



BASIC MODEL NUMBER

| | |
|----|--|
| 7E | Eclipse GWR probe, English unit of measure |
| 7M | Eclipse GWR probe, Metric unit of measure |

CONFIGURATION/STYLE

| | | | | |
|---|------------|--------------------------|-----------------------------------|---------------------------------|
| A | Coaxial | Standard | 3/4" process connection or larger | Dielectric range ≥1.4 |
| D | Coaxial | High Temp./High Pressure | | |
| P | Coaxial | High Pressure | | |
| R | Coaxial | Overfill | | |
| Q | Coaxial | Hot Water/Steam | 2" process connection or larger | Dielectric range ≥10 |
| S | Coaxial | Hot Water/Steam | 3/4" process connection or larger | |
| T | Coaxial | Interface | | Dielectric range ≥1.4 |
| B | Twin Rod | Standard | | 2" process connection or larger |
| 7 | Twin Rod | Flexible | | |
| 5 | Twin Rod | Flexible Bulk Solid | | |
| F | Single Rod | Standard | | |
| J | Single Rod | High Temp./High Pressure | | |
| 1 | Single Rod | Flexible | | |
| 2 | Single Rod | Flexible Bulk Solid | Dielectric range ≥4.0 | |

MATERIAL OF CONSTRUCTION

| | |
|----------|---|
| A | 316/316L stainless steel |
| B | Hastelloy C, Configuration/Style codes A, B, D, F, G, J, P, R and T only |
| C | Monel, Configuration/Style codes A, B, D, F, G, J, P, R and T only |
| E | Hygienic, 316/316L stainless steel (20 Ra EP finish), Configuration/Style code F only, Process connections codes 3P, 4P, 5P, and 6P only |
| F | PFA faced flange, 2" to 4", 150# to 300#, Configuration/Style code F only, Process connection codes 43, 44, 53, 54, 63, 64, DA, DB, EA, EB, FA, and FB only |
| G | Hygienic, AL6XN stainless steel (20 Ra EP finish), Configuration/Style code F only, Process connections codes 3P, 4P, 5P, and 6P only |
| H | Hygienic, Hastelloy C22 (20 Ra EP finish), Configuration/Style code F only, Process connections codes 3P, 4P, 5P, and 6P only |
| J | 316/316L stainless steel NACE construction |
| K | 316/316L stainless steel probe and process connection, ASME B31.1 specifications (model 7xS only) |
| N | Enlarged coaxial probe, 316/316L stainless steel probe, 2" minimum process connection |
| P | Enlarged coaxial probe, Hastelloy C, 2" minimum process connection |
| R | Enlarged coaxial probe, Monel probe, 2" minimum process connection |
| V | Optional PEEK™ spacers (for Model 7xD probe only) |
| W | Optional Teflon® spacers (for Model 7xD probe only) |
| 4 | PFA insulated rod, 2" NPT process connection or larger Configuration/Style code F only |

PROCESS CONNECTION SIZE/TYPE

See page below

O-RINGS

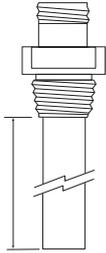
| | |
|---|---|
| 0 | Viton® GFLT |
| 1 | EPDM (Ethylene Propylene Rubber) |
| 2 | Kalrez® 4079 |
| 8 | Aegis PF128 |
| N | None (Use with probes 7xD, 7xP, 7xF-E, 7xF-F) |

LENGTH – PROBE

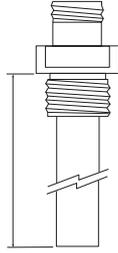
Length probe 24" to 240" (60 cm to 610 cm)



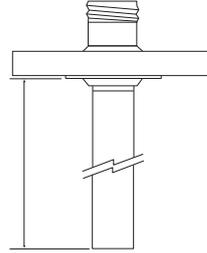
7.5.1 Probe



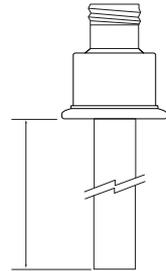
Insertion Length
NPT Process Connection



Insertion Length
BSP Process Connection



Insertion Length
ANSI or DIN Welded Flange



Insertion Length
Hygienic Flange

PROCESS CONNECTION SIZE/TYPE THREADED CONNECTIONS

| | |
|----|-------------------|
| 11 | 3/4" NPT Thread ① |
| 22 | 1" BSP Thread ① |
| 41 | 2" NPT Thread ③ |
| 42 | 2" BSP Thread ③ |

ANSI RAISED FACE FLANGE CONNECTIONS

| | | | | | |
|----|------------------|---------------------------|----|----------|---------------------------|
| 23 | 1" 150# | ANSI Raised Face Flange ① | 48 | 2" 2500# | ANSI Raised Face Flange ⑤ |
| 24 | 1" 300# | ANSI Raised Face Flange ① | 53 | 3" 150# | ANSI Raised Face Flange |
| 25 | 1" 600# | ANSI Raised Face Flange ⑤ | 54 | 3" 300# | ANSI Raised Face Flange |
| 27 | 1" 900/1500# | ANSI Raised Face Flange ⑤ | 55 | 3" 600# | ANSI Raised Face Flange ⑤ |
| 28 | 1" 2500# | ANSI Raised Face Flange ⑤ | 56 | 3" 900# | ANSI Raised Face Flange ⑤ |
| 33 | 1 1/2" 150# | ANSI Raised Face Flange ① | 57 | 3" 1500# | ANSI Raised Face Flange ⑤ |
| 34 | 1 1/2" 300# | ANSI Raised Face Flange ① | 58 | 3" 2500# | ANSI Raised Face Flange ⑤ |
| 35 | 1 1/2" 600# | ANSI Raised Face Flange ⑤ | 63 | 4" 150# | ANSI Raised Face Flange |
| 37 | 1 1/2" 900/1500# | ANSI Raised Face Flange ⑤ | 64 | 4" 300# | ANSI Raised Face Flange |
| 38 | 1 1/2" 2500# | ANSI Raised Face Flange ⑤ | 65 | 4" 600# | ANSI Raised Face Flange ⑤ |
| 43 | 2" 150# | ANSI Raised Face Flange ① | 66 | 4" 900# | ANSI Raised Face Flange ⑤ |
| 44 | 2" 300# | ANSI Raised Face Flange ① | 67 | 4" 1500# | ANSI Raised Face Flange ⑤ |
| 45 | 2" 600# | ANSI Raised Face Flange ⑤ | 68 | 4" 2500# | ANSI Raised Face Flange ⑤ |
| 47 | 2" 900/1500# | ANSI Raised Face Flange ⑤ | | | |

ANSI RING JOINT FLANGE CONNECTIONS

| | | | | | |
|----|------------------|--------------------------|----|----------|--------------------------|
| 3K | 1 1/2" 600# | ANSI Ring Joint Flange ⑤ | 5L | 3" 900# | ANSI Ring Joint Flange ⑤ |
| 3M | 1 1/2" 900/1500# | ANSI Ring Joint Flange ⑤ | 5M | 3" 1500# | ANSI Ring Joint Flange ⑤ |
| 3N | 1 1/2" 2500# | ANSI Ring Joint Flange ⑤ | 5N | 3" 2500# | ANSI Ring Joint Flange ⑤ |
| 4K | 2" 600# | ANSI Ring Joint Flange ⑤ | 6K | 4" 600# | ANSI Ring Joint Flange ⑤ |
| 4M | 2" 900/1500# | ANSI Ring Joint Flange ⑤ | 6L | 4" 900# | ANSI Ring Joint Flange ⑤ |
| 4N | 2" 2500# | ANSI Ring Joint Flange ⑤ | 6M | 4" 1500# | ANSI Ring Joint Flange ⑤ |
| 5K | 3" 600# | ANSI Ring Joint Flange ⑤ | 6N | 4" 2500# | ANSI Ring Joint Flange ⑤ |

- ① Configuration/Style Codes A, D, P, R & S only.
- ⑤ Configuration/Style Codes D & P only.
- ③ Configuration/Style Codes B, F, 1, 2, 5 & 7 only.





HYGIENIC FLANGE CONNECTIONS

| | |
|----|---|
| 2P | 3/4" Tri-clover® type, 16 AMP Hygienic Flange |
| 3P | 1" or 1½" Tri-clover type, 16 AMP Hygienic Flange |
| 4P | 2" Tri-clover type, 16 AMP Hygienic Flange |
| 5P | 3" Tri-clover type, 16 AMP Hygienic Flange |
| 6P | 4" Tri-clover type, 16 AMP Hygienic Flange |
| 9P | 2½" Tri-clover type, 16 AMP Hygienic Flange |

PROPRIETARY AND SPECIALTY FLANGE CONNECTIONS

| | | |
|----|-------------|--|
| 4R | 2" 150# | ANSI Raised Face Carbon Steel Flange with Top Hat |
| 4S | 2" 300/600# | ANSI Raised Face Carbon Steel Flange with Top Hat |
| 5R | 3" 150# | ANSI Raised Face Carbon Steel Flange with Top Hat |
| 5S | 3" 300/600# | ANSI Raised Face Carbon Steel Flange with Top Hat |
| TT | 3½" 600# | Fisher® - Proprietary Carbon Steel (249B) Torque Tube Flange |
| TU | 3½" 600# | Fisher - Proprietary 316 Stainless Steel (249C) Torque Tube Flange |
| UT | 3½" 600# | Masoneilan® - Proprietary Carbon Steel Torque Tube Flange |
| UU | 3½" 600# | Masoneilan - Proprietary 316 Stainless Steel Torque Tube Flange |
| UV | 3½" 600# | Masoneilan - Proprietary Carbon Steel Torque Tube Flange with Top Hat |
| UW | 3½" 600# | Masoneilan - Proprietary 316 Stainless Steel Steel Torque Tube Flange with Top Hat |

DIN FLANGE CONNECTIONS

| | | | | | |
|----|------------------|--------------------------|----|------------------|--------------------------|
| BA | DN 25, PN 16 | DIN 2527 Form B Flange ① | DG | DN 50, PN 250 | DIN 2527 Form E Flange ⑤ |
| BB | DN 25, PN 25/40 | DIN 2527 Form B Flange ① | DH | DN 50, PN 320 | DIN 2527 Form E Flange ⑤ |
| BC | DN 25, PN 64/100 | DIN 2527 Form E Flange ⑤ | DJ | DN 50, PN 400 | DIN 2527 Form E Flange ⑤ |
| BF | DN 25, PN 160 | DIN 2527 Form E Flange ⑤ | EA | DN 80, PN 16 | DIN 2527 Form B Flange |
| BG | DN 25, PN 250 | DIN 2527 Form E Flange ⑤ | EB | DN 80, PN 25/40 | DIN 2527 Form B Flange |
| BH | DN 25, PN 320 | DIN 2527 Form E Flange ⑤ | ED | DN 80, PN 64 | DIN 2527 Form E Flange ⑤ |
| BJ | DN 25, PN 400 | DIN 2527 Form E Flange ⑤ | EE | DN 80, PN 100 | DIN 2527 Form E Flange ⑤ |
| CA | DN 40, PN 16 | DIN 2527 Form B Flange ① | EF | DN 80, PN 160 | DIN 2527 Form E Flange ⑤ |
| CB | DN 40, PN 25/40 | DIN 2527 Form B Flange ① | EG | DN 80, PN 250 | DIN 2527 Form E Flange ⑤ |
| CC | DN 40, PN 64/100 | DIN 2527 Form E Flange ⑤ | EH | DN 80, PN 320 | DIN 2527 Form E Flange ⑤ |
| CF | DN 40, PN 160 | DIN 2527 Form E Flange ⑤ | EJ | DN 80, PN 400 | DIN 2527 Form E Flange ⑤ |
| CG | DN 40, PN 250 | DIN 2527 Form E Flange ⑤ | FA | DN 100, PN 16 | DIN 2527 Form B Flange |
| CH | DN 40, PN 320 | DIN 2527 Form E Flange ⑤ | FB | DN 100, PN 25/40 | DIN 2527 Form B Flange |
| CJ | DN 40, PN 400 | DIN 2527 Form E Flange ⑤ | FD | DN 100, PN 64 | DIN 2527 Form E Flange ⑤ |
| DA | DN 50, PN 16 | DIN 2527 Form B Flange | FE | DN 100, PN 100 | DIN 2527 Form E Flange ⑤ |
| DB | DN 50, PN 25/40 | DIN 2527 Form B Flange | FF | DN 100, PN 160 | DIN 2527 Form E Flange ⑤ |
| DD | DN 50, PN 64 | DIN 2527 Form E Flange ⑤ | FG | DN 100, PN 250 | DIN 2527 Form E Flange ⑤ |
| DE | DN 50, PN 100 | DIN 2527 Form E Flange ⑤ | FH | DN 100, PN 320 | DIN 2527 Form E Flange ⑤ |
| DF | DN 50, PN 160 | DIN 2527 Form E Flange ⑤ | FJ | DN 100, PN 400 | DIN 2527 Form E Flange ⑤ |

① Configuration/Style Codes A, D, P, R & S only.
⑤ Configuration/Style Codes D & P only.

LENGTH – PROBE MODELS 7xA, 7xB, 7xD, 7xF, 7XJ, 7xP, 7XQ, 7xR & 7xS

24" to 240" (60 cm to 610 cm) (7xQ and 7xS: 180" (457 cm) maximum)
(unit of measure is determined by second digit of Model Number)

Examples: 24 inches = 024; 60 centimeters = 060

LENGTH – PROBE MODEL 7x1, 7x2, 7x5 & 7x7

3' to 75' (1 to 22 m) – (7x2, 7x5 & 7x7 only: 5' (1.5 m) minimum)
(unit of measure is determined by second digit of Model Number)

Examples: 30 feet = 030; 10 meters = 010



7.6 References

1. FOUNDATION fieldbus™, A Pocket Guide Ian Verhappen, Augusto Pereira
2. FOUNDATION fieldbus™—System Engineering Guidelines, AG-181

Appendix – Transducer Block Parameters

| ITEM | PARAMETER NAME | PARAMETER LABEL |
|------|-------------------------|--------------------|
| 0 | BLOCK_STRUCTURE | BLOCK STRUCT |
| 1 | ST_REV | ST REV |
| 2 | TAG_DESC | TAG DESC |
| 3 | STRATEGY | STRATEGY |
| 4 | ALERT_KEY | ALERT KEY |
| 5 | MODE_BLK | MODE BLK |
| 6 | BLOCK_ERR | BLOCK ERR |
| 7 | UPDATE_EVT | UPDATE EVT |
| 8 | BLOCK_ALM | BLOCK ALM |
| 9 | TRANSDUCER_DIRECTORY | XD DIRECTORY |
| 10 | TRANSDUCER_TYPE | XD TYPE |
| 11 | XD_ERROR | XD ERROR |
| 12 | COLLECTION_DIRECTORY | COLLECT DIR |
| 13 | LEVEL | Level |
| 14 | LEVEL_UNIT | Level Unit |
| 15 | PROBE_LEVEL | Probe Level |
| 16 | PROBE_LEVEL_UNIT | Probe Level Unit |
| 17 | SENSOR_VALUE | Sensor Value |
| 18 | SENSOR_UNIT | Sensor Unit |
| 19 | SENSOR_OFFSET | Sensor Offset |
| 20 | CAL_TYPE | Cal Type |
| 21 | CAL_POINT_LO | Cal Point Lo |
| 22 | CAL_POINT_HI | Cal Point Hi |
| 23 | PROBE_LEVEL_LO | Probe Lvl Lo |
| 24 | PROBE_LEVEL_HI | Probe Lvl Hi |
| 25 | LEVEL_OFFSET | Level Offset |
| 26 | SENSOR_HIGH_LIMIT | Sensor Hi Lmt |
| 27 | SENSOR_LOW_LIMIT | Sensor Lo Lmt |
| 28 | PROBE_MODEL | Probe Model |
| 29 | PROBE_MOUNT | Probe Mount |
| 30 | MEASUREMENT_TYPE | Measurement Type |
| 31 | PROBE_LENGTH | Probe Length |
| 32 | DIELECTRIC_RANGE | Dielctric Rng |
| 33 | SENSITIVITY | Sensitivity |
| 34 | BLOCKING_DISTANCE | Blocking Distance |
| 35 | SAFETY_ZONE_MODE | SafeZone Mode |
| 36 | SAFETY_ZONE_HEIGHT | SafeZone Ht |
| 37 | SAFETY_ZONE_LATCH_RESET | SZ Latch Rst |
| 38 | THRESHOLD | Threshold |
| 39 | TRIM_LEVEL | Trim Level |
| 40 | LOCAL_AI_DISPLAY | Local AI Display |
| 41 | VOLUME | Volume |
| 42 | VOLUME_UNIT | Volume Unit |
| 43 | INTERFACE | Interface |
| 44 | INTERFACE_UNIT | Ifc Unit |
| 45 | UPPER_LIQUID_DIELECTRIC | Upr Liq Diel |
| 46 | INTERFACE_THRESHOLD | Ifc Threshld |
| 47 | INTERFACE_VOLUME | Ifc Vol |
| 48 | INTERFACE_VOLUME_UNIT | Ifc Vol Unit |
| 49 | STRAP_TABLE_LENGTH | Strap Table Length |
| 50 | TABLE_VOLUME_UNIT | Table Volume Unit |
| 51 | STRAPPING_TABLE_POINT01 | StrapTbl Pt01 |
| 52 | STRAPPING_TABLE_POINT02 | StrapTbl Pt02 |
| 53 | STRAPPING_TABLE_POINT03 | StrapTbl Pt03 |
| 54 | STRAPPING_TABLE_POINT04 | StrapTbl Pt04 |
| 55 | STRAPPING_TABLE_POINT05 | StrapTbl Pt05 |
| 56 | STRAPPING_TABLE_POINT06 | StrapTbl Pt06 |
| 57 | STRAPPING_TABLE_POINT07 | StrapTbl Pt07 |

| ITEM | PARAMETER NAME | PARAMETER LABEL |
|------|-------------------------------|--------------------|
| 58 | STRAPPING_TABLE_POINT08 | StrapTbl Pt08 |
| 59 | STRAPPING_TABLE_POINT09 | StrapTbl Pt09 |
| 60 | STRAPPING_TABLE_POINT10 | StrapTbl Pt10 |
| 61 | STRAPPING_TABLE_POINT11 | StrapTbl Pt11 |
| 62 | STRAPPING_TABLE_POINT12 | StrapTbl Pt12 |
| 63 | STRAPPING_TABLE_POINT13 | StrapTbl Pt13 |
| 64 | STRAPPING_TABLE_POINT14 | StrapTbl Pt14 |
| 65 | STRAPPING_TABLE_POINT15 | StrapTbl Pt15 |
| 66 | STRAPPING_TABLE_POINT16 | StrapTbl Pt16 |
| 67 | STRAPPING_TABLE_POINT17 | StrapTbl Pt17 |
| 68 | STRAPPING_TABLE_POINT18 | StrapTbl Pt18 |
| 69 | STRAPPING_TABLE_POINT19 | StrapTbl Pt19 |
| 70 | STRAPPING_TABLE_POINT20 | StrapTbl Pt20 |
| 71 | FID_TICKS | Fid Ticks |
| 72 | FID_SPREAD | Fid Spread |
| 73 | LEVEL_TICKS | Lvl Ticks |
| 74 | INTERFACE_TICKS | Ifc Ticks |
| 75 | INTERFACE_MEDIUM | Ifc Medium |
| 76 | ENTER_PASSWORD | Enter Password |
| 77 | NEW_PASSWORD | New User Password |
| 78 | DEVICE_STATUS | Device Status |
| 79 | HISTORY_MESSAGE | History Message |
| 80 | HISTORY_CONTROL | History Control |
| 81 | RESET_HISTORY | Reset History |
| 82 | HF_CABLE | HF Cable |
| 83 | FID_TYPE | Fid Type |
| 84 | FID_GAIN | Fid Gain |
| 85 | WINDOW_705 | Window |
| 86 | CONVERSION_FACTOR | Conv Factor |
| 87 | SCALE_OFFSET | Scale Offset |
| 88 | NEGATIVE_THRESHOLD_AMPLITUDE | NegThrsh Ampl |
| 89 | INTERFACE_THRESHOLD_AMPLITUDE | IfcThrsh Ampl |
| 90 | POSITIVE_THRESHOLD_AMPLITUDE | PosThrsh Ampl |
| 91 | SIGNAL | Signal |
| 92 | COMPENSATION | Compensation |
| 93 | DERATE_FACTOR | Derate Factor |
| 94 | TARGET_AMPLITUDE | Target Amplitude |
| 95 | TARGET_TICKS | Target Ticks |
| 96 | TARGET_CAL | Target Cal |
| 97 | TARGET_OPERATING_MODE | Target OperMode |
| 98 | 7XK_DISTANCE_CORRECTION | 7XK Dist Corr |
| 99 | ELECTRONICS_TEMPERATURE | Elec Temp |
| 100 | MAX_ELECTRONICS_TEMPERATURE | Max Elec Temp |
| 101 | MIN_ELECTRONICS_TEMPERATURE | Min Elec Temp |
| 102 | RESET_ELECTRONICS_TEMPERATURE | Reset Elect Temp |
| 103 | SAFETY_ZONE_HYSTERESIS | SafeZone Hyst |
| 104 | ECHO_SUMMARY | Echo Summary |
| 105 | ECHO_DATA | Echo Data |
| 106 | ECHO_DATA_INDEX | EchoData Indx |
| 107 | WAVEFORM_SELECTION | Waveform Selection |
| 108 | NSP_VALUE | NSP Value |
| 109 | FACTORY_PARAM_1 | Factory Param 1 |
| 110 | FACTORY_PARAM_2 | Factory Param 2 |
| 111 | STEAM_CAL_MOUNT | Steam Cal Mount |
| 112 | NON_VOL_STAT | Non Vol Stat |
| 113 | DATE_CODE | Date Code |
| 114 | MAGNETROL_SERIAL_NUMBER | Magnetrol S/N |
| 115 | FIRMWARE_VERSION | Firmware Ver |



Enhanced Model 705 Eclipse Guided Wave Radar Transmitter FOUNDATION fieldbus™ Configuration Data Sheet

Copy blank page and store calibration data for future reference and troubleshooting.

| Item | Value | Value | Value | | |
|-------------------------|-------|-------|-------|------------------------|--------------------------|
| Vessel Name | | | | | |
| Vessel # | | | | | |
| Process Medium | | | | | |
| Tag # | | | | | |
| Electronics Serial # | | | | TROUBLESHOOTING | |
| Probe Serial # | | | | Working Value | Non-Working Value |
| Level | | | | | |
| Volume (optional) | | | | | |
| Interface (optional) | | | | | |
| Interface Volume (opt.) | | | | | |
| Probe Model | | | | | |
| Probe Mount | | | | | |
| Measurement Type | | | | | |
| Sensor Units | | | | | |
| Probe Length | | | | | |
| Level Offset | | | | | |
| Volume Units (opt.) | | | | | |
| Strapping Table (opt.) | | | | | |
| Dielectric | | | | | |
| Sensitivity | | | | | |
| Blocking Distance | | | | | |
| Safety Zone Fault | | | | | |
| Safety Zone Height | | | | | |
| Safety Zone Alarm | | | | | |
| Threshold | | | | | |
| Interface Threshold | | | | | |
| Level Trim | | | | | |
| Level Ticks | | | | | |
| A. I. Disp | | | | | |
| Dev Addr | | | | | |
| Interface Ticks (opt.) | | | | | |
| Fid Ticks | | | | | |
| <Software Version> | | | | | |



Enhanced Model 705 Eclipse Guided Wave Radar Transmitter FOUNDATION fieldbus™ Configuration Data Sheet

Copy blank page and store calibration data for future reference and troubleshooting.

| Item | Value | Value | Value | TROUBLESHOOTING | |
|-------------|-------|-------|-------|-----------------|-------------------|
| | | | | Working Value | Non-Working Value |
| FidTicks | | | | | |
| FidSprd | | | | | |
| Fid Type | | | | | |
| HF Cable | | | | | |
| Fid Gain | | | | | |
| Window | | | | | |
| Conv Fct | | | | | |
| Scl Ofst | | | | | |
| Neg Ampl | | | | | |
| Pos Ampl | | | | | |
| Signal | | | | | |
| Compsate | | | | | |
| DrateFct | | | | | |
| Targ Ampl | | | | | |
| Targ Tks | | | | | |
| Targ Cal | | | | | |
| OperMode | | | | | |
| 7xKCorr | | | | | |
| ElecTemp | | | | | |
| Max Temp | | | | | |
| Min Temp | | | | | |
| SZ Hyst | | | | | |
| Name | | | | | |
| Date | | | | | |
| Time | | | | | |