

Rosemount™ 105P

Liquid Panel System



Customizable sensor mounting and sample handling systems

Complete system, including sensors, cables, transmitters, flow cells, and flow controller, offered as a single, easy-to-order panel that can support up to two sensors to meet a variety of installation and application needs.

Overview

Single, easy-to-order panel installation

Designed to support up to two sensors in one streamlined configuration, reducing complexity for both ordering and installation.

Optimized for water quality applications

- Built for pH, ORP, fluoride, ammonia, conductivity, dissolved oxygen, chlorine, and ozone measurements with an architecture that allows for future expansion into additional measurement types.
- Designed to support future sensor technologies and configurations as customer needs evolve.

Note

Ozone is supported with reduced service life, validated in field applications. Confirm sensor and wetted parts compatibility for the specific application.

Ordering information

Rosemount 105P model codes

After specifying the desired 105P model number, proceed to [Ordering instructions](#) to select the desired transmitter and sensor model numbers.

Required model components

Base model

Code	Description
105P	Customizable panel base

Panel material

Code	Description
AS	ABS standard size

Panel geometry

Code	Description
F1	1 flow cell
F2	2 flow cells

Optional model components

Nozzle accessories

Must order if building panel with amperometric sensor.

- Free chlorine: Rosemount 499ACL
- Dissolved oxygen: Rosemount 490A, 490ADO, and 499ATrDO
- Ozone: Rosemount 499AOZ

Note

Bubble-shedding nozzle (**BN/BC**) is required with amperometric sensors listed above; you must also order one flow cell (**F1**) or two flow cells (**F2**).

Code	Description
BN	Bubble shedding nozzle flow cell 1
BC	Bubble shedding nozzle both flow cells

Assemble to Rosemount 1056 Transmitter

Code	Description
S5	Install 1056 Transmitter on panel

Assemble to Rosemount 1058 Transmitter

Code	Description
S6	Install 1058 Transmitter on panel

Cable for measurement 1

Code	Description
AP1	Analog pH/ORP cable
AA1	Analog amperometric cable
DC1	Digital cable

Cable for measurement 2

Code	Description
AP2	Analog pH/ORP cable
AA2	Analog amperometric cable
DC2	Digital cable

Note

- **AP1/AP2** (analog pH/ORP): Rosemount 1056 or 1058
- **AA1/AA2** (analog amperometric): 1056 or 1058
- **DC1/DC2** (digital cable): 1058 only

Spare parts

Code	Description
0105P-4001-0001	Low flow assembly
0105P-4001-0002	Low flow assembly with bubble sweeping nozzle
0105P-4004-0001	105P tubing spares kit
0105P-4003-0001	105P fitting spares kit
SQP10009-LQD	Constant head flow controller (SQ9373)

Ordering instructions

Transmitter models

Emerson recommends the following transmitter models for the Rosemount 105P Panel:

- Rosemount 1056 Transmitter
- Rosemount 1058 Transmitter

Build your desired transmitter model using the following Product Data Sheets:

- [Rosemount 1056 Dual Channel Transmitter Product Data Sheet](#)
- *Rosemount 1058 Dual Channel Transmitter Product Data Sheet* on [Rosemount 1058 Dual Channel Transmitter](#)

Sensor models

Emerson recommends the following sensor models for the Rosemount 105P Panel.

- Rosemount 396A pH/ORP Sensor
- Rosemount 3900 pH/ORP Sensor
- Rosemount 396P pH/ORP Sensor
- Rosemount 3500 pH/ORP Sensor
- Rosemount 490A Dissolved Oxygen Sensor
- Rosemount 499ADO Dissolved Oxygen Sensor
- Rosemount 499ATrDO Trace Dissolved Oxygen Sensor
- Rosemount 499AOZ Sensor

Note

Ozone is supported with reduced service life, validated in field applications. Confirm sensor and wetted parts compatibility for the specific application.

Note

Customers should check the wetted parts of the 105P and sensors against their process composition.

Build your desired sensor model by referencing any Product Data Sheets available on [Emerson.com](https://www.emerson.com). Certain model options, such as toroidal sensors, will not physically fit on the 105P Panel.

Unless selecting an integral or Variopol (VP) sensor, make sure to order 4 ft. (1.2 m) cables separately using Rosemount 102C Cable models. See [Rosemount 102C Liquid Analysis Sensor Cable Product Data Sheet](#).

Specifications

General specifications

Sample requirements

Pressure	3 to 65 psig (122 to 549 kPa abs). A check valve in the inlet prevents the sensor flow cells from going dry if sample flow is lost. The check valve opens at 3 psig (122 kPa abs). If the check valve is removed, minimum pressure is 1 psig (108 kPa abs).
Temperature	32 to 122 °F (0 to 50 °C)
Minimum flow	3 gal/hr (11 L/hr)
Maximum flow	80 gal/hr (303 L/hr); high flow causes the overflow tube to back up.

Sample conductivity

> 50 µS/cm at 77 °F (25 °C)

Process connection

¼-inch outer dimension (OD) tubing compression fitting (can be removed and replaced with a barbed fitting for use with soft tubing).

Drain connection

¾-inch barbed fitting. Sample must drain to open atmosphere.

Wetted parts

Overflow sampler and flow cell:

- Acrylic
- Polycarbonate
- Polyester

- Kynar^{®1}
- Nylon
- Silicone

Chlorine sensor:

- Noryl^{®2}
- Viton^{®3}
- Wood
- Silicone
- Polyethersulfone
- Polyester
- Platinum

pH sensor (Rosemount 3900VP):

- Stainless steel
- Glass
- PTFE
- Polyphenylene sulfide
- EPDM
- Silicone

Response time to step change in chlorine concentration

< 80 seconds to 95 percent of final reading for inlet sample flow of 3 gal/hr (11 L/hr)

Weight

Rosemount 105P Panel: 6 lb. (2.7 kg)

Chlorine sensor specifications

Free chlorine range	0 to 10 ppm as Cl ₂ . For higher ranges, consult the factory.
pH correction range	6.0 to 9.5. For samples having pH between 9.5 and 10.0, consult the factory. Correction is not needed if pH < 6.0. For manual pH correction, choose option 01 . For continuous pH correction, choose option 02 .
Accuracy	Accuracy depends on the accuracy of the chemical test used to calibrate the sensor.
Interferences	Monochloramine Permanganate Peroxides
Electrolyte volume	Approximately 0.8 oz. (25 mL)
Electrolyte life	Approximately three months; for best results, replace electrolyte and membrane every three months.

¹. Kynar is a registered trademark of Elf Atochem North America.

². Noryl is a registered trademark of General Electric.

³. Viton is a registered trademark of EI duPont de Nemours & Co.

Rosemount 1056 Transmitter specifications

Case	Polycarbonate Type 4X/CSA 4 (IP65)
Conduit openings	Accepts PG13.5 or ½-inch conduit fittings
Display	Monochromatic back-lit LCD. Main character height 0.6 in. (15 mm). Display is user-programmable.
Languages	English French German Italian Spanish Portuguese Chinese
Ambient temperature and humidity	32 to 131 °F (0 to 55 °C) Relative humidity (RH): 5 to 95 percent (non-condensing)
Storage temperature	–40 to +140 °F (–20 to +60 °C)
Power	85 to 265 Vac 47.5 to 65 Hz, switching 15 W equipment protected by double insulation
Radio frequency interference (RFI)/electromagnetic interference (EMI)	EN-61326
LVD	EN-61010-1
Outputs	Two 4-20 mA or 0-20 mA isolated outputs. Continuously adjustable. Linear or logarithmic Maximum load 550 Ω Output dampening is user-adjustable.
Alarms	Four alarm relays. You can configure any relay as a Fault alarm instead of a Process alarm. You can configure each relay independently and also program each one with interval timer settings.
Relays	Form C, SPDT, epoxy sealed
Relay contact ratings	5 A at 28 Vdc or 300 Vac (resistive) ⅓ HP at 120/240 Vac
Terminal connection rating	Power connector (3 leads): 18-12 AWG wire size Current output connectors (2 leads): 24 - 16 AWG wire size Alarm relay terminal blocks: 18 - 16 AWG wire size
Hazardous location approvals	For more information refer to the <i>Rosemount 1056 Dual Channel Transmitter Product Data Sheet</i> on Rosemount 1056 Intelligent Four-Wire Transmitter . Approvals apply to the transmitter only. The Rosemount 105P is not suitable for use in hazardous areas.

Rosemount 1058 Transmitter specifications

Case	Heat stabilized and reinforced polybutylene terephthalate (PBT)
Display	User-customizable, back-lit color LCD with large process variables and user-definable display of diagnostic parameters. Resolution: 480 x 272 pixels per inch. Dimensions (diagonal): 4.3 in. (109 mm)
Languages	English French German Italian Spanish Portuguese Chinese Russian Polish
Ambient temperature and humidity	+14 to +140 °F (–10 to +60 °C) Relative humidity (RH) to 95 percent (non-condensing) Between +23 and +131 °F (–5 and +55 °C) there is no visible degradation in display or performance.
Storage temperature	–4 to +140 °F (–20 to +60 °C)
Power	Option 1: 115 Vac ± 15 percent, 60 Hz ± 6 percent, 10 W; 230 Vac ± 15 percent, 50 Hz ± 6 percent, 10 W Option 2: 20 to 30 Vdc, 15 W
Current outputs	Four 4-20 mA or 0-20 mA isolated current outputs. Fully scalable. Output 1 superimposes the HART® digital signal. You can program outputs for PID control. You can also enable output dampening with time constants from 0 to 999 seconds. HART digital communications transmitted via current output 1 is standard on all units.
Relay outputs	Four alarm relays for process measurement(s) or temperature. You can program for any relay for any measurement, timer, TPC, or Fault alarm operation instead of a Process alarm. When selected, a Fault alarm will activate the relay when a sensor or transmitter fault occurs. You can configure each relay independently.
Relays	Form C, single pole double throw (SPDT), epoxy sealed
Maximum relay current (resistive)	5.0 A
Inductive load	1/8 HP motor (maximum) at 115/230 Vac
Digital communications	HART digital communications are standard.
Hazardous location approvals	For more information, refer to the <i>Rosemount 1058 Dual Channel Transmitter Product Data Sheet</i> on Rosemount 1058 Dual Channel Transmitter . Approvals apply to the transmitter only. The Rosemount 105P is not suitable for use in hazardous areas.

Dimensional and installation drawings

Note

Dimensions are displayed with inches above and millimeters below.

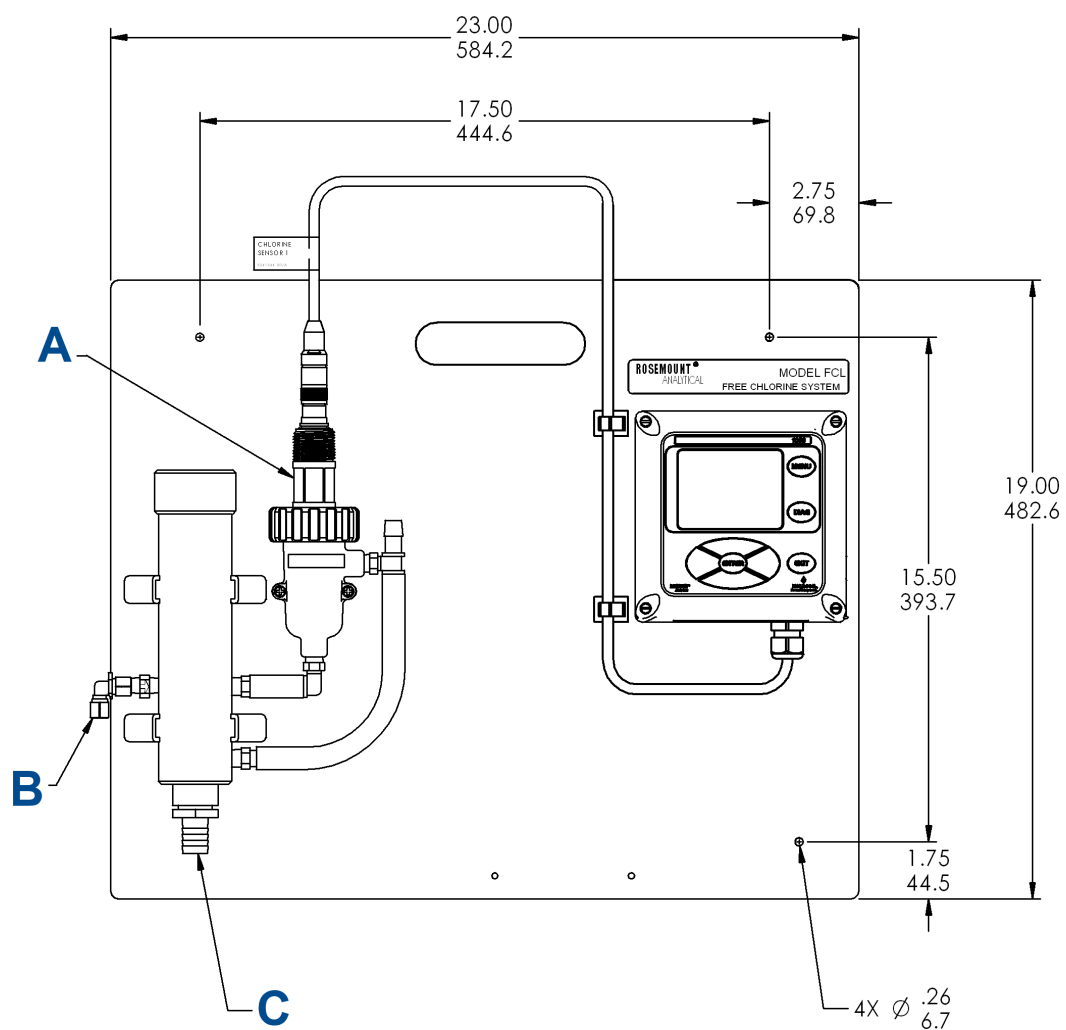
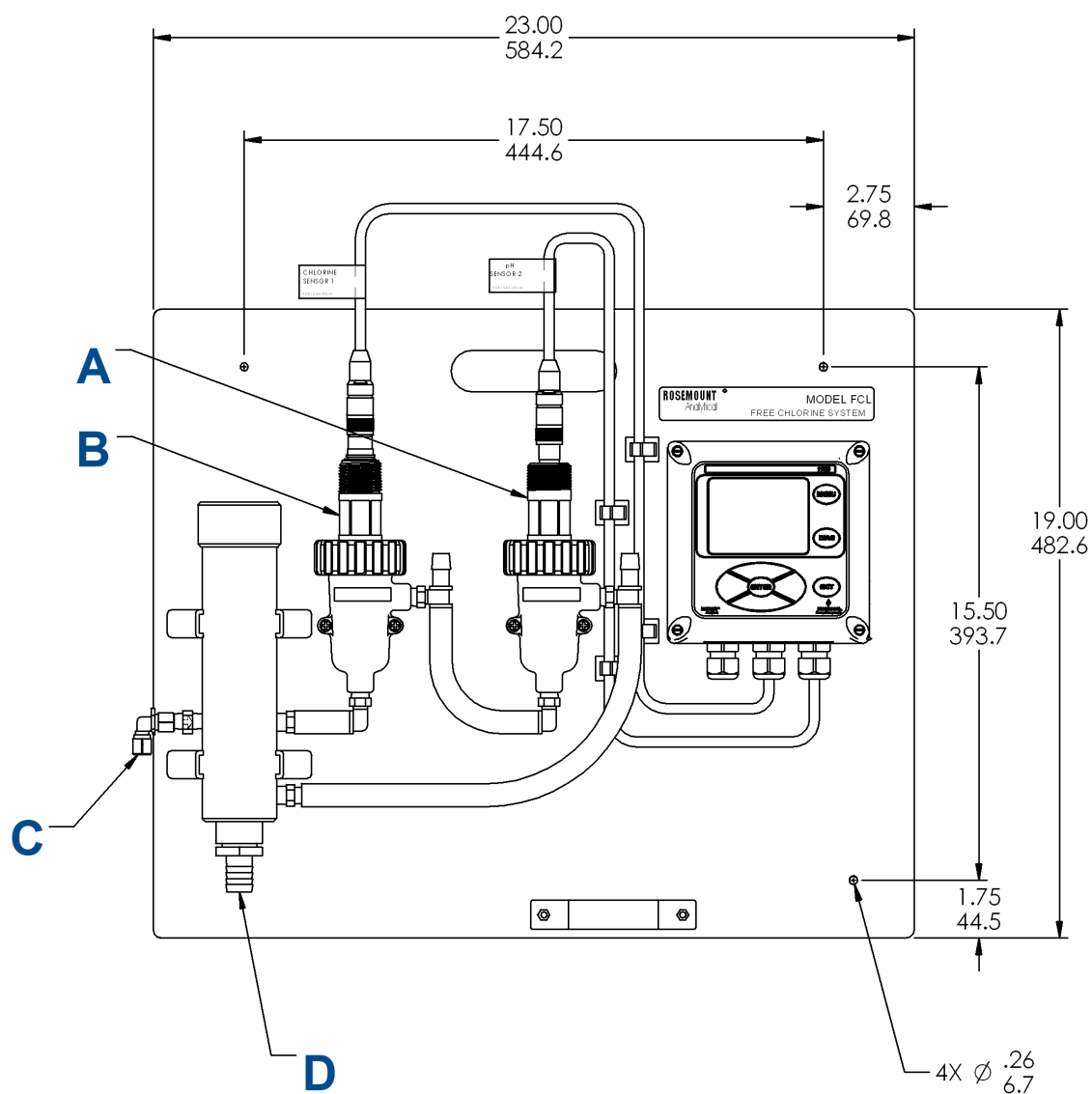
Figure 1: Example: one sensor panel**A. Chlorine sensor****B. Inlet****C. Drain**

Figure 2: Example: two sensor panel

- A. pH sensor
- B. Chlorine sensor
- C. Inlet
- D. Drain

For more information: [Emerson.com](https://www.emerson.com)

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