

## InPro 6860 i Optical Oxygen Sensor

### Easy Handling, Exceptional Performance



InPro 6860 i



#### Features Overview

- Plug and Measure
- Outstandingly fast service
- Immediate availability without need of polarization
- No electrolyte handling
- Low detection limit
- Highest signal stability
- Fast response time
- All wetted parts in accordance to FDA and USP Class VI-standards
- Sterilizable and autoclavable
- Hygienically polished surface
- Digital ISM technology

Combining innovative ISM technology with high-end optical measurement, METTLER TOLEDO offers optical oxygen sensors fully suitable for biopharma applications. The InPro 6860 i offers highly accurate oxygen measurement with enhanced stability, and easy handling without electrolyte change or time-consuming polarization procedures. The sensor is equipped with a digital interface (digital ISM and Modbus RTU) plus analog output signal for direct integration into existing biocontrollers, analog transmitters and into process environments including HART communication protocol.

#### Integrates ISM technology

With ISM, the installation, maintenance, and safety of the system is drastically improved. All sensor relevant data are stored in the sensor. Pre-calibrated systems transfer the data automatically to the transmitter and are therefore ready for measuring within seconds. Changes in the measuring system are monitored via the Dynamic Lifetime Indicator. With these features, error-free and safe operation of the sensor and the transmitter is assured. For more information see ISM introduction pages 12–13.

#### Specifications

##### Performance

Operating range	0 ppb to saturation
Accuracy	$\leq \pm [1\% + 8 \text{ ppb}]$
Response time at 25 °C (77 °F) (Air → N <sub>2</sub> )	98% of final value in <70s

##### Construction

Measuring principle	Fluorescence quenching
Cable connection	VP
Connector design	Straight
Process connection	Pg 13.5
Sensor body	316 L stainless steel
Membrane material	PTFE
Surface roughness of wetted parts	N5 / R <sub>a</sub> 16 (R <sub>a</sub> =0.4 μm / 16 μin)
O-ring material	EPDM (FDA positive listed)
Sensor diameter	12 mm

##### Working Conditions

Temperature compensation	Automatic
Measuring temperature range	5 to 60 °C (41 to 140 °F)
Environmental temperature range	InPro 6860 i: –20 to 140 °C (–4 to 284 °F) (sterilizable, autoclavable)

Operating pressure	0.2 to 6 bar (2.9 to 87 psi absolute)
Design pressure	Maximum 6 bar (87 psi absolute)

##### Certificates and Approvals

METTLER TOLEDO Quality Certificate, EHEDG, FDA/USP Class VI, 3.1, N5/R<sub>a</sub>16 ATEX



**Ordering Information**

Sensor	Length	nA	mA (4/20); HART	Order Number
InPro 6860i	120 mm	•		30 014 100
InPro 6860i	220 mm	•		30 014 101
InPro 6860i	320 mm	•		30 014 102
InPro 6860i	420 mm	•		30 014 103
InPro 6860i	120 mm		•	30 129 734
InPro 6860i	220 mm		•	30 129 735
InPro 6860i	320 mm		•	30 129 736
InPro 6860i	420 mm		•	30 129 737

**Transmitter**

M400 Type 2	52 121 349
M400 Type 3	52 121 350
M800 Process, 1-channel	30 026 633
M800 Process, 2-channel	52 121 813
M800 Process, 4-channel	52 121 853

**InPro 6860 i Consumables**

OptoCap BT02T (InPro 6860 i)	30 018 857
OptoCap BT02THD	30 302 172

**Cables for InPro 6860 i**

VP6 (analog)	Order Number	VP8 (digital)	Order Number
All standard VP6 (analog)	see table, pp. 168/169	VP8-ST, 1 m (3.3 ft)	52 300 353
VP6 Connector BNC, 1 m (3.3 ft)	30 032 730	VP8-ST, 3 m (9.9 ft)	52 300 354
VP6 Connector BNC, 3 m (9.9 ft)	30 032 731	VP8-ST, 5 m (16.4 ft)	52 300 355
VP6 Connector LEMO, 1 m (3.3 ft)	30 032 732	VP8-ST, 10 m (32.8 ft)	52 300 356
VP6 Connector LEMO, 3 m (9.9 ft)	30 032 733	VP8-ST, 15 m (49.2 ft)	52 300 357
VP6 Connector Lumberg, 1 m (3.3 ft)	30 032 734	VP8-ST, 20 m (65.6 ft)	52 300 358
VP6 Connector Lumberg, 3 m (9.9 ft)	30 032 735	VP8-ST, 35 m (114.8 ft)	52 300 359

**Accessories**

iLink™ – RS485 VP (InPro 6860 i)	30 014 134
Power Adapter InPro 6860 i VP6 (for Bio-Controller retrofit)	30 083 985
Power Adapter InPro 6860 i T82 (for Bio-Controller retrofit)	30 083 984
Housing Retrofit kit	52 403 811
Power supply in case of need for analog installation of InPro 6860 i	30 014 119

**OptoCap replacement**



OptoCap – BT02T\* electropolished, delivers a hygienically polished surface.

OptoCap – BT02THD for vertical installations, hydrophilic surface to reduce oxygen bubble interference.

\* Sensors are furnished with BT02T as a standard.



**Did You Know**

The optical oxygen sensors can be used in conjunction with the M400 and M800 transmitters as well as with existing analog installations.



**Did You Know**

Oxygen bubble interference can be a common issue when optical oxygen sensors are installed vertically. The new OptoCap™ (BT02THD) with its proprietary design has a surface treatment that efficiently reduces these interferences. This allows greater production control leading to consistent yield, batch to batch.

**Suitable Housings**

InFit 761 e.....	140
InTrac 777 e.....	152
InTrac 797 e.....	154
InTrac 781 .....	156
InTrac 785 e.....	158