



FLOW
LEVEL
PRESSURE
ANALYTICAL
TEMPERATURE
INSTRUMENTATION
PASTEURIZATION CONTROLS

# The Anderson "DART" Digital Reference Thermometer

**Meets PMO Provisions** 

Digital display reads to 0.1°F (0.01°C) providing precise and accurate temperature indication

Display blanks providing failsafe performance if the differential between RTD elements exceeds .5°F; sensor fails; lead broken; electrical short

Sensors can be easily replaced without the need to recalibrate the instrument and with no effect on the DART's accuracy

Degree F/C is user selectable enabling global performance

Meets requirements for use as Alternative Temperature Indicating Device (ATID) on Retort cookers

Quick Disconnect Receptacle (QDR) sensor connection optional for Retort and Non-PMO applications The Anderson "DART" Digital Reference Thermometer is the only digital thermometer available today that complies with the applicable provisions of the Pasteurized Milk Ordinance (PMO). With accuracy greater than twice that of mercury-in-glass pasteurization thermometers, the DART assures consistent processing. Unlike conventional thermometers which must be viewed at the process location, the "DART" display may be located up to 1500 feet from the sensor.

Its dual-element sensor and proprietary comparator circuitry

assure fail-safe performance. Self-diagnostics guarantee continued, reliable service and an internal test feature allows for easy verification of accuracy and performance by regulators. The DART not only meets or exceeds the requirements of the PMO, it stands up to the demands of the pasteurization loop. Dual element DART sensors are built to meet 3-A standards, and are interchangeable requiring no field calibration. As with all critical temperature instruments, DARTs are calibrated to Anderson's exacting performance requirements and are traceable to the National Institute of Standards and Technology (N.I.S.T.).

For Retort applications, the unique features of the DART also meet the requirements of the updated 21 CFR Part 113 document covering the use of Alternative Temperature Indicating Devices (ATID's). The DARTs' dual element comparator circuit ensures that readings are never compromised. With the ability to locate the display up to 1500' from the sensor, Retort process monitoring can easily be performed in the control room.



### **Specifications**

#### **SENSOR**

Type: 8 wire, dual-element, resistive Material: Type 316 stainless steel Finish: Meets or exceeds 3-A sanitary

standards (#09-08)

Process Connections: Split ferrule or sanitary-clamp type available in

various sizes

Integral conduit housing with cap sealable by Wiring Connection:

health authority

Cable Length: 25' standard, 1500' maximum Stability: Within 0.45°F (0.22°C) per year

Calibrated Accuracy: ±0.1°F at 32°F and 212°F (±0.06°C at 0°C

and 100°C)

±0.036°F between 32°F and 212°F (±0.02°C Linearity:

between 0°C and 100°C)

Interchangeability: ±0.10°F (±0.06°C)

Service Range: -50°F to +350°F (-45°C to +176°C)

**DIGITAL DISPLAY** 

Housing Type: Remote mount, wall or panel

Housing Material: Die cast aluminum coated with two-part

urethane paint

Fully gasketed and splashproof (provision for Closure:

health authority seal)

8-1/6" W x 10" H x 4" D Dimensions:

Power: 115 Volt A.C. nominal, 50/60 Hz, 85.0 volt

A.C. minimum, 138.0 Volt A.C. maximum

Effect of Line Voltage Changes: None within stated minimum and

maximum VAC

Power Consumption: 5 watts maximum

1/2" LED, 4-1/2 active digits Display:

Display Value: Fahrenheit or Celsius, user selectable -50°F to +350°F (-45°C to +176°C) Display Range:

Resolution: 0.1°F (0.01°C)

Calibrated Accuracy: ±0.1°F (±0.06°C) at room temperature,

70°F - 80°F (21°C - 26°C)

Linearity: ±0.1°F (±0.06°C)

Repeatability: ±0.1°F (±0.01°C) at room temperature Ambient Temperature Limits: 40°F to 120°F (5°C to 49°C)

Interchangeability: 0.1°F (±0.06°C)

Long-term Stability: Within 0.5°F (0.28°C) per year

Warm-up Time: One hour to meet stated specifications

#### **OVERALL SPECIFICATIONS (Display Unit and Sensor)**

Calibrated Accuracy:

±0.3°F (±0.16°C) including drift, linearity and

repeatability

Stability:

3 months minimum to calibrated accuracy

Calibration Adjustment:

"Fine" zero ±2.5°F (±1.39°C) only; (tracks for °F and °C)

All factory adjustments sealed

Speed of Response:

Within four seconds for standard PMO test

(Appendix I, Test 7)

Interchangeability of Cable:

Changing, adding or subtracting cable length has

no effect on system specifications

Special Applications: Consult factory

FITTING (TRI-CLAMP) 1-1/2" Tri-Clamp

2-1/2" Tri Clamp 3" Tri Clamp

Split Ferrule (button)

Projectile Well (41247

Projectile Well (41074)

2" Tri Clamp

4" Tri Clamp

SENSOR

005

006

007

800

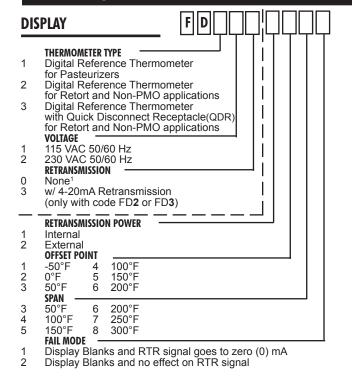
061

062

101

119

## **Ordering Information**



<sup>3/4&</sup>quot; Swagelok 1" Swagelok Retort Port (1 1/4" x 18 UNEF) 120 179 HOUSING Straight 2 Bent (for split ferrule only) PROBE LENGTH 2 025 (req'd for 119 fitting) 029 2-1/4" (req'd for 120 fitting) 5-1/2" 081 (req'd for 004 thru 061) 6-1/8" (req'd for 101 fitting) (req'd for 062 fitting) 091 9-1/8" 139 3 1/2" 049 (optional for 179 fitting) 091 6 1/8" (optional for 179 fitting 9 1/8" (optional for 179 fitting) 139 CABLE LENGTH\* Quick Disconnect Option(FD3 only) 08 200 00 No Cable **Quick Disconnect** 10 250' 01 25' Receptacle(QDR) no cable 12 300' 02 50' 14 03 75' 350 <u>Spare Parts</u> 42117L0006 6' Molded Cordset 04 100' 16 400' 05 125' 18 450 42117L0025 25' Molded Cordset 42117L0050 50' Molded Cordset 06 150' 500

42117L0100 100' Molded Cordset

<sup>&</sup>lt;sup>1</sup> For Option "0", no additional coding required.

For longer or intermediate lengths, consult factory.