si792 E
Inductive (Electrodeless) Conductivity
2-wire Transmitter

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

The si792 E Inductive Conductivity 2-wire Transmitter is full-featured and intuitive to operate. Combined with Hach's world-class sensors, the system provides the most accurate and reliable data available for monitoring inductive conductivity. 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 si792 E Inductive (Electrodeless) Conductivity 2-wire Transmitter is designed for use with GLI world-class 3700-series inductive conductivity sensors. The innovative technology of electrodeless sensors reduces polarization and electrode coating problems in harsh environments. Sensors are available in sanitary (CIP) flange and convertible styles in PFA Teflon®, PEEK®, PVDF, and polypropylene.

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

Multiple Communications Protocols

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

Area Rated to Suit Your Needs

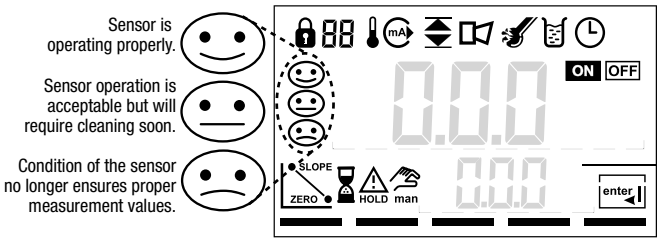
The si792 E transmitter is available as Class I, Division 2 (C I, D 2) with HART communications only or as intrinsically safe Class I, Division 1 (C I, D 1) with HART, PROFIBUS PA, or Foundation Fieldbus. FM, CSA, and ATEX certified.

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 E transmitter performs self-diagnostics and sensor monitoring such as coil and cable integrity.



Password-Protected Access

Separate passwords can be set for:

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

Simple Installation

The Hach si792 E Inductive (Electrodeless) Conductivity 2-wire Transmitter electronics are attached to a hinged door and are protected against aggressive environments. The plug-in terminals are easy to access and are clearly described to ensure error-free wiring. The empty rear enclosure can be pre-mounted, and the hinged front door with the electronics can easily be attached afterwards. Versatile mounting options include panel- pipe- or wall-mount.

Specifications*

Number of Inputs
1

Conductivity Input
Input for Inductive Conductivity (Electrodeless) sensors (3700 series)

Temperature Input
PT 100 / PT 1000 / NTC 30 kohms / NTC 100 kohms selectable

Measurement Ranges
Conductivity: 0.00 to 1999 mS/cm
Concentration: 0.00 to 100.0%
Salinity: 0.0 to 45.0‰ 0 to 35°C (32 to 95°F)
PT 1000/PT 100: -20.0 to 150°C (-4 to 302°F)
NTC: -20.0 to 130.0°C (-4 to 266°F)

Effective Ranges (display 3-1/2 digits)
Conductivity: 00.00 to 99.99 mS/cm;
000.0 to 999.9 mS/cm; 0000 to 1999 mS/cm
Concentration: 0.00 to 9.99%, 10.0 to 100.0%
Salinity: 0.0 to 45.0‰ 0 to 35°C (32 to 95°F)

Accuracy[1,2,3]
Conductivity: <1% measured value +0.02 mS/cm
Temperature: <0.5 K (<1 K for PT 100; <1 K for NTC >100°C)

Temperature Compensation* (reference temperature 25°C)
(OFF): Without
(Lin): Linear characteristic 00.00 to 19.99%/K
(NLF): Natural waters to EN 27888

Permissible Cell Factor
00.100 to 19.999

Admissible Transfer Ratio
001.00 to 199.99

Admissible Zero Point Adjustment
±0.5 mS/cm

Concentration Determination
-01- NaCl: 0 to 26% by weight 0°C (32°F);
0 to 28% by weight (100°C (212°F)

-02- HCl: 0 to 18% by weight -20°C (-4°F);
0 to 18% by weight 50°C (122°F)

-03- NaOH: 0 to 13% by weight 0°C (32°F);
0 to 24% by weight 100°C (212°F)

-04- H_2SO_4: 0 to 26% by weight -17°C (1°F);
0 to 37% by weight 110°C (230°F)

-05- HNO_3: 0 to 30% by weight -20°C (-4°F);
0 to 30% by weight 50°C (122°F)

-06- H_2SO_4: 94 to 99% by weight -17°C (1°F);
89 to 99% by weight 115°C (239°F)

-07- HCl: 22 to 39% by weight -20°C (-4°F);
22 to 39% by weight 50°C (122°F)

-08- HNO_3: 35 to 96% by weight -20°C (-4°F);
35 to 96% by weight 50°C (122°F)

-09- H_2SO_4: 28 to 88% by weight -17°C (1°F);
39 to 88% by weight 115°C (239°F)

-10- NaOH: 15 to 50% by weight 0°C (32°F);
35 to 50% by weight 100°C (212°F)

Outputs
4-20 mA output / bus connection galvanically separated

Display
LC display, 7-segment: measured value display conductivity, concentration, salinity, 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 E
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 E
FM: Class I, II, III, Div. 1, Groups A-G, T4 for Tamb < 55°C
CSA: Ex ib [ia] IIC, Class I, Div. 1, Groups A, B, C, D, T4 for Tamb < 55°C
ATEX: II 2 (1) G EEx ib [ia] IIC T6

Intrinsic Safety si792x E-FF, si792x E-PA
cFMus: Class I, Div. 1, Groups A-D, T4 for Tamb < 55°C
Ex ib [ia] IIC T4
ATEX: II 2 (1) G Ex ia IIC T4

Note: PP and PVDF overmold 3700 Inductive Conductive 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 or 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) E Version

Loop Current
4 to 20 mA floating
Supply Voltage: 14 to 30 Vdc
Measured Variable: conductivity, concentration, or salinity
Characteristic: linear or logarithmic
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 E-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: <16.1 mA
Physical Interface: according to EN 61158-2
Maximum Current in Case of Fault (FDE): <21.8 mA

si792x E-FF Version

Foundation Fieldbus Communication

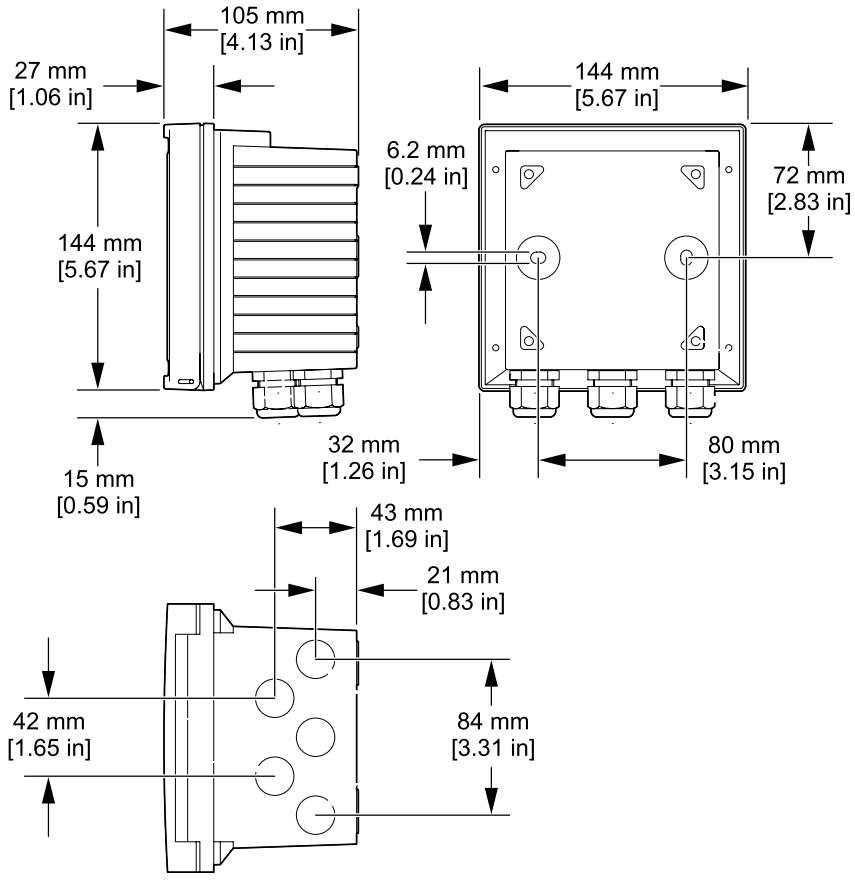
Protocol: FF-H1 (Foundation Fieldbus) via coupler to HSE Fieldbus / DCS, PC, PLC
Physical interface according to EN 61158-2 (IEC 1158-2)
Communication model certified to ITK 4.6
1 resource block
1 transducer block
3 AI function flocks: selectable; conductivity, concentration, salinity, temperature, cell constant
Supply Voltage: FISCO; ≤17.5 V (trapezoidal or rectangular characteristic), ≤24 V (linear characteristic)
Current Consumption: <16.1 mA
Maximum Current in Case of Fault (FDE): <21.8 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 be capable of monitoring the sensor condition such as coil and cable integrity.
4. The transmitter shall indicate the transmitter and sensor condition in the display.
5. The transmitter series shall connect to a network of choice including 4-20 mA, HART, PROFIBUS PA, and Foundation Fieldbus.
6. The transmitter shall have a bright red LED to indicate an alarm or that the instrument is in HOLD mode.
7. The transmitter shall work with Company 3700-series electrodeless conductivity sensors.
8. The transmitter shall be the si792 E Inductive (Electrodeless) Conductivity 2-wire Transmitter manufactured by Company.

Dimensions



Ordering Information

si792 E Inductive (Electrodeless) Conductivity 2-wire Transmitters

LXV503.99.70002	si792 E, 4-20 mA / HART, Class I Division 2
LXV503.99.70102	si792x E, 4-20 mA / HART, Class I Division 1, ATEX Zone 1
LXV503.99.76102	si792x E-PA, PROFIBUS PA, Class I Division 1, ATEX Zone 1
LXV503.99.77102	si792x E-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

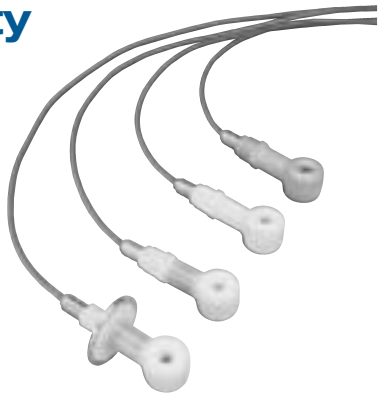
At , it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

Complete your si792 E Inductive Conductivity 2-wire Transmitter with a 3700-series Inductive Conductivity Sensor



These sensors are a small sample of what offers.
(See Lit. #2465)

Please contact or a representative for more information.

Complement your si792 E Inductive Conductivity 2-wire Transmitter with other Hach 2-wire Transmitters

The transmitters below have all the features of the si792 E transmitter and are designed for operation with pH/ORP or Contacting Conductivity sensors.

si792 P pH/ORP 2-wire Transmitter
(See Lit. # 2480)

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

Please contact Hach or a representative for more information.