dBi HART INTELLIGENT TRANSDUCERS

Self-contained transducers with HART protocol.

Setting new standards in communications and provide convenience for reliable plant and field-based level measurement systems.

The dBi HART series of transducers are low power devices featuring Pulsar Measurement's world-leading DATEM echo processing power for robust and reliable measurement from 125 mm to 15 m (4.9 in to 49.2 ft) depending on the unit chosen. Integration with plant systems and other equipment is straightforward. The dBi HART series support GSD, EDDL, and FDT/DTM making it easy to configure and calibrate the devices using standard PLC/HMI industry protocols.

Pulsar Measurement's software or on-site multi-drop setup provides options to program the transducers using either a standard interface or using Pulsar Measurement's programming parameters.

Formats to Suit Your Application

The dBi HART series are available in a range of different formats designed to be able to suit the needs of your application. For example, flanged, PTFE coated for corrosive applications, fitted with foam face for use in solids applications or submergence shield, and with threaded noses for easy installation.

For solid applications, the dBi HART transducers are compatible with Pulsar Measurement's aiming kit for the best possible results and to measure right down to the draw-off point of a bin or silo.

THE RIGHT SENSOR FOR

- Event Duration Management
- Combined Sewer Overflows
- Remote Level Monitoring
- Tank Level Monitoring
- Volume Measurement

Tank Shapes & Volume Measurement

The dBi HART transducers provide on-board conversion for volume with several pre-set tank shapes, plus the ability to curve-fit to non-standard tank shapes. The output from the unit can be configured to represent distance, level, space, or volume.

Functional Qualities

dBi Transducers with HART are loop powered (3.8-22mA), IP68 for outdoor applications, temperature compensated for increased accuracy, and make use of the HART Version 7 protocol, with individually addressable transducers.

Alternatively, they can be programmed as stand-alone devices using a hand-held calibrator or PC to operate as low-power measuring devices, using HART as the mechanism for data collection.

The first boot is approximately 8 seconds, if a typical 15-minute boot interval is used, this becomes approximately 3.5 seconds. The dBi transducers with HART will convert level to volume, with a library of typical tank shapes or a 16-point curve fit.

dBi3 HART Threaded Nose and PVDF Face

Programming

If you require setup only: Pulsar Measurement's HART PC Lite free software is bundled with the dBi HART transducer or is available for download via the website, and provides everything required for efficient setup.

For complete control over setup, installation, echo profile viewing, cloning, and troubleshooting purchase Pulsar Measurement's PC Suite, which includes HART PC along with other major Pulsar software packages. PC Suite is available as a free download for evaluation. Purchase a Pulsar Measurement 'Dongle' to authorize continued usage after the evaluation period.

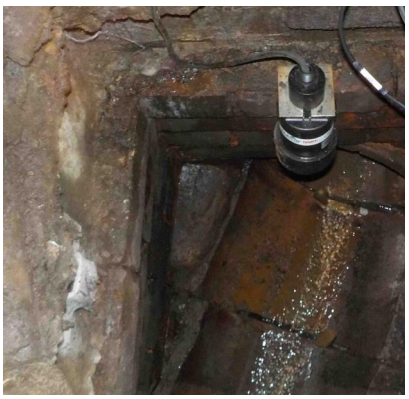
HART Communication Protocol

Echo Processing

The dBi HART Transducer series feature Pulsar Measurement's world-leading echo processing software, Digital Adaptive Tracking of Echo Movement (DATEM), which allows the system to zero in on the echo from the true target and follow it as it moves up and down the vessel, ignoring the stationary echoes from other elements in the measurement path. Stanchions, chains, and ladders, which cause many ultrasonic systems to fail, are no barrier to Pulsar Measurement equipment, allowing the dBi HART transducers to give reliable and accurate measurement in applications where other manufacturers' equipment would not work.

dBi HART on a CSO Application

3 dBi HART transducers Monitoring Sluice Levels



dBi HART in a Cluttered Well

Technical Specifications

PHYSICAL: TRANSDUCER SPECIFIC:

	dBi3	dBi6	dBi10	dBi15
Sensor Body Dimensions:	77 mm D x 134 mm H (3 in x 5 in)	86 mm D x 121 mm H (3.4 in x 4.8 in)	86 mm D x 121 mm H (3.4 in x 4.8 in)	86 mm D x 121 mm H (3.4 in x 4.8 in)
Weight:	1 kg (2.2 lb)	1.2 kg (2.7 lb)	1.3 kg (2.9 lb)	1.4 kg (3.1 lb)
Measurement Range:	0.1 m to 3 m (0.4 ft to 10 ft)	0.3 m to 6 m (1 ft to 20 ft)	0.3 m to 10.1 m (1 ft to 33 ft)	0.5 m to 15 m (1.6 ft to 50 ft)
Frequency:	125kHz	75kHz	50kHz	41kHz
Beam Angle:	<10°	<10°	<10°	<8°
Accuracy	2 mm (0.08 in)	4 mm (0.2 in)	3 mm (0.1 in) up to 6 m (19.7 ft) range 6 mm (0.2 in) over 6 m (19.7 ft) range	5 mm (0.2 in) up to 10 m (32.8 ft) 10 mm (0.4 in) over 10 m (32.8 ft) range
Resolution:	1 mm (0.04 in)	2 mm (0.08 in)	3 mm (0.1 in)	5 mm (0.2 in)

PHYSICAL: ALL TRANSDUCERS

Sensor Body Material:	Valox 357 PBT
Cable Lengths:	Standard: 5 m, 10 m, 20 m, or 30 m (16.4 ft, 32.8 ft, 65.6 ft, or 98.4 ft) Optional up to 150 m (492 ft) maximum (increments of 10 m (32.8 ft) only)
Mounting Connection:	BSP or 1" NPT

ENVIRONMENTAL

Enclosure Protection:	IP68 / NEMA 6P
Max. And Min. Temperature (Electonics):	-40 °C to +80 °C (-40 °F to +176 °F), options for front thread and flange mounting

APPROVALS

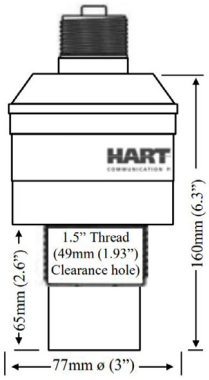
CE Approval:	Listed in the Certificate of Conformity within the manual
ATEX Approval:	Standard: Zones 1 & 2 to Ex II 2 G Ex mb IIC T4 Gb, Ex II 2 D Ex mb IIIC T130 °C Db, Tamb= -40 °C to +80 °C Optional: Zone 0 to Ex II 1 G Ex ia IIC T4 Ga, Ex II 1 D Ex ia IIIC T130 °C Da, Tamb= -40 °C to +80 °C

PERFORMANCE

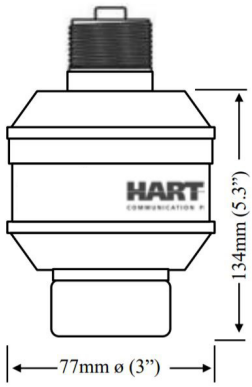
Input voltage range:	10-28 V DC
Output:	4-20mA output, resolution 1µa
Current Consumption:	3.8-22mA
Boot Time:	From power-up to stable reading: Cold boot = 9 seconds, Warm boot (within 12 hours from last start-up) = 4 seconds
Communcations Protocol:	HART 7

TRANSDUCER OPTIONS

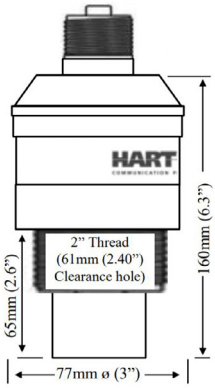
	dBi3	dBi6	dBi10	dBi15
PVDF:		✓	✓	
Front Threaded / PVDF:	✓	✓	✓	
Submergence Shield:	✓	✓	✓	✓
Flanged DIN / ANSI:		✓	✓	✓
Foam Face:			✓	✓
Sanitary Flange	✓	✓	✓	
Intrinsically Safe of All the Above:	✓	✓	✓	✓



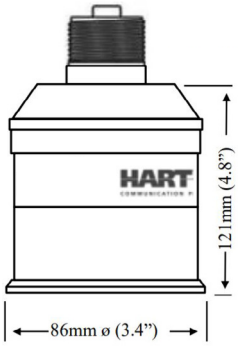
dBi3 & dBi6 Front Thread



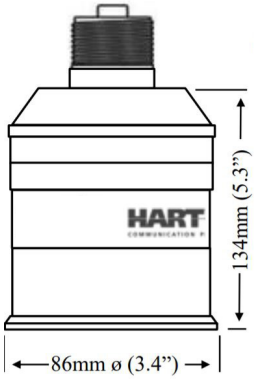
dBi3 Rear Thread



dBi10 Front Thread



dBi6 & dBi10 Rear Thread



dBi15 Rear Thread

pulsar MEASUREMENT

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