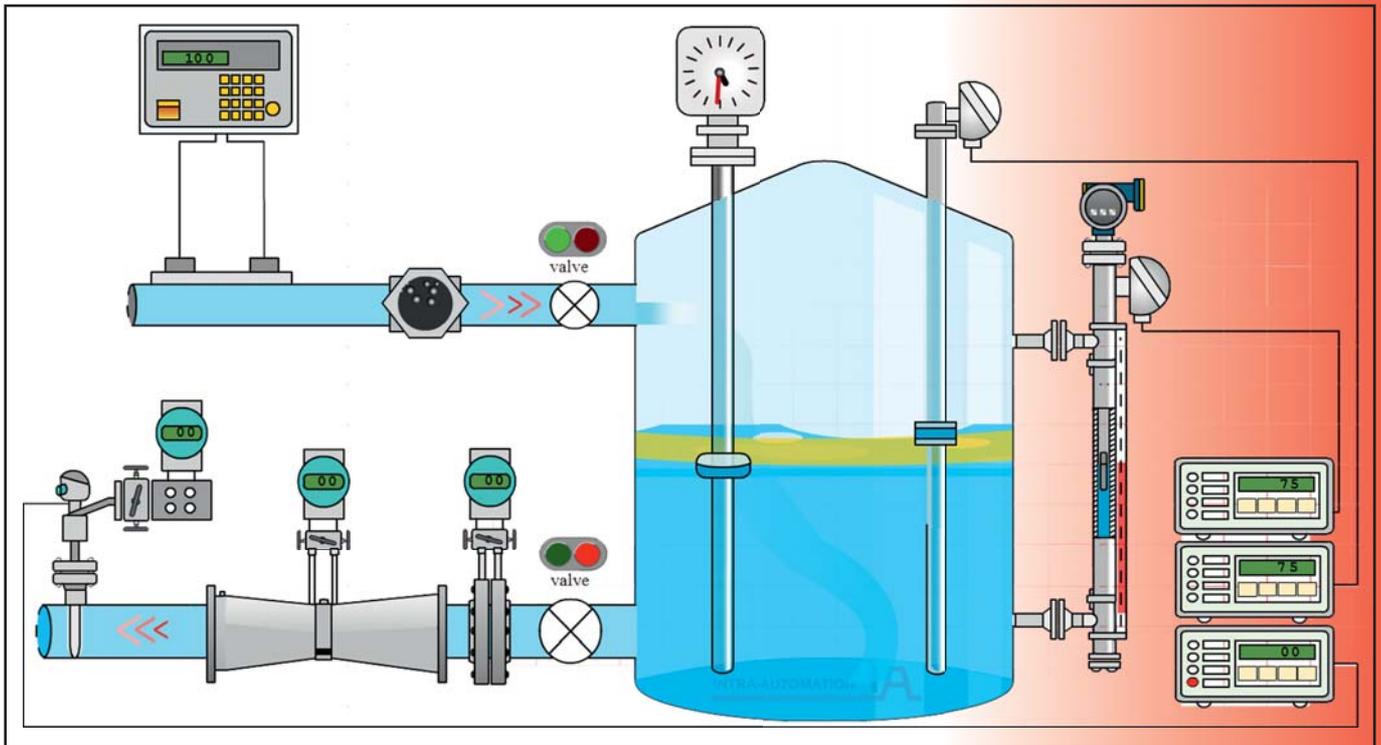


# INTRA-AUTOMATION IA

The Expert in  
Level and Flow



Measuring instruments successfully in use in 55 countries  
Quality and reliability since 1977



Intra-Automation  
General Overview Catalogue  
Printed 2013  
Printing errors and technical changes reserved



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## Itabar-Flow-Sensors

The Itabar flow sensors make it possible to measure the movement of gases, steam and liquids.

The sensor is distinguished by the following major engineering and applications features:

- ◆ Suitable for measuring the flow of liquid and gaseous media
- ◆ Pipe diameters from 15 (1/2") to 12000 mm (40')
- ◆ Materials: 316L / TP317LN / Hastelloy / Inconel / Titanium / Monel / Duplex / 314 / PVDF / A335 Gr. P1 / A335 Gr. P91
- ◆ Low assembly cost due to simple installation concept
- ◆ Excellent long-term accuracy
- ◆ Tested for suitability and approved for use in plants requiring certification as per editions 13 and 17 of the Federal Pollution Protection Act and German Federal Air Quality Maintenance Standards; Inspection report no. 936/808008 + 936/8060114, issued by "TÜV Rheinland" technical inspectorate
- ◆ All pressure ranges
- ◆ Low pressure losses in comparison with orifice plates (energy savings)
- ◆ No moving parts
- ◆ Existing pipe does not need to be cut
- ◆ Accuracy  $\pm 1\%$  of measured value
- ◆ The measurement transmitter can be mounted directly, eliminating threaded fittings and pressure tap piping
- ◆ FloTap designs can be installed and removed under pressure (i.e. for cleaning)
- ◆ Insensitively to water condensation and contamination
- ◆ Bi-directional measurement possible
- ◆ Operation temperatures:  $-100^{\circ}\text{C}$  to  $+1200^{\circ}\text{C}$  ( $-148^{\circ}\text{F}$  to  $+2192^{\circ}\text{F}$ )
- ◆ Operating pressure: 0 to 420 bar (up to 6091 psi)
- ◆ Volumetric flue gas measurement for stack gas scrubber plants; type IBF-100 sensors do not need to be removed from the stack for cleaning; stack diameter up to 12000 mm (472,44")
- ◆ Pipe can be round or rectangular



### Itabar-Flow-Sensors type: IBF-100 Stack Gas Measurement

Special design for stack gas volumetric measurement.

The IBF-100 flow sensor was developed especially for stack gas measurements. This flow sensor is engineered to be accessible from both ends so that mechanical cleaning can be undertaken if necessary without having to withdraw the sensor from the sleeve or the stack. This design offers major benefits at pipe diameters of 600 mm (23,62 inch) and more.

#### **German Federal Air Quality Maintenance Standards**

Tested for suitability and approved for use in plants requiring certification as per Ed. 13 and 17 of the Federal Pollution Protection Act, Inspection Report No. 936/808008, issued by the TÜV Rheinland Technical Inspectorate.



## Itabar-Flow-Sensors type: IBFD

### Version for saturated and superheated steam

ITABAR type: IBFD flow sensors for saturated steam and superheated steam have proven their qualities in all areas of power generation and industrial and process technologies. In order to guarantee the greatest possible operational safety, ITABAR sensors are manufactured and tested in accordance with the pressure-device guidelines and/or the ASME Boiler & Pressure Vessels Code.



#### Special features:

- ◆ Simple assembly; existing pipe needs not to be cut.
- ◆ With local differential pressure display or electr. differential pressure transmitter for tele-monitoring the flow values
- ◆ Extremely low persistent pressure loss / lower energy cost (appr. 10 % of differential pressure)
- ◆ High long-term accuracy as the models are almost wear-free
- ◆ Insensitive against pollutions
- ◆ TÜV Cert HP0 (TRB200), TRD 110
- ◆ PED 97/23/EG

#### Technical specifications:

- ◆ Standard materials: 316L / A335 Gr. P1 / A335 Gr. P11 / A335 Gr. P22 / A335 Gr. P31
- ◆ Pipe diameters:
  - 40...100 mm (IBFD-20/-21)
  - 100...600 mm (IBFD-26/26/35/36, HT / IBFD-HTG)
- ◆ Operating conditions: IBFD-HT / HTG: 160 bar @ 590 °C (2320 psi @ 1094°F)
- ◆ Accuracy:  $\pm 1$  % of meas. value
- ◆ Repeatability:  $\pm 0,1$  %
- ◆ flanged design: IBFD/IBFD-HT
- ◆ welded design: IBFD-HTG
- ◆ Flange mounted condensate pots are available with a combination shut-off-valve and condensate pot.

## Air Purge Unit LSP compact type EJJ

The Air Purge Unit is distinguished by the following major engineering and applications features:

- ◆ easy handling, mounting
- ◆ easy installation (small number of components)
- ◆ easy triggering

In order to achieve an optimal measurement result in the case of flow measurement of impure media, until now, the flow sensor had to be pulled out and cleaned in repeated time intervals or as a second option a more complicated air purge unit had to be installed.

The Air Purge Unit EJJ-compact is very trouble-free and easy to install because of its compact construction (small number of components – see picture).

Rendering possible the avoidance of complicated control panel assembly and the reduction of possible stock keeping of spare parts.

The EJJ-compact basically is a 2/2-way directly controlled valve type. That is why the EJJ-compact can be triggered by the customer through relays or SPS.

Furthermore, the EJJ triggering can be realized through the according option of the Digiflow (page20). Then the purge cycle time, clean time and settle time can be freely programmed according to the process. Simultaneously the Digiflow saves the last measured value prior to the air purging.





## Orifice Assemblies

With an orifice, the flow in a pipe can be measured according to the differential pressure principle. To measure, a differential pressure measurement device is needed, as well as knowledge of the fluid properties (Viscosity, density, and isentropic exponent).

### Orifice Plate BLS-100



- ◆ Applicable for universal flow conditions
- ◆ Low cost and high reliability

### Orifice Plate with Integral Block BLS-200



- ◆ For high temperature and high pressure
- ◆ Easy to remove and to replace
- ◆ Calibrated burr with sharp edge, free from burrs

### Orifice Plate with Ring BLS-250



- ◆ For flow measurement in small and medium sized pipes
- ◆ For low pressure

### Orifice Flange Assembly BLS-300



- ◆ Used in combination with orifice plates
- ◆ Applicable for almost all fluids

### Measuring Section with Orifice MBL-500



- ◆ Factory calibration
- ◆ Simple installation

All presented orifice instruments are available in C.S., SUS etc.  
Other materials on request!



## Sight Glass

Sight glasses find their application where flow has to be observed directly. Different designs fulfil different functions and are made for different operational conditions.

### Flapper Sight Glass



- ◆ Used for observing the state of fluid flow depending on opening & closing of the flapper on fluid flow.

### Ball Sight Glass



- ◆ Used for observing the fluid flow with common flow velocity by the motion of balls within the screen

### Ring Ball Sight Glass



- ◆ Used for observing the fluid flow with rapid flow velocity by the motion of balls within the screen.

### Lantern Sight Glass



- ◆ Used for observing the state of fluid flow regarding flow direction. It can be used as a calibration port.

### High Pressure Sight Glass

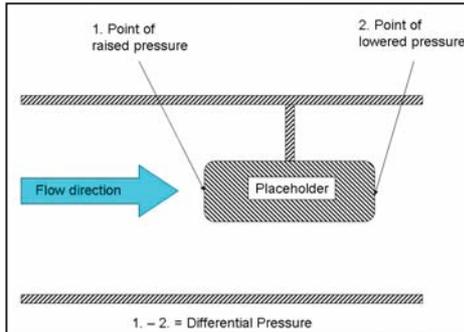


- ◆ Used for high pressure and high temperature.

All Sight Glasses are available in C.S., SUS, etc.  
Other materials on request.



## Flow Sensors working acc. to the differential pressure principle



Once an object is brought into a laminar flowing fluid inside a pipe, the fluid will dam up in front of the object, which generates a raise of pressure. Passing the object the fluid gets accelerated due to the smaller pipe cross section. This acceleration generates a pressure drop on the backside of the object. As all operational conditions at the place of measurement are known, the volume of flow can be calculated by using the difference of the two pressures. D.P. flow elements are Itabar-Flow-Sensors, Orifices and:

### Integral Orifice



- ◆ Small pipe diameters
- ◆ High precision
- ◆ With differential pressure transmitter
- ◆ Easy installation / simple maintenance

### Wedge Meter



- ◆ Suitable for a wide Reynolds range of flow measurement, for measuring clean and non-clean fluids such as slurries. With shorter lengths of straight pipe for upstream & downstream compared to other fluid meter with excellent repeatability and accuracy. Wedge tube can be manufactured according to end user's specification.

### Venturi with flanged process connection



- ◆ Slurry fluids, viscous fluids, low temperature
- ◆ Saturated or superheated steam

### Cone Flow Meter



- ◆ A new concept of flow measurement by differential pressure principle. It eliminates the weak points of orifice plate & Vortex flow meter.
- ◆ Turn down ratio 1 : 10

### Venturi



- ◆ Used for flow measurement when the most important point is to keep the permanent pressure loss on a minimum. Known for a long life span.

### Flow Nozzle

All differential pressure instruments are available in C.S., Stainless Steel, Alloy Steel and Titanium. Other materials on request.



## IS210 Clamp-on Ultrasonic Flow Meters

IS210 transit time flow meter utilizes two transducers that function as both ultrasonic transmitters and receivers. The transducers are clamped on the outside of a closed pipe at a specific distance from each other. When the flow meter works, the two transducers transmit and receive ultrasonic signals amplified by multi beam which travels firstly downstream and then upstream. Because ultrasonic sound travels faster downstream than upstream, there will be a difference of time of flight. When the flow is still, the time difference is zero. Therefore, as long as you know the time of flight both downstream and upstream, we can work out the time difference, and then the flow velocity ( $V$ ) and flow volume ( $Q$ ) can be calculated.

Intra-Automation offers Ultrasonic Flow Meters of different versions:

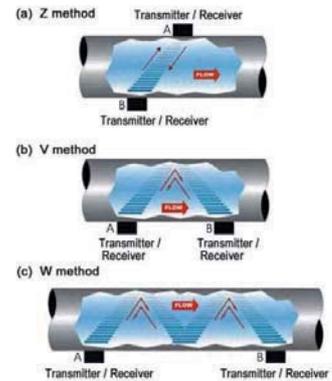


Figure 1

### IS210-S: Version for fixed installation

- ◆ Non-invasive clamp-on transducers
- ◆ Bi-directional flow metering possible
- ◆ Positive, negative and cumulating flow metering possible
- ◆ Ex-Version available
- ◆ Pipe sizes: 12...4570 mm
- ◆ Temperature range: -40...+250 °C
- ◆ Up to 8 GB Meas. value memory possible (SD-card)
- ◆ Simple use and fast installation



### IS210-P: Portable version

- ◆ Advanced DSP and Multipuls-Technology
- ◆ 40-hours-Battery (rechargeable)
- ◆ Backlit 4-line display integrated into a rugged, water tight housing
- ◆ Cost-effective and versatile applicable
- ◆ Supports SD-Card-Memory. (Capacity up to 8 GB)
- ◆ Works reliably with clean and low contaminated fluids.
- ◆ Light-weight and easy to handle housing.
- ◆ 4...20 mA, OCT Impulse (Flow velocity or total flow)-output as standard-output
- ◆ Optional heat flow BTU-function, two temperature-transmitters 4...20 mA for up- and downstream-temperature indication and thermal flow-, total thermal flow indication.





**ITABAR**  
Flow Sensor



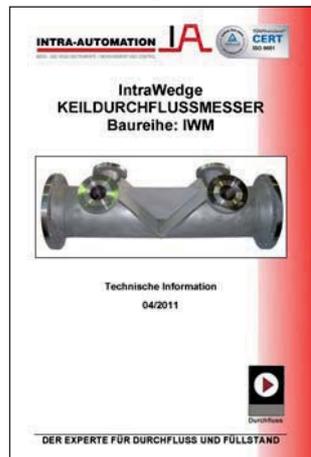
**IFN**  
Flow Nozzle



**ICM**  
Cone Flow Meter



**IWM**  
Wedge Meter



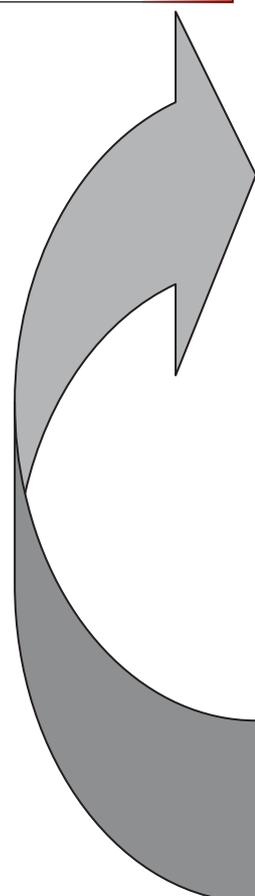
**Orifice Assembly**



**IVT**  
Venturi



**Orifice Flow Meter**

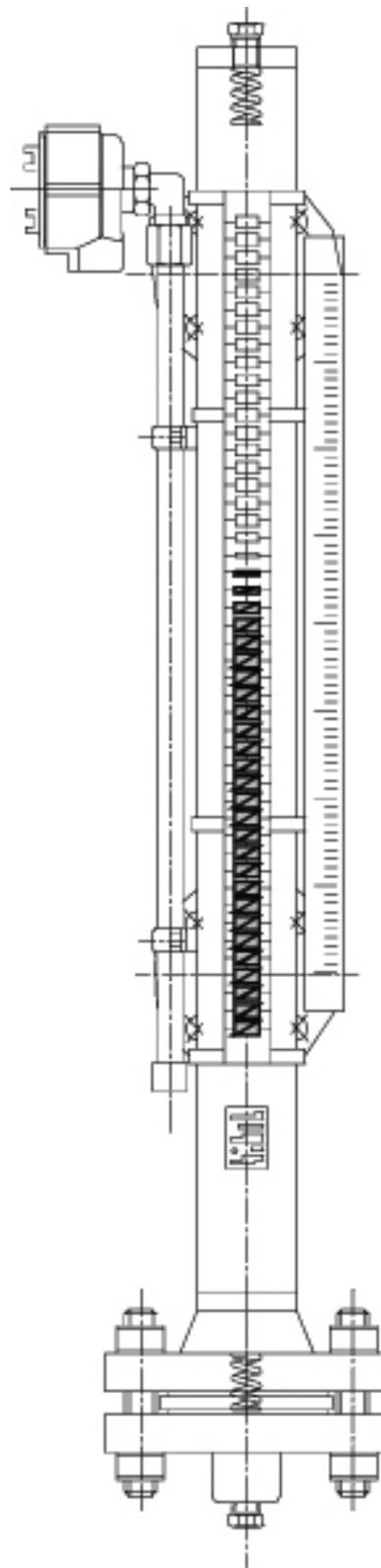




## Magnetically Controlled Liquid Level Indicator ITA

Magnetically controlled liquid level indicators type ITA are used for the following level measurement tasks:

- ◆ Indication of the liquid level for corrosive, toxic or flammable media with separation between measurement and display compartments.
- ◆ Magnetic transmission of the liquid level from the vessel to the gauge is continuous and resistant to vibration.
- ◆ Can be used to measure level both in atmospheric and pressurized vessels.
- ◆ Perfect readability of the display elements even at greater distance and after several years, since there is no clouding by product contamination resulting from exposure to ultraviolet light.
- ◆ Simple, unbreakable and maintenance-free design
- ◆ Great reliability even at high temperatures and pressures
- ◆ Alarm contacts can be attached at any point along the gauge.
- ◆ Measuring scale of the display can be set at customer's request on volume or height.
- ◆ Floats without gas pre-load as of a minimum density of  $0,35 \text{ kg/dm}^3$
- ◆ Maximum process pressure for sealed floats: 320 bar; at higher pressures the float is provided with pressure relief (not to be used with condensing media)
- ◆ Separation of the measurement from the display compartment eliminates the hazards associated with glass tube breakage.
- ◆ The float principle minimizes the influences of changes in density on measurement accuracy.
- ◆ Display of fill level
- ◆ Monitoring the extreme fill level by alarm contacts (also as Ex-Version)
- ◆ Transfer of the fill level using transmitters (4...20 mA Hart / Profibus PA) to electrical indicator units (also as Ex-Version)
- ◆ Interface level measurement.



## Magnetically Controlled Liquid Level Indicator ITA

### Overview standard designs:

Liquid level indicators for low and medium pressures, Series: ITA-3/6/7

- ◆ Wetted components made of corrosion-resistant stainless steel 316L as a standard.
- ◆ Pressure ranges: PN16, PN40, PN64/ANSI 150#, 300#, 400#, 600#)
- ◆ DIN- or ANSI-connection flanges
- ◆ Float design exactly adapted to the operation conditions
- ◆ Versions up to 12 m length (two sections)
- ◆ Special materials for special application parameters:
  - Titanium, Hastelloy C4, Inconel 625, TP317 LN, Monel
  - PTFE-lining (only PN16)
- ◆ Accessories: Drain- and vent-flanges, valves, reducers etc...
- ◆ types ITA-3.0/6.0/7.0 with CS-flanges.



### Indication rails:

- ◆ Aluminium and stainless steel indication rails for media up to 752°F
- ◆ Makrolon indication rails for media up to 248°F



### Switches and alarm contacts:

- ◆ Attached with a pipe clamp for positioning at any desired height
- ◆ Connection via 3-wire cable or terminals in the housing
- ◆ SPDP contact can be wired for either NC or NO function
- ◆ Ex-Version (EEx i / EEx d)
- ◆ various types; changeover contact, proximity switch
- ◆ up to +752°C fluid temperature

### Liquid level indicators made of plastics

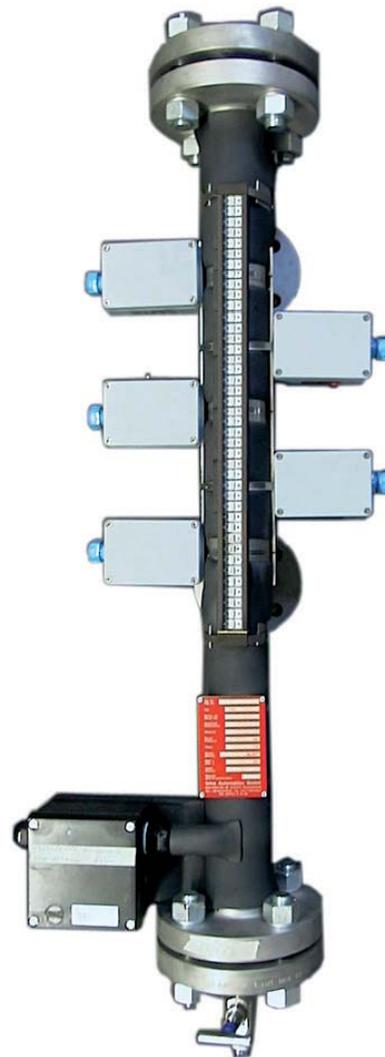
#### Series ITA-8

- ◆ It is hardly impossible to think of pipe and vessel engineering without the use of modern plastics.
- ◆ In utility and waste water applications and when handling corrosive media, liquid level gauges made of plastics replace costly solutions like metal tube linings or ceramic or glass tubes
- ◆ materials: PVC (Polyvinylchloride), PP (Polypropylene), PVDF (Polyvinylidene fluoride)
- ◆ Connection flange DN15/PN6 to DN32/PN6

### Liquid level indicators – Power plant technology

#### Series ITA-10/11/12/13

- ◆ Applications in the chemical, industrial processes and offshore industry
- ◆ sealed floats up to 320 bar (4641 psi)
- ◆ Minimum operating density 0,42 kg/dm<sup>3</sup>
- ◆ Special materials for special conditions: Titanium, Hastelloy C4, Inconel 625, 1.4539
- ◆ pressure ranges: PN100, PN160, PN250, PN320
- ◆ DIN- or ANSI-connection flanges
- ◆ Accessories: Drain- and vent-flanges, valves, reducers etc...





## Magnetically Controlled Liquid Level Indicator ITA

### Special designs:

- ◆ Two-part-design, on client's request or at measuring length more than 6000 mm
- ◆ Steam jacket with threaded or flanged connectors to heat the indicator with steam, e.g. when handling viscous media
- ◆ Liquid level indicator with Armaflex insulation. Reliable insulation in a range from -328 to +221°F, can be used in refrigeration plants, for ammonia.
- ◆ PTFE-lining for use with corrosive media
- ◆ Bureau Veritas, German Lloyd, DNV, Lloyds Register
- ◆ Overfill monitor for containers e.g. used to store flammable and non-flammable, water polluting liquids
- ◆ ITA-Cryo-design for refrigerants
- ◆ Special versions to fulfil requirements of client's operations.

### Supplementary equipment:

- ◆ Heating tape as frost protection on outdoor applications
- ◆ Vent and drain valves, flanged or threaded
- ◆ Scales with graduations on client's request
- ◆ Ceramic tape

### Approvals/Certificates:

- ◆ Material certificates 3.1 acc. DIN EN 10204
- ◆ General construction surveillance approval acc. Article 19 Water Resources Management Act (WHG) and Article 12 or the Flammable Liquids Code (VbF), Approved for Zone 0
- ◆ Approved water level controller VdTÜV / WR91-352
- ◆ German Lloyd
- ◆ X-ray test acc. DIN 54111 T1
- ◆ Dye penetrant test acc. DIN 54152
- ◆ Approvals acc. NACE, TRD, design pressure test by German TÜV
- ◆ Pressure Equipment Directive PED
- ◆ IBR-certificate available
- ◆ Ex-Version available

## Guided Wave Radar (GWR)

Intra-Automation combines the principle of conventional magnet flap indicator type ITA with the guided wave radar level transmitter for redundant measurement.

### Features:

- ◆ Measuring lengths up to 18 m (59,06 ft)
- ◆ Pressure ratings up to 320 bar (4641 psi)
- ◆ Temperature range up to 400 °C (752°F)
- ◆ Very high accuracy (mm)
- ◆ Installation independent from heater coils or agitators in the tank
- ◆ Insensitive against process conditions such as vibrations or extreme steam generation
- ◆ To be used in critical applications
- ◆ Redundant measuring of the actual level
- ◆ Precise visual measurement with highly exact sensor
- ◆ Hart, Profibus PA and Foundation Fieldbus available
- ◆ Digital on-site-indication available
- ◆ Ex-versions (EEx d, EEx ia) available



## Maglink Liquid Level Measurement System for Tanks

The „MAGLINK“ liquid level measurement system is designed for use with pressurized tanks or those open to the atmosphere, particularly in the chemical industry, where especially difficult operating conditions could prevail in regard to corrosion, temperature and pressure. All parts which are in contact with the medium being measured are made of rust- and acid-resistant steel or special materials, which allows these devices to be used in various industries like the chemical, foods, petroleum processing and marine industries (with PTB National Physical Testing Laboratories at Braunschweig and German Lloyd underwriter's certification), to include acids, liquefied petroleum gas, etc. The magnetic link between the float and the interior magnet is so stable that even rapid changes of the fluid level do not influence the accuracy of the level measurement.



### **Design features:**

- ◆ pressure- and vacuum-tight system
- ◆ high accuracy (linear transmission)
- ◆ corrosion-resistant materials
- ◆ no calibration needed
- ◆ electr. remote monitoring available
- ◆ can be read on eye level
- ◆ easy legibility with the 10" diam. direct display scale
- ◆ dual-pointer-system (standard)
- ◆ mechanical operation (Ex-proof design/ATEX optional)
- ◆ undisturbed by foam generation
- ◆ simple to use and maintain
- ◆ interface level measurement
- ◆ mounted on top of tank; optional: display on side of the tank

### **Materials:**

#### Guide tube and mounting flange:

- ◆ rust- and acid-resistant steel (standard: 316L alloy)
- ◆ PVDF, PP, PVC

#### Float:

- ◆ rust- and acid-resistant steel (standard: 316L alloy)
- ◆ Polypropylene PP
- ◆ PVC
- ◆ PVDF
- ◆ Monel
- ◆ Glass
- ◆ Halar-coated stainless steel (316L)

#### Housing:

- ◆ Die cast painted aluminium (standard)
- ◆ 316L steel alloy

#### Scale window:

- ◆ Glass
- ◆ Makrolon

#### Mounting flange:

- ◆ 2" 150# standard RF flange as per ANSI B 16.5 or DIN 2627 DN50/PN40 or on client's request





## Liquid Level Gauges

In case that the liquid level has to be monitored directly (e.g. due to directives by law), Liquid Level Gauges are to be applied.

### **Tubular Level Gauge**

#### **Series ITA\*-GG**

- ◆ used for observing the fluid level at low temperature & low pressure

### **Reflex Level Gauge**

#### **Series ITA\*-RG**

- ◆ used for observing the level of various liquids by using the reflection of light.
- ◆ for high pressure & high temperature
- ◆ not for steam measurements

### **Transparent Level Gauge**

#### **Series ITA\*-TG**

- ◆ used for observing the fluid level
- ◆ for high pressure & high temperature
- ◆ applicable for steam measurements

### **Option: Illuminator for Liquid Level Gauge**

- ◆ used for observing the fluid level in a dim place or at night
- ◆ ingress protection grade: IP66
- ◆ Explosion proof: KOSHA I Exd II B + H2 T5 & CENELEC / EExd II B + H2 T4



The different indicators are available in CS, stainless steel, stainless steel alloys and Titanium. Other materials on request.

## Bypass-Chambers for Level Transmitters, Series ITA\*-BG

Intra-Automation produces measuring chambers for installation on the tank side, which act as communicating pipes with the level in the tank. This means that the filling level in the chamber is always exactly the same as the filling level in the tank. These Bypass-Chambers provide the possibility to be equipped with a variety of level measuring systems resp. level switches. For example:



### Level Transmitter working acc. the Buoyancy Principle

#### Features

- ◆ Level, Interface and Density measurement
- ◆ Designed for extreme process and environmental conditions
- ◆ No moving parts – maintenance-free
- ◆ One Transmitter for level, interface and density
- ◆ 2 N measuring span
- ◆ Materials for wetted parts:  
C-Stahl, 16Mo3, 1.4404, Duplex, Inconel 825, Hastelloy C
- ◆ ATEX and FM approval for EEx d

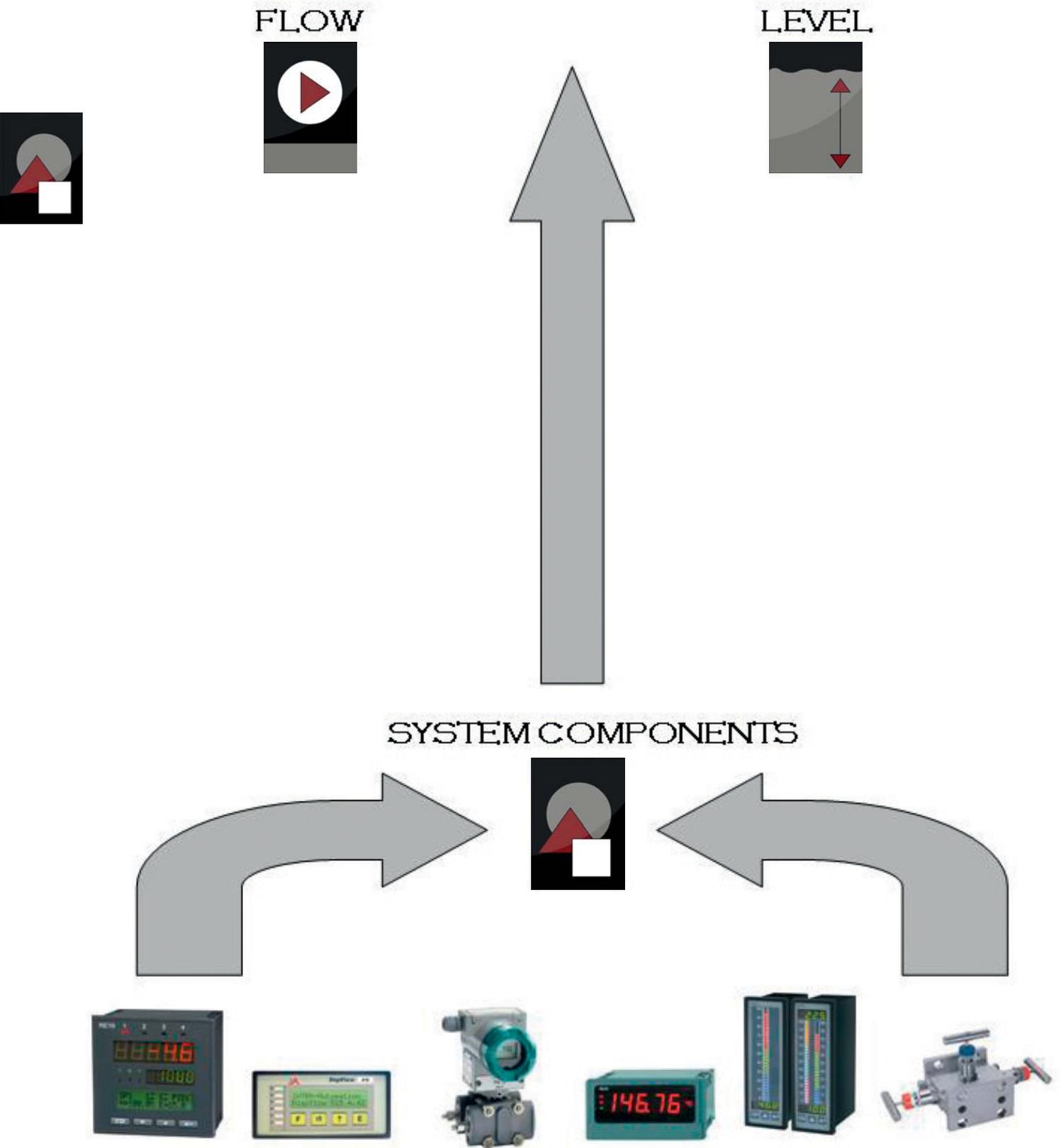
#### Description

The smart transmitter is designed to measure level, interface and density. The measurement is based on the Archimedes buoyancy principle

#### The level transmitter family



	<b>244LD</b>	<b>244LVP</b>	<b>167LP</b>
Connection	digital, 2- wire	digital, 2-wire	pneumatic
Mounting	Sandwich mounted	Flange mounted	Sandwich mounted
Output signal	4...20 mA / HART / PB-PA / FF	4...20 mA / HART	pneumatic 0,2...1 bar
FDT-DTM with adv. features	Yes	Yes	
meas. length	5 cm... 15 m	5 cm...3 m	35 cm...3 m
Density	100...2000 kg/m <sup>3</sup>	100...2000 kg/m <sup>3</sup>	100...1600 kg/m <sup>3</sup>
Temperature	-196...+500°C	-50...+150°C	-196...+400°C
Pressure	PN16...500	PN40	PN16...250
Flange size	DN80 / DN100 ANSI 3", 4"	DN50 / DN80 ANSI 2", 3"	DN80 / DN100 ANSI 3", 4"
SIL 2 cert.	Yes	Yes	Yes
Amb. temp.	-40...+85°C	-40...+85°C	-40...+90°C



## **Electronic Transmitters Series INT**

The INT series measurement transducers are used to measure pressure, absolute pressure or differential pressure.

The output signal, from 4 to 20 mA / Hart, can be transmitted over great distances to controllers, recording devices, display, etc.

These measurement transducers are fitted with water and dust-resistant housings for industrial use.

When intended for use in potentially hazardous atmospheres, the measurement transducers are supplied in an flame-proof-version enclosure (EEx d) or in an intrinsically safe version (EEx ia), as defined in ATEX standards.

A broad selection of materials is available (stainless steel, Hastelloy C, tantalum, Monel), selected to suit the particular operating environment. The main areas of use are in chemicals, petrochemicals, power generation, water purification, the food industry, paper-making and smelting technology.

You can install INT series wherever you need it and calibrate it from a remote point. For our smart transmitter naturally uses the HART-protocol for communications with PCs, handheld communicators and all other process control systems with HART capability.

The communications capability of the HART-“clan” also means that a laptop or PC can be used both for remote calibration and feedback documentation. In other words, the start-of-scale and full-scale values can be set without having to use a reference pressure. Damping and output characteristics (linear/ square root proportion) can be modified in the same way.

The Windows software offers a user interface and numerous help functions.

Not to forget second-to-none reliability and precision resulting mainly from the field-proven measuring principle employed. The use of special materials, such as Hastelloy and tantalum, gives the transmitters a very wide range of application and a long life expectancy. The measuring error is less than 0,1 % and variations in the ambient temperature only affect measurements by a mere 0,005 %

per 10 K. The INT series therefore provides complete accuracy throughout the year.

And not only for one year! Our new transmitters lose only 0,1 % of their functionality a year, which makes them still 99 % functional after ten years and more. So you hardly ever have to check up on them. If long-term stability is what you're looking for, our INT series is the transmitter you need.



## Flow Computers and Universal Indicators Series DigiFlow

The Flow Computer & Indicator Series DigiFlow are designed to visualise, control as well as to calculate different physical units. The backlit two rows alphanumeric display shows the instantaneous readings of flow or totals. The four-key-touchpad is used to program and configure the unit. The DigiFlow is powered 115/230 V AC 50/60 Hz. Optionally voltages between 24 and 28 V AC / DC. The DigiFlow characterised also by features like easy programming, user menus in three languages and a long life span.

There are four different DigiFlow types available.

### **DigiFlow 505** **Microprocessor controlled Flow Indicator-Integrator**



#### **Features:**

- ◆ Full scalable input signals 4-20 mA analogue or frequency.
- ◆ 2 inputs, either two independent measurements, dual range, median of two sensors or two different channels.
- ◆ Integration and indication of totals when time depended signals
- ◆ Simple programming
- ◆ User menus in three languages
- ◆ Control of a sensor-purge-unit
- ◆ RS232 Data logger output

Optionally there are up to three scalable analogue outputs 4-20 mA available.

Furthermore an optionally equipment to control a sensor purge unit can be ordered.

The DigiFlow 505 provides an adjustable voltage between 17V and 19V DC for powering sensors. Maximum current is 100 mA.

## Flow Computers and Universal Indicators Series DigiFlow

### DigiFlow 514 Batch Controller-Presentable Counter



#### Features:

- ◆ Full scalable input signals 4-20 mA analogue or frequency
- ◆ Display of rank total value, preset quantity, flow rate and accumulated quantity
- ◆ Two relay outputs for either slow and fast run or two flow channels
- ◆ Automatic overrun compensation
- ◆ Alert at signal fault
- ◆ Remote Start-Stop
- ◆ Simple programming
- ◆ RS232-interface
- ◆ Three languages user interface

### DigiFlow 515 Microprocessor Controlled Gas and Steam Flow Computer /Energy Flow Computer (Consumption and Enthalpy)



#### Features:

- ◆ Indication of flow rate and total of volume, mass and energy
- ◆ Temperature and Pressure compensation
- ◆ Input signals 4-20 mA analogue or frequency for flow input
- ◆ Dual ranged d.p. transmitter input
- ◆ Simple programming
- ◆ User menus in three languages
- ◆ Control of a sensor-purge-unit
- ◆ Data logger output

## Flow Computers and Universal Indicators Series DigiFlow

### Digiflow 515

Microprocessor Controlled Heat and Energy Flow Computer  
(Consumption and specific heat capacity)



#### Features:

- ◆ Indication of flow rate, heat and total of volume, heat
- ◆ Can be used for energy calculation
- ◆ Temperature and Pressure compensation
- ◆ Input signals 4-20 mA analogue or frequency for flow input
- ◆ Dual ranged d.p. transmitter input
- ◆ Simple programming
- ◆ User menus in three languages
- ◆ Control of a sensor-purge-unit
- ◆ Data logger output
- ◆ Includes tables to calculate the specific gravity and the specific heat capacity of the flowing medium based on the first main clause of the thermodynamic.

## Digital panel meters

### IntraDigit IA-N20

- ◆ Measurement of voltage or DC current and temperature (Pt100, J, K)
- ◆ Three-colour LED display (5 digits, 14 mm high)
- ◆ 2 alarm outputs of OC type
- ◆ Galvanic separation between the supply, measuring inputs and the programmer input
- ◆ Programmable parameters through the PD14 programmer
  - recounting of indications (individual characteristic)
  - two alarms of OC type operating in 6 working models
  - display colour programmable in three intervals
  - thresholds of displayed overflows
  - highlight of the unit
  - automatic or manual compensation: temperature of cold ends (for J, K) or wire resistance (for Pt100)
  - measurement averaging time
- ◆ Supply of object transducers



### IntraDigit IA-N24

- ◆ Designed for measurement of DC voltage or DC current, temperature through Pt100 thermometers, J, K thermocouple, AC voltage and AC current.
- ◆ 4-digit LED display (20 mm digit height)
- ◆ Programmable parameters through the PD14 programmer
  - Precision of displayed results (decimal point)
  - measurement averaging time
  - recounting of indications (individual characteristic)
  - automatic or manual compensation: temperature of cold ends (for J, K) or wire resistance (for Pt100)



## Digital panel meters

### **IntraDigit IA-N25**

- ◆ Designed for measurement of DC voltage or DC current, temperature through Pt100 thermometers, J, K thermocouple, AC voltage and AC current.
- ◆ 5-digit LED display (14 mm digit height)
- ◆ Programmable parameters through the PD14 programmer
  - Precision of displayed results (decimal point)
  - measurement averaging time
  - recounting of indications (individual characteristic)
  - automatic or manual compensation: temperature of cold ends (for J, K) or wire resistance (for Pt100)



### **IntraDigit IA-N30B**

- ◆ Measurement: current and DC voltage up to 5 A and 600 V
- ◆ Three-colour display (14 mm high), programmed in three intervals of the measured value
- ◆ Meter programming from the keyboard or through the RS-485 interface by means of the free delivered LPConfig program
- ◆ Four alarm outputs with signalling by LED diodes, operating in 6 different modes
- ◆ Conversion of any measured value into a 0/4...20 mA, or 0...10 V analogue signal
- ◆ Storage of minimal and maximal values for all measured values
- ◆ 21-point individual characteristic for the measured value



Further models on request.

## Microprocessor Controlled Industrial Controller

### IntraCon IA-RE19

- ◆ 2 main inputs: universal (temperature and standard signals)
- ◆ 2 logic inputs
- ◆ Additional input and RS485 (optional)
- ◆ 4 outputs (control and alarm): relay, transistor or continuous (optional)
- ◆ Control: PID with auto-tuning, on/off
- ◆ Programmable control (15 programs of 15 intervals) (optional)
- ◆ Step-by-step control (optional)



### IntraCon IA-RE22

- ◆ Universal input for RTD and TC sensors or standard signals from transducers
- ◆ Relay output or binary 0/5 V for relay of SSR type
- ◆ "Soft-Start"-function
- ◆ Manual operating option
- ◆ Control: PID with auto-tuning, on/off



## Microprocessor Controlled Industrial Controller

### IntraCon IA-RE55

- ◆ Temperature input (thermocouple or resistance thermometer)
- ◆ Control output: relay or transistor
- ◆ Alarm output: relay (optional)
- ◆ Control: PID with auto-tuning, on/off
- ◆ Setting of the set point value by means of the knob
- ◆ Programming push-buttons (optional)



### IntraCon IA-RE60

The RE60 controller controls the temperature in objects through turning on and off the electrical controlling device according to the defined setting by the controller. It cooperates directly with RTD and TC.

It is destined for the temperature control in telecommunication cabinets in food and drying industries and everywhere, where there is the necessity to stabilize the temperature changes.

The controller has one output destined for the control and two alarm outputs.



## Microprocessor Controlled Industrial Controller

### IntraCon IA-RE71

- ◆ Control acc. to the PID or ON/OFF algorithm
- ◆ Direct cooperation with resistance thermometers or thermocouple sensors
- ◆ Automatic selection of PID parameters
- ◆ One control output, relay output or voltage output for SSR relay control
- ◆ Manual control mode



### IntraCon IA-RE72

- ◆ Universal measuring input
- ◆ Binary input control
- ◆ Set point value: fixed value, programmed or from an additional input
- ◆ On/Off, PID, PID step-by-step control (valve control) or PID of heating-cooling type.
- ◆ Soft start
- ◆ 8 types of alarms
- ◆ Function of bi-stable alarm (LATCH)
- ◆ Timer function
- ◆ Measurement of heater current and heater burning or short-circuit of the control element



## Microprocessor Controlled Industrial Controller

### **IntraCon IA-RE81**

- ◆ Control acc. to the PID or ON/OFF, heating/cooling algorithms or step-by-step control
- ◆ Direct cooperation with resistance thermometers (RTD) or thermocouple sensors (TC)
- ◆ Automatic selection of PID parameters
- ◆ 2 configurable outputs
- ◆ Controller configuration by means of the free delivered LPConfig program
- ◆ Error signalling by means of messages
- ◆ Manual control mode
- ◆ Frontal protection grade ensured by the casing: IP65



### **IntraCon IA-RE82**

- ◆ Universal measuring input
- ◆ Binary input control
- ◆ Set point value: fixed value, programmed or from an additional input
- ◆ On/Off, PID, PID step-by-step control (valve control) or PID of heating-cooling type.
- ◆ Soft start
- ◆ 8 types of alarms
- ◆ Function of bi-stable alarm (LATCH)
- ◆ Timer function
- ◆ Measurement of heater current and heater burning or short-circuit of the control element



**Bargraph Indicators**

**IntraGraph IA-NA3/5/6**

Digital-analogue meters of IA-NA series with a multicolour bargraph have an universal input destined to measure: temperature, resistance, shunt voltage, standard signals, DC voltage and DC current. They can find application in various industrial fields, e.g. food industry, pumping stations and savage-treatment plants, chemical industry, weather stations, brewing industry and many other fields where they are destined for visualisation of the measured value and evaluation of the monitored manufacturing process change trend. They can also find application in automation systems where programmable controllers are applied.



## Manifolds

### **3-Way-Manifolds**

This 3 valve manifold is designed for remote / direct mounting to a transmitter. It has two block valves (+ and - lines) and an equalize valve.



### **5-Way-Manifolds**

The 5-valve manifold is designed to allow the direct mounting of a transmitter on a differential pressure sensor. The 5-valve manifold is equipped with two additional vent valves.



For the products presented in this brochure, we provide more and additional information on our homepage [www.intra-automation.com](http://www.intra-automation.com).

Just try and visit us in the Internet. You will be surprised.



Or contact us directly. Our Contact data is provided on the backside of this catalogue.

We look forward to hearing from you soon.

# INTRA-AUTOMATION GmbH



M E S S - U N D R E G E L I N S T R U M E N T E



Since its founding in 1977, Intra-Automation GmbH focused its corporate activities on measurement and control systems for flow, level, pressure, absolute pressure and differential pressure. Our mag. level gauges ITA and our flow sensors Itabar were the locomotives for the successful development of Intra-Automation GmbH.

Over the years, our product range has been extended by devices for flow correction and ultrasonic measurement as well as auxiliary equipment for flow and level. In a further step, the core competences "differential pressure flow measurement" and "bypass level measurement" have been strengthened by broadening the product line.

Today, Intra-products enjoy a good reputation in more than 55 countries and many industries all around the world, including chemical and pharmaceutical industry, the oil and gas sector, shipbuilding, machinery and plant construction, the food and beverage industry, water treatment as well as environmental engineering.

Our product range includes instruments for level measurement and control for temperatures up to 400°C and a pressure range up to PN320 as well as differential pressure measuring instruments up to 1200°C and up to PN400.

A continuous quality management according to DIN EN ISO 9001 and constant development guarantee recognized quality and reliability as well as reproducible parameters for all products.

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