



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

TEGRA MP1500 PID PROFILE (STEP) CONTROLLER

Thank you for choosing TEGRA MP1500 profile controller.

- * CE marked according to European Norms.
- * 16 program with 16 segments each
- * S Type Thermocouple Input.
- * Selectable cooling relay contact On/Off or P control featured.
- * OUT1 and OUT2 auxiliary switch outputs.
- * "offset" feature.
- * In case of probe failure, power rate of heating output can be adjusted
- * 96 x 96 mm size.
- * In case of power failures, the program can resume from the last step.
- * Adjustable parameter security levels.
- * Selectable 0-20mA, or 4-20mA analog or SSR output.
- On/Off, P,PI,PD or PID control featured heating control output.



TECHNICAL SPECIFICATIONS

Input type	Temperature range		Accuracy
	°C	°F	
S (Pt/0Rh-Pt) Thermocouple EN 60584	0...1600 °C	+32... +2912 °F	±0,2% (of full scale) ± 1 digit

ENVIRONMENTAL CONDITIONS

Ambient/storage temperature	0 ... +50 °C /-25... +70°C (with no icing)		
Max. Relative humidity	80% up to 31 °Cdecreasing linearly 50 % at 40 °C		
Rated pollution degree	According to EN 60529	Front panel : I	P65
		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 or 24V AC ±10 %, 50/60Hz.
Power consumption	Max. 7W A
Wiring	2.5mm ² screw-terminal connections
Line resistance	For thermocouple max.100ohm
Data retention	EEPROM (minimum 10 years)
EMC	EN 61326-1: 1997, A1: 1998, A2: 2001 (Performance criterion B for standard EN 61000-4-3)
Safety requirements	EN 61010-1: 2001 (Pollution degree 2, overvoltage category II)

OUTPUTS

HEA T output	Can be selected as 0-20mA, 4-20mA analog output and logic control output.
COOL output	Relay : 250V AC, 5A (for resistive load), NO contact.(Cooling output) (It can do proportional control.)
OUT1 output	Relay : 250V AC, 5A (for resistive load), NO contact. (Auxiliary relay output).
OUT2 output	Relay : 250V AC, 5A (for resistive load), NO contact (Auxiliary relat output).
Life expectancy for relay	No-load 20.000.000 switching; 250V AC, 5A for resistive load 60.000 switching.

CONTROL


Control type	Single set-point and alarm control
Control algorithm	On-Off / P , PI, PD, PID (selectable)
A/D converter	16 bits
Sampling time	500ms
Proportional band	Adjustable between 0 % and 100 %. If Pb=0 %, On-Off control is selected.
Integral time	Adjustable between 0.0 and 100.0 minutes
Derivative time	Adjustable between 0.00 and 25.00 minutes
Control period	Adjustable between 1 and 250 seconds
Hysteresis	Adjustable between 1 and 50 °C/F
Output power	The ratio of power at a set point can be adjusted between 0 % and 100 %

HOUSING

Housing type	Suitable for flush-panel mounting according to DIN 43 700.
Dimensions	W96xH96xD57mm
Weight	Approx. 395g (after packing)
Enclosure material	Self extinguishing plastics.

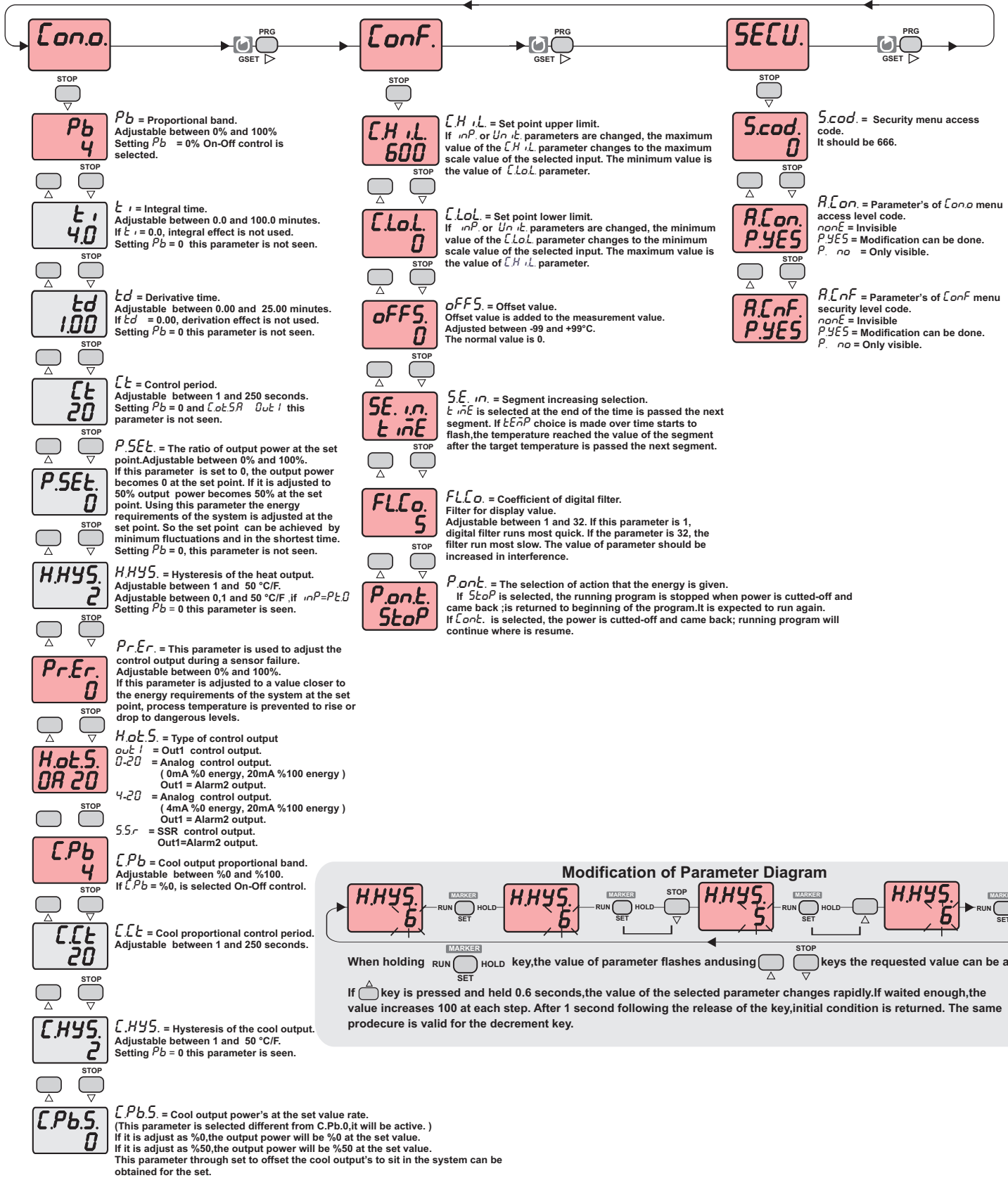


While cleaning the device, solvents (thinner, benzene, acid etc.) or corrosive materials must not be used.

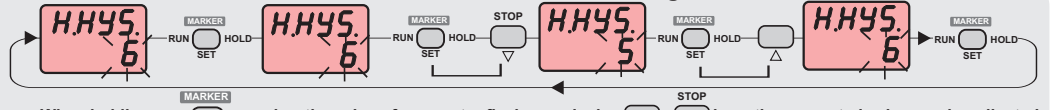
While the device in running mode, if the  key is pressed for 2 seconds, to the profile (step) parameters — See to the page 3/5

While the device in running mode, if the  key is pressed for 4 seconds, to the global parameters programming mode is passed.

GLOBAL PARAMETERS PROGRAMMING DIAGRAM




Modification of Parameter Diagram

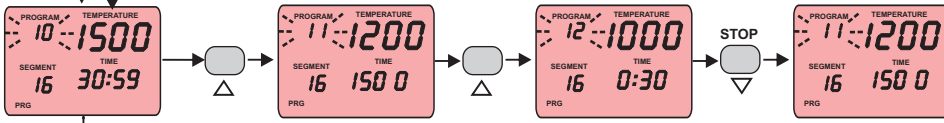



When holding **RUN** key, the value of parameter flashes and using **UP** and **DOWN** keys the requested value can be adjusted.

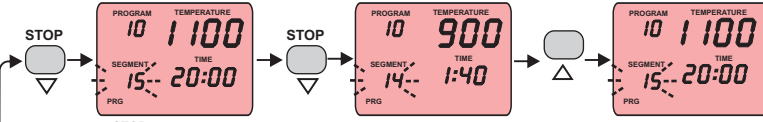
If **UP** key is pressed and held 0.6 seconds, the value of the selected parameter changes rapidly. If waited enough, the value increases 100 at each step. After 1 second following the release of the key, initial condition is returned. The same procedure is valid for the decrement key.


While the device in running mode, if the  key is pressed for 2 seconds, the program light comes on.



PROFILE (STEP) PARAMETERS PROGRAMMING DIAGRAM

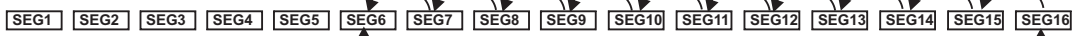




Keys by using  set the parameters to select the desired program number. The program parameter adjustable between 001 and 250.



Keys by using  is selected segment number, parameters required to be set. The segment parameter adjustable between 01 and 16. Each program consists of 16 segment.

If you want to be removed from any segment is between the first press  HOLD key and then  key is pressed together.



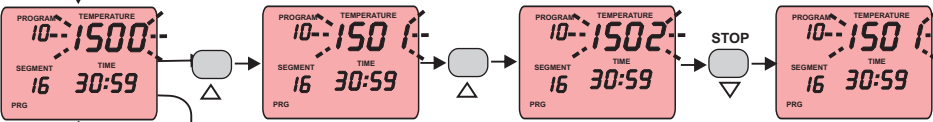
Removed the segment from intermediate. If you want to be a new segment is added, before the  HOLD key then  key is pressed together.

The empty segment is added to the last.



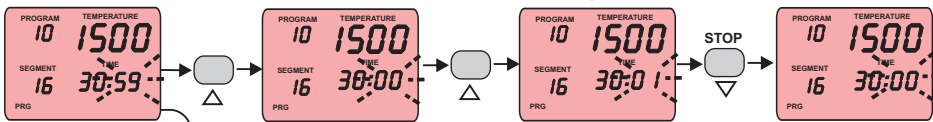
The empty segment additional to the intermediate.

The last segment is deleted.




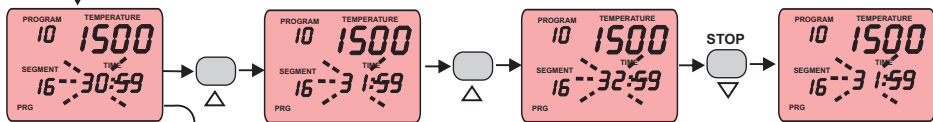
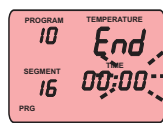
Keys by using the selected program and segment's are adjusted for the target temperature.

While the temperature adjustment mode, to the  HOLD key is by pressing return to the program selection mode.




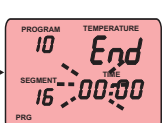
Keys by using, the selected segment to reach the target temperature is set or the waiting period of minute. Can take values between 00 and 59.

While the minute adjustment mode,  HOLD key is pressing time and minute by resetting easily, if the desired is the current segment can be placed the program termination marker. The termination marker is shown with "End" message at the top indicator.

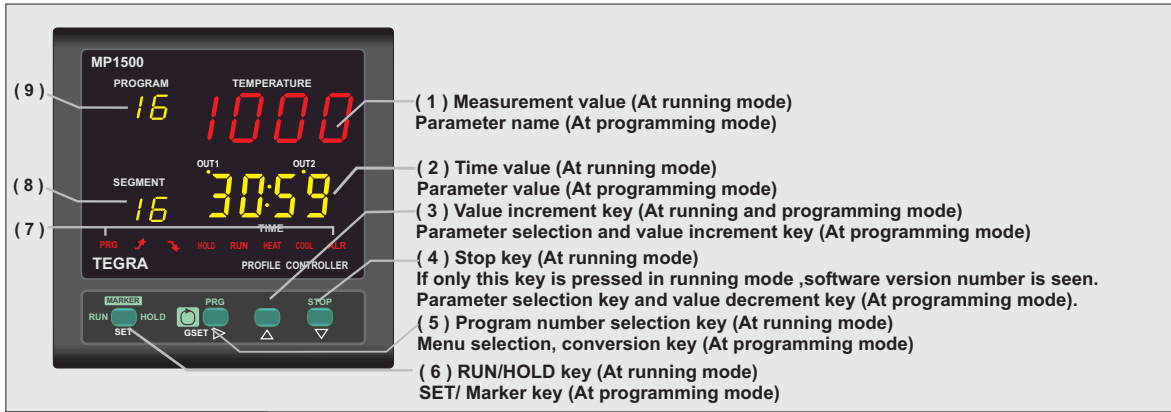


Keys by using, the selected segment to reach the target temperature is set or the waiting period of minute. Can take values between 00 and 99.

While the time adjustment mode,  HOLD key is pressing time and minute by resetting easily, if the desired is the current segment can be placed the program termination marker. The termination marker is shown with "End" message at the top indicator.

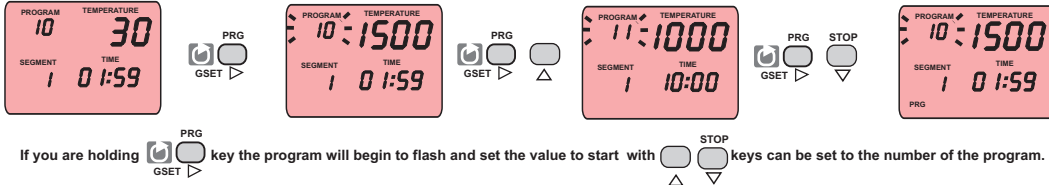


TERİMLER



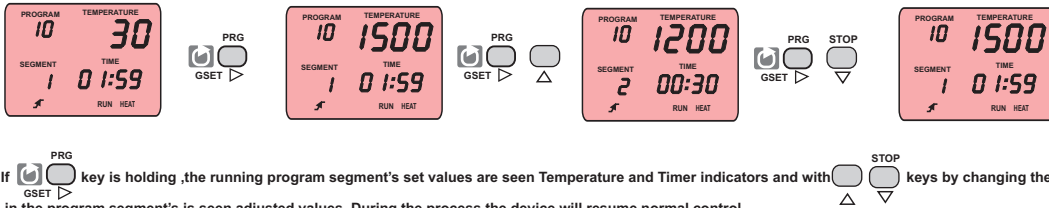
(1) Temperature display	4 digits 7 segment red LED temperature indicator. (Height: 14 mm)
(2) Time display	4 digits 7 segment yellow LED time indicator.(Height: 12,5mm)
(3),(4),(5),(6) Keypad	Mikro switch
(7) State indicator	Program situation and indicator and output indicator LEDs.
(8) Segment indicator	2 digits 7 segment yellow LED, segment number indicator . (Height: 8mm)
(9) Program indicator	2 digits 7 segment red LED program number indicator. (Height: 8 mm)

THE PROGRAM NUMBER SELECTION IS DONE

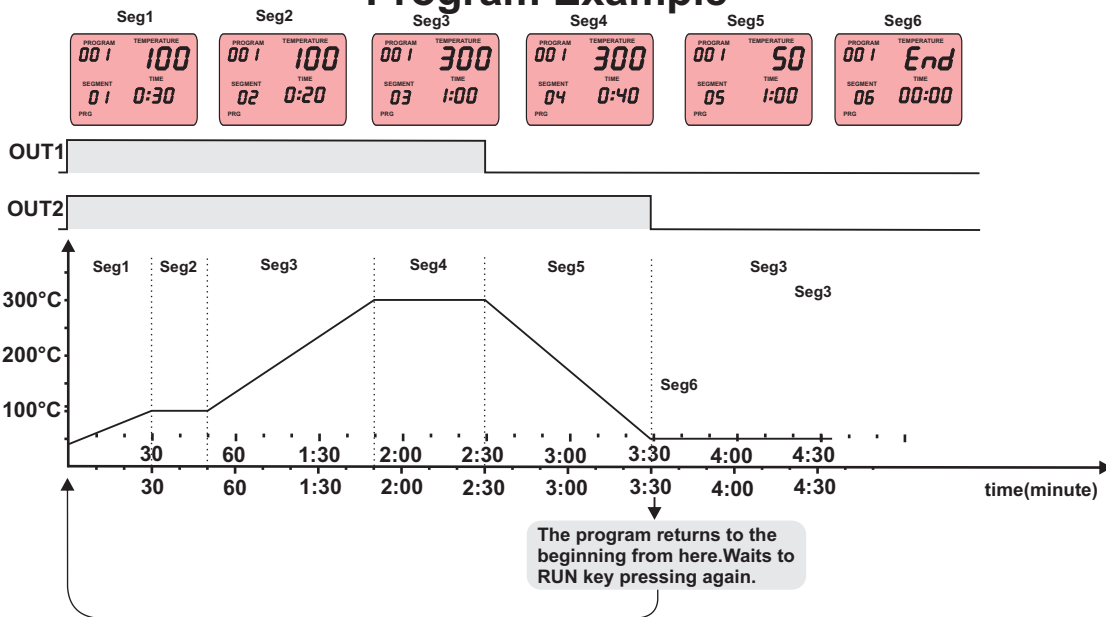


NOTE: The program number can be selected between the minimum "1" and maximum "16".

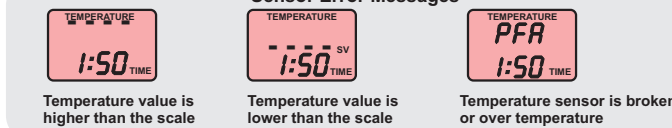
PROGRAM VALUES ARE SEEN AT A RUN STATE



Program Example



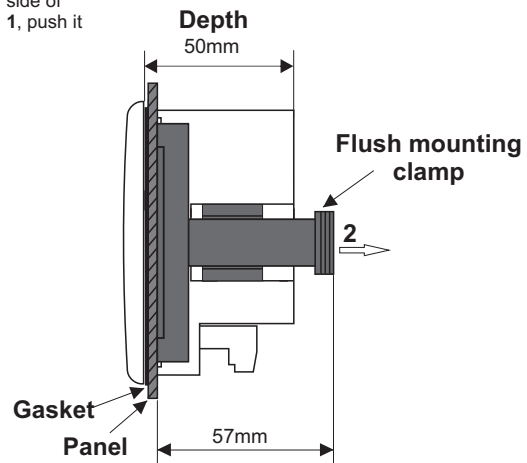
Sensor Error Messages



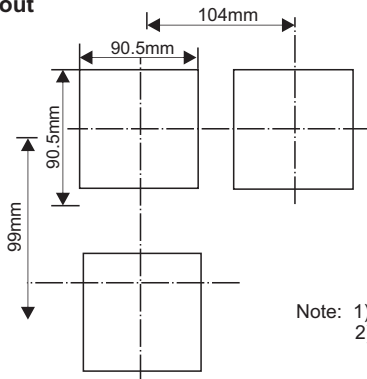
DIMENSIONS



For removing the device from the panel:
-While pressing both side of the device in direction 1, push it in direction 2.



Panel cut-out



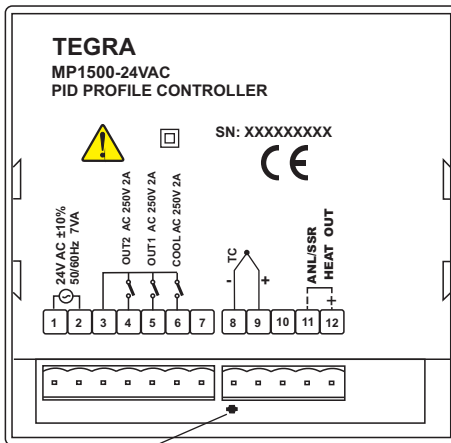
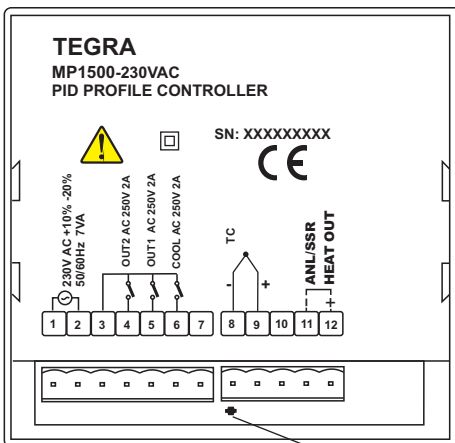
Note: 1) Panel thickness should be maximum 10mm.
2) If there is no 60mm free space at back side of the device, it would be difficult to remove it from the panel.

CONNECTION DIAGRAM



TEGRA MP1500 is intended for installation in 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 energy. The device must be protected against inadmissible humidity, vibrations, severe soiling and 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 on by a qualified staff and must be according to the relevant locally applicable regulations.

Screw-terminal connections



Logic output of the instrument is not electrically insulated from the internal circuits. Therefore, when using a grounding thermocouple, do not connect the logic output terminals to the ground.

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

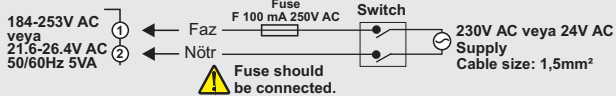
Holding screw
0.4-0.5Nm

Equipment is protected throughout by DOUBLE INSULATION.

Environment temperature measurement sensor

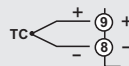
NOTE :

SUPPLY :



SENSOR INPUT :

For S type thermocouple :
Use suitable compensation cables. Don't use jointed cables. Pay attention to the polarities of the thermocouple cable as shown in the figure right are connected to the .



Order Code : MP1500-□□□□□□

1

1 - Supply Voltage
230VAC...230V AC
24VAC.....24V AC