

Digital Reference Thermometer

Introduction

The "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.

Features

- 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



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.
 Wiring Connection: Integral conduit housing with cap sealable by 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)
 Linearity: ±0.036°F between 32°F and 212°F (±0.02°C 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
 Closure: Fully gasketed and splashproof (provision for health authority seal)
 Dimensions: 8-1/6" W x 10" H x 4" D
 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

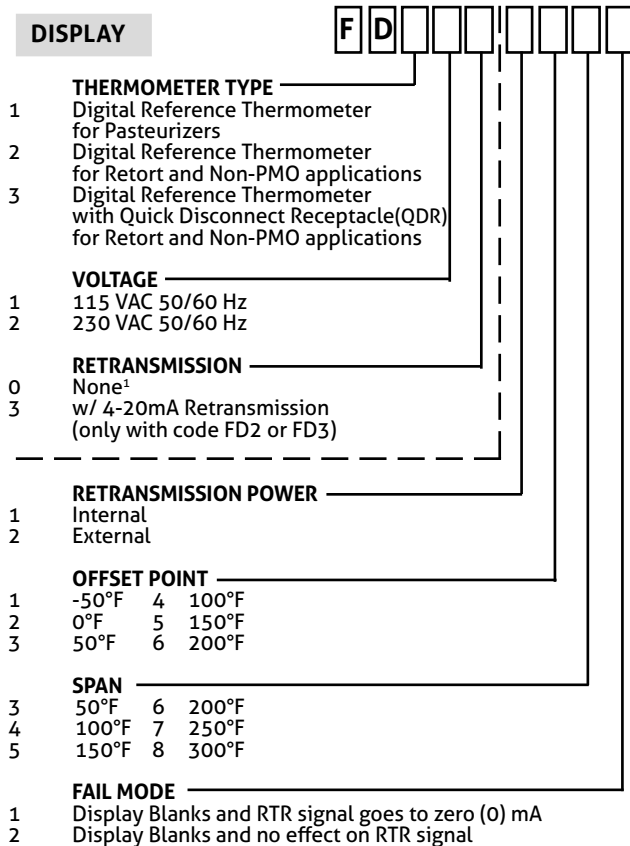
Display: 1/2" LED, 4-1/2 active digits
 Display Value: Fahrenheit or Celsius, user selectable
 Display Range: -50°F to +350°F (-45°C to +176°C)
 Resolution: 0.1°F (0.01°C)
 Calibrated Accuracy: ±0.1°F (±0.06°C) at room temperature, 70°F - 80°F (21°C - 26°C)
 Linearity: ±0.1°F (±0.06°C)
 Repeatability: ±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)

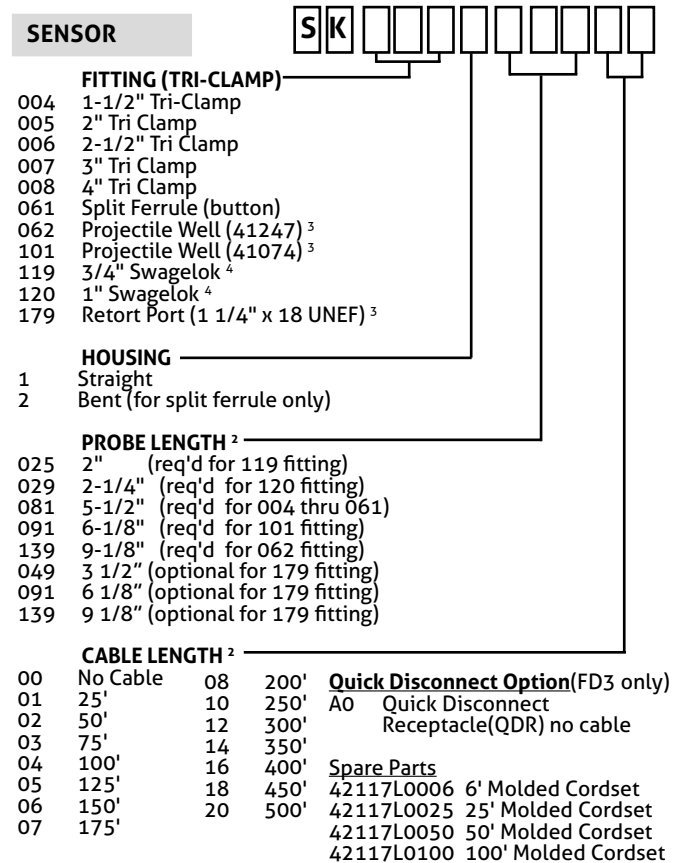
Calibrated Accuracy: ±0.3°F (±0.16°C) including drift, linearity and repeatability
 Stability: 3 months minimum to calibrated accuracy
 Calibration Adjustment: "Fine" zero ±2.5°F (±1.39°C) only; (tracks for °F and °C)
 Speed of Response: All factory adjustments sealed
 Interchangeability of Cable: Within four seconds for standard PMO test (Appendix I, Test 7)
 Changing, adding or subtracting cable length has no effect on system specifications
 Special Applications: Consult factory

Order Information

DISPLAY



SENSOR



¹ For Option "0", no additional coding required.
² For longer or intermediate lengths, consult factory.
³ Meets 3-A when used with a 3-A compliant well
⁴ Not 3-A compliant