

pHix[®] Compact pH, Redox/ORP and Temperature Transmitter

Advanced design with 'Tip and Dip' calibration and trouble-free operation.



4.1



General



With the advanced and unique design of the *pHix® Compact*, pH can now be measured much easier than before, and nearly all drawbacks of conventional measuring systems are eliminated. The compact design, with union in one end and male thread in the other end, makes *pHix® Compact* very simple to mount in pipelines and open tanks. Another innovation is the simple 2-wire 4-20 mA connection with communication capabilities for setup, electrode diagnosis, trouble shooting and calibration.

Also, a new double-junction electrode has been developed for the *pHix® Compact* with lower impedance, increased electrolyte volume, increased junction area and longer lifetime than traditional pH electrodes. The new electrodes can be used successfully in wastewater, potable water and water with low conductivity.

Note: 1 year warranty except electrodes, which are a 90 days shelf plus 6 months warranty..

Features

- Available with 4-20 mA output for pH/ORP or with 2 galvanically separated 4-20 mA outputs for both pH and temperature, or with standard pH or ORP electrode mV output.
- *pHix® Compact* is completely waterproof, and withstands a static pressure of 72 psi.
- LED indicator light shows operation, calibration and alarm status.
- No need for fittings or cables.
- Built-in temperature sensor.
- *pHix® Compact* is made from chemical resistant Ryton® (PPS) and 316 SS.
- *pHix® Compact* can be loop powered directly from an active 4-20 mA input e.g. from a PLC or indicator.
- Automatic electrode monitoring.
- Communication capability with commands for all configuration parameters.

Buffer adjustment

Buffer adjustment is activated by either turning the transmitter 180 ° or by turning the switch ring.

Buffer adjustment can also be activated from a PLC or through HART(R) commands via the 4-20 mA channel.

Buffer adjustment using switch ring:



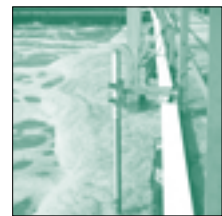
1: Rinse the electrode.



2: The switch ring is set to the pH value of the buffer (4, 7, or 10).



3: Zero and span is set automatically when immersed into the buffer solution.



4: *pHix® Compact* can be put into service.

Buffer adjustment using 'Tip and Dip' calibration:



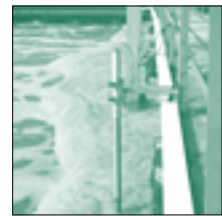
1: Rinse the electrode.



2: *pHix® Compact* is turned upside down. (Tip.)



3: Zero and span is set automatically when immersed into the buffer. (Dip).



4: *pHix® Compact* can be put into service.

Specifications

pHix® Compact loop powered models

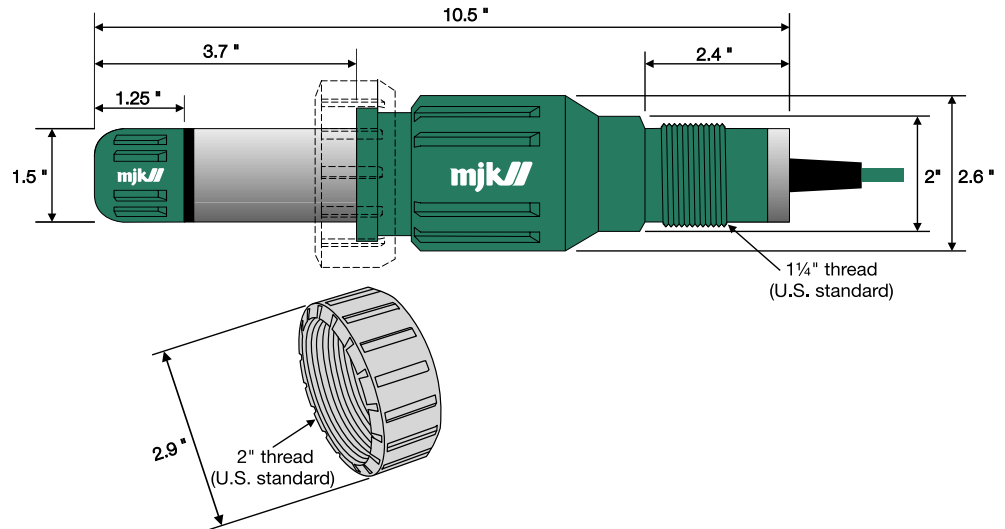
Power supply:	2-wire loop, 12 - 30 V DC
Accuracy:	± 0.01 pH / 1 mV / 1 °F
Linearity:	± 0.01 pH / 1 mV / 1 °F
Repeatability:	± 1 %
Input, pH:	0 -14 pH
Input, mV:	-1,000 mV ... +1,000 mV
Input impedance:	pH: > 2 × 10 ¹² Ω @ 75 °F
Input impedance:	ref.: > 2 × 10 ¹² Ω @ 75 °F
Temperature range:	32 ... + 122 °F
Output:	4-20mA factory set to 32 -122F on models w/ temperature loop
Zero setting, pH:	0 ... 12 pH (@ 4 mA out)
Span setting, pH:	2 ... 14 pH (@ 20 mA out)
Zero setting, °F:	-5 ... 140 °F (@ 4 mA out)
Span setting, °F:	32 ... 180 °F (@ 20 mA out)
Material:	Ryton® (PPS) / 316 SS, PUR Cable Sheath

Enclosure:	NEMA 6X
Response time:	Approx. 10 sec.
Temp. compensation:	Automatic (- 5 ... + 180 °F)
CE approvals:	EN50081-1, EN50082-1

pHix® Compact Electrode Output

Accuracy +/-	0.01pH/0.1mV
Range:	0-14 pH/-1000 to +1000mV
Input impedance:	pH/ORP: > 2 × 10 ¹² ohms, @ 75 °F
Input impedance:	ref.: > 2 × 10 ¹² ohms, @ 75 °F
Temperature range:	- 5 ... + 180 °F, 2-wire Pt 100 sensor included.
Material:	Ryton® (PPS) / 316 SS
Enclosure:	NEMA 6X
Response time:	Approx. 10 sec.
Temp. compensation:	requires separate device to use 2-wire Pt 100 Temperature Sensor.

Dimensions



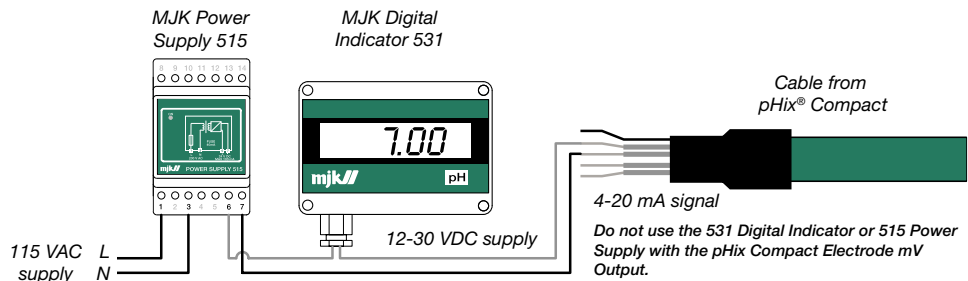
Electrical connection

pHix® Compact has either 1 or 2 x 4-20 mA signal outputs, and the cable has either 3 or 5 wires respectively:

No.:	Designation:	Color:	Signal:
1	Shield	(none)	-
2	+ 12-30 V DC	Red	pH / ORP
3	- 4-20 mA	Black	(output 1)
4	+ 12-30 V DC	Yellow	Temperature
5	- 4-20 mA	Orange	(output 2)

pHix Compact Electrode mV Output:

No.:	Designation:	Color:	Signal:
1	Shield	Clear	(none)
2	+	Red	mV for pH or ORP
3	-	Black	mV for pH or ORP



Order numbers

pHix® Compact

203106	pHix® Compact pH transmitter without electrode
203108	pHix® Compact pH and temperature transmitter without electrode
203111	pHix® Compact pH transmitter complete with electrode (no. 160310)
203113	pHix® Compact pH and temperature transmitter complete with electrode (no. 160310)
203121	pHix® Compact redox (ORP) transmitter complete with electrode (no. 160312)
160310	pHix® Compact pH electrode, pH 1 - 14; 32 ... 180 °F, 0 mV = 4.6 pH
160311	pHix® Compact pH electrode, pH 1 - 14; 32 ... 180 °F, 0 mV = 7 pH
160312	pHix® Compact redox (ORP) electrode, 32 ... 180 °F
155200	pHix electrode housing for pH and ORP mV output, includes Pt 100 sensor*, requires adding 160311 pH electrode or 160312 ORP electrode

Mounting equipment

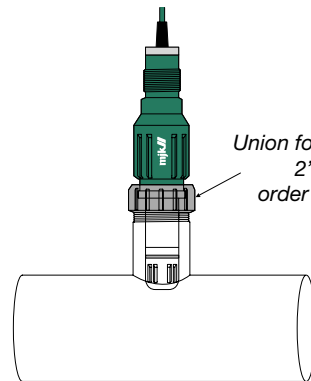
155206	Fitting for submersion, made from acid-proof steel
200205	Universal bracket
200210	Wall bracket for extension
200215	Extension for universal bracket
541410	Union for mounting on 2" pipe T

Electrolyte, cleaning solutions and buffer solutions

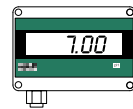
163010	KCl (16 oz.)
163020	Pepsin solution (8 oz.)
163025	pH buffer kit, pH 4, pH 7 and pH 10 (6 x 1 oz. individual use pouches)
163032	pH buffer, pH 4.00 (16 oz.)
163034	pH buffer, pH 7.00 (16 oz.)
163036	pH buffer, pH 10.00 (16 oz.)
163040	ORP buffer, value 235 mV (makes 8 oz.)

* Consult MJK factory Rep for details on Pt 100 temperature transmitters.

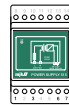
Accessories



Union for mounting on 2" pipe T, order no. 521410



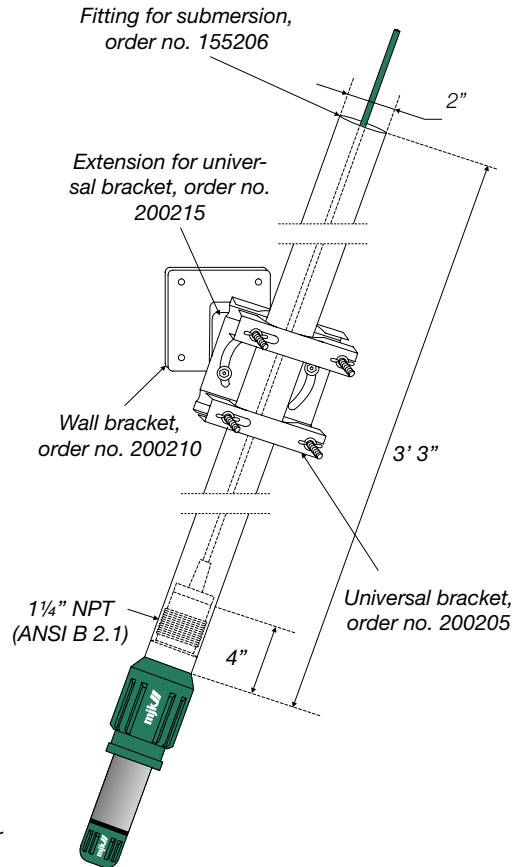
Loop supplied digital indicator type 531, order no. 200125. (See data sheet no. 6.3.)



Power supply type 515, order no. 209100 (See data sheet no. 6.3.)



115 V AC digital 4-20mA loop indicator type 533 with built-in 24 V DC supply and 2 relay outputs for alarm, control etc., order no. 200131.



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