

Technical Data (all measurement values ±1 digit)

| MultiLine® – Model | Multi 3410 | Multi 3420 | Multi 3430 |
|----------------------|------------|------------|------------|
| Order no. | 2FD450 | 2FD460 | 2FD470 |
| Measurement channels | 1 | 2 | 3 |

| MultiLine® – General specification | |
|------------------------------------|--|
| Memory | automatic, 10000 data sets |
| Data logger | manual/time controlled |
| Interface | USB host and Mini-USB |
| Power supply | Battery charger or 4 x 1.2 V NiMH rechargeable batteries |
| Continuous | 100 h |
| Protection class | IP67 |

| MultiLine® – D.O. measurement (optical) | |
|---|-----------------------|
| Concentration | 0.00 ... 20.00 mg/l |
| Saturation | 0.0 ... 200.0% |
| Partial pressure | 0 ... 400.0 hPa |
| Temperature | 0.0 ... 50.0 °C |
| AutoRead | automatic/manual |
| Calibration memory | up to 10 calibrations |
| Built-in barometric sensor | |

| MultiLine® – pH measurement | |
|-----------------------------|---|
| pH | -2.0 ... 20.0 pH -2.00 ... 20.00 pH -2.000 ... 20.000 pH |
| mV | ±2000; ±1250.0 |
| Temperature | -5.0 ... 105.0 °C |
| AutoRead | automatic/manual |
| CMC | yes |
| QSC | yes |
| Calibration | 1-, 2-, 3-, 4-, 5-point; WTW Technical, DIN/NIST, additionally 20 buffer sets |
| Calibration memory | up to 10 calibrations |

| MultiLine® – Conductivity measurement | |
|---------------------------------------|--|
| Conductivity | 0.0 ... 2000 mS/cm |
| Additionally | 0.00 ... 19.99 µS/cm, K=0.1 cm ⁻¹ |
| Spec. resistivity | 0.00 ... 20 MΩ cm |
| Cell constants | automatic |
| Salinity | 0.0 ... 70.0 (acc. IOT) |
| TDS | 0 ... 1999 mg/l, 0 ... 199.9 g/l |
| Temperature | -5.0 ... 105.0 °C |
| AutoRead | automatic/manual |
| T _{ref} | 20 °C/25 °C |
| Temperature compensation | none, nIF, 0.000 ... 10.000 %/K |
| Calibration memory | up to 10 calibrations |

| IDS pH sensors | SenTix® 940 | SenTix® 940-3 | SensoLyt® 900-6 | SensoLyt® 900-25 | SenTix® 950 | SenTix® 980 | SenTix® ORP 900 |
|------------------|--|-----------------|--------------------------|------------------|--------------------------|-----------------|-------------------|
| | Ord. no. 103740 | Ord. no. 103741 | Ord. no. 103742 | Ord. no. 103745 | Ord. no. 103750 | Ord. no. 103780 | Ord. no. 103790 |
| Meas. range pH | 0.000 ... 14.000 ± 0.004 | | 2.000 ... 12.000 ± 0.004 | | 0.000 ... 14.000 ± 0.004 | | mV: ±1200.0 ± 0.2 |
| Temp. range | 0 ... 80 °C | 0 ... 80 °C | 0 ... 60 °C | 0 ... 60 °C | 0 ... 80 °C | 0 ... 100 °C | 0 ... 100 °C |
| Ref. electrolyte | gel | gel | polymer | polymer | 3 mol/l KCl | 3 mol/l KCl | 3 mol/l KCl |
| Membrane type | cylindrical | cylindrical | cylindrical | cylindrical | cylindrical | cone | - |
| Junction | fiber | fiber | hole | hole | ceramic | platinum wire | ceramic |
| Shaft material | plastic | plastic | glass | glass | plastic | glass | glass |
| Shaft dimensions | length 120 mm ± 2 mm, Ø 12 mm ± 0.5 mm | | | | | | |
| Temp. accuracy | ± 0.2 °C | | | | | | - |
| Cable length | 1.5 m | 3 m | 6 m (IP68) | 25 m (IP68) | 1.5 m | 1.5 m | 1.5 m |

| IDS Conductivity Cells (IP68) | TetraCon® 925 | TetraCon® 925-3 | TetraCon® 925-6 | TetraCon® 925-25 | LR 925/01 |
|-------------------------------|---|------------------|------------------|------------------|---------------------------------|
| | Order no. 301710 | Order no. 301711 | Order no. 301712 | Order no. 301715 | Order no. 301720 |
| Type | 4-electrodes, graphite | | | | 2-electrodes, stainless steel |
| Conductivity | 10 µS/cm ... 2000 mS/cm ± 0.5 % of value | | | | 0.01 ... 200 µS/cm ± 0.5 % o.v. |
| Spec. resistivity | 0.5 Ohm cm ... 100 kOhm cm ± 0.5 % of value | | | | 5 kΩ ... 100 MΩ ± 0.5 % o.v. |
| Salinity | 0.0 ... 70.0 ± 0.5 % of value | | | | - |
| TDS | 0 ... 1999 mg/l, 0.0 ... 199.9 g/l ± 0.5 % of value | | | | - |
| Temperature | 0 ... 100.0 °C ± 0.2 °C | | | | |
| Shaft material | epoxy | | | | stainless steel |
| Shaft dimensions | Length 120 mm ± 1 mm, Ø 15.3 mm ± 0.2 mm | | | | 120 ± 1 mm, Ø 12 ± 0.2 mm |
| Cable length | 1.5 m | 3 m | 6 m | 25 m | 1.5 m |

| IDS D.O. Sensors (IP68) | FDO® 925 | FDO® 925-3 | FDO® 925-6 | FDO® 925-25 |
|-------------------------|---|------------------|------------------|------------------|
| | Order no. 201300 | Order no. 201301 | Order no. 201302 | Order no. 201305 |
| Concentration | 0.00...20.00 mg/l ± 0.5 % of value | | | |
| Saturation | 0.0 ... 200.0 % ± 0.5 % of value | | | |
| Partial pressure | 0.0 ... 200 hPa ± 0.5 % of value | | | |
| Temperature | 0 ... 50.0 °C ± 0.2 °C | | | |
| Membrane type | bevelled | | | |
| Shaft material | POM, stainless steel | | | |
| Shaft dimensions | Length, 140 mm ± 1 mm, Ø 15.3 mm ± 0.2 mm | | | |
| Cable length | 1.5 m | 3 m | 6 m | 25 m |

Redefining Multi-parameter Measurements



NEW: FDO® 925 Field optical D.O. sensor

MultiLine[®] INTELLIGENT DIGITAL SENSORS

**Multi 3410, 3420, 3430:
The New Multi-parameter Standard**

- Rugged multi-parameter meters for pH, D.O. and conductivity (available as 1-, 2- or 3-channel instrument)
- Various measurement parameter configurations available for use
- High resolution color display
- Convenient data transfer via USB-Stick



Intelligent

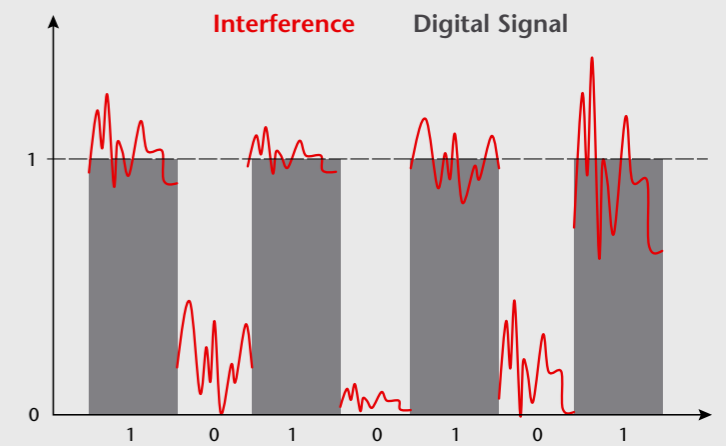
Intelligent Sensors store an ID

- Automatic logon to meters once connected
- Calibration history stored in the sensor
- Each sensor is individual identified digitally

Digital

Digital Processing and Data Transfer of Sensor measurement

- Fail-safe transfer by digital signals
- Variable cable lengths available for each sensor
- Direct signal processing contributes to extremely precise measurement readings



Sensor

Sensors for each application

- IDS-Sensors for every parameter and application
- Sensors are manufactured with enhanced WTW sensor technology
- Adapters for SenTix[®] pH sensors with S7 plug head available

**Single, dual or triple channel:
It's your choice!**

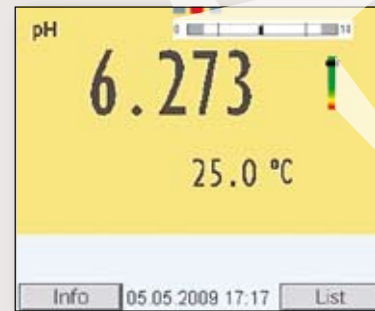
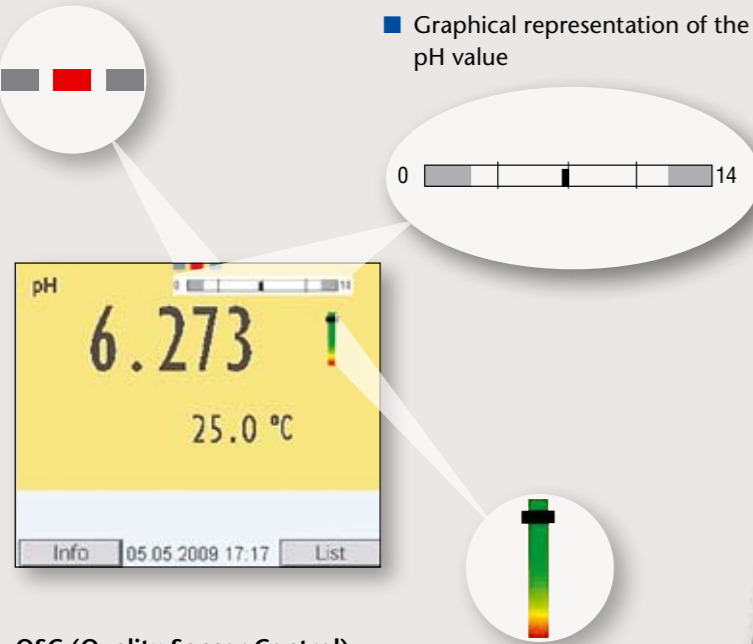
Meter features at a glance

- Brilliant high resolution TFT color display
- Simultaneous display of one, two or three parameters (color marked)
- Optical support of important maintenance and measuring function

Display of channel:
The position of the connector is displayed for each sensor

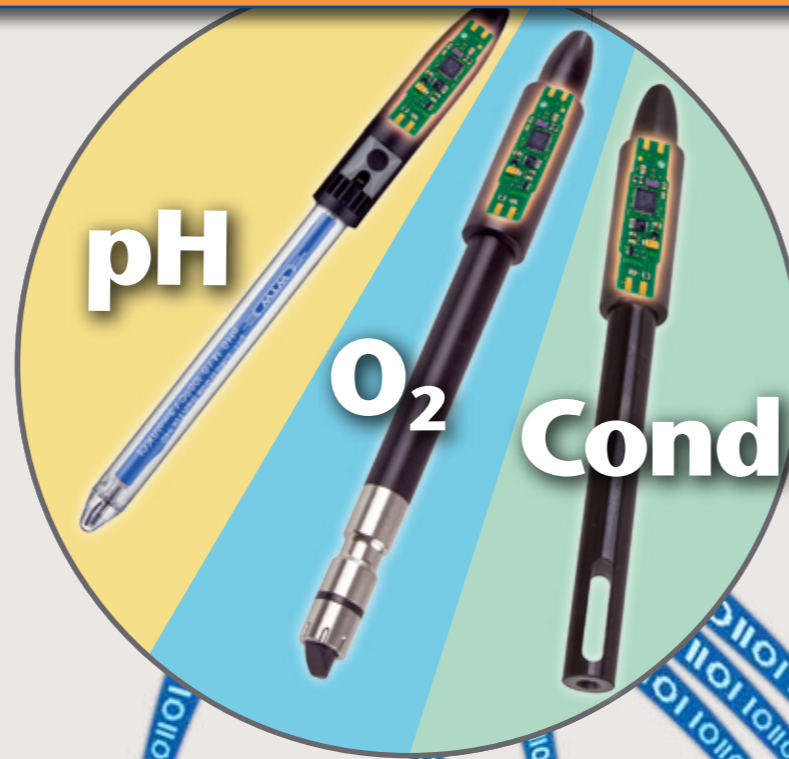
CMC (Continuous Measurement Control):
Measure in the optimum pH range

- Plain display of the calibrated range
- Graphical representation of the current pH value



QSC (Quality Sensor Control):
Benchmarks the current condition of an IDS pH sensor

- Validation of starting values of an IDS pH sensor by an initial calibration with precision buffers
- Compares each following calibration with the initial calibration information stored in the sensor
- Comprehensive graphical representation of the sensor quality



Single – Multi 3410

- 1 Channel
- 3 Parameters

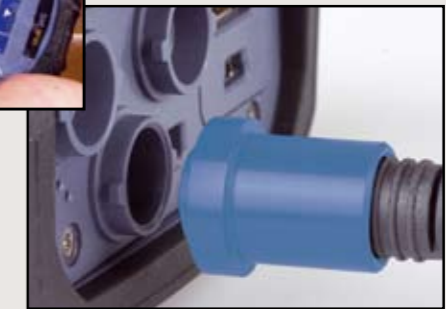
Dual – Multi 3420

- 2 Channels
- 3 Parameters in any combination

Triple – Multi 3430

- 3 Channels
- 3 Parameters in any combination

Ideal for portable field measurements



- Field proven housing with rubber boot (set), waterproof acc. to IP 67
- Robust and waterproof keypad: Clean easily under running water
- Tactile keypad response: error-free operation even when wearing gloves
- Waterproof quick-lock sensor connection

Easy Data Transfer



- Datalogger for GLP compliant data. Filter functions for output of user defined data
- USB interface: Data transfer directly to USB stick or selected printers
- Mini USB interface: Data transfer to PC or for firmware update

Uniquely Distinctive: IDS-Sensors

The new IDS sensors combine proven technology with new advantages

- High quality, enhanced sensor technology combined with most modern measurement electronics
- IDS sensors contain their serial number and their calibration records
- Measurement integrity benchmarking of IDS pH sensor by QSC (Quality Sensor Control).
- IDS-Conductivity measurement: Two sensors for coverage of all applications from pure water to highly conducting solutions

| pH electrodes | | |
|------------------|----------------------|--------------|
| IDS-Sensor | Conventional sensors | Cable length |
| SenTix® 940 | SenTix® 41/42 | 1.5 m |
| SenTix® 940-3 | SenTix® 41/42 -3 | 3 m |
| SensoLyt® 900-6 | – | 6 m (IP 68) |
| SensoLyt® 900-25 | – | 25 m (IP 68) |
| SenTix® 950 | SenTix® 51/52 | 1.5 m |
| SenTix® 980 | SenTix® 81/82 | 1.5 m |
| SenTix® ORP 900 | SenTix® ORP | 1.5 m |

| Conductivity cells (IP 68) | | |
|----------------------------|----------------------|--------------|
| IDS-Sensor | Conventional sensors | Cable length |
| TetraCon® 925 | TetraCon® 325 | 1.5 m |
| TetraCon® 925-3 | TetraCon® 325-3 | 3 m |
| TetraCon® 925-6 | TetraCon® 325-6 | 6 m |
| TetraCon® 925-25 | – | 25 m |
| LR 925/01 | LR 325/01 | 1.5 m |



The new FDO® 925: The optical D.O. probe for field and laboratory

- Extremely fast ($T_{99} < 60s$) and precise optical D.O. probe – outstanding for field and lab applications
- Factory calibrated sensor cap with built-in data chip
- Proven green light technology for long operation life of sensor
- Slender design – suitable for Winkler bottles
- Immune to H_2S fouling
- Bevelled membrane repels interference that can be caused by air bubbles



Factory-calibrated sensor cap

FDO₂

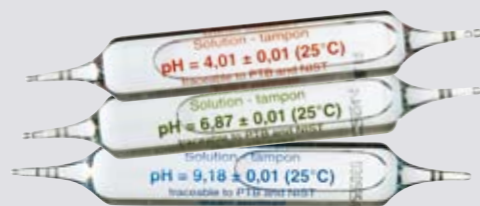
| Optical D.O. sensors (IP 68) | |
|------------------------------|--------------|
| IDS-Sensor | Cable length |
| FDO 925 | 1.5 m |
| FDO 925-3 | 3 m |
| FDO 925-6 | 6 m |
| FDO 925-25 | 25 m |

Useful accessories

Universal protective armoring for depth measurement.



The QSC-Kit with precision buffers for IDS pH-sensors allows clear benchmarking of their condition.



Adapter allows the connection of SenTix® Plus special sensors with plug head to work like conventional sensor without IDS functionality.

