Innovative

Chlorine

Sensor

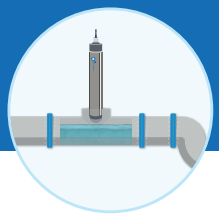
IN **PIPE** OR IN **PLANT**

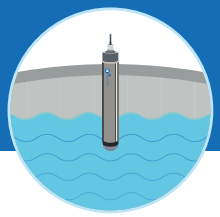
- Multiparameter
- Maintenance free
- Universal remote monitoring
- Battery powered (optional)
- Direct pipe installation (optional)

Halogen's no maintenance chlorine sensor

INNOVATIVE

The MP5-A chlorine sensor can be installed in locations that are impossible for other sensors. It is designed for low maintenance, with service intervals of six months or more, and zero water waste, potentially saving up to 265.000 liter of water per year. Furthermore, the MP5-A does not require reagents or membranes, leading to a savings of thousands of euros.





Features

These features are exclusive to Halogen's MP5-A, setting it apart from all other sensors in the market.

Highest accuracy

MP5-A is chlorine reading is accurate over a wide range of conditions of temperature, pH and conductivity. It is accurate within ±4% over 6.5 to 8.5 pH. Chlorine measurement is up to 20 ppm.

NSF61 certification-no waste stream

MP5-A is rated for drinking water exposure so it can be installed directly in a pipe for enormous water savings of over 70,000 gallons of water per year per sensor.

No reagents, no membrane

Since MP5-A is reagentless, it saves thousands of dollars over its lifetime. There is no need for monthly reagent or pump tubing changes. No waste stream or chemicals are needed.

Maintenance free

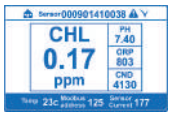
MP5-A does not require frequent calibration like membrane chlorine sensors. It can operate for 6 months or more unattended. Variables that cause other sensors to go out of calibration do not affect MP5-A.

Battery powered (optional)

Autonomous solution in the event of no electricity supply on-site. Ideal for use with battery-powered dataloggers.

Universal remote monitoring

Suitable to work with any RTU and datalogger. The modbus communication allows easy and direct integration with any automation and telemetry system, RTU and Datalogger on the market.



Five Parameters on one sensor

MP5-A provides operators with 5 critical water parameters every minute. Its chlorine measurement is membrane-free and automatically compensated for temperature, pH and conductivity changes. It measures:

1. Free chlorine
2. pH
3. Conductivity
4. Temperature (digital)
5. Rapid Response ORP™

A single sensor gives operators these critical monitoring parameters.

Factory calibrated

Sensors often read accurately right out of the box. There is no need for expensive service contracts. Spares can be kept on the shelf and swapped out, if necessary.

Self-cleaning

All electrodes are continuously cleaned and polished by cleaning beads. These beads also clean the pH sensor. This means the sensor does not require frequent calibration, cleaning, or service. This self-cleaning module makes each of these parameters “best in class” in reliability and accuracy.

Fow independent

Since this chlorine sensor is unaffected by flow changes, it stays in calibration and can be installed virtually anywhere in a process. It does not require complete flow chambers and drains to waste.

Ultralow chlorine level monitoring

MP5-A now has improved accuracy and performance at low chlorine levels. No other sensor matches the ultralow performance of MP5-A.

Unlike membrane sensors, it can operate in zero flow. This means it can be installed in tanks or clear wells.

There is no memory if exposed to zero chlorine for hours. It responds quickly when chlorine residual returns.

The LOD (limit of detection), now 0.01 ppm, and LOQ (limit of quantification), now at 0.04 ppm, are the best in class.

No other sensor can claim the following features and benefits:

Feature	Benefit
1. Pressure and flow independet	Operates at any flow & pressure
2. In pipe installation/wet tap NSF61 certified	Remote monitoring of tanks distribution lines or wells
3. Self-cleaning	Little to no maintenance
4. No membranes, reagents, or tubing	No labor for six months
5. Accuracy over a wide range of parameters	Frequent calibration not needed
6. Ultralow measurement	Measures low levels at 0 flow with no memory like membranes sensors
7. Measures 5 parameters factory calibrated	Eliminate 3 or 4 other discrete sensors. Often accurate out of the box
8. Remote monitoring w cellular modem	Operation unattended for 6 months or more
9. No waste stream	Saves 70,000 gallons per year
10. Versatile controller	Standard features like SD Card, RTC, Modbus Communication, (Ethernet Q2)

**6 months*

Ideal for distribution lines

			
Immersion version for tanks.	Easy to install panel with preassembled equipment. Just plug in and add tubing connections.	Pipe version for lowest cost.	Wet tap version for drinking water distribution pipelines.

Wet tap remover in a pipe

This flow independent sensor can be installed directly in distribution lines providing operators with insights into odor and taste problems. It is often useful to know what is happening before water gets to the user's tap.

The wet tap version enables installation directly in the distribution lines, using conventional wet tap equipment. Dead-end monitoring helps optimize flush frequency.

EPA 334.0 compliant

MP5-A can be used for compliance reporting using EPA 334.0.

Electrochemical cleaning

ORP Rapid Response™ electrochemically cleans the ORP electrodes. This ORP method responds quickly to changes in oxidant levels when compared to a discrete ORP sensor. ORP is integrated into the sensor and provides more reliable readings.

Monochloramine measurement (MP6)

The MP6 now measures monochloramine, free chlorine, pH and ORP on the same sensor. These are all critical parameters for water treatment operators. The price is less than 1/4 the price of monochloramine reagent instruments. Since it is reagentless, it saves thousands per year in reagent costs.

Remote monitoring-save manhours

This solution is ideal for tanks, wells, and distribution lines since there is no need for remote power. There is no need for frequent grab samples. A rechargeable 50AH Battery enables unattended operation for over 6 months. An integrated Cellular Modem uploads data every 15 minutes. The entire package is in an IP67 enclosure.

Cloud connected ANYWHERE

With a subscription, data is accessible in the Cloud along with remote troubleshooting, trending, SMS alerts for operators and technicians, and SCADA connectors.

Satellite | Cellular | LoRaWAN | Wi-Fi

Mobile Application

Available for both Android and Apple IOS devices, the mobile app provides an easy-to-use, familiar interface for all the functions of the D20 controller. Bluetooth operation makes connection and cloud set up easy.

D20 Controller delivers more for less

An integrated supplied SD Card records log files and enables reprogramming of both sensor and controller. A new graphic display is easy to read.

Two control relays can be used for operating chemical pumps and an alarm relay for warnings.

An optional Cellular Modem connects to the Cloud.

Overall*	
Measurement method	Reagent less, three electrodes, no membrane or electrolyte
Free Chlorine measurement range	0 to 20 ppm
Limit of detection (LOD)	10 ppb (0.01 ppm)
Limit of quantitation (LOQ)	40 ppb (0.04 ppm)
Monochloramine measurement	0 to 10 ppm
Resolution	0.001 ppm (1 ppb)
Chlorine accuracy [1]	±5% of the calibrated value1 (DPD) at any pH between 6.5 and 8.75 ±4% of the calibrated value1 (DPD) at any temperature between 15° and 35°C ±4% of the calibrated value1 (DPD) at any conductivity between 200 and 10,000 µS ±10% underflow changes from 0 to 4 meters/second velocit
Turbidity in sample without impact	No effect up to 3000 ppm (Arizona test dust fine, 50-micron size)
Calibration stability	6 months (typ)
Measurement interval	60 seconds
pH range (chlorine)	6.5 to 8.75
Conductivity	200 to 10000 µS
Pressure limit	10 bar (145 psi)
Temperature	5 to 55°C
Sample compensation	Automatic
Factory calibration performed	Yes
Power consumption	24VDC ±10% at 50mA 200 mA startup maximum

Value1 derived from 9 sensors calibrated at a single point: pH 8.0 and chlorine level of 1.25 ppm at 2,700 µS and 20°C.

D20-24V	D20- 24VDC no controller
D20-120V	D20 w 120 NEMA plug
D20-240V	D20 Hardwire
MKIT	Panel Mounted, Flow Cell, D20-120V
4-20 Pump Adder	4-20 Pump Adder
ENET Adder	2024 Q2 Ethernet Adder, Profibus, BACnet
Remote Sub	Remote troubleshooting subscription
Tier 1 Sub	Data Subscription Cloud data, alerts SMS
Tier 2 Sub	Data Subscription- add downloading of new firmware

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