



“Self-Powered” Analog pH Sensors & ORP Sensors

PURPOSE:

The “self-powered” configuration for analog pH & ORP sensors allows for features not otherwise possible when mating with pH & ORP transmitters that do not support preamplifiers. Examples of such features include:

- Extended cable lengths up to 305 meters (1,000 feet). Inquire to factory if a longer cable length is required.
 - Very long cables induce high load and so may diminish the total time available for field service use.
- Ability to bridge sensor leads across ordinary terminal strip in waterproof J-Box if required
- Quick disconnect NEMA 6P rated waterproof snap connectors for ease of commissioning & maintenance
- Operation in high-noise process environments and very low temperature field installations
- Support for parabolic ultra-rugged low-profile pH glass elements & extreme dehydration resistant reference
- Interfacing pH meters with known limitations for maximum impedance of pH sensors that they can support

MATING pH & ORP TRANSMITTERS:

Any pH transmitter or ORP transmitter that support analog pH sensors or ORP sensors **without** preamplifiers.

AVAILABLE CONFIGURATIONS:

Analog IOTRON™ pH sensors or ORP sensors or ZEUS™ Item # 1203 analog pH sensor with 1.25” NPT WPB sealing in “SP” style with extended nipple is required when ordering sensors in “self-powered” configuration. Overall sensor length is 4 inches longer than equivalent sensor configuration without the self-powered option.

Self-Powered Capacity:

Up to 2 years of field service time with either continuous or intermittent use (depends upon exact conditions)

Max Temperature of Field Operation:

Inline use is only limited by sensor specifications. Submersible use is limited to 85 degrees Celsius maximum.

End of Cable Terminations:

Tinned lead wires for base configuration (“-TL”) with color coding as follows:

mV Signal Output: **White**
Reference Signal: **Red**
TC: **Black**
TC: **Green**
Solution Ground: **Drain (Optional, Only used if Liquid Earth is Required)**

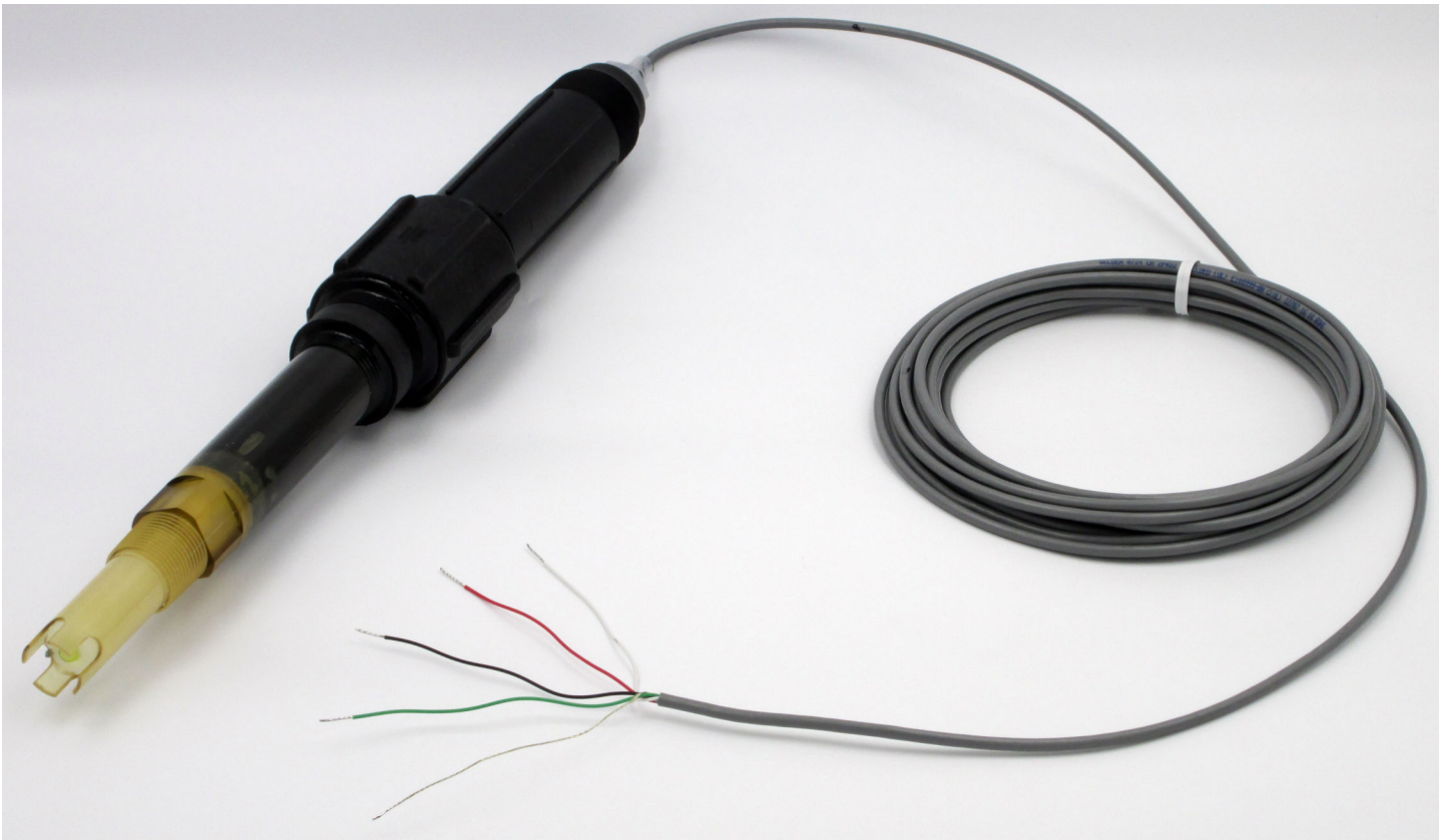
or

Q4M male snap NEMA 6P rated waterproof quick disconnect snap connector (“-Q4M”). Mating Q4F female snap to tinned lead extension cable required to be permanently connected to pH/ORP transmitter terminal board.

Ordering Codes:

The self-powered option for any eligible sensor configuration is designated with “-SP-TC” in the pH sensor or ORP sensor part number where “TC” is replaced by type of temperature compensation element. For example, “-SP-1000-” would be a self-powered configuration with an integral Platinum 1000 ohm temperature element. In addition, the required waterproofing “B” sealing option is always supplied in the 1.25” NPT size and with the extended nipple length to allow sufficient room for the self-powered configuration components. Other available options are specified normally as detailed in the part numbering guide.

Photos for Visualization of Typical Configuration of “Self-Powered” Analog pH Sensors & ORP Sensors



Typical self-powered pH sensor with optional liquid earth solution ground element shown above. Optional factory installed sealing hose should be requested for installation onto waterproofing “B” sealing for fully submersible use.



Detail rear view close-up of self-powered sensor assembly. The 1.25” MNPT threads are interface with 1.25” FNPT threads on standpipe or immersion rod for submersible installations with hose to be fitted onto the 3/8” hose barb.



Detail front view close up of pH sensor with optional solution ground liquid earth element in immersion configuration. Other configuration such as twist lock quick disconnect bayonet style are also available options.

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