

SHAW SDT Dewpoint Transmitter



Model SDT - Dewpoint Transmitter

Features:

- 2 Wire, 24 V, 4-20 mA Dewpoint Transmitter
- Various Ranges: Overall Range -100 to +20 °C (-148 to +68 °F) Dewpoint
- Output configurable in Dewpoint Temperature, ppm(v), g/m³ and lbs/MMSCF
- Accuracy ± 2°C (±3.6 °F) Dewpoint
- Weatherproof Rating IP66 – NEMA 4X
- Maximum Cable Length 1000m (3280 ft)
- Open/Short Circuit Detection
- Linear 4–20 mA output signal; loop powered
- Self contained, robust and reliable
- Weighs only 175 g (0.385 lbs)
- Supplied with Calibration Certificate Traceable to National & International Humidity Standards

The Shaw Moisture Meters Model SDT is a compact, 2 wire, 4–20 mA dewpoint transmitter designed to meet the stringent demands of industrial applications. The unit is fully self-contained within a robust housing providing weatherproof protection to IP66 / NEMA 4X.

Utilizing the Ultra High Capacitance Shaw Moisture Sensor, various dewpoint ranges are available covering an overall range from -100 to +20 °C (-148 to +68 °F) Dewpoint. The 4–20 mA output is configurable in Dewpoint Temperature, ppm (v), g/m³ and lbs/MMSCF.

Incorporating advanced electronics, the Model SDT derives its power from 7–28 Vdc non-isolated power source and is configured to output a linear, isolated, 4 – 20 mA signal for distances up to 1000 m (3280 ft).

Weighing in at only 175 g (0.385 lbs), the Model SDT is light enough to be supported by its' connection direct into the pipeline or can be placed in a dedicated sample cell with ¼" or 6 mm OD fittings.

The Model SDT is supplied ready to use, with a calibration certificate traceable to National & International humidity standards, Instruction Manual and 2 m (6.6 ft) of cable.

Specifications

DEWPOINT SENSOR

SENSING ELEMENT: Shaw Ultra High Capacitance Aluminum Oxide Sensor

RANGES:

- -100 to +20 °C (-148 to +68 °F) dew point
- -65 to +20 °C (-85 to +68 °F) dew point
- -80 to 0 °C (-112 to +32 °F) dewpoint
- 0.1 to 100.0 ppm(v)
- 0.01 to 10.00 ppm(v)
- 0.01 to 10.00 g/m³
- 0.1 to 100.0 lbs/MMSCF

ACCURACY: ± 2 °C (±3.6 °F) dew point; NPL traceable -90 to +20 °C (-130 to +68 °F)

RESOLUTION: see table next page

REPEATABILITY: Better than ±0.3 °C (±0.54 °F) DP

AUTOCAL: Field calibration / Span check facility. Activated and operated via potentiometer on the Transmitter body.

FACTORY CALIBRATION: Certificate of Calibration traceable to National Physics Laboratory (NPL) and international standards.

TEMPERATURE COEFFICIENT: Temperature compensated for operating range.

OPERATING TEMPERATURE: -20 to 60 °C (-4 to 140 °F)

STORAGE TEMPERATURE: -20 to 70 °C (-4 to 158 °F)

RESPONSE TIMES:

Wet to Dry: -20 to -60 °C (-4 to -76 °F) < 120 sec.

Dry to Wet: -120 to -20 °C (-184 to -4 °F) < 20 sec.

SAMPLE FLOW RATE: Flow independent but ideally 2 to 5 lpm (0.5 to 1.5 gpm). Max: 25 lpm (6.5 gpm)

CALIBRATION WARRANTY: 12 months after shipment

ELECTRICAL

ELECTROMAGNETIC COMPATIBILITY (EMC):

Immunity: Complies with EN 61000-6-1:2001

Emissions: Complies with EN 61000-6-3:2000

WARM UP TIME: 10 seconds

FAULT CONDITIONS:

Open Circuit/Under Range: Output drives to 20.5 mA

Short Circuit/Over Range: Output drives to 21.0 mA

ISOLATION: Sensing Element connected to the 4-20 mA loop but isolated from Transmitter body.

OUTPUT SIGNAL: 4 to 20 mA Linear

SUPPLY VOLTAGE: 7 – 28 Vdc (Uv) Reverse polarity protected.

MAXIMUM SERIES RESISTANCE: = {40 x (Uv – 7)} ohms

MECHANICAL

OPERATING PRESSURE: From 1 kPa (0.145 psia) to maximum 35,000 kPa (5075 psia)

OPERATING HUMIDITY (External): Maximum 95 %RH Non-condensing

CABLE TERMINATIONS: IP66 (NEMA4X) rated, size C, DIN EN 175301 connector at the Transmitter and other end terminated with bootlace ferrules

CABLE: Supplied with 2m (6.6 ft) standard cable. Nominal diameter 3.4mm, 92 ohms/km at 20 °C (68 °F)

TRANSMITTER ENCLOSURE: Hard Anodized Aluminum body with size C, DIN EN 175301 connector

SENSOR PROTECTION: 316 Sintered stainless steel filter - 50 micron

PROBE MATERIAL (WETTED PARTS): 316 Stainless Steel

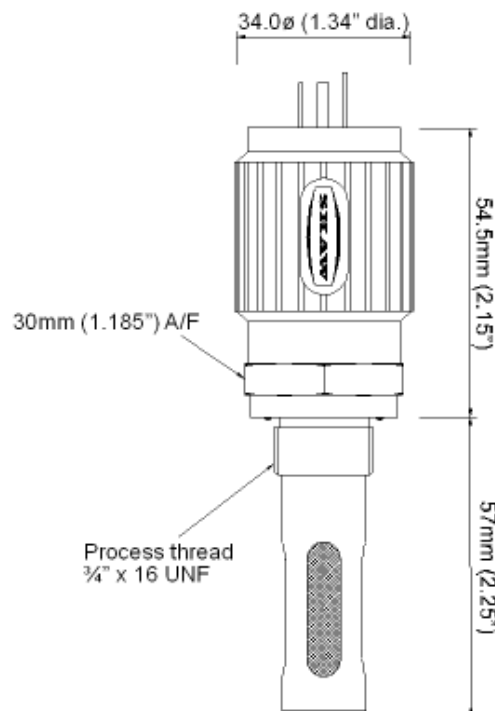
WEATHERPROOF CLASSIFICATION: IP66 / NEMA4X when connector mated to Transmitter

MECHANICAL CONNECTION: ¾" UNF (16tpi) with integral Viton "O" ring seal

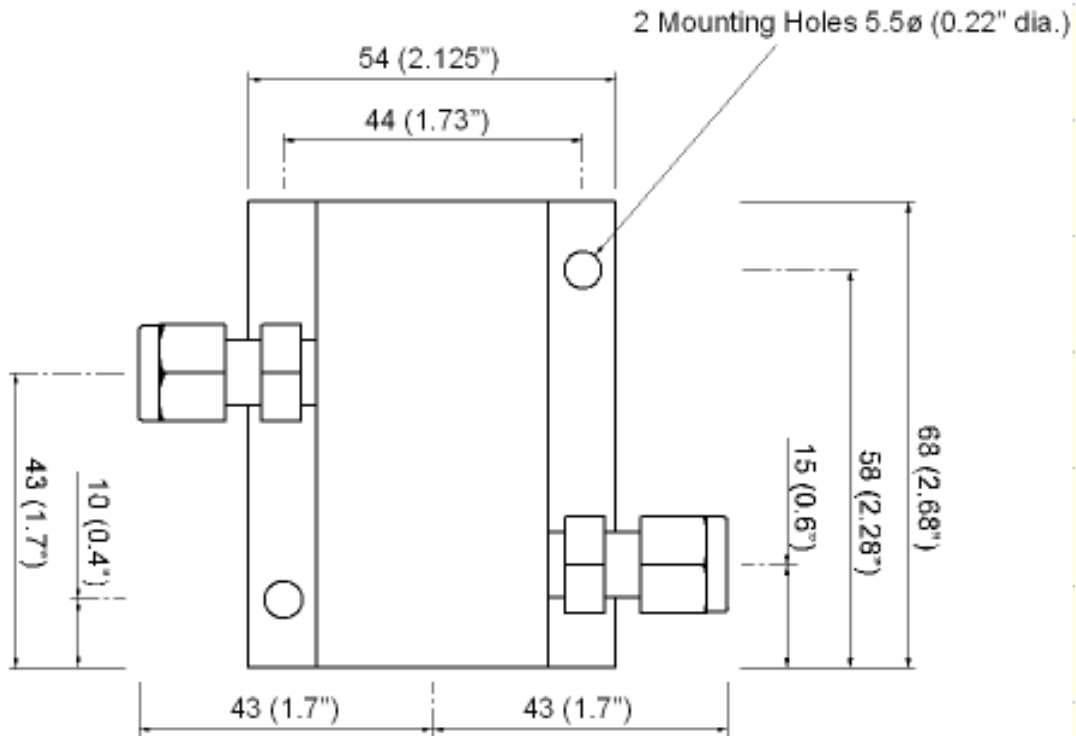
MECHANICAL WARRANTY: 24 months in case of faulty workmanship and defective parts

WEIGHT: 175grams (0.385 lbs) includes connector

Dimensions Dewpoint Transmitter SDT



Dimensions Stainless Steel Sample Cell



NOTE. The Assembly is shown with 1/4" OD tube fittings. The dimension across the tube fittings will vary for all other size fittings.

Ordering Guide

Model SDT-	Range	Resolution
ZD	-100 to +20 °C (-148 to +68 °F)	0.1 °C / 0.2 °F
HD	-65 to +20 °C (-85 to +68 °F)	0.1 °C / 0.2 °F
Gray	-80 to 0 °C (-112 to +32 °F)	0.1 °C / 0.2 °F
MP	0.1 to 100.0 ppm (v)	0.1 ppm(v)
LP	0.01 to 10.00 ppm(v)	0.01 ppm(v)
GH	0.01 to 10.00 g/m ³	0.01 g/m ³
LB	0.1 to 100.0 lbs/MMSCF	0.1 lbs/MMSCF
Sample Cell – SC1	Stainless Steel Sample Cell – 1/4" OD	
Sample Cell – SC2	Stainless Steel Sample Cell – 6 mm OD	

NOTE: ppm, ppb, g/m³ & lbs/MMSCF ranges are stated at atmospheric pressure. Model SDT Transmitter can be configured to provide corresponding ranges for operation at other constant pressure. This must be stated at time of order.



JLC International, Inc.
948 Lenape Drive, Town Center
New Britain, PA 18901

Phone: (800)-599-4732
(215)-340-2650
Fax: (215)-340-3670

www.jlcinternational.com

jlcusa@jlcinternational.com