Valcom®

Since 1974

INDUSTRY | CHEMICAL | FOOD & BEVERAGES | WATER

www.valcom.it

SINCE 1974 INNOVATION, QUALITY & SERVICE ON DEMAND

Decades of experience escorted by continuous efforts in researching and developing innovative solutions, make Valcom® the ideal partner as supplier of measurement and control equipment for water treatment process, wells, chests, lakes as well as various areas such as food and beverage, chemical, pharmaceutical, cement and steel industry.

Our products have obtained certificates approvals from the main international audit institutes and are sold directly or through distributors located in several countries all over the world. Our product range includes instruments with screwed, flanged, sanitary and special connections, featured by integral or remote versions. Capillary and seals manufactured, assembled and tested in our factory are also available in materials such as Stainless Steel, Duplex, HC, HB, Ti, Monel, Inconel, Ta.

Chemical & Pharmaceutical

For the chemical and pharmaceutical industry Valcom® offers a full range of electronic and pneumatic transmitters for pressure, level, vacuum, Δp and signal converters that cover ranges from 3 mbar to 1000 bar with output 4-20 mA + HART® communication protocol and with integrated or remote electronics.

The fully stainless steel construction of the housing makes them particularly suitable for installation in environments with aggressive atmospheres, allowing the measurement of gauge pressure, absolute or barometric in a measuring range of from 100 mbar to 1000 bar; the production of fluid seals can be realized in SS AISI 316 and other alloys in order to allow applications on corrosive fluids.

The instruments are ATEX intrinsically safe certified for use in applications in hazardous areas, and for the measurement of pressure or level there are countless variety of connections: threaded or flanged, even with PTFE coating and diaphragms in Hastelloy B and C , Titanium, Tantalum, and others.

Food & Beverage

The main features, that field instrumentation dedicated to the production processes in the food & beverage sector, consider sensor's stability and reliability. These features offer a significant positive impact on plant efficiency.

The compatibility of mechanical construction, combined with the correct choice of seals filling oils are never considered as a secondary matter, because necessary to produce and offer a safe product.

A suitable product for the application is not enough to grant reliability and proper functioning over time. We provide sanitary process connections, which allow a suitable cleaning of the wetted parts in contact with the process fluids, requested surface finishing, a proper evaluation of the measurement parameters (pressure and temperature), appropriate information on the viscosity and the specific weight of the fluid, in order to obtain a correct measure and a satisfactory accuracy for the process management.

For these type of applications Valcom® proposes specific process connections, typically DIN nut and triclamp (or for specific measurement positions in flanged and threaded versions, also with PTFE coating and diaphragms in HC, Tantalum, Titanium (or other materials on request). The response time is then crucial to the interruption or the activation of near real-time process steps, for which the analog instrumentation is still appreciated.

Water & Wastewater

Valcom® has dedicated to the integrated cycle of water a number of specific solutions for some of the phases composing the cycle itself.
The purpose of the control of this circuit is to ensure adequate water availability in quantity, quality and costs to the civilian population and industrial production activities by increasing the efficiency of aqueducts, sewers and treatment plants, and therefore the distribution network, in order to safeguard the water resource and managing expenses.

The measuring equipment, in this sense, is a great help to the object, as develope and introduce appropriate technologies and improving management techniques in the industry, is provided (along with increased education on conservation, restoration and reuse of the resource water) to improve the provision of infrastructure conditions.
Valcom® instruments applications:

- Water extraction from aquifers through wells instrumented with level gauges and pumps
- Water treatment to remove exceeding minerals
- Collecting water in storage tanks
- Supply to consumers via the distribution network
- Collection of waste water through the drainage system
- Treatment of collected wastewater
- Waste dump
- Piezometers for pore water pressure and level measurement

CHEMICAL, PHARMACEUTICAL & STEEL PLANTS

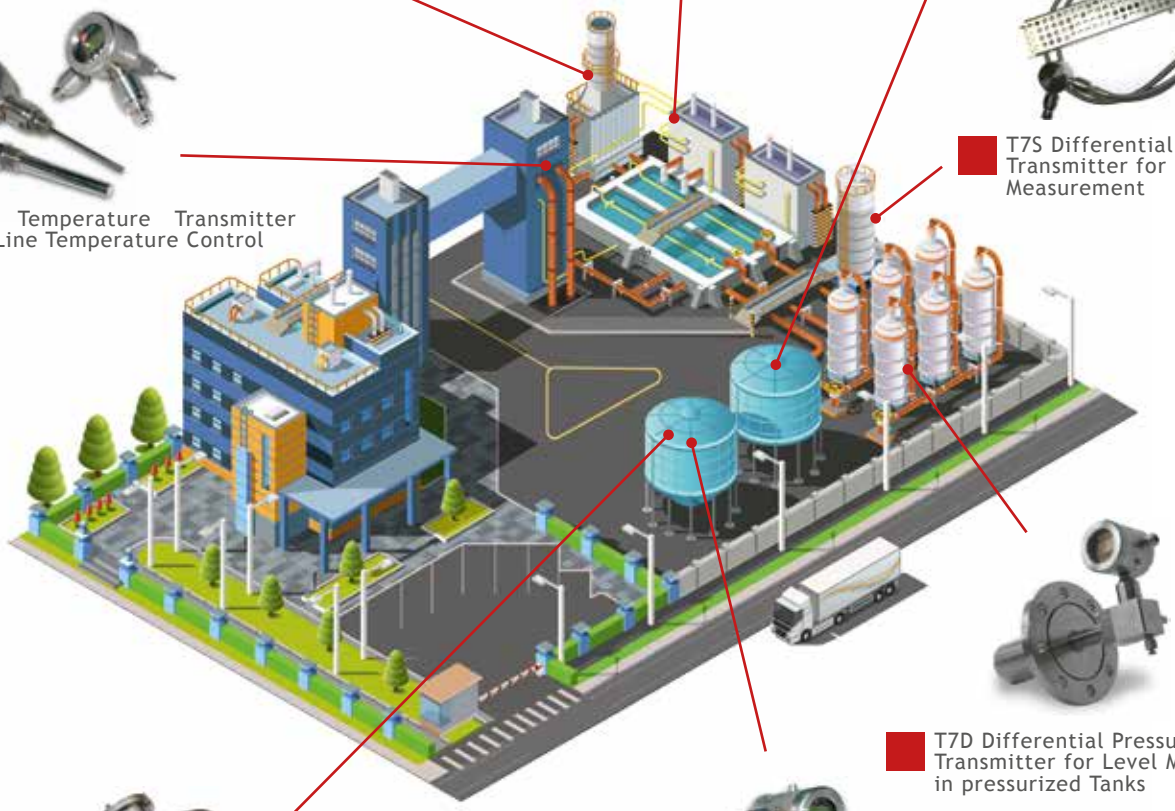
T72 / 27A Pressure Transmitter for Line Pressure Measurement

T7L / 27L Float Level Transmitter for clean fluids

KRG Radar Level Transmitter

T7S Differential Pressure Transmitter for Density Measurement

T7T Temperature Transmitter for Line Temperature Control



T7D Differential Pressure Transmitter for Level Measurement in pressurized Tanks

ASL Single or double Level switch for High & Overfill alarm

T7B Buoyancy Level Transmitter for Level Measurement in pressurized Tanks

FOOD & BEVERAGES

A2X / T7V Remote Indicators

ULG / KRG Ultrasonic / Radar noncontact Top Level Measurement

ASL Level Switch for High Alarm Detection

HMI Human Machine Interface for Plant Monitoring

T72 / 27A Pressure Transmitter for Line Pressure Measurement

T76 Pressure Transmitters for Side-Bottom Level measurement

ASL

SEP

T7D

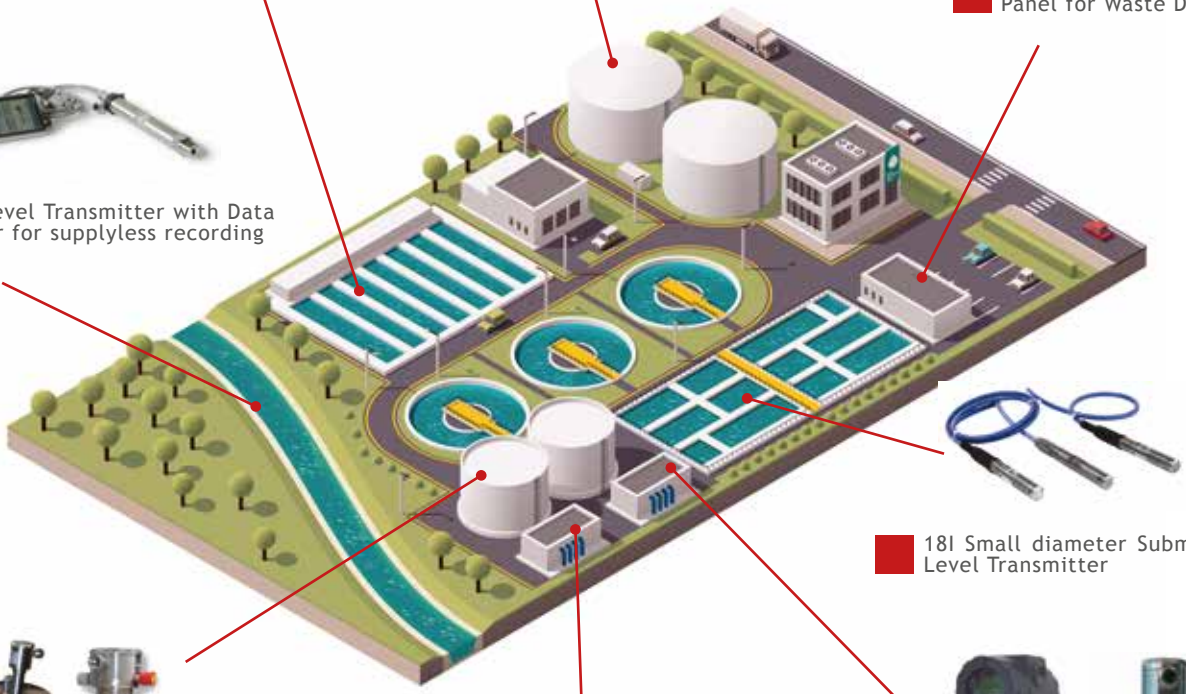
WATER & WASTEWATER

T7I / 27I Submersible Level Transmitter with Remote Electronic Head

ULG / KRG Ultrasonic / Radar noncontact Top Level Measurement

PAI Monitoring & Control Panel for Waste Dump

8DL Level Transmitter with Data Logger for supplyless recording



18I Small diameter Submersible Level Transmitter

ASL / LSG Level Switch for High Alarm Detection

ASG / UPF Magnetic and Ultrasonic Flowmeter

T7D / T72 Differential Pressure Transmitter for Flow Measurement

UPF

ASL

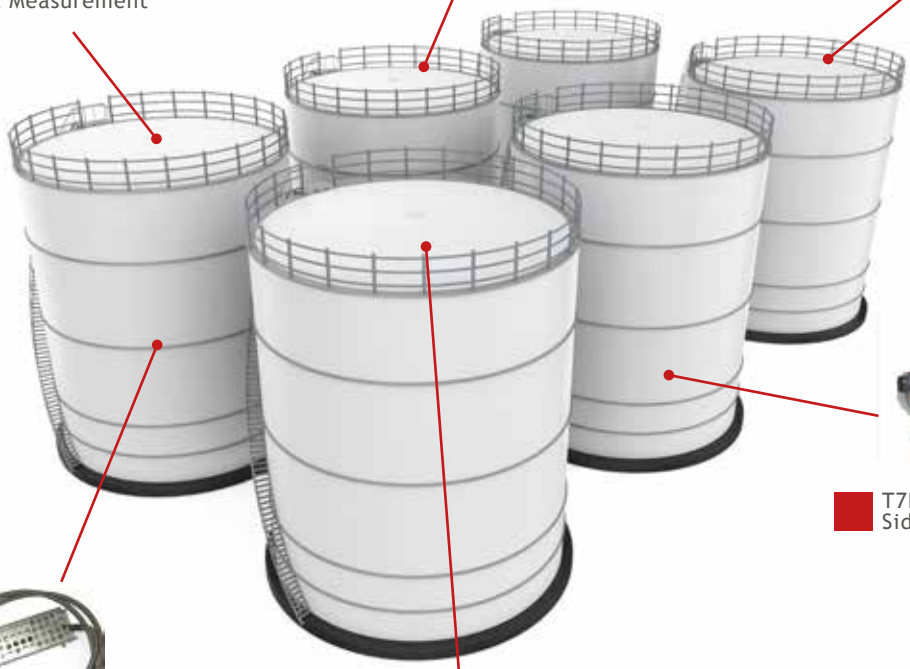
PAI

STORAGE TANKS

KRG / GMG Non-Contact / Guided wave Radar for Top Level Measurement

T7B Buoyancy Level Transmitter for Level Measurement in pressurized Tanks

ASL Double Level Switch for High & Overfill Alarm



T7N Pressure Transmitters for Side-Bottom Level measurement

T7S Differential Pressure Transmitter for Density Measurement

T7M Multipoint Temperature Transmitter with Interface Level Measurement

HMI Human Machine Interface for Plant Monitoring

Valcom®
Since 1974

OUR SECRET
ARE THE DETAILS.

LEVEL, PRESSURE, FLOW, DENSITY, TEMPERATURE

INDEX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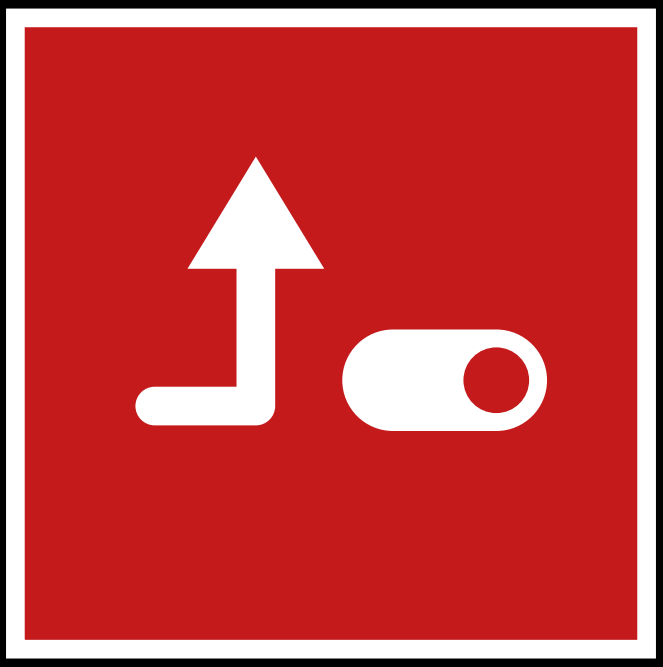
Since 1974



LEVEL
CONTINUOUS & ON/OFF

T72 Smart Submersible Level Transmitter

T72 series includes submersible electronic level transmitters with 4÷20mA output and HART® digital communication protocol for hydrostatic pressure sensing. Sensors are always calibrated individually together with their own seal.
Configurations and adjustments can be made remotely using HART® protocol compatible communicators or Valcom server-hart.

- Level measurement;
- Installation on water, chemical, food, pharmaceutical plants, marine, navy;
- Installation in areas with persistence of potentially explosive mixtures.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 0,35 bar to 0 ÷ 50 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.1 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +80°C / -40 ÷ +90°C
Ingress protection degree:	IP68

27I Submersible Level Transmitter

27I series includes submersible electronic level transmitters for hydrostatic pressure sensing.
All 27I series versions are featured with analog electronic and have small sizes (typical housing Ø 27 mm) and fixed ranges.
27I Series transmitters are used in industrial and marine applications to measure level of liquids in wells, chests, lakes, water treatment plants, tanks, pore water pressure, level, etc.

Supply:	2 wires: 11 ÷ 30 Vdc / 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA / 3 wires: 0 ÷ 5 Vdc or 0 ÷ 10 Vdc (min 30 mVdc)
Measuring range:	From -1 ÷ 0 bar to 0 ÷ 1000 bar
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< ± 0.25 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	Piezo: < ± 0.02 % FS/°C / Ceramic: < ± 0.01 % FS/°C
Long term stability:	Piezo: < ± 0.15 % FS/year / Ceramic: < ± 0.12 % FS/year
Response time (63% FS):	Piezo: 10 ms / Ceramic: 5 ms
Allowable de-range:	Piezo down to 4 times /Ceramic down to 2.5 times the Nominal Range
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +80°C / -40 ÷ +90°C
Ingress protection degree:	IP68

18I Submersible Level Transmitter

18I series includes submersible electronic level transmitters with 4÷20mA output proportional to hydrostatic pressure detected by means of a ceramic sensor.
All 18I series versions have housing ø18mm and fixed ranges.
18I Series transmitters are used in all industrial applications to measure level of liquids in wells, chests, lakes, water treatment plants, tanks, etc.

CE

Supply:	11 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA
Measuring range:	From 0 ÷ 1 bar to 0 ÷ 100 bar
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< 0.3 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	< ± 0.01 % FS /°C
Long term stability:	< ± 0.12 % FS/year
Response time (63% FS):	Ceramic: 5 ms
Allowable de-range:	down to 2.5 times the Nominal Range
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +80°C / -40 ÷ +90°C
Ingress protection degree:	IP68

8DL Transmitter with Data Logger

Series 8DL pressure tranducers with datalogger, battery supplied, measure relative and absolute pressures, with ranges from 100 mbar up to 75 bar. Transducer's housing is manufactured in SS AISI 316 with standard process connection 1/2" G-M (other standards available).
The submersible version is suitable for the measuring of liquids' level in wells, chests and tanks with standard IP65 rating or IP68 on request, and is composed by two SS AISI 316 bodies, connected with a self supporting cable of suitable length.

CE

Supply:	Lithium Battery type AA (3.6V / 1.9Ah)
Interface:	5 wires RS 232C for connection to PC, IP65 cable. Option USB/RS232 converter
Measuring range:	From 0 ÷ 100 mbar to 0 ÷ 75 bar
Overpressure:	< 3 x FS
Total accuracy:	< ± 0.3 % FS
Resolution:	0.01 bar
Temperature zero drift:	±1%FS (-20÷50°C) for ranges > 0.4bar / ±1.2%FS (-20÷50°C) for ranges < 0.4bar
Span thermal drift:	< 0.6%FS (-20÷50°C) for ranges > 0.4bar
Protection rating:	IP65 standard, IP68 on request
Ambient / Process / Storage temperature:	-20 ÷ +50°C / -20 ÷ +50°C / -40 ÷ +90°C
Logging time:	from 1 second to 24 hours
Record time:	from 1 second to 24 hours
ROM standard capacity:	12 months with 1 measure every 15 minutes

T7I Smart Level Transmitter

T7I series includes SMART electronic transmitters with 4÷20 mA output and HART® digital communication protocol. Sensors are calibrated individually together with their own seal. Configurations and adjustments can be made locally, by means of push buttons and display, or remotely using HART® communication protocol.
Sensor remotization through cable (introduced by Valcom® in early 80's) offer superior flexibility and sensor compensation accuracy compared to metal capillary when this can be avoided.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 0,35 bar to 0 ÷ 1000 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.07 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to -40 ÷ +130°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

T7B Smart Displacer Level Transmitter

T7B series transmitters are used in all industry branches for continuous measurement of specific gravity, level and interface of liquids in open or closed tanks. Because of the adopted construction solutions, T7B allows to realize a reliable measuring system easy to install since no additional components are required.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	356÷3048 mm
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	± 0.4%FS
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Damping:	0 ÷ 60 s
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -100 ÷ +350°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing
Ingress protection degree:	IP68

T7L Smart Float Level Transmitter

T7L series includes Float Reed level transmitters. Inside the float is placed a toroidal magnet which drives, without contact, Reed contacts located inside the guide pipe. Moving along the guide pipe the float changes the reed contact status. These variations are then acquired by the electronic board and converted into a 4÷20mA + Hart® current signal.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	0.6 ÷ 10 m
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< ± 5 mm
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Minimum fluid specific gravity:	0.5 kg / dm3
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to -40 ÷ +130°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing

27L Float Level Transmitter

27L series includes Float Reed level transmitters. Inside the float is placed a toroidal magnet which drives, without contact, Reed contacts located inside the guide pipe. Moving along the guide pipe the float changes the reed contact status. These variations are then acquired by the electronic board and converted into a 4÷20mA current signal.

Supply:	2 wires: 12 ÷ 30 Vdc / 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA / 3 wires: 0 ÷ 10 Vdc or 0 ÷ 5 Vdc
Measuring range:	0.6 ÷ 10 m
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< ± 5 mm
Minimum fluid specific gravity:	0.5 kg / dm3
Long term stability:	< ± 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to -40 ÷ +130°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP67
Relative Humidity:	< 98% RH not condensing

BMS Bubbling Measurement System

BMS is a bubbling system for level detection based on the measurement of hydrostatic pressure caused by the liquid contained in the tank. The working principle is founded on the measure of the pressure value needed to maintain a constant and regular air flow through a pipe probe open in the bottom and submerged into the liquid. At any level variation of the liquid in the tank corresponds a variation of the hydrostatic pressure applied on the air outgoing from the probe pipe; these pressure variations are precisely detected by the 27M P/I converter and converted into a standard 4÷20 mA electric signal or Hart® protocol. PR3 regulator keeps constant bubbling air flow at any level value, assuring high precision measurement.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA / 4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 1 m to 0 ÷ 60 m
Max load:	550/650 Ohm @ 24 Vdc
Overpressure:	< 3 x FS
Total accuracy:	± 0.25%FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	Piezo: < ± 0.02 % FS/°C / Ceramic: < ± 0.01 % FS/°C
Long term stability:	Piezo: < ± 0.15 % FS/year / Ceramic: < ± 0.12 % FS/year
Response time (63% FS):	Piezo: 10 ms / Ceramic: 5 ms
Allowable de-range:	Piezo down to 4 times /Ceramic down to 2.5 times the Nominal Range
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +80°C / -40 ÷ +90°C
Relative Humidity:	< 98% RH not condensing

ULG Ultrasonic Level Transmitter

ULG ultrasonic transmitters offer the best in liquid level measurement in a compact simple package.
Developed using the range of narrow beam angle pulse echo transducers, ULG units are available with measurement ranges up to 25 meters with standard plastic, PTFE or stainless steel sensor faces.
- Tank level measurement
- Level measurement for aggressive fluids
- Fire protection system monitoring

Supply:	2 wires: 12 ÷ 36 Vdc
Output signal:	4 wires current 4÷20Ma + HART with optional Relay (SPDT) 30 Vdc 1A DC
Measuring range:	Fluids: up to 25 m / Solids: up to 60 m
Minimum range:	Fluids: 0,2 m / Solids: 0,4 m
Max load:	600 Ohm @ 24 Vdc
Total accuracy:	± 0,2% of Measured Distance ±0.05% of Measuring Range
Sensor material:	PTFE, INOX
Housing material:	Die cast painted Aluminum
Ambient / Process / Storage temperature:	-10 ÷ +80°C / Up to -10 ÷ +85°C / -15 ÷ +90°C
Ingress protection degree:	IP68 Sensor / IP67 Housing
Electrical connection:	2 x M20x1,5 with plastic cable gland
Relative Humidity:	< 98% RH not condensing
Ingress protection degree:	IP68

KRG Smart Radar Level Transmitter

KRG series includes radar level transmitters. Using 26GHz microwaves, the liquid reflects them back to the instrument. The travel time, proportional to the distance between the surface and the gauge, is processed by instrument electronic generating output signal.
Five different types of antenna are available:
- Cone antennas size 4 “and 2”
- Flat PTFE antennas size 4 “and 2”
- Rod PTFE antenna “size 1”

Supply:	10,5 ÷ 36 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	1 ÷ 30 m
Frequency:	26 GHz
Total accuracy:	Up to ± 2 mm
Tracking Rate:	2 m/s
Beam Angle (α):	8°<α<25° depending by the Antenna type
Response time (63% FS):	< 256 ms (Standard Hart®)
Fluid typologies:	Crude oil, Alcohol, acids, water based fuids
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to -40 ÷ +200°C / -40 ÷ +90°C
Ingress protection degree:	IP66
Relative Humidity:	< 98% RH not condensing

GMG Smart GW Radar Level Transmitter

GMG uses TDR (Time Domain Reflectometry) technology: low-energy, high-frequency electromagnetic impulses are propagated along the probe which is immerged in the liquid to be measured. GMG is equipped with single rod, wire rope or coaxial probe for continuous level measurement and point level detection in liquids and light solid, with analog and switching output.

Supply:	12 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA (4 wires)
Rope lenght:	1000 ÷ 20000 mm
Max load:	500 Ohm @24 Vdc
Current compsuntion:	<70 mA @24 Vdc
Total accuracy:	0.03 % FS
Repeatability:	<2 mm
Resolution:	<1 mm
Temperature drift:	< ± 0.2 mm/°C
Response time (63% FS):	<100 ms
Ambient / Process / Storage temperature:	-25 ÷ +80°C / -40 ÷ +150°C / -40 ÷ +85°C
Ingress protection degree:	IP68
Relative Humidity:	< 98% RH not condensing

ASL Ultrasonic Level Switch

ASL instrument is designed for marine and on-land applications for liquid detection, pump control, water ingress alarm systems, overfilling protection on liquids with or without foam. ASL works on Valcom® proprietary principle of distributed acoustic waves in a metal rod. If the rod is not covered by the liquid the acoustic waves are dispersed freely without any interference. If liquid covers the rod the emission of acoustic waves is muffled and this interference is picked up by the piezoelectric sensor and converted into an on-off signal. These instruments have no moving parts, no vibration, no optical or capacitive detectors, they are pure static instruments offering the maximum reliability.

Supply:	12 ÷ 30 Vdc
Current Output signal:	ON-OFF 5 mA \ 13 mA
Frequency Output signal:	ON-OFF 1.2 kHz \ 3.8 kHz (± 30 %)
Relay Output signal:	1 A @ 30 Vdc - Max Switching Power 30 W \ 2.5 VA
Length of probe:	Rigid up to 6 m / Flexible up to 20 m
Switching point:	10 mm from bottom of probe
Repeatability:	Vertical Mounting: <3 mm / Horizontal Mounting: <1 mm
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -200 ÷ +450°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP68
Relative Humidity:	< 98% RH not condensing

TSU Fault Monitor

TSU series galvanically isolated safety barriers are designed for connection to ON/OFF sensors (two wires) with current (5 mA / 13 mA ± 1 mA) or frequency (1,2 kHz / 3,8 kHz ± 0,2 kHz) output. Inputs are constantly monitored to reveal any possible wiring anomalies (such as short circuit, open circuit or dispersion to ground). The ON/OFF signals from the sensors are retransmitted to the output with the control signals separated for each channel. The presence of bicolour LED's in input and output circuits allows to locally monitor the status of barrier and sensors. The small size of the housing and the presence of two channels per unit offer the possibility of a high density wiring on DIN rail 35mm.

Supply:	24 Vdc/Vac
Current Input:	2 inputs from two wires ON-OFF transmitters, current(5/13 ± 1 mA)
Frequency Input:	2 inputs from two wires ON-OFF transmitters frequency(1,2/3,8 ± 0,2 kHz)
Output:	4 Open Collector NPN or TTL outputs for ON/OFF and FAULT MONITOR signals
Max voltage per channel:	U0 = 28,4 V
Max current per channel:	I0 = 96 mA
Max power per channel:	P0 = 682 mW
Max capacitance per channel:	C0 = 79 nF
Max inductance per channel:	L0 = 4 mH
Ambient Temperature:	-20 ÷ +55°C

LSG Float Level Switch

LSG is a float level switch designed for liquid level control. Typical applications are high and overfilling protection, water presence detection, high and low alarm level of liquids with or without foam. Inside the float is placed a toroidal magnet which drives, without contact, a switch located inside the guide pipe; instrument has to be supplied with a constant voltage of 24Vdc (for example by means of VALCOM® TSU barrier) in order to provide two constant current output values related to alarm thresholds (On=6mA / Off=14mA). Switch replacement can be done without dismantling instrument from the process and doesn't need any recalibration. LSG can be used also in ON/OFF mode (simple connection).

Supply:	24 Vdc stabilized
Output signal:	Current output: 6mA (ON) - 14mA (OFF) @24 Vdc or Simple contact: NO/NC
Measuring Range:	Minimum 48 mm
Repeatability:	<1 cm
Working Pressure:	Standard 10 bar - Maximum 25 bar
Ambient / Process / Storage temperature:	-35 ÷ +85°C / -40 ÷ +130°C / -35 ÷ +85°C
Ingress protection degree:	IP67
Relative Humidity:	< 98% RH not condensing

DSL Dielectric Level Switch

DSL series level switches are static sensors without moving parts, suitable for the control of all conductive and non conductive liquids. The detection of presence of liquid is not influenced neither by viscosity, density, conductivity of the fluid nor by the presence of foams. The series is studied for granting the maximum reliability together with no need of a periodic maintenance. These instruments have been developed to be used in extreme environmental conditions, as well as with corrosive fluids.

Supply:	12 ÷ 35 Vdc
Current Output signal:	ON-OFF 10mA / 20mA
Relay Output signal:	Capacity 1A @ 30Vdc; Max switching power 33W or 60VA
Repeatability:	<5 mm
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to 150°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP68
Relative Humidity:	< 98% RH not condensing

Cod. F01/F02/F03

ABS/PVC/PVDF submersible housing

Cod. 06

Housing with thermo-shrinkable sleeve protection

Cod. JBX

Plastic Junction Box

Cod. S4 + Cod. I1/I2

1” Mounting Bracket with Delrin/Moplen protection Cap and isolating ring

Cod. 05

Sliding bracket on submersible cable

Cod. PAI

Pump control and monitoring Panel

Cod. M3

Test Magnet for ASL Series

Cod. HMI

Hart and on-off data acquisition panel with alarm functions

Cod. M9

Process connection with sliding nipple for ASL Series

Cod. T2

Finned body up to 450°C for ASL Series

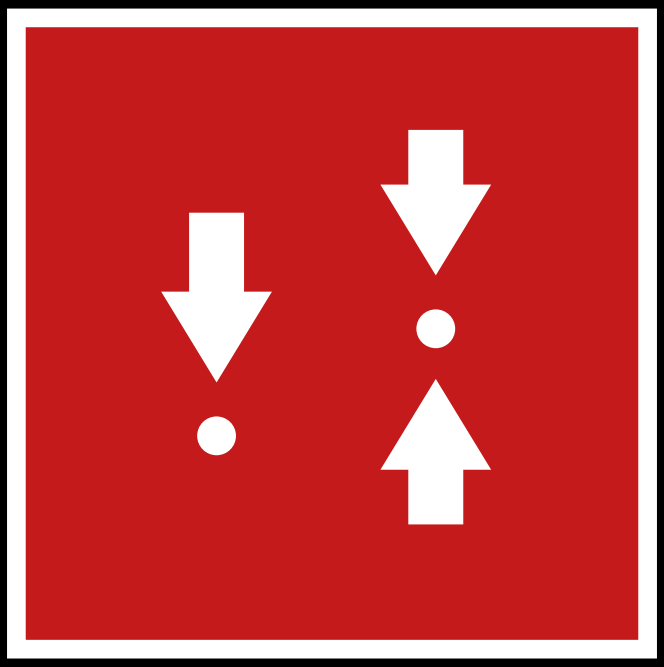
Cod. VCM

ATEX Electrical connectors

Cod. Z99

Analog Signal Converter and Trip Amplifiers


Valcom®
Since 1974



PRESSURE & DIFFERENTIAL PRESSURE

T7N Smart Pressure Transmitter

T7N series are Smart electronic transmitters with 4÷20mA+HART output. Sensors are always calibrated individually together with their own seal. These transmitters allow the measurement of pressure, vacuum and level in industrial, marine and off-shore.
Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.
The transmitters are intended for direct mounting on pipe or tank.
For remote sensor version and when remote seal and capillary are supplied, a bracket for wall or for 2" stand pipe mounting is also supplied.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 0,35 bar to 0 ÷ 1000 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.07 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing

T79 Smart Pressure Transmitter

T79 series are Smart electronic transmitters with 4÷20mA+HART output.
The design of the housing in SS AISI 316 is specially developed with only one cover, for easy wall installation or back process connection.
Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 0,35 bar to 0 ÷ 1000 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.07 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP67
Relative Humidity:	< 98% RH not condensing

T76 Mini-Smart Pressure Transmitter

T76 series includes SMART electronic transmitters featuring extremely reduced size with 4÷20mA output and HART® digital communication protocol. Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From -0 ÷ 0,35 bar to 0 ÷ 100 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.07 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP65
Relative Humidity:	< 98% RH not condensing

86A Pressure Transmitter

86A series are electronic transmitters with 4÷20mA output.
All versions allow zero and span adjustments by suitable trimmers and dip-switches located inside the housing.
The transmitters are intended for direct mounting on pipe or tank.
For remote sensor version and when remote seal and capillary are supplied, a bracket for wall or for 2" stand pipe mounting is also supplied.

Supply:	12 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA
Measuring range:	From -1 ÷ 0 bar to 0 ÷ 1000 bar
Max load:	600 Ohm @ 24 Vdc
Total accuracy:	< ± 0.25 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	Piezo: < ± 0.02 % FS/°C / Ceramic: < ± 0.01 % FS/°C
Long term stability:	Piezo: < ± 0.15 % FS/year / Ceramic: < ± 0.12 % FS/year
Response time (63% FS):	Piezo: 5 ms / Ceramic: 10 ms
Allowable de-range:	75%FS, 50%FS, 25%FS
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing

T72 Smart Pressure Transmitter

T72 series are Smart electronic transmitters with 4÷20mA output and HART® digital communication protocol.
Sensors are always calibrated individually together with their own seal.
These transmitters allow the measurement of pressure (absolute, relative or differential), vacuum and level in industrial, marine and off-shore.
Configurations and adjustments can be made remotely using HART® protocol compatible communicators.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From 0 ÷ 0,35 bar to 0 ÷ 1000 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.1 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP67
Relative Humidity:	< 98% RH not condensing

27A Pressure Transmitter

27A series includes electronic level, pressure and vacuum transmitters.
All versions have analogue electronics, small sizes (typical housing Ø 27 mm) and fixed ranges (when possible to adjust zero and span, this can be done within ± 10 %). The transmitters are, as standard, installed on and supported by the process pipe or flanged on mating flange. For remote sensor version and when remote seal and capillary are supplied, a stainless steel bracket for wall mounting is also available.

Supply:	2 wires: 11 ÷ 30 Vdc / 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA / 3 wires: 0 ÷ 5 Vdc or 0 ÷ 10 Vdc (min 30 mVdc)
Measuring range:	From -1 ÷ 0 bar to 0 ÷ 1000 bar
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< ± 0.25 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	Piezo: < ± 0.02 % FS/°C / Ceramic: < ± 0.01 % FS/°C
Long term stability:	Piezo: < ± 0.15 % FS/year / Ceramic: < ± 0.12 % FS/year
Response time (63% FS):	Piezo: 10 ms / Ceramic: 5 ms
Allowable de-range:	Piezo down to 4 times /Ceramic down to 2.5 times the Nominal Range
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP67
Relative Humidity:	< 98% RH not condensing

C08 Small Pressure Transmitter

The Flush Membrane Transmitter C08 is based on thin-film-on-steel technology and the in-house developed high performance chip electronics.
It therefore ensures a high level of accuracy over a wide temperature range and excellent long-term stability in combination with an extraordinary smooth diaphragm surface.
Typical applications are: Engine manufacturing, Machine tools, Hydraulics, Process technology, Water treatment, Food Industry, Chemical and Pharmaceutical industry

CE

Supply:	15 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA / 0 ÷ 5 Vdc / 1 ÷ 6 Vdc / 0 ÷ 10 Vdc
Measuring range:	From -0 ÷ 1 bar to 0 ÷ 100 bar
Total Error Band (-25÷+85°C) :	< ± 0.5 % FS
Accuracy @25°C:	< ± 0.4 % FS
Response time (10-90% NR):	1 ms
Long term stability:	< 0.2 % FS for year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +125°C / -40 ÷ +90°C
Construction:	Completely welded
Relative Humidity:	< 95% RH not condensing

MAN Bourdon Pressure Gauge

Entirely manufactured in stainless steel (case in 304 and pressure connection in 316), they are particulary resistant to harsh conditions of exercise and environment. They are used in chemical, petrochemical, canning food and pharmaceutical industry.
Thanks to the filling (optional) it is possible to make the gauge work with water hammers, pulsanting pressures and vibrations.
Available also for ATEX installations.

CE Ex

Measuring element:	Stainless steel seamless pipe
Measuring range:	From -1 ÷ 0 bar to 0 ÷ 250 bar
Accuracy Class:	Standard:1.6 / Up to Class 1
Temperature drift:	±0.3 %FS/10°C
Filling liquid:	Optional with Glycerin or Siliconic Oil
Temperatures with Dry execution:	Ambient: -30 +65°C / Process: -40 +180°C
Temperatures with filling:	Ambient: -5 +60°C / Process: -5 +70°C
Ingress protection degree:	IP55 / IP65 (With filling fluid)

T7D Smart Differential Pressure Transmitter

T7D series are Smart electronic differential pressure transmitters with 4÷20mA output and HART® digital communication protocol. These transmitters allow the measurement of differential pressure, level and volumetric flow. Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.
When remote seal and capillary are supplied, a bracket for wall or for 2" stand pipe mounting is also supplied.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From -0 ÷ 0,35 bar to 0 ÷ 10 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.07 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

T7K Smart Differential Pressure Transmitter

T7K series transmitters are used in industrial applications to measure differential pressures of liquids, gas and vapours, to measure relative or differential level of liquids and flow. Instrument's body is designed to sustain static pressures up to 160 / 400bar (16 / 40MPa).They can be supplied complete with seals and capillary.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From -0 ÷ 0,35 bar to 0 ÷ 400 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	±0.075 % FS in ambient conditions
Thermal Drift:	±0.1 % FS/10°C
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

T72 Smart Differential Pressure Transmitter

T72 series are Smart electronic transmitters with 4÷20mA output and HART® digital communication protocol. These transmitters allow the measurement of differential pressure level and volumetric flow.
Configurations and adjustments can be made remotely using HART® protocol compatible communicators.
For remote sensor version and when remote seal and capillary are supplied, a stainless steel bracket for wall mounting is also available.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From -0 ÷ 0,35 bar to 0 ÷ 20 bar
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	< 0.20 % FS (-25 ÷ 0°C) / < 0.1 % FS (0 ÷ 80°C)
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP67

27D Differential Electronic Pressure Transmitter

27D series includes transmitters for differential pressures and level measurement. All 27D series versions have analogue electronics, small sizes (typical housing Ø 27 mm) and fixed ranges (when possible to adjust zero and span, this can be done within ± 10 %).
The transmitters are, as standard, installed on and supported by the process pipe or flanged on mating flange. For remote sensor version and when remote seal and capillary are supplied, a stainless-steel bracket for wall mounting or for stand pipe 2” is also supplied.

Supply:	2 wires: 12 ÷ 30 Vdc / 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA / 3 wires: 0 ÷ 5 Vdc or 0 ÷ 10 Vdc (min 30 mVdc)
Measuring range:	From -0 ÷ 0,35 bar to 0 ÷ 20 bar
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< ± 0.25 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	< ± 0.02 % FS/°C
Long term stability:	< ± 0.3 % FS/year
Response time (63% FS):	5 ms
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +280°C / -40 ÷ +90°C
Ingress protection degree:	IP65 / IP67
Relative Humidity:	< 98% RH not condensing

CAP-SEP Series for Relative TX

Pressure / Level transmitters with PTFE wetted parts and Tantalum / Hastelloy C / Titanium diaphragm for service on highly aggressive fluids.

Transmitter for installation in hot and aggressive environment complete with capillary and remote seal.

Level / Pressure transmitters with plastic wetted parts, plastic rotating flange and PTFE covered Hastelloy C diaphragm

Different versions of seals, wafer type manufactured in various materials as Norsok or NACE MR 0175 compliant

CAP-SEP Series for Differential TX

Compact DP transmitter body with SS capillary armour and wafer seals.

Flanged level transmitter up to 8” / 200mm flange. Extensions length to 250 mm and Ø 73, 74, 76, 80, 96 mm available

Differential pressure transmitter with special SS AISI 316 housing with back connection, wafer remote seals and plastic protection on capillaries.

Full SS AISI 316 differential pressure transmitter for the measuring of level, with welding ring connection and flush diaphragm for application on headbox.

Cod. R7/R8

Cooling Syphon

Cod. S3

Pulsation Dampener

Cod. OV

Overpressure protection

Cod. N0/N1/N2

Welding nipple

Cod. M2

2 ways and 1 or 2 valves manifold

Cod. R4/R5

Finned extension with 4 or 11 fins

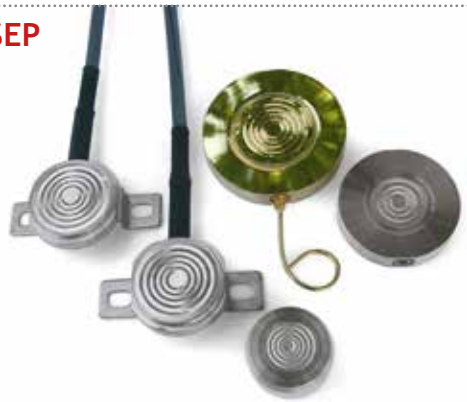
Cod. M5 / M3

Five / three ways and five /three valves manifold

Cod. ORI

Calibrated flanges

Cod. SEP



Process seals

Cod. SUN

Sunshade protection

Cod. T7V

Digital field indicator

Cod. D20

Universal local display


Valcom®
Since 1974

FLOW & DENSITY

FLOW Differential Pressure Transmitters



With Measuring Elements

ORI Series
Orifice flange assembly
in SS AISI 304/316

MUL Series
Multistage and Multihole
meter run

WED Series
Fully SS AISI 316 wedge unit
with integral manifold

PIT Series
Pitot tube with remote or integrally
mounted DP transmitter

VCO Series
V-Cone flow element
with flanged connections

ASG Magnetic Flowmeter

The ASG series flanged sensor is suitable for all the applications of fluids whose minimum conductibility is 5 mS / cm, and flow range and is available with the widest diameters range. The ASG sensor is supplied with a graphic display converter to view the electromagnetic flow measurement.
The used converter has high performances, communication buses, flexibility on the number of inputs/outputs, batch applications, data storing are required.
Flow measurement for water, wastewater and conductive fluids.

Supply:	85 ÷ 230 Vac / 48÷60 Hz
Output signal:	4 ÷ 20 mA / Optional RS-485 / Optional HART
Measuring range:	0 ÷ 12 m/s (forward and reverse) / Optional 0 ÷ 15 m/s
Nominal diameter:	DN 25 ÷ 2000 (JIS, ANSI, etc..)
Flanges material:	Carbon steel-/ SS AISI 316
Accuracy:	±0,5% reading value (0.1 ÷ 10 m/s) / Optional ±0,2%
Liquid temperature range:	-20 ÷ 160°C
Housing material:	Aluminum Alloy
Gasket material:	PTFE, PFA, Hard rubber
Display:	Graphic LCD (bacl light)
Ingress protection degree:	IP68 (Flanged sensor) / IP67 (Converter)
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +80°C / -40 ÷ +90°C
Ingress protection degree:	IP66

UPF Ultrasonic Portable Flowmeter

Ultrasonic flowmeter UPF is a next-generation instrument that meets technically advanced ergonomic standard requirements. This system is particularly advised to carry out measurements in severe operating environments and in places difficult to be reached. Ultrasonic flowmeter UPF is suitable for use in flow measuring tasks that require advanced performance, a simple installation method and an high portability for flow measurement of clean fluid in absence of bubbles and solid parts suspended.

- Portable Clamp-on versions
- Kit for energy application
- Double channel
- USB port for datas downloading

Supply:	90 ÷ 264 Vac 47÷63Hz (47÷63Hz/AC adapter included)
Measuring range:	-30 ÷ +30m/s
Process Connections:	Clamp on: DN 13 ÷ 50 mm / DN 20 ÷ 500 mm / DN 300 ÷ 5000 mm
Accuracy DN 13÷50mm:	V>1m/s ±2%, V<1m/s ±0,02m/s
Accuracy DN 50÷300mm:	V>1m/s ±1,5% V<1m/s ±0,015m/s
Accuracy DN 300÷5000mm:	V>1m/s ±1% V<1m/s ±0,01m/s
Operating temperature range:	-20 ÷ 120° C
Volumetric flow:	m3, L, ft3, bbl, gal / (s, min, h, day)
Thermal power:	W, kW, MW, BTU/h, kBTU/h, MBTU/h
Mass flow:	kg, ton, kton / (s, min, h, day)
Ingress protection degree:	IP65
Special function:	Echo viewer
Special function:	Multiple inputs for multiple measures

MFU Multiphase Flow Unit

The MFU series multiphase-flow-unit is a fluid metering system to be installed on oil production wells and is able to manage an accurate and repeatable fluid measurement for different fluid conditions combining sensor technology and a fluid dynamic validation software. MFU is consisting of:

- VEN Venturi tube on the inlet column
- T7W Oil in water measurement instrument water cut
- 3SEP® Density measurement on output column
- T7H smart transmitters
- T7HD smart transmitters
- UNIT electronic flow computing unit

Supply:	12.5 ÷ 30 Vac
Output signal:	4 ÷ 20 mA / Optional RS-485 / Optional HART
Oil / Water / Gas flow rate accuracy:	From ±2% to ±6% / From ±2% to ±6% / From ±8 to 10%
Nominal diameters:	2", 3", 4", 6", 8"
Ratings:	ANSI 300, ANSI 600 or API 3000
Wetted parts (Transmitters):	AISI 316L Nace MR0175, Inconel, Tantalum, Others on request
Wetted parts (Venturi):	AISI 4130, Duplex, Hard insert, Others on request
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to 283°C / -40 ÷ +90°C
Housing material:	SS AISI 316
Ingress protection degree:	IP67
Relative Humidity:	Up to 100% RH

MFM Mud Flow Meter

The MFM series mud-flow-meter is an innovative mud fluid metering system to be installed on oil / gas production wells. The goal of this system is to manage under increased safety the mud flow on wellheads in order to reveal Flow / Q_{MUD} / Q_{WATER} / Q_{GAS}. Sensors are installed using Hammer Wing Union in order to have a simpler installation, while Venturi tube and Dynamic Density Column are supplied with IHC or flanged connections according to pressure class. MFM is consisting of:

- MFM_{IN} mud flow meter complete with multiparametric sensors
- $T7S_{IN}$ specific gravity transmitter on inlet mud tank
- KRG_{IN} radar level transmitter on inlet mud tank
- $UNIT_{IN}$ electronic flow computing unit for mud inlet
- MFM_{OUT} mud flow meter complete with multiparametric sensors
- DDM Dynamic Density Meter complete with multiparametric sensors
- $T7S_{OUT}$ specific gravity transmitter on outlet mud tank
- KRG_{OUT} radar level transmitter on outlet mud tank
- $UNIT_{OUT}$ electronic flow computing unit

Supply:	12.5 ÷ 30 Vac
Output signal:	4 ÷ 20 mA / Optional RS-485 / Optional HART
MUD_{IN} & MUD_{OUT} / GAS_{OUT} flow rate accuracy:	< ±5% / < ±3%
Nominal diameters:	2", 3", 4", 6", 8"
Ratings:	ANSI 300, 600, 900 or API 3000, 5000, 10000
Wetted parts (Transmitters):	AISI 316L Nace MR0175, Inconel, Tantalum, Others on request
Wetted parts (Venturi):	AISI 4130, Duplex, Hard insert, Others on request
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to 283°C / -40 ÷ +90°C
Housing material:	SS AISI 316
Ingress protection degree:	IP67
Relative Humidity:	Up to 100% RH

T7S Smart Density Transmitter

T7S series are Smart electronic transmitters with 4÷20mA+HART®. These transmitters allow the measurement of specific gravity of fluids as liquids or cement slurry.
The instrument gives the specific gravity value of the product by measuring the static differential pressure between the two seals (Δp) and applying the formula ρ=Δp/d where "ρ" is the specific gravity, "Δp" is the differential pressure and "d" is the distance between the two seals.
Configurations and adjustments can be made locally by means of push buttons and display or remotely using HART® protocol compatible communicators.
A bracket for wall or for 2" stand pipe mounting is also supplied.

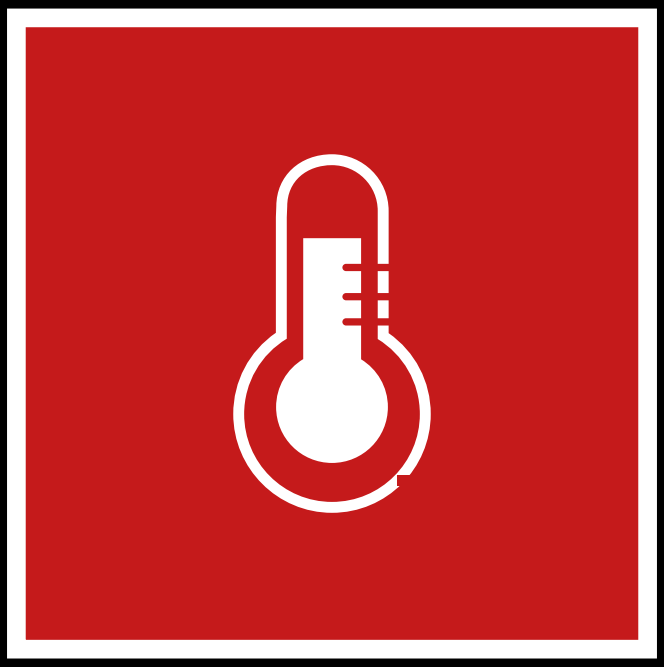
Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	From -0 ÷ 250 g/l to 0 ÷ 3000 g/l
Max load:	550 Ohm @ 24 Vdc
Total accuracy:	± 5 g/l for span of 1000 g/l
Sensitivity:	0.1 g/l
Fluid specific gravity:	0.5 kg / dm3 ÷ 5 kg / dm3
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -10 ÷ +130°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

T7B Smart Displacer Density Transmitter

T7B series transmitters are used in all industry branches for continuous measurement of specific gravity, level and interface of liquids in open or closed tanks. Because of the adopted construction solutions, T7B allows to realize a reliable measuring system easy to install since no additional components are required

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	500÷3000 g/l
Max load:	550 Ohm @ 24 Vdc
Density total accuracy:	± 3 g/l ÷ ± 5 g/l
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Damping:	0 ÷ 60 s
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -100 ÷ +350°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing


Valcom
MENU
OK



TEMPERATURE

T7T Smart Temperature Transmitter

T7T series includes SMART temperature electronic transmitters with 4÷20 mA output and HART® digital communication protocol able to accept 3 wires resistance thermometers. Total accuracy is depending on class of the sensors utilized such as class A, class B, 1/3 DIN, 1/5 DIN, etc. Digital electronics, combined with a linearization formula, makes the use of the transmitter more simple than the other classical analog ones. Temperature transmitter is designed for mounting on pipes, tanks and both for marine and land industrial plants.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA + Hart®
Measuring range:	-50 ÷ 450°C
Max load:	550 Ohm @ 24 Vdc
Accuracy Class:	Following IEC751 - Standard Class A PT100
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to 500°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

T7M Smart Multipoint Temperature Transmitter

T7M is an electronic multipoint temperature transmitter with a SMART-HART® electronic and a built-in multiplexer that can accept up to 15 resistance thermometers PT100 (3-wires) or 14 resistance thermometers plus 1 interface or level sensor. The multipoint solution offers great advantages for his mounting simplicity and for connection cables saving. Output is analog 4÷20mA+HART. In T7M series with display version the average and intermediate single temperature points can be displayed locally.
Accuracy is depending on class of the sensors utilized such as DIN A, DIN B, 1/3 DIN, 1/5 DIN and 1/10 DIN.

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA (as average of measured values) + Hart®
Measuring type:	15 PT100 or 14 PT100 sensors plus 1 float interface sensor
Max load:	550 Ohm @ 24 Vdc
Accuracy Class:	Following IEC751 - Standard Class A PT100
Measured value update frequency:	4 ÷ 20 mA + Hart®: ≈ 1 s / Hart®: ≈ 500 ms (On request)
Polling time:	4 ÷ 20 mA + Hart®: ≈ 800 ms / Hart®: ≈ 500 ms (On request)
Response time (63% FS):	< 256 ms (Standard Hart®)
Allowable de-range:	Down to 30 times the Nominal Range
Damping:	0 ÷ 60 s
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +85°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67

TRT Temperature Transmitter

The temperature transmitter mod. TRT is equipped with a PT100 probe and provides a current signal output within the 4÷20mA range (2 wires system).
It can be used in different applications such as, for example, for mounting on tank ships and in all the processes which requires an accurate temperature measurement. The instrument is also available with ATEX intrinsically safe certified electronics for installation in hazardous areas. Great advantages are given by its easy and simple installation.
Total accuracy depends on sensor class (DIN A, DIN B, 1/3 DIN, 1/5 DIN. 1/10 DIN).

CE

Supply:	12.5 ÷ 30 Vdc
Output signal:	4 ÷ 20 mA
Measuring range:	-50 ÷ 600°C
Accuracy Class:	Following IEC751 - Standard Class A PT100
Minimum span:	50°C
Linearity:	±0.1% (smart version)
Allowable de-range:	Down to 30 times the Nominal Range (smart version)
Damping:	0 ÷ 60 s (smart version)
Long term stability:	< 0.1 % FS/year
Ambient / Process / Storage temperature:	-40 ÷ +85°C / Up to 600°C / -40 ÷ +90°C
Ingress protection degree:	IP66

TWE Thermowells

A thermowell is a thermally conductive socket recommended to protect delicate instrument sensing elements against corrosive effects and permit instrument interchange or calibration check without disturbing or closing down the process. Thermowells are available for high pressures, high temperatures and high velocity applications.
Selected on the basis of pressure, temperature, flow, vibration and corrosion service parameters, basic thermowell types include: barstock execution or built-up execution, threaded, socket welded and flanged executions.

CE Ex

Standard material:	SS AISI 316 / 316L
Special materials:	Duplex, Superduplex, Hastelloy alloys, Inconel alloys, Incoloy alloys
Optional conformity:	NACE MR 0175
Tests:	Hydrostatic Test Pressure, Dye Penetrant Test, Wake Frequencies Test
Treatments:	Pickling and Passivation, Heat Treatment, Stellite coating on wetted parts
Options:	Plug and chain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OTHER MEASURES

27M Pressure to Current Converter

27M series converters/transmitters measure and convert relative (for example 3÷15 psi or 0.2÷1 bar) and differential pressures into an electrical signal within a range between 0,003 and 16 bar. The direct conversion of the pressure into an electrical signal is achieved by a minute deflection of sensor diaphragm which changes the resistance of the bridge with the applied stress; changes in pressure cause a corresponding change in the transmitter output proportionally to the bridge unbalance. A single circuit supplies power to sensor and receives its signal providing conversion into a standard 4÷20 mA 2 wires system or 3 wires for voltage output.

Supply:	2 wires: 12 ÷ 30 Vdc / 3 wires: 16 ÷ 26 Vdc
Output signal:	2 wires: 4 ÷ 20 mA / 3 wires: 0 ÷ 5 Vdc or 0 ÷ 10 Vdc (min 30 mVdc)
Measuring range:	From -1 ÷ 0 bar to 0 ÷ 35 bar
Max load:	650 Ohm @ 24 Vdc
Total accuracy:	< ± 0.25 % FS
Zero offset:	< ± 1 % FS
Temperature zero drift:	< ± 0.025 % FS /°C (-10 ÷ 60°C)
Span thermal drift:	Piezo: < ± 0.02 % FS/°C / Ceramic: < ± 0.01 % FS/°C
Long term stability:	Piezo: < ± 0.15 % FS/year / Ceramic: < ± 0.12 % FS/year
Response time (63% FS):	Piezo: 10 ms / Ceramic: 5 ms
Allowable de-range:	Piezo down to 4 times /Ceramic down to 2.5 times the Nominal Range
Ambient / Process / Storage temperature:	-40 ÷ +85°C / -40 ÷ +85°C / -40 ÷ +90°C

PC3-5-8 Pressure to Current Converter

These instruments are meant for the conversion of a standard direct current signal into a standard pneumatic signal, for the change-over from electrical controllers to pneumatic control valves, or from electrical measuring system to pneumatic controllers. They are featured by particularly compact design, good dinamic response, insensitivity to mechanic vibrations, low maintenance & low consumption, high reliability and an adjustable output measuring span.

Input:	4÷20 mA; 0÷20 mA; 1÷5 V; 1÷10V; 0÷10 V
Output:	3÷15 psi (0.2÷1 bar); 2÷20 psi (0.14÷14 bar); 4÷30 psi (0.3÷2 bar); 15÷3 psi (1÷0.2 bar); 0.5÷8 bar
Linearity error:	< ± 1 % FS
Hysteresis error:	< ± 0.5 % FS
Repeatability error:	< ± 0.2 % FS
Air consumption:	0,15 Nm^3/h
Air delivery:	2,6 Nm^3/h
Housing material:	ABS Tecnopolimer, 10% fiber glass stiffened
Mounting:	On 35 mm wide rail
Pneumatic connections:	Pipe fitting for tube 4x1 (outer diam. 6mm)
Electrical connections:	Terminal for 2 wires connection. Ø 0,5..1,5 mm
Ambient / Process / Storage temperature:	-20 ÷ +70°C / -20 ÷ +70°C / -30 ÷ +80°C

T7V Digital Field Indicator

T7V series includes 4÷20mA loop powered field digital indicators for ATEX Ex ia or Ex n applications and non ATEX application. Configuration and calibration are performed locally through the use of the buttons and the display.
All of the standard industrial and marine field measuring units are available (level, ullage, volume, pressure, flow, temperature, density, consistency etc. and user-defined units inserted by display).

Supply:	24 Vdc loop powered
Input signal:	4÷20 mA
Total accuracy:	< ± 0.1 % reading value
Zero offset:	< ± 1 % FS
Long term stability:	< ± 0.02 % FS/year
Ambient / Storage temperature:	-40 ÷ +85°C / -40 ÷ +90°C
Ingress protection degree:	IP66 / IP67
Relative Humidity:	< 98% RH not condensing

OMD Oil Mist detector

OMD is an atmospheric oil mist detection instrument for industrial applications, developed for installation in machinery and pump rooms. The OMD detector is an independent measuring and transmitting system with 4÷20mA+HART® and photorelays output, proportional to the density of oil mist in the sampled air.
OMD oil mist measuring is based on the physical principle of optical scattering. Infrared light emitted from a LED is received from two photodiodes for measure and reference purpose; by the comparison between the photodiodes output, the presence of oil mist can be detected. The typical flammability level of the oil mist is 50mg/l; the alarm level is set to 2.5% of lower flammability level and is calibrated to 1.2mg/l. The detector must be calibrated by the manufacturer with a certified oil mist generator, as stated by IMO recommendations. OMD is based on a digital electronics for signal analysis, including fault detection and photodiodes degrading monitoring system.

Supply:	24 Vdc ± 20%
Output signal:	4÷20 mA + HART®
Total accuracy:	< ± 0.2 mg/l
Detectable particle diameter:	0.4 ÷ 10 µm
Oil mist density measuring field:	0 ÷ 2 mg/l
Process / Storage temperature:	-20 ÷ +70 °C / -40 ÷ 75 °C
Relative Humidity:	< 98% RH not condensing

HMI Monitoring Touch Panel

The touch panel HMI device is used to monitor the variables detected by HART transmitters. The most typical application is the level monitoring of tanks for industrial applications that require a dislocated control for their cisterns.
The HMI devices are used for monitoring and alarms management using the HART® communication protocol. It is possible to connect to the system up to 30 HART® compatible transmitters on two buses in multi-drop mode, while in mixed mode 30 HART® transmitters and 12 on/off switches (16 in the only On/Off version).

CE

Supply:	16 ÷ 32 Vdc / I=0.7 ÷ 1.5 A
Processor:	AMD Geode LX, 500MHz (LX800)
Total accuracy:	< ± 0.1 % reading value
RAM Memory:	256 MB SDRAM
Memory:	4 GB SSD Disk Compact flash
GPIO:	12 Input - (16 Input in the only On/Off version)
HART:	2 buses, maximum 30 sensors
RS232 / RS485:	Optional Output
MODBUS:	RS485, TCP/IP, UDP/IP
Ingress protection degree:	IP45 front
Operating System:	Microsoft® Windows® XP
Pre-Installed:	Valcom® Hart Server, HMI Software 2.0 Rev8.2
Ambient / Process / Storage temperature:	+5 ÷ +60°C / -20 ÷ +75°C

PAI Monitoring Panel

PAI series includes indicating general purpose panels of great accuracy and versatility, typical for the visualization of the desired field variables. According to requirements, it is possible to set up to 4 alarm thresholds directly connected to output relays, to visualize the fluid volume (more than pressure and level) dependently from the shape of the tank, and the availability of digital outputs with the most common industrial communication protocols.
PAI series indicator panels together with Valcom® level transmitters 27 series or similar, are typically used to visualize the level of tanks, to indicate the minimum or maximum alarm level of a tank, to operate pumps start, stop and rotation, to indicate the volume of a product contained in a tank and more.

CE

Supply:	24 Vdc, 24 Vac, 115 Vac, 230 Vac
Output:	24 Vdc + Loop 4 ÷ 20mA or 0 ÷ 10VDC + Optional Relays
Size dimensions (version 1 display IP56):	L210 H150 W150
Size dimensions (version up to 4 displays IP65):	L310 H425 W160
Operating temperature range:	-10 ÷ 50°C
Display:	5 digits + sign
Maximum range:	± 99999
Average conversion time:	250 ms
Resolution:	± 20000 points
Optional volume indication:	Up to 320 segments
Assembly:	Up to 4 displays per panel

A2X Multifunction process indicator

The process indicators A2X series are configurable microprocessor devices, with analog input selectable via terminal block connection for measurements in mA or Vdc. Maximum display scale ±99999 with programmable reading scale and decimal point by means of four keys keypad and seven-segment display (character height 12.5mm). Start and end of scale calibration in self-learning mode through two external digital inputs and Loop interruption monitoring with visual indicator and output override (for 4÷20 mA signals) are only some of the features.

CE

Supply:	24, 110, 220 Vac, 24 Vdc
Output:	24 Vdc + Loop 4 ÷ 20mA or 0 ÷ 10VDC + Optional Relays
Alarm:	Eight types of alarm function (minimum, maximum, window, hysteresis)
Size dimensions for panel mounting:	DIN 96x48 mm
Operating temperature range:	-10 ÷ 50°C
Display:	5 digits + sign
Programming:	Simple programming via keypad with four keys
Maximum range:	± 99999
Average conversion time:	250 ms
Resolution:	± 20000 points
Optional volume indication:	Up to 320 segments
Linearization option:	Provision for entering 20 linearization segments
Linearization option:	+5 ÷ +60°C / -20 ÷ +75°C

VHS Valcom Hart Server

Valcom® HART® Server is an application software that allows the user to access the process and diagnostic data available on HART® field transmitters. It has been developed with the HART® (FieldComm Group™) protocol.
Valcom® HART® Server can be used with any HART® instruments of any manufacturer and the read data from the field are easily accessible by the operator.
With the Valcom® HART® Server is supplied an interface that allows the management of the whole instrumentation parameters as well as the recording of the measure with the integrated Data Logger feature.

CE

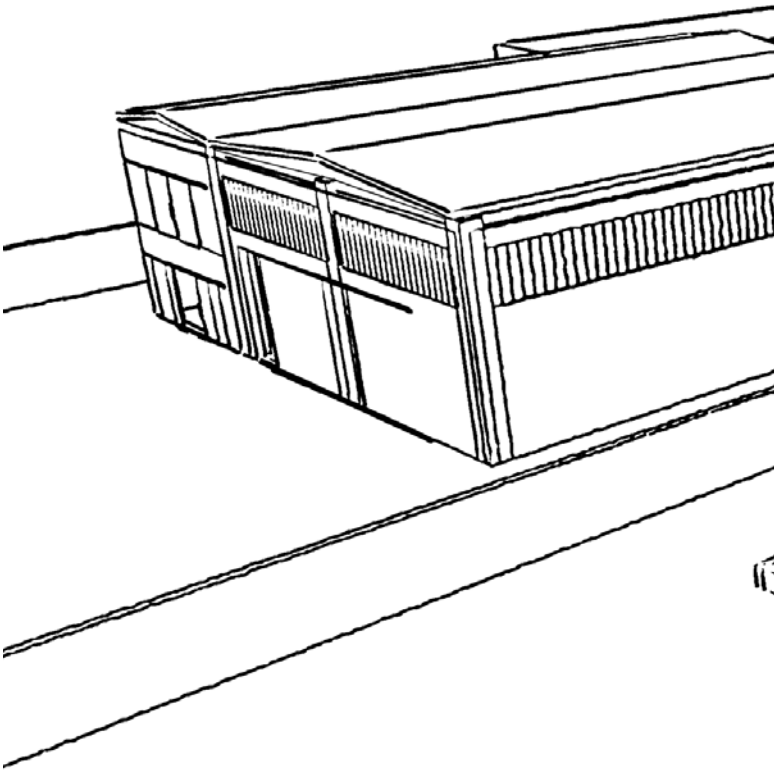
Supported Systems:	Microsoft Windows (from XP up to version 10)
RAM Memory:	Minimum Version 4.0
USB Interface:	HART® USB or HART® RS232
Supported HART® Instruments:	15 Sensors for each Bus
Functions:	Set Zero, Set 4÷20 mA Span, Damping Value, PV measure Unit, Set Alarm Mode, Loop Test, DAC Trim
Main Features:	Transmitter TAG, Polling Address and ID direct configuration feature, Quality of transmission diagnostics, Parallel displayed in real-time all the data from the transmitters connected to each loop, Data Logger feature to record the data
Other Features:	Dedicated Valcom® transmitter windows, with specific command implemented for every series of instruments, Universal windows to be used with any HART® transmitter, from any manufacturer, Display the table of the process variables (PV, SV, TV, QV) with relative measure units, TAG and description, Ability to send HART® specific commands

Valcom®
Since 1974

Founded in Milan in 1974, Valcom® started with the designing, developing and manufacturing of measurement and control instruments with specific know-how in the Pulp & Paper Industry where the patented ET connection became soon an indisputable trademark, internationally recognized. In the 80s the development towards a Smart electronic was enforced and as a result Valcom® introduced the SENIC version as a historical milestone in the remote field measuring of Pressure, relying on modular composition between transmitter head and various type of sensors, suitable for all Process Industries purposes.

The continuous efforts in researching together with a favorable economical situation made Valcom® significantly enter the Marine business in the Early 90s, with perfect selection of the suitable materials for sea-type and offshore applications, expanding clients portfolio from domestic to all across Europe in the time of a few years.

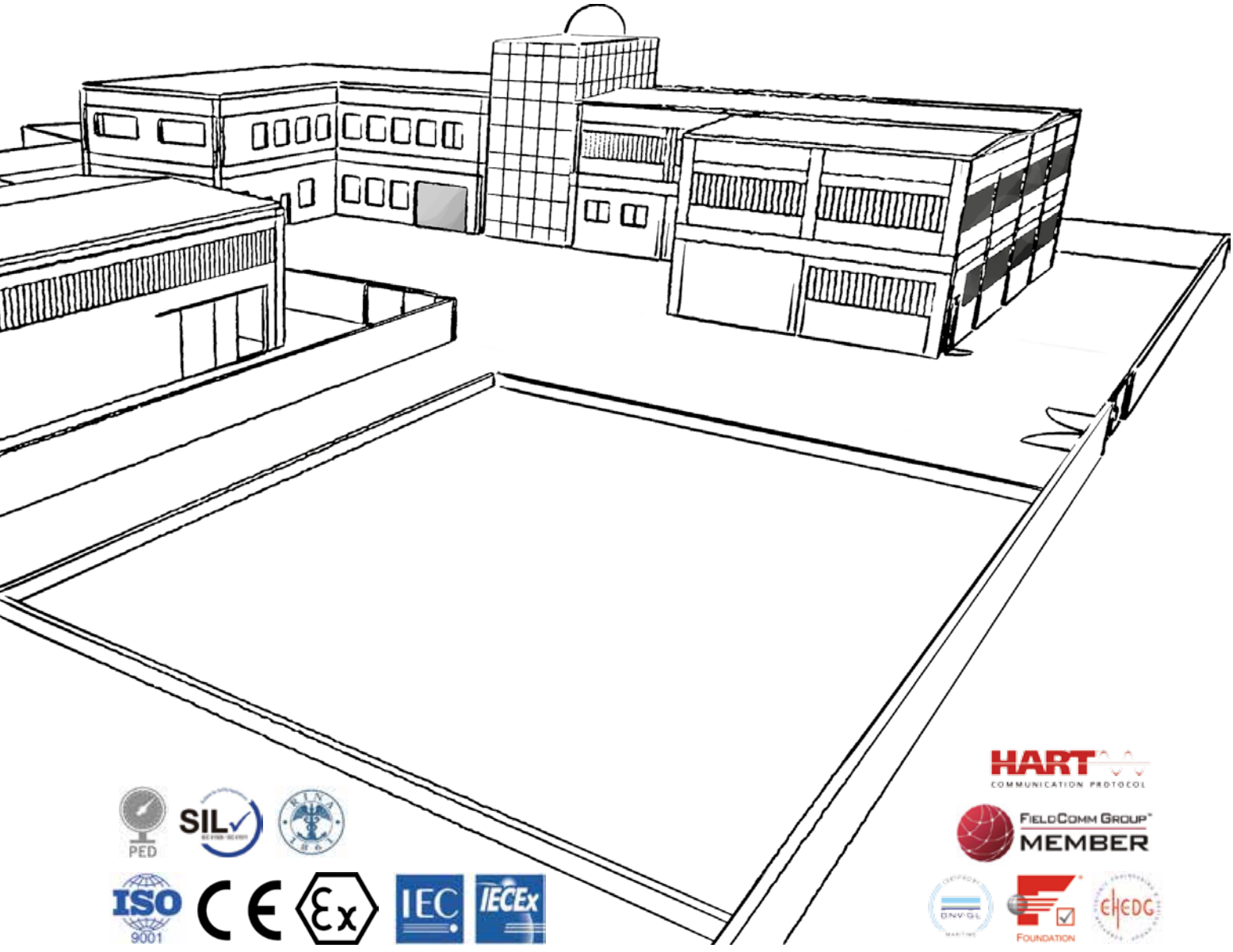
Today VALCOM® engineers and manufactures instrumentation for various industrial sectors: Pulp & Paper, Marine, Water Food & Beverages, Chemical & Pharmaceutical. ISO, ATEX, PED & SIL certifications, together with latest compliance to Marine Standards and Type Approvals, guarantee the products to be compliant with the up-to-date technical standards.



TERRANOVA®

THE PROCESS INSTRUMENTATION GROUP

TERRANOVA® Process Instrumentation Group gathers the oldest and most historical Italian Brands of Process Instrumentation: Spriano® (1923), Valcom® (1974) and Mec-Rela® (1976). New Technologies are developed in venture with the share held 3-Fase Technological Platform (1992), in participation with the University of Rome, La Sapienza. Our Mission is to present a great portfolio of experiences and solutions for all Process Industries with the quality, the creativity and the excellence that the Italian manufacture has always demonstrated in the years.



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TERRANOVA®
THE PROCESS INSTRUMENTATION GROUP

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