



The **CW1 inline pH sensor** is stronger than standard pH sensors, delivering an outstanding broad range performance. Specifically designed for clean water applications.

CW1 Inline pH sensor for clean water

Code: TT-CW1-pH

Features

- CVPC with ¾" MNPT Front & Back-end
- -5°C to 70°C
- HDPE reference
- 3m cable
- Acid/Fluoride resistant
- Inline
- Double junction
- Proprietary tough glass
 - ◆ Virtually unbreakable





CW1 Inline pH sensor for clean water

Code: TT-CW1-pH

Our Turtle Tough CW1 Inline pH Sensor utilises our most affordable and budget conscious CPVC body material. A key feature of this sensor is a compact style solid-state, non-porous, cross-linked polymer embedded in a HDPE support matrix. This enables the sensor to hold excess KCl assuring saturation at all temperatures for stability and long sensor service life in applications where little or no maintenance will be performed.

The proprietary tough glass is many times stronger than common pH sensors and delivers an outstanding broad range performance. The CPVC immersion style body has a $\frac{3}{4}$ " MNPT threaded connection on the front and back end.

Recommended applications include:

- Industrial
- Chemical
- Food & Beverage
- Semiconductor
- Pharmaceutical
- Wastewater

Any measurement where aggressive chemical cleaning is needed to remove fouling or low-maintenance operation is required with minimal cleaning and re-calibration.





General Specifications

| | |
|--------------------------|---|
| Description | CW1 Inline pH Sensor |
| Part Number | TT-CW1-pH-A |
| pH Range | 0 to 14 pH |
| Temperature range | -5°C to 70°C |
| Pressure | 6.9 to 690 kPa absolute (1 to 100 psig) |
| Body type | CPVC (Chlorinated-Polyvinyl-Chloride) with 3/4" MNPT Front & Back-end |
| Junction material | HDPE (High-Density Polyethylene) |
| Dimensions | Length: 180.3mm Maximum Diameter: 26.7mm |
| Cable length | 3m |
| Temperature compensation | N/A |
| Preamplifier | N/A |
| Waterproofing | Inline |
| Connection Analogue | Tinned leads (optional BNC) |
| Connection Digital | N/A |
| Special features | Acid/Fluoride Resistant |

pH Sensor Specifications

| | |
|----------------------|--|
| Measuring glass type | Proprietary Tough Glass |
| Glass dimensions | 8.0mm (0.315") Diameter |
| Initial impedance | <800 M Ohms @ 25°C |
| Sodium ion error | < 0.15 pH in saturated Na ⁺ solutions at pH 14.00 |
| Aidic errors | < 0.05 pH in HCl solutions at 0.00 pH |

Reference System Specifications

| | |
|---------------------|--|
| Type | Double Junction |
| Reference half cell | Ag/AgCl, Saturated KCl |
| Primary junction | Primary Junction Porous Ceramic, Saturated KCl in Cross-linked polymer, interfaced to Secondary Junction |
| Secondary junction | Solid-State Non-Porous Cross-Linked Polymer embedded in HDPE Support Matrix holds excess KCl assuring saturation at all temps for stability & long sensor service life |

Application Specifications

| | |
|--------------------------|---|
| Recommended applications | Industrial, chemical, food & beverage, semiconductor, pharmaceutical & wastewater. Any measurement where aggressive chemical cleaning is needed to remove fouling or low maintenance operation is required with minimal cleaning and re-calibration |
| Analyser / Interface | All Turtle Tough pH Analysers |
| Storage | Item should be kept at room temperature with closed protector cap, filled with storage solution in an upright position. Shelf life warranted for 12 months from the date of purchase |
| Warranty | 12 Month Conditional Warranty Please see www.turtletoough.com.au/support/warranty-returns |

1

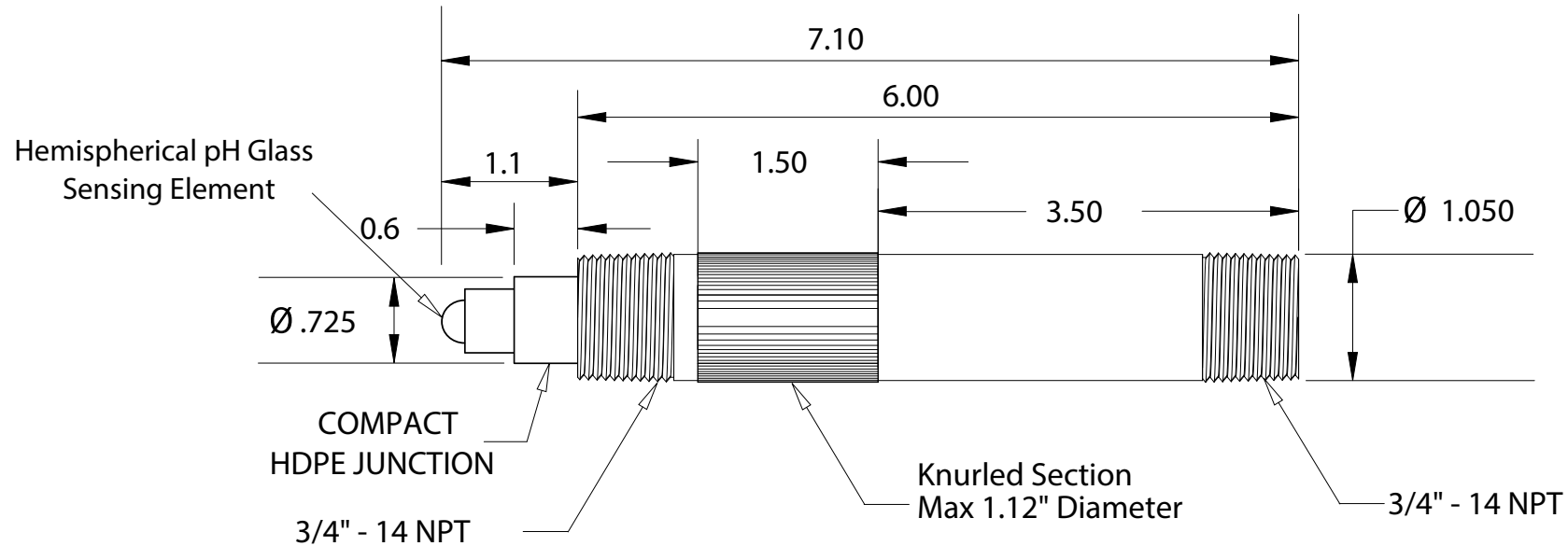
2

3

REVISION HISTORY

| REV | DESCRIPTION | DATE | APPROVED |
|-----|-------------|------|----------|
| | | | |

A



A

NOTES

1. All dimensions are in inches, unless otherwise indicated with tolerances as detailed below!
2. Sensor body material of construction is CPVC standard or RYTON when Alpha Prefix "PPS" is invoked!
3. Drawing shown in the standard without protective tines configuration used for inline installations.!
4. Protective tines option is not available for 2X12 series pH/ORP sensors. These sensors are intended! for inline type installations only. The recommended line size is a standard 3/4" FNPT pipe tee.!
5. The rear 3/4" MNPT threads are only intended for ! sealing the back of cable with 3/4" conduit.!
6. Use alternate sensor models available with protective! tines option for immersion or submersion use.!
7. Do not use any sensor beyond the factory defined! maximum temperature or pressure rating.

B

B

| TOLERANCES | |
|------------------|-------------------|
| 1 Place: ± .1 | 3 Places: ± .005 |
| 2 Places: ± .01 | 4 Places: ± .0005 |
| Angular: ± 0.25° | |

DRAWN BY
RHCHECKED BY
TADPAPPROVED BY
MJP**TURTLE
TOUGH**Turtle Tough Sensors
turtletoughsensors.com

| TITLE | | | |
|---|--------------|----------------|-----------|
| 3/4" MNPT Inline Installation Styles Only | | | |
| SIZE | PROJECT | DRAWING NO. | REV |
| B | INLINE | 6-9 pH SENSORS | / |
| SCALE | Not to Scale | MODEL | 2X12 ONLY |
| SHEET 1 | | OF 1 | |

1

2

3



Connection Diagram of Turtle Tough Sensors with no Preamplifier

| Cable Colour Coding | Instrument Terminal Name |
|---------------------|--------------------------|
| Black | TC |
| Black | TC |
| Red | Reference Electrode |
| Clear | Measuring Electrode |