



Transmitter and Enclosure.  
IP66 Rating.



## Features and Benefits

- 💧 GUBH Flameproof Enclosure Ex II 2 G D
- 💧 Designed for installation in to Ex Hazardous areas. Flameproof to ATEX and IECEx certification for use in potentially explosive atmospheres
- 💧 Offered with either DS4000 Advanced Display or DS1200 Standard Display Indicators and AMT-Ex Intrinsically Safe Dewpoint Transmitter
- 💧 Incorporates Signal Isolation within the enclosure
- 💧 Heat-resistant toughened glass observation window
- 💧 Range of enclosures available

**DS4000-Exd-AMT-Ex** is a single channel, online hygrometer with built-in isolator designed to accurately measure trace moisture in process gases utilising a range of dedicated, ultra high capacitance, field mountable AMT-Ex Dewpoint Transmitter.

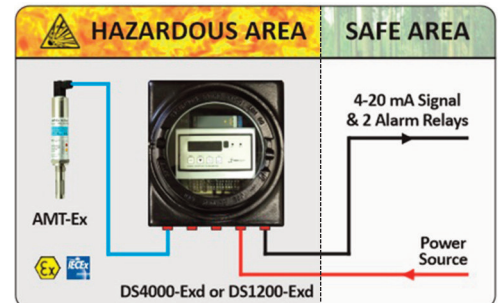
The DS4000-Exd-AMT-Ex Dewpoint Hygrometer is located in the Hazardous Zone. The GUBH Flameproof Enclosure Ex II 2 G D is flameproof to ATEX and IECEx Certification for use in potentially explosive atmospheres.

The system incorporates an "Automatic Calibration (AutoCal)" function and encompasses measurement needs from -120 °C to +20 °C (-184 °F to +68 °F) dewpoint. The AMT-Ex Transmitter is highly sensitive and has been designed and conditioned for long term stability and accuracy.

Additionally, the transmitter is ATEX certified for intrinsic safety so can be used in hazardous environments with the isolator housed within the DS4000-Exd 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 or °F dewpoint, ppm(v), ppm(w), g/m<sup>3</sup> or lb/MMSCF on the 5 digit, seven segment red LED display.



**DS4000-Exd-AMT-Ex** contains two independent, fully user programmable alarm contacts to provide all the versatility required for any application. A digital communication channel is provided via a RS485 serial connection for remote interrogation of measured values and status of alarms and instrument.

## Specifications

### DISPLAY - DS4000

<b>Type:</b>	Red 7-segment 5-digit primary display, and secondary display.
<b>Height:</b>	14mm (0.71inches) primary display, 7mm (0.3 inches) secondary display.
<b>Annunciators:</b>	Alarm 1 and Alarm 2 status LEDs.
<b>SENSOR/TRANSMITTER (AMT-Ex)</b>	
<b>Standard Dewpoint Ranges Available:</b>	Various between -120 °C to +20 °C / -184 °F to +68 °F (0.0001ppb(v) to 23,000ppm(v))
<b>Accuracy:</b>	Better than ±2 °C (3.6 °F) over full range
<b>Operating Temperature:</b>	-20 °C to +50 °C
<b>Storage Temperature:</b>	-50 °C to +70 °C
<b>Operating Humidity:</b>	0-90% RH non-condensing
<b>Mechanical Connections:</b>	3/4" UNF (16tpi) with integral Viton "O" ring seal
<b>Electrical Connection:</b>	3 wire 4-20mA
<b>Approvals:</b>	CE certified. ATEX. IECEx.

## Specifications Continued

### SENSOR/TRANSMITTER (AMT-EX)

<b>INTRINSIC SAFETY CERTIFICATION:</b>	IECEX BAS07.0080 BASEEFA 07ATEX0234 BAS21UKEX0805
<b>STANDARDS:</b>	EN 60079-0:2018 EN 60079-11:2012
<b>ATEX , UKCA and IECEX Markings:</b>	Ex II 1GD Ex ia IIC T4 Ga Exia IIIC T <sub>200</sub> 135 °C DA (-20 °C ≤ Ta ≤ +60 °C)



### RELAY OUTPUT 1 AND 2

<b>Contact Type:</b>	Single pole, changeover (SPCO)
<b>Rating:</b>	10A resistive, 120/240V, 50/60Hz
<b>Lifetime:</b>	>100,000 operations at rated voltage/current
<b>Isolation:</b>	1000 Vrms

### LINEAR (RE-TRANSMITTED) OUTPUT

<b>Ranges Available:</b>	0-20mA or 4-20mA linear in units selected
<b>Accuracy:</b>	±0.5% max of display value
<b>Load Impedance:</b>	500Ω max

### SERIAL COMMUNICATIONS

<b>Type:</b>	Serial asynchronous, UART
<b>Data Format:</b>	Open; one start bit, even parity, seven data bits and one stop bit.
<b>Physical Layer:</b>	RS485.
<b>Maximum No. of addresses:</b>	99.
<b>Baud Rate:</b>	Selectable – 1200, 2400, 4800 or 9600.

### ENVIRONMENTAL

<b>Approvals:</b>	CE
<b>EMC:</b>	Certified to BS EN61326-1
<b>Safety:</b>	Complies with BS EN 61010-1
<b>Instrument Front Panel Seal:</b>	To IP54
<b>Sensor/Transmitter:</b>	IP66 (with connector fitted)

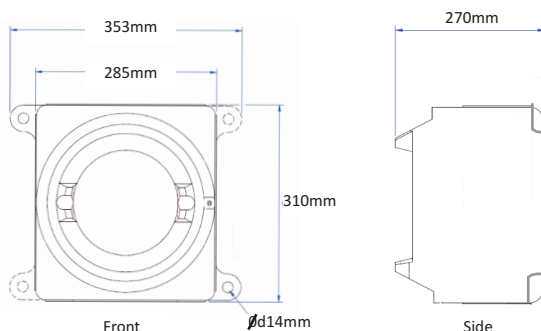
### PHYSICAL (CONTROL UNIT)

<b>Reference Conditions</b>	
<b>Supply Voltage:</b>	90 – 250V, 50/60Hz or 24Vdc
<b>Power Consumption:</b>	AC=10VA/DC=4VA max
<b>Operating Conditions</b>	
<b>Temperature:</b>	-20 °C to 60 °C
<b>Relative Humidity:</b>	0-90% non-condensing
<b>Automatic Calibration (AutoCal):</b>	Field calibration / Span check facility. Activated and open via two button switches on the Transmitter body. Locked in normal operating mode to avoid tamper.
<b>Sensor/Transmitter Enclosure:</b>	316 Stainless steel body with size C, DIN EN 175301 connector.
<b>Dimensions:</b>	<b>Height</b> – 66mm, <b>Width</b> – 135mm, <b>Depth</b> – 108mm without sensor connector.
<b>Weight:</b>	18.65 kg (41.15 lbs)

### ENCLOSURE MATERIALS AND FINISH

<b>Body and Cover:</b>	GUBH Flameproof II 2 G D Copper free aluminium alloy LM25. (EN AC-42000), (BS EN 1706:1998) with less than 0.2% copper content.
<b>Mounting plate:</b>	Mild steel zinc plated (Passivated).
<b>Window:</b>	Heat resistant toughened glass.
<b>Finish:</b>	Chromate primed and polyester powder coated.
<b>Earthing:</b>	Enclosure is supplied with a 6mm stainless steel (18/8) internal and external earth stud as standard.
<b>Cable Entries ports and Thread Sizes:</b>	Available ISO metric M20-M90 1/2" - 3" NPT.

### Dimensions:



### Manufacturers Warranty

12 Months in case of defective parts or faulty workmanship.

## How to order

# DS4000-AMT-Ex-Exd +[XX] +[X] +[X] +[XX] +[XX] +[X] +[X]

### 1 Select a Sensor Range Below

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



### 2 Select a Display Unit

°C Dewpoint	<b>C</b>
°F Dewpoint	<b>F</b>
ppm(V)	<b>V</b>
lb/MMSCF	<b>L</b>
g/m <sup>3</sup>	<b>G</b>

### 3 Select a Retransmission Output

Voltage Output	<b>V</b>
Current Output	<b>A</b>

### 4 Select Alarm 1 Configuration

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

### 5 Select Alarm 2 Configuration

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

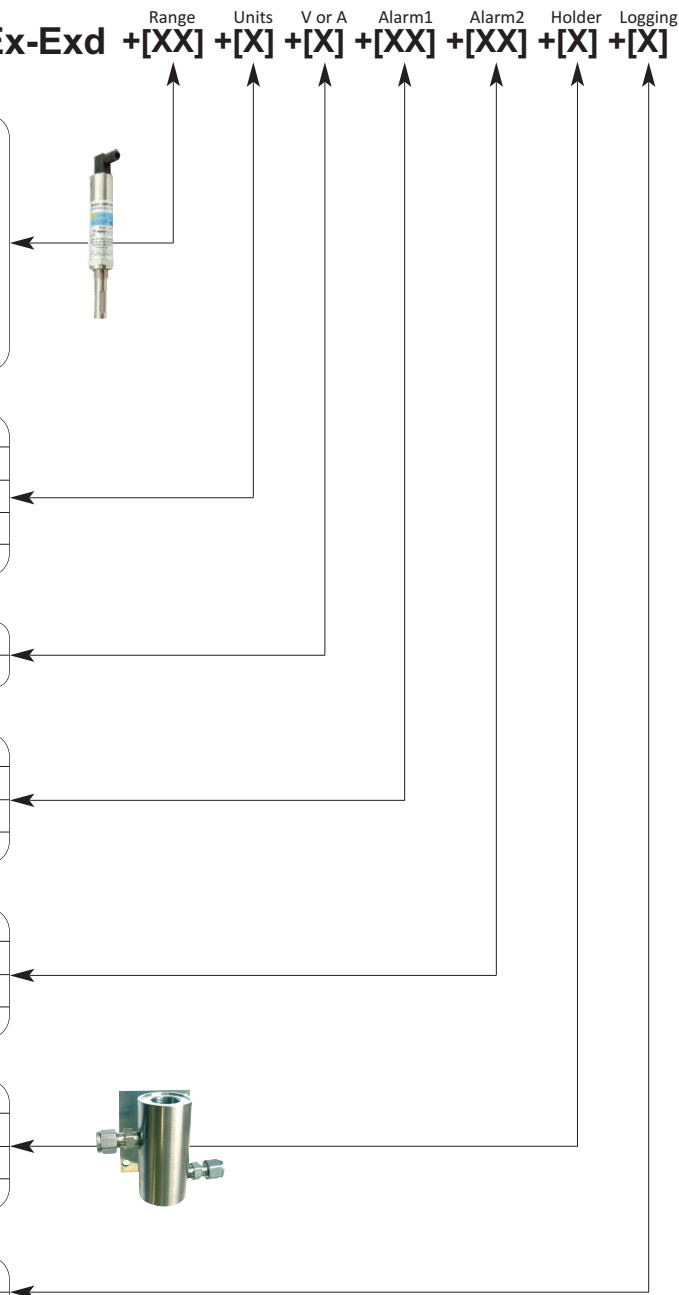
### 6 Select a Sensor Holder

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



### 7 Select Logging

No Logging	<b>O</b>
With Logging	<b>L</b>



#### Ordering Example:

To order **DS4000-AMT-Ex-Exd** with a range of **-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, plus logging, the order code will look like this:-

**DS4000-AMT-Ex-Exd - 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<sub>3</sub>), chlorine (Cl<sub>2</sub>) etc. Strong oxidising agents such as ozone (O<sub>3</sub>) should also be prevented from coming into contact with the sensor.

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

2710 DS4000-Exd-AMT-Ex pd281123-Iss-7

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