











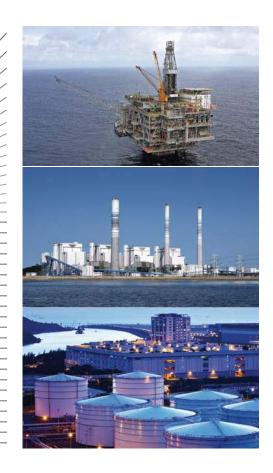
# GENERAL GUIDANCE





- **Level Switch**
- Level Gauge

www.hitrol.com





### **Always The Best Solution**

# HITROL

Since 1975, Hitrol has grown up to be a comprehensive and specialized manufacturer in the field of instrumentation and control, whose products quality is guaranteed by Korean government.

Hitrol makes a commitment to do our best to achieve the following targets.

#### **First**

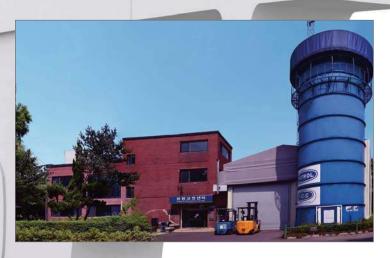
Hitrol will do our best to supply the measuring and control instruments with high precision to our customers on time.

#### Second

Hitrol will do our best to promote the export to be a global company in the world.

#### **Third**

Hitrol will do our best to be a first class company in the world who manufactures the highest precision instruments comparing with any other products through the continuous R&D activities.







#### Dear our valuable clients,

HITROL would like to thank our entire customers who have given us the continued patronage during last four decades. Hitrol has grown up as a dedicated firm specializing in the field of instrumentation during last four decades and is making a greater effort to supply with high precision and reliable products to our customers through the continuous R&D activities and quality assurance with our accumulated know-how. And also, Hitrol is paying more attention to promote the export to make a step forward for globalization.

HITROL has a subsidiary company, FCC (Flow Calibration Center) who has a large liquid flow standard system in accordance with international standard (ISO 17025), which is used for calibration and test of instruments produced by Hitrol. Now, as FCC was designated as an International Calibration and Testing Laboratory, Hitrol is providing high precision instruments to our customers in domestic and overseas market in accordance with international standard.

HITROL makes a commitment that we will do our best for continuous R&D activities to lead world market in the field of instrumentation and control. Lastly, the management and all of our staff in Hitrol will do our best to serve you and hope your lasting encouragement and warm cooperation as well.

Sincerely yours,

Jong-Ho, Kim / President





- May 1975 Hanil Instrumentation Manufacturer was established.
- Apr. 1976 Developed level measuring instruments for water supply, sewage treatment facility and shipyard.
- Sep. 1979 Built and moved headquarter and factory to Bucheon City in Gyeonggi Province.
- Feb. 1980 Changed the company name to Hanil Level Inc.
- Feb. 1982 Developed and start the production of level measuring instruments with d2 G4 high pressure and explosion proof.
- Apr. 1983 Certified from KR in Korea, LRS in Great Britain and ABS in USA, and designated as an exclusive Shipbuilding equipment manufacturer.
- Apr. 1984 Registered as a company for shipbuilding.
- Jan. 1986 Introduced a new technology in the field of level and flow measurements into Korea through the technical collaboration and joint venture agreement with Endress-Hauser in Germany.
- Apr. 1987 Win the presidential Award for the best domestic development.
- Feb. 1988 Developed safe and explosion protected instrument and start the manufacturing of the products related to ship, approved for shipbuilding equipment from Korea Shipbuilding Association.
- Aug. 1989 Established Research Institute at Paju City in Gyeonggi Province and it was designated as an International Calibration Laboratory for liquid flow rate measurement with a liquid flow standard system.
- Sep. 1990 Developed and launched flow meters.
  - Designated as an instrumentation and control equipment manufacturer for hydroelectric and thermal power plants from Korea Electric Power Corporation (KEPCO).
- Oct. 1991 Developed intrinsically safe and explosion proof type level measuring instruments.
- Dec. 1992 Built a new factory in Paju City, Gyeonggi Province and start the production of flow meters.
- Jul. 1993 Designated as a manufacturer of equipment for Nuclear Power Plant from KEPCO.
- May 1994 Designated as an International Calibration Laboratory for large liquid flow rate measurement with approved standard system.
  - Initiate the business for power plant and water supply and sewage treatment facility.
  - Win the Yang-back technology gold medal sponsored by Korea Herald domestic and foreign economic newspaper.
- Nov. 1995 Changed the company name to Hitrol Co., Ltd. for a comprehensive instrumentation manufacturer and sales company aiming at globalization.
  - Awarded gold medal from 9th precision measurement promotion meeting and selected as a superior enterprise (Liquid flow).
- Mar. 1996 Acquired NT Mark for differential pressure flow meter by Director General of Agency for Technology and standards.

  Acquired EM Mark for differential pressure flow meter by Director General of Agency for Technology and standards.

  Developed a flow restriction element ("Q" Class KEPCO project) and applied it to generation stations of KEPCO.

  Supplied it to the Ulchin Nuclear Power Plant (1996. 12. "Q" Class).
- Sep. 1997 Selected as one of the excellent 100 enterprises for Quality Competitive Power by Director General of Agency for Technology and standards.
  - Acquired ISO 9001(KSA-QA) Certificate for Quality Assurance System by Korean Standards Association.
- Dec. 1997 Acquired EM Mark for Capacitance Level Instrument by Director General of Agency for Technology and standards.
- May 1998 Agreement on joint venture with E+H in Germany was terminated.
- Oct. 1998 Developed a vibration type level switch for high temperature application (governmental project).
- Dec. 1998 Developed a flow meter and velocity instrument with low pressure loss (governmental project).
- Oct. 1999 Capacitance type level instrument was designated as an excellent world class capital product.

  Received a Ministry Award from the government.
- Dec. 1999 Registered as a vendor for thermal dispersion type instruments to KEPCO (safety class, nuclear power generating stations)
  - Dec. 30, 99 Acquired the qualification certificate for KEPIC Code (Averaging Pitot Tube, Flow Restriction Orifice, Venturi Tube and pipe components connecting with instruments)
- Mar. 2000 Made an agreement for the manufacturing technology of measuring instruments with HITACHI-NAKA Electronics Company in Japan.

- May 2000 Registered as a venture business from the government (Gyeonggi-Do Small and Medium Business Agency (No. 2000162461-1679).
- Sep. 2000 Acquired NT Mark for Thermal Gas Flow Meter using for the Nuclear Power Plant by Ministry of Industrial Resources.
- Nov. 2000 Awarded gold medal for division of weighing & measurement by Ministry of Industrial Resources (30th The Precision Technology Development).
- Feb. 2001 Acquired "CE" Mark for RF Admittance Type Level Switch (HCC-96RF-R / HLC-96RF-R) by Rwiuv.
- Apr. 2001 Win the presidential award for New Technology of Thermal Mass Flow Meter.
- Sep. 2002 Accredited as an International Calibration Laboratory in accordance with International Standard, ISO/IEC 17025
- May 2003 Acquired the patent for "Wedge Flow Sensor" by Ministry of Patent (No. 0394345)
- Jul. 2004 Won a contract on the supply of the Thermal Dispersion Type Instruments with Nuclear Safety Class to the Shin-Kori,
   Shin-Wolsung Nuclear Power Plant Unit 1&2 by Korea, Electric Power Company.
   Won a contract on the supply of the Venturi Tube, Flow Nozzle and Averaging Pitot Tube to the Lungmen Nuclear
- Apr. 2005 Supplied 46 sets of flow instruments such as Wedge Meter and Venturi Tube to the Jilin Petrochemical Company in Jilin Province of China.
- Apr. 2006 Supplied the flow Instruments such as Venturi Tube and Flow Nozzle for the Maoming Ethylene Project in China.
- May 2006 Supplied the flow Instruments such as Venturi Cone to U.S.A for Oil & Gas applications.
- Mar. 2007 Acquired "PED Certificate" for Pressure Boundary Instrument of Cone Meter (Flow Instrument) by Lloyd.
- Sep. 2007 Supplied the Venturi Tube and Flow Nozzle to the Dushanzi Petrochemical in China.
- Nov. 2007 Supplied the Cone Meter for Tombua-Landana Project for oil & gas application in Angola.
- Jun. 2008 Supplied 350 pcs of Cone Meter for steam application in Oman, Drilling in Canada.
- Sep. 2008 Awarded the Industry Medal from the Government.

Plant Unit 1&2 by Taiwan Power Company.

- Jan. 2009 Developed and commercialized "Level Transmitter for LNG Tank, -200°C" in cooperation with the Korea Gas Corporation.
- Aug. 2009 Acquired the patent for DP Hicone by Ministry of Patent (No. 10-2009-0005979/5983)
- May 2010 Audited by Mitsubishi Heavy Industries in Japan and registered as a supplying vendor.
- Jun. 2010 Registered as a supplying vendor for UAE Nuclear Power Plant.
- Jul. 2010 Supplied a 36" Cone Meter to the Statoil in Norway.
- Aug. 2010 Supplied Cone Meters for the BP Angola FPSO Project.
- Oct. 2010 Acquired the ISO 14001 certificate from KSA-QA.
- Feb. 2011 Supplied the "Q" Class Ultrasonic Level Transmitters to Shin-Kori Unit 3&4 Nuclear Power Plants.
- Mar. 2011 Supplied 15 pcs of High Pressure Cone Meters for Petrobras Brazil FPSO Project. (Hydrostatic Pressure test at 1050kgf/cm² for 2 hours).
  - Supplied the Venturi Tube and Orifice to Mitsubishi Heavy Industries for Turk Menhimiya Project.
- Jul. 2011 Won a contract on the supply of Averaging Pitot Tube (J224A) to the Nuclear Power Plant in UAE.

  Won a contract for the Power Plants, SEP11- 34 &35 in Iraq from STX Heavy Industries.
- Dec. 2011 Won a contract on the supply of Conical Orifice, etc. for the Nuclear Power Plant in UAE.
- Feb. 2012 Acquired the certificate of good performance for the Ultrasonic Level Transmitter applying to the Nuclear Power Plant from Small and Medium Business Administration. HUT-2000N (Q/T/S) HUL-2100N (Q/T/S)
- Feb. 2013 Won a contract on the supply of level instruments for Dangjin Coal-Fired Power Complex, Unit 9 & 10.
- Aug. 2013 Microwave Radar Level Transmitter was registered as a designated development product by 5 power companies in Korea.
- Apr. 2014 Supplied level switches to Samsung Engineering for 2485 InterGen SLP CCGT Power Plant Project.
- May 2014 Supplied Wedge flow meter to GS Construction for UGCC Project in Uzbekistan.
- Jul. 2014 Acquired the Australia Patent for "Cone Type Venturi Integrated Valve Device" (Patent No. 10-2009-0005979)
- Jan. 2015 Acquired the Canadian Patent for "Cone Type Venturi Integrated Valve Device" (Patent No. 2,763,333)
- May 2015 Acquired the Australia Patent for "Wafer-Type Venturi Cone Meter" (Patent No. 10-2010-0099306)
- Jul. 2016 Supplied Cone Meter to Petrobras for P-74, 75, 76 and 77.





# Flow Calibration Center **ISO/IEC 17025**

#### **Liquid Flow Standard System**

Hitrol has recognized that a liquid flow standard system is the most important and it is required to produce the highest quality flow meter. So, we built the flow calibration center in our company in 1990. We have established the subsidiary company of FCC (Flow Calibration Center) in 2007 and it was designated as an International Calibration and Testing Laboratory, and have been performed the calibration of flow meters that are used for industries and other organizations.

All of flow meters produced and supplied by Hitrol are calibrated and tested with the flow standard system equipment and we can confidently guarantee the quality of our products.

#### Item of Calibration

Differential pressure flow meter | Area flow meter | Volume flow meter | Mass flow meter Electromagnetic flow meter | Vortex flow meter | Turbine flow meter | Ultrasonic flow meter

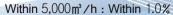
# Indoor -**Liquid Flow Standard** System up to 12" Pipe

- Liquid storage bath: 60m3
- Flow generator
- Diameter of test section: 15mm 300mm
- Straight pipe part
- Volumetric flow rate control system
- Flow rate measurement system
- Date processing & analyzing system Maximum flow rate and system uncertainty are : Within 500 m³/h: Within 0.2%

# **Outdoor** -**Liquid Flow Standard** System up to 42" Pipe

- Liquid storage bath: 150m3
- Flow generator
- Diameter of test section: 350mm 1050mm
- Straight pipe part
- Volumetric flow rate control system
- Flow rate measurement system
- Date processing & analyzing system

Maximum flow rate and system uncertainty are :









#### **Hydrostatic Test Equipment**

Hitrol has hydrostatic test equipment which carries out the hydrostatic test for flow meters. Before the calibration test, hydrostatic test for all flow meters shall be performed in accordance with ASME B 31.1 / B 31.3. This test is to prove the quality and satisfaction on welding parts of flow elements.

#### **Equipment Specification**

- Test Size : Max. 700mm | Max. 500mm

- Test Pressure : Max. 250kg/cm<sup>2</sup> | Max. 400kg/cm<sup>2</sup>

- Test Temperature : AMB







### **Equipment Specification**

- Measuring Range : 2~30m/sec

- Type : Suction

- Wind Tunnel Size :  $2.7m(W) \times 2.7m(W) \times 10.3m(L)$ - Test Section :  $0.6m(W) \times 0.6m(H) \times 1.4m(L)$ 

- Contraction Rate: 9:1







# **Manufacturing Flow Chart**

# · Manufacturing Process











## Hydrostatic Test









## · Shop Performance Test











Shipment









#### · Field Installation

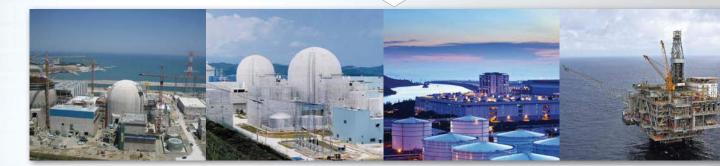














ISO9001 | ISO14001 | ISO17025 | KEPIC | PED | CRN | CE | PATENT







ISO9001 ISO14001 ISO17025







KEPIC MN KEPIC EN PED







CRN CE **PATENT** 

| ш             | DIFFERENTIAL PRESSURE   |  |   |  |   |  |
|---------------|---|--|---|--|---|--|
| TYPE          | DP HiCone METER   | FLOW NOZZLE  | VENTURI TUBE  | AVER. PITOT TUBE<br>(HITBAR)   | WEDGE METER   |  |
| IMAGE         |   |  |   |  |   |  |
| MODEL         | HFV Series  | HFN Series   | HVT Series  | HAPT Series  | HWFM Series   |  |
| SPECIFICATION | Mounting: Flange     Screw     Butt Weld     Other as required      Size: 15 ~ 1,800mm      Material: Stainless Steel     Duplex     Hastelloy     Other as required      Accuracy: ±0.5% F.S      Repeatability: ±0.1%      Turndown Ratio: 10:1      Straight pipe section: 3D:1D | Mounting: Flange Butt Weld      Size: 50 ~ 600mm      Material: Stainless Steel Duplex Hastelloy Other as required      Accuracy: ±0.5% F.S      Repeatability: ±0.1%      Turndown Ratio: 4:1      Straight pipe section: As per ISO 5167 or ASME | Mounting: Flange     Butt Weld     Size: 50 ~ 1,800mm      Material: Stainless Steel     Duplex     Hastelloy     Other as required      Accuracy: ±0.5% F.S      Repeatability: ±0.1%      Turndown Ratio: 4:1      Straight pipe section: As per ISO 5167 or ASME | Mounting: Flange Screw     Size: 50 ~ 1,800mm     Material: Stainless Steel Duplex Hastelloy Other as required     Accuracy: ±1% F.S     Repeatability: ±0.1%     Turndown Ratio: 4:1     Straight pipe section: 7D:3D | Mounting: Flange     Size: 50 ~ 1,800mm     Material: Stainless Steel                               |  |
| FEATURES      | Short upstream and downstream straight pipe section Wide flow rate measurement range Excellent repeatability and high accuracy Better signal stability High reliability as it has no moving parts PED certificated (ASME B31.3 & B31.1) API 22.2 testing                            | Applicable to most of fluid     High pressure, temperature and velocity application     Low abrasion comparing with Orifice     High durability     Excellent repeatability and high accuracy     High reliability as it has no moving parts       | Low pressure loss     Applicable to most of fluid     Simple structure     Applicable to measure for high flow rate     High durability     Excellent repeatability and high accuracy     High reliability as it has no moving parts                                | Low pressure loss     Simple structure     High reliability as it has no moving parts     Easy installation and maintenance  | High viscosity material and<br>slurry application     High reliability as it has no<br>moving parts |  |
| APPLICATION   | <ul><li>Liquid</li><li>Oil &amp; Gas</li><li>Air</li></ul>  | · Liquid<br>· Gas<br>· Steam   | <ul><li>Liquid</li><li>Gas</li><li>Steam</li></ul>  | · Liquid<br>· Gas<br>· Air   | <ul><li>Liquid</li><li>Waste Water</li><li>Slurry</li><li>Heavy Oil</li></ul>                       |  |

| DIFFERENTIAL<br>PRESSURE<br>MEASURING /<br>RESTRICTION<br>ORIFICE  | THERMAL MASS<br>FLOW METER   | ROTA METER<br>&<br>TRANSMITTER  | TURBINE<br>FLOW METER   | TYPE          |
|--|--|---|---|---------------|
| The state of the s |  |   |   | IMAGE         |
| HOP, HOF, HRO Series   | HTMF Series  | HFR-981   | HFT-7000  | MODEL         |
| Size: 15 ~ 1,800mm  Material: Stainless Steel Duplex Hastelloy Monel Other as required  Accuracy: ±2% F.S  Repeatability: ±0.1%  Turndown Ratio: 4:1  Straight pipe section: As per ISO 5167 or ASME   | • Measuring Range: 0.1 to 100,000 SCFM • Input Power: AC 110 ~ 130V 50 ~ 60Hz • Cable Length: Max. 120M • Operating Press.: 10kgf/cm² • Operating Temp.: - Element (-5 ~ 150°C) - Transmitter (0 ~ 60°C) • Accuracy: ±1% F.S • Repeatability: ±0.5% • Response Time: Max. 1.0sec | · Mounting: Flange · Size: 15 ~ 250mm · Material: Stainless Steel · Power Source: DC 24V · Output Signal: DC 4 ~ 20mA · Accuracy: ±2% F.S | · Mounting: Flange Screw · Size: 15 ~ 200mm · Material: Stainless Steel · Power Source: DC 24V or AC 110 ~ 220V · Output Signal: DC 4 ~ 20mA · Accuracy: ±0.5% F.S                | SPECIFICATION |
| Low price     Applicable to most of fluid     Simple structure     Conical type is to reduce the cavitation on the pipe line   | Direct measurement of mass flow rate     Applicable to measure for low flow rate.     Fast response time     1 to 8 points depending on the application     Built–in Microprocessor     It is designed for Nuclear Power Plant application                                       | Strong structure  Easy handling Straight pipe run at upstream is not required High durability Local indication                            | Measurement of high flow rate with small size     Wide application for low viscosity liquids     Easy handling     Excellent repeatability and high accuracy     Local indication | FEATURES      |
| <ul><li>Liquid</li><li>Gas</li><li>Steam</li></ul>   | <ul> <li>Air</li> <li>N<sub>2</sub></li> <li>CO<sub>2</sub></li> <li>Methane</li> <li>O<sub>2</sub></li> </ul>   | <ul><li>Liquid</li><li>Gas</li><li>Air</li></ul>  | · Liquid  | APPLICATION   |

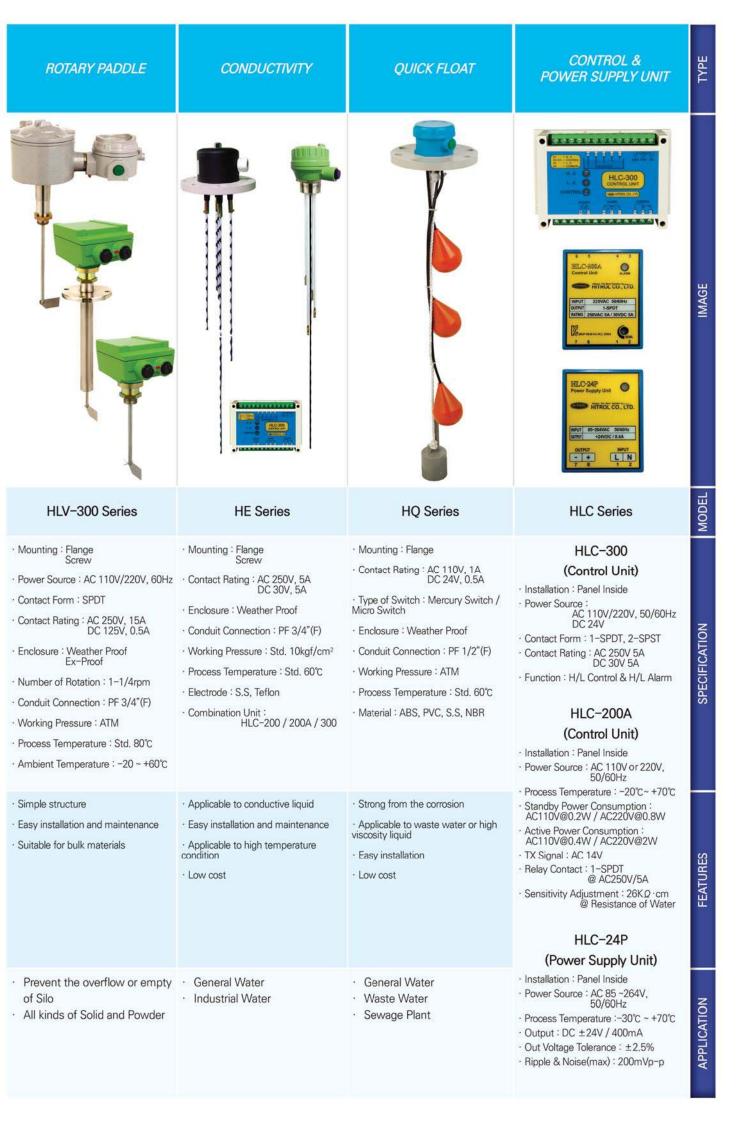
| TYPE          | RADAR  |  | ULTRASONIC  |   |
|---------------|--|--|---|---|
| IMAGE         |  |  | UsonicPLUS R  | USONICPLUS N  ULTRASONIC LEVEL TRANSMITTER  |
| MODEL         | HW Series  | HS Series  | HUT-2000S<br>HUL-2100S<br>(2200S, 2300S)  | HUT-2000N/T/S<br>HUL-2100N/T/S<br>(2200S)   |
| SPECIFICATION | · Mounting: Screw  · Measuring Range: 0.2~23M  · Resolution: 1mm  · Power Source: DC 24V  · Output Signal: DC 4 ~ 20mA + Hart  · Operating Temp.: 100°C 180°C (Opt.)  · Operating Press.: 3bar 25bar (Opt.)  · Beam Angle: 6°  · Enclosure: Weather Proof (IP67) | Type: Compact  Mounting: Flange Screw  Measuring Range: 0.2~25M  Beam Angle: 5~7°  Resolution: 1~10mm (depend on Measuring Range)  Output Signal: DC 4~20mA + Hart  Power Source: DC 24V / AC 85~255V  Enclosure: Weather Proof (IP67) | Type: Remote Channel: 1ch or 2ch Mounting: Flange Thread (Sensor) Wall (Transmitter)  Measuring Range: 8M, 15M, 30M Beam Angle: 7° Resolution: 1mm Output Signal: DC 4~20mA, RS 232 RS 485, Relay Power Source: AC 90 ~ 240V Enclosure: Weather Proof (IP65)                        | · Type : Remote  · Mounting : Flange  |
| FEATURES      | 25GHz Frequency     Easy installation due to small antenna     High temperature and pressure tank application     Plug-in graphical display module     Ex-Proof version  | Compact Type (2/4-wire)  Plug-in Display  5° beam Angle  Full temperature compensation  Ex-Proof version   | Remote Type  Cost effective dual channel system for: two independent measuring task rake control (differential level) two sensors in one silo (average computing)  Real data sampling (Spectrum Analyzing) Threshold & Start Point (Variable Function)  TTF (Time Thickness Filter) | Designed for nuclear power plant     Stainless steel housing     Environmental Qualification for nuclear power plant     Testing EMI & RFI     Real data sampling (Spectrum Analyzing)     Threshold & Start Point (Variable Function)     TTF (Time Thickness Filter)     Class—1E, Non Class—1E |
| APPLICATION   | <ul> <li>Thermal / Hydro Power Plant</li> <li>Oil / Petrochemical Plant</li> <li>Water / Sewage Treatment</li> <li>Steel / Refinery</li> <li>River / Dam</li> <li>Pharmaceutical</li> <li>Food and beverage</li> </ul>   | <ul> <li>Thermal / Hydro Power Plant</li> <li>Oil / Petrochemical Plant</li> <li>Water / Sewage Treatment</li> <li>Steel / Refinery</li> <li>River / Dam</li> <li>Open channel Flow Metering</li> </ul>                                | <ul> <li>Thermal / Hydro Power Plant</li> <li>Oil / Petrochemical Plant</li> <li>Water / Sewage Treatment</li> <li>Steel / Refinery</li> <li>River / Dam</li> </ul>   | · Nuclear Power Plant   |

| CAPACITANCE  | MAGNETIC FLOAT  | SPRING BALANCE   | HYDRO-STATIC<br>PRESSURE   | TYPE          |
|--|---|--|--|---------------|
|  |   |  | NO GRAPIC NOCOCIO  | IMAGE         |
| HT-100CT Series  | HT-100R Series  | HT-100F Series   | HT-100P Series   | MODEL         |
| Mounting: Flange Screw     Power Source: DC 24V     Output Signal: DC 4~20mA     Enclosure: Weather Proof Ex-Proof     Conduit Connection: PF 3/4"(F)     Working Pressure: Std. 10kgf/cm²     Process Temperature: Std. 80°C Max. 150°C     Ambient Temperature: -20 ~ +60°C     Wetted Part Material: S.S./ Teflon | Mounting: Flange     Power Source: DC 24V     Output Signal: DC 4~20mA     Enclosure: Weather Proof Ex−Proof     Conduit Connection: PF 3/4"(F)     Working Pressure: Std. 10kgf/cm²     Process Temperature: Std. 80°C Max. 150°C     Ambient Temperature: −20 ~ +60°C     Wetted Part Material: S.S | · Mounting: Flange  · Power Source: DC 24V  · Output Signal: DC 4~20mA  · Enclosure: Weather Proof  · Conduit Connection: PF 1/2"(F)  · Working Pressure: ATM  · Process Temperature: Max. 80°C  · Ambient Temperature: −20 ~ +60°C  · Wetted Part Material: S.S | · Mounting: Flange  · Power Source: DC 24V  · Output Signal: DC 4~20mA  · Enclosure: Weather Proof  · Conduit Connection: PF 3/4"(F)  · Working Pressure: ATM  · Process Temperature: Std. 80°C  · Ambient Temperature: -20 ~ +60°C  · Wetted Part Material: S.S     | SPECIFICATION |
| Strong for aggressive material     Applicable to low and high viscosity liquids     Applicable to the tank installed the agitator     Various probe types according to the application     Easy installation (wire type)     Applicable to corrosive material     Interface measurement between water and oil        | It is generally well–used to measure the level of liquid     Various materials of sensing part (Stainless Steel, PVC, Teflon)     Applicable to corrosive material (PVC, Teflon)     Local Indication (Model: HT–100RS–L)   | Easy installation     Local Indication (Model : HT-100Fl)     Suitable for large open tank   | Easy installation     Easy maintenance     Unaffected by wave status on the surface     Flat diaphragm of stainless steel for high sensitivity     Side mounting on the tank is available (Model: HT-100PS)     Suitable for open tank     Applicable to waste water | FEATURES      |
| Chemical Plant     Waste Water Plant   | <ul> <li>Waste Water Plant</li> <li>Filling &amp; Discharging Storage<br/>Tank</li> <li>Drinking Water Plant</li> <li>Interface Measurement</li> <li>Petrol Tank</li> </ul>   | <ul> <li>Waste Water Plant</li> <li>Filling &amp; Discharging Storage<br/>Tank</li> <li>Drinking Water Plant</li> <li>Petrol Tank</li> <li>Brewery Plant</li> </ul>  | <ul> <li>Waste Water Plant</li> <li>Filling &amp; Discharging Storage<br/>Tank</li> <li>Paper Industry</li> <li>Drinking Water Plant</li> <li>Food Industry</li> </ul>   | APPLICATION   |

| TYPE          | FLOAT  |  | MAGNETIC FLOAT   |  |
|---------------|--|--|--|--|
| IMAGE         |  |  |  | THE STREET OF ST |
| MODEL         | HM-12(10) Series   | HM-95(90S) Series  | HR-30 Series   | HR-50 Series   |
| SPECIFICATION | Mounting : Flange     Contact Rating : AC 250V, 10A DC 125V, 0.5A     Enclosure : Weather Proof Ex-Proof     Conduit Connection : PF 3/4"(F)     Working Pressure : Std. 10kgf/cm²     Process Temperature : Std. 120°C     Wetted Part Material : S.S | Mounting : Flange     Contact Rating : AC 250V, 15A DC 125V, 0.5A     Enclosure : Weather Proof Ex−Proof     Conduit Connection : PF 3/4"(F)     Working Pressure : Std. 10kgf/cm²     Process Temperature : Std. 120°C     Wetted Part Material : S.S | Mounting: Flange Screw     Contact Rating: AC 250V, 1A DC 24V, 0.5A     Enclosure: Weather Proof Ex-Proof     Conduit Connection: PF 3/4"(F)     Working Pressure: Std. 10kgf/cm²     Process Temperature: Std. 80°C     Wetted Part Material: S.S | Mounting: Flange     Contact Rating: AC 220V, 1A DC 24V, 0.5A     Enclosure: Weather Proof     Working Pressure: 0.5kgf/cm²(PVC) 10kgf/cm²(SS)     Process Temperature: Std. 60°C     Meterial: Chamber–SUS 304, 316 Float–PVC, Titanium Switch Housing – PVC Duralumin Terminal Box – ABS     Measuring Length: Max. 2,500mm  |
| FEATURES      | Designed for side mounting     Various float size     Applicable to high temperature condition, 250°C (Model: HM–12H–SP)     Acquired the "CE" mark  | High temperature & pressure application (Max. 500°C, 63kg/cm²)     Strong structure     It is well–used to control of water supply to boiler in nuclear or coal power plant     Acquired the "CE" mark   | It is generally well–used to measure the level of liquid     Various materials of sensing part (Stainless Steel, PVC, Teflon)     Applicable to corrosive material (PVC, Teflon)   | Applicable to various liquids     Strong structure     High reliability for level measurement     Adjustable setting points  |
| APPLICATION   | <ul> <li>Fuel oil tank process control for petrochemical plant</li> <li>Water treatment plant</li> <li>Liquid level control for generator</li> </ul>   | <ul> <li>Boiler feeding drum</li> <li>Water Control</li> <li>Fuel oil tank level alarm, process control for petrochemical plant</li> <li>Nuclear Power Plant for process control</li> <li>Sealing liquid level control for generator</li> </ul>        | <ul> <li>General liquids, Waste Water</li> <li>Water treatment plant</li> <li>Filling and discharging storage tank</li> <li>Petrol Tank</li> <li>Brewery Plant</li> <li>Drinking Water Plant</li> <li>Petrochemical Industry</li> </ul>            | <ul><li>General liquids</li><li>Wastewater Treatment plant</li><li>Water treatment plant</li></ul>   |

| DISPLACER   | CAPACITANCE  |  | RADIO FREQUENCY<br>ADMITTANCE   |               |
|---|--|--|---|---------------|
| CE  |  | CE   | CE  | IMAGE         |
| HM-90(30) Series  | HCC-95P Series   | HCC-609N Series  | HCC-96RF Series   | MODEL         |
| Nounting: Flange Contact Rating: AC 250V, 15A DC 125V, 0.5A  Enclosure: Weather Proof Ex-Proof Conduit Connection: PF 3/4"(F) Working Pressure: Std. 10kgf/cm² Process Temperature: Std. 120°C Wetted Part Material: S.S                        | · Mounting: Flange Screw  · Power Source: AC 90~240V  · Contact Form: DPDT  · Contact Rating: AC 250V, 5A DC 28V, 5A  · Enclosure: Weather Proof Ex-Proof  · Conduit Connection: PF 3/4"(F)  · Working Pressure: Std. 10kgf/cm²  · Process Temperature: Std. 80°C  · Ambient Temperature: ~20 ~ +60°C  · Time Adjustable: 0.5 ~ 30 sec.  · Fail Safe Mode: H & L Selection  · Material: S.S+Teflon | · Mounting: Flange Screw  · Power Source: AC 90~240V  · Contact Form: DPDT  · Contact Rating: AC 250V, 5A DC 28V, 5A  · Enclosure: Weather Proof Ex-Proof  · Conduit Connection: PF 3/4"(F)  · Working Pressure: Std. 10kgf/cm²  · Process Temperature: Std. 80°C  · Ambient Temperature: ~20 ~ +60°C  · Time Adjustable: 0.5 ~ 30 sec.  · Fail Safe Mode: H & L Selection  · Material: S.S+Teflon | Mounting: Flange Power Source: AC 110/220V, 60Hz Contact Form: DPDT Contact Rating: AC 250V, 5A DC 28V, 5A  Enclosure: Weather Proof Ex-Proof Conduit Connection: PF 3/4"(F) Working Pressure: Std. 10kgf/cm² Process Temperature: Std. 80°C, Max. 400°C Ambient Temperature: -20 ~ +60°C Fail Safe Mode: H & L Selection Material: S.S+Special | SPECIFICATION |
| High temperature & pressure application (Max. 500°C, 63kg/cm²) Contact position is adjustable H/L control function Easy installation It is well–used to control of water supply to boiler in nuclear or coal power plant Acquired the "CE" mark | <ul> <li>Fail-safe level detection</li> <li>Selectable time delay</li> <li>Check operating status as LED flashing</li> <li>Adjustable sensitivity (5 ~ 75pF)</li> <li>Applicable to various liquids and solids</li> <li>Easy installation (wire type)</li> <li>Applicable to corrosive material</li> </ul>   | <ul> <li>Fail-safe level detection</li> <li>Selectable time delay</li> <li>Check operating status as LED flashing</li> <li>Adjustable sensitivity (0.5 ~ 20pF)</li> <li>Applicable to various liquids and solids</li> <li>Applicable to corrosive material</li> <li>Acquired the "CE" mark</li> </ul>  | Prevention of malfunctioning as it compensates the material build-up on the probe Suitable for measurement of ash Applicable to high temperature condition (400°C) Acquired the "CE" mark   | FEATURES      |
| <ul> <li>Boiler feeding drum</li> <li>Water Control</li> <li>Fuel oil tank level alarm, process control for petrochemical plant</li> <li>Nuclear Power Plant for process control</li> <li>Sealing liquid level control for generator</li> </ul> | <ul> <li>Petrochemical Plant</li> <li>Water Treatment Plant</li> <li>Food Industry</li> <li>All kinds of solid and liquid with dielectric constant (ε.)</li> </ul>   | <ul> <li>Petrochemical Plant</li> <li>Water Treatment Plant</li> <li>Food Industry</li> <li>All kinds of solid and liquid with dielectric constant (ε.)</li> </ul>   | <ul> <li>Ash Hopper in Power Plant</li> <li>Oil Ash</li> <li>Fly Ash</li> <li>Cement Silo</li> <li>Material has build-up</li> </ul>   | APPLICATION   |

#### **VIBRATION** CE CE MODEL HTM-20N Series HTM-30N Series HTM-920 Series HTM-930 Series Mounting: Flange / Screw · Mounting : Flange / Screw · Mounting : Flange / Screw · Mounting : Screw Power Source : AC 90 ~ 240V DC 24V (Opt.) Power Source : DC+17V ~ DC +40V AC 88V ~ 264V • Power Source : AC 110V/220V, 60Hz • Power Source : AC 110V/220V, 60Hz DC 24V (Opt.) · Contact Form : SPDT, DPDT Contact Form : DPDT · Contact Form : DPDT · Contact Form : SPDT · Contact Rating : AC 250V, 5A DC 30V, 5A Contact Rating : AC 250V, 5A DC 30V, 5A · Enclosure : Weather-Proof (IP65) Ex-Proof (Ex d IIC T6) · Contact Rating : AC 250V, 5A DC 30V, 5A SPECIFICATION Enclosure : Weather Proof Ex-Proof · Enclosure : Weather Proof · Working Pressure : Max. 40barA · Enclosure: Weather Proof · Conduit Connection: PF 3/4"(F) Conduit Connection: 2-PF 3/4"(F) · Process Temperature: -40°C ~ 150°C · Conduit Connection: Terminal Block Working Pressure : Std. 10kgf/cm² (Cable-2kgf/cm²) · Working Pressure : Std. 10kgf/cm<sup>2</sup> Resonant Frequency: 350Hz±50Hz · Working Pressure : Std. 10kgf/cm<sup>2</sup> Process Temperature : Std. 80°C · Fail Safe Mode : H & L Selection · Process Temperature: 250°C Process Temperature : Max. 80°C · Ambient Temperature: -20 ~ +60°C (Cable-60°C) · Material : S.S · Ambient Temperature: -20 ~ +60°C · Material : S.S Ambient Temperature : −20 ~ +60°C Fail Safe Mode: H & L Selection Material: S.S Suitable for fine powder with small particle which has more than 0.2 specific gravity Suitable for light powder which has more than 0.02 specific gravity Suitable to the material with a coarse • Various liquid and powder can be detected Adjustment after installation is not · Acquired the "CE" mark • Status Indicator: Power, Detector, Relay required • Sensitivity Adjustment : Dip Switch (3 Step) Acquired the "CE" mark **FEATURES** • Delay Time Adjustment : Dip Switch (8 Step @ Default 1.5s ~ Max. 21s) • Applicable to low density: 0.7g/cm3 • Applicable to high viscosity: 10,000mm²/s · Applicable to high pressure · Operating convenience and stability Water Petrochemical Plant Fly Ash Petrochemical Plant · Powder (high or low density) (PP, PE, Nylon Chip, etc) Petrochemical Plant **APPLICATION** (PP, PE, Nylon Chip, etc) Petrochemical Plant Power (high or low density) (PP, PE, Nylon Chip, etc) Power (high or low density) **Bulk Material** Power (high or low density) **Bulk Material** · Bulk Material · Kernel of Styrofoam



| TYPE          | MAGNETIC FLAP  | REFLEX TYPE   | TRANSPARENT TYPE  |
|---------------|--|---|---|
| IMAGE         |  |   |   |
| MODEL         | HLG-100F Series  | HRG Series  | HTG Series  |
| SPECIFICATION | <ul> <li>Type: Magnetic</li> <li>Mounting: Side to Side</li> <li>Flange Rating: 150LB ~ 1,500LB</li> <li>Max. Temperature: 350°C</li> <li>Material: SUS 304<br/>SUS 316L<br/>PP<br/>etc.</li> <li>Output Signal: DC 4~20mA(opt.)<br/>SPST or SPDT(opt.)</li> </ul> | Type: Reflex  Mounting: Side to Side  Size: 15A, 20A, 25A  Flange Rating: 150LB ~ 1,500LB  Material: C.S, S.S  Visible Length: 171 to 4,000mm | Type: Transparent  Mounting: Side to Side  Size: 15A, 20A, 25A  Flange Rating: 150LB ~ 1,500LB  Material: C.S, S.S  Visible Length: 171 to 4,000mm                    |
| FEATURES      | Strong for aggressive material     Applicable to flammable or explosion area     High temperature & pressure application   | Designed for a wide range of<br>Pressure and temperature<br>applications     Long visible length     Economic model                           | Designed for a wide range of pressure and temperature applications     Suitable for observation of the level of corrosive and colored liquids     Long visible length |
| APPLICATION   | <ul> <li>Refinery Plant</li> <li>Chemical and Petrochemical Plant</li> <li>Boiler</li> <li>Beverage Plant</li> </ul>   | <ul> <li>Refinery Plant</li> <li>Chemical and Petrochemical Plant</li> <li>Boiler</li> <li>Beverage Plant</li> </ul>                          | <ul> <li>Refinery Plant</li> <li>Chemical and Petrochemical Plant</li> <li>Boiler</li> <li>Beverage Plant</li> </ul>  |

TYPE

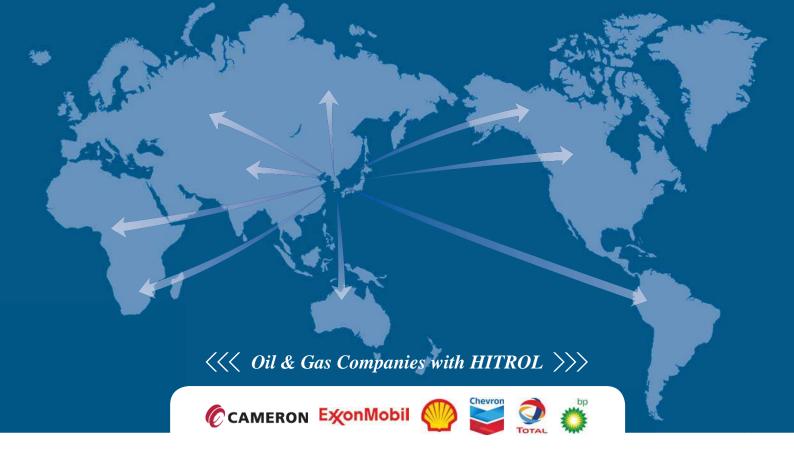
#### TANK LEVEL GAUGE

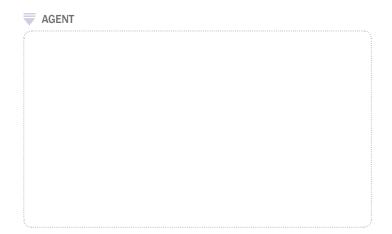






| HLT-1000 Series  | HLT-2000 Series  | HAT Series  | MODEL         |
|--|--|---|---------------|
| Mounting: Side or Top Range: 2.5m, 5m, 10m, 16m, 20m, 30m Working Press.: ATM Process Temp.: Max. 150°C Indicator: 2-Point Dial Enclosure: Weather Proof (IP65) Material: SUS 304, SUS 316, etc. Head Material: Al. Cast | Mounting: Side or Top Range: 2.5m, 5m, 7.5m Working Press.: ATM Process Temp.: Max. 150°C Indicator: 1–Point Dial Enclosure: Weather Proof (IP54) Material: SUS 304, SUS 316, etc. Head Material: Al. Cast | HAT-1000 Series (Transmitter)  Power source: DC 24V  Output: DC 4~20mA 2-SPDT (opt.)  Enclosure: Weather Proof (IP66) Ex-Proof (opt.)  Combination gauge: HLT Series  HAT-5000 Series (Switch)  Switch type: Micro switch  Output: Max. 4-SPDT  Contact rating: AC 250V, 15A, DC 125V, 0.5A  Enclosure: Weather Proof (IP66) EX-Proof (opt.)  Combination gauge: HLT Series | SPECIFICATION |
| Semi-permanent life     Transmitter and Switch - Option (HAT Series)     No need maintenance     Local indication  | Semi-permanent life     Transmitter and Switch - Option (HAT Series)     No need maintenance     Local indication  | Semi-permanent life     No need maintenance   | FEATURES      |
| <ul><li>Refinery Plant</li><li>Liquids storage tank for general industry</li></ul>   | <ul><li>Refinery Plant</li><li>Liquids storage tank for general industry</li></ul>   | <ul><li>Refinery Plant</li><li>Liquids storage tank for general industry</li></ul>  | APPLICATION   |







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