



Water and Wastewater Solutions



Company Overview

ENTECH

Difference For Greater Value

Entech Industrial Solution Co., Ltd. was established in 1993 to operate the business of importing and selling measuring instruments for industrial, energy, safety and environmental works. At present, The Company is a distributor for the leader of measuring instruments for water and waste water which are Xylem Group and Flexim. Both of these products will provide the solution for many applications.



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Field & Laboratory Measuring Instruments

COD Measurement

Spectrophotometer photoLab® 7100 VIS COD Plus



photoLab® 7100 VIS of 320–1,100 nm supports fastest and affordable routine analysis via barcoded test kits for round and rectangular cuvettes. More than 250 methods are available for waste/drinking water, food & beverage industry as well as production, environmental monitoring or fish farming.

Measurement	Multiparameter
Measurement range	0.5–11 mg/L
Wavelength range	320–1,100 nm COD ₄₀₅ ; 525 nm
Technology	Monochromator with reference beam

Spectrophotometer photoLab® 7600 UV-VIS COD Reagent Free



The spectrophotometer photoLab® 7600 UV-VIS combine routine analysis with spectral analysis and pioneering procedure OptRF.

For the standard parameters COD, nitrate and nitrite, a spectrum in the UV range is evaluated by means of complex algorithms which are based on reference spectra. The result is put out directly as concentration reading, without the use of reagents.

Measurement	Multiparameter
Measurement range	0.5–11 mg/L
Wavelength range	190–1,100 nm COD ₄₀₅ ; 525 nm
Technology	Monochromator with reference beam

Filter Photometer photoLab® S6- S12 COD 6-12 Wavelengths



The photoLab® S6&12 filter photometer with 6 & 12 wavelengths combines lab precision with highest comfort and highest speeds for extensive water analytics.

Approx. 100 methods are detected automatically. So, it can be used in water analytics as well as galvanization and in the food industry.

Measurement	Multiparameter
Measurement range	0.5–11 mg/L
Wavelength range	190–1,100nm COD ₄₀₅ ; 525 nm
Technology	Monochromator with reference beam

Reactor CR2200/3200/4200



CR4200

Thermoreactors for the disintegration of COD, total nitrogen and total phosphorus, including brief and self-programmed high temperature disintegration up to 170 °C.

The high reaction temperature over a defined period of time ensures a complete degradation of the sample. The required temperatures and degradation times for the standard parameters are stored in every WTW thermoreactor. In addition, there are different options for self programming and cuvette numbers available.

CR2200	Max 12 Sample 100–150 °C Temperature range
CR3200	Max 24 Sample 25–170 °C Temperature range
CR4200	Max 24 Sample 25–170 °C Temperature range
Weight & dimensions	245(W) × 292(D) × 180(H) mm 3.6kg

Photometry

Spectrophotometer photoLab® photoLab® 7100VIS / photoLab® 7600VIS



photoLab® 7100

Model	photoLab® 7100 (VIS)	photoLab® 7600
Wavelength range	Spectral photometer VIS 320–1,100 nm	Spectral photometer (VIS) 190–1,100 nm
Lamp	Tungsten-Halogen	Xenon
Accuracy/reproducibility	±1 nm; < 0.5 nm	±1 nm; < 0.5 nm
Scan speed	700–2,000 nm/min in 1, 2, 5, 10 nm steps	700–2,000 nm/min in 1, 2, 5, 10 nm steps
Data memory	5,000 measurements, 40 MB for spectrums and kinetics	
Weight & dimensions	404(W) x 314(H) x 197(H) mm, Approx 4.5kg	

Features

- Easy to use: place cuvette, read measurement value
- More than 250 test programs for water analysis, galvanics and general lab analytics
- Cell and reagent test kits with barcode for automatic program selection
- Automatic cuvette and measurement range detection for rectangular cuvettes
- Top reliability due to menu guided comprehensive Analytical Quality Assurance - AQA
- Measurement "Light" on the road with car battery use
- USB and Ethernet-connections for easy update, print to PDF or printer, storage and data export



photoLab® 7600

Portable Meters for Photometric Meters pHotoFlex®



pHotoFlex®: portable LED photometer for environmental monitoring and extensive water and routine analytics in (mobile) service labs

pHotoFlex® STD
Absorbance measurement

pHotoFlex® pH
Absorbance measurement + pH measurement
(Electrodes type)

pHotoFlex® Turb
Absorbance measurement + pH measurement
(Electrodes type) Turbidity

Wavelength nm	436, 517, 557, 594, 610, 690 (+860: Turb only) nm
Measurement range	pH (pHotoFlex® STD) : 0–16 Turbidity (pHotoFlex® Turb only) : 0–1,100 NTU/FNU
Power supply	1.5V × 4 (Approx 5,000 measurements)
Weight & dimensions	86(W) × 234(D) × 117(H) mm 600g

Reagents



PhotoLab® Series
photoLab® 7100
photoLab® 7600



pHotoFlex® Series
pHotoFlex® STD
pHotoFlex® pH
pHotoFlex® Turb

Item	Symbol	Measurement range	Measurement method	PhotoLab® Series	pHotoFlex® Series
Acidity	-	0.40-8.00 mm ol/L 0.02-0.50 mg/L 0.020-1.20 mg/L	Indicator Chromazoin 5 Chromazoin 5	*	*
Aluminum	Al	0.05-0.40 mg/L 0.01-0.25 mg/L 0.010-2.000 mg/L 0.20-8.00 mg/L 0.5-16.0 mg/L 4.0-80.0 mg/L	Chromazoin 5 Erio Chromium cyan R Indo phenol blue Indo phenol blue Indo phenol blue	*	*
Ammoniacal Nitrogen	NH ₄ -N	0.010-3.00 mg/L 0.02-1.50 mg/L 2.0-75 mg/L 5-150 mg/L 0.00-0.50 mg/L 0.00-2.50 mg/L 0-50 mg/L	Indo phenol blue Indo phenol blue Indo phenol blue Indo phenol blue Salicylic acid Salicylic acid Salicylic acid	*	*
Adsorptive organic Halogen	AOX	0.05-2.50 mg/L	Iron (III) thiocyanate	*	*
Arsenic	As	0.001-0.100 mg/L 0.002-0.100 mg/L	Silver diethyl dithiocarbamate Silver diethyl dithiocarbamate	*	*
BOD	BOD	0.5-3,000 mg/L	Winkler test	*	*
Boron	B	0.050-0.800 mg/L 0.05-2.00 mg/L	Losothianin Azomethine H	*	*
Bromine	Br	0.020-10 mg/L	DPD	*	*
Cadmium	Cd	0.025-1.000 mg/L 0.002-0.500 mg/L 0.010-0.500 mg/L	Cation derivative Cation derivative Cation derivative	*	*
Calcium	Ca	1.0-15.0 mg/L 5-160 mg/L 10-250 mg/L	Glyoxal-bis-hydroxyanil Glyoxal-bis-hydroxyanil Phthalein Complexone	*	*
Chloride	Cl	5-125 mg/L 2.5-25.0 mg/L 10-250 mg/L	Iron (III) thiocyanate Iron (III) thiocyanate Iron (III) thiocyanate	*	*
Residual Chloride (Free Total)	Cl ₂	0.03-6.00 mg/L 0.05-5.00 mg/L 0.010-6.00 mg/L	DPD DPD DPD	*	*
Chlorine Dioxide	ClO ₂	0.020-10.00 mg/L 0.02-7.50 mg/L	DPD DPD	*	*
Chromium (Hexavalent)	Cr ⁶⁺	0.05-2.00 mg/L 0.01-3.00 mg/L	Diphenylcarbazide Diphenylcarbazide	*	*
COD	O ₂	4.0-40.0 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		5.0-80.0 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		10-150 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		15-300 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		50-500 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		25-1,500 mg/L	Chromium sulfate decomposition / Chromium (III)	*	*
		300-3,500 mg/L	Chromium sulfate decomposition / Chromium (III)	*	*
		500-10,000 mg/L	Chromium sulfate decomposition / Chromium (III)	*	*
		5,000-90,000 mg/L	Chromium sulfate decomposition / Chromium (III)	*	*
COD (Mercury free)	O ₂	10-150 mg/L	Chromium acid sulfate decomposition / Chromium acid	*	*
		100-1,500 mg/L	Chromium sulfate decomposition / Chromium (III)	*	*
		0.05-8.00 mg/L	Cuprizone	*	*
		0.05-7.50 mg/L	Cuprizone	*	*
Copper	Cu	0.02-6.00 mg/L	Cuprizone	*	*
		0.04-6.00 mg/L 0.00-5.00 mg/L	Cuprizone Bicinchoninic acid	*	*
Cyanide	CN	0.010-0.500 mg/L	Barbituric acid / pyridinecarboxylic acid	*	*
		0.01-0.30 mg/L 0.002-0.500 mg/L	Barbituric acid / pyridinecarboxylic acid Barbituric acid / pyridinecarboxylic acid	*	*
DEHA	DEHA	0.020-0.500 mg/L 0.04-1.00 mg/L	Ferrozin Alizarin Combrexon	*	*
Fluoride	F	0.10-2.00 mg/L	Alizarin Combrexon	*	*
		0.10-1.80 mg/L	Alizarin Combrexon	*	*
		0.025-0.500 mg/L 1.0-20.0 mg/L	Alizarin Combrexon Alizarin Combrexon	*	*
Holm Aldehyde	HCHO	0.02-8.00 mg/L	Sulfuric acid / chromotropic acid	*	*
		0.10-8.00 mg/L	Sulfuric acid / chromotropic acid	*	*
		0.10-7.00 mg/L	Sulfuric acid / chromotropic acid	*	*
Gold	Au	0.5-12.0 mg/L	Rhodamine B	*	*
		0.5-9.0 mg/L	Rhodamine B	*	*
Hardness (Total)	CaCO ₃	5-215 mg/L	Phthalein Complexone	*	*
Hydrazine	N ₂ H ₄	0.005-2.00 mg/L	4-(dimethylamino)-Benz Aldehyde	*	*
Hydrogen Peroxide	H ₂ O ₂	2-20.0 mg/L	Titanyl sulfate	*	*
		0.25-5.00 mg/L 0.015-6.00 mg/L	Titanyl sulfate Neocuproine	*	*
Iodine	I	0.050-10.00 mg/L	DPD	*	*
		0.05-4.00 mg/L	Triazine	*	*
		0.05-3.00 mg/L	Triazine	*	*
Iron (II, III)	Fe	1.0-50.0 mg/L	2,2'-dipyridine	*	*
		0.005-5.00 mg/L	Triazine	*	*
		0.010-5.00 mg/L	1,10-phenanthroline phosphorus	*	*
		0.02-3 mg/L	1,10-phenanthroline phosphorus	*	*
Iron (Total)	Fe	0.02-1.8 mg/L	TPTZ	*	*
Lead	Pb	0.01-5 mg/L	4-(2-pyridylazo)-resorcin	*	*
		0.1-5 mg/L	4-(2-pyridylazo)-resorcin	*	*
Magnesium	Mg	5.0-75.0 mg/L	O-cresolphthalein derivative	*	*
		0.005-2.000 mg/L	PAN	*	*
Manganese	Mn	0.01-10.0 mg/L	Formaloxime	*	*
		0.02-9.0 mg/L	Formaloxime	*	*
		0.10-5.00 mg/L	Formaloxime	*	*
		0.0-20 mg/L	Over Iodine acid oxidation	*	*

Item	Symbol	Measurement range	Measurement method	PhotoLab® Series	pHotoFlex® Series
Molybdenum	Mo	0.02-1.00 mg/L	Bromopyrogallollet	*	*
		0.5-45.0 mg/L	Mercaptoacetic acid	*	*
		0-35 mg/L	Thioglycolic acid	*	*
Monochrome Ramin	Cl ₂	0.05-10.0 mg/L	Indo phenol blue	*	*
Nickel	Ni	0.10-6.00 mg/L	Dimethylglyoxime	*	*
		0.02-5.00 mg/L	Dimethylglyoxime	*	*
		0.10-3.80 mg/L	Dimethylglyoxime	*	*
		0.10-3.00 mg/L	Resorcinol	*	*
Nitrate Nitrogen	NO ₃ -N	0.10-2.70 mg/L	Resorcinol	*	*
		0.5-25.0 mg/L	2,6-dimethyl Phenol (DMP)	*	*
		0.5-18.0 mg/L	Nitrospectral	*	*
		0.5-14.5 mg/L	Nitrospectral	*	*
		1.0-50.0 mg/L	2,6-dimethyl Phenol (DMP)	*	*
		23-225 mg/L	2,6-dimethyl Phenol (DMP)	*	*
		0.2-17.0 mg/L	Resorcinol	*	*
		0.2-13.0 mg/L	Resorcinol	*	*
		0.2-20.0 mg/L	Nitrospectral	*	*
Nitrate Nitrogen	NO ₃ -N	0.1-25.0 mg/L	2,6-dimethyl Phenol (DMP)	*	*
		0-30 mg/L	Chromotrophate	*	*
		0.010-0.700 mg/L	Grease reaction	*	*
		0.00-0.50 mg/L	Grease reaction	*	*
		0.002-1.00 mg/L	Grease reaction	*	*
		0.01-0.50 mg/L	Grease reaction	*	*
		1.0-90.0 mg/L	Sulfuric acid Iron (II)	*	*
		0.03-0.6 mg/L	Sulfanilic acid / naphthylamine	*	*
		0.3-3 mg/L	Sulfanilic acid / naphthylamine	*	*
		0.00-0.3 mg/L	Diazotization	*	*
Total Nitrogen	TN	0.5-15.0 mg/L	After peroxidisulfuric acid decomposition, nitrospectral	*	*
		0.5-25 mg/L	After peroxidisulfuric acid decomposition DMP	*	*
Volatile organic acid	-	5.0-25 mg/L	Persulfate decomposition - Chromotrophic acid	*	*
		10-140 mg/L	Persulfate decomposition - Chromotrophic acid	*	*
Dissolved Oxygen	O ₂	50-3000 mg/L	Hydroxamic acid / Iron (III)	*	*
Ozone	O ₃	0.5-12.0 mg/L	Winkler test	*	*
		0.010-4.00 mg/L	DPD	*	*
Phenol	C ₆ H ₅ OH	0.001-3.500 mg/L	DPD	*	*
		0.002-5.000 mg/L 0.10-2.50 mg/L	4-aminoantipium phosphorus MBTH	*	*
Orthophosphoric acid	PO ₄	0.5-25.0 mg/L	Molybdenum acid vanadium	*	*
		3.0-100.0 mg/L	Phospho molybdenum blue	*	*
		1.0-70.0 mg/L	Phospho molybdenum blue	*	*
		0.01-5.00 mg/L	Phospho molybdenum blue	*	*
		0.20-2.50 mg/L	Phospho molybdenum blue	*	*
		0.5-30.0 mg/L	Molybdenum acid vanadium	*	*
		1.0-100.0 mg/L	Phospho molybdenum blue	*	*
		1.0-50.0 mg/L	Phospho molybdenum blue	*	*
Total phosphorus	TP	0.00-0.80 mg/L	Ascorbic acid	*	*
		0.00-1.60 mg/L	Ascorbic acid	*	*
		0.05-5.00 mg/L	Phospho molybdenum blue	*	*
		0.05-3.00 mg/L	Phospho molybdenum blue	*	*
		0.5-25.0 mg/L	Phospho molybdenum blue	*	*
		0.5-15.0 mg/L	Phospho molybdenum blue	*	*
pH	pH	6.4-8.8	Phenol red	*	*
Potassium	K	5.0-50.0 mg/L	Carginst / turbidity	*	*
		30-300 mg/L	Carginst / turbidity	*	*
Silica	SiO ₂	0.011-6.00 mg/L	Silico molybdenum blue	*	*
		0.11-10.70 mg/L	Silico molybdenum blue	*	*
		1.1-107.0 mg/L	Silico molybdenum blue	*	*
		0.0-1.6 mg/L	Heteropoly blue	*	*
		0-100 mg/L	Silicomolybdenum acid	*	*
Silver	Ag	0.25-3.00 mg/L	Eosin / 1,10-phenanthroline phosphorus	*	*
		0.25-2.75 mg/L	Eosin / 1,10-phenanthroline phosphorus	*	*
Sodium	Na	10-300 mg/L	Iron (III) thiocyanate	*	*
		5-250 mg/L	Barium sulfate / turbidity	*	*
Sulfate	SO ₄	50-500 mg/L	Barium sulfate / turbidity	*	*
		100-1,000 mg/L	Barium sulfate / turbidity	*	*
		25-300 mg/L	Tannic acid	*	*
Sulfide	S	0-70 mg/L	Barium sulfate - turbidity	*	*
		0.02-1.50 mg/L	Dimethyl-p-phenylenediamine	*	*
Sub Sulfate	SO ₃	1.0-20.0 mg/L	Elman reagent	*	*
		0.05-3.00 mg/L	Elman reagent	*	*
Surfactant (+ Ion)	CTAB	0.02-50.0 mg/L	Elman reagent	*	*
		0.05-1.50 mg/L	Dysarfin blue	*	*
Surfactant (- Ion)	MSAS	0.05-2 mg/L	Methylene blue	*	*
		0.10-7.50 mg/L	TBPE	*	*
Tin	Sn	0.10-2.50 mg/L	Pyrocatechol bio red	*	*
		5.0-80.0 mg/L	Peroxodisulfuric acid decomposition / Indicator	*	*
TOC	TOC	50-800 mg/L	Peroxodisulfuric acid decomposition / Indicator	*	*
		0.025-1.000 mg/L	PAR	*	*
Lead	Zn	0.025-1.000 mg/L	PAR	*	*
		0.20-5.00 mg/L	PAR	*	*

BOD Measurement

Biochemical Oxygen Demand BOD Measurements/Respiration



The inoLab® Oxi 7310 is the perfect benchtop meter with secure and convenient menu-controlled operation via a graphic display for the measurement of dissolved oxygen with the proven, galvanic oxygen sensors, the universal CelloX® 325, the self-stirring StirrOx® G for BOD measurements and DurOx® 325 for training purposes. With automatic documentation according to GLP/AQA, it supports the traceability - not only in the environmental lab. For this, the serial number of the sensor can be saved. On request also available with an optional built-in printer.

Multiparameter Benchtop Meter inoLab Multi 9000 Series



inoLab Multi 9310 IDS



inoLab Multi 9620 IDS



inoLab Multi 9630 IDS

WTW's benchtop meters can safely determine and reliably document biochemical oxygen demand (BOD). For this, a series of dilutions is prepared depending on the BOD, where the start and end values as well as the value of the dilution water are determined with WTW meters and sensors.

The inoLab® Multi IDS series are digital multiparameter benchtop meters for IDS sensors. Our digital IDS meters are now ready for radio measurement. Benefit from wireless communication between lab meter and sensor!

The **IDS** concept from WTW: **I**ntelligent, **D**igital **S**ensors for standard parameters pH, conductivity, dissolved oxygen and turbidity. The IDS system is based on two components: digital sensors and corresponding field and benchtop meters. The outstanding innovation: The measurements are processed in the sensor, not in the meter. And in addition: As of now all IDS benchtop meters support wireless measurement.

Multi 9310

1 Measurement Channel
DO/BOD, pH, ORP, conductivity and ISE

Multi 9620

2 Measurement Channel

Multi 9630

3 Measurement Channel

Measurement range

pH : 0.000–14.000 pH
ORP : -1,200.0–1,200.0 mV
DO : 0.00–20.00 mg/L
Conductivity : 10 µS/cm–2,000 mS/cm

Weight & dimensions

9310 : 240(W) × 190(D) × 80(H) mm
Approx 0.8 kg
9310P : 290(W) × 190(D) × 80(H) mm
Approx 1.0 kg
9620/9630 : 180(W) × 80(D) × 55(H) mm
Approx 0.4kg

Sensors for the Determination of BOD

BOD determination with galvanized or optical oxygen sensors according to DIN EN 1899-1 and DIN EN 1899-2 - with portable and benchtop devices.

Method	Usable sensors						
CelloX® Galvanic oxygen sensor							•
StarrOx® Galvanic oxygen sensor							•
Optical IDS dissolved oxygen sensors	•	•	•	•	•	•	

WTW's benchtop meters can safely determine and reliably document the biochemical oxygen demand (BOD). For this, a series of dilutions is prepared depending on the BOD, where the start and end values as well as the value of the dilution water are determined with WTW meters and sensors. With the conventional benchtop meters type inoLab® Oxi 7310 you can measure with the self-stirring StirrOx® G or with the CelloX® 325 and the stirring attachment RZ 300. The optical oxygen sensor FDO® 925 can be used for all digital meters; it will also require the stirring attachment RZ300, just like the CelloX® 325.

BOD Measurement

Meters for the Determination of BOD OxiTop Series



WTW OxiTop® systems are easy-to-use meters for BOD self-monitoring. OxiTop®-C measuring systems can execute anaerobic and aerobic examinations across the entire spectrum of biodegradability and evaluate them on the computer.

Complete packages of 6 or 12 samples are available and ready for immediate use. Flexible, customisable and scalable, based on pressure measurement (no mercury). Simplifies handling, no need for dilution series or multiple bottles. Data security with built-in memory - classic 5 measurements/days or up to 360 points and 99 days graphical results with Control systems Suitable for routine BOD5 and other special applications - compliant to multiple international methodologies and standards. Incubators, accessories and consumables also available.

Measurement
Respiration/Biogas Determination
Measurement period
5 days (OxiTop IS)
30 mins-90 days (with OxiTop® Control OC 110)
Measurement range
0-4,000 mg/L
0-400,000 mg/L (Control OC 110)
Pressure mode
500-1,350 hPa
(with OxiTop® Control OC 110)



OxiTop Control 12-inch (Measuring system: Sensor head, sample container, stirrer, controller)



OxiTop IS12 type (Measuring system: Sensor head, sample container, stirrer)

Model	OxiTop			OxiTop Control		
	IS6 / IS12	6 / 12	B6 / B6M / B6M 2.5	A6 / A12	S6 / S12	AN6 / AN12
Product image						
Application	BOD measurement Sample sealed in vessel for 5 days measuring pressure change		Soil respiration The soil samples were sealed in, to monitor the change of pressure in the head portion	OECD / aerobic applications Sample containing a non-biodegradable material, (Max 90 days) Biogas determination		Biogas determination monitor the pressure change of the gas produced by the anaerobic decomposition
Number of samples	IS6 : 6 IS12 : 12	C6 : 6 C12 : 12	B6 : 6 B6M : 6 B6M 2.5 : 6	A6 : 6 A12 : 12	S6 : 6 S12 : 12	AN6 : 6 AN12 : 12
Sample vessel	Amber Bottle 510 ml	Amber Bottle 510 ml	B6 : 500 ml Duran Bottle B6M : 1.0 L B6M 2.5 : 2.5 L	Transparent Bottle A6 : 1,000 ml A12 : 250 ml	Amber Bottle 510 ml	Transparent bottle AN6 : 1,000 ml AN12 : 250 ml
Measuring head	OxiTop	OxiTop-C	OxiTop-C	OxiTop-C	OxiTop-C	OxiTop-C
Stirrer	IS6 : IS6 IS12 : IS12	C6 : IS6 C12 : IS12	-	A6 : IS6-Var A12 : IS12	S6 : IS6 S12 : IS12	AN6 : IS6-Var AN12 : IS12
Controller	-	OC100	OC110	OC110	OC110	OC110
Software & cable	-	-	•	•	•	•
CO ₂ absorbent	•	•	•	•	•	•
Nitrification inhibitor	•	•	-	•	•	•
Overflow flask	164/432 ml	164/432 ml	-	-	-	-
Stirrer bar	IS6 : 6 Pieces IS12 : 12 Pieces	C6 : 6 Pieces C12 : 12 Pieces	-	A6 : 6 Pieces A12 : 12 Pieces	S6 : 6 Pieces S12 : 12 Pieces	AN6 : 6 Pieces AN12 : 12 Pieces
Stirrer bar remover	•	•	-	•	•	•

Biochemical Oxygen Demand Test

When properly used, the BOD test provides a reliable characterization of wastewater. It can be expected to be a standard for regulatory agencies for many years even though its use as a control tool is limited by the 3 or 5 day wait required for the test (and sometimes 20 days!). Various methods (based on short-term monitoring and extrapolation) of quickly estimating the probable results of the BOD test on a sample have been devised and the interested reader is advised to consult appropriate literature but a 'true' BOD test requires time and incubation.

BOD Incubator & Laboratory Refrigerator

ACCUPLUS

- 2 layer glasses
- Incubator : Temperature range from 0 - 40 °C (User setting)
- BOD 20 °C setting point
- Refrigerator : Temperature range from 2 - 8 °C (User setting)
- Internal / External Material Epoxy coated steel
- Defrost : No frost
- Audible and visual alarm (Upper / Lower)
- Refrigerant R134a Non CFC
- 1 point power supply socket inside Incubator
- Elcb protection
- Forced-air circulation system ensuring constant cabinet temperature
- No temperature disturb with outside control panel
- Over high temperature protection system



**BOD
Laboratory Incubator**

Laboratory Refrigerator



Technical Data	Model	Smart i250S	Smart i250DS	R950	R1400	P701	P1010
Capacity (Liters)		260 (9 cu.ft)	260 (9 cu.ft)	950 (33 cu.ft)	1440 (50 cu.ft)	700 (24 cu.ft)	1000 (35 cu.ft)
Temperature Range		0-40 °C	0-40 °C	2-8 °C	2-8 °C	2-8 °C	2-8 °C
Controller system		Microprocessor Controller	Microprocessor Controller	Microprocessor Controller	Microprocessor Controller	Programable Controller	Programable Controller
Display		LCD 2 lines with backlight	LCD 2 lines with backlight	LCD 2 lines with backlight	LCD 2 lines with backlight	LED	LED
Stability		±1°C	±1°C	±2°C	±2°C	±2°C	±2°C
Alarm (Audible/Visible)		✓	✓	✓	✓	✓	✓
Door type		1 glass door	1 opaque door with powder paint	2 glass doors	3 glass doors	2 glass doors	3 glass doors
Shelf		4	4	5x2	5x3	5x2	5x3
Dimension (External) WxDxH		560x600x1695	560x600x1695	1200x690x2050	1800x680x2050	1100x600x2000	1655x600x2000
Dimension (Internal) WxDxH		500x480x1100	500x480x1100	1110x600x1450	1710x600x1450	1020x500x1380	1560x500x1380

pH / ORP / Ion Concentration

pH pH Measurements

pH determines the acid and base characteristics of water. A pH of 7.0 is neutral; values below 7 are acidic and values above 7 are alkaline. Excessively high or low pH levels are often associated with nutrient deficiencies, metal toxicities, or other problems for aquatic life. High pH makes ammonia more toxic. During algal blooms, photosynthesis increases the water pH, especially in stagnant or slow-moving water.

pH is measured by a sensing electrode for Hydrogen and a reference electrode along with a meter to measure the electrode potential. The YSI pH sensor is a glass bulb filled with a solution of stable pH (usually 7), so the inside of the glass surface experiences constant binding of H⁺ ions. The outside of the bulb is exposed to a water sample where H⁺ varies. The resulting differential of H⁺ creates a potential which is read by the meter versus the stable potential of the reference electrode.

InoLab Benchtop pH/ORP & ISE InoLab 7110 / 7310 / 7320



InoLab 7320P



InoLab 7310

The WTW InoLab line includes the 7110 (single channel), 7310 and 7310P (single channel) and 7320 and 7320P (dual channel) instruments providing easy-to-use and calibrate instruments ideal for the laboratory.

Parameter	
pH, ORP (mV), ISE (Ammonia, Ammonium, Bromide, Cadmium, Calcium, Chloride, Iodide, Copper, Cyanide, Fluoride, Lead, Nitrate, Potassium, Silver/Sulfide, Sodium), Temp	
pH	
Scale	: -2.0~20.0; -2.00~20.00; -2.000~19.999
Resolution	: 0.1; 0.01; 0.001
Accuracy	: ±0.1; ±0.01; ±0.05 (Sample temp 15~35 °C)
ORP (mV)	
Scale	: -1,200~1,200.0; -2,500~2,500
Resolution	: 0.1; 1.0
Accuracy	: ±0.3; ±1.0 (Sample temp 15~35 °C)
ISE	
(mol/l, mmol/l, ppm, %) Scale: 0.000~9.999; 10.00~99.99; 100.0~999.9; 1,000~999,999 Resolution: 0.001; 0.01; 0.1; 1 (µmol/l) Scale: 0.000~9.999; 10.00~99.99; 100.0~999.9; 1,000~9,999 Resolution: 0.001;	
Temp	
Scale	: -5~105 °C
Resolution	: 0.1
Accuracy	: ±0.1

Lab pH Meter inoLab pH 7000 series



inoLab pH 7110



inoLab pH 7310



inoLab pH 7310P
Built-in printer

Simple, easy-to-use lab pH meter for the routine measurement with reproducible measuring results and increased measuring accuracy. The inoLab® pH 7000 series is highly suitable for routine measurements in the lab, where automatic documentation is not a priority. Less keys make operation simple and safe with a smooth, easy to clean surface.

Model	pH7110	pH7310 / pH7310P
Measurement range	pH : -2.000~19.999 pH : -2.00~19.99 pH mV : -1,200.0~1,200.0 mV : -2,000~2,000 mV Temp : -5.0~105.0 °C	pH : -2.000~20.000 pH : -2.00~20.00 pH mV : -1,200.0~1,200.0 mV : -2,000~2,000 mV Temp : -5.0~105.0 °C
Accuracy	pH : ±0.005 pH; ±0.01 pH mV : ±0.3 mV; ±1 mV Temp : ±0.1 K	pH : ±0.004 pH; ±0.01 pH mV : ±0.2 mV; ±1 mV Temp : ±0.1 K
Weight & dimensions	240(W) × 190(D) × 80(H) mm, Approx 1.0kg	pH7310 240(W) × 190(D) × 80(H) mm Approx 0.8kg pH7310P 290(W) × 190(D) × 80(H) mm Approx 1.0kg

pH / ORP / Ion Concentration

Handheld pH/ORP Meter ProfiLine pH 3000 Series



Easy and robust portable pH/mV meter for routine measurement - secure and reliable pH measurement due to repeatable results.

The ProfiLine pH 3000 Series is the right choice for all who are looking for a simple meter for portable pH measurements. A clear keypad with only 6 keys and the automatic AutoRead function for repeatable measured values make pH measurement safe and prevent errors. The anti-skidding keypad can be operated with gloves as well. The large display is clear and easy to read.

Measurement range

pH : -2.00-19.999 pH
mV : -1,200-1,200 mV
; -2,500-2,500 mV
Temperature : -5.0-105.0 °C

Accuracy

pH : ±0.1 pH(-19.9pH)
; ±0.01 pH(-19.99pH)
; ±0.005 pH(-19.999pH)
mV : ±0.3 mV (±1,200mV)
; ±1 mV (±2,500mV)
Temperature : ±0.1 °C

Memory

pH3110 : N/A
pH3310 : 200 points (Manual) /5,000 points (Auto)

Interface

USB Connection (pH3310 only)

Handheld Ion Meter 3310 pH/ISE



The pH/ION 3310 effortlessly delivers precise measuring results. The 1 to 5-point calibration for pH and the 2 to 7-point ISE calibration (also non-linear) as well as a GLP-supporting documentation meets all the requirements of modern metrology. The USB interface is used for data transfer, but can also be used as a power supply in the lab.

Measurement

Ion Electrodes

Measurement range

0-1,999 mg/L

Power supply

4x AA batteries

Weight & dimensions

80(W) × 55(D) × 180(H) mm, Approx 400g
Electrodes: 145(L) × 11(Ø) mm

Portable pH Meter pHotoFlex® pH



pHotoFlex® pH: portable LED photometer combined with full value pH measurement for environmental monitoring, fish hatcheries, extensive routine and water analytics.

Light source

LED

Reproducibility

0.01 NTU or < 0.5 % of measured value

pH/ORP

pH 0-16 with automatic temperature control (ATC)

Accuracy

Photometry: <2 nm wavelength accuracy, 0.005 abs.
Reproducibility pH: ±0.01 pH

Power supply

4x AA batteries for approx. 3,000 measurements

Weight & dimensions

86(W) × 236(D) × 77(H) mm
600g

Lab pH/ORP/Ion Meter

inoLab pH/ION 7320



Measurement range

pH : -2.000-20.000 pH
mV : -999.9-999.9 mV;
-2,000-2,000 mV
Temperature : -5-105 °C
Con : 0.000-10.000 mg/L
; 0.00-100.00 mg/L
; 0.0-1,000.0 mg/L
; 0-2,000 mg/L

Accuracy

pH : ±0.004 pH; ±0.01 pH
mV : ±0.2 mV; ±1 mV
Temperature : ±0.1 K

Weight & dimensions

250(W) × 230(D) × 70(H) mm
1.6kg

Precise pH/ISE benchtop meter with enhanced ISE methods for concentration measurement with ion selective electrodes.

Portable pH/ORP Meter

pH/ION 331



Measurement range

pH : -2.00-19.999 pH
mV : -1,200.0-1,200.0 mV
; -2,500-2,500 mV
Temperature : -5-105 °C
Con : 0.000-9.999 mg/L
; 10.00-99.99 mg/L
; 100.0-999.9 mg/L
; 1,000-999.999 mg/L

Accuracy

pH : ±0.005 pH; ±0.01 pH
mV : ±0.3 mV; ±1mV
Temperature : ±0.1 K

Weight & dimensions

80(W) × 55(D) × 180(H) mm
400g

pH/ISE pocket meter for pH, mV and concentration measurements.

pH / ORP / Ion Concentration

Portable Meters for MEMOSENS® Electrodes HandyLab® 7 Series

SI Analytics



The new mobile pH measuring devices by SI Analytics with MEMOSENS® technology offers increased safety and a user-friendly interface.

Function	HL700	HL750	HL750EX	HL780
MEMOSENS® pH , ORP	•	•	•	•
Analog pH, ORP	•	•	•	•
Temp	•	•	•	•
Explosion proof Ex-Zone 0/1	-	-	•	-
PC Software HandyLab® Pilot	-	•	•	•
Micro USB-B	-	•	•	•
Data logger (Memory)	-	5,000	5,000	10,000
Lithium battery	-	•	-	•



Scale	
MEMOSENS® pH	: -2,000~+16,000 pH, -2,000~+2,000 mV, -50~250 °C
MEMOSENS® ORP	: -2,000~+2,000 mV, -50~+250 °C, ΔmV (Offset) -700~700 mV
Analog pH	: -2~16pH, below 2-3 digit Resolution
Analog ORP	: -1,300~+1,300
Temperature	
Con	: 2 x Ø 4 mm
NTC 30 kΩ	: -20~+120 °C Pt 1000: -40~+250 °C
Accuracy/Reproducibility	: ±0.3°C/0.2 °C
Weight & dimensions	
132(W) x 156(H) x 30(D) mm	
500g	

Electrodes for IDS / Wireless IDS Digital Meters

MEMOSENS® Process Electrodes MEMOSENS® Electrodes

SI Analytics









Our MEMOSENS® program contains pH and redox electrodes. They are compatible to all at the market available measuring devices based on the MEMOSENS® protocol.







Features

- Complete galvanic isolation
- Resistant to environmental influences
- Radical improvement in measuring point reliability
- Lifecycle memory makes predictive maintenance possible
- MEMOSENS® is an open system
- All MEMOSENS® sensors and devices from the manufacturers involved are compatible with each other

Model	A7781	FLA93-MF	PL 83	SL 83	Pt 8281	PL 89	SL 89
Parameter	pH, Temp	pH, Temp	pH, Temp	pH, Temp	ORP, Temp	ORP, Temp	ORP, Temp
Length (mm)	120, 225	120, 225	120, 225	120, 225, 325, 425	120	120	120, 225
Use	General	Low temperature	High temperature	High alkalinity	Autoclave	High temperature	High temperature Autoclave
Temp Item	-5~+80 °C	-30~+100 °C	0~+130 °C	0~+140 °C	-5~+100 °C	0~+130 °C	0~+140 °C
System	Silamid®	-	Silamid®	Silamid®	Silamid®	Silamid®	Silamid®
Range/material	0~14pH Ceremic	0~14pH Platinum	0~14pH Hole junction	0~14pH Ceremic	KPG annular gap junction	Ceremic	Ceremic
Max (Bar)	12	6 (3 bar pressure variation)	12	12	12	12	12
ATEX Cert	All MEMOSENS® process electrodes are ATEX certified						

pH / ORP / Ion Concentration

Type	pH sensor options					
	SenTix 41	SenTix 81	SenTix L	SenTix SP	SenTix HWS	SenTix Mic-D/B
						
Scale		0-14 pH		2-13 pH		0-14 pH
Temperature item	-5-80 °C	0-100 °C	-5-100 °C	0-80 °C	-5-100 °C	-5-100 °C
Connector	Epoxy	Glass		Epoxy	Glass	
Internal solution	Gel	3M KCL (Ag N/A)	3M KCL (Ag N/A)	Spare chip membrane	3M KCL (Ag N/A)	3M KCL (Ag)
Junction type	Ceramic	Platinum		Pin hole	Sleeve	Platinum
Connector		-		BNC	DIN-BNC	
Feature	SenTix 41, pH electrode, Single Junction, 3 in 1, Gel electrolyte, Epoxy shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix 81, pH electrode, self-flushing platinum single junction, 3 in 1, Refillable, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix L, Single Junction, Combination, Spear tip membrane, Epoxy shaft, 1 meter cable, BNC connector	SenTix SP, pH electrode, Double Junction, 3 in 1, Platinum junction, 170 mm length, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix HWS, pH electrode, Double Junction, 3 in 1, ground joint junction, 170 mm length, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix Mic-B/D, pH electrode, Double Junction, 3 in 1, Platinum junction, 170 mm length, Micro electrode, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ
Use	High accuracy	General use	Laboratory measurement	Food (Needle type)	Precision measurement	Low volume samples

Type	pH combination electrode			ORP combination electrodes		
	SenTix Sur	SenTix MIC-D	SenTix ORP	SenTix Ag	SenTix Au	SenTix PtR
						
Scale	2-13 pH	0-14 pH				
Temperature item	0-50 °C	-5-100 °C	0-100 °C		-5-100 °C	
Material	Glass			Glass		
Internal solution	Referid*	3M KCL (Ag N/A)	3M KCL	ELY / ORP / Ag	3M KCL	
Junction type	KPG	Platinum	Platinum	Silver	Gold	Platinum
Connector	DIN-BNC			AS/DIN/BNC		
Feature	SenTix Sur, pH electrode, Single Junction, Combination, Flat glass membrane, Glass shaft, 1 meter cable, BNC Connector	SenTix MIC-D pH electrode, Triple Junction, Iodine/Iodide reference, 3 in 1, Refillable, Micro electrode, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	The scale is comparable with that of pH measurement. Typical areas of use are the monitoring of the disinfection effect, the determination of ORP potentials in biochemical reactions, measuring in waters of different quality and more. The platinum electrodes can be used universally, the gold electrode is especially suited for strongly oxidizing media without the presence of chloride. The silver electrode is intended for argentometry.			
Use	General use	Laboratory measurement	General use	Argentometry	Oxidisation	General use

FIOLAX® Ampoule pH Buffer

SI Analytics



The exactness of the pH measurement is mainly dependent on the accuracy of calibration. This again highly depends on the reliability of the buffer.

Hermetically sealed in the glass ampoule and sterilized with hot steam, same as a pharmaceutical product, the buffer solutions free of preservation agent have an extremely long shelf life and guarantee continuously error-free characteristics.

Buffer solutions in the unique double-end ampoules offer a particularly high degree of reliability and measuring accuracy.

Features

- Reliability and measuring safety
- Extremely long storage times, thanks to hot-steam sterilization
- Without preservative agent
- A maximum of calibration safety

250ml PE bottles:
pH 4.01, 7.00, 10.01



Phosphate / Nitrogen

pHotoFlex® STD Phosphate and Nitrogen Set TNP-A



These rugged, waterproof, multiparameter colorimeters are ideal for laboratory and field testing. The instruments feature a large, backlit display, waterproof rating, data logging with the ability to export data to a computer using LSdata software, user-defined programs and a 2-year warranty.

Plus CR 3200 thermoreactor for thermal digestion with 2x12 round cuvettes with 8 fixed/8 user-defined programs with temperatures of up to 170 °C and AQA.

pHotoFlex® set

N.P : pHotoFlex® STD
N.P : Reagent and Thermoreactor

Light source

LED

Measurement range

Nitrogen Ntot1
TC (LR): 0.5 to 25.0 mg/L (Digestion 120 °C / 248 °F, 30 min)

Nitrogen Ntot2
TC (HR): 10 to 150 mg/L (Digestion 120 °C / 248 °F, 30 min)

Phosphate PO₄-1
TP: 0.007 to 0.800 mg/L PO₄-P; 0.02 to 2.45 mg/L PO₄

Phosphate PO₄-2
TP: 0.06 to 5 mg/L PO₄; 0.02 to 1.63 mg/L PO₄-P

photoLab® 7100 Phosphate and Nitrogen Set TNP-7100



The spectral photometer photoLab® 7100 VIS with AQA and IQ LabLink combines secured water analysis with uncomplicated special and spectral analytics.

CR 3200 thermoreactor for thermal digestion with 2x12 round cuvettes with 8 fixed / 8 user-defined programs with temperatures of up to 170 °C and AQA.

7100 set

N.P : photoLab® 7100
N.P : Reagent and Thermoreactor

Technology

Monochromator with reference beam

Measurement range

Nitrogen Ntot1 TC (LR):
0.5 to 25.0 mg/L (Digestion 120 °C / 248 °F, 30 min)

Nitrogen Ntot2 TC (HR):
10 to 150 mg/L (Digestion 120 °C / 248 °F, 30 min)

Phosphate PO₄-1 TP:
0.007 to 0.800 mg/L PO₄-P; 0.02 to 2.45 mg/L PO₄

Phosphate PO₄-2 TP:
0.06 to 5 mg/L PO₄; 0.02 to 1.63 mg/L PO₄-P

Multi-parameter and Conductivity

Multiparameter Benchtop Meter inoLab Multi 9000 Series



inoLab® benchtop devices offer the correct solution for pH, ORP, dissolved oxygen and conductivity measurements in the lab.

The new inoLab® Multi 9310 IDS is highly suitable for digital measurements of pH, ORP, dissolved oxygen (optical), BOD, conductivity and turbidity in the lab. Use the new wireless modules together with the new IDS plug head sensors, be independent from cables and measure i.e. conveniently under laboratory hoods or laminar flow benches. The IDS technology allows optimized measurements and efficient documentation in the simplest manner. A USB interface or an optionally installed printer allow the documentation via the computer or directly on the meter.

Multi 9310
1 Measurement Channel DO/BOD, pH, ORP, conductivity and ISE
Multi 9620
2 Measurement Channel
Multi 9630
3 Measurement Channel
Measurement range
pH : 0.000–14.000 pH
ORP : –1,200.0–1,200.0 mV
DO : 0.00–20.00 mg/L
Conductivity : 10 µS/cm–2,000 mS/cm
Weight & dimensions
9310 : 240(W) × 190(D) × 80(H) mm Approx 0.8 kg
9310P : 290(W) × 190(D) × 80(H) mm Approx 1.0 kg
9620 / 9630 : 180(W) × 80(D) × 55(H) mm Approx 0.4kg

Multi-parameter Portable Meter MultiLine 3000 Series



High-quality portable digital IDS multi-parameter instrument with a universal measurement input for starting with digital measurement technology.

The Multi 3510 IDS compact portable multi-parameter instrument for applications with digital IDS pH/ORP electrodes, dissolved oxygen sensors, conductivity cells or turbidity sensors. Calibration records and additional information are stored in the sensor. Well laid-out menus make the operation safe and easy. With a wide range of electrodes almost every application including depth measurement down to 100 m will be covered in the field and in the laboratory.

Multi 3510
1 Measurement Channel DO/BOD, pH, ORP, conductivity and ISE
Multi 3620
2 Measurement Channel
Multi 3630
3 Measurement Channel
Measurement range
pH : 0.000–14.000 pH
ORP : –1,200.0–1,200.0 mV
DO : 0.00–20.00 mg/L
Conductivity : 10 µS/cm–2,000 mS/cm
Turbidity : 0.0–4,000.0 FNU/NTU
Weight & dimensions
80(W) × 180(D) × 55(H) mm, 400g

Multi-Parameter Sensors MPP930



MPP IDS - the digital multi-parameters with Multi 3430 digital display

Multi-parameter probes for simultaneous measurement of up to three parameters from the following selection: Dissolved oxygen (optical), pH or ORP, conductivity as well as turbidity. A built-in pressure sensor delivers the depth. Every sensor measures the temperature required for its compensation on its own. All probes are available in kits with sensors. The MPP 930 IDS can measure up to 3.

Model
Multi-Parameter Electrodes MPP910/MPP930
Use
Spot sampling and short term logging
Sensor
MPP910 : 1 port
MPP930 : 3 ports
Measurement range
DO(Optical) : 0–20 mg/L
pH : 0–12
ORP : –1,250–1,250 mV
Conductivity : 1 µS/cm–2.5/cm
Depth : 0.5–100 m
Temperature : 0–50 °C
Weight & dimensions
(MPP910) : 443(L) × 40(Ø) mm, Approx 355g
(MPP930) : 400(L) × 69.5(Ø) mm, Approx 1.1kg

Multi-parameter and Conductivity

Benchtop EC/Cond Meter inoLab Cond 7000 Series



The new inoLab® Cond 7310 is highly suitable for all conductivity measurements connected with automatic documentation according to GLP/AQA in quality labs in all industries. It works with all modern WTW conductivity measuring cells to cover all applications. For the documentation, the serial number of the used sensor can be entered. Upon request, the measured values can be put out via the optional built-in printer.

Model	Cond 7110	Cond 7310 / Cond 7310P
Measurement range	Conductivity : 0.0 µS/cm~1,000 mS/cm Temperature : -25.0~125.0 °C Salinity : 0.0~70.0 ppt TDS : 0~1,999 mg/L Spec res : 0.000~199.9 MΩ cm	Conductivity : 0.0 µS/cm~2,000 mS/cm Temperature : -5.0~105.0 °C Salinity : 0.0~70.0 ppt TDS : 0~2,000 mg/L Spec res : 0.000~2,000 MΩ cm
Accuracy	Conductivity : Meas value ±0.5 % Temperature : ±0.1 K	
Weight & dimensions	240(W) × 190(D) × 80(H) mm Approx 1.0kg	Cond 7310 : 240(W) × 190(D) × 80(H) mm Approx 0.8 kg Cond 7310P : 290(W) × 190(D) × 80(H) mm Approx 1.0kg



inoLab Cond 7110



inoLab Cond 7310



inoLab Cond 7310P
Built in printer

Conductivity Cells



Conductivity meters inoLab

ProfiLineSeries compatible sensors

Model	TetraCon 325	LR325/01
		
Use	General Use (Spot sampling)	Pure water measurement
Measuring range	1 µS/cm to 2,000 mS/cm	0.001 µS/cm to 200 µS/cm
Features	4 electrode graphite cell	2 electrode stainless steel measuring cell, flow vessel

Handheld EC/Cond Meter ProfiLine Cond 3000 Series



The versatile Cond 3310 is designed for conductivity measurements in changing media with different 2 and 4 pole measuring cells. With its large memory and its waterproof USB interface, this meter is ideal for the capture of large data volumes, e.g. for pump tests including date, time and ID number. Via the interface, the data can be transferred to the computer and processed as needed.

Measurement range	
Conductivity	: 0.0~1,000 mS/cm
Temperature	: -5.0~105.0 °C
Salinity	: 0.0~70.0 ppt
Spec res	: 0.00~20 MΩ cm (Cond3210, 3310 only)
TDS	: 0~1,999 mg/L (Cond3210, 3310 only)
Memory	
Cond3110	: N/A
Cond3310	: 200 points (Manual) / 5000 points (Auto)
Interface	
USB Connection (Cond3310 only)	

Multi-parameter / Suspended Solid

MultiLine® & inoLab® - Wireless Multi Channel Meters



- Bench top and handheld
- Wireless sensors
- pH, ORP, dissolved oxygen, turbidity parameters available
- Galvanic isolation - No interference of measuring signals
- Calibration records and additional information are stored in the sensors
- Smart sensor evaluation



Spectrophotometer UV-VIS Reagent Free COD Nitrate Nitrite



- Easy to use: place cuvette, read measurement value
- More than 250 test programs for water and general lab analytics
- Cell and reagent test kits with barcode for automatic program selection
- Automatic cuvette and measurement range detection for rectangular cuvettes
- Top reliability due to menu guided comprehensive-AQA
- Measurement "Light" on the road with car battery use
- USB and Ethernet-connections for easy update, print to PDF or printer, storage and data export



Portable meters for Memosens®

SI Analytics

- Increased safety due to digital signal transmission. External interferences are eliminated, calibration data is transferred securely, and sensor data is transmitted easily.
- The sensor data is stored in the sensor.
- Predictive maintenance thanks to the possibility to track the sensor's past performance.
- Submersible thanks to its hermetically sealed plug-in head.
- Memosens® is an open system, which means that it is supported by several manufacturers and is a defacto standard.



Portable Suspended Solids TSS 711



The Royce Model 711 Portable Suspended Solids/ Interface Level Analyzer is a rugged, waterproof instrument designed for the rigors of remote sampling. The meter provides reliable operation in waste treatment plants, rivers, lakes and other aqueous systems. The meter will read in either grams per liter when in the suspended solids mode or relative density percentage while in the interface level mode of operation.

Measurement range	0.01–10 grams per liter (10 to 10,000 mg/L)
Reproducibility	±1 % of reading or ±20 mg/L, whichever is greater
Accuracy	±5 % of reading or ±100 mg/L, whichever is greater
Power supply	Standard 9V batteries
Weight & dimensions	7"(L) x 3.2"(W) x 1.5"(D) Approx 1kg

Multi-parameter



- AP-700 or AP-800 Aquaprobe with 3m cable
 - Handheld GPS Aquameter
 - 250ml RapidCal calibration solution
 - Spare DO membrane cap, DO filling solution and pH storage solution
 - USB cable and Windows PC application
 - Lanyard, screwdriver & 5 AA batteries to power the GPS Aquameter
- The Full Water Monitoring Package Supplied in Carry Case for Portable Use

AP-700

- pH • ORP • conductivity • TDS
- SSG • Res • salinity
- dissolved oxygen • temperature

AP-800

- pH • ORP • conductivity • TDS • SSG
- Res • salinity • dissolved oxygen
- temperature • TURBIDITY

Parameter	Range
Dissolved Oxygen	0 - 500.0% / 0 - 50.00 mg/L
Conductivity (EC)	0 - 200 mS/cm (0 - 200,000 S/cm)
TDS*	0 - 100,000 mg/L (ppm)
Resistivity*	5 •cm - 1 M •cm
Salinity*	0 - 70 PSU / 0 - 70.00 ppt (g/Kg)
Seawater Specific Gravity*	0-50 σ_t
pH	0 - 14 pH / \pm 625mV
ORP	\pm 2000mV
Temperature	-5 °C - +50 °C
Turbidity**	0 - 3000 NTU

The advanced multiparameter probes

The AP-2000/AP-5000/AP-7000 comes pre-loaded with a selection of sensors: pH • ORP • conductivity • TDS • SSG • Res • salinity • optical dissolved oxygen • temperature • depth



AP-7000

There are an additional 6 ports allowing you to add much more:
All 6 Aux ports can be fitted with either an optical sensor or an ISE from the list below



AP-5000

There are an additional 4 ports allowing you to add more:
All 4 Aux ports can be fitted with either an optical sensor or an ISE from the list below



AP-2000

There are an additional 2 ports allowing you to add more:
Aux port 1 can be fitted with either an optical sensor or an ion selective sensor (ISE)

Aux port 2 can be fitted with only an ISE sensor

ISE Electrode Options:

Ammonium / Ammonia, Chloride, Nitrate, Fluoride, Calcium.

Optical Electrode Options:

Turbidity, Chlorophyll, Blue Green Algae, Rhodamine, Fluorescein, Refined Oil, CDOM / FDOM.

DO Measurement

Dissolved Oxygen DO Measurements

Every species on our planet depends on water and oxygen. For aquatic species, adequate dissolved oxygen is of prime importance to their continued survival. Since dissolved oxygen levels are directly related to good water quality, the two are highly interdependent. Many factors can affect DO levels, and an understanding of these levels in order to make informed decisions concerning wastewater treatment operations, hypoxic zones, aquaculture facilities or large-scale ecosystems is essential.

Benchtop Meter Dissolved Oxygen Measurement inoLab® Oxi 7310

inoLab Oxi 7310



inoLab Oxi 7310



inoLab Oxi 7310P
Built-in printer

The inoLab® Oxi 7310 is the perfect benchtop meter with secure and convenient menu-controlled operation via a graphic display for the measurement of dissolved oxygen with the proven, galvanic oxygen sensors, the universal Cellox® 325, the self-stirring StirrOx® G for BOD measurements and DurOx® 325 for training purposes. With automatic documentation according to GLP/AQA, it supports the traceability - not only in the environmental lab. For this, the serial number of the sensor can be saved. On request also available with an optional built-in printer.

Measurement range

DO Con	: 0.00–20.00 mg/L; 0.0–90.0 mg/L
Saturation	: 0.0–200.0 %; 0–600 %
Pressure	: 0.0–200.0 mbar; 0–1,250 mbar
Temperature	: 0–50.0 °C

Accuracy

DO Con	: Meas value ±0.5 %
Saturation	: Meas value ±0.5 %
Temperature	: ±0.1 K

Temperature compensation

Auto Compensation (0–40 °C)

Weight & dimensions

240(W) × 190(D) × 80(H) mm
800g (phosphorus N/A)

Wireless Optical IDS Dissolved Oxygen Sensors FDO® 925-P



The FDO® 925 is especially suited for lab and process thanks to its compact size. The flow-free, easy to clean beveled membrane allows it to be used in containers with low sample volumes. Also, low oxygen concentrations below 1 mg/l can be shown exactly.

WTW's proven FDO® 925 is now available as sustainable plug head version. The universal plug head fits the sensor with wireless functionality - disturbing cables are no longer required. Furthermore it can be connected to AS/IDS-x cables with lengths of up to 100 m. With this new technology WTW significantly expands the range of applications and the measuring comfort of its optical dissolved oxygen sensors.

Measurement range

Concentration	: 0.00... 20.00 mg/l ±0.5 % of value
Saturation	: 0.0 ... 200.0 % ±0.5 % of value
Partial pressure	: 0.0 to 400 hPa ±0.5 % of value
Temperature	: 0 ... 50.0 °C ±0.2 °C



Multi-parameter & DO

Multi-parameter Portable Meter MultiLine® Multi 3510 IDS



The Multi 3510 IDS compact portable multi-parameter instrument for applications with digital IDS pH/ORP Electrodes, dissolved oxygen sensors, conductivity cells or turbidity sensors. Calibration records and additional information are stored in the sensor. Well laid-out menus make the operation safe and easy. With a wide range of electrodes almost every application including depth measurement down to 100 m will be covered in the field and in the laboratory. The delivery also contains the MultiLab® Importer software for data acquisition via Excel®.

Measurement range

DO Con : 0.00-20.00 mg/L
 Saturation : 0.0-200.0 %
 Pressure : 0.0-200 hPa
 Temperature : 0-50 °C

Power supply

1.5V 4x AA batteries
 1.2V NiMH rechargeable battery four (optional)

Weight & dimensions

80(W) × 180(D) × 55(H) mm
 400g

Electrode dimensions

Ø15.3 × 150(L) mm

Oxygen Portable Meter ProfiLine Oxi 3000 Series



Dissolved oxygen measurement - really simple: The Oxi 3000 series are an easy to use, robust and waterproof portable meter for the measurement of dissolved oxygen, i.e. in surface waters, in wastewater treatment plants and in fish farming applications. It is suitable for galvanic oxygen sensors of the CellOx® and DurOx® series; the adjustable salinity compensates for the salt content when measuring sea water and allows correct measured values. The results can be displayed either as saturation or concentration.

Measurement range

DO Con : 0.00-19.99 mg/L; 0.0-90.0 mg/L
 Saturation : 0.0-199.9 %; 0-600 %
 Temperature : -5.0-105.0 °C

Power supply

Oxi 3205 : N/A
 Oxi 3310 : 200 points (Manual) / 500 points (Auto)

Weight & dimensions

80(W) × 180(D) × 55(H) mm
 400g

DO Electrodes



inoLab, ProfiLine series DO electrode specifications

Model	CellOx 325 (Membrane)	DurOX (Membrane)	StirrOx G (Membrane)	FDO 925* (Optical)
Use	General (Spot sampling)	General (Spot sampling)	BOD measurement	General (Spot sampling)
Measurement range	0-50 mg/L	0-50 mg/L	0-50 mg/L	0.00-20.00 mg/L
Features	DO, Saturation, Pressure	Low flow rate (2.5-5 cm/sec)	BOD Built-in stirrer	No calibration No stirring needed

Turbidity / Color

Benchtop Turbidity Meter Turb 555



Professional turbidity meters for the lab from 0.01 - 10.000 NTU according to drinking water standard, for quality, goods receiving and production inspections.

Measurement range

NTU : 0-10,000
EBC : 0-2,450
Nephelos : 0-67,000 t

Reproducibility

0.01 NTU or $\pm 1\%$ of the measured value

Accuracy

0 ... 1,000 : 0.01 or $\pm 2\%$ of the value
1,000 ... 4,000 : $\pm 5\%$ of the value
4,000 ... 10,000 : $\pm 10\%$ of the value

Power supply

AC100-240V $\pm 10\%$ / 47-63 Hz

Weight & dimensions

252(W) x 290(D) x 100(H) mm
Approx 1kg

Portable Turbidity Meter Turb 430T



Portable nephelometric with highest precision according to DIN ISO / US EPA for water analytics, quality control and process monitoring.

Measurement ranges

NTU 0 ... 1,100 / 0-1,100
FNU 0 ... 1,100

Reproducibility

0.01 NTU or $< 0.5\%$ of measured value

Measurement ranges

NTU: 0-1,100
FNU: 0-1,100

Accuracy

± 0.01 NTU or $\pm 2\%$ of the measured value

Power supply

4x AA batteries for approx. 3,000 measurements

Weight & dimensions

86(W) x 236(D) x 77(H) mm
600g

Economical Portable Turbidity Meter Turb 355



Small portable turbidity meter as per DIN ISO / US EPA for nephelometric measurements in quality control and environmental monitoring.

Measurement ranges

NTU 0 ... 1,100
FNU 0 ... 1,100

Reproducibility

0.05 NTU or $\pm 1\%$ of the measured value

Resolution

N 0.01 NTU in the range 1 ... 9.99
0.1 NTU in the range 10.0 ... 99.9
1 NTU in the range 100 ... 1,000

Accuracy

0-500 NTU/FNU: ± 0.1 NTU/FNU or $\pm 2\%$ of measured value
500-1,100 NTU/FNU: $\pm 3\%$ of the measured value

Power supply

4x AAA batteries for approx. 1,500 measurements

Portable Turbidity Meter WQ770B



The Global Turbidity Meter is a highly accurate device with a fully submersible sensor for in-situ environmental or process monitoring. The meter is provided with a padded carrying case and 25' of marine grade cable, with lengths up to 100' available upon request.

Measurement ranges

Sensor=0-50 NTU and 0-1000 NTU; Meter=0-50 NTU or 0-1000 NTU selectable

Output

4-20mA (Sensor, both ranges), LED screen (Meter)

Cable Length

Sensor=25 ft standard (optional to 500 ft)

Accuracy

+ 1% of full scale

Operating Voltage

10-36 VDC @ 40 MS (Sensor); Internal 9VDC battery (Meter)

Weight & dimensions

Body- 1 1/2 x 8.5 inches (3.8 x 21.6 cm) (Dia x Length)
1lb (454 g) (Sensor); 2 lbs (907 g) (Meter+sensor)

Automatic Tritator

TITRONIC® Piston Burette TITRONIC® 300

SI Analytics



The new burette TITRONIC® 300 not only allows you to perform dosing operations quickly and easily but also accomplishes manual titrating operations without difficulty. The burette can be used with all dosing liquids, solvents and titrants.

The adjustment of any dosing volume and the dosing speed is made simply by pressing a button. For incremental dosing operations, the entry of the volume and the waiting time between the volume increments can be adjusted just as easily and quickly.

Burette capacity	
20 ml-50 ml	
Burette accuracy	
20mL Burette	: ±0.15 mL, Reproducibility: ±0.05 mL Resolution: 0.005 mL
50mL Burette	: ±0.025 mL, Reproducibility: ±0.25 mL Resolution: 0.025 mL (EN ISO 8655-6)
Interface	
1x USB-A and 1x USB-B, 2x RS-232-C	
Power	
100-240 V or more, 50/60 Hz, Power30VA	
Weight & dimensions	
135(W) × 310(H) × 205(D) mm 2kg (not including stirrer)	

TITRONIC® Piston Burette TITRONIC® 500

SI Analytics



The TITRONIC® 500 is the perfect piston burette for manual titrations, accurate dosing of small and large volumes and the preparation of solutions.

The TITRONIC® 500 can also be used as automatic dosing (TitroLine® 7000, TitrSoft 3.0) and titration burette (TitrSoft 3.0).

Features

- Intelligent exchangeable units with 5, 10, 20 and 50 ml volume
- Connection of printer and analytical balances
- Complete remote control via RS232 or USB-B interface thanks to the two RS232 ports it is possible to connect up to 16 devices on one RS232 or USB port at ones

Burette capacity	
5 ml, 10 ml, 20 ml, 50 ml	
Burette accuracy	
Accuracy	: ±0.1-0.15 %
Reproducibility	: ±0.05-0.07 % (EN ISO 8655-6)
Display	
3.5"-1/4 VGA TFT LCD	
Interface	
2x USB-A and 1x USB-B, 2x RS-232-C	
Power	
90-240V or more, 50/60 Hz, Power30VA	
Weight & dimensions	
153(W) × 45(H) × 296(D) mm 3.5kg (not including stirrer)	

TitroLine® Automatic Titration TitroLine® 5000

SI Analytics



This new automatic titrator combines a syringe burette and pH/mV meter plus integrated intelligence. This intelligence carries out the parameterisation of the method for you.

The new Titrator TitroLine® 5000 offers even more features than its predecessor and is even more convenient to use.

Burette capacity	
20ml-50ml	
Burette accuracy	
20mL Burette	: ±0.15 mL, Reproducibility: ±0.05 mL
50mL Burette	: ±0.025 mL, Reproducibility: ±0.25 mL
Interface	
1x USB-A and 1x USB-B, 2x RS-232-C	
Power	
100-240V or more, 50/60 Hz, Power 30VA	
Weight & dimensions	
135(W) × 310(H) × 205(D) mm 2kg (not including stirrer)	

Titroline 7800 - Multi-Functional Auto-Titrator

SI Analytics



- High accuracy with temperature compensated pH electrodes
- Titration & Karl-Fisher switchable
- Conductivity sensor connectable
- Two parameters display



IQ Sensor Net 2020 XT
Influent:
pH, Conductivity, Ammonium,
COD, TOC, DOC, BOD, SAC

Aeration:
D.O., Ammonium,
Nitrate, TSS, pH

Effluent:
Ammonium, Nitrate, pH,
Conductivity, D.O., Turbidity,
COD, TOC, DOC, BOD, SAC

Back-up Terminal
Final Setting:
Nitrogen, Turbidity, TSS,
pH, Sludge Blanket Level



Online Measuring Instrumentation

Online Measuring Instrumentation

IQ Sensor Net IQ Sensor Net



WTW's IQ Sensor Net systems for wastewater treatment plant and industrial applications offers nearly unlimited network opportunities - for up to 20 sensors.

The systems are modular system and can "grow" with increasing demands! You can transfer all of your information to your PLC via one single cable and will save in unnecessary investments. Furthermore, you can read all measured parameters on a single display.



Sensors

Parameters	1 TriOxmatic®	2 FDO®	3 Sensolyt®	4 TetraCon®	5 Viso Turb®	6 VSolid®	7 NitraVis®	8 CarboVis®	9 NiCaVis®	10 VARION®	11 AmmoLyt®	12 NitraLyt®	13 IFL
Temperature	•	•	•	•	•	•	•	•	•	•	•	•	
DO (electrochemical)	•												
DO (optical)		•											
pH			•										
ORP			•										
Conductivity				•									
Salinity				•									
Turbidity					•								
TSS						•	•	•	•				
Ammonium										•	•		
Nitrate							•		•	•		•	
Nitrite							•		•				
Potassium										•	•		
Chloride*										•	•		
COD (chemical oxygen demand)							•	•					
TOC (total organic carbon)							•	•					
BOD (biochemical oxygen demand)							•	•					
DOC (dissolved organic carbon share of TOC)							•	•					
SAC (spectral absorption coefficient)							•	•					
Interface (Sludge) Level Measurement**													•

*Chloride is used as compensation only and is not a visible parameter on the IQSN system. Please contact us for more information.

Online Measuring Instrumentation

IQ Sensor Net System 2020XT



Customizable configuration, to fit all applications.

Display Unit/Controller



Display unit/Controller

- Displays up to 8 parameter simultaneously

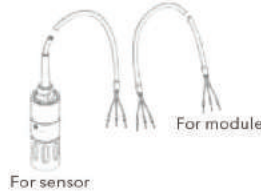
MIQ Module



Module

- Power supply
- Analog output / input
- Interface
- System expansion
- Control (Max 3 modules)

Cable



For sensor

For module

Cable 2

- Low-voltage installation (IQ system is 24 V)
- Cable lengths up to 1 km

Sensors



DO



FDO 700 IQ (Optical)



TriOxmatic 700 IQ (Membrane)

pH/ORP



SensoLyt 700 IQ

Conductivity



TetraCon 700 IQ

Ammonia/Nitrate



VARION Plus 700 IQ

Ammonia



AmmoLyt Plus 700 IQ

Nitrate



NitraLyt Plus 700 IQ

UV Sensor



CarboVis 700 IQ
NitraVis 700 IQ
NicaVis 700 IQ
NicaVis 700 IQ NI
UV 700 IQ SAC
UV 700 IQ NOx

Turbidity/SS

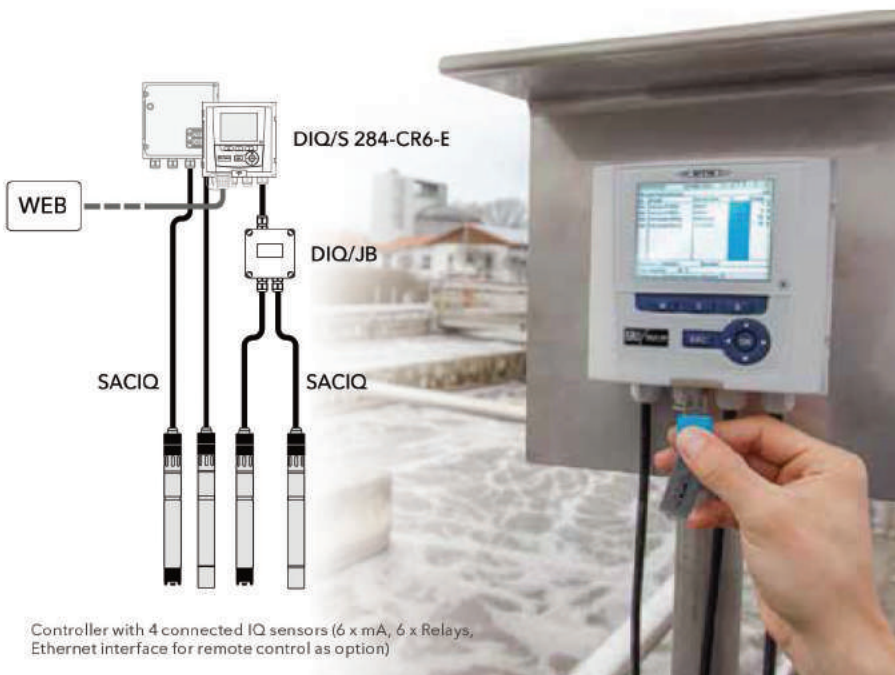
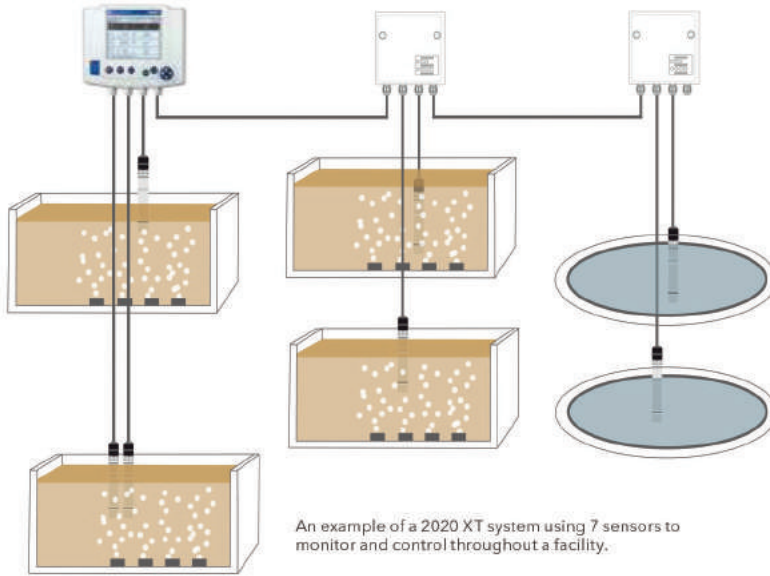


VisoTurb 700 IQ
ViSolid 700 IQ

Sludge Level



IFL 700 IQ



Online Measuring Instrumentation

Terminal/controller MIQ/TC 2020 3G IQ Sensor Net



The heart of every IQ Sensor Net system 2020 – multi-parameter system for up to 20 sensors with USB interface, remote maintenance and remote communication.

Features

- Safe and easy – multi-functional USB interface for extremely fast data exchange and software updates
- A solution for every application - up to 20 sensors can be connected, all IQ parameters are measurable
- Flexible and ready for the future – the IQ Sensor Net can be expanded as needed thanks to its modular construction

Connectable sensors

up to 20 sensors

Power output and relay

up to 48 x 0(4) ... 20 mA and relay (total)

Field bus communication

PROFIBUS-DP, MODBUS RTU, Ethernet/IP, MODBUS TCP

USB interface

for software updates and data backup

Data memory

up to 526.600 data sets

BackUp controller function

Yes

Integrated lightning protection

Yes

EMC protection

Yes

Terminal/controller DIQ/S 282/284 IQ Sensor Net



Controller for small and mid-sized wastewater treatment plants including USB-interface and internal data logger- up to 4 sensors, all parameters, available anytime.

Features

- All parameters available (O₂, NH₄, NO₃, COD, PO₄, sludge level, ...)
- USB-interface and internal data logger by default
- Convenient and available anytime via Ethernet-interface

Connectable sensors

for DIQ/S 282: 2

for DIQ/S 284: 4

Measurable parameters

6

USB interface

as standard

Internal data logger

as standard

Dimensions

144(W) x 144(H) x 125 (D) mm for CR6(-E); depth 173 mm

Relays

up to 6 (depending on version and expandable with modules)

Analog outputs

up to 6 (depending on version and expandable with modules)

Fieldbusses

optional: PROFIBUS-DP or Modbus (both via RS 485) or Ethernet/IP, Modbus TCP and PROFINET (via RJ 45)

Max. cable length

250 m

Terminal/controller DIQ/S 181 IQ Sensor Net



The new system 181 – the digital and cost-efficient single parameter measuring point with proven IQ Sensor Net technology and matching fixed cable sensors.

Features

- Low-cost alternative to analog measuring points
- Matching digital IQ fixed cable sensors for pH/ORP, conductivity, O₂ and turbidity
- Stable, robust and proven measuring technology

Version

DIQ/S 181(/24V)

Connectable sensors

1 IQ fixed cable sensor

Power outputs and relays

2x (0) 4-20 mA 3x relays

Parameters

pH/ORP, conductivity, O₂, turbidity, temperature

Sensor cable length

10 m

Max. cable length

250 m (DIQ/JB and SNCIQ required sold by the meter)

Power supply

Wide range power supply (100-240 VAC) or 24 V

Connectable modules

DIQ/CHV (Cleaning Head Valve)

Online Measuring Instrumentation

Online pH/ORP Sensor SensoLyt 700 IQ



SensoLyt®700 IQ - digital pH/ORP armature with integrated preamplifier and temperature sensor as well as lightning protection to be connected to IQ Sensor Net.

By storing calibration values within the sensor, a "pre-calibrated pH-measurement" can be generated. Due to our quick-lock, the sensor can be disconnected and - after laboratory calibration - re-connected at the site easily. Inconvenient calibrations in the field under adverse conditions can be completely eliminated if there is an IQ connection in the lab.



Sensor	
SensoLyt 700IQ	
Material	
SUS 316Ti	
Weight & dimensions	
506(L) x 40(Ø) mm, Approx 970g	
Electrodes	
SEA	Measurement range: pH2-12 Temperature: 0-60 °C
SEA-HP	Measurement range: pH4-12 Temperature: 0-60 °C
DWA	Measurement range: pH0-14 Temperature: 0-60 °C
ECA	Measurement range: pH2-12 Temperature: 0-60 °C
PtA	Measurement range: ±2,000 mV Temperature: 0-60 °C

Online Conductivity Sensor TetraCon 700 IQ



TetraCon® 700 IQ - digital 4 electrode conductivity measuring cell with flow-free operation, especially with high conductivity. This measuring technique has proven itself over the years and offers an interference-free operation, also and foremost at high conductivity values. The 4-electrode measuring cell is very insensitive to contamination. Based on the pressure resistance of up to 10 bars, there is nothing to stop you from mounting into pipes or on lines.

The sea water model includes the sensor for use in special media: All wetted parts are made of titanium and plastic and are therefore extremely resistant to corrosion.



Measurement range	
0.00-20.00 µS/cm	0.0-200.0 µS/cm
0.000-2.000 mS/cm	0.00-20.00 mS/cm
0.0-200.0 mS/cm	0-500 mS/cm
Material	
SUS316Ti (IP68)	
Weight & dimensions	
357(L) x 40(Ø) mm, 660g	

Online Turbidity/TSS Sensor VisoTurb 700 IQ/ViSolid 700 IQ



VisoTurb®: Optical turbidity sensors according to nephelometric principle according to DIN EN 27027 and ISO 7027 for the in-situ use in water/wastewater with ultrasonic cleaning system.

Model	VisoTurb	ViSolid
Measuring procedure	Nephelometric procedure	Nephelometric procedure
Measurement range	NTU : 0.05-4,000NTU SiO ₂ : 0.1-4,00 mg/L SiO ₂ TSS : 0.0001-400 g/L TSS	SiO ₂ : 0.01-300g/L SiO ₂ : 0.001-30 % SiO ₂ TSS : 0.003-1,000g/L TSS : 0.0003-100 % TSS
Dimensions	365(L) x 40(Ø) mm	365(L) x 40(Ø) mm
Weight	Approx 990g	Approx 970g



Online Measuring Instrumentation

Online Optical UV VIS Spectral Sensors CarboVis 700 IQ/NiCaVis 700 IQ



CarboVis® 700 IQ: Spectral sensor with integrated ultrasonic cleaning for the chemical-free measurement of the organic load and suspended solids concentration.

NiCaVis® 705 IQ: Sensor with integrated ultrasonic cleaning for the reagent-free measurement of nitrate and carbon parameters in the wastewater treatment system drain.

The optical measuring method of these sensors allows continuous measuring of carbon and nitrogen parameters directly in the medium. With this procedure, the information of the entire spectrum is evaluated, which allows the simultaneous determination of multiple parameters. At the same time, cross sensitivities of individual parameters among each other and interference such as turbidity are eliminated.

Measurement

Spectral measurement in the UV-VIS range of (200–720 nm)

Measurement range

CarboVis 705 IQ: 5 mm
 COD : 0.1–800.0 mg/L
 TOC : 1–500.0 mg/L
 SAC : 0.1–600.0 m⁻¹

CarboVis 701 IQ: 1 mm
 COD : 1–12,500 mg/L
 TOC : 1–20,000 mg/L
 SAC : 1–5,000 m⁻¹

NiCaVis 705 IQ: 5 mm
 COD : 0.1–800.0 mg/L
 TOC : 1–500.0 mg/L
 SAC : 0.1–600.0 m⁻¹
 NO₃-N : 0.01–50.00 mg/L

Cleaning

Maintenance-free WTW ultrasonic cleaning

IQ SENSOR NET system

282/284 and 2020

Online Optical UV sensors UV 700 IQ SAC



UV 700 IQ SAC: Low-cost probe (integrated ultrasonic cleaning, turbidity compensation) for the maintenance-free and reagent-free SAC measurement according to DIN 38404 C3.

With the new sensor UV 700 IQ SAC, you can determine the spectral absorption coefficient at 254 nm directly and without chemicals. Turbidity influences are compensated by a reference measurement at 550 nm.

Measuring method

UV absorption measurement 254 nm

Measurement range

UV 705 IQ SAC: 5 mm
 AC : 0.1–600.0 m⁻¹
 UVT : 0.0–100.0 %

UV 701 IQ SAC: 1 mm
 CSAC : 0.5–3,000.0 m⁻¹
 UVT : 0.0–100.0 %

Cleaning

WTW ultrasonic cleaning

IQ SENSOR NET system

282/284 and 2020

Online Digital IQ Sensor to Determine the Sludge Level IFL700 IQ



Unique on the market: Sludge level measurement with maintenance-free cleaning system - the FL 700 IQ with smart signal processing.

Detailed echo profile presentation on the display.

Maintenance-free cleaning system.

Measuring method

Ultrasound echo measurement (ultrasonic)

Measurement range

0.40–15.00 m

Weight & dimensions

442(L) x 105(Ø) mm (Max) /
 IFL 700 IQ: 3.9kg, IFL 701 IQ: 3.7kg

IQ Digital
SENSOR NET XT
 Converter (P36)
 required separately

Online Measuring Instrumentation

Online Digital Electro-chemical Oxygen Sensors TriOxmatic 700IQ



In the analog sensors of the TriOxmatic® series, you will find the ideal solution for your application. In addition to the continuous measuring accuracy, the sensors are equipped with an automatic self diagnosis system, a shorter response time and different cable lengths as options.

Model	700IQ(SW) Seawater	701IQ	702IQ
Measurement range	DO Con: 0.0–60.0 mg/L Saturation: 0–600 %	DO Con: 0.00–20.00 mg/L; 0.0–60.0 mg/L Saturation: 0.0–200.0 %; 0–600 %	DO Con: 0–2,000 µg/L; 0.00–10.00 mg/L Saturation: 0–110 %
Weight & dimensions	700IQ: 360(L) × 40(Ø) mm Approx 660g 700IQ(SW): 360(L) × 59.5(Ø) mm Approx 1,170g	/	/



Online Digital IQ Sensors for Dissolved Oxygen FDO 700IQ



Standard Model

Seawater Model

FDO® sensors are the perfect solution for measuring dissolved oxygen. In addition to being free of calibration and flow, with their 45° membrane, they are also insensitive to air bubbles. Therefore, you will not require any additional installation equipment. The robust design of this sensors allows the use with an overpressure of up to 10 bar. The special membrane has a unique stability and thus ensures stable measured values.

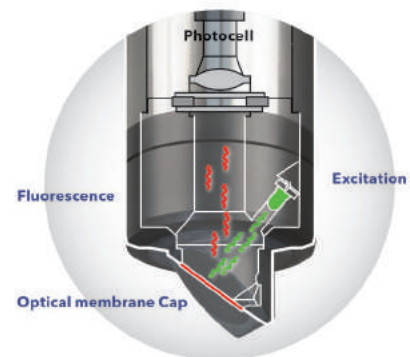
Calibration-free, reliable, DIN compliant - the optical FDO® oxygen sensors for the IQ Sensor Net to regulate biological cleaning steps.

- FDO 700IQ
- FDO 700IQ SW
- FDO 701IQ
- FDO 701IQ SW

The sea water model (FDO® 700 IQ SW) is optimized for use in special media: All wetted parts are made of titanium and plastic and are therefore extremely resistant to corrosion.



Measurement range (25C)
DO : 0–20.00 mg/L Saturation : 0–200.0 %
Accuracy
±0.05 mg/L (1 mg/L) ±0.1 mg/L (1 mg/L)
Power supply
Max DC24 V (Supplied via controller)
Weight & dimensions
340(L) × 40(Ø) mm; not incl cable Approx 900g



Optical technology

Online Measuring Instrumentation

pH mV μ S mS O₂ Cl₂ °C

ST Sensortechnik
Meinsberg



MV 5010

Specifications

Measuring ranges
 MV 5010 = pH -2 ... 16, -2000 ... 2000 mV
 MV 5020 = 0 ... 100 mS/cm
 MV 5025 = 0 ... 500 mS/cm
 MV 5030 = 0 ... 200 %, 0 ... 20 mg/l
 MV 5060 = 0 ... 2 (10) mg/l

Temperature measurement / compensation
 -10 ... 130 °C
 automatically with Pt 1000 or fixed temperature

Controller outputs

2 limit relays, two-way contact, max. 250 V AC/5 A
 PID-controller, bidirectional
 (pulse length or analogue output)
 Analogue outputs : 2 x 0(4) ... 20 mA
 oder 2 x 0 ... 5 V

Interfaces

USB (optional RS-232)
 for configuration, calibration and data logger

Display : graphic OLED 128 x 64 pixel
 plain text menu

Data logger : with real time clock for 4000 data sets
 reading out via USB interface
 graphic display

Dimensions : 160 x 130 x 70 mm (W x H x D)

Power supply 100 ... 240 V AC, 18 ... 36 V DC

Enclosure
 aluminium case for wall mounting, protection IP 65 (NEMA 4X)

Features

cost-efficient measurement of process parameters
 easy operation (plain text menu)
 simultaneous temperature measurement
 free scalable analogue outputs and 2 relay outputs
 USB interface and PC software
 firmware update via USB
 IP 65 protection (NEMA 4X)



MV 5010
 pH / ISE /
 Redox (ORP)



MV 5020
 Leitfähigkeit
 Conductivity



MV 5025
 4-pol Leitfähigkeit
 Conductivity



MV 5030
 Sauerstoff
 Dissolved Oxygen



MV 5060
 Chlor
 Chlorine



Meinsberg electrodes for laboratory and process

- Electrochemical sensors are developed and manufactured in Meinsberg (Saxony/Germany) for more than 65 years.
- The innovative team of experienced chemists, design engineers, technicians and glassblowers realises high reliability, flexibility and quality.
- Meinsberg make a wide range of sensors for measuring pH value, redox potential, conductivity, dissolved oxygen, chlorine and temperature for application in laboratory and process.

Online Measuring Instrumentation

Expert Level Measurement Hydrostatic Water Level Measurement



Expert™ Hydrostatic Submersible Level Transmitters are developed to deliver stable and exact level measurement even in very harsh environments. Expert™ works flawlessly with a minimum of maintenance.

Features

- Designed in enforced housing material
- Extremely wide measuring range from 0 to 300 m
- The transmitters are delivered with a predefined but re-programmable measuring range
- Easy installation
- PUR insulation and constructed for 1,000kg tensile strength

Model	Expert 700	Expert 7070	Expert 7070T	Expert 1400	Expert 7060	Expert 3400
Application	Water Wells	Water Wells and Water Storage and Processing	Water Wells and Water Storage and Processing	Water Wells and Water Storage and Processing	Wastewater and process water	Drinking, waste and process water
Body	AISI 316L	AISI 316L	AISI 316L	AISI 316	PP	PPS
Diaphragm	AISI 316L	AISI 316L	AISI 316L	Ceramic	AISI 316	Ceramic
Features	Outer diameter Ø 16 mm	Outer diameter Ø 22 mm	Outer diameter Ø 22 mm	Outer diameter Ø 22 mm	Outer diameter Ø 60 mm	Outer diameter Ø 50 mm
Output	Analog 4-20 mA	Analog 4-20 mA, voltage or Modbus	Analog 4-20 mA, Voltage or Modbus	Analog 4-20 mA	Analog 4-20 mA, voltage or Modbus	Analog 4-20 mA

Shuttle® Ultrasonic Level Transmitters



MJK's Shuttle® measures, displays, transmits and controls levels for about the same price as the competitors' stripped-down transmitters, plus you get the high quality product you expect from MJK. With MJK's cabled sensor it is easy to locate the display, where it can be useful, and the large display allows viewing from a distance. It has a one-step measurement start-up procedure that is easy to follow and easy to modify set-up of all functions, controls and signal management features. The advanced on-board software ensures accurate and reliable operation even in difficult applications.

Features

- Tanks in storm flow installations
- Lift stations
- Tanks at sewage plants
- Tanks in drinking water facilities
- Tanks and basins in process and food industries
- Sludge containers
- Many types of solids levels
- Level measurement in open channels, flumes and weirs

Range	In liquids: 0-10 cm to 0-25 m / 0-4 in. to 0-80 ft. In solids: 0-4 m to 0-10 m / 0-4 in. to 32 ft.
Frequency	30 kHz, 40 kHz or 50 kHz
Temperature range	-20 to +60 °C / -4 °F to +140 °F
Temperature compensation	Built-in -20 to +60 °C / -4° to +140 °F
Spread	3°, 6° or 7°
Material	Depends on the sensor model
Enclosure	IP 68 / NEMA 6P (submersible to 10 m / 30 ft. of water)
Max. cable length	250 m



Total Organic Carbon Analyzer



Laboratory TOC Analyzer

The 1080 TOC Analyzer

processes aqueous samples for analysis of the total organic carbon (TOC), total inorganic carbon (TIC), and non-purgeable organic carbon (NPOC) content. Supporting USEPA-approved methods, Standard Methods, ASTM, DIN/ISO/CEN, and EU Methods the 1080 can analyze up to 300 samples per 24-hour period, depending upon the protocol employed, in excess of 100,000 samples per year. Principal applications include: wastewater, seawater, industrial process water, drinking water, groundwater and cooling water.

- Wide operational range (50 ppb – 2,000 ppm C)
- Supports TC/TIC/TOC/NPOC analysis techniques and standard measurements
- Patented* Smart Slide injector extends o-ring life and reduces maintenance
- Patented* Tube Guard extends furnace tube life and reduces maintenance
- Intuitive, easy-to-use software

Method Compliance : USEPA, CEN, USP, EUP, ASTM, ISO, DIN, STD

Furnace Temperature : Adjustable, 680 °C in 1°C increments - 720 °C for TNb

Measurement Range : 50 ppb °C - 2,000 ppm °C (multiple calibration ranges or dilution required)

Measuring time : From 3 minutes

Oxidation technique : High temperature catalytic oxidation, liquid samples

Options available : TNb module, 88-position rotary autosampler

Method TC : 680 °C with Platinum catalyst

Method TIC : Acidification and sparging

Method TOC : NPOC, combustion of TIC-free sample, TOC-TIC

Reproducibility : 3.0%

Accuracy : +2% FS or 2% relative

Sample pathway : Color-coded Teflon® and PEEK® with automatic cleaning in all injection modes

Sample injection and sample handling : Injection: sipper, rotary autosampler

Handling : automatic syringe with sliding TC furnace injector

Sample Injection Volume : 10µL – 2.0 mL

IC pretreatment : Available with optional autosampler

Reagent purge : Yes

Reagents Required : Hydrochloric acid, rinse water

Gas Supply : Oxygen or Air, 99.995% (carbon dioxide and hydrocarbon free), 50-60 psig



Online TOC Analyzer

The 9210P TOC Analyzer

is fully compliant with USEPA Method 415.3 and SM 5310C. It combines the robust heated persulfate oxidation method with a patented, solid-state infrared detection technology for unparalleled accuracy and precision across a range of 50 ppb to 250 ppm.

Engineered for operation in process environments, the 9210p requires no external gases, minimal preventative maintenance, and uses standard reagents. Calibration is typically stable for 12 months.

- Flexible - Ideal for drinking water, municipal wastewater, surface water, ground water, and other industrial water streams
- Reliable - Compliant with USEPA Method 415.3 and SM 5310C
- Economical - Uses standard reagents, does not require external gases or expensive service contracts
- Simple - A large, touchscreen display, paired with an easy-to-use interface, simplifies set-up and access to data, trending, and diagnostic screens

Analog Outputs : 2, 4-20mA (User-configurable concentrations)

Calibration : 2 point (KHP two standards)

Certifications : CE, EMC EN50082-1, and EN 55011 Group 1 Class A

Data Export : To PC via Ethernet, or using a USB memory stick (Microsoft® Excel®-ready .csv file format)

External Dimensions : 48.3 cm H x 31.1 cm W x 31.1 cm D (19 in H x 12.25 in W x 12.25 in D)

Gas Requirements : < 200 mL/min. 99.99% N2 or CO2-free air

Input Relays : 2 (remote start, remote stop)

Instrument Enclosure : NEMA 4X / IEC Class IP-56

Measurement Accuracy : +5%

Measurement Ranges : 0.050 to 25 / 5 to 250 ppm carbon

Measurement Technique : Non-dispersive infrared (NDIR) detection

Operating Environment : 5 – 45 °C, up to 90% humidity (non-condensing)

Operating Principle : Heated sodium persulfate oxidation

Operator Interface : Windows® CE-based, color touchscreen display

Output Relays : 2 (system alarm, sample alarm)

Power Requirements : 24VDC (Optional 24VDC power supply allows operation with 90-250VAC 50/60Hz source)

Reagents Required : Sodium persulfate, phosphoric acid

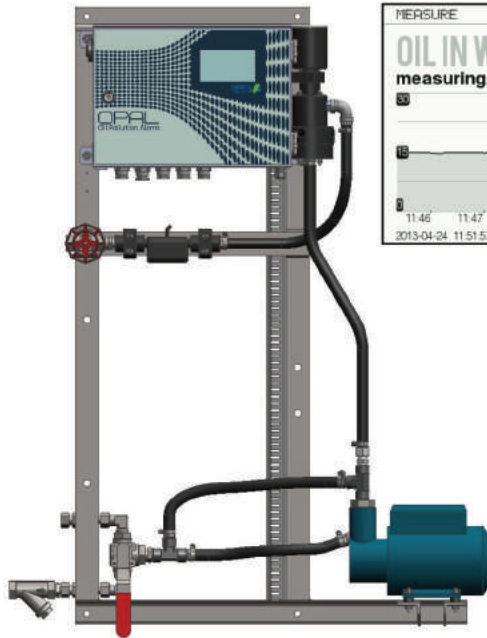
Regulatory Method Compliance : USEPA 415.3 (Source water & drinking water) SM 5310 C (Water & wastewater)

Sample Processing / Analysis Time : 4 to 9 minute intervals

Weight : 11 kg (24 lbs)

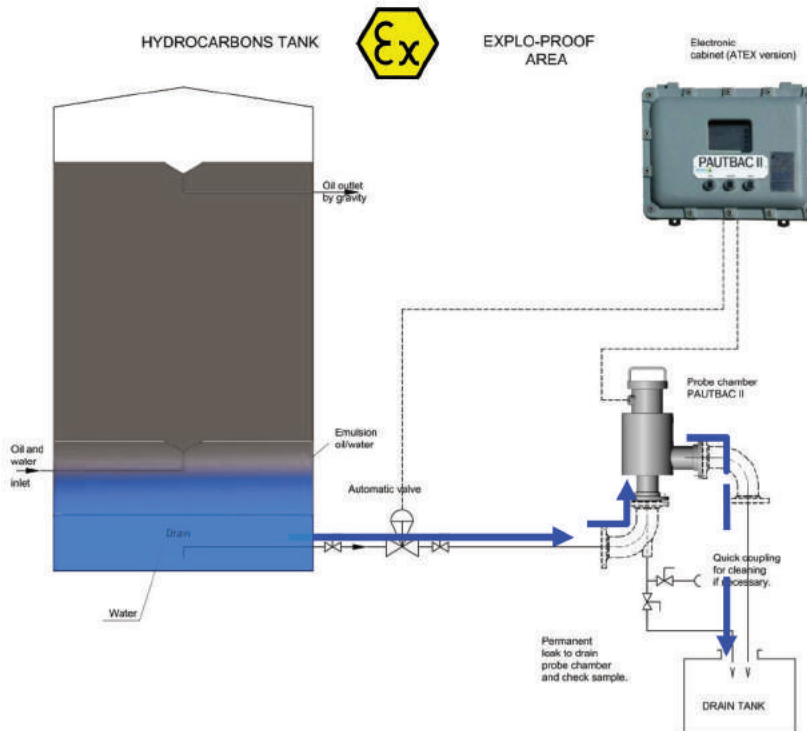
OPAL Oil in Water Analyzer

The new OPAL infra-red is the best solution for an early detection of oil in water.



ANALYSIS
 Method & Parameter : IR light scattering beam measurement
 Suspended hydrocarbons
 Range : 0 -10 up to 0 - 1000 ppm, others on request
 Streams : 1 stream of analysis (multistream on option)
 Accuracy & Repeatability : 1 to 2 % of end of range
 (depending on range)
 Response time Instantaneous : T90%C < 3 sec.

ADVANTAGES
 Compact system, fast & efficient
 IR light scattering detection,
 automatic, on line
 Intuitive, touchscreen user interface
 Extended choice of inputs & outputs
 Easy, cost-efficient operation
 No reagent, no cleaning product
 Automatic cleaning of measuring vessel
 Engineered solutions



PAUTBAC II Automatic Dewatering of Storage Tank

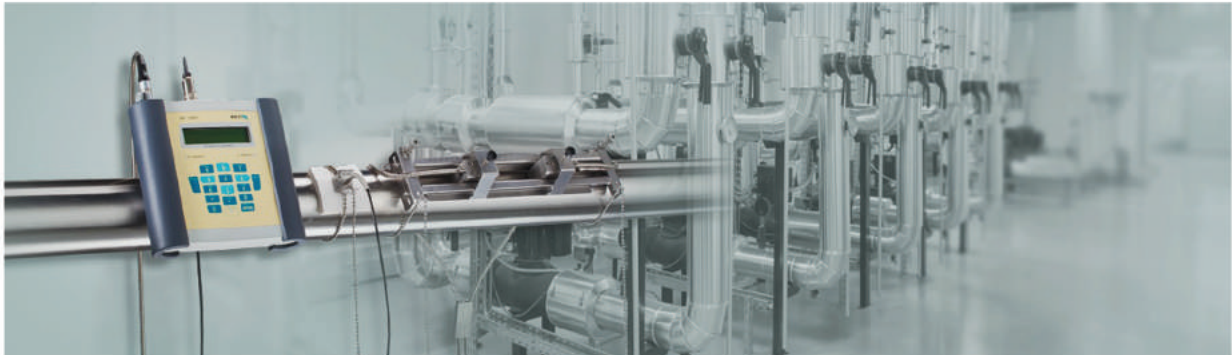
What is the PAUTBAC II?
 PAUTBAC II equipment is SERES environnement's BEST SOLUTION to automatize water drainage from oil storage tanks:
 Interface Detection Oil in Water
 automatic, on line, using capacitive probe,
 without human attendance
 Simple : installation & operation made easy
 Economical: low capital & maintenance costs
 Flexible: installation in safe or hazardous area

In petroleum products storage tanks: Oil refineries, slop stations, petroleum industries, tank farms, oil storage bases.

- PRINCIPLE:** Capacitive probe.
RANGE & THRESHOLD: 5 to 25% with adjustable alarm threshold (originally factory set at 5%)
SAMPLE SUPPLY: Temperature 5 - 85°C max - Pressure 3 bar max - Flow 5 - 30 m3/hr
AUTOMATIC DRAINING: Automatic purging cycle must be programmed:
 - Purging frequency : Programmable between 1 and 999 hours.
 - Max. purging duration : Programmable between 1 and 30 min.
 - Valve & Purge line flushing : Programmable between 0 and 99 sec.
 - Valve shutdown delay : Programmable between 0 and 99 sec.
DISPLAY: Colour Screen
OUTPUT CONTACT: - Valve control dry contact output (or 24VDC)
 - Oil detection dry contact output.
 - General alarm dry contact output
 - Optional dry contact available on request (or 24VDC)
 - Buzzer control +24VDC (Buzzer in option)
OUTPUT SIGNAL: 4-20 mA (or 0-20 mA) oil content output signal

Ultrasonic Flow Meter

Portable Ultrasonic Flow Meter



The flexible meter

The portable flow meters FLUXUS® F/G601 and FLUXUS® F/G608 measure the flow of liquids and gases nonintrusively by employing the proven transit-time correlation method. Special ultrasonic transducers are simply clamped onto the outside of the pipe and are never in direct contact with the medium flowing inside. No cutting into the pipe or process interruption is required for installation

The broad transducer range

enables flow measurement at pipes sizes from 6 mm to 6500 mm with pipe wall temperatures from -190 °C up to +600 °C and beyond as well as within hazardous areas (ATEX / IECEx and FM certified).

Highly reliable measurements

even at high solid contents or wet gas

Ideal measurement solution

for the determination of a building's or plant's thermal energy consumption and total energy efficiency

Energy efficient battery management

allowing for more than 17 hrs. of remote measurement

General technical specifications

Transmitter:	F601 / F608 (Liquids)	G601 / G608 (Gases and Liquids)
Quantities of measurement:	volume flow, mass flow, thermal energy flow (optional for liquids and gases), flow velocity	
Operating time with battery:	>17 hrs.	
Operating temperature:	-10 °C 60 °C	
Flow channels:	2	
Degree of protection:	IP65 acc. to EN60529, F608 and G608: ATEX (IECEx) Zone 2 and FM Class I, Div.2	
Flow velocity:	0.01 ... 25 m/s	0.01 ... 35 m/s
Inner pipe diameter:	6 mm ... 6500 mm	7 mm ... 1600 mm
Pipe wall temperature:	-40 °C ... +200 °C (-190 °C ... +600 °C)	-40 °C ... +80 °C
Repeatability:	± 0.15 % of reading ± 0.01 m/s	
Accuracy*		
- with extended calibration:	± 1.2 % of reading ± 0.01 m/s	± 1 ... 3 % of reading ± 0.01 m/s
- with field calibration:	± 0.5 % of reading ± 0.01 m/s**	± 0.5 % of reading ± 0.01 m/s **

FLUXUS F601 Energy

The portable FLUXUS F601 Energy is specially designed for temporary heating and cooling Thermal Energy measurement, with all measurements – Flowmeter, Temperature and Thermal Energy calculator contained in one device and done in accordance with the EN 1434 Thermal Energy meter standard.

FLUXUS G601 CA Energy

Portable flow measurement of Compressed Air and Thermal Energy The FLUXUS G601 CA Energy is the ideal tool for carrying out complete energy efficiency tasks in the industry as well as within facility management (e.g. according to DIN ISO 50001 standards) by allowing the measurement of compressed air flow rates as well as the monitoring of thermal energy quantities and the flow rate determination of any kind of liquid or gaseous media with just one device.

Ultrasonic Flow Meter

Permanent Ultrasonic Flow Meter



FLUXUS® WD The solution for water suppliers

The WD Series belongs to the most reliable and accurate ultrasonic clamp-on systems. Furthermore, it measures flow rates as low as 0.01 m/s. The inaccuracy of other meter technologies can increase so dramatically in the low flow range, that they are unsuitable for monitoring minimum night flows. But for water suppliers the precise monitoring of minimum night flows is an essential part of their leakage detection activities – and the WD Series is the ideal tool for this task.

Product variant:	WD400	WD1200	WD6500
Recommendation for heavily corroded pipes:	100 ... 400 mm (ID) 4 - 16 inch (OD)	400 ... 1200 mm (ID) 16 - 48 inch (OD)	1200 ... 6500 mm (ID) 48 - 260 inch (OD)
Pipe material:	All		
Media:	Water		
Flow velocity	0.01...25 m/s		
Accuracy:	±1.2 % of reading ±0.01 m/s		



FLUXUS® WW Efficiency in monitoring wastewater flows

The FLUXUS® WW is the ideal flow meter for retrofitting at pumping stations and treatment plants. It is installed without pipe modification or intrusion, is maintenance-free and delivers accurate and reliable flow measurements.

Product variant:	FLUXUS® WW
Pipe diameter range:	up to 6500 mm
Pipe material:	All
Media:	Water / Wastewater
Solid or gas content:	up to 10 % in volume
Flow velocity:	0.01... 25 m/s
Accuracy:	± 0.5% of reading ± 0.01 m/s (field calibrated) ± 1.2% of reading ± 0.01 m/s (out of the box - application dependent)



Water and Wastewater Solutions

ENTECH

Difference For Greater Value

ENTECH INDUSTRIAL SOLUTION CO.,LTD.
Tel : 0 2779 8888 info@entech.co.th



www.entech.co.th



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