pH, ORP & Ion Selective Sensors Part Numbering Guide

pH, ORP & Ion Selective sensor part numbers consist of six major components denoted by the following set of variables:

PREFIX XXXX-YYYY-ZZZ-EOC-WPSEAL

1. Alpha Prefix "PREFIX"
2. Model Number(s) "XXXX"
3. Integrated Electronics "YYYY"
4. Cable Length & Terminations "ZZZ-EOC"
5. Waterproofing Seal (If Present) "WPSEAL"

Note # 1: Components 1 & 2 are always separated by a space
Note # 2: Components 2, 3, 4, 5 & 6 are always separated by a hyphen (-)
Note # 3: Additional information about each component of the part number can be found in the following document: "Competitive Advantages of IOTRON™ & ZEUS™ pH & ORP Industrial Sensor Design & Technology"

1. Alpha Prefix "PREFIX"

For Standard pH or ORP Sensors:
PREFIX always starts with "PN"

For Standard Ion Selective (ISE) Sensors → **Contact factory for details about ISE part numbers & available options**
PREFIX always starts with "AB"

For custom applications or configurations, additional characters may be added to the end of the standard Alpha Prefix (PREFIX) to denote these special features. *** Please consult APPENDIX A for details about available "Add-On" prefix options.*

2. Model Number(s) "XXXX"

- There is a list of standard model numbers available on the ASTI website.
- There are four numbers in each model number, each position of which has a specific meaning

Position # 1 Significance for pH, ORP & ISE Sensors
"**X**XXX"
The physical mounting configuration of probe
"5" = Sanitary TRI-CLOVER or HOT-TAP Valve Retractable
"6" = ¾"– ¾" or ¾"– 1" MNPT
"8" = 1" MNPT Twist Lock Bayonet

Position # 2 Significance for pH & ORP Sensors Only
"X**X**XX"
The application for which the sensor is designed
"0" = General Purpose
"1" = High Temperatures
"2" = Ultra-High Temperatures
"3" = Abrasive Slurries & High Viscosity
"4" = Acids, Fluorides & HF Solutions
"5" = Pulp & Paper Slurry Type Processes
"6" = Dissolved Sulfide (H_2S, HS^- & S^{2-})
"7" = Aggressive Dissolved Ammonia & Chlorine Gas & Volatile Organic Solvents
"8" = ORP, Oxidation/Reduction Potential
"9" = Saturated Sodium (Brine) Samples

Position # 3 Significance for pH & ORP Sensors Only
"XX**X**X"
The type of plastic housing
"1" = CPVC
"3" = PPSU (RADEL)
"4" = PEEK (KETASPIRE)
"5" = PPS (RYTON)

Position # 4 Significance for pH, ORP & ISE Sensors
"XXX**X**"
This indicates the generation number of the model

"0" = Ion Selective Sensors, only available in PPSU (RADEL) plastic housings
*** Please consult APPENDIX C for basic information about ISE sensors*

"1, 2, 3, 4" = first, second, third, fourth generation design and/or mounting configuration mounting for the given sensor series

Sensor body & junction support matrix materials of construction for various IOTRON pH/ORP/ISE/DO sensor series. The ion selective (ISE) sensors are highlighted in **blue** while the dissolved oxygen sensors are highlighted in **orange**.

¾"-¾" MNPT Immersion pH/ORP/DO Sensor Series

Generic Model	Sensor Body	Junction	Drawing Numbers
2X12	CPVC	Compact HDPE	6-9, 6-9-Pt (2812), 6-10 (2312)
6X11	CPVC	Compact HDPE	6-3, 6-3-Pt (6811), 6-4 (6311)
6X13	CPVC	HDPE	6-5, 6-5-Pt (6813), 6-6 (6313)
6X12	CPVC	KYNAR	6-5, 6-5-Pt (6812), 6-6 (6312/6512)
6X53	RYTON R-4-230BL	HDPE	6-5, 6-5-Pt (6853), 6-6 (6353)
6X54	RYTON R-4-230BL	KYNAR	6-5, 6-5-Pt (6854), 6-6 (6354/6554)
AST-DO-UNIVERSAL CONVERTIBLE CONFIG	RYTON R-4-230BL	N/A	AST-DO-UNIVERSAL CONVERTIBLE CONFIGURATION
6X32	RADEL R-5000 NT	KYNAR	6-5, 6-5-Pt (6832), 6-6 (6332/6532)
6X42	PEEK KT-880 NT	KYNAR	6-5, 6-5-Pt (6842), 6-6 (6342/6542)

¾"-1" MNPT Immersion pH/ORP/ISE Sensor Series

Generic Model	Sensor Body	Junction	Drawing Numbers
6X31	RADEL R-5000 NT	KYNAR	6-1, 6-1-Pt (6831), 6-2 (6331/6531)
6XX0 (ISE)	RADEL R-5000 NT	HDPE	6-ISE
6X41	PEEK KT-880 NT	KYNAR	6-1, 6-1-Pt (6841), 6-2 (6341/6541)
6X51	RYTON R-4-230BL	KYNAR	6-1, 6-1-Pt (6851), 6-2 (6351/6551)
6X52	RYTON R-4-230BL	HDPE	6-1, 6-1-Pt (6852), 6-2 (6352)

1" MNPT Twist Lock pH/ORP/ISE/DO Sensor Series

Generic Model	Sensor Body	Junction	Drawing Numbers
8X31	RADEL R-5000 NT	KYNAR	8-1, 8-1-Pt (8831), 8-2 (8331/8531)
8XX0 (ISE)	RADEL R-5000 NT	HDPE	8-ISE
8X41	PEEK KT-880 NT	KYNAR	8-1, 8-1-Pt (8841), 8-2 (8341/8541)
8X51	RYTON R-4-230BL	KYNAR	8-1, 8-1-Pt (8851), 8-2 (8351/8551)
8X52	RYTON R-4-230BL	HDPE	8-1, 8-1-Pt (8852), 8-2 (8352)
AST-DO-UNIVERSAL TWISTLOCK CONFIG	RYTON R-4-230BL	N/A	AST-DO-UNIVERSAL TWISTLOCK CONFIGURATION

Sanitary / HOT-TAP Valve Retractable ¾" MNPT pH/ORP/ISE/DO Sensor Series

Generic Model	Sensor Body	Junction	Drawing Numbers
5X31	RADEL R-5000 NT	KYNAR	5-1, 5-1-Pt (5831), 5-2 (5331/5531)
5XX0 (ISE)	RADEL R-5000 NT	HDPE	5-ISE
5X41	PEEK KT-880 NT	KYNAR	5-1, 5-1-Pt (5841), 5-2 (5341/5541)
5X51	RYTON R-4-230BL	KYNAR	5-1, 5-1-Pt (5851), 5-2 (5351/5551)
AST-DO-UNIVERSAL SANITARY/HOT-TAP	RYTON R-4-230BL	N/A	AST-DO-UNIVERSAL SANITARY/HOT-TAP CONFIGURATION

1"-1.25" MNPT Immersion pH/ORP/ISE Sensor Series

Special Model	Sensor Body	Junction	Drawing Numbers
AB 6100 Fluoride ISE Sensor for Acid Service	RADEL R-5000 NT	Large Size HDPE	F-1
ZEUS 1202, 1203, 1204 Digital 1205, 1234	RADEL R-5000 NT	High-Temp KYNAR	ZEUS Analog & Digital pH/ORP Sensor (ULTRA RUGGED CONFIGURATION)

Note: The first drawing number indicated is valid for all part number of the sensor series except as otherwise indicated.

The features of some models can be combined together to create a blended part numbers. These "hybrid" part numbers are designated with a forward slash "/" between the model numbers invoked.

Some Selected Examples Include:

XXXX = "6831/6631"
Sulfide Resistant ORP Sensor, ¾" – 1" MNPT Inline/Immersion RADEL Sensor Body

XXXX = "5331/5631"
Slurry & Sulfide Resistant pH sensor, Sanitary & HOT-TAP RADEL Sensor Body

XXXX = "8151/8451/8651"
Acid/Fluoride, Hi-Temp & Sulfide Resistant pH Sensor, 1" MNPT Twist Lock Quick Disconnect RYTON Sensor Body

XXXX = "6241/6441"
Ultra High Temperature & Acid Resistant pH sensor , ¾" – 1" MNPT Inline/Immersion PEEK Sensor Body

XXXX = "5131/5331"
High Temperature & Abrasive Slurry Resistant pH sensor, Sanitary & HOT-TAP RADEL Sensor Body

XXXX = "8151/8951"
Hi-Temp & Saturated Sodium (Brine) Resistant pH Sensor, 1" MNPT Twist Lock Quick Disconnect RYTON Sensor Body

XXXX = "6841/6241/6341"
Ultra-High Temperature Slurry Abrasive Resistant ORP Sensor, ¾" – 1" MNPT Inline/Immersion PEEK Sensor Body

XXXX = "5551/5151/5951"
High Temperature Saturated Sodium Paper/Pulp Resistant pH sensor, Sanitary & HOT-TAP RYTON Sensor Body

Note: Not all-theoretical combinations of part numbers possible. Consult factory for availability of desired combination.

Replacement pH & ORP Sensors For Transmitters that support and/or require Integrated Preamplifiers

The instruments listed below require and/or support integral preamplifiers. Sensors to mate with these OEM pH & ORP transmitters are supplied with the appropriate integrated temperature compensation element, solution ground & OEM compatible high-impedance CMOS operational amplifier (a.k.a. preamplifier) as may be required to ensure full compatibility and optimal performance. Some manufacturers and analyzer models can support both sensors with or without preamplifiers on the same instrument. A sensor hook-up schematics for interfacing to the given OEM pH/ORP transmitter is supplied with each sensor, and some of the most common wiring schematic are posted on our website (please inquire for any not listed).

Fully Supported Hardware - FULL COMPATIBILITY

Manufacturer	pH & ORP Transmitters
Rosemount Analytical Liquid Division A Part of Emerson Process Management	**LEGACY:** 1050, 1181, 1055, 2081, 3081, 81, 54pH, 54epH, XMT **MODERN:** 1056, 1057, 56, 1066, 5081, 6081
Foxboro Analytical by Schneider Electric (a Division of Invensys)	**LEGACY:** 870IT **MODERN:** 875PH, 876PH, 873PH, 873DPX
Honeywell (formerly Leeds and Northrup, a.k.a. L&N)	**LEGACY:** 7030, 7075, 7076, 7079, 7081, 7082 , 7083, 7084, 7096, 9782 **MODERN:** UDA2182, APT2000PH, APT4000PH
Electro-Chemical Devices (a.k.a. ECD)	**LEGACY:** T20, T21, T27, T29, T30, C22 **MODERN:** T23, T28

* ASTI offers pH & ORP sensors compatible with the transmitters listed above as an alternative to mating OEM pH & ORP sensors detailed.

Replacement pH & ORP Sensors For Transmitters DO NOT SUPPORT Integrated Preamplifiers

The instruments listed below do no support preamplifiers. Sensors to mate with these OEM pH & ORP transmitters are supplied with the appropriate internal temperature compensation and/or solution ground signals to ensure compatility. A sensor hook-up schematics for interfacing to the given OEM pH/ORP transmitter is supplied with each sensor, and the some of the most common wiring schematic are posted on our website (please inquire for any not listed). If longer cable runs may be required for your planned installation, it is recommended to select a transmitter that supports preamplifiers (see list to the left).

Fully Supported Hardware - FULL COMPATIBILITY

Manufacturer	pH & ORP Transmitters
Endress+Hauser (a.k.a. E+H)	**LEGACY:** CPM152, CPM280, CPM431 **MODERN:** CPM153, CPM223, CPM253
Mettler-Toledo International (formerly Ingold)	**LEGACY:** 1120, 1140, 2050, 2100, 2220, 2400, 2500, 2800X, 2050e, pH 2100-PA, pH 2100e **MODERN:** M200, M300, M400, M700, M800
ABB (formerly TBI-Bailey)	**LEGACY:** TB515, TBN580, TB701/702, 4630, 4631, 4635, 4636, AX416, AX436, AX468, AX460, AX466 **MODERN:** AX460, AX416, AX436, APA592, TB82pH, TB84pH
Knick	**LEGACY:** Stratos Eco 2402 **MODERN:** Stratos Evo, Stratos Pro A2 pH, Stratos Pro A4 pH, Stratos Eco 2405 pH, Stratos 2221 pH, Stratos Stratos 2231 pH, Protos 3400(X)-035, PHU 3400(X)-110

* ASTI offers pH & ORP sensors compatible with the transmitters listed above as an alternative to mating OEM pH & ORP sensors detailed.

Replacement pH & ORP Sensors For Transmitters that support and/or require Integrated Preamplifiers

The instruments listed below require and/or support integral preamplifiers. Sensors to mate with these OEM pH & ORP transmitters are supplied with the appropriate integrated temperature compensation element, solution ground & OEM compatible high-impedance CMOS operational amplifier (a.k.a. preamplifier) as may be required to ensure full compatibility and optimal performance. Some manufacturers and analyzer models can support both sensors with or without preamplifiers on the same instrument. A sensor hook-up schematics for interfacing to the given OEM pH/ORP transmitter is supplied with each sensor, and some of the most common wiring schematic are posted on our website (please inquire for any not listed).

Supported Hardware with Some Known Issues

LIMITED COMPATIBILITY

Manufacturer	pH & ORP Transmitters
Rosemount Analytical Liquid Division, Part of Emerson Process Management	**LEGACY:** 1054, 1054A, 1054B, 1055
HACH (formerly Great Lakes Instruments, a.k.a. GLI)	**LEGACY:** 33, 53, 60, 62, 63, 70, 83, 90, 95, 570, 670, 671, 690, 691, 692, P33, P53, P63 **MODERN:** si792, si794, PRO-P3 GLI PRO series, sc200
GF (Georg Fischer) Signet a.k.a +GF+	**LEGACY:** 710, 2720, 9030, 9040, 8710, 5700 **MODERN:** 9900, 8900, 8750

* ASTI offers pH & ORP sensors compatible with the transmitters listed above as an alternative to mating OEM pH & ORP sensors detailed.

Trademarks (indicated with ™) are registered to the respective corporations as listed above.

Replacement pH & ORP Sensors For Transmitters DO NOT SUPPORT Integrated Preamplifiers

The instruments listed below do no support preamplifiers. Sensors to mate with these OEM pH & ORP transmitters are supplied with the appropriate internal temperature compensation and/or solution ground signals to ensure compatility. A sensor hook-up schematics for interfacing to the given OEM pH/ORP transmitter is supplied with each sensor, and the some of the most common wiring schematic are posted on our website (please inquire for any not listed). If longer cable runs may be required for your planned installation, it is recommended to select a transmitter that supports preamplifiers (see list to the left).

Supported Hardware with Some Known Issues

LIMITED COMPATIBILITY

Manufacturer	pH & ORP Transmitters
Yokogawa Electric Corporation (Formerly Johnson Yokogawa Controls, a.k.a. JYC)	**LEGACY:** pH/ORP 200, pH/ORP 400, pH/ORP 202, pH/ORP 402, pH150, pH100, OR100 **MODERN:** PH450G, PH202G

* ASTI offers pH & ORP sensors compatible with the transmitters listed above as an alternative to mating OEM pH & ORP sensors detailed.

Trademarks (indicated with ™) are registered to the respective corporations as listed above.

Most of the pH/ORP transmitter models listed also have a both contacting conductivity and toroidal (inductive contactless) conductivity transmitter counterpart to which ASTI can also supply alternative sensors to the OEM model sensors. Please inquire for any such conductivity retrofit and replacement sensor needs as well as for the pH & ORP measurements.

The manufacturers and models detailed on this webpage are not a complete listing of the supported OEM pH & ORP transmitters, analyzers and controllers to which ASTI can retrofit our replacement pH, ORP and conductivity sensors.

PLEASE INQUIRE FOR COMPATIBILITY INFORMATION ABOUT ANY INSTRUMENTATION NOT LISTED HERE

Naturally, all the ASTI pH, ORP and Ion selective (ISE) sensors are compatible with our own **2TX, 3TX and 4TX transmitters**

3. Integrated Electronics "YYYY"

A variety of electronics may be integrated into most sensors. These include the following categories:

1. Thermocompensator (TC) Elements
2. Analog Preamplifiers
3. Smart Digital Sensor Boards
4. No Electronics

1. ThermoCompensators Elements (ONLY)

Current List includes:	3000 Ohm Balco,	YYYY = "3000"	(Typical for TBI-Bailey / ABB & Jenco Transmitters)
	301 Ohm GLI Assy,	YYYY = "301"	(Typical for Older Great Lakes and Compatibles)
	1000 Ohm Platinum,	YYYY = "1000"	(Typical for Foxboro & Modern Rosemount Instruments)
	100 Ohm Platinum,	YYYY = "100"	(Typical for Older Rosemount and E+H Instruments)

Note: Other TC Elements may be available upon request

2. Analog Preamplifiers

Analog preamplifiers are available to interface OEM transmitters that either support and/or require these electronics to interface with that given instrument. The suitable mating TC element and solution ground (if required) are automatically assigned by specifying the integral preamplifier type. See Appendix "A" for solution ground options available.

Examples:

YYYY = "ROSEMOUNT"
Most all Uniloc Rosemount Emerson Process Management transmitters support integral preamplifier in sensor configuration option. Modern Rosemount transmitters include the 1056, 1057, 56, 1066 and 5081 while the legacy transmitters include the 1181, 1055, 2081, 3081, 81, 54 and XMT models. Simple specify the mating Rosemount transmitter model to get the compatible preamplifier. For example if you have a model 5081 transmitter then YYYY = "5081". Most modern Rosemount preamplifiers are intercompatible amongst various models altough the specific wiring scheme will vary based upon the terminal assignments.

YYYY = "FOXBORO"
Most all Foxboro transmitters support integral preamplifier in sensor configuration option. Modern Fobxoro transmitters include the 875PH, 876PH, 873PH, 873DPX while the model 870IT is now a legacy transmitter. Simply specify the mating Fobxoro transmitter model to get the compatible preamplifier. For example for a model 875 transmitter then YYYY = "875". Most modern Foxboro preamplifiers are intercompatible amongst various models altough the specific wiring scheme will vary based upon the terminal assignments. Note that a solution ground (a.k.a. liquid earth) is required for the Foxboro 875, 876 and 870IT transmitters and is automatically included when these integral Foxboro preamplifier electronics option is invoked.

YYYY = "GLI5"
Most all Great Lakes Instruments (GLI) / HACH transmitters support integral preamplifier in sensor configuration option. Modern GLI/HACH transmitters include the 1056, 1057, 56, 1066 and 5081 while the legacy transmitters include the 1181, 1055, 2081, 3081, 81, 54 and XMT models. Simply specify YYYY = "GLI5" and the 5-wire differential type preamplifier and sensor assembly will be compatible with all GLI or HACH transmitter models. The GLI5 type differential preamplifiers are intercompatible amongst various Great Lakes and HACH pH/ORP transmitter models altough the specific wiring scheme will vary based upon the terminal assignments. Note that a solution ground (a.k.a. liquid earth) is required for the Foxboro 875, 876 and 870IT transmitters and is automatically included when these integral GLI5 preamplifier electronics option is invoked.

Note: All preamplifier types are supported for all ¾"-1" MNPT Immersion and 1" MNPT Twist Lock sensor series. Some preamplifiers may not be available for the smaller ¾"- ¾" MNPT and Sanitary/HOT-TAP sensor series.

3. Smart Digital Sensors Boards **YYYY = "HiQ" for 3TX-HiQ-pH intelligent digital pH/ORP Transmitters**

Any existing Iotron™ pH & ORP sensors can be purchased for use with the 3TX-HiQ-pH transmitter. This requires invoking the -HiQ option at the end of the sensor part number and then adding a waterproofing option thereafter if desired. Invoking the -HiQ option will add the following three components to the sensor model:

1) Integral standard Pt temperature compensation element (ACCU-TEMP upgrade available with applicable surcharge)
2) Smart digital sensor board for use with 3TX-HiQ-pH intelligent transmitter
3) 6 meters (20 feet) of integral cable with NEMA 6P / IP67 waterproof & corrosion resistant male snap connector

→ All HiQ style sensors come standard with male snap connector. Standard integral cable length is 6 meters (20 feet).
→ Shorter 3 meters (10 feet) or 1.5 meters (5 feet) integral sensor cable lengths also terminating with male snap connector available for same price as standard 6 meter (20 foot) length. Specify shorter lengths by –HiQ-1.5m or –HiQ-3.0m coding. If standard –HiQ option is invoked the sensor is supplied with standard 6 meters (20 feet) of cable & male snap connector.

→ 12 meters (40 feet) of integral sensor cable with male snap connector available as a *special order option (-HiQ-12m)*.

Female Snap to Male Snap Digital Cable Extension Options

3 meters (10 feet)	HiQ4F-3m-HiQ4M
6 meters (20 feet)	HiQ4F-6m-HiQ4M
12 meters (40 feet)	HiQ4F-12m-HiQ4M
24 meters (80 feet)	**HiQ4F-24m-HiQ4M**

Female Snap to Tinned Leads Digital Cable Extension Options

1.5 meters (5 feet)	HiQ4F-1.5m-TL
3 meters (10 feet)	HiQ4F-3m-TL
6 meters (20 feet)	HiQ4F-6m-TL
12 meters (40 feet)	**HiQ4F-12m-TL**

*The snap to snap & snap to tinned leads cable extensions can be used together in any desired combination without signal degradation provided the **maximum supported 610 meters (2,000 feet) of total cable length is not exceeded**. Inquire to the ASTI factory for any special requirements not fulfilled by the standard options. The most cost effective route is typically to use the standard options whenever possible.*

Items denoted in GREEN are special orders. This means that there may be limited availability and/or extended lead times for purchase of these items or to invoke these options. Contact ASTI factory or distributor for further details

4. No Electronics

If no electronics are desired then YYYY = "0000"

Typically no electronics style sensors are only employed when the measurement is both performed at or very near 25 degrees Celsius and only a rather short cable length is required. One additional case for the no integral electronics style of sensor is when a separate external temperature compensation element is permanently installed into the process solution and (potentially) an external preamplifier is employed to support longer cable runs or use in noisy electrical areas. Contact the ASTI factory for further assistance for no electronics style sensor configurations and installation schemes.

4. Cable Length & Terminations "ZZZ-EOC"

Simply designate the desired cable length in units of feet **"ZZZ"**. For analog sensors 10 feet (3 meters) of cable are provided in the base configuration with any additional cable is charged per the prices indicated on the current ASTI Sensor Price List. For smart digital sensors 20 feet (6 meters) of cable are provided in the case configuration with an extended 40 feet (12 meters) or cable available as a special order option.

Limitations on cable length:

For Sensors without Preamplifier:	MAX LENGTH = 15 - 50 feet (dependent upon sensor & meter)
For Sensors WITH preamplifier:	MAX LENGTH = 150 - 500 feet (depending upon transmitter)
For Smart Digital Sensors:	MAX LENGTH = 2,000 feet (610 meters) for 3TX-HiQ-pH meters

Selected Suffix Callouts for End of Cable "EOC" Terminations:

Terminations for Analog pH & ORP sensors WITHOUT preamplifier or smart digital sensor board

- Male BNC Connector ("MBNC") or Tinned Lead Wires ("TL") → Black Cable

Terminations for Analog pH & ORP sensors WITH integral analog preamplifiers

- Tinned Lead Wires ("TL") or NEMA 6P & IP67 rated quick disconnect snap connector ("Q7M") * → Gray Cable
- Braid Reinforced with Tinned Lead Wires ("BL") → **Blue Cable**

Terminations for pH & ORP sensors WITH smart digital sensor board *(see previous page for more details)*

- NEMA 6P & IP67 rated quick disconnect snap connector ("HiQ4M") is standard → **Green Cable**

* For Sensors with Q7M male snap connector a mating female snap to tinned leads Q7F-Xm-TL extension cable (where X is the cable length in meters) must be installed at time of commissioning. This cable will stay permanently connector to the transmitter terminal board when the sensor is installed or removed from service via the NEMA 6P & IP67 rated Q7M/Q7F quick disconnect snap connector system. The maximum total cable length for the installation will vary from between 150 feet (~50 meters) up to 500 feet (~150 meters) depending upon the mating transmitter that is interfaced. Contact ASTI factory for assistance and validation of your planned installation scheme.

Integral Cable Lengths for Sensors Terminated with Q7M Quick Disconnect Snap Connectors

→ Sensors that are terminated with Q7M male snap connector come standard with 3 meters (10 feet) of integral cable

→ Shorter 1.5 meters (5 feet) of integral sensor cable length also terminating with Q7M male snap connector are available for same price as the standard 3 meters (10 feet) length. Specify shorter lengths by –Q7M-1.5m coding. If –Q7M option is invoked without any cable length indicated the sensor is supplied with standard 3 meters (10 feet) of cable & Q7M male snap connector complete.

→ Longer 6 meters (20 feet) integral sensor cable lengths also terminating with Q7M male snap connector are available as a standard order option with applicable surcharge.

→ Maximum 12 meters (40 feet) of integral sensor cable with Q7M male snap connector is available as a *SPECIAL ORDER OPTION (-Q7M-12m) with applicable surcharge. Q7F-24m-TL is a SPECIAL ORDER extension cable.*

Female Snap to Tinned Leads Cable Extension Options for Analog Sensors with Q7M snap connector terminations

1.5 meters (5 feet)	Q7F-1.5m-TL
3 meters (10 feet)	Q7F-3m-TL
6 meters (20 feet)	Q7F-6m-TL
12 meters (40 feet)	Q7F-12m-TL
24 meters (80 feet)	**Q7F-24m-TL**

Inquire to factory for analog sensor quick disconnect snap style installations that require extension cables longer than 80 feet.

5. Waterproofing Seal (If Present) "WPSEAL" → Comparison Chart & Option Guide

The matrix of submersible option is based upon three factors:

- Material of Construction
- Family of Waterproofing Option
- Type & length of sealing hose




Description of Waterproofing	Material of Construction	Family "A" Standard	Family "B" Submersible	Family "C" Special	Family "IT" Submersible
Most Submersible Applications	**PP**	**WPA**	**WPB**	**WPC**	**WPIT**
Halogen and Oxidizer Resistant	**CPVC**	**WPG**	**WPH**	*Not Available*	**WPITC**

GENERAL NOTES ABOUT WATERPROOFING OPTIONS:

1. All options are available for sensors with ¾" MNPT, 1.0" MNPT or 1.25" MNPT rear threads.
2. Max temperature for continuous usage of the polypropylene (PP) waterproofing options is 105 °C (220 °F).
3. Max temperature for continuous usage of the CPVC waterproofing options is 90 °C (195 °F).
4. The waterproofings with polypropylene (PP) material of construction are the best choice for most applications. There are some selected process solutions that contain chemicals for which CPVC is a better choice than PP such as in some strong oxidizers such as chlorine and chlorine dioxide as well as diluted nitric acid. In general, however, the PP material of construction is a better choice for chemical resistance, particularly if organic solvents may be present.
5. All waterproofing types are suitable for use in outdoor installations where rain and moisture may be present on a continuous basis. All waterproofing options are also suitable for facilities that perform washdowns such that the back of the sensor may become thoroughly wetted.
6. WPA & WPC require an immersion tube to the NPT threads of the waterproofing feature for fully submersible use.
7. The WPB, WPH, WPIT series waterproofings can be installed with either 3/8"X5/8" braid reinforced vinyl tubing or NORPRENE® polypropylene tubing for fully submersible installations without the use of an immersion tube.
8. The NORPRENE® polypropylene tubing is primarily intended to be employed for locations where the entire cable assembly will be exposed to the 105 degrees Celsius (including the hose) or else for process media that is incompatible with vinyl tubing. The NORPRENE® polypropylene hose installation assembly includes a special NYLON clamp to act as a secondary securing feature although the factory installation of the NORPRENE® polypropylene hose results in a very reliable seal even without use the optional NYLON clamp.
9. Total tubing desired for WPB, WPH & WPIT is indicated with /XX suffix for vinyl tubing and /XXPP suffix for the NORPRENE® polypropylene tubing where XX is the length of hose in feet. Typical maximum supported hose length possible is 35 feet (10.7 meters). Inquire to factory if a hose length longer than 35 feet is required for your installation.
10. The length of installed tubing is recommended not to exceed 65% of the total cable length for best results.

Complete pH, ORP & Ion Selective Sensor Part Numbers "PREFIX XXXX-YYYY-ZZZ-EOC-WPSEAL"

PNGRPtDX 8052-1000-20-TL-WPB/10
1" MNPT RYTON Bodied Submersible Twist Lock with 4 each Tines All-In-One Dual pH/ORP Sensor; Pt1000 TC Element with 20 feet cable with tinned lead wire terminations; Waterproofing "B" Sealing option (WPB) with 10 feet of vinyl hose tubing installed

PN 6053-0000-15-MBNC
¾"-¾" MNPT RYTON Bodied Inline/Immersion pH Sensor with 4 each protective tines and no electronics; Complete with 15 feet cable and male BNC connector

PNA 6241/6441-1181-20-TL
¾"-1" MNPT PEEK Bodied Inline/Immersion Ultra-High Temperature Acid/Fluoride & Dissolved Ammonia Gas Resistant pH Sensor; with 3K Balco TC & Rosemount-Uniloc 1181 preamplifier; 20 feet cable of tinned lead wire terminations

PNHF 6431-HiQ-WPH/05
Smart Digital ¾"-1" MNPT RADEL Bodied Submersible High HF Resistant pH Sensor; 20 feet cable with HiQ4M male snap connector; Waterproofing "H" Submersion Sealing (WPH) with 5 feet of vinyl hose tubing installed

PNHF 6431-CONV-10-Q7M
¾"-1" MNPT Inline/Immersion RADEL Bodied High HF Resistant pH Sensor; Pt1000 TC & Conventional Analog Preamplifier (suitable for most Rosemount pH Transmitters); 10 feet cable with Q7M Male Snap Connector Termination

AB 6100-3TX-40-Q7M-WPH/20
1"-1.25" MNPT Submersible Fluoride Ion Selective Sensor for use in low pH service conditions & applications requiring acid cleaning; Pt1000 TC & Conventional Analog Preamp; 40 feet cable with Q7M Male Snap Connector; WPH Submersion Seal with 20 feet hosing

PNTJ 6831/6631-HiQ-WPIT/10PP
Smart Digital ¾"-1" MNPT RADEL Bodied Inline/Immersion Hydrogen Sulfide Resistant ORP Sensor with Triple Junction Reference System; 20 feet cable with HiQ4M male quick disconnect snap connector; Polypro WPIT sealing with 10 feet of NOREPRENE tubing

PNXGRE 5631/5331-HiQ-40-WPB/20
Smart Digital RADEL Bodied Extreme Dehydration, Sulfide & Slurry/Viscous Resistant Sanitary/HOT-TAP Style pH sensor with RADEL Sensor Body; Complete with 40 feet of cable with 20 feet vinyl tubing installed

PNCTJX 6131/6631-870IT-35-BL-WPC
¾"-1" MNPT Submersible Hi-Temperature Sulfide Resistant pH Sensor wtih Triple Junction Reference System; ACU-TEMP Pt1000 TC, 316SS Solution Ground & Foxboro 870IT/875/876 compatible preamplifier; 35 feet braid reinforced blue cable with WPC sealing option

PNLTSK 8041-1000-10-TL
1" MNPT PEEK Bodied Twist Lock Quick Disconnect Organic Solvent Resistant pH Sensor; Pt1000 TC & 10 feet cable with tinned lead wire terminations; Kalrez 4079 "O"-Rings (2 each)

PN 6341/6141-GLI5-50-TL-WPIT/25
¾"-1" MNPT PEEK Inline/Immersion Slurry/Viscous & Hi-Temp Resistant pH Sensor; 301 Ohm TC Assembly, 316SS Solution Ground & GLI 5-wire Differential Preamplifier; 50 feet of cable with tinned lead wires; WPIT Sealing Option w/ 25 feet of vinyl tubing installed

AB 6410-1000-25-WPA-ULTRALOW
¾"-1" MNPT Submersible Ammonium Ion Selective Sensor for Ultralow Use; Pt1000 TC & 25 feet cable; Waterproofing "A" Sealing

PNACXGRTJ 5841/5141/5641-1000-20-TL-WPIT/05PP
PEEK Hi-Temp Sulfide Resistant HOT-TAP ORP Sensor; Triple Junction; 4 each Tines; ACCU-TEMP Pt1000; 5 feet NEORPENE hose

PNACXGRTSTJ 5431-1000-20-TL
Acid, Gas & Solvent Resistant Sanitary pH Sensor; Triple Junction, Tines & TS Seal; ACCU-TEMP Pt1000; 20 feet cable; Tinned Leads

PNGRTJX 8631-1000-15-TL-WPB
1" RADEL Twist Lock with Tines Sulfide Resistant pH Sensor with Triple Junction; ACCU-TEMP PT1000 TC; 15 feet cable; WPB Seal

PNEX 5331-1056-35-Q7M-WPIT/15
Slurry & Extreme Dehydration Resistant Sanitary pH Sensor; Pt1000 & 1056 Preamp; 35 feet cable & Q7M Snap; WPIT w/ 15 feet hose

APPENDIX A "PREFIX"
Explanation of Alpha Prefix (PREFIX) add-ons and examples with full description

Custom Applications	Add-On Alpha Prefix
Dissolved Ammonia or Chlorine Gas Resistant	"A" or "C"
Organic Media Applications*	"L"
Teflon Silicone Required*	"TS"
Triple Junction*	"TJ"
High-Level HF Resistant*	"HF"

Custom Configurations	Add-On Alpha Prefix
Accu-Temp Option for Fast Temperature Response*	"X"
Low Impedance Option*	"Z"
316SS Solution Ground (Indicated for Sensor Without Preamplifiers Only)*	"Y"
Platinum Solution Ground (Indicated for Sensor Without Preamplifiers Only)*	"Pt"
Platinum Solution Ground with 2 each reference half-cells for simultaneous use on two completely separate input channels or transmitters Addition*	"PtD"
3-wire TC*	"M"
Removal of Sensor Guard (For Immersion Series Only)	"NG"
Addition of 4 each Protective Tines Sensor Guard Configurations* (for Twist Lock & Sanitary/HOT-TAP Series)	"GR"
Addition of 2 each Protective Tines Sensor Guard Configurations* (for Twist Lock & Sanitary/HOT-TAP Series)	"GRO"
Shielded and Braid Reinforced **Blue Cable***	**"BL"**
Upgrade from standard Viton® -75 to CV75, Simriz® 485 or Kalrez® 4079* (for Twist Lock & Sanitary/HOT-TAP Series)	"W", "U" or "K" respectively

**Additional charge applies for these options, consult current ASTI price list for details or contact ASTI Factory.*

Notes:

1) *Not all options are available for all sensor series. Contact ASTI Factory for details.*
2) *Waterproofing Options are indicated as a separate line item option for each different sensor model. Waterproofing options for submersible sensors are not integrated into the sensor part number.*

Examples of Alpha Prefixes with add-ons:

PREFIX = "PNACGRO"
pH/ORP sensor with Double Sealing for Aggressive Dissolved Gases ("AC") and 2 each Protective Tines for Twist Lock or Sanitary/HOT-TAP ("GRO")

PREFIX = "PNLTSK"
pH/ORP sensor for organic ("L") and solvent containing applications ("TS") with special optional Kalrez 4079 "O"-rings

PREFIX = "PNACXGRTSTJ"
pH/ORP sensor with Double Sealing for Aggressive Dissolved Gases ("AC"), ACCU-TEMP Fast Response TC Element ("X"), 4 each Protective Tines for Twist Lock or Sanitary/HOT-TAP ("GR") with solvent resistant sealing ("TS") and triple junction reference system ("TJ")

PREFIX = "PNXHFGR"
pH/ORP sensor for with ACCU-TEMP temperature element option ("X") for fast temperature response for high fluoride configuration of X4XX sensor series (-HF) with 4 each Protective Tines for Twist Lock or Sanitary/HOT-TAP

PREFIX = "PNXGRE"
pH/ORP Sensor with with ACCU-TEMP temperature element option ("X") and 4 each Protective Tines for Twist Lock or Sanitary/HOT-TAP ("GR") with extreme dehydration resistant reference system option ("E")

APPENDIX C "XXXX"
Designating the ion selective sensor

- There is a list of ion selective part numbers and the corresponding ion measured in the ASTI website.
- All ion selective membranes fall into two categories: solid-state polycrystalline or organic PVC type.
- The interferences for each membrane are available from the factory if not specified on existing documentation.

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