

# INTRA-AUTOMATION

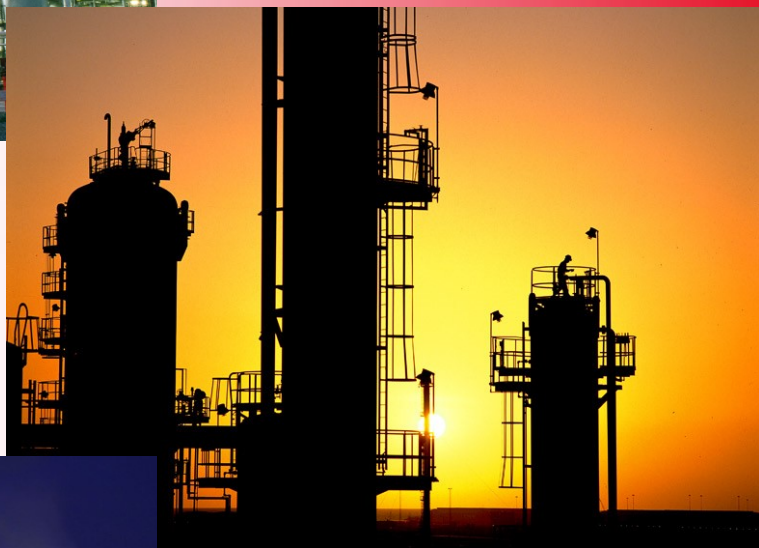


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**Measuring instruments successfully in use in 72 countries**  
**Quality and reliability**

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 application features:

- ◆ Suitable for measuring the flow of liquid and gaseous media
- ◆ Pipe diameters from 15 (1/2") to 12000 mm (472,44")
- ◆ 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  $+2192^{\circ}\text{F}$ )
- ◆ Operation 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 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 ISO 3834 (HP0)
- ◆ 2014/64/EU (PED)

#### Technical Specifications:

- ◆ Standard materials: 316L / A335 Gr. P1 / A335 Gr. P11 / A335 Gr. P22 / A355 Gr. P31
- ◆ Pipe diameters:
  - 40...100 mm (IBFD-20/21)
  - 100...600 mm (IBFD-25/26/35/36 /-HT / -HTG)
- ◆ Operating conditions: IBFD-HT / HTG: 160 bar @ 590 °C (2320 psi @ 1094°F)
- ◆ Accuracy:  $\pm 1$  % of measured value
- ◆ Repeatability:  $\pm 0,1$  %
- ◆ Flanged design: IBFD/IBFD-HT
- ◆ Welded design: IBFD-HTG
- ◆ Flange-mounted condensate pots are available with a combination of shut-off-valve and condensate pot

### Air Purge Unit LSP compact type EJG

The Air Purge Unit is distinguished by the following major engineering and application 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 EJG-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 EJG-compact basically is a 2/2-way directly controlled valve type. That is why the EJG-compact can be triggered by the customer through relays or SPS.

Furthermore, the EJG triggering can be realized through the according option of the Digiflow (page 18). 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.

