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

US Patented

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.).

ANDERSON INSTRUMENT CO., INC • 156 AURIESVILLE RD. • FULTONVILLE, NY 12072 • USA • 800-833-0081 • FAX 518-922-8997
ANDERSON INSTRUMENT CO. LP • 400 BRITANNIA RD. EAST, UNIT 1 • MISSISSAUGA, ONTARIO L4Z 1X9 • CANADA • 905-568-1440 • FAX 905-568-1652
NEGELE INDUSTRIEELEKTRONIK GmbH (A Division of Anderson) • RAIFFEISENWEG 7 • D-87743 EGG A. D. GÜNZ • GERMANY • +49 (0) 8333/9204-0 • FAX +49 (0) 8333/9204-49
MAIDA INTERNATIONAL (LATIN AMERICA & ASIA) 516-676-3079 • FAX 516-676-3199

www.andinst.com

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)
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

Ordering Information

DISPLAY

F D ☐☐☐ ☐☐☐☐☐

THERMOMETER TYPE
1 Digital Reference Thermometer for HTST and VAT Pasteurizers
2 Digital Reference Thermometer for all other applications

VOLTAGE
1 115 VAC 50/60 Hz
2 230 VAC 50/60 Hz

RETRANSMISSION
0 None[1]
3 w/ 4-20mA Retransmission (std. with code FD**2** above; N/A with FD**1**)

RETRANSMISSION POWER
1 Internal
2 External

OFFSET POINT

1	-50°F	4	100°F
2	0°F	5	150°F
3	50°F	6	200°F

SPAN

3	50°F	6	200°F
4	100°F	7	250°F
5	150°F	8	300°F

FAIL MODE
1 Display Blanks and RTR signal goes to zero (0) mA
2 Display Blanks and no effect on RTR signal

SENSOR

S K ☐☐☐ ☐ ☐☐☐☐☐

FITTING (TRI-CLAMP)

004	1-1/2" Tri-Clamp
005	2" Tri Clamp
006	2-1/2" Tri Clamp
007	3" Tri Clamp
008	4" Tri Clamp
061	Split Ferrule (button)
062	Projectile Well (41247)
101	1-1/4" 18UNEF (41074 well)
119	3/4" Swagelok
120	1" Swagelok

HOUSING
1 Straight
2 Bent (for split ferrule only)

PROBE LENGTH [2]

025	2"	(std. for 119 fitting)
029	2-1/4"	(std. for 120 fitting)
081	5-1/2"	(std. for 004 thru 061)
091	6-1/8"	(std. for 101 fitting)
139	9-1/8"	(std. for 062 fitting)

CABLE LENGTH*

00	No Cable	08	200'
01	25'	10	250'
02	50'	12	300'
03	75'	14	350'
04	100'	16	400'
05	125'	18	450'
06	150'	20	500'
07	175'		

NOTES:
[1] *For Option "0", no additional coding required.*

[2] *For longer or intermediate lengths, consult factory.*

FORM AIC3348 • © May 1993
Revised: November 2004
Supercedes: April 2004