S401 DIG pH Electrode

Digital measurement with built-in Temperature sensor

The sensor **S401 DIG** is used for digital measurement of pH in pure water, wastewater treatment plants, suspended solids fouling processes, processes with pollutants, processes with high concentrations of sulfides, coagulation and flocculation, scrubbers, galvanic processes, surface finishing, processes of elimination or recovery of heavy metals.

Applications

pH Measurement in:

- Water and Wastewater Treatment
- Coagulation and Flocculation
- Process Monitoring and Control
- Acid / Caustic NeutralizationPlant Effluent

Features and benefits

- Reliable pH measure thanks to the use of a process of digital measurement
- Communication of measurements via MODBUS RTU protocol
- Possibility to execute all the calibrations via serial port
- Absence of moving mechanical parts
- Immediate installation and easy maintenance

The S401 DIG pH Electrode is suitable for pH measures in various applications. The porous Teflon® liquid junction resists fouling and chemical attack. Double junction reference cells increase the service life in applications containing sulfides (H2S) and metals such as lead, mercury and silver. The new cast-in-place solidreference electrolyte helps maintain a constant reference cell potential by resisting dilution over time with pressure and temperature changes. The new capillary temperature sensor design places the Pt100 behind the pHsensitive membrane for accurate temperature compensation and measurement. The IP68 environmental rating protects the high imped-ance pH electrode signal from moisture resulting from condensate build up in submersion pipes.

S401Diff / DIG Digital / Differential pH Electrode

Data Sheet

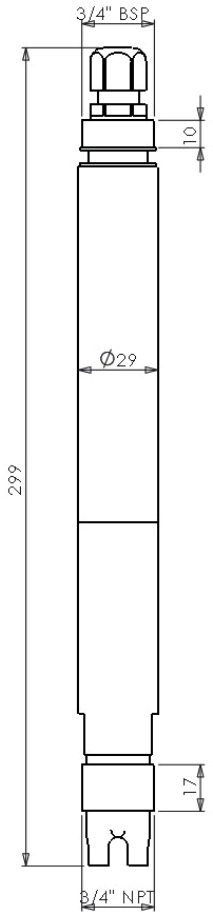
Composition of the supply

1

2

The supply consists of a single package containing the following parts:

1. 1 S401 DIG Digital pH Electrode with 10m cable
2. 1 Technical manual for instruction

TECHNICAL DATA	DIMENSIONS
Materials : — Ryton® and PVC body — Viton® O-Rings — Other materials: Teflon®, carbon, epoxy	
Measuring Electrode: Platinum made, anular form	
Thread: 3/4" NPT, 3/4" BSP	
Measuring range: 0-14 pH	
Calibration method: 2-point calibration with certified pH standard solutions	
Measuring method: Digital	
Resolution: 0,01 pH	
Accuracy: ± 0.05 pH	
Repeatability: ± 0.05 pH	
Responding time: T_{90} < 60s	
Temperature sensor: PT100	
Operating Temperature immersion : 0÷50°C (122°F) **Operating Temperatura in the pipeline:** 0÷80°C	
Max operating Pressure: 11bar	
Minimum operating conductivity: 50µS	
Maximum absorption: 2W	
Mechanical protection: IP68 Sensor+cable	
Cable length: 10m integrated with the sensor (more on request)	
Power supply: 12…24Vdc	
Communication: RS485 Modbus	
Equipotential contact for the solution: included	
Dimensions (LxHxP): 29x299x29mm	

ELECTRICAL CONNECTIONS	
RED	12-24VDC
BLACK	GROUND
YELLOW	RS485 A+
GREEN	RS485 B-

S401 DIFF pH Electrode for prohibitive apps

Differencial measurement with built-in Temperature sensor

The sensor S401 Diff is used for differential measurement of pH in pure water, wastewater treatment plants, suspended solids fouling processes, processes with pollutants, processes with high concentrations of sulfides, coagulation and flocculation, scrubbers, galvanic processes, surface finishing, processes of elimination or recovery of heavy metals.

Applications

• pH Measurement

Features and benefits

• Reliable pH measure thanks to the use of a process of digital measurement
• Communication of measurements via MODBUS RTU protocol
• Differential method of measurement enables a longer electrode life in time and in the most prohibitive applications
• Possibility to execute all the calibrations via serial port
• Black PVC sensor body
• Absence of moving mechanical parts
• Immediate installation and easy maintenance

pH electrodes S401 are designed for measurements of pH in heavy duty applications where pH electrodes standards would not be able to work because the life of reference would be too short. The S401 pH sensor is constituted by a PVC body which houses the glass electrode for measuring the PH, the reference electrode with a salt bridge, the temperature sensor, the earth contact of the solution and the electronic board of signal handling.
These sensors are fully interchangeable with any pH electrode and are suitable for use with any pH meter. They are able to communicate the values of the measure pH and Temperature via MODBUS RTI protocol, and you can perform all calibrations through the serial port.

As already said, the S401 Diff uses the proven technique of differential measurement in three electrodes, the pH and the reference electrode are compared to a ground electrode for a rate measuring accuracy, even in chemical applications difficult. The bridge replaced and the tank can be refilled ensure a long service life in applications containing sulphide (H2S) and metals such as lead, mercury, and silver. The electrode will maintain a constant potential in the reference cell dilution resisting the variations of pressure and temperature over time. The patented reference junction in porous Teflon ® resists fouling and chemical attack. Not surprisingly, examples of applications where differential pH electrodes are the most suitable choice are: wastewater treatment plants, suspended solids fouling processes, processes with pollutants, processes with high concentrations of sulfides, coagulation and flocculation, scrubbers, galvanic processes, surface finishing, processes of elimination or recovery of heavy metals.

Composition of the supply


1

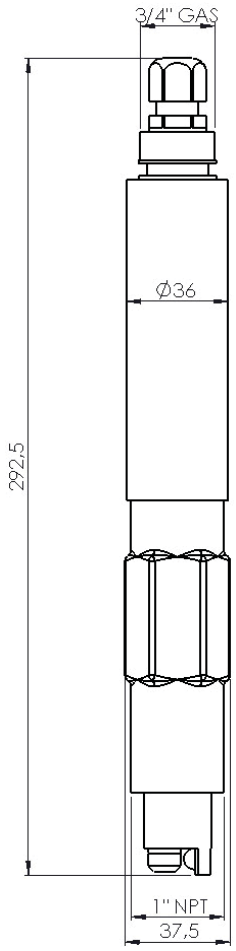
2

The supply consists of a single package containing the following parts:

1. 1 S401 Diff Differential pH Electrode with 10m cable
2. 1 Technical manual for instruction

S401Diff / DIG Digital / Differential pH Electrode

Data Sheet

TECHNICAL DATA	DIMENSIONS
Materials : — Ryton® and PVC body — Viton® O-Rings — Other materials: Teflon®, carbon, epoxy	
Measuring Electrode: Platinum made, anular form	
Thread: 1" NPT, 3/4" GAS BSP	
Measuring range: 0-14 pH	
Calibration method: 2-point calibration with certified pH standard solutions	
Measuring method: Differencial	
Resolution: 0,01 pH	
Accuracy: ± 0.05 pH	
Repeatability: ± 0.05 pH	
Responding time: T_{90} < 60s	
Temperature sensor: PT100	
Operating Temperature immersion : 0÷50°C (122°F) **Operating Temperatura in the pipeline:** 0÷80°C	
Max operating Pressure: 6.9bar	
Minimum operating conductivity: 50µS	
Maximum absorption: 2W	
Mechanical protection: IP68 Sensor+cable	
Cable length: 10m integrated with the sensor (more on request)	
Power supply: 12…24Vdc	
Communication: RS485 Modbus	
Equipotential contact for the solution: included	
Dimensions (LxHxP): 37,5x292,5x37,5mm	

ELECTRICAL CONNECTIONS	
RED	12-24VDC
BLACK	GROUND
YELLOW	RS485 A+
GREEN	RS485 B-

Order codes

9700770097	S401 DIG pH digital electrode
9700720097	S401 DIFF pH Electrode for prohibitive apps 10m cable