si792 P pH/ORP 2-wire Transmitter

Easy-access, clearly-described terminals ensure comfortable and error-free wiring.

The Hach si792P pH/ORP 2-wire Transmitter is full-featured, and intuitive to operate. Combined with Hach world-class differential pH/ORP technology, the system provides the most accurate and reliable data available for monitoring pH/ORP. Rugged construction is designed for Class I, Division 2 (C I, D 2) or Class I, Division 1 (C I, D 1) applications. Digital communication capabilities are available.

Features and Benefits

The Right Sensors

The Hach si792 P pH/ORP 2-wire Transmitter is designed for use with the following Hach GLI world-class sensors.

- *pHD and LCP differential pH and ORP sensors*
- *Conventional combination technology pH and ORP sensors*

For a complete list of approved sensor/transmitter combinations, please contact Hach.

Multiple Communications Protocols

The si792 P transmitter is available with digital communication functionality to easily connect to a communication network of choice, including HART®, PROFIBUS PA, or Foundation® Fieldbus.

Area Rated to Suit Your Needs

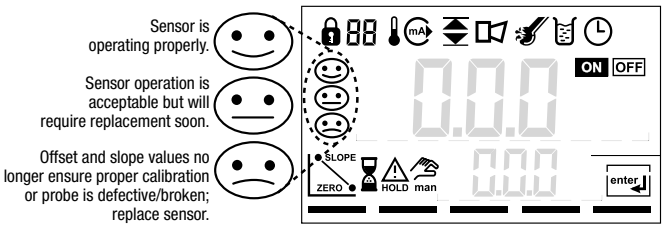
The si792 P transmitter is available as Class I, Division 2 (C I, D 2) with HART communications only or as intrinsically safe, Class I, Division 1 (C I, D 1) with HART, PROFIBUS PA, or Foundation Fieldbus. FM, CSA, and ATEX certified.

Easy-to-use Intuitive Interface

A logical menu structure, combined with icon based messages allows for intuitive operation. The large, clear liquid crystal display shows the measurement value, process temperature, and sensor and transmitter status. A transmitter or sensor error is indicated by a bright red LED and a message is displayed.

Sensor Diagnostics

The si792 P transmitter performs self-diagnostics and sensor monitoring such as asymmetry potential, slope, response time, cable integrity, glass, and reference impedance.



Password-Protected Access

Separate passwords can be set for:

- *sensor calibration*
- *transmitter configuration*
- *administrator functions*

Simple Installation

The Hach si792 P pH/ORP 2-wire Transmitter electronics are attached to a hinged door and are protected against aggressive environments. All terminals are easy to access and clearly described to ensure comfortable and error free wiring. The empty rear enclosure can be pre-mounted and the hinged front door with the electronics can be easily attached afterwards. Plug-in terminals make wiring easy. Versatile mounting options include panel- pipe- or wall-mount.

HART® is a registered trademark of the HART Communication Foundation. Foundation® is a registered trademark of Fieldbus Foundation.

WW
PW
IW

Specifications*

Number of Inputs
1

pH/mV Input
Input for differential pH or ORP sensors (LCP and pHD series)
Input for glass electrode or ORP electrode
(e.g. PC and RC series)
Input for reference electrode
Input for auxiliary electrode for impedance measurement (SG)

Glass Electrode Input[1]
Input resistance: >0.5 x 10^{12} ohms
Input current: <2 x 10^{-12} A)

Reference Electrode Input[1]
Input resistance: >1 x 10^{10} ohms
Input current: <1 x 10^{-10} A

Temperature Input
PT 100 / PT 1000 / NTC 300 ohms selectable

Measurement Ranges
pH: -2.00 to 16.00
ORP: -1500 to 1500 mV
Temperature: -20.0 to 150.0°C (-4 to 302°F) for PT 100, PT 1000;
-20.0 to 110.0°C (-4 to 230°F) for NTC 300 ohms

Accuracy[1,2,3]
pH: <0.02 TC: 0.002 pH/K
ORP: <1 mV TC: 0.1 mV/K
Temperature: <0.5 K (<1 K for PT 100; <1 K for NTC >100°C)

Temperature Compensation of the Medium
Linear -19.99 to 19.99%/K (reference temperature 25°C)

Calibration Range Maximum
Asymmetry potential: ±60 mV
Slope: 80 to 103% (47.5 to 61 mV/pH)

Outputs
4-20 mA output / bus connection galvanically separated

Display
LC display, 7-segment: measured value display pH/mV value, temperature
Main display: character height 17 mm; unit symbols 10 mm
Secondary display: character height 10 mm; unit symbols 7 mm

Alarm Indication
Red LED with alarm or HOLD

Memory Backup
Parameters and calibration data >10 years (EEPROM)

Operating Temperature
-20 to 55°C (-4 to 131°F)

Storage Temperature
-20 to 70°C (-4 to 158°F)

Relative Humidity
10 to 80%, non-condensing

Immunity
EN 61326 (industrial levels)

Hazardous Location Certifications
Non-Incendive si792 P (HART only)
FM: N.I. Class I, Div. 2, Group A, B, C, D, T4 for Tamb < 55°C
CSA: N.I. Class I, Div. 2, Group A, B, C, D, T4 for Tamb < 55°C

Intrinsic Safety (si792x P, si792x P-FF, si792x P-PA only)
FM: Class I, II, III, Div. 1, Groups A-G, T4 for Tamb < 55°C
CSA: Ex ib [ia] Class I, Div. 1, Groups A, B, C, D, T4 for Tamb < 55°C
ATEX: II 2 (1) G EEx ib [ia] IIC T6 (si792x P)
ATEX: II 2 (1) G EEx ib [ia] IIC T4 (si792x P-FF, si792x P-PA)

Note: Hach differential pH/ORP sensors are not ATEX certified.

Enclosure Material
PBT (polybutylene terephthalate)

Protection/Rating
IP 65

Cable Glands
3 breakthroughs for cable glands M20x1.5
2 breakthroughs for NPT 1/2-in. or rigid metallic conduit

Mounting
Wall, panel or pipe (horizontal and vertical)

Dimensions
144 x 144 x 105 mm (5.7 x 5.7 x 4.1 in.)

Weight
Approximately 1 kg (2.2 lbs.)

si792(x) P Version

Loop current
4 to 20 mA floating
Supply Voltage: 12 to 30 V
Measured Variable: pH value, mV value
Characteristic: linear
Overrange: 22 mA in the case of error messages
Measurement Error[1]: <0.3% of current value +0.05 mA
Operating Range: 3.8 to 22.00 mA

HART Communication
Digital communication via FSK modulation of the loop current, reading of device identification, measured values, status and messages reading and writing parameters, starting product calibration, signaling configuration amendment according to FDA 21 CFR 11.

[1] According to IEC 746 part 1, at nominal operating conditions
[2] ±1 count
[3] Plus sensor error

Specifications *continued*

si792x P-PA Version

PROFIBUS PA Communication

Protocol: PROFIBUS PA DPV1
via segment coupler or link to
DCS, PLC, PC
Profile: profile for Analyzers
Version 3.0 (PNO directive)
Physical Interface: MBP-IS (Manchester Bus Powered-Intrinsically Safe) according to EN 61158-2 (IEC 1158-2)
Physical block
- 2 analog input function blocks
- 2 discrete input blocks
- Logbook block
- Alarm block

Supply Voltage: FISCO; ≤17.5 V (trapezoidal or rectangular characteristic), ≤24 V (linear characteristic)
Current Consumption: <12.7 mA
Physical Interface: according to EN 61158-2
Maximum Current in Case of Fault (FDE): <24.4 mA

si792x P-FF Version

Foundation Fieldbus Communication

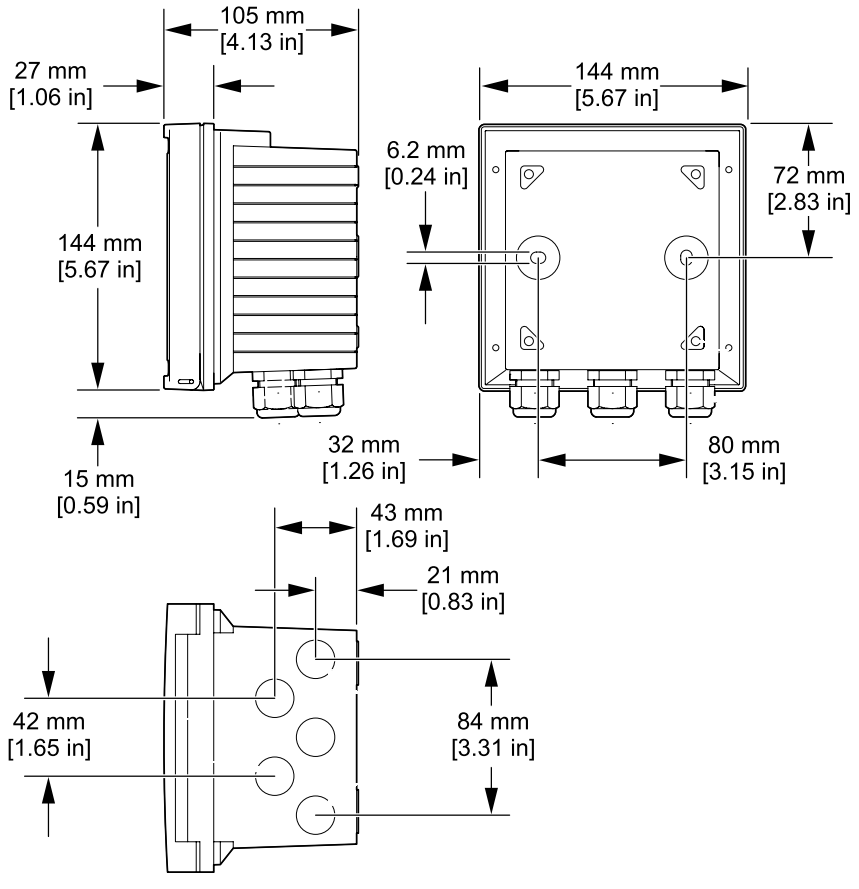
Protocol: FF-H1 (Foundation Fieldbus) via coupler to HSE Fieldbus / DCS, PC, PLC
Physical interface according to EN 61158-2 (IEC 1158-2)
Communication model certified to ITK 4.6
1 resource block
1 transducer block
3 AI Function Blocks: selectable; pH, ORP, temperature, glass impedance, reference impedance, asymmetry potential, slope
Supply Voltage: FISCO; ≤17.5 V (trapezoidal or rectangular characteristic), ≤24 V (linear characteristic)
Current Consumption: <12.7 mA
Maximum Current in Case of Fault (FDE): <24.4 mA

**Specifications subject to change without notice.*

Engineering Specifications

1. The transmitter shall have a liquid crystal display to simultaneously show measurements, sensor status, and alarms.
2. The transmitter shall have user-test diagnostics for transmitter and sensor monitoring without requiring special test equipment.
3. The transmitter shall have the capability of monitoring the sensor condition such as glass/reference impedance.
4. The transmitter shall indicate the transmitter and sensor condition in the display.
5. The transmitter shall have a bright red LED to indicate an alarm or that the instrument is in HOLD mode.
6. The transmitter shall accept Hach differential pH and ORP sensors.
7. The transmitter shall connect to a network of choice including 4-20 mA, HART, PROFIBUS PA, and Foundation Fieldbus.
8. The transmitter shall be the si792 P pH/ORP 2-wire Transmitter manufactured by Hach Company.

Dimensions



Ordering Information

si792 P pH/ORP 2-wire Transmitters

LXV500.99.70012	si792 P, 4-20 mA / HART, Class I Division 2
LXV500.99.70112	si792x P, 4-20 mA / HART, Class I Division 1, ATEX Zone 1
LXV500.99.76112	si792x P-PA, PROFIBUS PA, Class I Division 1; ATEX Zone 1
LXV500.99.77112	si792x P-FF, Foundation Fieldbus, Class I Division 1; ATEX Zone 1

Accessories

LZY483	Pipe-Mount Installation Kit
LZY484	Panel-Mount Installation Kit
LZY485	Protective Hood/Sunshield

Complete your si792 P 2-wire Transmitter with a Hach differential or combination pH or ORP sensor.

These sensors are a small sample of what Hach offers.

pH Sensor
Combination pH Sensor
3/4-inch
(See Lit. #2470)

pHD Differential Sensor
1-inch
(See Lit. #2467)

Please contact Hach or a representative for more information.

Complement your si792 P pH/ORP 2-wire Transmitter with Hach conductivity transmitters.

The transmitters below have all the features of the si792 P transmitter and are designed for operation with conductivity sensors.

si792 C Contacting Conductivity 2-wire Transmitter
(See Lit. # 2606)

si792 E Inductive (Electrodeless) Conductivity 2-wire Transmitter
(See Lit. # 2605)

Please contact Hach or a representative for more information.

Lit. No. 2480
C8X Printed in U.S.A.

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

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