

Process Instrumentation

Product information for five KROHNE field instruments

This sheet covers five KROHNE instruments: an electromagnetic flowmeter (**OPTIFLUX 4300**), an 80 GHz radar level transmitter (**OPTIWAVE 7500**), a process pressure transmitter (**OPTIBAR PM 5060**), a temperature transmitter (**OPTITEMP TT 53 C**) and a pH sensor (**SMARTPAT PH 8320**).

At a glance

Product	Measures	Range	Accuracy	Communication
OPTIFLUX 4300	Flow (electromagnetic)	DN 2.5 to DN 3000	+/-0.2%	HART, Modbus, FF, PROFIBUS PA/DP, PROFINET
OPTIWAVE 7500	Level (80 GHz radar)	0 to 100 m	+/-2 mm	2-wire HART 7, 4-20 mA
OPTIBAR PM 5060	Pressure	100 mbar to 1,000 bar span	0.075 / 0.10 / 0.20%	4-20 mA HART 7.3; FF, PROFIBUS PA options
OPTITEMP TT 53 C	Temperature	RTD, TC, mV, ohm	+/-0.08%*	2-wire 4-20 mA HART 7, NFC, Bluetooth
SMARTPAT PH 8320	pH	0 to 14 pH	0.02 pH resolution	4-20 mA, HART 7

Common features

- HART communication (version 7 on four of the five) with 4-20 mA outputs on all five instruments
- NAMUR NE 107 diagnostics on the OPTIWAVE 7500, OPTIBAR PM 5060 and OPTITEMP TT 53 C
- Fieldbus options (FOUNDATION Fieldbus, PROFIBUS PA) on the OPTIFLUX 4300 and OPTIBAR PM 5060
- Hazardous-area approvals are available across the range, depending on the device and order code

Product profiles

OPTIFLUX 4300

Electromagnetic flowmeter for process and custody transfer

Full-bore electromagnetic flowmeter for aggressive liquids, abrasive media and custody transfer, with no moving parts and no pressure loss.

- Nominal sizes DN 2.5 to DN 3000 (1/10 to 120 inch)
- High accuracy of +/-0.2%; custody transfer approvals include OIML R49, OIML R117 and MI-001, MI-004, MI-005
- Liners of PTFE, PFA, ETFE, hard rubber, soft rubber or PU; fluid temperature up to +180 C
- Pressure ratings up to PN 40 / ASME Class 600, and up to 1,500 bar in special versions
- Measures low-conductivity fluids (1 uS/cm and above) and high solids content up to 70%
- 3 x 4-20 mA outputs with HART, Modbus, FOUNDATION Fieldbus, PROFIBUS PA/DP or PROFINET

OPTIWAVE 7500

80 GHz FMCW radar level transmitter for liquids

Non-contact 80 GHz radar for liquids in narrow tanks with internal obstructions, long nozzles and corrosive media.

- Measuring range 0 to 100 m; accuracy +/-2 mm
- Process temperature -50 to +200 C; pressure -1 to 40 barg
- Flush-mounted PEEK or PTFE lens antenna with a 4 degree beam angle (DN 70 antenna)
- Thread and flange connections, DN 40 and DN 70 antenna sizes
- 2-wire loop-powered with HART 7; SIL 2/3 certified; NAMUR NE 107 diagnostics
- Tank Bottom Management and empty-tank spectrum function; backlit LCD with 4-button keypad

OPTIBAR PM 5060

Process pressure transmitter

Pressure transmitter for gauge, absolute and differential pressure, also used for level, density and interface measurement with slave sensors.

- Spans from 100 mbar to 1,000 bar using piezoresistive, strain gauge or ceramic measuring cells
- Reference accuracy classes of 0.075%, 0.10% and 0.20% depending on turn-down
- Process temperature -40 to +105 C as standard; up to +150 C (FKM seals) or +200 C (ceramic cell)
- 316L diaphragm, Elgiloy for high-pressure versions; threaded, flanged and hygienic connections
- Supply 9.6 to 35 V DC (9.6 to 30 V DC for intrinsically safe types)
- Used in process, power, chemical, food and beverage, and marine applications

OPTITEMP TT 53 C

Head-mounted temperature transmitter, universal input

Head-mounted temperature transmitter with a universal input and galvanic isolation, configurable by HART, PC software or a mobile app.

- Universal input for RTD, thermocouple, millivolt and resistance sensors
- 2-wire 4-20 mA output with HART 7; galvanically isolated
- NFC for configuration without power supply; Bluetooth with the OPTICHECK Temperature Mobile app
- NAMUR NE 107 diagnostics, sensor break monitoring, ambient temperature logging and runtime counter
- Vibration resistance up to 10 g; fits connection head B or larger, with optional DIN rail mounting
- Configured with ConSoft PC software, HART handhelds or the mobile app

SMARTPAT PH 8320

pH sensor with integrated transmitter

Loop-powered pH sensor with the transmitter built into the sensor head, for water and wastewater applications.

- pH range 0 to 14 with 0.02 pH resolution; 4-20 mA output with HART 7
- Process temperature 0 to +70 °C; pressure up to 10 bar; minimum conductivity 150 µS/cm
- Ag/AgCl double-junction reference with TepoxGel and a dirt-repellent PTFE diaphragm; handles oily and greasy media
- Loop powered at 15 to 30 V DC; VarioPin 2.0 connector with 3 to 30 m cables
- Offline calibration; ATEX, IECEx, NEPSI and cFMus approvals for hazardous areas
- Used in biological wastewater treatment and neutralisation control

Notes and sources

* KROHNE's OPTITEMP TT 53 C page quotes an accuracy of $\pm 0.08\%$ without stating the reference span; check the technical datasheet for accuracy by sensor type. SIL ratings and approvals for this device were not stated in the sources used.

OPTIFLUX 4300 and OPTIBAR PM 5060 ranges and accuracy depend on the sensor size, liner, measuring cell and order code. The SMARTPAT PH 8320 figure is the resolution; no accuracy value was stated.

Compiled from KROHNE product pages and technical datasheets for each device (OPTIFLUX 4300, OPTIWAVE 7500, OPTIBAR PM 5060 C, OPTITEMP TT 53 C and SMARTPAT PH 8320). Confirm against the current KROHNE documentation before quoting or ordering.