LSB (01)h
CRC DATA	LSB (AC)h
	MSB (63)h

Structure of response message (Byte Format)

Device Address	(0A)h
Function Code	(81)h
Error Code	(02)h
CRC DATA	LSB (B0)h
	MSB (53)h

As you see in command message, coil information of (4A1)h = 1185 is required but there isn't any coil with 1185 address. Therefore error code with number (02) (Illegal Data Address) sends.

