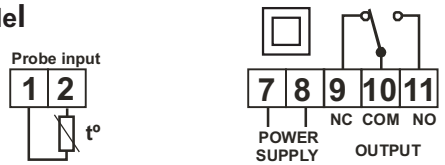
KLT11-D Temperature Digital Controller

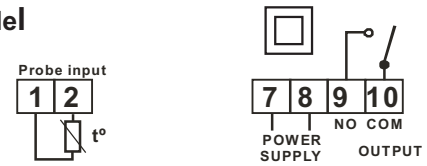
Specification and Operating Instructions

Wiring Diagram

1HP Model



2HP Model



Description

The KLT11 is designed for many heating and cooling applications. It has an input for temperature probe type PTC or NTC (selectable by parameter).The probe temperature is displayed on the bright 3-digit display. The user is able to program 16 different parameters including set point, hysteresis, cycle time and ambient probe adjustment using the silicone front keypad. The KLKey input allows an easy programming of the parameters. The unit features error warning and password protection. Select between red, green or blue display color, temperature display in ºC or ºF and 115Vac, 230Vac, 24Vac/dc or 12Vac/dc power supplies.

Model references

The model reference is given by: KLT11 - DWXYZ
Where each sufix can take the following values:

W	Output	Null= 16A(1HP), 2= 20A(2HP)
X	Display Color	R=Red, G=Green, B=Blue
Y	Supply Voltage	110=115Vac, 230=230Vac 24=24Vac/dc, 12=12Vac/dc
Z	Units	C=ºC, F=ºF

Installation

NOTE: Unit must be mounted away from vibration, impacts, water and corrosive gases.

- Cut hole in panel 71 x 29 mm (2.80 x 1.14 inches)
- Apply silicone (or rubber gasket) around the perimeter of the hole to prevent leakage.
- Insert unit into hole of panel.
- Slide removable fitting clips onto unit from the back until secure to panel.
- Wiring diagram is displayed on the top of the unit

NOTE: DO NOT INSTALL PROBE CABLE NEAR POWER CABLES.

Technical Data

Supply voltages
115Vac±10%, 230Vac±10%, 24Vac/dc±10%, 12Vac/dc±10%

Supply powers
4VA (230V/115V) 1,5VA(24V /12V)

Storage temperature
-20ºC to 80ºC (-4 to 176ºF)

Operating temperature
0ºC to 70ºC (32 to 158ºF)

Probe range
PTC -50ºC to 150ºC (-58 to 302ºF)
NTC -50ºC to 110ºC (-58 to 230ºF)

Accuracy
Better than 1% of full scale

Resolution
0,1º (3 digits)

Display
3-digit and sign (red, green or blue)

Probe Input (Selectable by parameter)
PTC1000 probes (25ºC - 1000 Ohm) / NTC

KLKey Input
For an quick programming of all parameters

Output

1HP Model	SPDT Relay Resistive load 16A 1HP 240Vac -- 10FLA, 60LRA 240Vac
2HP Model	SPST Relay Resistive load 20A 2HP 240Vac -- 12FLA, 72LRA 240Vac

Dimensions
Front 77 x 36 mm Depth 62 mm (3.03 x 1.42 x 2.44 inch)

Front Protection IP64

List of parameters

	Description	Units	Range
SP	Set Point	Degrees	r1 to r2
r0	Differential or hysteresis	Degrees	1 to 20
r1	Lower value for SP	Degrees	-58 to r2
r2	Higher value for SP	Degrees	r1 to 302
d0	Cooling or heating control	Option	Ht/Co
d2	Defrosting duration	Minutes	0 to 59
d8	Defrosting interval time	Hours	0 to 24
c0	Minimum stopping time	Minutes	0 to 59
c1	Cool cycle duration	Hours	0 to 24
c2	ON time of fault cycle	Minutes	0 to 999
c3	OFF time of fault cycle	Minutes	0 to 999
P1	Ambient probe adjustment	Degrees	-10 to 10
P4	Decimal point	Option	no/yes
H5	Access code to parameters	Numeric	0 to 255
H6	Probe type	Option	Ptc/ntc
t0	Maximum displayed temp.	Degrees	-58 to 302

Parameter descriptions

SP = Set point. Temperature we wish to regulate the machine (variable from r1 to r2)
r0 = Differential or hysteresis
r1 = Lower value for SP
r2 = Higher value for SP
d0 =Cooling or heating control
If d0 = Ht and TS is the temperature of ambient probe:
If TS >= SP the load is disconnected
If TS <= SP-r0 the load is connected
if d0=Co then:
If TS <= SP the load is disconnected
If TS >= SP+r0 the load is connected
d2 = Defrosting duration (if d2=0 no defrosting is performed)
d8 = A defrosting cycle is performed every d8 hours (if d8=0 no periodic defrosting is performed)
c0 = Minimum stopping time of the load
c1 = Cool cycle duration
c2 = ON time of fault cycle, when ambient probe is broken
c3 = OFF time of fault cycle, when ambient probe is broken
P1= Ambient probe adjustment. If the probe is not placed in the exact point to control use a standard thermometer to offset the measured temperature.
P4= Decimal point only in visualization of the probe. The parameters are always decimal.
H5 = Access code to parameters (it is set to 00 from factory)
H6 = Probe Model Ptc or Ntc
t0 = Maximum temperature displayed during defrosting and during the next hour to defrosting.

Parameter programming

Set Point (SP) is the only parameter the user can access without code protection.
•Press SET. *SP* text will appear on the display.
•Press SET again. The real value is shown on the display.
•The value can be modified with the UP and DOWN arrows.
•Press SET to enter any new values.
•Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

Access to all code protected parameters.

•Press SET for 8 seconds. The access code value 0 is shown on the display (unit comes with code set at 0 from factory).
• With the UP and DOWN arrows, code can be set to user needs.
•Press SET to enter the code. If code correct, the first parameter label is shown on the display (SP).
• Move to the desired parameter with the UP and DOWN Keys.
•Press SET to view the value on the display.
• The value can be modified with the UP and DOWN arrows.
•Press SET to enter the value and exit.
• Repeat until all necessary parameters are modified.
•Press SET and DOWN at the same time to quit programming or wait one minute and the display will automatically exit programming mode.

** The keyboard code can be reset to ZERO by turning off the controller and turning it on again while keeping the SET pressed.*

Activating/deactivating defrosting

Holding the UP arrow pressed for 8 seconds the defrosting is activated. Repeating this operation the defrosting is stopped. If a cool cycle is activated the defrosting is disabled.

Activating/deactivating cool cycle

Holding the DOWN arrow pressed for 8 seconds a continuous cool cycle is activated. Repeating this operation the cool cycle is stopped. If defrosting is activated cool cycle is disabled.

Default working

In case of probe error, the control performs a continuous regulation, c2 minutes load connected - c3 minutes load disconnected.
In case of memory error, the control performs a continuous regulation, 5 minutes load connected - 5 minutes load disconnected.

Led indication and display messages

The led ***OUT*** indicates if the load is connected or not. If a continuos cool cycle is being performed the led flashes (90% ON 10% OFF). If the control is waiting the stopping time c0 to start a cool cycle the led flashes (10% ON 90% OFF).
The led ***DEF*** indicates if the control is performing defrosting.
In normal operation, the probe temperature will be shown on the display. In case of alarm or error, the following messages can be shown:
• *Er* = Memory Error
• *oo* = Open Probe Error
• -- = Short Circuit Probe Error

Maintenance, cleaning and repair

After final installation of the unit, no routine maintenance is required.
Clean the surface of the display controller with a soft and damp cloth. Never use abrasive detergents, petrol, alcohol or solvents.
All repairs must be made by authorised personnel.

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