

MCG 351 Average Temperature Probe

Average Temperature Probe

The MCG 351 (ATP) represents state-of-the-art temperature measurement, and is accepted worldwide to use as a standard for custody transfer inventory and corrected volumes. The MCG 351 Average Temperature Probe (ATP) allows gauges and transmitters to sense temperature through the change of resistance in the probe. The MCG 351 possesses a series of spot temperature sensitive elements positioned at different points in the probe. These resistors are at various levels so that the average temperature of the product within the tank may be measured. The multiple element probe allows the gauge to select the submerged elements and average their reading.

Resistance Temperature Detector

The Resistance Temperature Detector (RTD) measures multiple spot temperatures by outputting a resistance change to a gauge or transmitter. This change in resistance, which is directly proportional to temperature, is detected by a precision input bridge circuit in the transmitter. In addition to two element leads, a third reference lead is provided. The reference lead is used to remove lead wire resistance from the measurement of the temperature elements.

Average Temperature Converter

The MCG 2350 is a stand-alone average temperature converter. Accepting its input from an average temperature probe with up to 14 elements, the unit multiplexes these inputs to give a digital output that corresponds to the product temperature. The MCG 2350 is available in two resolution ranges (0.1° C and 0.01° C). The housing is an explosion proof enclosure and includes a critical intrinsic safety (I.S.) barrier, allowing for the use of either explosion proof probes or I.S. probes. The MCG 2350 is normally connected directly to other L&J Engineering models via a serial connection, to give the transmitter average temperature capabilities. The MCG 2350 is UL/C-UL and ATEX/CENELEC Approved.



Features

- High Accuracy
- Platinum Elements

Applications

- Temperature measurement for inventory or process control
- Volume correction for custody transfer application
- Temperature averaging

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Specifications:

Accuracy:

+/- .45°F(0.25°C)

Standard Connections:

3/4" NPS or 1"NPS, other NPS, NPT and flanged connections available

Temperature Range:

-58°F(-50°C) to 215°F(102°C) for standard unit,
-58°F(-50°C) to 400°F(204°C) for high temperature unit

Flexible Hose:

316 Stainless Steel standard

Hose Assemble Test:

171 psig

Insulation Test:

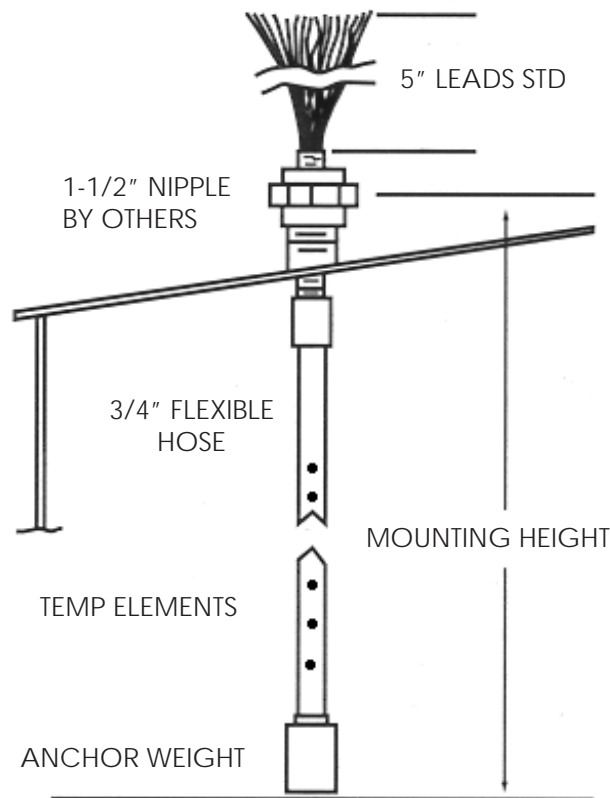
600 V RMS, Resistors to housing

Safety:

Intrinsically safe with MCG 2350 (MCG 2350 sold separately)

NOTE: all lead wires are hermetically sealed at the top hose fitting. Units furnished in 5' lead wires, Longer lengths are available.

Dimensions



All designs subject to change. Certified dimensions and specifications available upon request.

MCG 351 Ordering Guide

MCG 351 Average Temperature Probe

Includes: Standard connection - 3/4" M.S.S. flange, no anchor bar, 5 feet of Lead Wire.

Model Number Selection:

The model number will consist of a base number **MCG 351** followed by 10 digits. These digits will represent 7 sets of option tables:

MCG 351 - AB - CD - EF - GH - IJ

AB – Elements / Length	
01	1 Element, 2' - 7' ft. tank (.61 - 2.13 m)
02	2 Elements, 7' - 12' ft. tank (2.14 - 3.66 m)
03	3 Elements, 12' - 17' ft. tank (3.67 - 5.18 m)
04	4 Elements, 17' - 22' ft. tank (5.19 - 6.71 m)
05	5 Elements, 22' - 27' ft. tank (6.72 - 8.23 m)
06	6 Elements, 27' - 32' ft. tank (8.24 - 9.75 m)
07	7 Elements, 32' - 37' ft. tank (9.76 - 11.28 m)
08	8 Elements, 37' - 42' ft. tank (11.29 - 12.80 m)
09	9 Elements, 42' - 47' ft. tank (12.81 - 14.33 m)
10	10 Elements, 47' - 52' ft. tank (14.34 - 15.85 m)
11	11 Elements, 52' - 57' ft. tank (15.86 - 17.37 m)
12	12 Elements, 57' - 62' ft. tank (17.38 - 18.90 m)
13	13 Elements, 62' - 67' ft. tank (18.91 - 20.42 m)
14	14 Elements, 67' - 72' ft. tank (20.43 - 21.95 m)
15	15 Elements, 72' - 77' ft. tank (21.95 - 23.47 m)
16	16 Elements, 77' - 82' ft. tank (23.47 - 24.99 m)

*Required probe height is from point of probe insertion to tank floor. Specify exact height on order. Longer Heights available consult factory.

CD – Connections	
01	Standard Connection, 3/4" M.S.S. flange
02	2" 150 # ANSI R.F. Carbon Steel flange
03	2" 150 # ANSI R.F. Stainless Steel flange
04	2" 300 # ANSI R.F. Stainless Steel flange
05	4" 150 # ANSI R.F. Carbon Steel flange
06	4" 150 # ANSI R.F. Stainless Steel flange
07	4" 300 # ANSI R.F. Stainless Steel flange
08	3" 150 # ANSI R.F. Carbon Steel flange
13	8" 150 # ANSI R.F. Carbon Steel flange

E – Temperature Range	
0	Normal Temp 215° F Max
1	High Temp 400° F Max

F – Calibration	
1	Copper (Cu) (per element)
2	Platinum (Pt)

G – BS&W	
0	No BS&W
2	BS&W

H – Anchor Weight	
1	With Anchor Weight
2	Without Anchor Weight

IJ – Lead Wire	
00	No Lead Wire, (Top Condulet HSG supplied with terminal blocks)
01	5 ft. (1.5 m) lead wire length (Standard)
02	15 ft. (4.6 m) lead wire length
03	35 ft. (10.6 m) lead wire length
04	50 ft. (15.2 m) lead wire length
05	75 ft. (22.7 m) lead wire length
06	100 ft. (30.3 m) lead wire length
07	150 ft. (45.5 m) lead wire length
08	200 ft. (60.6 m) lead wire length
09	250 ft. (75.7 m) lead wire length
10	300 ft. (90.9 m) lead wire length