

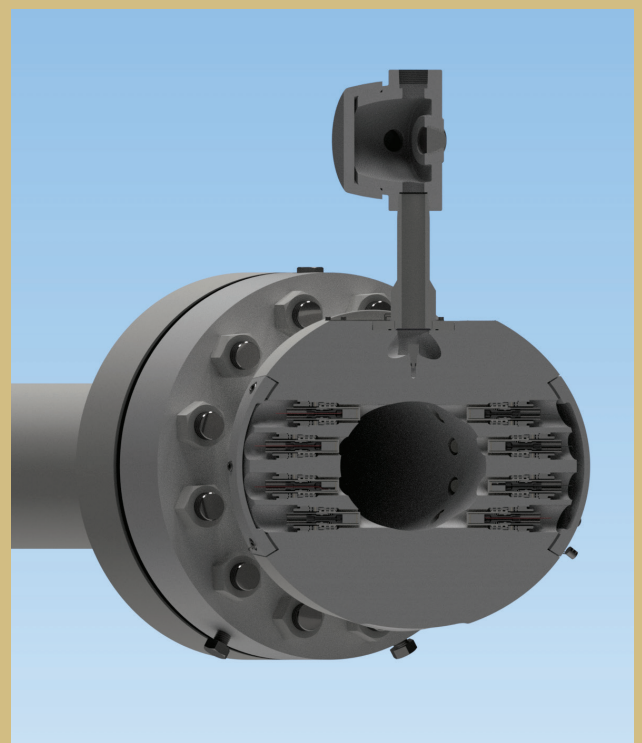


BRINGING ULTRASONIC FLOW MEASUREMENT TO THE EXTREMES

iSonic 8L-XT - Liquid Flow Measurement for Extreme Temperatures

XTC - Cryogenic Temperatures

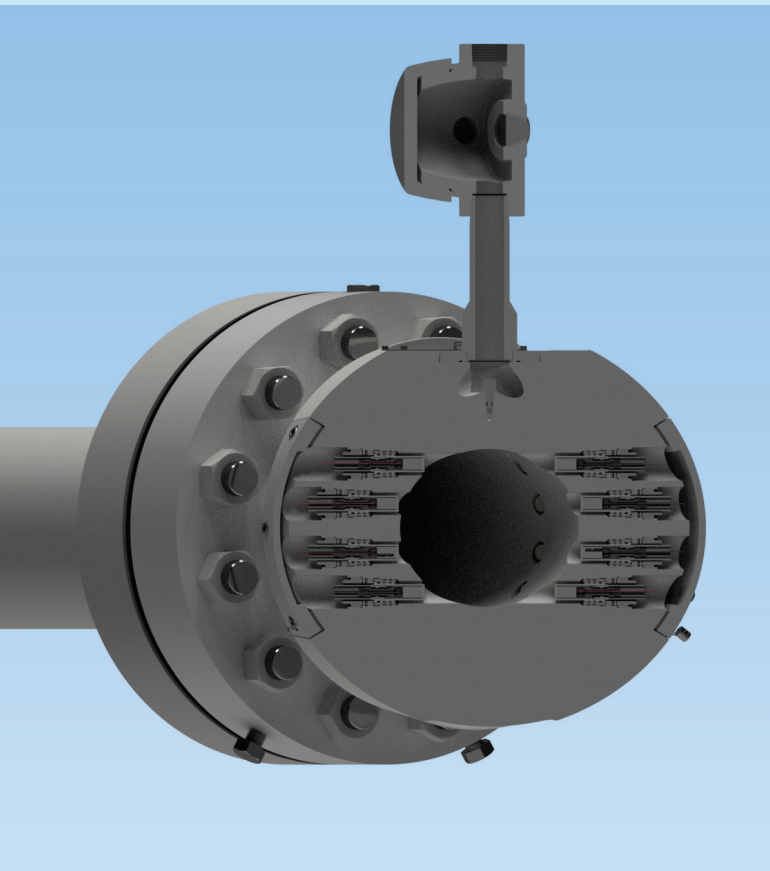
XTH - Power Plant Feedwater Temperatures



ACCURATE, REPEATABLE AND RELIABLE

The iSonic 8L-XT is our new addition to the iSonic family. The iSonic 8L-XTH and iSonic 4L-XTC are state-of-the-art multi-path flowmeters designed to measure fluids over a wide range of temperatures.

The iSonic 8L/4L-XT are ultrasonic flowmeters of forged steel bodies with up to 16 high precision non-wetted transducers, high speed electronics, and lightning-fast signal processing resulting in the most innovative, accurate and reliable ultrasonic flow meter in the industry.



FEATURES AND BENEFITS

- A multi-path flowmeter designed for custody transfer and precise calorimetrics
- Non-wetted transducers welded-in stainless housings
- Available in sizes 3"- 24"
- Working pressures up to 6,000 psig
- Working temperatures, -200 to 100 C cryogenic operation and -40 to 250 C for high temperatures

TYPICAL APPLICATIONS

- Wide flow range, ideal for LNG products and high temperature water
- Compliant with API Chapter 5.8, OIML R 117 Conformities include ATEX 2014/34/EU, NEC/CEC (US/CA) explosion-proof/Intrinsically Safe

iSonic 8L-XT/4L-XT PERFORMANCE

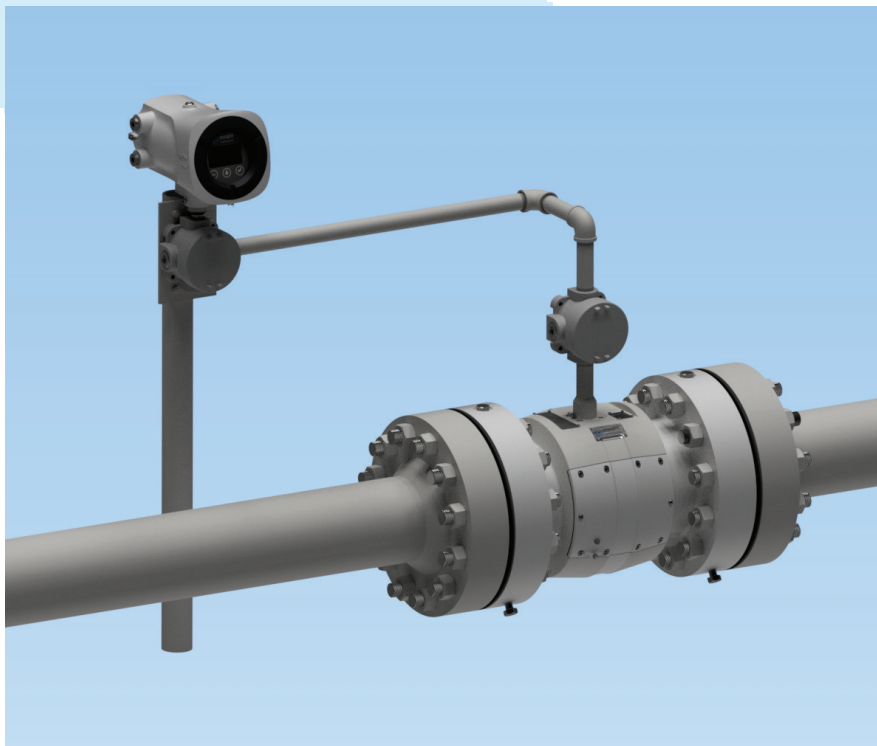
Linearity : $\pm 0.15\%$ (8L) and $\pm 0.25\%$ (4L) of measured value over a 40:1 turndown

Uncertainty of Meter Factor : $< \pm 0.027\%$ (API MPMS, Chapter 5.8)

Velocity Range : 1.0 fps (0.3 m/s) to 40.0 fps (12.2 m/s) - higher rates available

TYPICAL APPLICATIONS

- Custody Transfer Pipelines - LPG plants loading and off-loading
- Power Plant Feedwater
- Line Balance
- Leak Detection
- Check Metering
- LNG Cargo Loading & Offloading
- Offshore Platforms

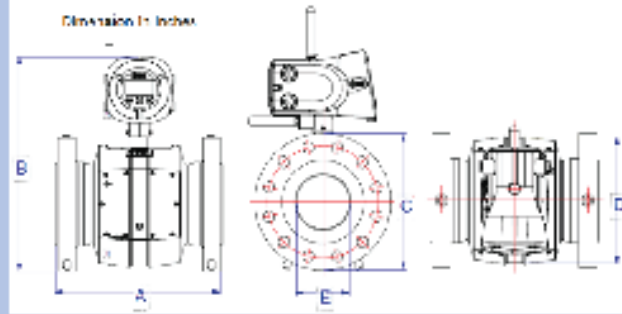


TECHNICAL SPECS

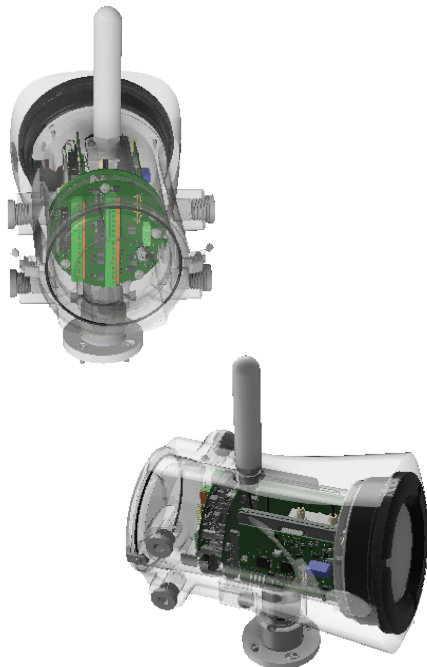
| iSonic 8L-XT and 4L-XT Liquid - Technical Data | | |
|------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Path Arrangement | | 8 paths – Cross Configuration / 4 path - Single Plane |
| Size | | 3" to 24" (Standard) other sizes on request |
| Measurement Principle | | transit time |
| Repeatability | | ≤0.05% (standard calibration) |
| Accuracy | | Class 0.3 (8L-XT) and Class 0.5 (4L-XT) |
| Pipe requirements | with flow conditioner | Upstream straight length ≥ 5D, Downstream straight length ≥ 3D |
| | no flow conditioner | 8L-XT Upstream straight length ≥ 5D, Downstream straight length ≥ 3D |
| Temperature Range | | -40 °C to +250 °C (Feedwater Mode) -200 °C to +100 °C (Cryogenic Model) |
| Pressure Range | | 0 psig to 2250 psig (Standard 150#, 300#, 600#, 900#) 0 psig to 3750 psig (Extended 1500#) |
| Ingress protection | | IP66 |
| Environment | | |
| Ambient temperature | | -40 °C ~ +70 °C electronics |
| Ambient humidity | | ≤95%, non-condensing |
| Conformities and Haz Loc Approvals | | |
| Conformities | | API 5.8 ATEX: 2014/34/EU NEC/CEC UL1203 |
| Hazardous Approvals | | ATEX/IECEx Ex db ia mb IIB+H2 T6...T4 NEC/CEC (US/CA) Explosion-proof / Intrinsically Safe: Class I, Div. 1 Groups B, C, D, T6...T4 |
| Inputs/Outputs | | |
| Analog Outputs | 2 | 4 to 20mA, electrically isolated |
| Analog Inputs | 2 | 4 to 20mA |
| Digital Outputs | 4 | 2 x status, 2 x pulse $f_{max} = 5$ kHz passive, electrically isolated, internal or external power, open collector |
| Communication Ports | RS485 | Modbus RTU 3 x RS485 |
| | Ethernet | 1 x Ethernet 1 x Wi-Fi |
| | Cloud communication | 4G (optional) |
| Power | | |
| Voltage | | 12-30 VDC |
| Power Consumption | | 5W, (6W during 4G communication) |
| Data Storage | | |
| Archived data | Meter | Every Minute (10,000 records) Hourly (10,000 records) Daily (5,000 records) |
| | Cloud | Every Minute (10,000 records), on demand Hourly (no limit) Daily (no limit) |
| Alarm/Event Log | Meter | Event Log (10,000 events) Parameter modification Log (1,000 modifications) Alarm Log (1,000 alarms) |
| | Cloud | Event Log (no limit) Parameter Modification Log (no limit) Alarms Log (no limit) |

WEIGHT & DIMENSIONS

- The iSonic's body is either forged Carbon Steel or Stainless Steel machined utilizing multi-tasking CNC to ensure highest precision.
- The iSonic 8L-XT/4L-XT standard overall length is 3D for sizes 4 - 12 inch, making it suitable for new or existing applications. Consult the factory for other lengths to meet installation requirements.
- The iSonic 8L-XT/4L-XT is easily adaptable in the field and control room. With MODBUS protocol and multiple I/O facilitates seamless integration into any FC, RTU and SCADA.



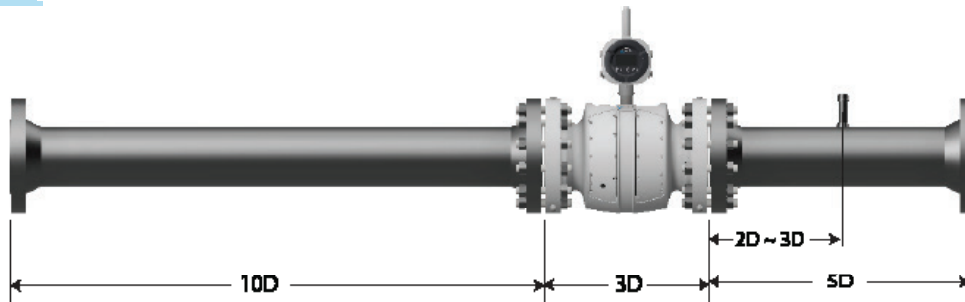
| Material | Size | Length | Weight | A | B | E + Antenna | C | H | | Weight/Volume |
|----------------|------|--------|--------|------|------|-------------|------|------|------|---------------|
| 430V stainless | 4 | 150 | 16 | 11.5 | 19.0 | 22.0 | 9.0 | 9.0 | 4.0 | 124 |
| 430V stainless | 4 | 300 | 30 | 11.5 | 19.0 | 22.0 | 10.0 | 9.0 | 4.0 | 130 |
| 430V stainless | 4 | 600 | 47 | 11.5 | 19.0 | 22.0 | 10.0 | 9.0 | 3.0 | 135 |
| 430V stainless | 4 | 900 | 75 | 11.5 | 19.0 | 22.0 | 11.0 | 9.0 | 3.0 | 210 |
| 430V stainless | 6 | 150 | 24 | 17.7 | 22.0 | 26.1 | 14.0 | 14.0 | 8.1 | 343 |
| 430V stainless | 6 | 300 | 38 | 17.7 | 22.0 | 26.1 | 14.0 | 14.0 | 8.1 | 367 |
| 430V stainless | 6 | 600 | 45 | 17.7 | 22.0 | 26.0 | 14.0 | 14.0 | 6.8 | 443 |
| 430V stainless | 6 | 900 | 97 | 20.5 | 23.0 | 27.4 | 15.0 | 14.0 | 6.8 | 575 |
| 430V stainless | 8 | 150 | 65 | 23.0 | 23.0 | 27.0 | 13.0 | 10.5 | 0.0 | 503 |
| 430V stainless | 8 | 300 | 61 | 23.0 | 23.0 | 26.7 | 13.0 | 10.5 | 0.0 | 623 |
| 430V stainless | 8 | 600 | 69 | 23.0 | 23.0 | 28.1 | 13.0 | 10.5 | 7.0 | 702 |
| 430V stainless | 8 | 900 | 147 | 25.8 | 23.0 | 29.1 | 13.0 | 10.5 | 7.4 | 895 |
| 430V stainless | 10 | 150 | 83 | 25.5 | 23.0 | 29.2 | 13.0 | 10.0 | 10.0 | 837 |
| 430V stainless | 10 | 300 | 95 | 25.5 | 23.0 | 29.7 | 13.0 | 10.0 | 10.0 | 913 |
| 430V stainless | 10 | 600 | 103 | 25.5 | 23.0 | 31.9 | 13.0 | 10.0 | 8.0 | 1082 |
| 430V stainless | 10 | 900 | 173 | 25.5 | 23.0 | 32.7 | 13.0 | 10.0 | 9.5 | 1181 |
| 430V stainless | 12 | 150 | 127 | 30.4 | 28.0 | 32.4 | 15.0 | 21.1 | 12.0 | 1295 |
| 430V stainless | 12 | 300 | 139 | 30.4 | 28.0 | 33.2 | 15.0 | 21.1 | 12.0 | 1433 |
| 430V stainless | 12 | 600 | 153 | 30.4 | 30.0 | 33.9 | 15.0 | 21.1 | 11.4 | 1547 |
| 430V stainless | 12 | 900 | 173 | 30.4 | 31.0 | 34.9 | 15.0 | 21.1 | 11.1 | 1711 |
| 430V stainless | 14 | 150 | 147 | 31.5 | 30.0 | 34.1 | 15.0 | 22.0 | 13.0 | 1448 |
| 430V stainless | 14 | 300 | 162 | 31.5 | 31.0 | 35.1 | 15.0 | 22.4 | 13.0 | 1631 |
| 430V stainless | 14 | 600 | 174 | 31.5 | 31.0 | 35.0 | 15.0 | 22.0 | 12.5 | 1724 |
| 430V stainless | 14 | 900 | 198 | 31.5 | 32.0 | 36.0 | 15.0 | 21.4 | 12.1 | 1976 |
| 430V stainless | 16 | 150 | 181 | 35.5 | 32.0 | 36.3 | 15.0 | 24.5 | 15.0 | 1529 |
| 430V stainless | 16 | 300 | 187 | 35.5 | 32.0 | 37.0 | 15.0 | 24.5 | 15.0 | 1697 |
| 430V stainless | 16 | 600 | 217 | 35.5 | 34.0 | 38.1 | 15.0 | 24.5 | 14.0 | 2170 |
| 430V stainless | 16 | 900 | 237 | 35.5 | 34.0 | 38.0 | 15.0 | 24.5 | 13.9 | 2410 |
| 430V stainless | 18 | 150 | 213 | 36.1 | 31.0 | 36.1 | 15.0 | 25.0 | 17.0 | 2181 |
| 430V stainless | 18 | 300 | 220 | 36.4 | 31.0 | 36.0 | 15.0 | 25.8 | 17.0 | 2407 |
| 430V stainless | 18 | 600 | 268 | 36.4 | 32.0 | 37.0 | 15.0 | 25.0 | 16.1 | 2884 |
| 430V stainless | 18 | 900 | 304 | 36.4 | 32.0 | 37.2 | 15.0 | 25.8 | 15.7 | 3102 |
| 430V stainless | 20 | 150 | 263 | 38.4 | 35.0 | 40.3 | 15.0 | 25.0 | 19.0 | 2640 |
| 430V stainless | 20 | 300 | 283 | 38.4 | 36.0 | 41.8 | 15.0 | 25.0 | 18.0 | 2971 |
| 430V stainless | 20 | 600 | 327 | 38.4 | 38.0 | 42.8 | 15.0 | 25.0 | 17.0 | 3283 |
| 430V stainless | 20 | 900 | 369 | 38.0 | 38.0 | 43.0 | 15.0 | 25.0 | 17.4 | 3690 |
| 430V stainless | 24 | 150 | 347 | 40.5 | 40.0 | 44.8 | 15.0 | 31.0 | 21.0 | 3078 |
| 430V stainless | 24 | 300 | 423 | 42.5 | 40.0 | 46.0 | 15.0 | 33.3 | 23.0 | 4201 |
| 430V stainless | 24 | 600 | 477 | 42.5 | 40.0 | 47.1 | 15.0 | 31.0 | 21.0 | 4723 |
| 430V stainless | 24 | 900 | 626 | 45.0 | 45.0 | 49.1 | 15.0 | 33.3 | 20.0 | 6308 |



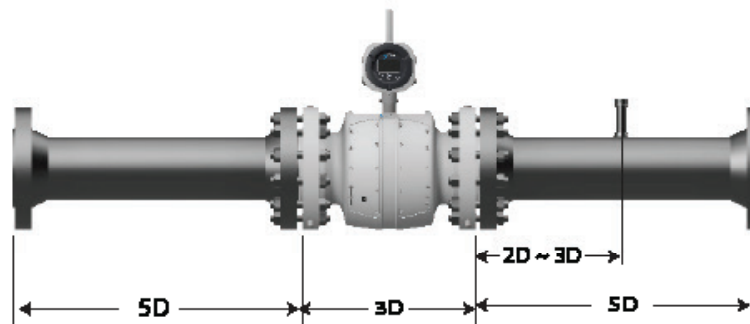
- The iSonic 8L-XT/4L-XT electronic enclosure - magnificent craftsmanship, ergonomic, ample I/O, and easy access to facilitate maintenance and repairs

INSTALLATION RECOMMENDATIONS

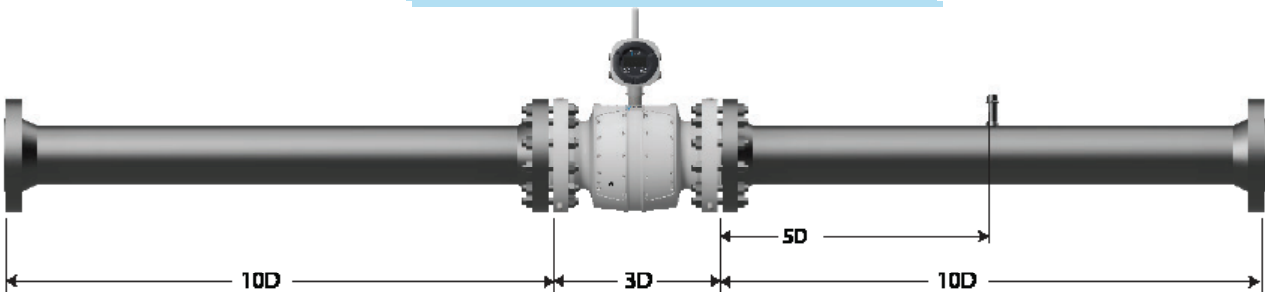
Installation 8L-XT/4L-XT - standard



Installation 8L - compact



Installation 8L/4L - bi-directional



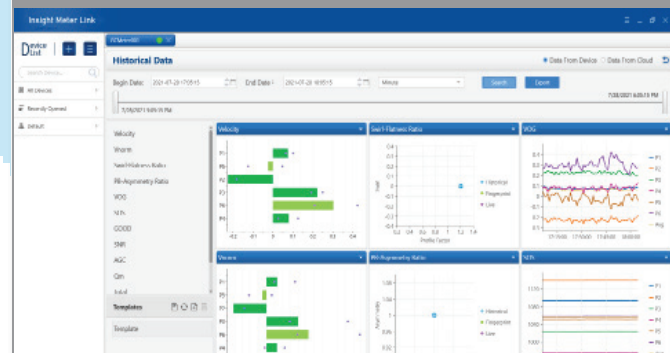
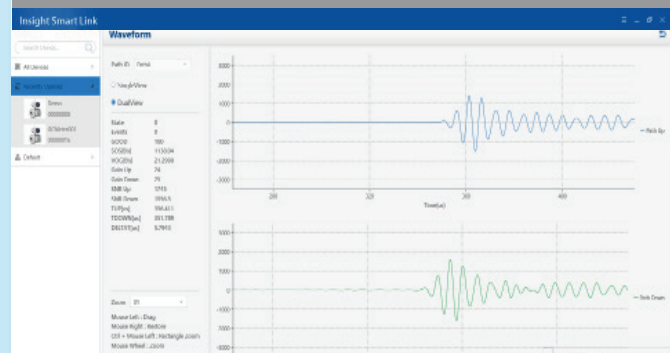
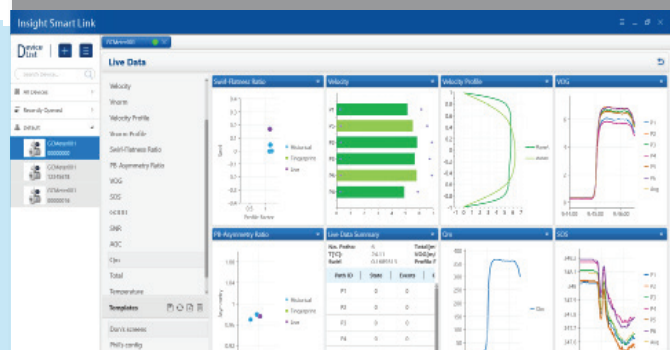
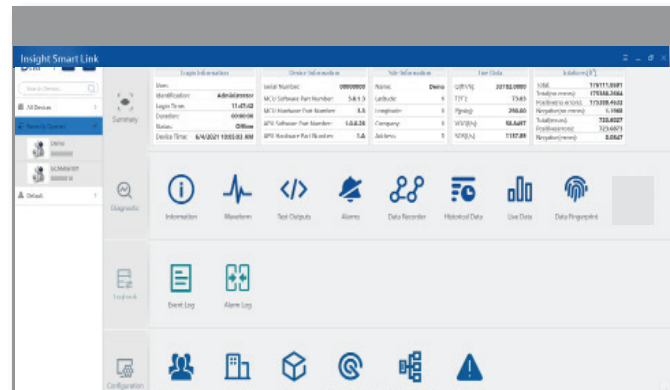
SMARTLINK SOFTWARE

Insight SmartLink, an intelligent, intuitive and simplified diagnostic software designed to facilitate the meter's configuration, monitoring, and troubleshooting. It guides operators through any suspect / upset conditions before measurement is compromised. This software was created focusing on "simplicity" avoiding complex and complicated data screens. The user no longer struggles with confusing charts, too many screens and too much data.

SmartLink was designed with an Intelligent dashboard format, simplified and easily personalized by selecting graphical or numerical data and dragging in to an intuitive dashboard. Simplified adaptable to meet most user's needs for reliable, accurate and continuous flow analysis. SmartLink provides performance-base and dynamic flow-based diagnostics to ensure continuous performance, reliability and accuracy 24/7.

Performance-Based diagnostics for each path include; fluid velocity, signal to noise ratios, speed of sound, gain, percent-performance and more.

Dynamic-Based diagnostics include; turbulence, swirl, cross-flow, profile factor and other disturbances in the pipeline.



FLOW RANGE

| ID (mm) | NPS | Extended | Standard | Q_t | Q_{max} | $Q_{overrange}$ |
|---------|-----|-----------|-----------|-------|-----------|-----------------|
| | | Q_{min} | Q_{min} | | | |
| | | BPH | BPH | BPH | BPH | BPH |
| 95.0 | 4 | 48.1 | 80.2 | 100 | 2,006 | 2,407 |
| 140 | 6 | 69.7 | 174 | 218 | 4,357 | 5,228 |
| 185 | 8 | 122 | 304 | 380 | 7,608 | 9,129 |
| 235 | 10 | 196 | 491 | 614 | 12,276 | 14,731 |
| 270 | 12 | 259 | 648 | 810 | 16,204 | 19,445 |
| 310 | 14 | 342 | 854 | 1,068 | 21,361 | 25,634 |
| 355 | 16 | 448 | 1,121 | 1,401 | 28,013 | 33,616 |
| 400 | 18 | 569 | 1,423 | 1,778 | 35,565 | 42,678 |
| 450 | 20 | 720 | 1,800 | 2,251 | 45,012 | 54,015 |
| 540 | 24 | 1,037 | 2,593 | 3,241 | 64,818 | 77,781 |

| ID (mm) | NPS | Extended | Standard | Q_t | Q_{max} | $Q_{overrange}$ |
|---------|-----|--------------------|--------------------|--------------------|--------------------|--------------------|
| | | Q_{min} | Q_{min} | | | |
| | | m ³ /hr | m ³ /hr | m ³ /hr | m ³ /hr | m ³ /hr |
| 95.0 | 4 | 7.7 | 12.8 | 15.9 | 319 | 383 |
| 140 | 6 | 11.1 | 27.7 | 34.6 | 693 | 831 |
| 185 | 8 | 19.4 | 48.4 | 60.5 | 1210 | 1452 |
| 235 | 10 | 31.2 | 78.1 | 97.6 | 1952 | 2342 |
| 270 | 12 | 41.2 | 103 | 129 | 2576 | 3092 |
| 310 | 14 | 54.3 | 136 | 170 | 3396 | 4076 |
| 355 | 16 | 71.3 | 178 | 223 | 4454 | 5345 |
| 400 | 18 | 90.5 | 226 | 283 | 5655 | 6786 |
| 450 | 20 | 115 | 286 | 358 | 7157 | 8588 |
| 540 | 24 | 165 | 412 | 515 | 10306 | 12367 |



CONTACT US AT:

info@insightmetering.com

VISIT US AT: www.insightmetering.com