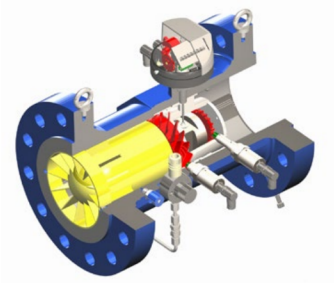

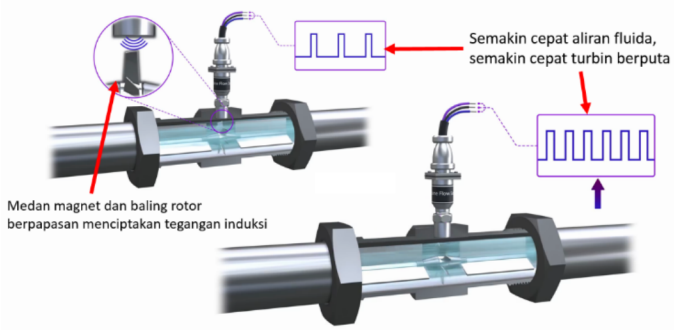


جريان سنج توربيني يك نوع دستگاه اندازه گيري است كه استفاده از آن در صنعت نفت و گاز خيلي مرسوم است. اغلب اين نوع جريان سنج به ديگر جريان سنج ها به دليل مزاياي نظير سادگي در نصب و دقت بالاي آن در اندازه گيري ترجيح داده مي شود. به همين دليل از اين دستگاه اغلب براي اندازه گيري مواد با ارزش مثل نفت خام، گاز و همچنين فراورده هاي نفت خام استفاده مي شود. اين نوع دبي سنج از نوع دبي سنج هاي سرعتي مي باشد كه سرعت جريان سيال را اندازه گيري مي كند.

# ارتباط با ما

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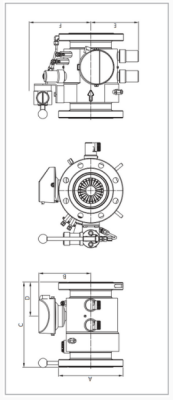
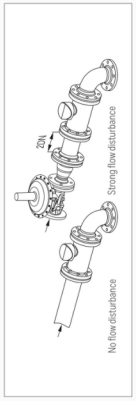
# GAS TURBINE FLOWMETER

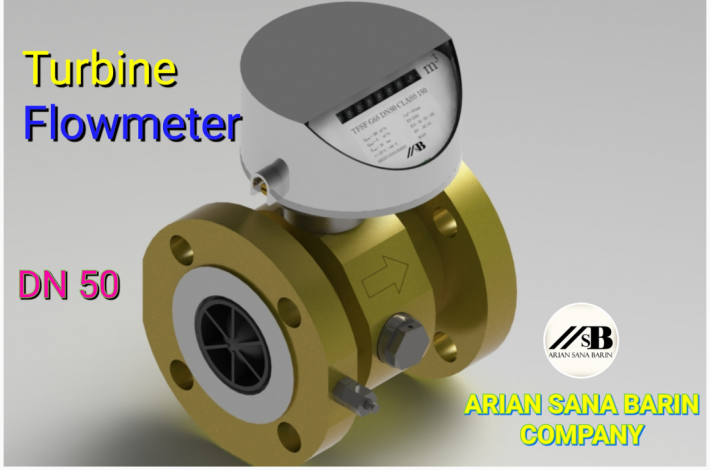
Arian Sana Barin

# TECHNICAL DATA

| | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Diameter | DN | 50 | 80 | 80 | 80 | 100 | 80 | 100 | 100 | 100 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 | 150 |
| | Meter size | G | 65 | 100 | 160 | 250* | 160 | 172 | 185 | 250 | 400* | 250 | 400 | 650* | 650 | 400 | 250 | 400 | 650 | 650* | 1000 | 1000* | 1600 | 1600 |
| Measuring data | Measuring range | $Q_{min}$ | 5 | 8 | 12,5 | 20 | 12,5 | 20 | 20 | 20 | 32 | 20 | 32 | 50 | 32 | 20 | 20 | 32 | 50 | 80 | 50 | 80 | 80 | 80 |
| | | $Q_{max}$ | 100 | 160 | 250 | 400 | 250 | 300 | 300 | 400 | 650 | 400 | 650 | 1000 | 650 | 400 | 400 | 650 | 1000 | 1600 | 1000 | 1600 | 2560 | 2560 |
| | $\Delta p$ ** at $Q_{max}$ | [mbar] | 11 | 2 | 5 | 12 | 2 | 5 | 5 | 13 | 13 | 1 | 2 | 6 | 2 | 1 | 1 | 2 | 6 | 15 | 6 | 15 | 15 | 15 |
| | Temperature range | | -25 °C to +70°C | | | | | | | | | | | | | | | | | | | | | |
| | Pressure rates | | PN 10, 16, 25, 40, 64, 100 / ANSI 150, 300 , 600 | | | | | | | | | | | | | | | | | | | | | |
| Housing *** | Dimensions | A mm | 165 | 215 | 215 | 215 | 273 | 215 | 273 | 273 | 273 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 | 356 |
| | | B mm | 155 | 172 | 172 | 172 | 185 | 172 | 185 | 185 | 185 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 | 210 |
| | | C mm | 150 | 240 | 240 | 240 | 300 | 240 | 300 | 300 | 300 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 | 450 |
| | | D mm | 75 | 100 | 100 | 100 | 120 | 100 | 120 | 120 | 120 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180 |
| | | E mm | 135 | 157 | 157 | 157 | 170 | 157 | 170 | 170 | 170 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 |
| | | F mm | 280 | 200 | 200 | 200 | 210 | 200 | 210 | 210 | 210 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 | 235 |
| Weight [kg]*** | PN10/16, ANSI150 | (GGG) | 10 | 21 | 21 | 21 | 29 | 21 | 29 | 29 | 29 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| | PN25/40, ANSI300 | (steel) | 13 | 32 | 32 | 32 | 50 | 32 | 50 | 50 | 50 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 | 91 |
| | PN64/100, ANSI600 | (steel) | 15 | 33 | 33 | 33 | 50 | 33 | 50 | 50 | 50 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 | 97 |
| Outputs / pulse values *** [Imp/ml] | LF-Type E 1 | (Reed switch) | 10 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.1 | 0.1 |
| | HF-Type A 1R | (inductive) | 28000 | 10500 | 10500 | 10500 | 6630 | 10500 | 6630 | 6630 | 6630 | 6630 | 2560 | 2560 | 2560 | 6630 | 6630 | 2560 | 2560 | 2560 | 2560 | 2560 | 2560 | 2560 |
| | HF-Type A 1S | (inductive) | - | 21000 | 21000 | 21000 | 13260 | 21000 | 13260 | 13260 | 13260 | - | 5120 | 5120 | 5120 | - | - | 5120 | 5120 | 5120 | 5120 | 5120 | 5120 | 5120 |






## Applications

Custody Transfer approved Gas Flow Measurement from low to high operating pressures.
Gas Distribution, Industrial and Commercial applications

## Operating Principle

The gas flowing through the meter sets the turbine wheel in motion. The number of revolutions of the wheel is proportional to the volume passing through the meter. To optimize measurement performance a patented flow straightener eliminates flow disturbances such as swirl or asymmetric flow that are e.g. created by bends or T-pieces upstream of the meter. After the flow conditioner the cross section of the meter is reduced to increase flow velocity and consequently increase the driving impulse of the medium on the turbine wheel.

The combination of flow conditioning and optimized measurement unit incl. the turbine wheel make it possible to measure the flow rate accurately even at low flows and pressures. The shaft on which the turbine wheel is fixed is held in place by robust ball bearings that help to maintain high performance for a long time with minimized maintenance needs. Via gears and a magnetic coupling the revolutions of the turbine wheel are transmitted to the 8-digit mechanical counter located in the pressure-less index head.

The outlet of the meter has been optimized to decrease pressure loss and create optimal flow conditions after the meter.

## Measuring ranges

Standard measurement range is 1:20. Depending on the operating pressure MID allows for higher measuring ranges.
Please contact the factory for more details.

$$Q_{min,\,HP} = Q_{min,\,LP} \cdot \frac{1}{\sqrt{d_v \cdot p}}$$

$d_v$=density ratio of gas (natural gas $d_v$ = 0.65)
p=actual absolute pressure [bar]