

MT5100

Guided Wave Radar Level Transmitters

State-of-the-art loop powered,
4-20 mA output guided wave
radar transmitter for level and
interface applications
K-TEK Products



Features

- Total and Interface Level Measurement from a single process penetration (see options)
- Graphic Display with Waveform Screen
- All Digital Electronics
- Weak Signal Alarm
- Widest Selection of Wetted Materials
- Radar Signal Travels Along the Waveguide – Eliminates False Echoes and Minimizes Signal Loss
- No Moving Parts
- 2 Wire Loop Powered
- Lengths From 1 to 65 ft. / 0.3 to 19.8 meters
- Rigid, Flexible Cable, and Coaxial Probes

Options

- Glass Viewing Window
- 316L Stainless Steel Enclosure
- MODBUS
- Foundation Fieldbus
- RI100 Repeat Indicator - required for 4-20 mA total level measurement in addition to interface level
- Analog Output

Accessories

- K-COM™ Communications Software
- External Chamber
- Stilling Well
- Loop Indicator

SPECIFICATIONS

| | | | |
|-----------------------|---|-----------------------|---|
| Housing | Dual Compartment Powder Coated Aluminum or Stainless Steel | | |
| Electrical Connection | 1/2" FNPT or M20 | | |
| Power | 13.5 – 36 VDC, Standard; 9 - 32 VDC Foundation Fieldbus; 10 - 18 VDC MODBUS | | |
| Wiring | Standard and Foundation Fieldbus - 2 wire MODBUS - 4 wire plus shield (2 power, 2 data - half duplex) | | |
| Output | Single 4-20 mA, HART, Foundation Fieldbus (ITK 5.01), MODBUS (RTU or ASCII) (*Secondary Output Available Via HART or RI100 Repeat Indicator) | | |
| Graphic Display | Field Selectable Units in Feet, Inches, Millimeters, Centimeters, Meters or Percentage and Waveform Screens | | |
| Accuracy | +/- 0.2 in / 5 mm Level; +/- 1.0 in / 25 mm Interface Level | | |
| Resolution | +/- 0.063 in / 1.6 mm | Process Pressure | Up to 5000 psi (344 bar) |
| Range | 1 to 65 ft. / 0.3 to 19.8 meters | Process Temperature | Up to 800°F (427°C) |
| Process Connection | 3/4" NPT Standard | Dielectric Constant | Upper Fluid 1.6 - 5, Lower Fluid 15 - 100+ |
| Sensor Material | 316 SS Standard, Other Materials Optional | Process Max Viscosity | 1500 cp |



Approvals



Factory Mutual Research Corporation

XP-IS / I / 1 / ABCD / T6 Ta = 77°C
 DIP / II, III / 1 / EFG / T6 Ta = 77°C
 IS / I / 1 / ABCD / T4 Ta = 77°C - ELE1034
 NI / I / 2 / ABCD / T4 Ta = 77°C
 S / II, III / 2 / FG / T4 Ta = 77°C
 ANI / I / 2 / ABCD / T4 - ELE1034
 Type 4X



IEC International Electromechanical Commission

IECEx ITS 08.0036X

II 1/2 G/D
 Ex ia IIB T4 (-40°C ≤ Tamb ≤ 66°C)
 Ex iaD 20/21 IP6X T80°C (-40°C ≤ 66°C)

IECEx ITS 08.0037X

Ex ia d IIC T4
 Ex iaD tD 20/A21 IP6X T80°C



Canadian Standards Association

XP CL 1, DIV 1, GP ABCD; CL 2, DIV 1, GP EFG; CL 3 - T6
 CL 1, DIV 2, GP ABCD; CL 2, DIV 2, GP EFG - T5
 IS CL 1, DIV 1, GP CD; CL 2, DIV 1, GP EFG - T4
 - when installed per ELE1034
 Type 4X



GOST Russia

1Exd[ia]IIC T6, 0ExialIB T6, IP67



ATEX

ITS 08ATEX25865X

II 1/2 G/D Ex ia IIB T4 (-40°C ≤ Tamb ≤ 66°C)
 Ex iaD 20/21 IP6X T80°C (-40°C Tamb ≤ 66°C)

ITS08 ATEX15870X

II 1/2 G/D Ex ia d IIC T6
 Ex tD 20/A21 IP6X T80°C



UKRSEPRO

1ExdialICT6; 0ExialIBT4



ORDERING INFORMATION

MT5100 a/b/c/d/e/f/g/h/i/j/k/l

/a Probe Material

| | |
|-------------|---|
| S6 | 316L Stainless Steel Standard |
| S4 | 304L Stainless Steel (Rigid Probe Only) |
| HC | Hastalloy C-276 (Rigid Probes Only) |
| HB | Hastalloy B3 (Rigid Probes Only) |
| MO | Monel |
| TI | Titanium (Rigid Probes Only) |
| IN25 | Inconel 625 |

/b Transmitter Configuration

| | |
|-----------|--|
| L | Local Transmitter Standard |
| LW | Local Transmitter with Window Cover Standard |

/c Transmitter Housing

| | |
|----------|---|
| A | Dual Compartment Aluminum Housing Standard |
| S | Dual Compartment 316L Stainless Steel Housing |

/d Process Connection / Waveguide Coupler

| | |
|-----------------|---|
| Cxxon xx | Process Connection & Waveguide Coupler (Table 1) |
| o | Seal Code (no code required for C8) (Table 2) |
| n | NPT for C10 |

/e Probe Type

Pxx Probe Code (Table 3)

/f Probe Attachment

| | |
|-----------------|--|
| CDyyz-ww | Clamp On Centering Disk (Solid Rod Probes) Note: Rigid probes installed in stilling wells or external chambers require centering disk |
| CWyyz-ww | Clamp On Centering Weight (Cable Probes) Note: Cable probes require a centering weight or end fitting to stabilize bottom of cable |

/g Process Temperature

| | |
|-----------|---|
| H0 | 32 to 250°F / 0 to 121°C Maximum |
| H6 | C1 thru C5 and C10 couplers: Above 250°F / 121°C or below 32°F / 0°C Electronics enclosure is extended 6" above process connection C8 couplers: Above 500°F / 260°C Extends electronics enclosure an additional 6" above process connection (Refer to Table 1 for maximum and minimum process temperatures) |

/h Electronic Module

M7B Two Level, Graphic Display, 4-20 mA Output, HART
Add suffix "M" for MODBUS (not Intrinsically Safe)
Add suffix "F" for Foundation Fieldbus

/i Secondary Analog Output

| | |
|-----------|---|
| X | None |
| RI | RI100 Repeat Indicator (HART communications only, not Intrinsically safe) |

/j Approvals

| | |
|------------|--|
| X | None |
| FM | Factory Mutual Research Corporation and Canadian Standards Association |
| GR | GOST Russian (M7AM option and RI100 not Intrinsically Safe) |
| CEX | ATEX Flameproof |
| CEI | ATEX I.S. |
| IEI | International Electromechanical Commission I.S. |
| IEX | International Electromechanical Commission Flameproof |
| UKR | Ukraine SEPRO |

/k Process Connection

| | |
|-----------|---|
| P | Standard as shown on Probe Process Connection Table (Table 1) |
| FL | Loose flange or plug for use with probe NPT threads; Specify type, material and rating from Flange Designation Chart (SLG-0001-1) |
| WP | Welded process connection Specify type, material and rating from Flange Designation Chart (SLG-0001-1) <i>The Flange Designation Guide is available under Data Sheets on the MT5100 Product Page on www.ktecorp.com</i> Welded flanges size 900# and above may require the use of an H6 extension. |

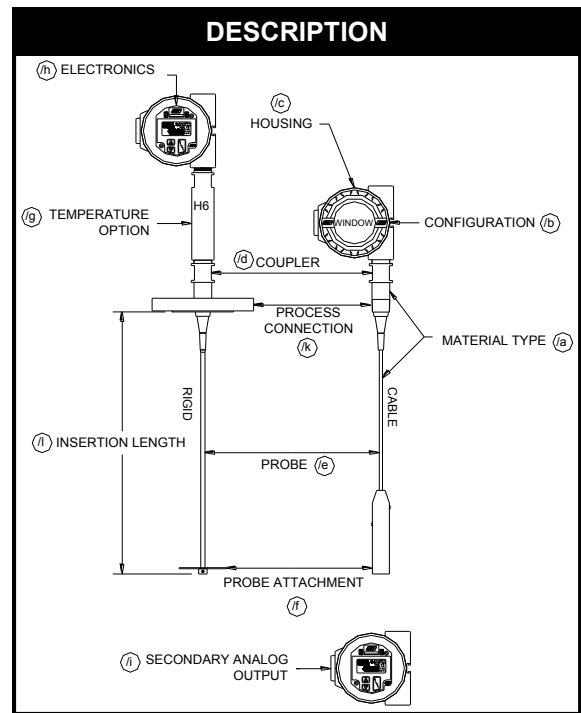
/l Length

| | |
|----------|--|
| L | Insertion length from face of coupler in inches or millimeters. - 12in / 305mm minimum - maximum based on probe type |
|----------|--|

Available Accessories:

M20 ISO Fitting: M20 Female Electrical Connection (Brass or Stainless Steel)

| | |
|-----|-----------------|
| MM | Brass |
| MMS | Stainless Steel |



0575
0871

MT5100 INTERFACE GUIDELINES

In order to properly detect the level of interface between two liquids using the MT5100, the following rules must be adhered to:

1. One of the following probe and mounting configurations must be used:
 - a. Single rigid rod or flexible cable mounted in a stilling well, external chamber, or existing displacer.*
 - b. Dual rigid rod, dual flexible cable or Tri-Tape
 - c. Coaxial probe mounted into tank, external chamber, or displacer

* *This is the preferred mounting configuration to reduce the chance of fouling.*
2. Emulsion layers will affect the detection of an interface level. An emulsion layer may negate an interface level indication completely. The MT5100 will read an interface level in the presence of a 2 inch emulsion.
3. The minimum upper fluid thickness must be 4 inches when emulsion is present, and 0 inches with a clean interface.
4. The upper fluid dielectric constant must be greater than 1.6 and less than 5.
5. The interface level indication is a calculated value based partially upon the dielectric of the upper fluid. The upper fluid dielectric must remain constant for consistency / accuracy in the interface level indication.
6. The lower fluid dielectric constant must not be less than 15.
7. If the application is a flooded condition (sensor completely submerged in process), it must remain completely flooded.
8. In a non-flooded condition, the upper fluid must not be allowed to enter the upper unmeasurable zone. The upper unmeasurable zone is typically located within the mounting nozzle of the vessel.

If the required interface application does not fall within the above mentioned parameters, please consult the factory for an alternate technology, such as a Magnetostrictive, Magnetic Level Gauge or RF Capacitance.

Table 1 - PROCESS CONNECTION / WAVEGUIDE COUPLER

| Base Code ³ | Insulator | Process Connection | Seal Options Table 2 | Maximum Pressure | Min Temp ⁵ | Max Temp ⁵ | Compatible Probes |
|--|--------------------------|--------------------|----------------------|---|-----------------------|-----------------------|--|
| SINGLE PROBE / COAXIAL PROBE | | | | | | | |
| C1o ^{1,2} | Teflon | 3/4" NPT | V, K, E, A | 1500 psi @ 100°F / 103 bar @ 38°C 600 psi @ 400°F / 41 bar @ 204°C | -60°F -50°C | 400°F 204°C | P01 ⁴ , P03 ⁴ , P11 ⁴ , P51, P91 |
| C2o ^{1,2} | | 1.5" NPT | | | | | P02 ⁴ , P12 ⁴ |
| C8 | Borosilicate Glass | 1.5" NPT | Hermetic | 5000 psi @ 100°F / 344 bar @ 38°C 1500 psi @ 800°F / 103 bar @ 427°C | -60°F -50°C | 800°F 427°C | P11 ⁷ , P71 (316SS only) |
| DUAL PROBE | | | | | | | |
| C4o ^{1,2} | Teflon | 1.5" NPT | V, K, E, A | 1500 psi @ 100°F / 103 bar @ 38°C 600 psi @ 400°F / 41 bar @ 204°C | -60°F -50°C | 400°F 204°C | P31 |
| C5o ^{1,2} | | 2" NPT | | | | | P22, P32 |
| TRI-TAPE PROBE | | | | | | | |
| C10on ^{1,2,6} | Teflon | 2" or 3" NPT | V, K, E, A | 1500 psi @ 100°F / 103 bar @ 38°C 600 psi @ 400°F / 41 bar @ 204°C | -60°F -50°C | 400°F 204°C | P34 (316SS only) |
| CUSTOM | | | | | | | |
| CXo | Custom (Consult Factory) | | | | | | |
| <p>Notes:</p> <ol style="list-style-type: none"> 1. Add the suffix "H" to the Base Code (example: C1HV) to increase the maximum pressure to: 3000 psi @ 100 F / 207 bar @ 38 C 1200 psi @ 400 F / 83 bar @ 204 C 2. Add the suffix "S" to the Base Code to include a hermetic seal (example: C4SV) 3. o - Enter seal code from Table 2 (example: C2V. Not required for C8) 4. Requires installation in a stilling well or external chamber 5. Consult Table 2 for o-ring temperature specifications. 6. Thread size "n" as follows: 2" NPT = 2, 3" NPT = 3 (example: C10V3) 7. Requires installation in a stilling well or external chamber - minimum L1=12" | | | | | | | |

Table 2 - O-RING SEALS

| Suffix | Description | Min. Temp | Max. Temp | Compatible With | Not Compatible With |
|--------|-------------|----------------|----------------|---|---|
| V | Viton | -15°F -26°C | 400°F 204°C | General Purpose, Ethylene | Ketones (MEK, Acetone), Skydrol Fluids, Amines, Anhydrous Ammonia, Low Molecular Weight Esters and Ethers, Hot Hydrofluoric or Chlorosulfuric Acids, Sour HCs |
| K | Kalrez | -40°F -40°C | 400°F 204°C | Inorganic and Organic Acids to Include HH and Nitric, Aldehydes, Ethylene, Glycols, Organic Oils, Silicone Oils, Vinegar, Sour HCs, Amines, Ethylene Oxide, Propylene Oxide | Black Liquor, Hot Water, Hot Aliphatic Amines, Molten Sodium, Molten Potassium |
| E | EPDM | -60°F -50°C | 250°F 125°C | Acetone, MEK, Skydrol Fluids, Anhydrous Ammonia | Petroleum Oils, Di-Ester Base Lubricants, Propane |
| A | Aegis | -14°F -10°C | 572°F 300°C | Most Chemicals | Brake Fluid |

Table 3 - PROBE TYPES

| Code | O.D. | Notes | Max Length | Attachment Options |
|-------------------------------------|-------------------------------|--------------------------|---------------------------|--------------------|
| RIGID ROD | | | | |
| P01 | 0.25in (6mm) | | 10ft (3.05m) ¹ | CD |
| P02 | 0.50in (13mm) | | 20ft (6.10m) ² | |
| P03 | 0.38in (9mm) | | 10ft (3.05m) ¹ | |
| FLEXIBLE CABLE | | | | |
| P11 | 0.19in (5mm) | | 30ft (9.1m) ³ | CD, CW |
| P12 | 0.25in (6mm) | | | |
| DUAL RIGID ROD | | | | |
| P22 | 0.50in (13mm) | | 30ft (9.1m) | CD |
| DUAL FLEXIBLE CABLE | | | | |
| P31 | 0.19in (5mm) | | 65ft (19.8m) | CD, CW |
| P32 | 0.25in (6mm) | | | |
| TRI-TAPE | | | | |
| P34 | 2.00in (51mm) | 316 Stainless Steel only | 50ft (15.24m) | CW (included) |
| COAXIAL (clean liquids only) | | | | |
| P51 | 0.88in (22mm) | 316 Stainless Steel only | 22ft (6.71m) | CD |
| P71 | 1.32in (34mm) | | | |
| P91 | 1.00in (25mm) | | | |
| CUSTOM | | | | |
| PXX | Custom Probe, Consult Factory | | | |

Notes:

- 5ft (1.52m) maximum probe length when installed in a stilling well or EC chamber (minimum 2" diameter)
- 10ft (3.05m) maximum probe length when installed in a stilling well or EC chamber (minimum 3" diameter)
- Lengths greater than 7ft (2.13m) require cable spacers at 5ft (1.52m) maximum intervals when installed in a 2" or smaller stilling well or EC chamber. Lengths greater than 10ft (3.05m) require cable spacers at 10ft (3.05m) maximum intervals when installed in 2.5" - 3" stilling well or EC chamber.

MT5100 Recommended Installation

| SINGLE PROBE IN STILLING WELL AND TRI-TAPE | | SINGLE PROBE IN EC CHAMBER | |
|--|---|---|---|
| UNMEASURABLE ZONES | | UNMEASURABLE ZONES | |
| L1 | 4 IN. | L1 | 4 IN. |
| L2 | 1 IN. (+ weight height for P11, P12) | L2 | 1 IN. (+ weight height for P11 and P12) |
| PROBE TYPES | | PROBE TYPES | |
| P01, P02, P03, P11, P12, P43 | | P01, P02, P03, P11, P12 | |
| <ul style="list-style-type: none"> • Preferred Configuration | | <ul style="list-style-type: none"> • Preferred Configuration • Flooded or Non-Flooded | |
| Note: Stilling Well Size 2" - 4" Pipe; Customer or K-TEK Supplied. | | Note: Chamber Size 2" - 4" Pipe; Customer or K-TEK Supplied. Reference EC Data Sheet (EC100-0202-1) to specify / order external chamber available online at www.ktekcorp.com on the Displacer Replacer and External Chamber page. | |
| | | | |
| COAX (CLEAN FLUIDS ONLY) | | DUAL PROBE | |
| UNMEASURABLE ZONES | | UNMEASURABLE ZONES | |
| L1 | 4 IN.* | L1 | 4 IN. |
| L2 | 1 IN. | L2 | 2 IN. (+ weight, height for P31 and P32) |
| PROBE TYPES | | PROBE TYPES | |
| P51, P71, P91 | | P22, P31, P32 | |
| <ul style="list-style-type: none"> * 0" Available Upon Request. | | | |
| | | | |

MT5100 Guided Wave Radar Probe Attachments

| Cable Weights | | | | | |
|---------------|----------|---------------------|--------------------|-----------------|-------------------|
| Part No. | Material | O.D. | Weight Height (WH) | Weight | Compatible Probes |
| CW09D-S6 | 316SS | 0.875 in. / 22.2 mm | 4.0 in. / 101.6 mm | 0.7 lbs / 301 g | P11 |
| CW09D-S4 | 304SS | | | 0.8 lbs / 324 g | |
| CW09D-MO | Monel | | | | |
| CW10D-S6 | 316SS | 1.0 in. / 25.4 mm | 6.0 in. / 152.4 mm | 1.3 lbs / 590 g | P11 |
| CW10D-S4 | 304SS | | | 1.4 lbs / 635 g | |
| CW10D-MO | Monel | | | | |
| CW10E-S6 | 316SS | | | 1.3 lbs / 590 g | P12 |
| CW10E-S4 | 304SS | | | 1.4 lbs / 635 g | |
| CW10E-MO | Monel | | | | |
| CW16F-S6 | 316SS | 1.625 in. / 41.3 mm | 2.0 in. / 50.8 mm | 1.1 lbs / 499 g | P11, P31 |
| CW16F-S4 | 304SS | | | 1.2 lbs / 544 g | |
| CW16F-MO | Monel | | | | |
| CW19G-S6 | 316SS | 1.875 in. / 47.6 mm | 2.0 in. / 50.8 mm | 1.5 lbs / 680 g | P12, P32 |
| CW19G-S4 | 304SS | | | 1.6 lbs / 726 g | |
| CW19G-MO | Monel | | | | |
| CW29F-S6 | 316SS | 2.875 in. / 73.3 mm | 1.0 in. / 25.4 mm | 1.8 lbs / 816 g | P11, P31 |
| CW29F-S4 | 304SS | | | 2.0 lbs / 907 g | |
| CW29F-MO | Monel | | | | |
| CW29G-S6 | 316SS | | | 1.8 lbs / 816 g | P12, P32 |
| CW29G-S4 | 304SS | | | 2.0 lbs / 907 g | |
| CW29G-MO | Monel | | | | |

For included weight on /P34 probes use code /CW-S6

| Centering Disks | | | | |
|-----------------|--------------------|-------------------|-------------------|----------------------------|
| Part No. | O.D. | Height | Compatible Probes | Minimum Stilling Well Size |
| CD15B-% | 1.5 in / 38.1 mm | 0.375 in / 9.5 mm | P01 | 1.5 in sch. 40 |
| CD15C-% | | 0.5 in / 12.7 mm | P02 | |
| CD15I-% | | 0.4375 in / 11 mm | P03 | |
| CD20B-% | 2.0 in. / 50.8 mm | 0.375 in / 9.5 mm | P01 | 2 in sch. 40 |
| CD20C-% | | 0.5 in / 12.7 mm | P02 | |
| CD20I-% | | 0.4375 in / 11 mm | P03 | |
| CD23B-% | 2.3 in. / 58.7 mm | 0.375 in / 9.5 mm | P01 | 2.5 in sch. 40 |
| CD23C-% | | 0.5 in / 12.7 mm | P02 | |
| CD23I-% | | 0.4375 in / 11 mm | P03 | |
| CD28B-% | 2.8 in. / 71.1 mm | 0.375 in / 9.5 mm | P01 | 3 in sch. 80 |
| CD28C-% | | 0.5 in / 12.7 mm | P02 | |
| CD28I-% | | 0.4375 in / 11 mm | P03 | |
| CD38B-% | 3.75 in. / 95.3 mm | 0.375 in / 9.5 mm | P01 | 4 in sch. 80 |
| CD38C-% | | 0.5 in / 12.7 mm | P02 | |
| CD38I-% | | 0.4375 in / 11 mm | P03 | |

% - enter material code from /a

Quotation Request - MT5000 SERIES Guided Wave Radar

Tel (1) 225-673-6100 Email:sales@ktekcorp.com Date: _____

Fax (1) 225-673-2525 Attn: _____

| | |
|-----------------|----------------|
| Customer: _____ | Contact: _____ |
| Phone #: _____ | Fax #: _____ |
| Email: _____ | Project: _____ |
| Rep Firm: _____ | Contact: _____ |
| Phone #: _____ | Fax #: _____ |
| Email: _____ | |

Process Conditions: TAG: _____

Material To Be Measured: _____ Dielectric Constant: _____

Is Material: Solid Liquid Liquid/Liquid Interface (Refer to MT5100 Level and Interface Level Measurement Data Sheet (MT5100-0202-1) for more information.

If Solid: Particle Diameter: _____ Bulk Density _____ **pcf / kg/m³**

If Liquid / Liquid Interface: Upper Dielectric Constant: _____ Lower Dielectric Constant: _____

Flooded Sensor

Non-flooded Sensor

Temperature: Operating: _____ Maximum: _____ **°F / °C / °K**

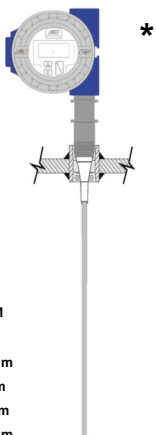
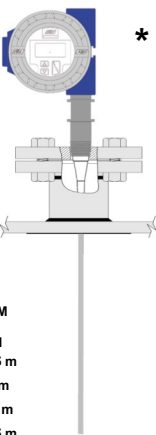
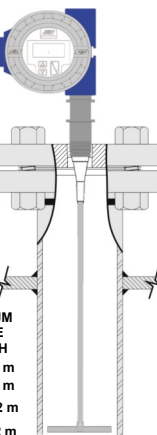
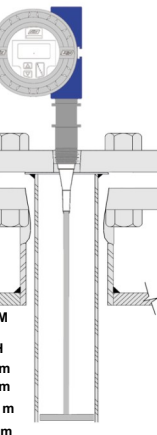
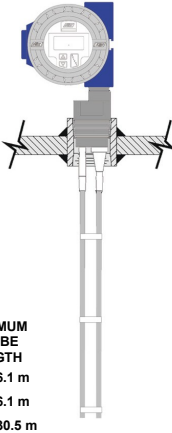
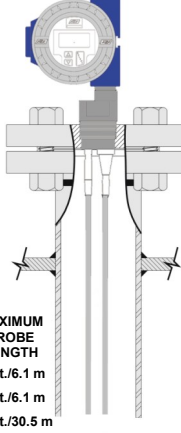
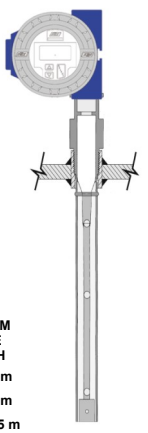
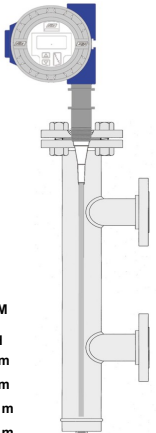
Pressure: Operating: _____ Maximum: _____ **PSIG / KG / BAR**

Agitation: None Minimal Heavy

Foam: No Yes: Foam Density: Light Heavy

Buildup: None Light Heavy (Single Probe designs recommended with heavy buildup)

Select mounting configuration closest to your application: (*Not for liquid / liquid interface)

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|------------------|----------------|---|--------------|----|----------------|---|----------------|---|------------------|----------------|----|----------------|---|---------------|--------------|----------------|---|-----|----------------|---|--------------|--------------|---------------|--------------|---------------|--|-----|---------------|---|--------------|----|---------------|----|---------------|
| <p>Flat Plate Or Coupling *</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.3¹</td><td>100 ft./30.5 m</td></tr> <tr><td>4</td><td>20 ft./6.1 m</td></tr> <tr><td>10</td><td>40 ft./12.2 m</td></tr> <tr><td>35</td><td>100 ft./30.5 m</td></tr> </table> | 1.3 ¹ | 100 ft./30.5 m | 4 | 20 ft./6.1 m | 10 | 40 ft./12.2 m | 35 | 100 ft./30.5 m | <p>Nozzle & Flange *</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.3¹</td><td>100 ft./30.5 m</td></tr> <tr><td>4</td><td>20 ft./6.1 m</td></tr> <tr><td>10</td><td>40 ft./12.2 m</td></tr> <tr><td>35</td><td>100 ft./30.5 m</td></tr> </table> | 1.3 ¹ | 100 ft./30.5 m | 4 | 20 ft./6.1 m | 10 | 40 ft./12.2 m | 35 | 100 ft./30.5 m | <p>Permanent Stilling Well</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.7</td><td>20 ft./6.1 m</td></tr> <tr><td>3</td><td>30 ft./9.1 m</td></tr> <tr><td>10</td><td>50 ft./15.2 m</td></tr> <tr><td>35</td><td>50 ft./15.2 m</td></tr> </table> | 1.7 | 20 ft./6.1 m | 3 | 30 ft./9.1 m | 10 | 50 ft./15.2 m | 35 | 50 ft./15.2 m | <p>Removable Stilling Well</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.7</td><td>20 ft./6.1 m</td></tr> <tr><td>3</td><td>30 ft./9.1 m</td></tr> <tr><td>10</td><td>50 ft./15.2 m</td></tr> <tr><td>35</td><td>50 ft./15.2 m</td></tr> </table> | 1.7 | 20 ft./6.1 m | 3 | 30 ft./9.1 m | 10 | 50 ft./15.2 m | 35 | 50 ft./15.2 m |
| 1.3 ¹ | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 40 ft./12.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.3 ¹ | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 40 ft./12.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 30 ft./9.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 30 ft./9.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Dual Rod Flat Plate or Coupling</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>3</td><td>20 ft./6.1 m</td></tr> <tr><td>4</td><td>20 ft./6.1 m</td></tr> <tr><td>10</td><td>100 ft./30.5 m</td></tr> </table> | 3 | 20 ft./6.1 m | 4 | 20 ft./6.1 m | 10 | 100 ft./30.5 m | <p>Dual Rod Nozzle & Flange</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>2.5</td><td>20 ft./6.1 m</td></tr> <tr><td>4</td><td>20 ft./6.1 m</td></tr> <tr><td>10</td><td>100 ft./30.5 m</td></tr> </table> | 2.5 | 20 ft./6.1 m | 4 | 20 ft./6.1 m | 10 | 100 ft./30.5 m | <p>Coaxial Probe</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.4</td><td>20 ft./6.1 m</td></tr> <tr><td>4</td><td>20 ft./6.1 m</td></tr> <tr><td>10</td><td>100 ft./30.5 m</td></tr> </table> | 1.4 | 20 ft./6.1 m | 4 | 20 ft./6.1 m | 10 | 100 ft./30.5 m | <p>External Chamber</p>  <p>MINIMUM DIELECTRIC CONSTANT</p> <p>MAXIMUM PROBE LENGTH</p> <table border="1"> <tr><td>1.7</td><td>20 ft./6.1 m</td></tr> <tr><td>3</td><td>30 ft./9.1 m</td></tr> <tr><td>10</td><td>50 ft./15.2 m</td></tr> <tr><td>35</td><td>50 ft./15.2 m</td></tr> </table> | 1.7 | 20 ft./6.1 m | 3 | 30 ft./9.1 m | 10 | 50 ft./15.2 m | 35 | 50 ft./15.2 m | | | | | | |
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| 4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2.5 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 100 ft./30.5 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1.7 | 20 ft./6.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 30 ft./9.1 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 35 | 50 ft./15.2 m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

- Accuracy subject to changes in dielectric constant. Ultra-Low Dielectric (ULD) measurement method supports dielectric constants from 1.3 to a maximum of 2.5.

Quotation Request

Material & Connections:

Process Connection: MNPT RF Flange Tri-Clamp Other

Process Connection Description: _____

Probe Material: 316L SS Hast C276 Hast B3 Monel Titanium Inconel 625

Probe Type: Solid Rod Cable (316SS & Monel Only)
 Sanitary Rod Specify Finish 180 Grit 240 Grit 240 Grit & EP

(Refer to chart for part numbers)

Centering Disk (Solid Rod): Yes No P/N: _____ If blank, K-TEK will choose.

Centering Weight (Cables): Yes No P/N: _____ If blank, K-TEK will choose.

Housing & Electronics Options:

Aluminum Dual Compartment Housing (standard) 316L SS Dual Compartment Housing Window Cover

HART MODBUS Foundation Fieldbus

Vessel / Application Details:

specify by circling

Total Insertion Length (Bottom of process fitting to end of probe): _____ in / ft / cm / m Other: _____

Standard Lengths for field modification to final length: _____

Custom Lengths for final length by K-TEK _____

Mounting:

Directly on roof of tank Mounted on Nozzle: nozzle height: _____ diameter: _____

In existing stilling well - describe: _____

In new stilling well - describe: _____

In external chamber - describe: _____

Stilling well or external chamber to be supplied with transmitter: Yes No

Approval Required:

FM Factory Mutual

XP-IS / I / 1 / ABCD / T6 Ta = 77°C
DIP / II, III / 1 / EFG / T6 Ta = 77°C
IS / I / 1 / ABCD / T4 Ta = 77°C - ELE1034
NI / I / 2 / ABCD / T4 Ta = 77°C
S / II, III / 2 / FG / T4 Ta = 77°C
ANI / I / 2 / ABCD / T4 - ELE1034
Type 4X

Canadian Standards Association

XP CL 1, DIV 1, GP ABCD; CL 2, DIV 1, GP EFG; CL 3 - T6
CL 1, DIV 2, GP ABCD; CL 2, DIV 2, GP EFG - T5
IS CL 1, DIV 1, GP CD; CL 2, DIV 1, GP EFG - T4
- when installed per ELE1034
Type 4X

GOST Russian

1Exd[ia]IICT6, 0ExialIBT6, IP67

UKRSEPRO

1ExdialICT6, 0ExialIBT4

IEC International Electromechanical Commission

IECEx ITS 08.0036X
II 1/2 G/D
Ex ia IIB T4 (-40°C ≤ Tamb ≤ 66°C)
Ex iaD 20/21 IP6X T80°C (-40°C ≤ 66°C)
IECx ITS 08.0037X
Ex ia d IIC T4
Ex iaD tD 20/A21 IP6X T80°C

ATEX

ITS 08ATEX25865X
Ex ia IIB T4 (-40°C ≤ Tamb ≤ 66°C)
Ex iaD 20/21 IP6X T80°C (-40°C Tamb ≤ 66°C)
ITS08 ATEX15870X
II 1/2 G/D Ex ia d IIC T6
Ex tD 20/A21 IP6X T80°C

Completed by K-TEK:

Quotation # _____ By: _____ Date: _____

Qty: _____ Part #: _____ Price: \$ _____

Options: _____

Note: All prices USD, EX-Works packed for shipping, FOB Factory, standard shipping 5 weeks ARO.

Additional notes or comments:

Contact us

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Fax: +1 225 637 2525

www.abb.com/level

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