



RTD PART NUMBER LAYOUT

| | | | | | | | | | |
|----------|-------------|----------|-----------------|--------------------|---------------|----------------|----------------------------|-----------------------|---------------------|
| APPROVAL | RTD ELEMENT | SHEATH Ø | SHEATH MATERIAL | ELEMENT CONNECTION | SHEATH LENGTH | ELEMENT OPTION | ENCLOSURE MOUNTING FITTING | ENCLOSURE TERMINATION | TERMINATION OPTIONS |
|----------|-------------|----------|-----------------|--------------------|---------------|----------------|----------------------------|-----------------------|---------------------|

TC PART NUMBER LAYOUT

| | | | | | | | | | |
|----------|-------------------|----------|-----------------|--------------------|---------------|----------------|----------------------------|-----------------------|---------------------|
| APPROVAL | THERMOCOUPLE TYPE | SHEATH Ø | SHEATH MATERIAL | MEASURING JUNCTION | SHEATH LENGTH | ELEMENT OPTION | ENCLOSURE MOUNTING FITTING | ENCLOSURE TERMINATION | TERMINATION OPTIONS |
|----------|-------------------|----------|-----------------|--------------------|---------------|----------------|----------------------------|-----------------------|---------------------|

APPROVAL

| CODE | DESCRIPTION |
|------|-----------------------------|
| HL06 | ATEX / IECEx - Ex db, Ex tb |

RTD ELEMENT OPTIONS

| 1st and 2nd characters | TC ELEMENT OPTIONS |
|------------------------|--|
| R1 (Grade B) | Thermocouple Type |
| R3 (Class AA) | E, EE, EEE Single (E), Double (EE), Triple (EEE) Thermocouple |
| RS (1.5/IEC Class B) | J, JJ, JJJ Single (J), Double (JJ), Triple (JJJ) Thermocouple |
| RA (Class A) | K, KK, KKK Single (K), Double (KK), Triple (KKK) Thermocouple |
| RB (Class B) | T, TT, TTT Single (T), Double (TT), Triple (TTT) Thermocouple |
| RC (Class C) | N, NN, NNN Single (N), Double (NN), Triple (NNN) Thermocouple |
| RD (Class D) | |

3rd character

| | |
|----------------|--|
| T (thin film) | Measuring Junction |
| F (wire wound) | U Ungrounded |
| | UM Ungrounded, Special Limits Thermocouple |

4th character

| | |
|--------------------|--|
| 1 (single element) | |
| 2 (dual element) | |

5th and 6th character

| | |
|----------------|--|
| 10 (10 Ω Cu) | |
| 12 (120 Ω Ni) | |
| 25 (250 Ω Pt) | |
| 55 (500 Ω Pt) | |
| 85 (100 Ω Pt) | |
| 92 (100 Ω Pt) | |
| 95 (1000 Ω Pt) | |

7th digit character

| | |
|---|--|
| L, K, M: (metallic sheath w/ refractory powder) | |
| H (mineral insulated sheath) | |

Element Connection

| Code | Description |
|------|-------------|
| 2 | 2 Wires |
| 3 | 3 Wires |
| 4 | 4 Wires |

Sheath Diameter and material (first digits are diameter, ending digits are material)

| | |
|---------|---|
| 2 8 | 1/8" Sheath Diameter, Material 8 = stainless steel (see list of other material codes) |
| 3 8 | 3/16" Sheath Diameter, Material 8 = stainless steel (see list of other material codes) |
| (236) 8 | 6 mm Sheath Diameter, Material 8 = stainless steel, (see list of other material codes) |
| 4 8 | 1/4" Sheath Diameter, Material: 8 = stainless steel, (see list of other material codes) |
| 5 8 | 5/16" Sheath Diameter, Material 8 = stainless steel, (see list of other material codes) |
| 6 8 | 3/8" Sheath Diameter, Material 8 = stainless steel, (see list of other material codes) |

Other Material Code Options: 3 = Alloy 600, 4 = 310 SS, 5 = 446 SS, 8 = 316 SS, 32 = 316L SS, 29 = Alloy C-276, 41 = HR160

Above with "Z" at end - does not affect Safety or Certification (suffix at end of p/n: is Z + 3 or 4 digits)

Z521 = Shin-Etsu sensor potting
Z187 = flat tip
Z371 = 20 Gauge sensor lead-wire

Enclosure Termination

| | |
|------------|--|
| 75T142E-T | (4 to 20) mA HART Field transmitter with aluminum housing, without display - see Note |
| 75T142E-D | (4 to 20) mA HART Field transmitter with aluminum housing, with display - see Note |
| 76T71C-D10 | (4 to 20) mA isolated Programmable transmitter with display and aluminum housing - See Note |
| 76T71C-D10 | (4 to 20) mA isolated Programmable HART transmitter with display and aluminum housing - See Note |
| 76T72C-D10 | (4 to 20) mA dual input HART transmitter with display and aluminum housing - See Note |
| 76T72C-D10 | (4 to 20) mA dual input HART transmitter with display and aluminum housing - See Note |
| 93 | Aluminum field wiring enclosure |
| 93,AD | Anodized aluminum field wiring enclosure |
| 94 | 316L Stainless Steel field wiring enclosure |

Note: Transmitter option followed by additional characters that represent calibration, does not affect safety, consult factory for details

Termination Options (one or more, separated by comma or dash)

| | |
|---------|--|
| SB | 1/2" NPT conduit reducer bushing |
| I | Stainless Steel tag |
| IM2 | M20x1.5 conduit reducer bushing, Nickel plated Brass |
| MS | M25x1.5 conduit reducer bushing, Nickel plated Brass |
| (blank) | Terminal Block - provided when there is no transmitter |
| T71-00 | (4 to 20) mA isolated head-mounted transmitter - see Note |
| T71C-00 | (4 to 20) mA HART isolated head-mounted transmitter - see Note |
| T72-00 | (4 to 20) mA HART isolated head-mounted transmitter - see Note |
| T72C-00 | (4 to 20) mA dual input, isolated HART head-mounted transmitter - see Note |
| T82-00 | (4 to 20) mA dual input, isolated HART head-mounted transmitter - see Note |

Does not affect safety or this Certification. Specific customer requirements not impacting this certification (i.e. special testing), may be followed by additional text or descriptive information.

Note: Transmitter option followed by additional characters that represent calibration, does not affect safety, consult factory for details

ENCLOSURE MOUNTING FITTING

| CODE | DESCRIPTION |
|----------|---|
| 6HN | 1/2 X 1/2 NPT STEEL HEX NIPPLE |
| 6PN_[1] | 1/2 X 1/2 NPT STEEL PIPE NIPPLE (SPECIFY LENGTH) |
| 6U_[1] | 1/2 X 1/2 NPT STEEL UNION / NIPPLE (SPECIFY LENGTH) |
| 8HN | 1/2 X 1/2 NPT STAINLESS STEEL HEX NIPPLE |
| 8PN_[1] | 1/2 NPT S.S. PIPE NIPPLE (SPECIFY LENGTH) |
| 8U_[1] | 1/2 NPT S.S. HEX/UNION/NIPPLE (SPECIFY LENGTH) |
| 8RXU_[1] | 1/2 NPT S.S. RND/UNION/NIPPLE (SPECIFY LENGTH) |

[1] Specify length 3-1/2" TO 9"

Installation Notes for configuration codes XP05 and XP06

WARNING - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR APPROVED CLASSIFICATION

WARNING - DO NOT OPEN WHEN ENERGIZED

WARNING - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT

- Approved Apparatus must be installed in accordance with these manufacturer instructions and per relevant codes, standards and regulations (i.e. IEC 60079-0, IEC 60079-1, IEC 60079-14, IEC 60079-31)
- Keep enclosure cover closed tightly and safety lock engaged when circuits are powered and an explosive atmosphere is present. Enclosures 93, 93,AD & 94 require 1/16" hexagonal wrench, enclosures 75 and 76 require a 3mm hexagonal wrench.
- T-Code is determined by maximum measured process temperature T_{process}.
- Seal all unknud entries with appropriate blanking element approved for area and protection type. Sensor assemblies are supplied without blanking elements, conduit seals, or cable glands. Installer should select appropriate blanking elements, conduit seals or cable glands that are suitable for the area protection type. Follow relevant codes, standards and regulations (i.e. IEC 60079-0, IEC 60079-1, IEC 60079-14, IEC 60079-31).
- Cable glands and wiring must be rated 5°C higher than Ta.
- Enclosure must be attached to potential matching line.
- Keep all connections and covers tight when circuits are alive. Do not open/remove covers unless area is known to be safe. Covers must be screwed tight and secured; safety catch must be fastened before putting into service.
- All sensor pipe and conduit threaded connections to be made wrench tight.
- Hazardous (Classified) Locations:

CE 2813 **II 2 GD Sira 18ATEX 1250X**
 Ex db IIC T6...T4 Gb Tamb=(See Table)
 Ex tb IIC T60C...T110°C Db Tamb=(See Table)
 IP66
 IECEx SIR 18.0065X
 Ex db IIC T6...T4 Gb Tamb=(See Table)
 Ex tb IIC T60°C...T110°C Db Tamb=(See Table)
 IP66

Specific Conditions of Use:

- The XP joints are not field repairable, contact manufacturer if dimensional information is needed.
- Field connections to XP sensors shall be appropriately certified for the location and installed in accordance with wiring method requirements of the local electrical code as applicable.
- Heat transfer from the process must not cause the XP sensor enclosure to exceed T-code (gas) or Surface Temperature (dust) rating of the sensor assembly. Therefore, it is the end-user's responsibility to ensure that the ambient temperature around the XP sensor enclosure does not exceed the permitted ambient. Prevention measures include installing suitable insulation or an assembly with suitable length sheath or lagging.
- When the process temperature range exceeds the service temperature range it shall be verified by on-site temperature measurements, taking the worst case conditions into account that the service temperature does not exceed the temperature range of the assembly enclosure.
- The ranges of stopping plugs shall not be used in conjunction with any other cable entry device.
- Reducers shall not be used for the direct inter-connection of enclosures.
- Any un-used enclosure entry must be filled with a properly certified Ex db, tb, IP66 stopping plug/blanking element.
- For Class III (dust), enclosures 93 w/ option AD, electrostatic charging of external surfaces shall be avoided.

| Enclosure | *Device | Electric Rating | Ambient Temp Range (Ta) w/o Union (w/ GHN, SHN, 6PN, SHP or 8PN Head Mounting Fittings) | Ambient Temp Range (Ta) w/ Union (w/ 6XU, 8XU, 8RXU Head Mounting Fittings) | Enclosure | Conduit Entries | Thread Size |
|--------------|---|------------------|---|---|-----------|-----------------|-------------|
| 93 and 93,AD | T71-00, T71C-00, T72-00, T72C-00 w/o display | 11-30 Vdc, 25 mA | Ta: -20 TO +55/70/85°C T6/T5/T4 Gb, T65/T70°C Db | Ta: -20 TO +55/60°C T6/T6 Gb, T65/T70°C Db | 93 | 1 | 3/4"-14 NPT |
| | Terminal Block | N/A | Ta: -20 TO +80/95°C T6/T5 Gb, T80/T95°C Db | Ta: -20 TO +60°C T6 Gb, T60°C Db | 94 | 1 | 3/4"-14 NPT |
| 94 | T71-00, T71C-00, T72-00, T72C-00 w/o display | 11-30 Vdc, 25 mA | Ta: -40 TO +55/70/85°C T6/T5/T4 Gb, T65/T80/T95°C Db | Ta: -20 TO +55/60°C T6/T6 Gb, T65/T70°C Db | 76 | 1 | 3/4"-14 NPT |
| | Terminal Block | N/A | Ta: -40 TO +80/95°C T6/T5 Gb, T80/T95°C Db | Ta: -20 TO +60°C T6 Gb, T60°C Db | 75 | 2 | 1/2"-14 NPT |
| 76 | T71-D10, T71C-D10, T72-D10, T72C-D10 w/ display | 11-36 Vdc, 23 mA | Ta: -40 TO +65/80/85°C T6/T5/T4 Gb, T85/T100/T105°C Db | Ta: -20 TO +60°C T6 Gb, T85°C Db | | | |
| | T82-D10 w/ display | 11-42 Vdc, 23 mA | Ta: -40 TO +65/80/85°C T6/T5/T4 Gb, T85/T100/T105°C Db | Ta: -20 TO +60°C T6 Gb, T85°C Db | | | |
| 75 | T142-T w/o display T142-D w/ display | 11-36 Vdc, 23 mA | Ta: -40 TO +55/70/80°C T6/T5/T4 Gb, T110°C Db | Ta: -20 TO +55/60°C T6/T5 Gb, T110°C Db | | | |

*For assemblies with transmitter terminations refer to the appropriate transmitter instruction manual for additional instructions

EXAMPLE RTD PART NUMBER:
HL06-R1T185H484-012(1/2)-FP-8XU594,M5,T82-00-4I-85-00-A-U-(S)-40-180)C

EXAMPLE TC PART NUMBER:
HL06-K48UM-010-FE-8HN93,T82-00-TI-K-00-A

| | | | | |
|--|----------------|----------------|----------------|----------------------------------|
| Installation Instruction ATEX / IECEx db, tb HL06, XP05 & XP06 Assembly, T71, T72, T82, T142 | SIZE: A | PART NUMBER: | REVISION DATE: | |
| | | H093703 | 04/25/2023 | |
| This document is PROPRIETARY to Pyromation | DRAWING NO: | REV: | SCALE: | FORT WAYNE, INDIANA 260-484-2580 |
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