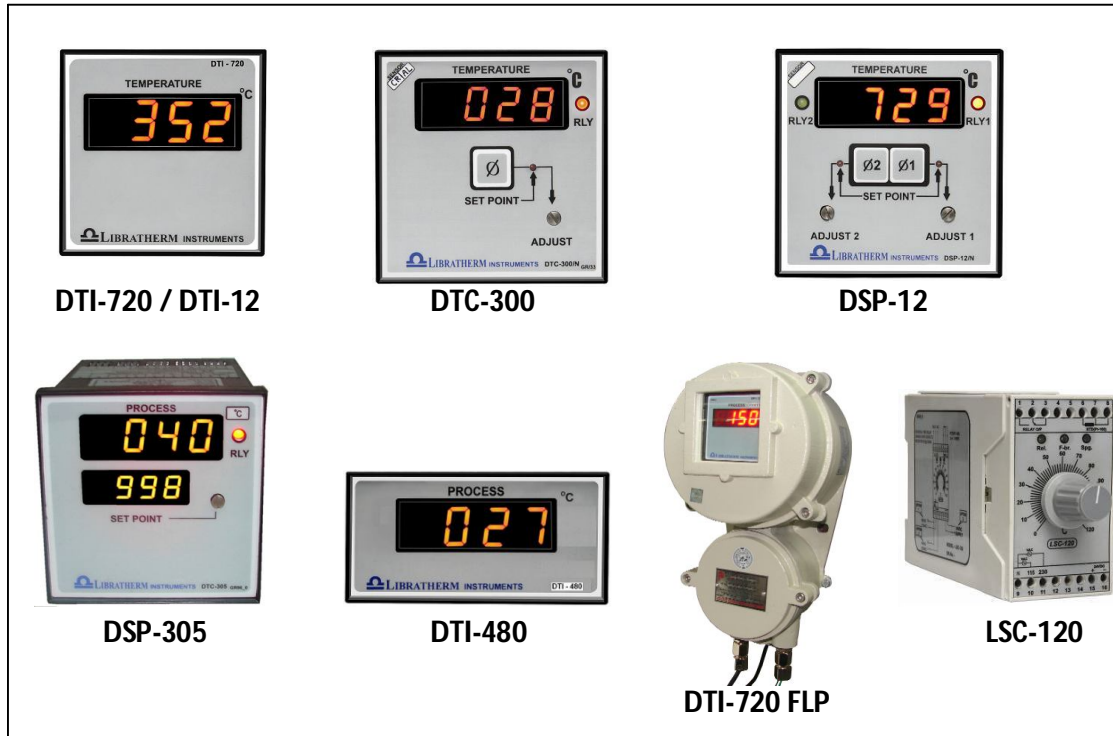


Temperature Indicator Controller (Digital)

(Product Code 1.1 To 1.16)



Model Wise Description:

Temperature Indicators (1.1 to 1.9)

Sr. No	Model	Product Description	Size (mm.)
1.1	DTI-720	3 and ½ digit Temperature Indicator	72 x72 x 120
1.2	DTI-720-FLP	Temp. Indicator in Flame Proof Enclosure	350 x 200 x 160
1.3**	DTI-480	3 and ½ digit Temperature Indicator	96 x 48 x120
1.4**	DTI-12	3 and ½ digit Temperature Indicator	96 x 96 x 120
1.5	MTI-X	Multipoint Temperature Indicator (X = 2 to 8)	96 x 96 x 120
	X=2,4,6,8	Selection using front panel Rotary switch of X positions or ways.	
1.6	DTI-484	4 and ½ Digit Temperature Indicator	96 x 48 x 120
1.7	DTI-1000	1" Display size 3 and ½ digit Temp. Indicator	192 x 96 x 160
1.8	DTI-2000	2" Display size 3 and ½ digit Temp. Indicator	192 x 96 x 160
1.9	DTI-4000	4" Display size 3 and ½ digit Temp. Indicator (Wall mounting enclosure)	500 x 250 x 150

(Models with ** are available with SMPS supply of 90 to 250VAC)

On-Off Temperature Controllers (1.10 to 1.16)

Sr. No	Model	Product Description	Size (mm.)
1.10**	DTC-300	Single set point on/off controller potentiometer setting	96 x 96 x 120
1.11**	DTC-305	Dual Display Single set point on/off controller potentiometer setting	96 x 96 x 120
1.12**	DSP-12	Two set point on/off controller potentiometer setting	96 x 96 x 120
1.13	DSP-30	Single set point on/off controller with variable hysteresis	96 x 96 x 120
1.14	DTC-720 -FLP	Single set point on/off controller potentiometer setting but in Flame Proof Enclosure	350 x 200 x 160
1.15	DSP-722 - FLP	Two set point on/off controller potentiometer setting but in Flame Proof Enclosure	350 x 200 x 160
1.16**	LSC-120	35 mm. DIN rail mount temperature safety controller	45 x 75 x 110

(Models with ** are available with SMPS supply of 90 to 250VAC)

Description:

Libratherm offers simple Digital Temperature Indicator Controller, which are low cost, accurate, rugged and reliable instruments available for indication and On/Off control for general-purpose temperature control applications. Indicators are available in display sizes of 0.5" to 4" to suit long distance visibility.

On/Off control is the simplest controlling method. When used for heating control the temperature sensed by the connected sensor is compared with the set point and when the temperature exceeds this set point, the heater is put OFF. When the temperature again drops below the set point, the heater is turned ON. So, depending upon the heating system design, inertia due to heat, the heat absorption by process or the natural losses, the temperature will oscillate above and below the set points by few degrees. When the application is for cooling control, the cooling device such as compressor or water circulating valves are turned OFF, when temperature drops below the set point and turned ON when the temperature rises above the set point. Special models are available for applications requiring variable hysteresis i.e. where the single device to be operated at two different set points. DIN rail mount temperature controller is also available as model LSC-120.

Some of the above models are also available in suitable size flameproof enclosures for use in the hazardous environment.

Features:

- ❖ Elegant appearance and compact in size.
- ❖ Accuracy better than $\pm 0.5\%$ of the full scale.
- ❖ Accepts standard type of thermocouple or RTD - Pt-100.
- ❖ Control output Relay or TRIAC or DC pulse for external SSR.
- ❖ Uses high quality potentiometer, and membrane switch for adjusting the set points.

Applications:

- ◆ Heat treatment
- ◆ Furnace / Oven control
- ◆ Food processing
- ◆ Constant temp. Baths,
- ◆ Environmental chambers
- ◆ Plastic / Packaging / Pharmacy industry
- ◆ Cold Storage and Chilling plants
- ◆ Laboratory equipment etc.

Technical Specifications:

Input	Thermocouple type J, K, RTD (Pt-100) / 2 or 3 wire (any one to be specified). Please refer to Input and Range selection table given below.
Available Standard Ranges	Please refer Input and Range Selection Table – Given Below
Accuracy	Indicating accuracy better than $\pm 0.5\%$ of the specified range
Display	3.5 digits or 4.5 digits 0.5" Red 7-segment LED display. Other Display sizes are model dependent as given in the above tables.
Set Points (One or Two)	Adjustable using front panel multi-turn potentiometers with push to read membrane switches. (Single or Dual set points – as per the models)
Type of Control Outputs (DC pulse, Relay and Triac)	a) Relay changeover contacts (rated for 6A @ 230VAC) – preferred for ON/OFF control. b) Solid state relay driver (0 to 10) VDC logic pulse. c) Built in AC Solid-state relay or Triac (rated for 10A @ 230VAC).
Output operation	The outputs can be operated in high alarm or low alarm mode as per the requirement – please refer to the ordering information – Table
Hysteresis (Fixed)	2°C for ON/OFF action (for 1°C resolution controller) 0.3°C for ON/OFF action (for 0.1°C resolution controller) Variable from 0.1/1 to 10.0/10 °C (model DSP-30)
SMPS Supply	90 to 250 VAC 50/60Hz (5VA max) (for some models marked **)
Linear Supply	230VAC or 110VAC +/- 10%, 50/60Hz
Size	As given in the above tables. 72 x 72, 96 x 48 and 96 x 96 , 192 x 96
Panel Cutouts	68 x 68, 92 x 44, 92 x 92, 186 x 92 mm ± 0.5 mm.
Enclosures (model based)	ABS Plastic /Metal powder coated with polycarbonate front, Aluminum Die cast housing for flame proof enclosures, Metal enclosures for large display.

Input and Range Selection Table:

Code	Input	Range
A1	J T/C - Fe/Con thermocouple	0 to 400 °C
A2	K T/C - Cr/Al thermocouple	0 to 400 °C
A3	K T/C - Cr/Al thermocouple	0 to 1000 °C
A4	K T/C - Cr/Al thermocouple	0 to 1200 °C
A5	Pt-100 0 to 400 °C	0 to 400 °C
A6	Pt-100 0.0 to 199.9 °C	0.0 to 199.9 °C
A7	Pt-100 -100.0 to 200.0 °C	-100.0 to 200.0 °C
A8	Pt-100 -100.0 to 50.0 °C	-100.0 to 50.0 °C
A9	Pt-100 0.00 to 199.99 °C (only for model DTI-484 – 1.6)	0.00 to 199.99 °C
A10	Pt-100 0.0 to 400.0 °C (only for model DTI-484 – 1.6)	0.0 to 400.0 °C

Ordering Information:

Model	A- Input	B- Output-1 Mode	C- Output -1 Type	D- Output-2 Mode	E- Output-2 Type	F- Supply Voltage
DTI-720	Any one of A1 to A10	B1- (High Alarm) B2- (Low Alarm) 00 – (None)	C1- (Relay + DC Pulse) C2- (Triac + DC Pulse) 00 – (None)	D1- (High Alarm) D2- (Low Alarm) 00 – (None)	E1- (Relay + DC pulse) E2- (Triac + DC pulse) 00 – (None)	F1- (90-250VAC) (**) F2- (230VAC) F3- (110VAC) F4- (24 VDC)
DTI-720 FLP						
DTI-480						
DTI-12						
MTI-2						
MTI-4						
MTI-6						
MTI-8						
DTI-484						
DTI-1000						
DTI-2000						
DTI-4000						
DTC-300						
DTC-305						
DSP-12						
DTC-720FLP						
DSP-722FLP						
DTC-300						
DTC-305						
DSP-12						
DSP-30						
DTC-720FLP						
DSP-722FLP						
LSC-120						

Examples:

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Model	A- Input	B- Output-1 Mode	C- Output -1 Type	D- Output-2 Mode	E- Output-2 Type	F- Supply Voltage
DTI-720	A2	00	00	00	00	F2
DTC-300	A3	B2	C1	00	00	F1
DTC-720FLP	A2	B1	C1	00	00	F2
LSC-120	A5	B2	C1	00	00	F4

Example	Ordering Code	Description
1	DTI-720-A2-00-00-00-00-F2	This is Temperature Indicator in 72 x 72 mm size accepting K type thermocouple and calibrated in the range of 0 to 400°C and working on 230VAC supply.
2	DTC-300-A3-B2-C1-00-00-F1	This is single set point on-off controller accepting K type thermocouple calibrated in the range of 0 to 1000°C with single control relay and dc pulse output and working on 90-250VAC
3	DTC-720FLP-A2-B1-C1-00-00-F2	This is temperature indicator in flame proof enclosure – accepting K type thermocouple and calibrated in the range of 0 to 400 °C, with single high alarm control relay and dc pulse output and working on 230VAC
4	LSC-120-A5-B2-C1-00-00-F4	This is DIN rail mounting blind safety temperature controller accepting PT-100 as the input sensor calibrated in the range of 0 to 400°C with control relay output working on 24VDC.

REMARK :

User can select the desired model of Temperature indicator/controller with type of sensor, required calibrated range, control output and supply voltage from the above tables. For any special purpose requirement please write to us on sales@libratherm.com.