

# Pharmaceutical & Biotech Industry



**PARSHVI**<sup>®</sup>  
TECHNOLOGY (INDIA) PVT. LTD.



**Note : All Sensors Available in ATEX  
and Flame Proof Version.**

Represented by :



**PARSHVI**<sup>®</sup>  
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## RTD Probes & Temperature Transmitter

### Specification :

#### RTD Probes

- ❖ Pt-100/ Pt1000, Simplex & Duplex
- ❖ Accuracy: Class ,A / Class B / Higher
- ❖ Sheath: SS316L (1.4404)
- ❖ OD & length: 6mm (standard) / 8 mm / 10mm / 12mm diameter and upto 300 mm length sheath
- ❖ Termination : W.P die-cast aluminum head with threaded cap & chain with single cable entry
- ❖ Cable gland : 1& 2" BSP, Single compression Process Connection: Fix & Adjustable type



#### Temperature Transmitter (Make : Pixsys)

- ❖ Programming : Wireless with Mobile Application
- ❖ Input : RTD (PT100/Ni100/PT1000)
- ❖ Output : 4...20mA Loop Powered
- ❖ Power supply : operating range 6-32 Vdc
- ❖ Connection : Screw pins
- ❖ Fixing : On DIN/B head
- ❖ According to : CE, EN 61000-6-4, EN 61000-6-2, UL 61010-1
- ❖ 3600 Point Data Logging

**Application :** Hygienic/ Utility Process

## Infrared Temperature Sensor

### Specification :

- ❖ High-ambient sensing heads withstand up to 120°C
- ❖ Field of view optics : 20:1
- ❖ Temperature range : 0 to 250°C (other on request)
- ❖ Output : 4-20 mA, 2 wire
- ❖ Without display
- ❖ Cable length : 3 meter



**Application :** Autocoater

## Autoclave Chamber & Load Temperature Probe

### Specification :

- ❖ Available in PT100 RTD (Class A, AA as per IEC 60751:2008)
- ❖ Measuring range -30°C...180°C
- ❖ Response time T05=5sec
- ❖ Connection wire (cable-jacket/wire)
- ❖ PFA/PTFE, 250°C
- ❖ Material (process-intrusive) 316L



### Application :

- ❖ For Temperature Measurements in Sterilizers

## Strap-on Temperature Transmitter/ Controller

### Specifications :

- ❖ Sensor : Pt1000 EN 60751B
- ❖ Accuracy :  $\pm 0,3$  °C (at 0 °C)
- ❖ Range : -50...+120 °C
- ❖ Mounting By an adjustable tie on the pipe
- ❖ Protection class : IP54



### Application :

- ❖ Designed for automatic HVAC systems to detect radiator temperatures

## Immersion Temperature Transmitter/ Controller

### Specifications :

- ❖ Sensor : Pt1000 EN 60751/B
- ❖ Measuring range : -50...+120 °C
- ❖ Accuracy :  $\pm 0,3$  °C (at 0 °C)
- ❖ Measuring probe  
Dimensions  $\varnothing$  6 mm x 85 mm
- ❖ Protection class IP54



### Application :

- ❖ Heating and cooling water temperatures in HVAC automation systems
- ❖ Air temperature measurements for air ventilation in ducts

## Pressure Switch

### Specification :

- ❖ Pressure range : -700mbar to 12 bar
- ❖ Max. operating pressure : 0.5/1 bar
- ❖ Diaphragm material : NBR
- ❖ Process connection : 1/4", BSP thread
- ❖ Material : Brass
- ❖ Accessories : IP65 cover cap



### Application :

- ❖ Monitoring the Overpressure of Combustible Gases
- ❖ Gas Burner, Boiler Pressure

## Air Differential Pressure Switch

### Specification :

- ❖ Pressure range : 20 - 5000 Pa
- ❖ Switch type : SPDT (1 NO + 1 NC)
- ❖ Protection standard : IP54
- ❖ Temperature range : -20°C to +85°C
- ❖ Hose connection with 6 mm (OD)



### Application :

- ❖ AHU Filter Status
- ❖ Fan, Blower & Filter Status

## Hygienic Pressure Transmitter

### Specification :

- ❖ Piezoresistive pressure sensor design
- ❖ Measuring ranges : -1 bar to 40 bar
- ❖ Output : 4...20mA, 0...10V, 0...5V and others
- ❖ Accuracy :  $\pm 0.25\%$ FSO or  $\pm 0.5\%$ FSO
- ❖ Calibrated and temperature compensated
- ❖ Flush diaphragm construction
- ❖ Variety of pressure & electrical connections
- ❖ Operating Temperature Range : -20 to 200°C



### Application :

- ❖ Hygienic Process

## Pressure Transmitter

### Specification :

- ❖ Measuring ranges from 100 mbar to 600 bar
- ❖ Absolute, gauge and sealed gauge
- ❖ Accuracy:  $\pm 0.25\%$ FSO or  $\pm 0.5\%$ FSO
- ❖ Calibrated and temperature compensated
- ❖ Stainless steel construction
- ❖ Piezoresistive pressure sensor design
- ❖ Variety of pressure & electrical connections
- ❖ Output 4...20mA, 0...10V, 0...5V and others



### Application :

- ❖ Process Control Systems/ Utility
- ❖ Refrigeration and HVAC Controls
- ❖ Pumps and Compressors

## Draft Pressure Transmitter of ID/FD Fan

### Specification :

- ❖ Range : 0-1000mmWC (other on request )
- ❖ Supply Voltage : 18 ... 30 VAC / VDC
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3-wire or 4 ... 20 mA, 2-wire is also available
- ❖ With switching output
- ❖ Linearity :  $\leq \pm 0.5\%$  FS, min.  $\pm 1$  Pa
- ❖ Working temperature : -20 ... 70°C
- ❖ Protection class : IP65
- ❖ Display : with LED-display, 4 digits (only for 3-wire)
- ❖ Process connection P1 and P2 : Stainless steel - Hose pipe
- ❖ Connection with 4 / 6 mm outer diameter



**Application :** Draft Pressure Measurement of ID/FD Fan

## Differential Pressure Transmitter

### Specification :

- ❖ Range :  $\pm 25, \pm 50, \pm 100, \pm 500$  0...25, 0...50, 0...250, 0...1000 (selectable via jumper)
- ❖ High accuracy : 0.4% from applied pressure
- ❖ Automatic zero point calibration
- ❖ Span point calibration (Optional)
- ❖ Measuring units : Pa, kPa, mbar, inchWC, mmWC, psi
- ❖ Supply voltage : 24 VDC  $\pm 10\%$  / 24 VAC  $\pm 10\%$
- ❖ Output signals (3-wire) : 0/2...10 VDC 4...20 mA
- ❖ Operating temperature :  $-5...50\text{ }^\circ\text{C}$
- ❖ Response time : 0.4 / 8 s
- ❖ Protection standard : IP54



**Application :** HVAC & BMS

## Differential Pressure Switches And Transmitter

### Specification :

- ❖ Range :  $\pm 100$  Pa /  $\pm 250$  /  $\pm 300$  /  $\pm 500$  Pa (Selectable)
- ❖ Units : Pa, kPa, mmWC, inWC, mbar (Selectable)
- ❖ Supply Voltage : 24 VAC or VDC,  $\pm 10\%$
- ❖ Output : Analog: 0-10 V
- ❖ Relay 1 : 250 VAC / 30 VDC / 6 A
- ❖ Relay 2 : 250 VAC / 30 VDC / 6 A
- ❖ Automatic zero point calibration
- ❖ Display : 3 1/2 digit LCD backlit display



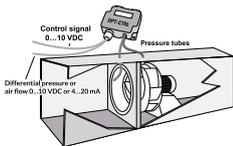
### Application :

- ❖ Fan, blower and filter monitoring
- ❖ Staircase pressure monitoring and alarm
- ❖ Pressure monitoring in cleanrooms
- ❖ Boiler pressure monitoring and alarm

## Differential Pressure or Air Flow Transmitter With PID Controller

### Specification :

- ❖ Range : 0...2500 Pa
- ❖ Power supply : 24 VAC or VDC
- ❖ Output:
  - ❖ Control output : Voltage (0-10 V) or current (4-20 mA)
  - ❖ Differential pressure or air flow : Voltage(0-10 V) or current (4-20 mA)
- ❖ PID - Parameter : Adjustable Via Menu
- ❖ Zero Point Calibration : AZ (autozero) function for automatic zero point calibration or By Pushbutton
- ❖ with Display : 2-line display (12characters/line)
- ❖ Line 1 : Direction of control output
- ❖ Line 2 : Pressure or air flow measurement
- ❖ IP Protection : IP54



### Application :

- ❖ Controlling differential pressure or air flow in air handling systems
- ❖ VAV applications

## Digital Differential Pressure Transmitter with 2 Relays

### Specification :

- ❖ Range : 0 to 2.5 bar
- ❖ Pressure unit : mmWC, Pa, mbar
- ❖ Power Supply : screw terminals 24 VAC/VDC
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3-wire
- ❖ Switching output : 2 relays with 50VAC/5A (S1) and 250VAC/5A (S2) switching capability
- ❖ Display : Red 7-segment LED display, 4-figure
- ❖ Accuracy :  $\pm 1\%$  of FS
- ❖ IP65 - SS/ MS enclosure with process connection : 2 - Hose connection with 4 mm outer diameter



**Application :** AHU/ HEPA Filter/ Scrubber/ De-Duster

- ❖ Bag Filter Pressure Monitoring



## Air Differential Pressure Transmitter

### Specification :

- ❖ Range : -100 Pa ..... 500 mbar
- ❖ Supply voltage : 18 ... 30 VAC / VDC
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3 wire
- ❖ With switching output
- ❖ Linearity :  $\leq \pm 0.5\%$  FS, min.  $\pm 1$  Pa
- ❖ Protection class : IP54
- ❖ Working and storage temperature :  $-20 \dots +70\text{ }^\circ\text{C}$
- ❖ Hose connection with 6 mm outer diameter
- ❖ Display : optional



### Application

- ❖ Measurement of Constant Pressure in VAV
- ❖ Dynamic Filter and Ventilator Monitoring
- ❖ Monitoring & Controlling of Air Filters & Fan (Blower)
- ❖ Duct Static Pressure Monitoring

## Digital Differential Pressure Transmitter

### Specification :

- ❖ Range : -100 Pa and 1 bar
- ❖ Supply voltage : 18 ... 30 VAC / VDC
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3 wire
- ❖ With switching output
- ❖ Linearity :  $\leq \pm 0.5\%$  FS, min.  $\pm 1$  Pa
- ❖ Working temperature :  $-20 \dots 70\text{ }^\circ\text{C}$
- ❖ Protection class : IP65
- ❖ Display : Optional
- ❖ Process connection P1 and P2 : Stainless steel -Hose pipe connection with 4 / 6 mm outer diameter



### Application

- ❖ Pressure Monitoring in Sterilization Tunnel Chamber
- ❖ Bag Filter Status

## High Precision Differential Pressure Transmitter

### Specification :

- ❖ Also  $\pm$  measurement ranges
- ❖ Scalable measurement ranges and units
- ❖ Zero-point correction prevents zero-point drift
- ❖ Built-in valve provides a high level of over pressure protection
- ❖ High level of accuracy and long-term stability through automatic zero-point calibration
- ❖ Easy configuration of the measuring range, analog output, time constants and units via PC or keyboard (optional)
- ❖ Display with keyboard for configuration of the pressure transmitter (optional)
- ❖ Margin of error:  $\pm 0.2\%$  or  $\pm 0.5\%$  of max. Value
- ❖ Protection class IP 65, with USB: IP 40 /IP20



### Application

- ❖ Sterilization tunnel chamber

## High Precision Cleanroom Pressure Sensor

### Specification :

- ❖ Measurement ranges :  $\pm 30$  Pa
- ❖ Measurement accuracy :  $\pm 0.2\%$  FS
- ❖ Zero-point correction prevents zero-point drift
- ❖ Built-in valve provides a high level of overpressure protection
- ❖ Step response time (T63) : 25 ms .. 60 s (adjustable)
- ❖ Power supply : 24 V AC / DC  $\pm 10\%$

### Application :

- ❖ Cleanroom Pressure Monitor



## Differential Pressure Transmitter

### Specification :

- ❖ Suitable for top-hat rail mounting and wall surface installation
- ❖ Selectable output signal 0/2 .. 10 V, 0/4 .. 20 mA or 0 .. 5 V
- ❖ Selectable attenuation of the output signal of up to 4 s (optional)
- ❖ Display (optional)
- ❖ Zero-point calibration via an external signal reduces maintenance costs



### Application

- ❖ Bag Filter Pressure Monitoring
- ❖ Draft Pressure Monitoring
- ❖ Fan/ Blower Flow Monitoring

## Differential Pressure Transmitter

### Specification :

- ❖ High level of accuracy and long-term stability
- ❖ Measurement of positive and negative differential pressures
- ❖ LCD display (optional)
- ❖ Output signal 4 .. 20 mA
- ❖ Factory-adjusted attenuation of the output signal of up to 5 s possible (optional)



### Application : Isolator

## Calibrator for Low Pressure Device

### Specification :

- ❖ High level of accuracy and long-term stability through automatic zero-point calibration
- ❖ Simple menu navigation for unit conversion, setting calibration points and setting the measurement range
- ❖ Generation of positive and negative differential pressures
- ❖ Easy to operate and produce calibration curves via USB port and PC

### Application

- ❖ In House Calibration Purpose
- ❖ In House Calibration of Low Pressure Sensor Like Magnehelic Gauge and DPT



## Portable Digital Manometer + Air Velocity Meter

### Specification :

- ❖ Range :  $\pm 200$  Pa
- ❖ Velocity range : 5 ... 58 m/s
- ❖ Display : 3 1/2" Digit, LCD
- ❖ Accuracy :  $\pm 0.5\%$  of max. value
- ❖ Operating temperature : 0 ... 50°C
- ❖ Power supply : 9 V battery with calibration certificate

### Accessories:

- ❖ L - shape pitot tube
- ❖ Length : 600 mm
- ❖ MOC : Stainless steel
- ❖ Process connection : 6 mm hose

### Application :

- ❖ Testing and Commissioning Purpose



## Differential Pressure Transmitter for Liquids

### Specification :

- ❖ Range : 0-2.5, 0-6, 0-10 bar  
(Special measuring ranges on request)
- ❖ Supply : 18 – 30 V AC/DC
- ❖ Output signal : 0-10 Volt & 4 to 20 mA
- ❖ Process connection : 2 x inner thread G1/4 Axial
- ❖ Accuracy :  $\pm 0.5\%$  FS
- ❖ Protection class : IP65



### Application :

- ❖ Secondary Variable Pump Control in Chiller Management

## Capacitive Type Level Switch

### Specification :

- ❖ Process connection : G1/2" hygienic
- ❖ Output signal : PNP, NPN or Push-Pull, switchable
- ❖ Response time :  $< 0,2$ sec
- ❖ Supply voltage :  $U_b = 24V (12...32VDC)$
- ❖ Electrical connection : M12 connector 5pin
- ❖ Process temperature : 0°C...100°C /max 130°C ( $< 1h$ )
- ❖ Process pressure : max 10 bar ❖ LED Indication



### Application :

- ❖ Level detection in vessels or pipes
- ❖ Level detection of syrup and fruit concentrate

## Compact Liquid Vibrating Fork Level Switch

### Specification :

- ❖ Industrial power supply (15 to 80 VDC or 15 to 260 VAC).
- ❖ Low power consumption.
- ❖ No calibration required.
- ❖ Threaded & Hygienic process connection.
- ❖ Suitable for side as well as top mounting.
- ❖ Minimum 1/2" (LFV12) process connections
- ❖ High pressure up-to 15 bar
- ❖ High Temperature up-to 150 °C available



### Applications :

- ❖ Flow/No-Flow Detection in Pipe-Lines.
- ❖ Used as a Full, Empty and Demand Alarm in Fluid Containers, Tanks Containing Liquids of Various Types, Fuel Oil, Lube Oil etc.

## Liquid Vibrating Fork Level Switch

### Specification :

- ❖ Compact size.
- ❖ Universal industrial power supply (15 to 80 VDC & 15 to 260 VAC).
- ❖ Low power consumption.
- ❖ No calibration required.
- ❖ All liquids from free-flowing to viscosity up-to 10,000cP.
- ❖ Process pressure max. 15 bar
- ❖ Process temperature max 200 °C.
- ❖ Minimum and maximum fail safe field selectable.



### Application

- ❖ High Low Detection in Silo/ Vessel.
- ❖ Flow/ No-Flow Detection in Pipe-Lines.

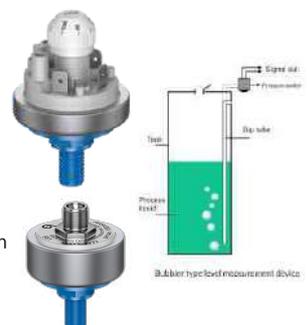
## Water Level Switch / Transmitters

### Specification :

- ❖ Ambient temperature : -20°C to +85°C
- ❖ Range : As per tank height up to 6 meter
- ❖ Tube connection or Threaded connection (CuZn40 = brass, V2A = stainless steel)
- ❖ Diaphragm material : NBR
- ❖ Switch type : SPDT
- ❖ Output signal : 4 ... 20 mA
- ❖ Electrical rating : max. 6 (1.5) A / 250 VAC
- ❖ Electrical connection : Tab terminal 6.3 mm x 0.8 mm
- ❖ Protection Class : IP65

### Application :

- ❖ Liquid Level Monitoring



## Conductivity Level Switch

### Specification :

- ❖ Enclosure : Aluminium non-Hazardous IP-65/ 68
- ❖ Sensor type : Rigid rod (PTFE insulated)
- ❖ Material temperature : max 80°C
- ❖ Sensor MOC : SS304
- ❖ Process connection : 1-1/2" BSP thread (M)
- ❖ Power supply : 12-260 VAC/12-60 VDC
- ❖ Output : 1 DPDT relay insertion length : 500mm

**Application :** Scrubber Liquid Level



## Guidedwave Radar Level Transmitter

### Specification :

- ❖ Robust design for a longer service life
- ❖ With steel terminal head material Nr. 1.4305
- ❖ Connection: M12 plug-in connection, 5-pole
- ❖ Thread G 1", elastomer-free seal system
- ❖ Supply voltage : 12V DC...30V DC
- ❖ Output signal : 4mA...20mA / 0V...10V
- ❖ Response time : <400 ms
- ❖ Protection class : IP69K
- ❖ Process temperature : -20...+150°C

### Application

- ❖ Fill level measurement in vessels



## Solid Vibrating Fork Level Switch

### Specification :

- ❖ Enclosure : Aluminium non-Hazardous IP-66/ 68
- ❖ Process Temperature : 200°C
- ❖ Sensing surface material : SS-316
- ❖ Process connection : Threaded 1 1/4" BSP
- ❖ Process connection material: SS-304
- ❖ Universal supply 15-60VDC & 15-260VAC
- ❖ Output : 1 x DPDT potential-free relay output
- ❖ Relay rating : 5A 230VAC, 5A 24VDC for resistive loads
- ❖ Probe Length : Customize

### Application

- ❖ Level Measurement of Free Flowing Powders and Granules (size max. 10mm).



## Ultrasonic Level Transmitter

### Specification :

- ❖ Compact Size
- ❖ User Friendly menus
- ❖ Temperature Compensation
- ❖ Two-wire loop-powered
- ❖ Simple Installation & Maintenance
- ❖ RS232, RS485, Modbus
- ❖ Various output types
- ❖ High protection class
- ❖ Explosion proof type
- ❖ LCD display

### Applications :

- ❖ Sedimentation Tank
- ❖ Sewage Treatment
- ❖ FO Tank Level



## RF Admittance Level Switch

### Specification :

- ❖ Enclosure : Aluminium Non-Hazardous IP-65/68
- ❖ Process Temperature : 200 Degrees C
- ❖ Sensor Type : Rigid Rod Probe
- ❖ Sensing Material : SS-316
- ❖ Insulation Type : Part PTFE
- ❖ Process Connection Material : SS 304
- ❖ EUID : Mains : Universal Supply 15-60VDC & 15-260VAC
- ❖ Output : 1 x DPDT potential-free relay output
- ❖ Switching : Single-point level switching
- ❖ Relay Rating : 5A 230VAC, 5A 24VDC for Resistive Loads

### Application :

- ❖ Coal Bunker Level Measurement



## Hydrostatic Continuous Level Transmitter

### Specification :

- ❖ Compact size.
- ❖ Wide range industrial dc power supply (12 to 36 VDC).
- ❖ Loop powered device (true-two wire).
- ❖ No calibration required.
- ❖ Customized process connections
- ❖ Accuracy +/- 0.25% of FS.
- ❖ Suitable for corrosive liquids
- ❖ Process pressure max. 200 mH2O
- ❖ Process temperature max. 80 °c.

### Application

- ❖ Pressure Sensor for Hydrostatic Level Measurement at Bore Well, Well etc.
- ❖ Deep Submersible Liquid Level Measurements.



## Capacitance Level Transmitter

### Specification :

- ❖ Compact size.
- ❖ Rigid rod/flexible rope versions.
- ❖ Wide range industrial dc power supply (15 to 60 VDC).
- ❖ Loop powered device (two wire).
- ❖ No potentiometers – hassle free calibration
- ❖ Various customized process connections like Threaded/Flanged/Hygienic etc.
- ❖ Remote electronics version available on request.
- ❖ Process temperature max. 200 °C.
- ❖ Process pressure max. 20 bar.
- ❖ Suitable for corrosive liquids.
- ❖ Suitable for top mounting.

### Application :

- ❖ Free flowing homogeneous liquids Like oil, raw water, WFI, DM/DI water etc.



## Water Quality Monitoring System (pH, Conductivity, Turbidity, Total chlorine, Free Chlorine, Ozone & Temperature Measurement) with the Cloud Connect

### Specification :

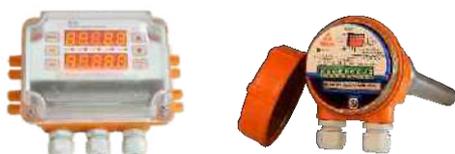
- ❖ Automatic cleaning by ASR® possible
- ❖ Low maintenance due to gel filling
- ❖ Stable zeropoint
- ❖ High quality Zircon® junction for reliable measurement results
- ❖ Max. Pressure: < 10 bar at 20 °C
- ❖ Electrode Material: 2 Gold rings
- ❖ Process Connection: M12 Plug
- ❖ Connect with the Kuntze Cloud Connect® service

### Measuring Parameter

- ❖ pH:0.. 14.00 pH
- ❖ Conductivity : Up to 2,000, 20,00, 200.0 mS/cm
- ❖ Turbidity 0-10 NTU
- ❖ Free Chlorine : Up to 1000 µg/l ; up to 5,00 ; 10,00 ; 20,00 mg/l
- ❖ Total Chlorine : Up 0-1000 µg/l ; 5,00 ; 10,00 ; 20,00 mg/l
- ❖ Ozone : Up to 1000 µg/l, 5,00 / 10,00 mg/l

### Application :

- ❖ Water Process Engineering



## Liquid Analyzer - pH/ ORP Meter

### Specification :

- ❖ 48 x 96 mm, panel mounting type
- ❖ Drip-proof/Dust-proof IP66 (for front panel only)
- ❖ Power supply : 100 to 240 VAC (standard)
- ❖ 2-points Contact output (standard)
- ❖ Proportional control, max. 4 points of relay contact
- ❖ Various settings & calibration via software

### Application :

- ❖ Water Treatment
- ❖ low Ionic Boiler Feed Water
- ❖ ETP



## pH / ORP Electrode

### Specification :

- ❖ High alkali high temperature glass
- ❖ Measuring range pH 0.. 14
- ❖ Very small alkaline error
- ❖ Suitable for temperatures up to 135 °C (275 °F)
- ❖ Long service life due to refillable reference electrode
- ❖ High quality Zirkon junction for reliable measurement results
- ❖ Dirt-repellent and corrosion resistant PTFE junction
- ❖ Integrated temperature sensor
- ❖ Process Connection : Vario pin (PG 13.5)
- ❖ Reference System: Ag / AgCl / Solid electrolyte
- ❖ Electrode Length : 120 mm / 225 mm / 325 mm / 425 mm

### Application :

- ❖ Scrubber System ❖ Low Ionic Boiler Feed Water
- ❖ Drinking Water Treatment ❖ ETP ❖ Fermentation Process



## Conductivity / TDS Meter

### Specification :

- ❖ Measuring range : 0 µS/cm – 15000 µS/cm
- ❖ Output signal : Digital PNP or analogue output 4-20 mA
- ❖ Protection category : IP68
- ❖ CIP- / SIP cleaning : 0...+150°C (30 min)
- ❖ Accuracy : 5% of measurement value
- ❖ Integrated temperature compensation
- ❖ Response time <0.5s
- ❖ Supply voltage  $U_b = 24\text{ V} \pm 20\%$  (18...32 VDC)

### Application :

- ❖ Water & Waste Water Process Engineering



## Cell Growth Measurement Transmitter (Bio Mass Sensor)

### Specification :

- ❖ Hygienic design (CIP/SIP-compatible & autoclavable)
- ❖ Integrated digital transmitter (logarithmic amplifier)
- ❖ Resistant sapphire window
- ❖ Long-lasting LED light source for color-neutral measurements
- ❖ Configuration using EXpert software
- ❖ AU, OD, EBC, FAU, mg/l or customer-specific unit (CDU)
- ❖ OPL available in 5 / 10 / 20 mm and various shaft lengths
- ❖ Can be used in small fermenters
- ❖ Protection class IP68

### Application

- ❖ Measurement and Monitoring of Cell Growth (e.g. yeast or mammalian cells) in the Laboratory and the Production Process
- ❖ Monitoring of Fermentation Processes
- ❖ Colour-independent Concentration Measurement of Microorganisms (e.g. determination of Bacteria or Algae Concentrations, Particularly Microalgae)
- ❖ Determination of the Optimal Time for Cell Harvesting
- ❖ Establishment of Controlled Systems for Cell Density, Feed or Dilution Rates
- ❖ Filter Monitoring



## Inline Liquid Concentration Monitor

### Specification :

- ❖ Refractive Index range : Full range,  $n_D = 1.3200 \dots 1.5300$  (=definition to 0...100%wt)
- ❖ Output units : Brix/ Conc% / g/cm<sup>3</sup> / refractive index unit RIU
- ❖ Measurement precision :  $\pm 0.025$  Brix/%wt ❖ Accuracy :  $\pm 0.0002$  RIU
- ❖ Speed of response : 1 sec. undamped
- ❖ Temperature compensation : Automatic, individual zero point calibration
- ❖ Hygienic design
- ❖ Process pressure : -1 to 16 bar
- ❖ Process temperature : -40°C ...100°C (130°C During CIP and SIP)
- ❖ Sensor protection class : IP67, Nema 4X
- ❖ Power Supply : 24 VDC
- ❖ Output : 2 x 4-20 mA

### Application :

- ❖ Concentration monitor in TFF system
- ❖ Concentration monitor in bioreactor and ultra filtration systems
- ❖ Glucose and Sugar Concentration Monitor in bio process



## Solid Flow Monitor (BBD Sensor)

### Specification :

- ❖ Probe : tribo-electric probe consisting of rod and head
- ❖ Probe rod : electrically isolated from housing
- ❖ Immersion depth : 500 mm
- ❖ Measuring range of dust : 0...100% (qualitative)
- ❖ Analogue output : 4...20 mA, 2-wire transmitter
- ❖ Galvanically isolated to device ground
- ❖ Power supply : 24 VDC (max. +25%, -10%)
- ❖ Exhaust gas temperature : max. 260°C
- ❖ Process connection : welding sleeve with Tri-Clamp fastener
- ❖ Housing : IP 65, protection class 1

### Application : Broken Bag Leak Detector/ FBD



## SPM Dust Monitor - QAL1 Certified

### Specification :

- ❖ Compact device with aluminum housing
- ❖ Probe rod length : 500 mm
- ❖ Measuring range of dust : lowest certificated range 0 -7.5 mg/m<sup>3</sup> dust, max. measuring range 0...250 mg/m<sup>3</sup> dust
- ❖ Exhaust gas temperature : max. 280 °C
- ❖ Flow velocity : min. 5 m/s
- ❖ Protection degree : IP65
- ❖ Analog input : 1 x 4...20 mA for external velocity v [m/s]
- ❖ Analog output : 4 ... 20 mA, electrically isolated
- ❖ Digital outputs : 4 potential free contacts for failure
- ❖ Power supply : 110 V / 230 VAC
- ❖ Process connection : welding sleeve with Tri-Clamp fastener

### Application : Stack Dust Emissions Measurement



## Air Velocity Transmitter with S - Type Pitot Tube

### Specification :

- ❖ Range : 0 ... 1 KPa (10 mbar)
- ❖ Velocity range : 0 ... 30 m/s
- ❖ Supply voltage : 18 ... 30 VAC / VDC
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3-wire
- ❖ With switching output
- ❖ Display : LED display, red, 4 digits
- ❖ Accuracy :  $\pm 1\%$  FS, min.  $\pm 1$  Pa
- ❖ Protection class : IP65

### Accessories:

- ❖ S-type pitot tube (Stainless steel)
- ❖ Length : 500 mm
- ❖ OD : 6 mm
- ❖ Mounting type : cleat or flange

### Application : Duct Velocity Measurement



## Air Flow & Velocity Transmitter

### Specification :

- ❖ Range : 0 ... 1000 Pa
- ❖ Multiple field selectable measurement
- ❖ Measuring Units :
  - ❖ Volume flow : m<sup>3</sup>/s, m<sup>3</sup>/h, cfm, l/s
  - ❖ Velocity : m/s, ft./min
  - ❖ Pressure : Pa, inWC, mmWC, kPa, mbar, psi
- ❖ With Autozero function
- ❖ Supply Voltage: 24 VAC or VDC, ±10 %
- ❖ Output : 4 ... 20 mA or 0 ... 10 V, 3-wire
- ❖ Accuracy (from applied pressure) : 1%
- ❖ Protection standard : IP54
- ❖ Display : 2-line LCD display
- ❖ Line 1 : Volume or velocity measurement
- ❖ Line 2 : Pressure measurement
- ❖ Length : 100 mm to 450 mm



### Application :

- ❖ Air Flow Measurement in DHS / Autocoater
- ❖ In-duct air flow monitoring
- ❖ Measure and monitor air flow across centrifugalfans

## Air Velocity Transmitter/ Controller

### Specification :

- ❖ Range : 0 to 2/ 0 to 10/ 0 to 20m/s (selectable via jumper)
- ❖ Output : 0-10V or 4-20mA
- ❖ Probe : Adjustable immersion length 50...180 mm, mounting flange included
- ❖ Display Optional
- ❖ Field adjustable relay (Optional)



### Application

- ❖ In-Duct Air Flow and Velocity Monitoring
- ❖ VAV Applications

## Air Velocity Sensor for Sterilization Tunnel

### Specification :

- ❖ Measuring range : 0.3 ... 3.0 m/s
- ❖ Minimum reaction time
- ❖ High time yield thanks to ultralight titanium vane wheel which is easy on the bearings
- ❖ Corrosion resistant
- ❖ Can be sterilized
- ❖ High working temperature and pressure range
- ❖ Temperatures Up to +350 °C for Sterilization Tunnel
- ❖ Operates largely irrespective of density and composition of gas
- ❖ Low pressure drop
- ❖ Easy adjustment to process parameter
- ❖ H2O2 sterilizable



### Application :

- ❖ Monitoring laminar flow
- ❖ Air Flow measurement in Sterilization Tunnel

## VHP Compatible Air Flow Sensor

### Specification :

- ❖ Accurate measurement of lowest flow velocities
- ❖ Integrated transducer
- ❖ ATEX protection for applications in Category 3G and 3D (Zone 2 and 22)
- ❖ No moving parts
- ❖ GMP compliant
- ❖ Protective stainless steel body
- ❖ Sterilisable with hydrogen peroxide (H2O2)
- ❖ Easy ceiling or wall mounting
- ❖ High durability
- ❖ Self-monitoring: discontinuity, damage to sensor element, heavy soilage, parameter inconsistency
- ❖ Easy adjustment of parameters via serial interface



### Applications:

- ❖ Measuring laminar flow in clean rooms, under fan filter units
- ❖ Monitoring flow in glove boxes, isolators

## Portable Ultrasonic Flow Meter For Liquids

### Specification :

- ❖ Flow velocity range 0.2 ... 20 m/s
- ❖ Bi-directional
- ❖ Menu-oriented operation
- ❖ Backlit graphic display, 64 x 240 pixels
- ❖ Programming via 16 key control panel
- ❖ Measurement uncertainty: pipe OD > 75 mm : ± 2 % of measured value
- ❖ Installation without process interruption or shut-down
- ❖ Battery or mains operation
- ❖ Battery life up to 20 hours
- ❖ Power 110 ... 240 VAC +/-10%
- ❖ High-capacity data logger with numerous parameters for pipe materials and mediums
- ❖ No pressure losses when measuring flow rate, no risk of leakage, no cleaning necessary
- ❖ Easy retrofitting



### Application :

- ❖ Flow rate measurement in liquid-filled pipes
- ❖ HVAC systems, pump and technical system verification
- ❖ Fire and hydraulic systems
- ❖ Boiler testing
- ❖ Leak detection
- ❖ Filter sizing
- ❖ Ultrapure liquids/ fluids in pharmaceutical industry

## Humidity & Temperature Transmitter/ Controller

### Specification :

- ❖ Duct + Wall Mounting
- ❖ Power supply : 24 Vac/dc, < 1 VA
- ❖ Accuracy: ±2 %rH
- ❖ Modbus Communication (optional)
- ❖ Humidity measurement range : 0...100 %rH
- ❖ Humidity measurement accuracy : ±2 %rH
- ❖ Temperature measurement range : -50...50 °C
- ❖ Temperature measurement accuracy : ±0.5 °C
- ❖ Humidity output 0...10 Vdc, 2 mA / 4...20 mA < 600 Ω
- ❖ Temperature output 0...10 Vdc, 2 mA / 4...20 mA < 600 Ω
- ❖ IP protection class : IP54 Ambient temperature : -50...50 °C
- ❖ Mounting : with flange, probe depth adjustable < 150 mm



## Temperature & Humidity Transmitter/ Controller

### Specification :

The following measurement options are available in RTX Series

- ❖ Temperature Measurement
- ❖ Humidity measurement
- ❖ Inbuilt PID Controller
- ❖ Available with Modbus RTU or BACnet MS/TP communication via the Rs-485
- ❖ Configure via mobile application
- ❖ Temperature measurement accuracy ±0.3 °C
- ❖ External O/P: 0..10 V (freely scalable)

### Application :

- ❖ To control the heating, cooling or VAV applications
- ❖ To Control the AHU , Humidification and Dehumidification system

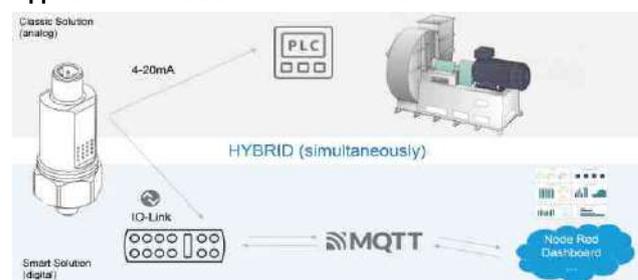


## Smart Vibration Sensors (IO-Link)

### Specification :

- ❖ Housing material and fastening : 1.4305 (V2A) with fastening M8 x 8; pitch 1.25 mm (standard)
- ❖ Output : 4 – 20 mA, 3 wire
- ❖ Measuring range : 0 – 25 mm/s rms (other on Request)
- ❖ Electrical Connection : M12 connector
- ❖ Measuring head temperature : -40°C ... +85°C
- ❖ Protection class : IP 66/67
- ❖ Frequency range : 10 – 1,000 Hz

### Application : Fan & Blower Vibration Measurement



## Portable Vibration Meter

### Specification :

- ❖ HE400 is an easy-to-use and compact portable measuring instrument.
- ❖ Measurement range: 0–16 mm/s rms
- ❖ Frequency range: 1...1000 Hz rms
- ❖ Measurement accuracy: +/- 5%
- ❖ Display accuracy: ± 1 decimal place
- ❖ Input signal: 4...20 mA DC
- ❖ Voltage supply: 4 x AA battery or accumulator (max.) power consumption: 25 mA
- ❖ Temperature range: 0°C ... +50°C



## PID Controller

### Specification :

- ❖ Convenient Initial setting mode!
- ❖ AT on startup function!
- ❖ Simplified Program control!
- ❖ Simplified converter function!
- ❖ A variety of Event Input/Output functions!
- ❖ Large, Easy-to-view, 5-digit PV, SV Displays!
- ❖ Compact, 60 mm-deep control panel interior!
- ❖ Simple settings from a PC
- ❖ Drip-proof/Dust-proof IP 66
- ❖ Control O/P : Relay contact 1a, Non-contact voltage (for SSR drive), Direct current (As per ordering)
- ❖ Multi-input : Total 18 types of input
- ❖ Sampling Time 125 ms
- ❖ Password Protection for Configuration



## Digital Process Indicator

### Specification :

- ❖ Compact Design
- ❖ Galvanic Isolation 1.5 kV ( Input, Output and Power Supply )
- ❖ Sampling Time 125 ms
- ❖ User-Friendly Operation and Configuration
- ❖ Password Protection for Configuration
- ❖ IP66 Protection Class for Front Flush
- ❖ Standard Retransmission Output ( 4-20 mA, 12000-bit Resolution)
- ❖ CE and UL approved
- ❖ 3 Points Alarm output
- ❖ Lower Power Consumption (8VA), Longer Life of Electronics Modules
- ❖ Loop Break & Sensor Burnout Alarm
- ❖ Multi-input : total 18 types of input



## T+Rh Transmitter using dry-bulb, wet-bulb sensors

### Specification :

- ❖ Wet bulb input : RTD, Pt100 3-wire, 0 to 100°C
- ❖ Dry bulb input : RTD, Pt100 3-wire, 0 to 100°C
- ❖ Temperature output : 0 to 20 mA DC or 4 to 20 mA
- ❖ Humidity output : 0 to 20 mA DC or 4 to 20 mA DC
- ❖ Corresponding to the relative humidity 0 to 100 %RH
- ❖ Power supply : 100 to 240 V AC 50/60 Hz, or 24 V AC/DC 50/60 Hz
- ❖ Input sampling period : 250 ms

**Application :** Temp. & Humidity monitoring in cooling tower



## Exner Retractable Fittings

### Specification :

- ❖ Designed according to hygienic criteria
- ❖ Stainless steel AISI 316L / 1.4404
- ❖ EPDM sealings with FDA and USP VI approval
- ❖ Up to 10 bar and 140 °C
- ❖ Protection cap for cable connection
- ❖ Process connections for hygiene applications
- ❖ Static probe housing with Ingold connection (DN25)
- ❖ Static probe housing with clamp connection
- ❖ Excellent stainless steel surface qualities (up to Ra <0.37 µm)
- ❖ Available with or without protection cage
- ❖ Suitable for sensors with 120 mm length and PG13.5 connection

### Application :

- ❖ Pharmaceutical
- ❖ For all Kind of Ø12/120mm Sensors with Thread PG13.5 (pH-glass- and ISFET Sensors, Conductivity- or Temperature Sensors, Turbidity and Other Optical Sensors)



## Universal Converter

### Specification :

- ❖ Multi-input: total 18 types of input
- ❖ Loop Break Alarm output
- ❖ Compact Design
- ❖ Galvanic Isolation 1.5 kV
- ❖ Sampling Time 125 ms
- ❖ User-Friendly Operation & Configuration
- ❖ Password Protection for Configuration

### Application :

- ❖ Universal Isolated Digital Temperature Transmitter
- ❖ Digital Temperature Switch ❖ Universal Signal Isolator



## Special Drive for Gate Opening and Closing

### Specification :

- ❖ Release-input (optional) and position report ensure high level of functional security
- ❖ Variable positioning range up to 50 rotations
- ❖ Position : Horizontal construction
- ❖ Protection class : IP 55
- ❖ Position feedback : 0 .. 10 V (floating contact "position reached")
- ❖ Output shaft : 12 mm solid shaft with flattening
- ❖ Positioning accuracy : 2 % of positioning range
- ❖ Power supply : 24 VDC

### Application :

- ❖ Sterilizing Tunnel / DHS



## Integrated Stepper Motor

### Specification :

- ❖ Space-saving, compact design
- ❖ Galvanically separated supply voltages for control and performance electronics
- ❖ Durable EC-motor
- ❖ Extremely accurate positioning due to measurement of the position at the output side
- ❖ Easy and low-cost mounting via hollow shaft
- ❖ Bus interfaces simplify start-up and wiring complexity
- ❖ Address may be set using the bus or an address switch (not for IO-Link)
- ❖ Baud rate set via switch
- ❖ Status messages retrievable via bus

### Application

- ❖ Used in Vial Filling Machine/ Vial Capping Machine for
- ❖ Cap Vibrating Bowl Height Regulation
- ❖ Capping head Height Regulation
- ❖ Stopper Vibrating Bowl Height Regulation
- ❖ Capping In feed Auger Height Regulation

