



i-Series Sensors

Intelligent sensors for level measurement

ELECTRONICS

ACOUSTIC

WEIGHT

OVERLOADING
SAFETY SYSTEMS

VALVES

TEMPERATURE

DETECT
A FIRE®

FLOW

DENSITY

INTERFACE

PRESSURE

LEVEL



Ultrasonic sensors with integrated transmitter for measurement of distance, level, empty space or volumes. Suitable for harsh ambient conditions.

i-Series level sensors can be used to measure distance, level, empty space or volumes of liquids in any application where highly accurate level measurements are required.

The level sensors are designed for use in poor ambient conditions. Soiling as well as wear and tear is avoided thanks to non-contacting measurement.

Since transmitter and sensor share the same fully encapsulated enclosure the unit can be easily installed with low space requirements. Extensive programming works are not needed through pre-programmed measurement range steps. The sensors can be directly connected to any PLC, NIVUS GPRS data logger and all systems processing measurement values featuring an active mA-input.

The level sensors utilise a particular energy-efficient sensor concept. Thanks to minimum startup times and measuring cycles it is possible to obtain very long lifetimes with independent and self-sufficient battery-powered data loggers. False echoes can be avoided manually if required by using a free PC software. Additionally all parameters relevant for adjustment of the measurement range can be optimised and documented.

The i-Series level sensors can be easily integrated into existing process conducting systems.

The standardised output of readings allows direct connection to a PLC without the need for additional programming works.

Benefits

- Sensor as independent, comfortable level measurement
- Pre-programmed measurement range steps of 3, 6, 10 and 15 m
- Ideally suitable for battery operation through quick measurement times
- Resistant to humidity, aggressive environments and heavy temperature fluctuations
- IP68 protection
- Can be directly connected to PLC
- Saves time and space, no transmitter installation needed
- DATEM - digital echo processing with automatic false echo avoidance
- Ex-approval according to ATEX for Zone 1; optional for Zone 0
- Easy wiring directly to terminal unit in Ex-areas (no Zener barrier required)

Typical applications

- **Wastewater:** stormwater overflow tanks and storage sewers, clarifiers, pump stations, screening plants, flow measurements, tank volume measurements, container monitoring, irrigation facilities.
- **Drinking water:** tank level measurements, water treatment, sweeter desalination plants, level measurements.
- **Flood protection:** stormwater retention tanks, level measurements with remote data transmission, surface water bodies.
- **Power generation:** cooling water circuits, hydropower plants.

Technical Specifications

Echo processing	Automatic and self-learning echo suppression
Cable lengths	5, 10, 20, 30, 50 oder 100 m; further lengths on request
Process connection	1" BSP/NPT Standard
Startup time	4 sec. typical
Configuration	PC software for parameter setting, echo evaluation, linearisation and false echo avoidance
Ex-Approval	II 2 GD Ex m IIC T4 or II 1 GD Ex ia IIC T4
Functions	Level, distance, empty space, volume and linearisation using 16 breakpoints
Outputs	4 - 20 mA (3,8 - 22 mA, 2-wire) HART® (for programming via NIVUS software)
Protection	IP 68 (5 Bar)
Enclosure material	Valox 357 PBT PVDF (optional)
Power supply	10-28 V DC

Specifications subject to change

OPTIONS

Flange type	for all type of flanges DIN DN50 / DN 80 / DN100 / DN150 / DN200, ANSI / 2" / 3" / 4" / 6" / 8" /
Enclosure material	PVDF for aggressive media, max. 70°C (for i-6, i- 10 and i-15)
Coating of transmitter surface	PTFE soft foam for dusty bulk solids (for P 06, P 10 and P 15)
Flood protection head	For generation of echo loss and alarm output in case of flood. No dirt on the sensor face in case of flood (for all types without front thread)
Front Thread	• Front thread 1.5" for i-3 and i-6 • Front thread 2" for i-10

Specifications subject to change

SENSOR TYPE I-3

Operating temperature	- 40 °C to + 80°C
Resolution	1 mm
Measurement uncertainty	2 mm
Beam angle	<10°
Transmit frequency	125 KHz
Measurement range	0,125 m - 3 m

Specifications subject to change

SENSOR TYPE I-6

Operating temperature	- 40 °C to + 80°C
Resolution	2 mm
Measurement uncertainty	4 mm
Beam angle	<10°
Transmit frequency	75 KHz
Measurement range	0,3 m - 6 m

Specifications subject to change

Technical Specifications

SENSOR TYPE I-10

Operating temperature	from - 40 °C to + 80°C
Resolution	3 mm
Measurement uncertainty	< 6 m: 3 mm; > 6 m: 6 mm
Beam angle	<10°
Transmit frequency	50 KHz
Measurement range	0,3 m - 10 m

Specifications subject to change

SENSOR TYPE I-15

Operating temperature	from - 40 °C to + 80°C
Resolution	5 mm
Measurement uncertainty	< 10 m: 5 mm; > 10 m: 10 mm
Beam angle	<10°
Transmit frequency	41 KHz
Measurement range	0,5 m - 15 m

Specifications subject to change

