

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 $+20^{\circ}\text{C}$ (-184°F to $+68^{\circ}\text{F}$) 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 $^{\circ}\text{C}$ dewpoint, $^{\circ}\text{F}$ dewpoint, ppm(v), ppb(v), g/m^3 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 $+20^{\circ}\text{C}$ dewpoint (-184°F to $+68^{\circ}\text{F}$)
- Units selectable for $^{\circ}\text{C}$ T_d, $^{\circ}\text{F}$ T_d, ppm(v), ppb(v), g/m^3 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 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

HYSTERESIS: 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 OPERATING 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).

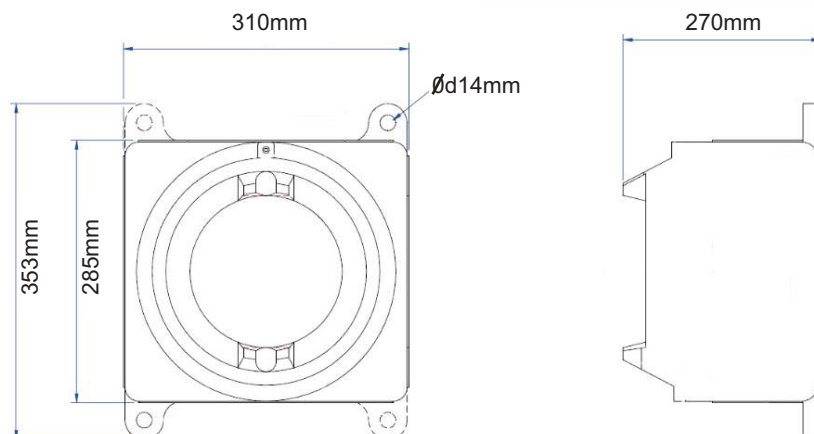
WINDOW: Heat resistant toughened glass.

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



How to Order

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/m ³	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 (NH₃), chlorine (Cl₂) etc. Strong oxidising agents such as ozone (O₃) should also be prevented from coming into contact with the sensor.

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

2835 Model DS1200-Exd-AMT-Ex pd120122-ISS 2

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Product specification may be subject to change.