



# DBI15

## IP68 ultrasonic level transducer

### SMART HART or PROFIBUS PA or MODBUS RTU

ELECTRONIC  
EQUIPMENT

ACOUSTIC

WEIGHING

ANTI-TILTING

VALVES

TEMPERATURE

DETECT  
A FIRE®

FLOW/  
RATE

DENSITY

INTERFACE

PRESSURE

LEVEL



- Measuring ranges up to 15m
- Connection with two-pole cables
- Use on liquids or solids
- Digital echo process
- Various mounting possibilities
- No need for coaxial cables
- Transducers in both Atex Ex mb Zone 1, or Atex Intrinsically Safe Zone 0
- Calibratable via dedicated programmers
- Hart or Profibus PA or ModBusRTU via PC with dedicated Pulsar SW

Transducers are programmed with Hart or Profibus handheld calibrators, ModBus RTU via PC interface. The measurement is represented either with 4 to 20mA proportional to the measurement value or using the associated protocol. HART transducers are certified Atex zone 1 (Ex mb) without barriers. Atex zone 0 (Ex ia) on request requires a suitable barrier. The HART transducers are current loop powered (3.8 ÷ 22mA) have IP68 protection for outdoor installations, are temperature compensated to increase accuracy and use version 7 of the Hart protocol with self-addressable transducers. Alternatively, they can be individually programmed using a suitable hand-held programmer or via PC. The first start takes 8 seconds, then if a typical 15-minute interval is used the start time becomes 3.5s. Terry Ferraris' new transducers are compact, inexpensive and easy to install. They are designed for use on liquids or solids, and are reliably accurate and cost-effective. They are low-voltage instruments using the most advanced processor for echo analysis available, providing reliable and precise measurements. The echo analysis software is able to distinguish, and ignore, obstacles, chains and ladders and follow what is moving inside the tank: Terry Ferraris' dBi transducers have proven to work where other similar instruments have shown serious problems with functionality, reliability and repeatability. dBi transducers are available in 4 types with a measuring

range of 3/6/10/15m. They can be programmed using the standard communication protocols for the fieldbus type used or alternatively with Terry Ferraris SW. For use on solids, dBi transducers use an orientation coupling that, by directing the ultrasonic beam onto the body that is to reflect the echo, maximises the response, i.e. the reflected echo. Transducers convert level measurements into volume. The computer controlling the process has access to a library containing various pre-selected tank geometries that normally fit standard tanks, or it is possible to create a new volumetric geometry via SW by means of a dedicated level/volume table set up using a freely programmable 16-point break.

The current output can optionally represent either the distance from the probe face to the target, or a level, space or volume. dBi transducers are available as Hart or Profibus PA d or ModBus RTU devices in a wide range of models and executions to suit the installation, e.g. PTFE-coated flanged for use with corrosive liquids, foams or with threaded connections to facilitate mechanical installation in the field.

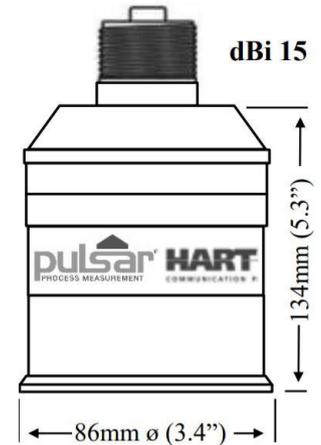
*Continuous product development may lead to changes in the data displayed.*

TERRY FERRARIS S.R.L.

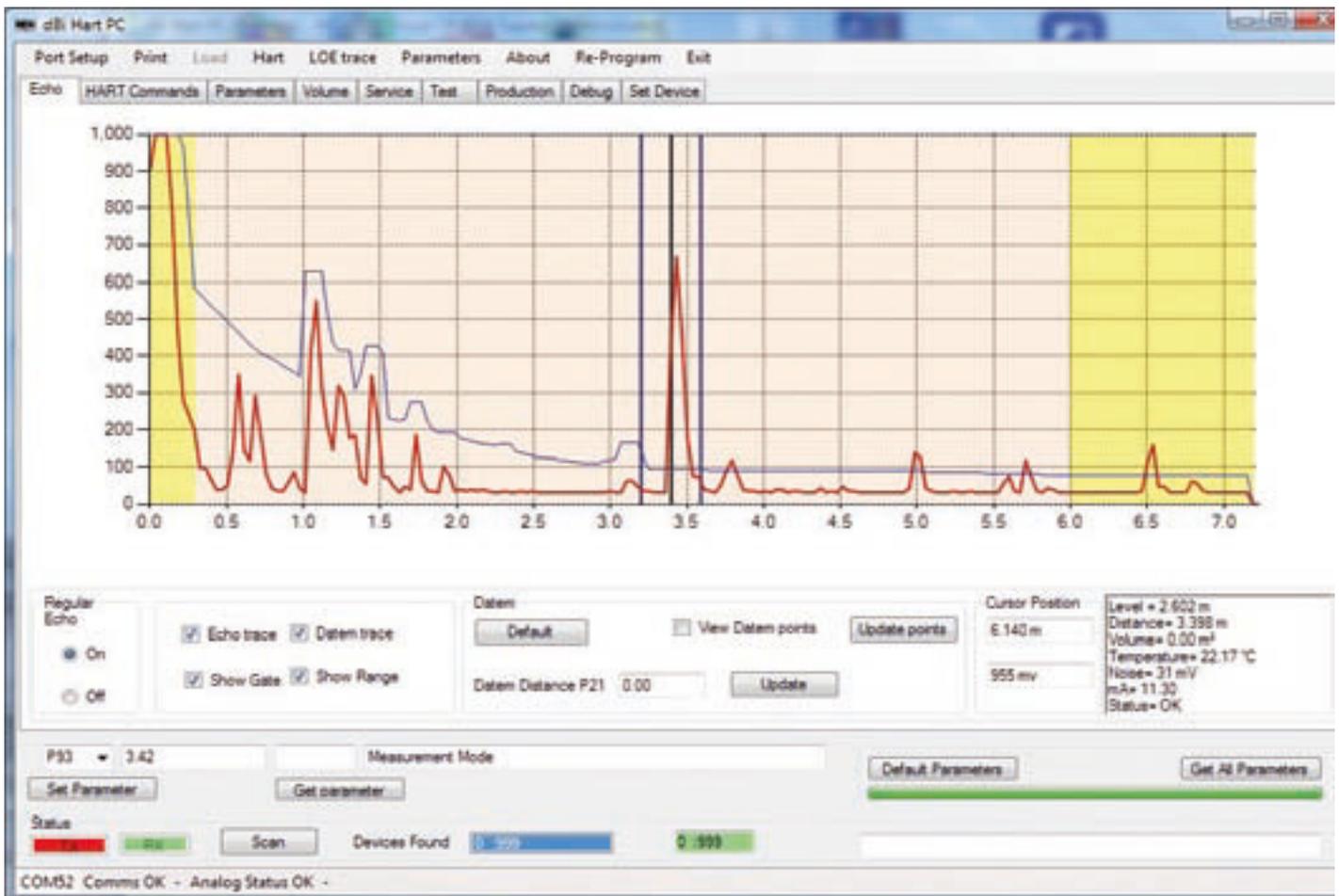
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# Technical specifications

Weight	1.4 kg
Dimensions and assembly	86mm ø 135mm height   Rear thread 1" BSP/NTP
Repeatability/accuracy(NB aperture angles at - 3dB comprise everything but generate an effective angle of < 3°)	Measurement range: 0.3 - 15m Frequency: 41kHz Repeatability: 1.5 mm Accuracy: 10mm over 10m Opening angle: <10°
Enclosure	Valox 357 PTB
Temperature adjustment	Internal temperature sensor: ± 0.5°C
Transducer cable	Two-pole shielded 2 x 0.5mm <sup>2</sup> , length STD 5m, on request 10, 20, or 30m
Temperature range	-40 ÷ 80°C
Input protection	IP68 - BS EN 60068-2-17:1995 e BS EN 60529
Certification	Atex; Ex mb Zone 1 standard, Ex ia Zone 0 on request



# Calibration software



## Technical specifications

To operate a transducer with the Hart protocol using a PC requires: a Hart Modem and a 250  $\Omega$  resistor. The resistor is put in series with the transducer power supply to generate the resistance needed for the configuration. If you only need the set-up Hart PC Lite can be downloaded from the internet and contains everything you need to the transducer set-up.

For complete set-up control, echo profile screens, cloning of other transducers and troubleshooting, Terry Ferraris provides the appropriate SW on request. The dBi series transducers are available in various models to suit different uses e.g. flanged or coated for use in corrosive liquids, foams and with threaded connections for easy mounting.



### Transducers with HART protocol

Power supply	10 to 28Vdc, 4 to 20mA average current 12mA. Power consumption at an interval of 15 minutes with average current = 35 $\mu$ A
Digital communication	FSK (Frequency Shift Keying) modulation from 1200 - 2400Hz

### Transducers with PROFIBUS protocol

Power supply	Bus powered, for IEC 61158-2; 20mA (for intrinsically safe use) 20mA 18-24Vdc
Activation time	1-2 seconds at 20mA current loop
Programming	Modem; Simatic PDM, EDDL, FDT/ DTM 2-wire cable interface Loop-powered from PC or laptop without the need for power from other sources : Profile 3.0.2, Class A with I&M functionality

# HART



# PROFI<sup>®</sup> BUS



# ModBus

