



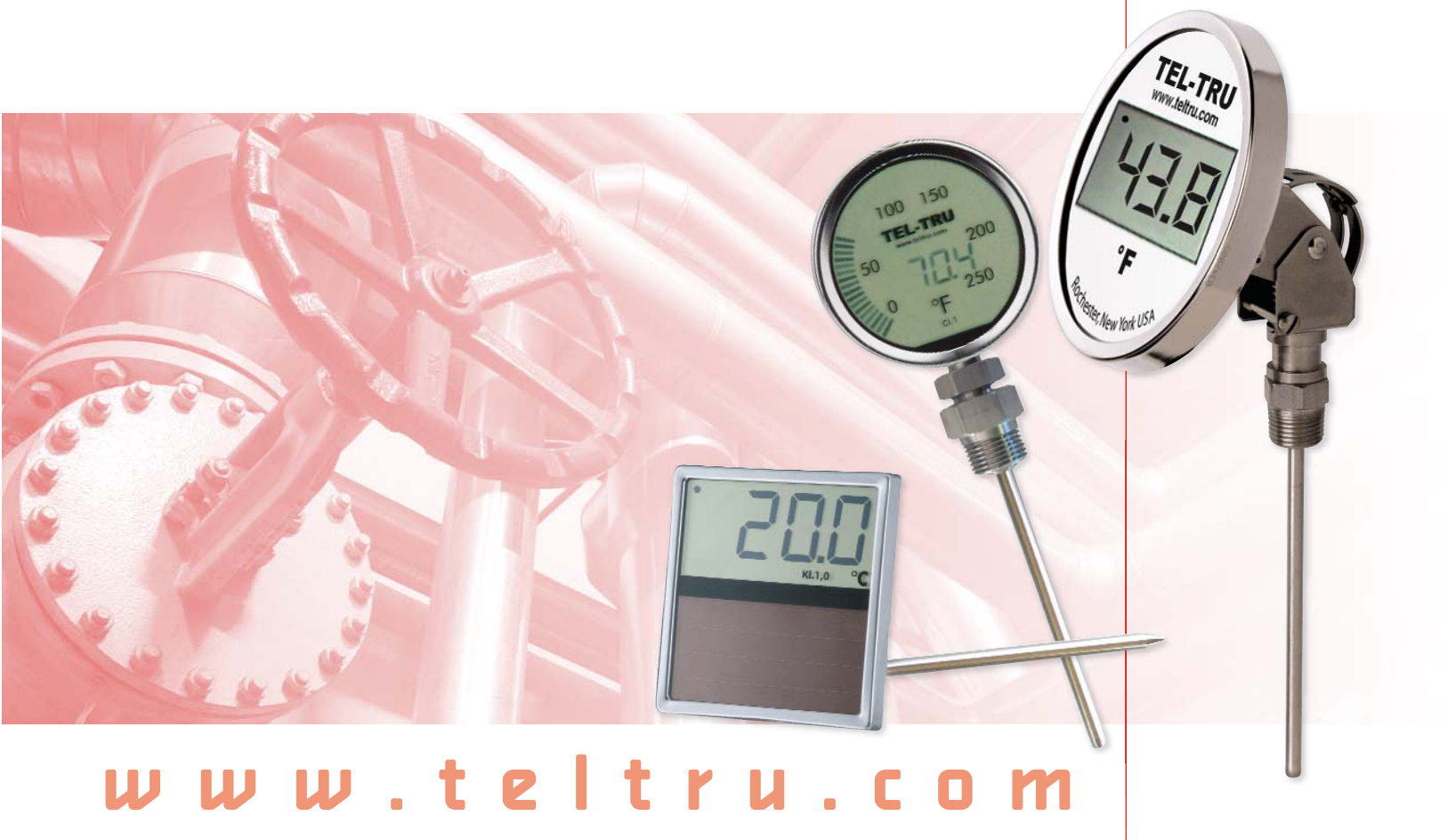
**TEL-TRU MANUFACTURING COMPANY**

# **DIGI-TEL THERMOMETERS**

**Solar-powered digital thermometers**

**Battery-powered interchangeable display/probe assemblies**

*DIGI-TEL Thermometers combine the easy, quick visual reference feature of a local indicator and the precision readout of a digital thermometer with a unique interchangeable probe concept.*



[www.teltru.com](http://www.teltru.com)



*World-Class Instruments*

*Since  
1916*



# Electronic DIGI-TEL Thermometers

## Digi-Tel . . . The Industrial Thermometer of the Future

- ▶ Easily read display with either analog or digital indication
- ▶ Innovative sensor and microprocessor technology
- ▶ All stainless steel for heavy-duty industrial process applications
- ▶ Back, bottom, adjustable angle, or remote configurations
- ▶ Dust and moisture protection level is to IP 65 and EMI to EC standards
- ▶ Requiring very low power consumption, units are either battery powered (with a minimum 5-year life) or solar powered
- ▶ All DIGI-TEL models have a one-year warranty

### The Probe Assembly—Sensor

- ▶ Pt 1000 thin film Platinum RTD, 2-wire type temperature sensor
- ▶ Maximum cable length recommended is 50 meters (163 feet) for remote models
- ▶ Probes fit standard bimetal thermowells

### The Measuring Process

- ▶ A 3-second cycle for sensor readings provides real-time temperature indication, which is symbolized by a flashing sun on the display

### Accuracy

- ▶ A microprocessor conditions the Pt 1000 signal with a resolution of 12 bits
- ▶ Meets accuracy requirements of EN 13190 class 1
- ▶ Factory certification of accuracy available

### Sensor Monitoring and Service Considerations

- ▶ The microprocessor's integrated diagnostic routines continuously check the validity of the sensor output and the integrity of the sensor signal
- ▶ See [www.teltru.com/digierror.aspx](http://www.teltru.com/digierror.aspx) for error message details to confirm if:
  - ▷ There is a short circuit of the sensor connection
  - ▷ The measured value is out of range
  - ▷ The probe is not connected to the module
  - ▷ There is a sensor failure

## Construction options

### Interchangeable Display modules and probe assemblies

- ▶ Probe assembly and indicator display can be selected according to the application and easily connected on-site
- ▶ Standard watertight interchangeable connector assembly system
- ▶ Field changes and replacements are simple
- ▶ Maximum flexibility for use in industrial, test, and OEM applications
- ▶ SELECT, CONNECT, and INSTALL!

Integrated Display modules and probe assemblies with threaded connections are available for solar powered units.

### Display readout options:

#### Analog/Digital display on 3" units

- ▶ The circular arrangement of LCD "graduations" gives the appearance of a traditional dial instrument allowing instant recognition of reading from a distance, while the exact temperature can be read from a 4-digit display
- ▶ Temperature ranges available are traditional bimetal thermometer equivalents

#### Digital only display on 5" and 4-1/2" units

- ▶ With large high-resolution digits

## Power options

### Battery powered

- ▶ A lithium battery, with a minimum working life of five years
- ▶ Factory battery replacement available

### Solar Powered

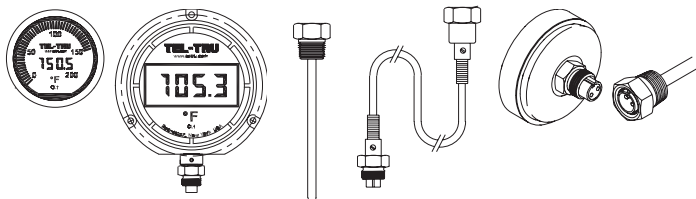
- ▶ The Solar powered DIGI-TEL has a solar cell integrated into the display module
- ▶ It can be used practically anywhere because the instrument functions reliably in artificial light at levels as low as 50 lux

## BATTERY POWERED DIGI-TEL MODULAR THERMOMETERS

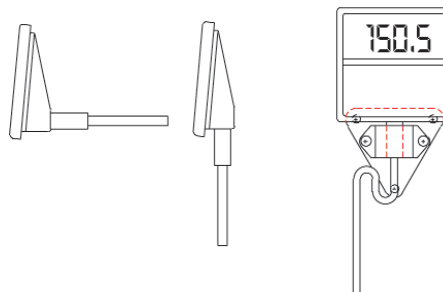
Select a Digital  
Display Module

Select a Probe  
and/or Cable

Connect and  
Install



## SOLAR POWERED DIGI-TEL INTEGRATED THERMOMETERS



## ▶ ACCURACY CHART

	3" Models	5", 4½" and 4" Models
Display Type	<b>Analog/Digital Readout:</b> <u>Analog</u> "graduations" similar to dial thermometers <u>Digital</u> readout for exact reading	<b>Digital Only Readout</b>
Size	.43" (11mm)	1.06" (27mm)
Factory Calibrated Temperature Ranges	<b>Accuracy</b> ≤1% FS	<b>Accuracy</b> ≤1% FS
	-80/120°F      -40/80°C -40/160°F      0/120°C 0/250°F          0/200°C 0/400°F          0/300°C 25/125°F 50/550°F 150/750°F	-75/750°F -60/400°C



## Interchangeable Display Modules



D1A Direct Mount Adjustable Angle



D1B Direct Mount Back Connect



D1C Direct Mount Bottom Connect



D5A Direct Mount Adjustable Angle

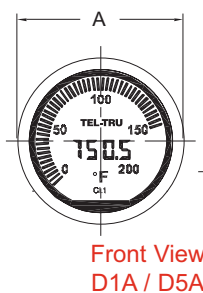


D4R Remote Mount Bottom Connect

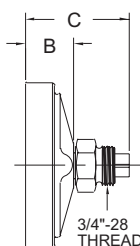
### ► SPECIFICATIONS:

Case Material:	D1 and D5 304 stainless steel D4 polypropylene turret style
Power Supply:	Lithium battery
Service Life:	> 5 years
Reading Cycle:	3 second intervals
Dual Display (D1):	Analog bar graph 61 divisions, digital 4 digits with 7 segment display .43" (11mm) high
Display (D4, D5):	Digital 4 digits with 7 segment display 1.06" (27mm) high
Protection Level:	IP 65
Ambient Temp.:	-4 to 140°F (-20 to 60°C)
Accuracy:	In accordance with DIN EN 13190 Class 1, see Accuracy Chart, previous page
Resolution:	Up to 500°F (250°C) =.1°

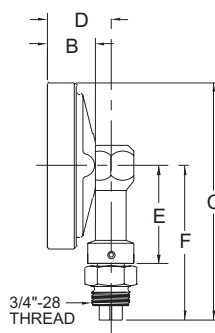
### ► D1 and D5 DIRECT MOUNT DIMENSIONAL DRAWINGS



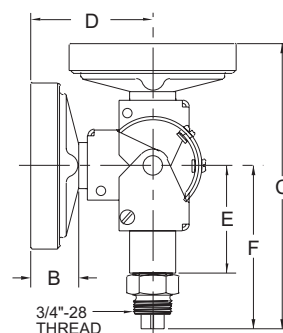
Front View  
D1A / D5A



Back Connect  
D1B / D5B



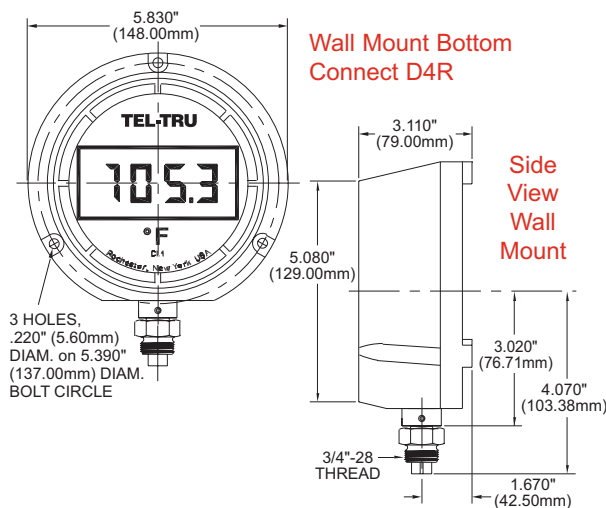
Bottom Connect  
D1C / D5C



Adjustable Angle  
D1A / D5A

Model Codes	A	B	C	D	E	F
D1A	3.187" (80.95mm)	.890" (22.61mm)	5.500" (139.70mm)	2.430" (61.72mm)	2.020" (51.31mm)	3.070" (77.98mm)
D1B	3.187" (80.95mm)	.890" (22.61mm)	1.940" (49.28mm)	N/A	N/A	N/A
D1C	3.187" (80.95mm)	.890" (22.61mm)	4.518" (114.76mm)	1.187" (30.15mm)	1.875" (47.63mm)	2.925" (74.30mm)
D5A	5.040" (128.02mm)	1.328" (33.73mm)	5.730" (145.54mm)	2.660" (67.56mm)	2.020" (51.31mm)	3.070" (77.98mm)
D5B	5.040" (128.02mm)	1.328" (33.73mm)	2.378" (60.40mm)	N/A	N/A	N/A
D5C	5.040" (128.02mm)	1.328" (33.73mm)	6.195" (157.35mm)	1.625" (41.28mm)	2.625" (66.68mm)	3.675" (93.35mm)
D4R	See Drawings to the right					

### ► D4 REMOTE MOUNT DIMENSIONAL DRAWINGS





# Interchangeable Transmitter, Probes, and Cables

## ► TEMPERATURE TRANSMITTER

The Digi-Tel Temperature Transmitter offers maximum flexibility and durability, through a modular fit with Digi-Tel Sensor Probes and Display Modules. The transmitter offers field selection of factory-scaled temperature ranges, as well as EMI/RFI protection.

### Signal

Input: Pt 1000  
 Connection: 2 wire  
 Output: 4 to 20 mA  
 Upscale/down-scale break: 21.5 to 3.6 mA  
 Supply volt.: 8 to 35 Vdc 24 rec.  
 Zero / Span adjustment: 16-position dipswitch for range selection  
 17 factory scaled ranges from -75°F to 1200 °F  
 Accuracy: See range chart on website (includes effect of linearity, hysteresis and repeatability)  
 Protection: Hardened to EMI/RFI and ESD  
 Reverse Polarity  
 Over-voltage  
 Short circuit protection

Calibration: Traceable to NIST

### Environmental

Oper. temp: -40°F to 185°F (-40°C to 80°C)  
 Stor. temp.: -50°F to 250°F (-46°C to 120°C)  
 Protection: Warranted to NEMA 4/IP65

### Mechanical

Material: Heavy Duty Housing 303 Stainless Steel  
 1 1/4" Hex  
 Elec. conn.: Mini DIN 43650C (Hirschmann type) or  
 1/2" NPT

For more detailed specifications, visit  
[www.teltru.com/transmit\\_temp.aspx](http://www.teltru.com/transmit_temp.aspx)



## ► HOW TO ORDER *Displays, transmitter, probes, cables can be ordered separately.*

### DISPLAY

A B C  
 100

Code    Description			
A	<b>Case Size/Display</b>		
	D1        3" Analog/Digital Display		
	D5        5" Digital Display		
	D4        4½" Digital Display		
B	<b>Mounting Style</b>		
	A        Adjustable Angle		
	B        Back Connected		
	C        Bottom Connected		
	R        Remote Mounted, D4R=4½"		
C	<b>Temperature Range</b>		
	Code    Temp. Range		Model
	01	-80/120°F	D1 (analog/ digital) 3" Dial
	02	-40/160°F	
	03	25/125°F	
	04	0/250°F	
	05	0/400°F	
	06	50/550°F	
	07	150/750°F	
	51	-40/80°C	D5 (digital) 5" Dial
	52	0/120°C	
	56	0/200°C	
	55	0/300°C	
	09	-75/750°F	D5 (digital) 5" Dial
	58	-60/400°C	
	09	-75/750°F	D4R (digital) 4½" Dial
	58	-60/400°C	

### TRANSMITTER

DTT-1 with DIN Connector  
 DTT-2 with 1/2" NPT Conduit Conn.

### PROBE

A B C  
 0

Code	Description
<b>A</b>	<b>Probe Assembly</b>
P24	≤ 750°F (400°C)
<b>B</b>	<b>Length</b>
02	2 1/2"
04	4"
06	6"
09	9"
12	12"
15	15"
18	18"
24	24"
<b>C</b>	<b>Connection</b>
1	No thread
2	1/2" NPT Union
3	1/2" BSPT Union

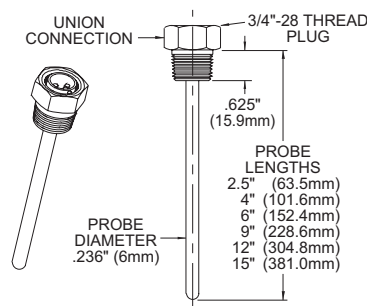
### CABLE

A B  
 005

Code	Description
<b>A</b>	<b>Cable with interchangeable connection fittings</b>
C1	Teflon Coated
<b>B</b>	<b>Cable Lengths</b>
005	5'
010	10'
015	15'
020	20'
030	30'
040	40'
050	50'

## ► PROBES

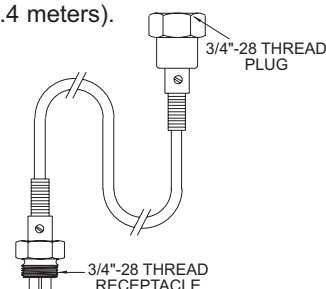
Conn.: 316SS union connection  
 Probe Mats: 316SS up to 750°F/300°C  
 Probe: 6mm (.236") diameter  
 Sensor: Pt 1000 thin film platinum RTD  
 Accuracy: In accordance with IEC 751, A2 (DIN EN 60751)



## ► CABLES

Cables for remote mount applications have complete keyed and sealed plug and receptacle 316SS connectors for assembly to display modules and probes.

**NOTE:** Maximum cable length is 50 feet (15.4 meters).

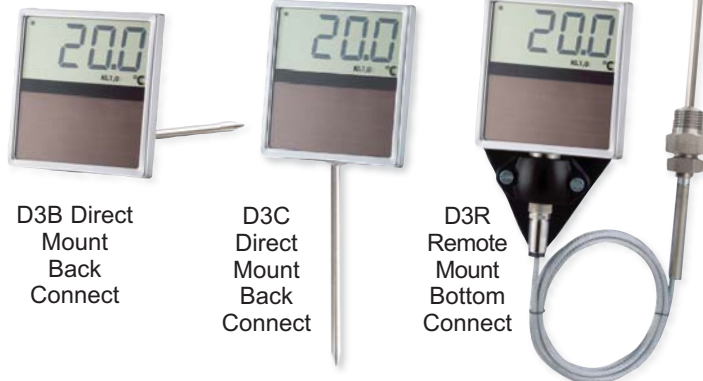


If a **compression fitting** is required, see **Solar** page for ordering information.





# Solar Powered Digital Thermometers



D3B Direct  
Mount  
Back  
Connect

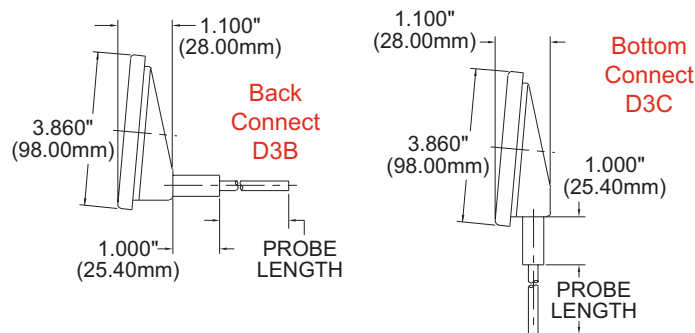
D3C  
Direct  
Mount  
Back  
Connect

D3R  
Remote  
Mount  
Bottom  
Connect

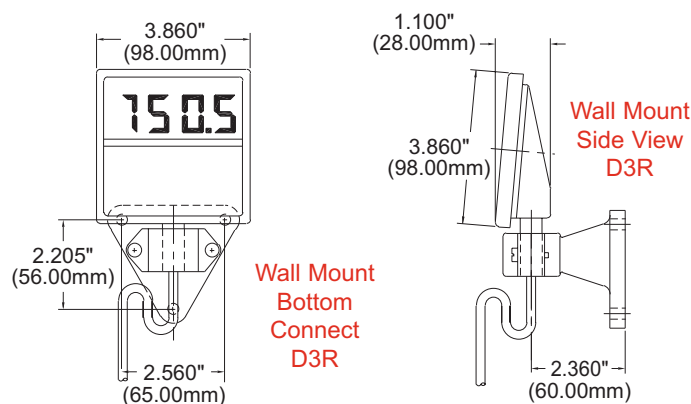
## SPECIFICATIONS:

Case Material:	Stainless Steel case with chrome plated bezel
Connection:	None (compression fitting sold separately)
Probe:	6mm (.236") diameter 316SS
Power Supply:	Solar cell, 50 Lux min. light density
Reading Cycle:	3 second intervals
D3 Display:	Digital 4 digits with 7 segment display 1.06" (27mm) high
Protection Level:	IP 65
Ambient Temp.:	-4 to 140°F (-20 to 60°C)
Accuracy:	In accordance with DIN EN 13190 Class 1, see Accuracy Chart, first page

## DIRECT DIMENSIONAL DRAWINGS



## REMOTE DIMENSIONAL DRAWINGS



## HOW TO ORDER

### DIRECT MOUNT

A	B	C	D
		100	14

### REMOTE MOUNT

A	B	C	D	E	F
		100			14

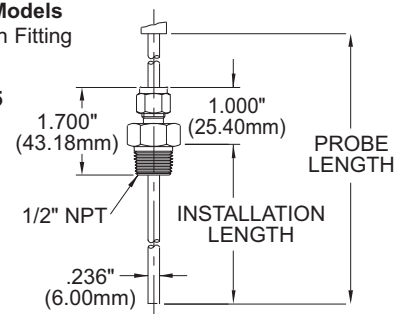
Code    Description			
A	Case Size/Display D3            4" Digital Display		
B	Mounting Style B            Direct Mounted, Back Connected C            Direct Mounted, Bottom Connected R            Remote Mounted (Bottom Connected)		
C	Temperature Range		
	Code	Temp. Range	Model
	09 58	-75/750°F -60/400°C	D3 (digital)
D	Probe Length 04            4" 06            6" 09            9" 12            12" 15            15"		
▼ Remote Models Only ▼			
E	Cable C1            Teflon Coated		
F	Cable Length 005          5' 010          10' 015          15' 020          20' 030          30' 040          40' 050          50'		

**Compression Fitting Order Separately**

For use with Solar Powered Direct and Remote Mount Models

1/2" NPT Compression Fitting (Male), 6mm, 316SS

Order Code **96002105**



**Additional Products  
available from Tel-Tru**



**Digi-Tel Temperature Transmitter**

**Electronic Calibration Instruments**

**Bimetal Thermometers**

**Sanitary Bimetal Thermometers**

**Sanitary and Industrial RTDs**

**Glow Dial Thermometers**

**Digi-Tel Sanitary Thermometers**

**Pressure Gauges**

**Sanitary Pressure Gauges**

**Pressure Transmitters**

**Gas Actuated Thermometers**

**Vapor Tension Thermometers**

**Non-Contact Thermometers**

**Glass Industrial Thermometers**

**Thermowells**

**Surface Thermometers**



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