

Model CET5000 Series SmartCET[®] Corrosion Monitoring Transmitter – multivariable output version

CET5000-M Multivariable

Specification and Model Selection Guide

Description

The SmartCET[®] multivariable transmitter will detect general corrosion and localized corrosion (pitting) in real-time connecting to a distributed control system or process knowledge system via a 4-20mA signal and compatible HART[®] protocol.

The CET5000M model provides four outputs, which include general corrosion rate, an indicator for localized corrosion (Pitting Factor), Stern-Geary constant (B-value), and fourth variable to help diagnose the corrosion mechanism. The transmitter connects to the process environment through a process specific probe and electrode combination.

Function

The SmartCET instrument utilizes state-of-the-art algorithms and data analysis techniques to accurately measure corrosion rate and pitting.

SmartCET executes on a 7-minute measurement cycle and performs an automated standard linear polarization resistance (LPR) technique along with an electrochemical noise (ECN) measurement. These techniques provide the corrosion rate and an indication of localized (pitting) corrosion.

To further enhance accuracy of the general corrosion rate, Harmonic Distortion Analysis is applied to calculate a B value based upon the actual process conditions, which is made available as one of the outputs. The default B value can be changed in the transmitter based upon the calculated value.

SmartCET connects to a variety of probe and electrode configurations. Some configurations are insertion probe with three finger electrodes, insertion probe with flush-mounting electrodes, flange mounted insertion probe with electrodes, and flange mounted flow-thru ring electrodes.

Features

- On-line, Real-Time Corrosion Monitoring
- Two-wire 4-20mA Transmitter HART[®]
- Multivariable Output with general corrosion rate, localized corrosion indicator (pitting), dynamic B-value, and an additional variable for corrosion mechanism analysis
- Withstands 1500 psi (102 bar) Process Pressure (consult factory for high pressure applications)
- Standard 3/4" NPT Process Connection for Insertion Probe Type
- Custom Configuration

Transmitter Housing
Model:
CET5000-M

Optional Extended cable For Remote Mounting



(6 or 12 feet length)

Probe
(See probe mounting guide on following pages)

Electrode
(See electrode materials guide on following pages)

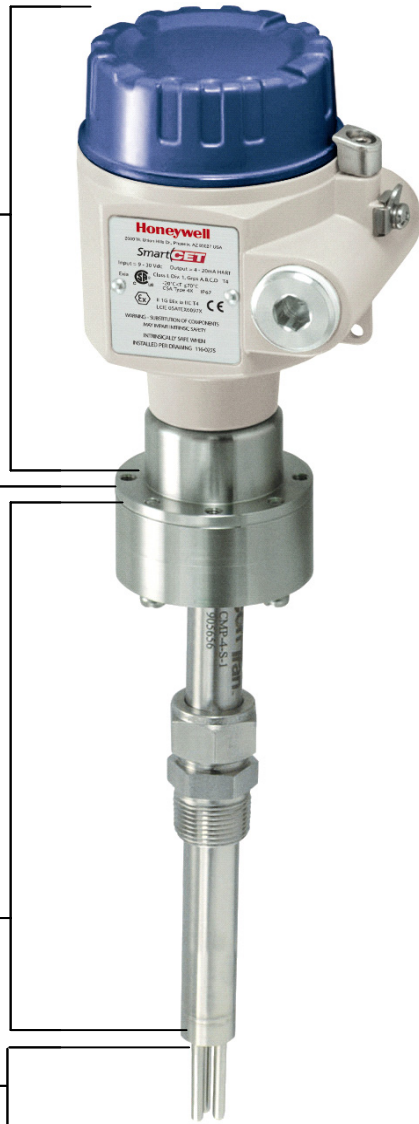


Figure 1 Corrosion Monitoring Transmitter

SPECIFICATIONS

| General Specifications | |
|--|---|
| Output signal | 4-20mA signal (two-wire) with HART |
| Supply voltage | 9-30 Vdc |
| Rated Operating Voltage | 9 VDC minimum at max loop current 2-wire (4-20mA) |
| Max load with 24VDC power supply | 680 ohms with high alarm capability 750 ohms without high alarm |
| Linearity | 0.0015% non linear |
| Resolution | 17 bit |
| B value (default) | 25.6mV |
| Operating and Storage Conditions | |
| Operating Temperature | -40°F to +158°F (-40°C to +70°C) |
| Storage Temperature | -40°F to +185°F (-40°C to +85°C) |
| Process Conditions | |
| Process Temperature (Max.) 316 Stainless Steel Probe <i>Direct Mount:</i> <i>Remote Mount:</i> Glass Epoxy Probe | Custom probes with higher ratings available 250°F (121°C) 500°F (260°C) peak, 400°F average 150°F (65°C) |
| Process Pressure (Max.) | 3600 psi (245 bar) 316 stainless steel, retrievable probe double sealed 1500 psi (102 bar) 316 stainless steel, retractable probe double sealed 100 psi (7 bar) glass epoxy probe |
| O-Ring (set of 3) | Viton (Viton® is registered trademarks of DuPont Dow Elastomers) |
| Physical Specifications | |
| Protection | NEMA 4x (applies to transmitter directly mounted with probe) |
| Enclosure Material | Aluminum |
| Process connection | ¾"NPT (for insertion probes) |
| Electrical connection | ¾"NPT |
| Wiring Terminal | Accept up to 1.5mm - 14AWG |
| Mounting | Probe mounts direct on process pipe, transmitter can be direct or remote mounted to probe. |
| Weight | 1.1 lb (500g) |
| Certifications and Approvals | |
| Electrical Classifications | <ul style="list-style-type: none"> • CSA (Canada and US) Class 1 Div 2, Groups A, B, C, D • CSA Intrinsic Safety Class I, II, III; Div 1 Groups A, B, C, D, E, F, G • CE Mark • ATEX – Ex II 1G EEx ia IIC T4, -40C <Ta < 70C |

Model Selection Guide

Model Selection Guide
34-SC-16-01 Issue 1

SmartCET corrosion transmitter for Real-time, online corrosion measurement - corrosion is the new process variable

The SmartCET multivariable transmitter will detect general corrosion and localized corrosion (pitting) in real-time connecting to a distributed control system or process knowledge system. The CET5000M model provides four outputs, which include general corrosion rate, an indicator for localized corrosion (Pitting Factor), Stern-Geary constant (B value), and fourth variable to help diagnose the corrosion mechanism. The transmitter connects to the process environment through a process specific probe and electrode combination.

Features include:

- 4-20mA signal and compatible HART protocol
- New corrosion measurements available approximately every seven minutes
- Flexible sensor configuration and design allows for process specific probe and electrode application.

This MSG produces a valid model number for ordering the transmitter. Probes and/or electrodes are ordered separately.



SmartCET CET5000

Instructions

- Select the desired key number. The arrow to the right marks the selection available.
- Make the desired selections from Tables I through VI using the column below the proper arrow. A dot (•) denotes availability.

Key Number I II III IV V VI

_____ - _____ - _____ - _____ - _____ - _____ - _____

KEY NUMBER - SmartCET CET5000 Corrosion Transmitter

| Description |
|---|
| SmartCET single variable for General Corrosion |
| SmartCET single variable for Localized Corrosion (Pitting Factor) |
| SmartCET Multivariable Output |

| Selection | Availability | | |
|-----------|--------------|---|---|
| CET5000G | ↓ | | |
| CET5000P | | ↓ | |
| CET5000M | | | ↓ |

TABLE I - Process Connection

| Process Connection | |
|-----------------------------------|--|
| 3/4" NPT, 316L | |
| 3/4" NPT Nylon Adjustable Fitting | |
| 1" - 150 lb Flange | |
| 1" - 300 lb Flange | |
| 1 1/2" - 150 lb Flange | |
| 1 1/2" - 300 lb Flange | |
| 2" 150 lb Flange | |
| 2" 300 lb Flange | |
| Ring electrode | |
| No selection | |

| | | | |
|-----|---|---|---|
| N21 | • | • | • |
| NP3 | • | • | • |
| A31 | • | • | • |
| A32 | • | • | • |
| A51 | • | • | • |
| A52 | • | • | • |
| A61 | • | • | • |
| A62 | • | • | • |
| 000 | • | • | • |
| XXX | • | • | • |

TABLE II - Probe Material / Mounting / Length

| Measurement / Probe Material | |
|------------------------------|--|
| Inches 316 L | |
| Inches Epoxy Glass | |
| Millimeters 316L | |
| Millimeter Epoxy Glass | |
| Ring Electrode | |
| No selection | |

| | | | |
|------------|---|---|---|
| CB _ _ _ _ | a | a | a |
| CF _ _ _ _ | b | b | b |
| DB _ _ _ _ | a | a | a |
| DF _ _ _ _ | b | b | b |
| NA _ _ _ _ | c | c | c |
| XX _ _ _ _ | • | • | • |

Table II continued next page

TABLE II - Probe Material / Mounting / Length (continued)

| | | Availability | | | | |
|---|---|--|---------|---|---|---|
| | | Selection | G | P | M | |
| Probe Mounting and Style | Standard Insertion, Direct Mount, Fixed, SS, Viton | --- A --- | d | d | d | |
| | Standard Insertion, Remote Mount, Fixed, SS, Viton | --- B --- | d | d | d | |
| | Standard Insertion, Direct Mount, Adjustable, SS, Viton | --- C --- | d | d | d | |
| | Standard Insertion, Remote Mount, Adjustable, SS, Viton | --- D --- | d | d | d | |
| | Retractable Insertion, Remote Mount, Adjustable, SS, Viton | --- E --- | d | d | d | |
| | Special (Consult Factory) | --- F --- | • | • | • | |
| | Standard Insertion, Direct Mount, Fixed, SS, Kalrez | --- G --- | d | d | d | |
| | Standard Insertion, Remote Mount, Fixed, SS, Kalrez | --- H --- | d | d | d | |
| | Standard Insertion, Direct Mount, Adjustable, SS, Kalrez | --- I --- | d | d | d | |
| | Standard Insertion, Remote Mount, Adjustable, SS, Kalrez | --- J --- | d | d | d | |
| | Retractable Insertion, Remote Mount, Adjustable, SS, Kalrez | --- K --- | d | d | d | |
| | Flush Probe, Direct Mount, Fixed, SS, Triangle disks geometry | --- L --- | d | d | d | |
| | Flush Probe, Remote Mount, Fixed, SS, Triangle disks geometry | --- M --- | d | d | d | |
| | Flush Probe, Direct Mount, Adjustable, SS, Triangle disks geometry | --- N --- | d | d | d | |
| | Flush Probe, Remote Mount, Adjustable, SS, Triangle disks geometry | --- O --- | d | d | d | |
| | Retractable Flush, Remote Mount, Adjustable, SS, Triangle disks geometry | --- P --- | d | d | d | |
| | Flush Probe, Direct Mount, Fixed, SS, Interleaved | --- Q --- | d | d | d | |
| | Flush Probe, Remote Mount, Fixed, SS, Interleaved | --- R --- | d | d | d | |
| | Flush Probe, Direct Mount, Adjustable, SS, Interleaved | --- S --- | d | d | d | |
| | Flush Probe, Remote Mount, Adjustable, SS, Interleaved | --- T --- | d | d | d | |
| | Retractable Flush, Remote Mount, Adjustable, SS, Interleaved | --- U --- | d | d | d | |
| | High pressure insertion, Remote, Fixed, SS | --- V --- | d | d | d | |
| | High pressure flush, Remote, Fixed, SS, Triangle disks geometry | --- W --- | d | d | d | |
| | High pressure flush, Remote, Fixed, SS, Interleaved | --- X --- | d | d | d | |
| | Ring electrode, Remote Mount, Virgin PTFE gasket. (Specify electrode, flange, class and finish) | --- Y --- | e | e | e | |
| | Ring electrode, Remote Mount, Garlock Gylon gasket. (Specify electrode, flange, class and finish) | --- Z --- | e | e | e | |
| | Ring electrode, Remote Mount, other gasket material. (Specify electrode, size and pressure rating) | --- 1 --- | e | e | e | |
| | No selection | --- 2 --- | • | • | • | |
| | Probe Length | 8 inch for 316L or epoxy glass, NPT Process Connection | --- 080 | f | f | f |
| | | 12 inch for 316L, NPT or Flange Process Connection | --- 120 | g | g | g |
| | | 18 inch for 316L, NPT or Flange Process Connection | --- 180 | g | g | g |
| | | 24 inch for 316L, NPT or Flange Process Connection | --- 240 | g | g | g |
| | | 200 mm for 316L or epoxy glass, NPT Process Connection | --- 200 | g | g | g |
| | | 300 mm for 316L, NPT or Flange Process Connection | --- 300 | g | g | g |
| 450 mm for 316L, NPT or Flange Process Connection | | --- 450 | g | g | g | |
| 610 mm for 316L, NPT or Flange Process Connection | | --- 610 | g | g | g | |
| Ring Electrode | | --- RRR | c | c | c | |
| No selection | | --- XXX | • | • | • | |

TABLE III - Electrode Material Guide

| | Electrode Material | Selection | Availability | | |
|--|--|-----------|--------------|---|---|
| | | | G | P | M |
| | 1018 Carbon Steel | 0A | • | • | • |
| | A53 Grade B Carbon Steel | 0B | • | • | • |
| | AISI 304 (Check with factory) | 0C | • | • | • |
| | AISI 304L | 0D | • | • | • |
| | AISI 316 (Check with factory) | 0E | • | • | • |
| | AISI 316L | 0F | • | • | • |
| | Carpenter 20 Cb3 | 0G | • | • | • |
| | Monel 400 | 0H | • | • | • |
| | CDA715 70-30 Cu-Ni | 0I | • | • | • |
| | CDA 110ETP 99.9 Cu | 0J | • | • | • |
| | CDA 706 90-10 Cu-Ni | 0K | • | • | • |
| | CDA687 (Al Brass) (Check with factory) | 0L | • | • | • |
| | CDA443(ARS AD. Brass) | 0M | • | • | • |
| | Aluminum 1100 | 0N | • | • | • |
| | Aluminum 2024 | 0O | • | • | • |
| | Titanium GR2 | 0P | • | • | • |
| | Hastelloy C-276 | 0Q | • | • | • |
| | ASTM A105 Carbon Steel | 0R | • | • | • |
| | AISI 1010 Carbon Steel | 0S | • | • | • |
| | AL6061 Aluminum | 0T | • | • | • |
| | A106 GrB | 0U | • | • | • |
| | A36 | 0V | • | • | • |
| | 5LGrB | 0W | • | • | • |
| | C2000 | 0X | • | • | • |
| | C22 | 0Y | • | • | • |
| | Ductile Iron Grade 65-45-12 | 0Z | • | • | • |
| | A182 F5, 5Cr 1/2Mo | 1A | • | • | • |
| | A182 F9, 9Cr 1Mo | 1B | • | • | • |
| | API5LX-65 Carbon maganese pipeline steel | 1C | • | • | • |
| | Duplex 2205 | 1D | • | • | • |
| | A516 Gr70 | 1E | • | • | • |
| | API 5LX52 (STE 360.7) | 1F | • | • | • |
| | 317L stainless steel | 1G | • | • | • |

TABLE IV - Transmitter

| | | | | | |
|-------------------|--|----|---|---|---|
| Housing | Aluminum housing with 3/4" electrical | A2 | • | • | • |
| Electrical Output | Electronic Output - 4-20mA with HART | IH | • | • | • |
| Transmitter Mount | Direct Mount (not for ring electrodes) | 1 | h | h | h |
| | Remote 6 feet cable | 2 | i | i | i |
| | Remote 12 feet cable | 3 | i | i | i |
| | Special (Consult Factory) | 4 | • | • | • |

TABLE V - Approvals

| | | | | | |
|-----------|--|----|---|---|---|
| Approvals | General Purpose | GP | • | • | • |
| | CSA, NI, Class 1, Div 2, Group A-D | D2 | • | • | • |
| | CSA, IS, Class 1, Div 1, Group A-D; ATEX, FM | IS | • | • | • |

TABLE VI - Insertion Length for Insertion Probes or Ring Flange Size+Class+Finish

| | Selection | Availability | | |
|---------------------------|-----------|--------------|---|---|
| | | G | P | M |
| Insertion length - inches | 050 | j | j | j |
| 5.0 inches | 052 | j | j | j |
| 5.2 inches | 054 | j | j | j |
| 5.4 inches | 056 | j | j | j |
| 5.6 inches | 058 | j | j | j |
| 5.8 inches | 060 | j | j | j |
| 6.0 inches | 062 | j | j | j |
| 6.2 inches | 064 | j | j | j |
| 6.4 inches | 066 | j | j | j |
| 6.6 inches | 068 | j | j | j |
| 6.8 inches | 070 | j | j | j |
| 7.0 inches | 072 | j | j | j |
| 7.2 inches | 074 | j | j | j |
| 7.4 inches | 076 | j | j | j |
| 7.6 inches | 078 | j | j | j |
| 7.8 inches | 080 | j | j | j |
| 8.0 inches | 082 | j | j | j |
| 8.2 inches | 084 | j | j | j |
| 8.4 inches | 086 | j | j | j |
| 8.6 inches | 088 | j | j | j |
| 8.8 inches | 090 | j | j | j |
| 9.0 inches | 092 | j | j | j |
| 9.2 inches | 094 | j | j | j |
| 9.4 inches | 096 | j | j | j |
| 9.6 inches | 098 | j | j | j |
| 9.8 inches | 100 | j | j | j |
| 10.0 inches | 102 | j | j | j |
| 10.2 inches | 104 | j | j | j |
| 10.4 inches | 106 | j | j | j |
| 10.6 inches | 108 | j | j | j |
| 10.8 inches | 110 | j | j | j |
| 11.0 inches | 112 | j | j | j |
| 11.2 inches | 114 | j | j | j |
| 11.4 inches | 116 | j | j | j |
| 11.6 inches | 118 | j | j | j |
| 11.8 inches | 120 | j | j | j |
| 12.0 inches | 122 | j | j | j |
| 12.2 inches | 124 | j | j | j |
| 12.4 inches | 126 | j | j | j |
| 12.6 inches | 128 | j | j | j |
| 12.8 inches | 130 | k | k | k |
| 13.0 inches or mm | 132 | j | j | j |
| 13.2 inches | 134 | j | j | j |
| 13.4 inches | 136 | j | j | j |
| 13.6 inches | 138 | j | j | j |
| 13.8 inches | 140 | k | k | k |
| 14.0 inches or mm | 142 | j | j | j |
| 14.2 inches | 144 | j | j | j |
| 14.4 inches | 146 | j | j | j |
| 14.6 inches | 148 | j | j | j |
| 14.8 inches | 150 | k | k | k |
| 15.0 inches or mm | 152 | j | j | j |
| 15.2 inches | 154 | j | j | j |
| 15.4 inches | 156 | j | j | j |
| 15.6 inches | 158 | j | j | j |
| 15.8 inches | 160 | k | k | k |
| 16.0 inches or mm | 162 | j | j | j |
| 16.2 inches | 164 | j | j | j |
| 16.4 inches | 166 | j | j | j |
| 16.6 inches | 168 | j | j | j |
| 16.8 inches | | | | |

Table VI continued next page

TABLE VI - Insertion Length for Insertion Probes or Ring Flange Size+Class+Finish

| Insertion length - inches | Selection | Availability | | |
|---------------------------|-----------|--------------|---|---|
| | | G | P | M |
| 17.0 inches or mm | 170 | k | k | k |
| 17.2 inches | 172 | j | j | j |
| 17.4 inches | 174 | j | j | j |
| 17.6 inches | 176 | j | j | j |
| 17.8 inches | 178 | j | j | j |
| 18.0 inches or mm | 180 | k | k | k |
| 18.2 inches | 182 | j | j | j |
| 18.4 inches | 184 | j | j | j |
| 18.6 inches | 186 | j | j | j |
| 18.8 inches | 188 | j | j | j |
| 19.0 inches or mm | 190 | k | k | k |
| 19.2 inches | 192 | j | j | j |
| 19.4 inches | 194 | j | j | j |
| 19.6 inches | 196 | j | j | j |
| 19.8 inches | 198 | j | j | j |
| 20.0 inches or mm | 200 | k | k | k |
| 20.2 inches | 202 | j | j | j |
| 20.4 inches | 204 | j | j | j |
| 20.6 inches | 206 | j | j | j |
| 20.8 inches | 208 | j | j | j |
| 21.0 inches or mm | 210 | k | k | k |
| 21.2 inches | 212 | j | j | j |
| 21.4 inches | 214 | j | j | j |
| 21.6 inches | 216 | j | j | j |
| 21.8 inches | 218 | j | j | j |
| 22.0 inches or mm | 220 | k | k | k |
| 22.2 inches | 222 | j | j | j |
| 22.4 inches | 224 | j | j | j |
| 22.6 inches | 226 | j | j | j |
| 22.8 inches | 228 | j | j | j |
| 23.0 inches or mm | 230 | k | k | k |
| 23.2 inches | 232 | j | j | j |
| 23.4 inches | 234 | j | j | j |
| 23.6 inches | 236 | j | j | j |
| 23.8 inches | 238 | j | j | j |
| 24.0 inches or mm | 240 | k | k | k |
| 24.2 inches | 242 | j | j | j |
| 24.4 inches | 244 | j | j | j |
| 24.6 inches | 246 | j | j | j |
| 24.8 inches | 248 | j | j | j |
| 25.0 inches or mm | 250 | k | k | k |
| 25.2 inches | 252 | j | j | j |
| 25.4 inches | 254 | j | j | j |
| 25.6 inches | 256 | j | j | j |
| 25.8 inches | 258 | j | j | j |
| 26.0 inches or mm | 260 | k | k | k |
| 26.2 inches | 262 | j | j | j |
| 26.4 inches | 264 | j | j | j |
| 26.6 inches | 266 | j | j | j |
| 26.8 inches | 268 | j | j | j |
| 27.0 inches or mm | 270 | k | k | k |
| 27.2 inches | 272 | j | j | j |
| 27.4 inches | 274 | j | j | j |
| 27.6 inches | 276 | j | j | j |
| 27.8 inches | 278 | j | j | j |
| 28.0 inches or mm | 280 | k | k | k |

Table VI continued next page

TABLE VI - Insertion Length for Insertion Probes or Ring Flange Size+Class+Finish

| Insertion length - millimeters | Selection | Availability | | |
|--------------------------------|-----------|--------------|---|---|
| | | G | P | M |
| 135 mm | 135 | m | m | m |
| 145 mm | 145 | m | m | m |
| 155 mm | 155 | m | m | m |
| 165 mm | 165 | m | m | m |
| 175 mm | 175 | m | m | m |
| 185 mm | 185 | m | m | m |
| 195 mm | 195 | m | m | m |
| 205 mm | 205 | m | m | m |
| 215 mm | 215 | m | m | m |
| 225 mm | 225 | m | m | m |
| 235 mm | 235 | m | m | m |
| 245 mm | 245 | m | m | m |
| 255 mm | 255 | m | m | m |
| 265 mm | 265 | m | m | m |
| 275 mm | 275 | m | m | m |
| 285 mm | 285 | m | m | m |
| 290 mm | 290 | m | m | m |
| 295 mm | 295 | m | m | m |
| 300 mm | 300 | m | m | m |
| 305 mm | 305 | m | m | m |
| 310 mm | 310 | m | m | m |
| 315 mm | 315 | m | m | m |
| 320 mm | 320 | m | m | m |
| 325 mm | 325 | m | m | m |
| 330 mm | 33 | m | m | m |
| 335 mm | 335 | m | m | m |
| 340 mm | 340 | m | m | m |
| 345 mm | 345 | m | m | m |
| 350 mm | 350 | m | m | m |
| 355 mm | 355 | m | m | m |
| 360 mm | 360 | m | m | m |
| 365 mm | 365 | m | m | m |
| 370 mm | 370 | m | m | m |
| 375 mm | 375 | m | m | m |
| 380 mm | 380 | m | m | m |
| 385 mm | 385 | m | m | m |
| 390 mm | 390 | m | m | m |
| 395 mm | 395 | m | m | m |
| 400 mm | 400 | m | m | m |
| 405 mm | 405 | m | m | m |
| 410 mm | 410 | m | m | m |
| 415 mm | 415 | m | m | m |
| 420 mm | 420 | m | m | m |
| 425 mm | 425 | m | m | m |
| 430 mm | 430 | m | m | m |
| 435 mm | 435 | m | m | m |
| 440 mm | 440 | m | m | m |
| 445 mm | 445 | m | m | m |
| 450 mm | 450 | m | m | m |
| 455 mm | 455 | m | m | m |
| 460 mm | 460 | m | m | m |
| 465 mm | 465 | m | m | m |
| 470 mm | 470 | m | m | m |
| 475 mm | 475 | m | m | m |
| 480 mm | 480 | m | m | m |
| 485 mm | 485 | m | m | m |
| 490 mm | 490 | m | m | m |
| 495 mm | 495 | m | m | m |

Table VI continued next page

TABLE VI - Insertion Length for Insertion Probes or Ring Flange Size+Class+Finish

| Insertion length - millimeters | Selection | Availability | | |
|--------------------------------|--------------|--------------|---|---|
| | | G | P | M |
| 500 mm | 500 | m | m | m |
| 505 mm | 505 | m | m | m |
| 510 mm | 510 | m | m | m |
| 515 mm | 515 | m | m | m |
| 520 mm | 520 | m | m | m |
| 525 mm | 525 | m | m | m |
| 530 mm | 530 | m | m | m |
| 535 mm | 535 | m | m | m |
| 540 mm | 540 | m | m | m |
| 545 mm | 545 | m | m | m |
| 550 mm | 550 | m | m | m |
| 555 mm | 555 | m | m | m |
| 600 mm | 600 | m | m | m |
| 605 mm | 605 | m | m | m |
| 610 mm | 610 | m | m | m |
| 615 mm | 615 | m | m | m |
| 620 mm | 620 | m | m | m |
| 625 mm | 625 | m | m | m |
| 630 mm | 630 | m | m | m |
| 635 mm | 635 | m | m | m |
| 640 mm | 640 | m | m | m |
| 645 mm | 645 | m | m | m |
| 650 mm | 650 | m | m | m |
| 655 mm | 655 | m | m | m |
| 660 mm | 660 | m | m | m |
| 665 mm | 665 | m | m | m |
| 670 mm | 670 | m | m | m |
| 675 mm | 675 | m | m | m |
| 680 mm | 680 | m | m | m |
| 685 mm | 685 | m | m | m |
| 690 mm | 690 | m | m | m |
| 695 mm | 695 | m | m | m |
| 700 mm | 700 | m | m | m |
| 705 mm | 705 | m | m | m |
| 710 mm | 710 | m | m | m |
| No Selection | No selection | XXX | • | • |

RESTRICTIONS

| Restriction Letters | Available Only With | | Not Available With | |
|---------------------|---------------------|-----------|--------------------|--|
| | Table | Selection | Table | Selection |
| a | | | I | NP3 000 |
| b | | | I | N21 A31, A32 A51, A52 A61, A62 000 |
| c | | | I | N21 NP3 A31, A32 A51, A52 A61, A62 |

RESTRICTIONS

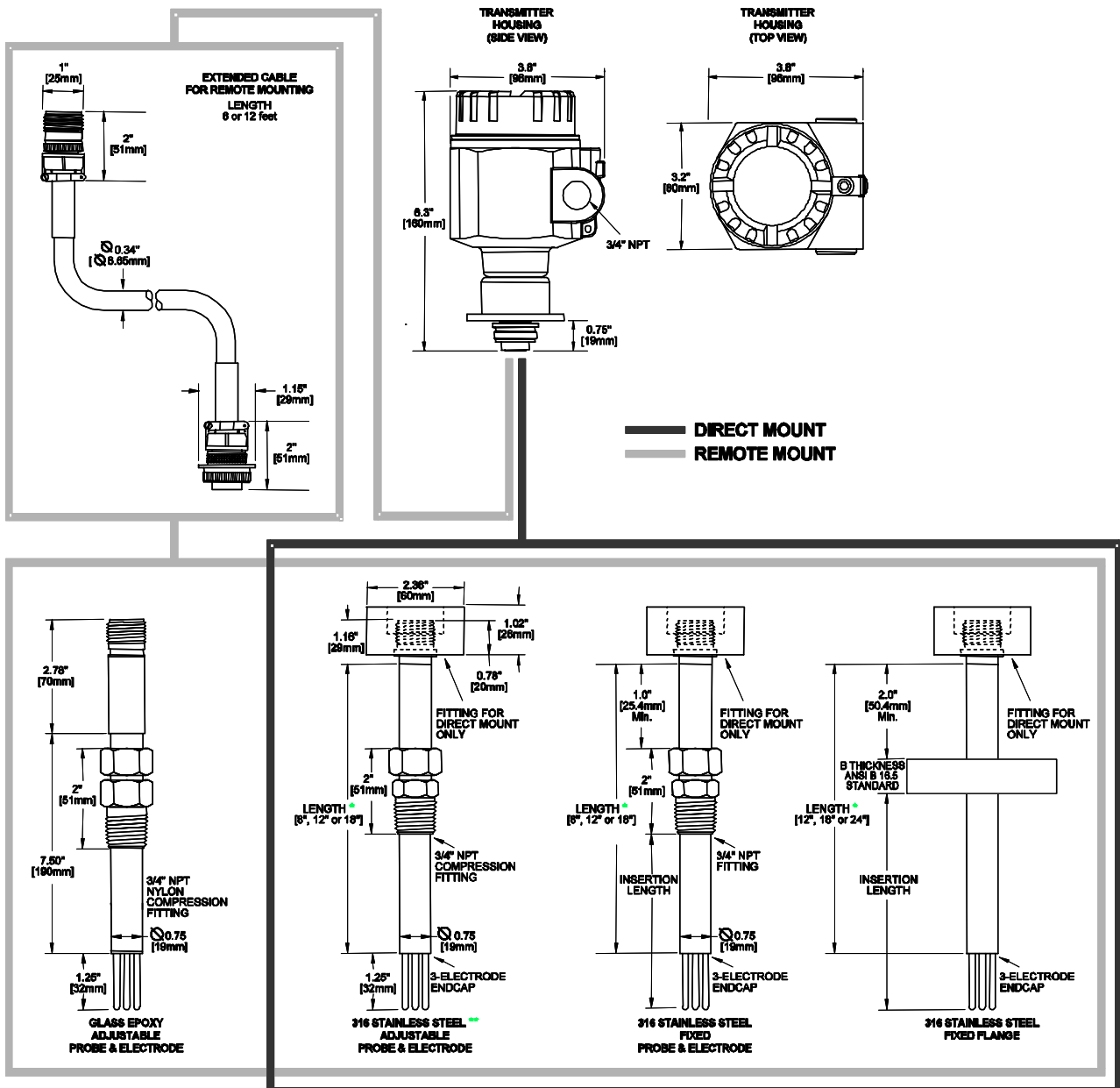
| Restriction Letters | Available Only With | | Not Available With | |
|---------------------|---------------------|-----------|-----------------------|--|
| | Table | Selection | Table | Selection |
| d | | | II | CF _ _ _ _ DF _ _ _ _ NA _ _ _ _ |
| e | | | I II II | N21 NP3 A31, A32 A51, A52 A61, A62 CB _ _ _ _ CF _ _ _ _ DB _ _ _ _ DF _ _ _ _ |
| f | | | I II | A31, A32 A51, A52 A61, A62 000 NA _ _ _ _ |
| g | | | I II | 000 CF _ _ _ _ DF _ _ _ _ NA _ _ _ _ |
| h | | | I II | 000 NA _ _ _ _ |
| i | | | II | _ _ A _ _ _ _ _ C _ _ _ _ _ G _ _ _ _ _ I _ _ _ _ _ L _ _ _ _ _ N _ _ _ _ _ Q _ _ _ _ _ S _ _ _ |
| j | | | I II | NP3 000 CF _ _ _ _ DB _ _ _ _ DF _ _ _ _ NA _ _ _ _ |
| k | | | I II | NP3 000 CF _ _ _ _ DF _ _ _ _ NA _ _ _ _ |
| m | | | I II | NP3 000 CB _ _ _ _ CF _ _ _ _ DF _ _ _ _ NA _ _ _ _ |

CET5000 Supplemental SmartCET Corrosion Transmitter Accessories & Kits

| Description | Part Number | List Price |
|-----------------------------------|--------------|------------|
| Galvanic Isolator – 1 Channel | 50022364-001 | ** |
| Galvanic Isolator – 2 Channel | 50022364-002 | ** |
| Remote Probe Cable – 6 Ft | 50022365-001 | ** |
| Remote Probe Cable – 12 Ft | 50022365-002 | ** |
| Hart USB Modem | 50022366-001 | ** |
| Hart Interface Module –no relays | 50022367-001 | ** |
| Hart Interface Module –two relays | 50022367-002 | ** |

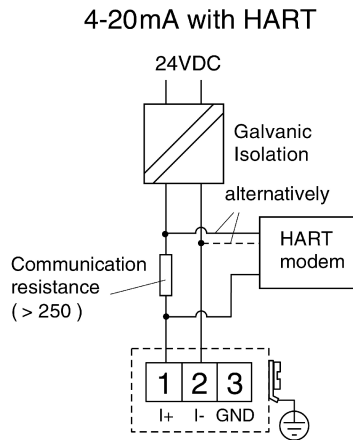
** Consult Honeywell Order Entry Systems for current parts pricing.

Housing Dimensions



Configuration

2-wire connection with HART (DC)



Corrosion reading: update time 7.2 min (fixed)
The adjustments and scaling can be done using a hand held HART® calibrator. The tables below contain scaling information.

General Corrosion

Maximum Range: 250 mils/yr (6.35mm/yr)
with electrode area approx 1cm². Consult factory for applications in higher corrosion environments.

Localized Corrosion (Pitting Factor)

| | |
|------------------|--------------|
| Default Range: | 0.001 – 1.0 |
| Low Pitting: | 0.001 – 0.01 |
| Average Pitting: | 0.01 – 0.1 |
| High Pitting: | 0.1 – 1.0 |

B-Value

| | |
|-----------------|---------------------|
| Expected Range: | 0.005 to 0.06 volts |
|-----------------|---------------------|

Corrosion Mechanism Indicator

| | |
|-----------------|-------------------------------|
| Expected Range: | -2 to +2 μA/cm ² . |
|-----------------|-------------------------------|

Values are dependent on material and environment.

Industrial Measurement and Control

Honeywell International Inc.

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Phoenix, Arizona 85027