

# J&D Manufacturing

## JDDT1 - Single Stage Digital Thermostat



The JDDT1 Digital Temperature Switch combines reliability and an installation friendly weatherproof enclosure. Programming parameters can be quickly completed using the front keys. If programming multiple units with identical settings, a configuration key is an available accessory. In order to prevent tampering from unauthorized users, a parameter lock physical jumper and software pass-code security are standard in the unit. The bright, easy-to-read LED display shows the current output status and the temperature measurement.

The multiple conduit knockouts on the JDDT1 give flexibility to the installer to determine the best location for the conduit entry. Another installation friendly feature of the JDDT1 is the ability to quickly jumper the line voltage to the common of the output relay using fast tabs.

### SPECIFICATIONS

#### Probe Range:

**PTC:** -58 to 302°F (-50 to 150°C).

**NTC:** -58 to 230°F (-50 to 110°C).

**Input:** PTC (1000 Ω @ 25°C)/NTC (10KΩ @ 25°C).

**Output:** R1 SPDT Relay Resistive Load: 20A @ 240 VAC

**Horsepower Rating:** R1 2HP @ 240 VAC, 1 HP @ 120 VAC

**Control Type:** On/Off. **Control Type:** On/Off.

**Power Requirements:** 90 to 255 VAC

**Power Consumption:** 3.6VA.

**Accuracy:** ± 1% FS.

**Display:** 3 digits plus sign.

#### Resolution:

.1° < 100°; 1° ≥ 100°.

#### Memory Backup:

Non-volatile memory.

#### Ambient Temperature:

32 to 104°F (0 to 40°C).

**Weight:** 1.2 lbs (544 g).

#### Front Protection:

NEMA 4X (IP66).

**Agency Approvals:** CE, UL, cUL.

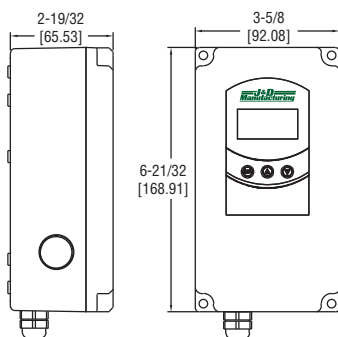


Figure 1

### CAUTION

**NOTICE:** The thermostat must be installed by authorized professionals. It should be located in a place free of vibrations, impacts, and corrosive gases.

**NOTICE:** Protective plastic overlay should be peeled off after final installation.

### WIRING INSTRUCTIONS

Wiring diagram is displayed on the inside cover of the unit and in figure 2.

**NOTICE:** If the length of the probe cables exceed 100 meters, a recalibration adjustment must be made (parameter P1).

**NOTICE:** Avoid installing the probe cables within proximity of power cables.

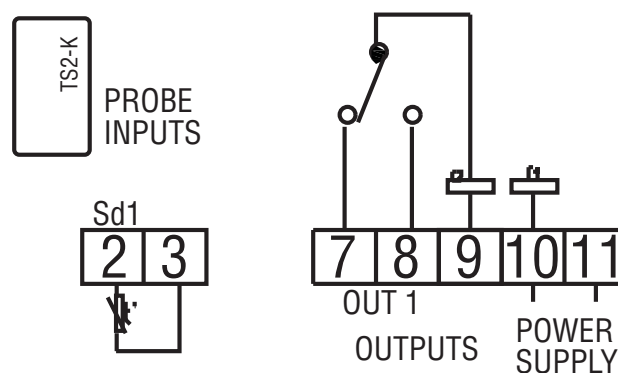


Figure 2

### QUICK START - PROGRAMMING PARAMETERS

In order to adjust parameter values, parameter lock jumper must be set in unlocked position (see figure 3).



Locked



Unlocked

Figure 3

Upon startup take note of indicated temperature units, °C or °F. (Change of temperature units is shown in advanced settings.)

#### Access only to Set Points SP (without software code protection):

- Press and release SET. Parameter SP appears on the display.
- Press SET to see the value of the parameter.
- Modify the value using the UP and DOWN keys.
- Press SET Key to save the value.
- Press SET and DOWN to quit programming, or wait 1 minute for the TIMEOUT.

## ADVANCED - PROGRAMMING PARAMETERS

### Access to all parameters (software code protected):

- Press SET for 8 seconds. The access code value 0 is shown on the display.
- Using the UP and DOWN buttons, set the code (factory-set code is 0).
- Press SET to confirm the code. If it is correct, the first parameter label will be shown on the display (SP).
- Move to the desired parameter with the UP and DOWN keys.
- Press SET to see the value of the parameter.
- Modify the value with the UP and DOWN keys.
- Press SET to save and exit parameter list.
- Press SET and DOWN to quit programming, or wait 1 minute for the TIMEOUT.

### Resetting the parameter pass code

The parameter code can be set to zero by holding the SET key and cycling power to the unit.

### LED INDICATIONS

✱ This indicates that the output is energized or that the compressor is connected. It waits for the programmed minimum stop time of the compressor.

♠ This indicates that defrosting is activated.

### Error Messages

In normal operation, the probe temperature will be shown. In case of alarm or error, the following messages will be shown:

- Er- Memory error.
- -- Shorted-circuited probe error.
- oo- Open probe error.

## PARAMETER LIST

	Description	Units	Range
P	Set Point	Degrees	r1 to r2
r0	Differential or hysteresis	Degrees	1 to 20°
r1	Lower value for set point	Degrees	-50 to 150°C -50 to 302°F
r2	Higher value for set point	Degrees	-50 to 150°C -50 to 302°F
d0	Heating or Cooling Control	Option	Ht/Co
d2	Time for Defrosting	Minutes	0 to 59
d8	Interval time between Defrosts	Hours	0 to 24
c0	Minimum stop time for compressor	Minutes	0 to 59
c1	Continuous cycle time	Hours	0 to 24
c2	On time of fault cycle	Minutes	0 to 999
c3	Off time of fault cycle	Minutes	0 to 999
P0	Engineering Units	Option	°C/°F
P1	Ambient Probe Adjustment	Degrees	-10 to 10°
H5	Parameter access code	Number	0 to 99
H6	Probe Input Type	Option	Ptc/ntc
t0	Maximum Temperature on Display	Degrees	-50 to 150°C -50 to 302°F

## PARAMETER DESCRIPTIONS

**SP** = Set Point. Temperature desired to regulate the machine.  
Can vary from r1 to r2.

**r0** = Differential. Heating: If temperature is  $\geq$  SP then output is OFF.  
If temperature is  $<$  SP - r0 then output is ON. Cooling:  
If temperature is  $\geq$  SP + r0 then output is ON. If temperature  
is  $<$  SP then output is OFF.

**r1** = Lower Set Point Limit.

**r2** = Upper Set Point Limit.

**d0** = Heat or Cooling Control. Ht = heating control,  
Co = cooling control.

**d2** = Defrosting Time Remaining, in minutes. If d2 = 0,  
defrosting will not start.

**d8** = Interval Between Two Defrostings, in hours.

**c0** = Minimum Time for Compressor to be OFF. Minimum time for  
compressor to stop until it can start again.

**c1** = Continuous Cycle Time. The remaining time for a continuous  
cold cycle.

**c2** = ON Time of fault cycle, during probe error.

**c3** = OFF Time of fault cycle, during probe error.

**P0** = Selection of Engineering units between F and C.

**P1** = Ambient Probe Calibration. Offsets temperature in degrees  
to adjust the ambient probe.

**H5** = Access Code to Parameters. Factory-set to 0.

**H6** = Selection of Input Probe Type: PTC or NTC.

**t0** = Temperature Display Limit. Maximum temperature shown on  
the display, although the real temperature can be greater.

### OPERATION IN CASE OF ERROR

If the probe or thermostat memory should fail, the compressor will be  
connected in accordance to the parameters set in C2 and C3.

## MAINTENANCE

After final installation of the JDDT1 Digital Temperature Switch, no  
routine maintenance is required. A periodic check of system calibration  
is recommended.

## WARRANTY

J&D Manufacturing warrants all products are free from defects in  
materials and workmanship under normal use for the period of one year  
from date of purchase. Our warranty does not cover normal or regular  
wear and tear. J&D Manufacturing can repair or replace at our option,  
any product or part of the product that is found to be defective. Our  
warranty applies to materials only, and does not include return freight,  
delivery, loss or damage to personal property, cost of removal or  
installation, any incidental or consequential damages or labor. This  
warranty does not apply to products which are misused, abused, altered,  
improperly installed or subject to negligence. All warranties must be  
approved through our warranty department. The original purchaser must  
present a copy of the invoice for the defective product. One year is our  
standard warranty unless specified on our literature or in the installation  
instructions or user manuals.