DS1200 Exd AMT Ex

Flame Proof Single Channel Dew Point Hygrometer for Ex Hazardous Areas

DS1200 Exd AMT Ex is a single channel, online hygrometer with isolator designed to accurately measure trace moisture in process gases utilising a range of dedicated, ultra high capacitance, field mountable transmitters.

The **DS1200 Exd AMT Ex** is designed to take dewpoint readings in Ex Hazardous areas Zones 1, 21, 2 and 22. It is Flameproof to ATEX and IECEx Certification for use in potentially explosive atmospheres.

The system incorporates an automatic calibration (AutoCal) facility and encompasses measurement needs from 120°C to +20°C (184°F to +68°F) dewpoint.

The sensor/transmitter is highly sensitive and has been designed and conditioned for long term stability.

Additionally, the transmitter is ATEX certified for intrinsic safety so can be used in hazardous environments with the isolator located inside the DS1200 Exd Flameproof Unit.

There are three Hot Key front panel key functions to gain rapid access to set alarms trip points and choice of displayed engineering units. These functions can be locked to prevent unauthorised tampering.

Users may choose to view the trace moisture levels in °C dewpoint, °F dewpoint, ppm(v), ppb(v), g/m³ or lb/MMSCF on the 4 digit, 14 segment LED display.

The factory calibrated, but fully configurable, 4 20mA output is automatically linearly correlated with all the selected engineering units.

DS1200 Exd AMT Ex contains two independent, fully user programmable alarm contacts to provide all the versatility required for any application.

ATEX and IECEx Certified Enclosure. IP66 Rating.

Side View

3 wire AMT Ex Transmitter

Features

- Choice of transmitters covering an overall range from 120°C to +20°C dewpoint (184°F to +68°F)
- Units selectable for °C T_d, °F T_d, ppm(v), ppb(v), g/m³ or lb/MMSCF
- Calibrations traceable to International Humidity Standards
- Automatic calibration (AutoCal) adjustment to maintain accuracy between laboratory calibrations
- GUBH Flameproof Enclosure (type "d") Ex II 2 G D
- DS1200 Display has a flexible power input of 22V 253V AC or DC Operation 50/60Hz
- Two independent fully programmable alarms relays
- Linear 4 20mA retransmission signal
- Hot Key functions for rapid access to set alarms and units, can be locked to prevent tamper
- Ex certified sensor/transmitter for Hazardous Area use (via isolator housed in Exd enclosure)

Specifications

MODEL AMT-Ex Dewpoint Transmitter only

TRANSMITTER TYPE: 3 Wire, 4-20mA Loop Powered Transmitter
OUTPUT SIGNAL: 4 to 20mA Linear
OPERATING VOLTAGE: 12-28V dc. Reverse polarity protected.
SENSING ELEMENT: Ultra High Capacitance - Aluminium Oxide Type
RANGES: See How to Order Step 1 Below
INTRINSIC SAFETY CERTIFICATION STANDARDS:
EN 60079-0   EN 60079-11

⟨Ex⟩ Ex II 1GD   Ex ia IIC T4   Ex iaD 20 T135°C (-20°C ≤ Ta ≤ +60°C)

AUTOCAL: Field calibration / Span check facility. Activated and operated via two button switches on the Transmitter body. Locked in normal operating mode to avoid tamper.
FACTORY CALIBRATION: Supplied with Certificate of Calibration traceable to NPL / NIST
ACCURACY: ± 2°C dewpoint (NPL/NIST traceable for range -90°C to +20°C)
TEMPERATURE COEFFICIENT: Temperature compensated for operating range.

REPEATABILITY: Better than ±0.3°C dewpoint
OPERATING TEMPERATURE: -20°C to +60°C
STORAGE TEMPERATURE: -20°C to +70°C
OPERATING PRESSURE: From 1kPa (0.01 barA) to Maximum 35,000kPa (350 barA)
OPERATING HUMIDITY (External): Maximum - 95% RH Non-condensing
SAMPLE FLOW RATE: Flow independent but ideally 2 to 5 litres per minute. Max: 25 litres/min.
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 IS (blue) standard cable. Nominal diameter 3.4mm, 92ohms/km at 20°C
ELECTROMAGNETIC COMPATIBILITY (EMC):
   Complies with BS EN 61326-1
WARM UP TIME: 10 seconds
FAULT CONDITIONS:
   Open Circuit : Output drives to 20.50mA
   Short Circuit : Output drives to 20.75mA
   System Error: Output drives to 21.00mA
ISOLATION: Sensing Element connected to the 4-20mA loop but isolated from Transmitter body.
TRANSMITTER ENCLOSURE: 316 Stainless steel 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: 3/4" UNF (16tpi) with integral Viton "O" ring seal.
MECHANICAL WARRANTY: 24 months in case of faulty workmanship and defective parts.
CALIBRATION WARRANTY: 12 months.
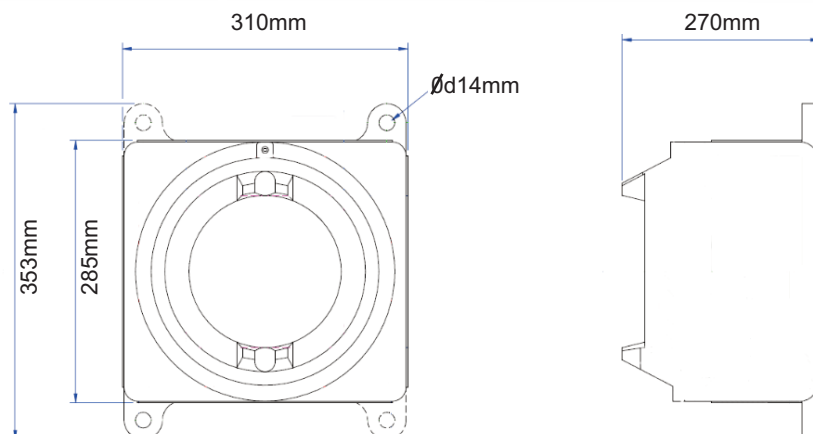
MODEL DS1200 Display only

DS1200 DISPLAY INDICATOR SPECIFICATIONS

ENCLOSURE: 1/8 DIN panel mounting ABS case
DISPLAY: 4 digit, 14 segment LED indicator. Red characters 13.8mm high. Factory set to display in °C, °F, ppm(v), ppb(v), g/m³ or lbs/MMSCF
SUPPLY VOLTAGE: Universal 22Vac - 253Vac 50/60Hz & 20Vdc - 300Vdc 150mA to 15mA
MAX VOLTAGE: 250 VRMS
MAX CURRENT: 2A /AC
MAX AC POWER: 500VA
MAX CURRENT AT 24 VDC: 1A
POWER CONSUMPTION: 3.5W Maximum
OUTPUT SIGNAL: Linear 4 to 20mA, fully isolated. Maximum load 800Ω / 16Vdc
PROGRAMMABLE SIGNAL RANGES: 0...20 or 4...20mADC (Factory set)
ISOLATION: Voltage Test / Operation - 2.3kVac / 250Vac
CURRENT OUTPUT-
LOAD (max): 20mA / 800Ω / 16VDC
LOAD STABILITY: ≤ 0.01% of span / 100 Ω
RELAY-
RELAY FUNCTION: setpoint
HYSTERISIS: 1% of range
ALARM RELAYS: 2 independent fully programmable switched contacts. Rated 2A @ 250Vac / 1A @ 24Vdc.
ANNUNCIATORS: AL1 & AL2 LED's on front panel indicating status of each alarm
ELECTROMAGNETIC COMPATIBILITY (EMC):
   Complies with BS EN 61326-1
WEATHERPROOF CLASSIFICATION: Front panel only - IP65 (NEMA 4X).
TEMPERATURE OPERATINTG RANGE: -20°C to +60°C
DISPLAY RESPONSE TIME (0-90%, 100 to 10%): 0.4s.
WIRE SIZE, PIN 45 & 46 (max): 1 x 1.5mm2 stranded wire
WIRE SIZE, OTHERS (max): 1 x 2.5mm2 stranded wire
RELATIVE HUMIDITY: < 95% RH
ERROR DETECTION: Cable loop break
DIMENSIONS (HxWxD): 48 x 96 x 120mm
CUT OUT DIMENSIONS: 44.5 x 91.5mm
WEIGHT: 230 grams

ENCLOSURE MATERIALS AND FINISH

GUBH Flameproof (type "d")   II 2 G D

BODY AND COVER: Copper free aluminium alloy LM25. (EN AC-42000), (BS EN 1706:1998) with less than 0.2% copper content.
MOUNTING PLATE: Mild steel zinc plated (Passivated).
WINDOW: Heat resistant toughened glass.
FINISH: Chromate primed and polyester powder coated.
EARTHING: Enclosure is supplied with a 6mm stainless steel (18/8) internal and external earth stud as standard.
CABLE ENTRIES PORTS AND THREAD SIZES: Available ISO metric M20-M90 1/2"- 3" NPT.

Dimensions

310mm   Ød14mm   270mm   353mm   285mm

How to Order

	Range	Units	V or A	Alarm1	Alarm2	Holder	Logging
Model DS1200-AMT-EX-Exd | +[XX] | +[X] | +[X] | +[XX] | +[XX] | +[X] | +[X] |

Select a Range Below

SR: -110°C to -20°C (-166°F to -4°F)   dewpoint
PL: -100°C to   0°C (-148°F to +32°F) dewpoint
RD: -80°C to -20°C (-112°F to -4°F)   dewpoint
GY: -80°C to   0°C (-112°F to +32°F) dewpoint
SD: -100°C to +20°C (-148°F to +68°F) dewpoint
LD: -120°C to +20°C (-184°F to +68°F) dewpoint
HD: -65°C to +20°C (-85°F to +68°F)   dewpoint

Select a Display Unit

°C Dewpoint	C
°F Dewpoint	F
ppm(V)	V
lb/MMSCF	L
g/m³	G

Select a Retransmission Output

Voltage Output	V
Current Output	A

Select Alarm 1 Configuration

High Alarm, Direct action (normally de-energised relay)	HD
High Alarm, Reverse action (normally energised relay)	HR
Low Alarm, Direct action (normally de-energised relay)	LD
Low Alarm, Reverse action (normally energised relay)	LR

Select Alarm 2 Configuration

High Alarm, Direct action (normally de-energised relay)	HD
High Alarm, Reverse action (normally energised relay)	HR
Low Alarm, Direct action (normally de-energised relay)	LD
Low Alarm, Reverse action (normally energised relay)	LR

Select a Sensor Holder

None	N
1/4" Swagelok® Stainless Steel Compression Fitting	4
1/8" Swagelok® Stainless Steel Compression Fitting	8
6mm Swagelok® Stainless Steel Compression Fitting	6

Select Logging

No Logging	O
With Logging (SEE PAGE 4 FOR DETAILS)	L

Ordering Example:
To order **DS1200** with range **-80°C to 0°C dewpoint**, with retransmission set to current output, both alarms to trip on rising dewpoint with normally de-energised relays and sensor holder with 1/4" Swagelok® fittings, + logging, the order would look like this:-
Model DS1200 - GY - C - A - HD - HD - 4 - L

Corrosive Gases: The Sensor should not be exposed to corrosive gases (or corrosive contaminants in the gas sample) as these can chemically attack the sensor, impairing calibration accuracy and/or damaging it beyond economic repair. Examples of such gases are mercury (Hg), ammonia (NH_3), chlorine (Cl_2) etc. Strong oxidising agents such as ozone (O_3) should also be prevented from coming into contact with the sensor.

For more information on Hazardous and Zoned Area applications, please contact us.

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