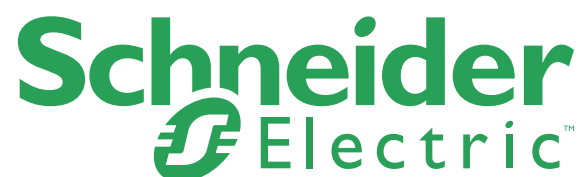


## I/A Series<sup>®</sup> Intelligent Vortex Flowmeters

Models 84F-T, 84F-U, and 84F-L (Style B)  
Flanged Body Flowmeters  
with HART Communications Protocol

Give instrument Model Code when ordering.  
\*Parts preceded by an asterisk are recommended spare parts.  
See Recommended Spare Parts Summary section for quantities.

TO ORDER PARTS, CALL 1-866-746-6477.



MODEL CODE

| Description  | Model |
|--|-------|
| Intelligent Vortex Flowmeter – Flanged Body  | 84F   |
| <b>Electronics Version</b>   |       |
| Intelligent Electronics, HART Communication Protocol, with Pulse Output  | -T    |
| Intelligent Electronics, HART Communication Protocol, without Pulse Output   | -U    |
| Intelligent Electronics, Low Power HART Communication Protocol, with Pulse Output  | -L    |
| <b>Nominal Line Size</b>   |       |
| 3/4 in (DN15) Line Size  | 3Q    |
| 1 in (DN25) Line Size  | 01    |
| 1 1/2 in (DN40) Line Size  | 1H    |
| 2 in (DN50) Line Size  | 02    |
| 3 in (DN80) Line Size  | 03    |
| 4 in (DN100) Line Size   | 04    |
| 6 in (DN150) Line Size   | 06    |
| 8 in (DN200) Line Size (a)   | 08    |
| 10 in (DN250) Line Size  | 10    |
| 12 in (DN300) Line Size  | 12    |
| <b>Body, Flange, and Shedder Bar Material</b>  |       |
| CF8M 316 SS Cast Body/Shedder and Type 316 SS Flanges (Line Sizes 3Q to 04) and Type 304 SS Flanges (Line Sizes 06 to 8); Line sizes 10 to 12, Fabricated 304 SS (b)       | R     |
| CF8M 316 SS Cast Body/Shedder and Type 316 SS Flanges (Line Sizes 3Q to 04) (Face-to-face lengths are backward compatible with Style A Model 84 Vortex Flowmeters) (c) (d) | Y     |
| Nickel Alloy CX2MW (e) Cast Body/Shedder and Nickel Alloy N06022 Flanges (Line Sizes 3Q to 08); Line Sizes 10 and 12 are fabricated (e) (f)                                | H     |
| Duplex SS Cast Body/Shedder per ASTM A 995, Grade 4A, CD3MN and Duplex SS Flanges per A182 Grade F51 (Line Sizes 3Q to 08); Line Sizes 10 and 12 are fabricated (f)        | D     |
| <b>End Connections and Flange Rating</b>   |       |
| ANSI Class 150 RF  | 1     |
| ANSI Class 300 RF  | 2     |
| ANSI Class 600 RF  | 3     |
| ANSI Class 900 RF (Not Available with Line Sizes 10 and 12)  | 4     |
| ANSI Class 1500 RF (Not Available with Line Sizes 10 and 12)   | 9     |
| ANSI Class 150 RTJ (Not Available with Line Size 3Q)   | N     |
| ANSI Class 300 RTJ   | P     |
| ANSI Class 600 RTJ   | R     |
| ANSI Class 900 RTJ (Not Available with Line Sizes 10 and 12)   | S     |
| ANSI Class 1500 RTJ (Not Available with Line Sizes 10 and 12)  | T     |
| PN16 EN1092-1 Raised Face Type “D” Nut Groove (Available with Line Sizes 06 through 12 only)   | 5     |
| PN25 EN1092-1 Raised Face Type “D” Nut Groove (Available with Line Sizes 08 through 12 only)   | J     |
| PN40 EN1092-1 Raised Face Type “D” Nut Groove  | 6     |
| PN63 EN1092-1 Raised Face Type “D” Nut Groove (g)  | 7     |
| PN100 EN1092-1 Raised Face Type “D” Nut Groove   | 8     |
| PN160 EN1092-1 Raised Face Type “D” Nut Groove (Not Available with Line Sizes 3Q, 10, and 12)  | K     |
| PN16 EN1092-1 Raised Face Finish Type B1 (Available with Line Sizes 06 through 12 only)  | D     |
| PN25 EN1092-1 Raised Face Finish Type B1 (Available with Line Sizes 08 through 12 only)  | L     |
| PN40 EN1092-1 Raised Face Finish Type B1   | F     |
| PN63 EN1092-1 Raised Face Finish Type B2 (h)   | G     |
| PN100 EN1092-1 Raised Face Finish Type B2  | H     |
| PN160 EN1092-1 Raised Face Finish Type B2 (Not Available with Line Sizes 3Q, 10, and 12)   | M     |
| PN40 EN1092-1 Raised Face Finish Type F  | C     |
| PN100 EN1092-1 Raised Face Finish Type F   | Q     |
| NPT Connection (Only Available with 3/4 inch - 1 1/2 inch Class 1500, and 2 inch Class 900 for R material option)  | V     |
| <b>Single or Dual Measurement; Isolation Valve and Manifold</b>  |       |
| Single Measurement; No Isolation Valve   | S     |
| Dual Measurement; Manifold with no Isolation Valves  | D     |
| Single Measurement; Manifold with one Isolation Valve; CF8M (316 SS); Not Available with End Connections 4, 9, H, K, M, S, and T (f)                                       | K     |
| Dual Measurement; Manifold with two Isolation Valves; CF8M (316 SS); Not Available with End Connections 4, 9, H, K, M, S, and T (f)  | L     |

MODEL CODE

MODEL CODE (Continued)

| Description   | Model |
|---|-------|
| <b>Sensor Fill, Temperature Range, and Material</b>   |       |
| <b>Standard Temperature Range (with Fill Fluid)</b>   |       |
| Fluorolube Fill, 0° to 200°F (-18° to +93°C) Nickel alloy CW2M (i)  | D     |
| Fluorolube Fill, 0° to 200°F (-18° to +93°C) Stainless Steel Type CF3M  | F     |
| Silicone Fill, 0° to 400°F (-18° to +204°C) Nickel alloy CW2M (i)   | R     |
| Silicone Fill, 0° to 400°F (-18° to +204°C) Stainless Steel Type CF3M   | S     |
| <b>Extended Temperature Range (No Fill Fluid) (j) (k)</b>   |       |
| Unfilled, 300° to 700°F (149° to 371°C) Nickel alloy CW2M (i)   | A     |
| Unfilled, 300° to 700°F (149° to 371°C) Stainless Steel Type CF3M   | B     |
| Unfilled, 300° to 800°F (149° to 427°C) Nickel alloy CW2M (i)   | E     |
| Unfilled, 300° to 800°F (149° to 427°C) Stainless Steel Type CF3M   | G     |
| <b>Electronics Housing Mounting, Material, and Conduit Connections</b>  |       |
| Integral Top Mounted 1/2-NPT Conduit Connections  | T     |
| Integral Top Mounted M20 Conduit Connections  | V     |
| Remote Mounted 1/2-NPT Conduit Connections (I)  | R     |
| Remote Mounted M20 Conduit Connections (I)  | W     |
| <b>Local Digital Indicator/Configurator</b>   |       |
| No Digital Indicator/Configurator   | N     |
| Full Function Digital Indicator/Configurator  | J     |
| <b>Electrical Safety</b>  |       |
| ATEX intrinsically Safe   | E     |
| ATEX flameproof   | H     |
| CSA intrinsically safe  | C     |
| CSA Division 2  | M     |
| CSA explosionproof  | D     |
| EAC intrinsically safe  | 1     |
| EAC flameproof  | 2     |
| FM intrinsically safe   | F     |
| FM nonincendive   | K     |
| FM explosionproof   | G     |
| IECEX intrinsically safe  | L     |
| IECEX flameproof  | B     |
| INMETRO intrinsically safe  | 3     |
| INMETRO flameproof  | 4     |
| KOSHA, flameproof   | 5     |
| NEPSI intrinsically safe  | R     |
| NEPSI flameproof  | S     |
| No Agency Electrical Certifications; with CE mark, PED Controls and Records                                   | Y     |
| No Agency Certifications; no CE mark; Units not to be installed in European Union (EU) countries              | Z     |
| <b>Optional Selections</b>  |       |
| <b>Cable Length Selection for Remote Electronics Housing</b>  |       |
| 20 ft (6 m) Cable to Connect to Remote Electronics Housing  | -B    |
| 30 ft (9 m) Cable to Connect to Remote Electronics Housing  | -D    |
| 40 ft (12 m) Cable to Connect to Remote Electronics Housing   | -E    |
| 50 ft (15 m) Cable to Connect to Remote Electronics Housing   | -G    |
| <b>Cleaning - Oxygen/Chlorine Service</b>   |       |
| Cleaning of Process Wetted Parts per Compressed Gas Association's CGA G-4.1 and ASTM G93                      | -H    |
| - Available only with Body/Flange/Shedder Material Codes R and Y.   |       |
| - Not available with Line Sizes 10 and 12 or with Isolation Valve Codes D, K, and L.                          |       |
| - Not available with Extended Temperature Codes E and G.  |       |
| <b>Sensor Plating</b>   |       |
| Gold Plated Sensor  | -J    |
| <b>Schneider Electric Certificates of Compliance/Conformance</b>  |       |
| Standard Certificate of Compliance  | -L    |
| Schneider Electric Material Certification of Process Wetted Metal (Conforms to EN 10204 type 3.1 certificate) | -M    |
| Process Wetted Parts Comply with NACE Standards MR-0175-2003 and MR-0103-2007                                 | -Q    |

**MODEL CODE (Continued)**

| Description   | Model    |
|---|----------|
| <b>Schneider Electric Calibration Certificate</b><br>Calibration and Pressure Test Certified Copy   | -N       |
| <b>Cable Connectors – with Electronics Housing Codes T and R only (1/2 NPT)</b><br>Hawke-Type Cable Gland (available only with electrical safety codes Y and Z)<br>PG11 Cable Gland, Trumpet Shaped (not available with explosionproof/flameproof certifications) | -P<br>-R |
| <b>Conduit Fitting</b><br>Adapter for use with 1/2 NPT conduit (Available only with Remote Mounted Housing Code R)  | -T       |
| <b>Welding Certificate</b><br>Welding certified to conform to ASME Boiler and Pressure Vessel Code, Section IX<br>Welding certified to conform to ASME Boiler and Pressure Vessel Code, Section IX and Radiographic Examination (X-Ray) of welds                  | -F<br>-X |
| <b>Instruction Manual</b><br>Detailed Instruction Manual in hard copy format (m)  | -C       |
| Examples: 84F-T02R1SDTNK-X; 84F-M04J7DRRJG-GQNT   |          |

- a. For Line Size 08 with 4, 9, S, T, K, and M End Connections, Welding Certificate Option -X is required.
- b. Required with Male NPT end connections (Option -V).
- c. Available with ANSI End Connections 1, 2 and 3 for Line Sizes 3Q through 08.
- d. For line sizes 06 to 12, Body, Flange, and Shedder Bar Material Option R provides the same face-to-face lengths as Style A Model 84 Vortex Flowmeters.
- e. Equivalent to Hastelloy® C-22. Hastelloy® is a registered trademark of Haynes International, Inc.
- f. Contact Global Customer Support for availability in Style B.
- g. For Line Sizes 3Q, 01, and 1H, select End Connection 8.
- h. For Line Sizes 3Q, 01, and 1H, select End Connection H.
- i. Equivalent to Hastelloy® C-4C.
- j. Welding Certificate Option -X is required for extended temperature range (400° to 800° F) (204° to 427° C).
- k. High Temperature Sensors are not available with Body, Flange, and Shedder Bar Material selection D (Duplex SS).
- l. For remote mounting, select optional cable length.
- m. A DVD containing the full documentation set is shipped standard with this product.

PARTS

Figure 1. Model 84F (Style B) Electronics Housing Assembly  
(Housing Integrally Mounted to Flowtube)

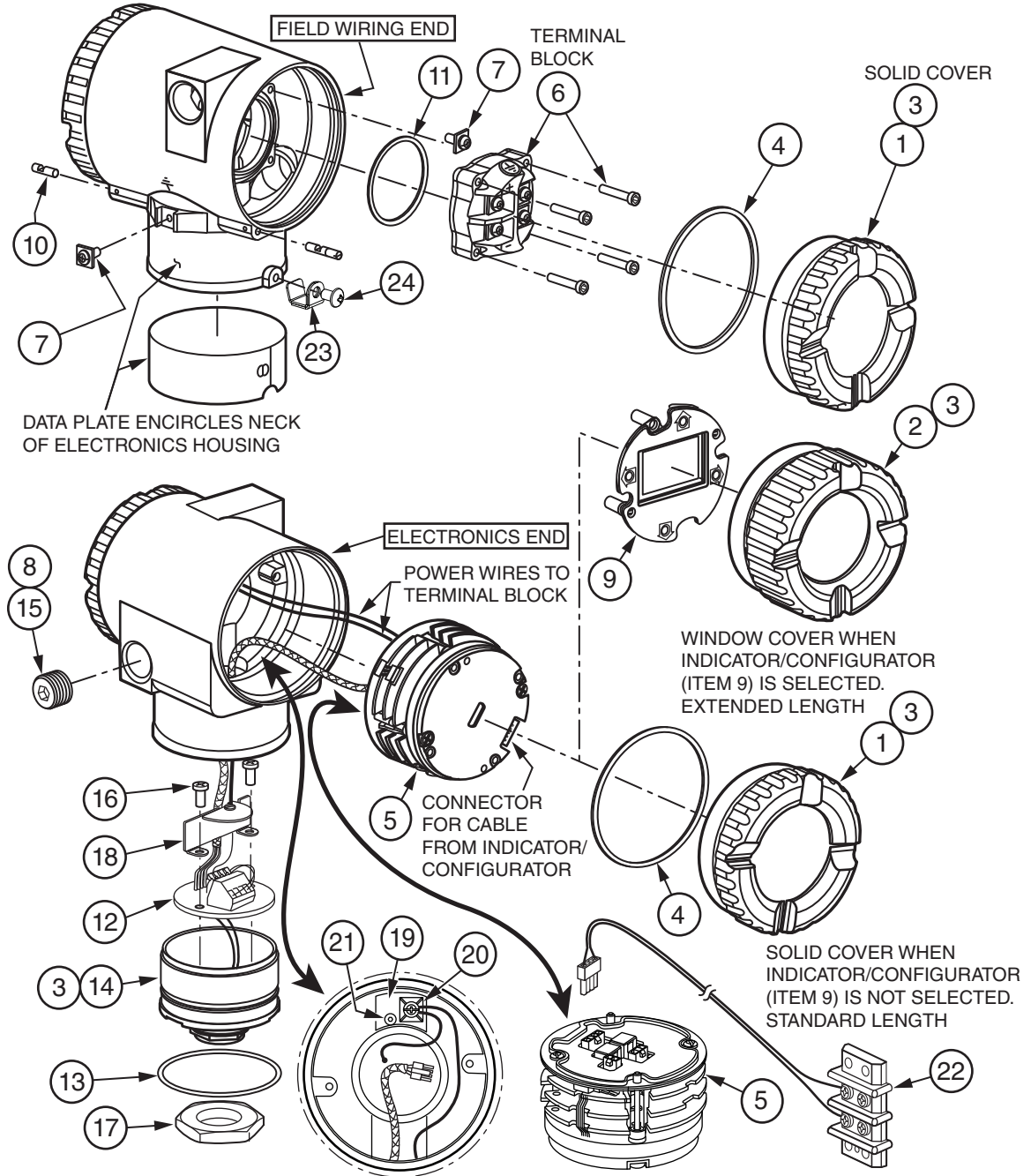


Table 1. Parts for Figure 1

| Item | Part No. | Qty.  | Part Name  |
|------|----------|---|--|
| 1    | D0162AP  | 2   | Cover, Aluminum; No Indicator/Configurator   |
| 2    | K0147YA  | 1   | Cover, Aluminum; with Window; used when Indicator/Configurator is selected, replaces Item 1 on electronics end.  |
| 3    | X0114AT  | A/R   | Grease, 14 ounce can (a)   |
| *4   | X0201FC  | 2   | O-ring, Cover  |
| *5   | Below    | 1   | Electronics Module Assembly  |
|      | K0147VT  |   | with Pulse Output (Version -T)   |
|      | K0148SL  |   | without Pulse Output (Version -U)  |
|      | K0152PD  |   | LOW POWER with Pulse Output (Version -L)   |
| 6    | Below    | 1   | Terminal Block Assembly - with or without Pulse Output. (The terminal block assembly includes 4 mounting screws) |
|      | K0147ZS  |   | with Pulse Output (non-explosionproof installations)   |
|      | K0149FM  |   | with Pulse Output (flameproof/explosionproof installations)  |
|      | K0148XE  |   | without Pulse Output (non-explosionproof installations)  |
|      | K0149FN  | without Pulse Output (flameproof/explosionproof installations)                                    |  |
| 7    | D0162VJ  | 2   | Screw Assembly, Plated ss, 0.164-32 x 0.375  |
| 8    | B1270KE  | A/R   | Sealant, Thread (a)  |
| *9   | K0149GV  | 1   | LCD Indicator/Configurator Replacement Kit; Includes Indicator/Configurator, label, screws, and instructions     |
| *10  | D0162WM  | 2   | Screw, Cover Lock, 0.164-32 (b)  |
| 11   | X0144KR  | 1   | O-ring, Terminal Block   |
| *12  | Below    | 1   | Sensor Interface Assembly  |
|      | L0123HH  |   | Standard Temperature, non-explosionproof transmitters (no preamplifier).   |
|      | L0123HF  |   | Standard Temperature, flameproof or explosionproof transmitters with barrier (no preamplifier).                  |
|      | L0123HG  |   | Extended Temperature, non-explosionproof transmitters (with preamplifier).                                       |
|      | L0123HD  | Extended Temperature, flameproof or explosionproof transmitters with barrier (with preamplifier). |  |
| *13  | Below    | 1   | O-ring, Housing Neck   |
|      | X0201LY  |   | O-ring - Standard  |
|      | X0144KW  |   | O-ring - for use with CSA certifications only (see WARNING below)  |
| 14   | Below    | 1   | Cup, Housing Neck  |
|      | K0152TP  |   | O-ring - Standard  |
|      | K0148TX  |   | O-ring - for use with CSA certifications only (see WARNING below)  |
| 15   | Below    | 1   | Plug, Pipe; (See WARNING below)  |
|      | B0139CA  |   | 1/2 NPT; Aluminum; with Housing Codes T and R  |
|      | D0179FK  |   | M20; ss; with Housing Codes V and W  |
| 16   | X0173UN  | 2   | Screw, Panhead; Cross Recessed; ss; M4 x 0.7 x 9 mm (.03 x 0.35 in)  |
| 17   | K0148TQ  | 1   | Nut, Jam; Hexhead; ss; 0.500-14  |
| 18   | K0152JY  | 1   | Shield Assembly  |
| 19   | K0152JV  | 1   | Molding, Terminal Block  |

PARTS

Table 1. Parts for Figure 1

| Item | Part No. | Qty. | Part Name                                  |
|------|----------|------|--|
| 20   | K0152JX  | 1    | Screw Assembly, P.E.; ss; 0.164-32 x 0.315 |
| 21   | X0133VN  | 1    | Screw, Socket Head; ss; 0.138-32 x 0.437   |
| 22   | K0152KU  | 1    | Harness, Test; Accessory (c)               |
| 23   | D0197PS  | 1    | Clip, Retention                            |
| 24   | X0174EK  | 1    | Screw, Button Head                         |

- a. Recommended lubricant and thread sealant is indicated for threaded parts. An equivalent commercially available equivalent lubricant or thread sealant may also be used.
- b. Cover lock screws are provided with ATEX/IECEX/NEPSI/EAC/INMETRO/KOSHA flameproof electrical certifications. They are used to help prevent rotation of the housing covers. To remove a cover, turn screw clockwise until screw clears the cover groove; then remove cover. To put cover back in place, screw cover on, and then turn screw counterclockwise until it engages the cover groove.
- c. The test harness provides a method for inputting a frequency using a frequency generator, for those users who require a test input for validation.

**⚠ WARNING**

**RISK OF MOISTURE INGRESS**

To maintain IP66 (IEC 60529) and NEMA 4X protection, the unused conduit opening must be closed with a metal plug. In addition, the threaded housing covers must be properly installed.

**Failure to follow these instructions can result in death or serious injury.**

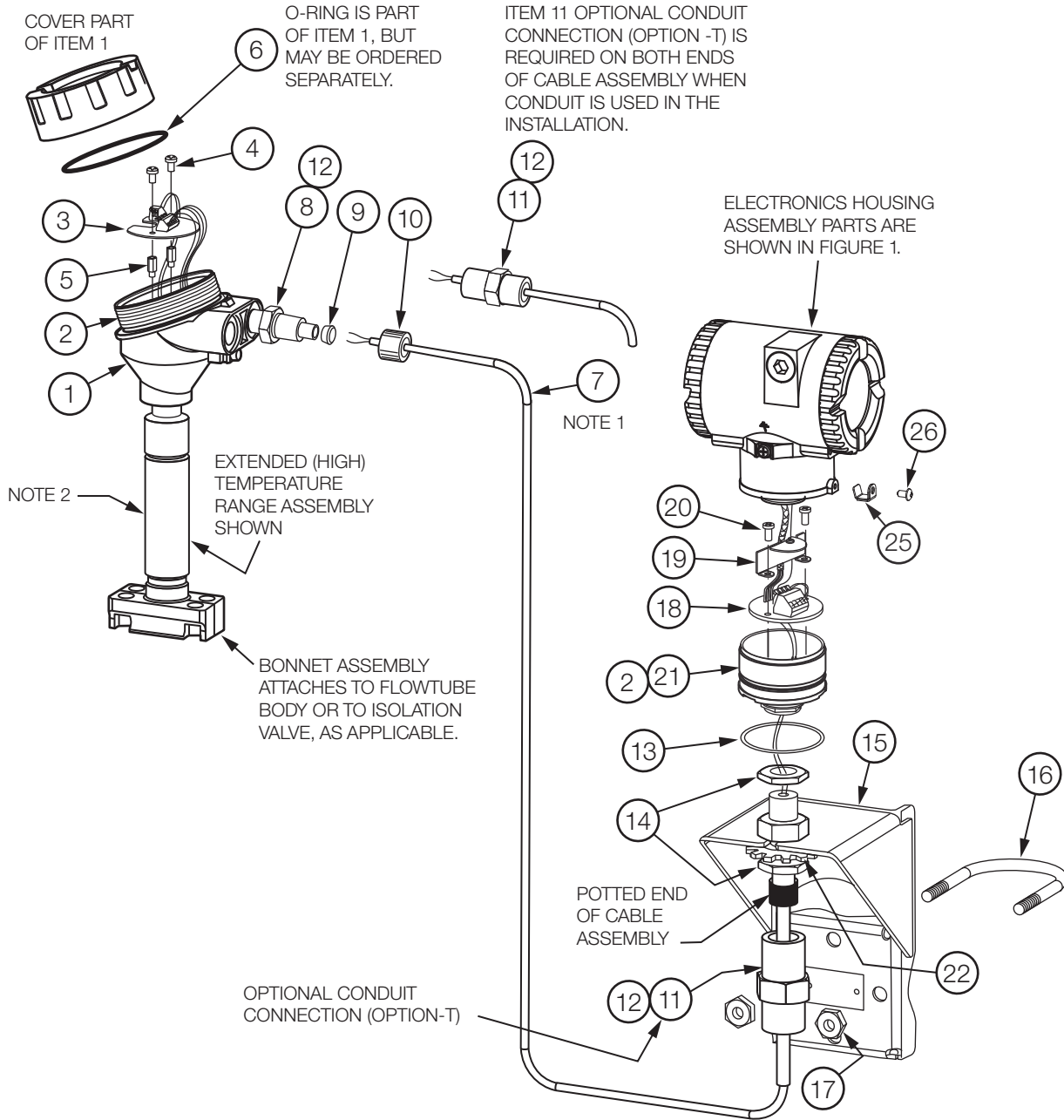
**⚠ WARNING**

**RISK OF ANSI/ISA NONCOMPLIANCE**

Failure to install the proper Housing Neck O-ring and Housing Neck Cup (Items 13 and 14) for CSA-labeled products violates ANSI/ISA 12.27.01.

**Failure to follow these instructions can result in death or serious injury.**

Figure 2. Model 84F (Style B) Flowmeter Assembly with Remote Mounted Electronics Housing





PARTS

Table 2. Parts for Figure 2

| Item | Part No. | Qty. | Part Name  |
|------|----------|------|--|
| 1    | K0152GB  | 1    | Connection Head Assembly (Junction Box); explosionproof; ss; Includes housing, cover, cover lock, and cover O-ring |
| 2    | X0114AT  | A/R  | Grease, 14 ounce can (a)   |
| *3   | Below    | 1    | Preamplifier Assembly  |
|      | L0123HT  |      | Standard Temperature   |
|      | L0123HV  |      | Extended Temperature   |
| 4    | X0173UN  | 2    | Screw, Panhead; Cross-recessed; ss; M4 x 0.7 x 9 mm (.03 x 0.35 in)  |
| 5    | X0201KL  | 2    | Standoff, hexagonal head; ss; M4 x 10 mm (.39 in)  |
| *6   | D0179EG  | 1    | O-ring, Cover; Part of Item 1 but may be ordered separately  |
| 7    | Below    | 1    | Cable Assembly, Remote Housing (includes Connector Assembly) (b)   |
|      | K0149HU  |      | 20 ft (6 m) long   |
|      | K0149HV  |      | 30 ft (9 m) long   |
|      | K0149HW  |      | 40 ft (12 m) long  |
|      | K0149HX  |      | 50 ft (15 m) long  |
| 8    | B0185AJ  | 1    | Adapter; 1.125 Hexhead; ss; 1/2 NPT and 0.500-20   |
| 9    | K0146JV  | 1    | Bushing, silicone rubber; 0.275 in long; 0.280 I.D.  |
| 10   | B0185AK  | 1    | Nut, Knurled; ss; 0.542 in long; 0.500-20  |
| 11   | K0149LE  | 2    | Connector, Conduit; Option -T (required when conduit is used)  |
| 12   | B1270KE  | A/R  | Sealant, Thread (a)  |
| *13  | Below    | 1    | O-ring, Housing Neck   |
|      | X0201LY  |      | O-ring - Standard  |
|      | X0144KW  |      | O-ring - for use with CSA certifications only - See WARNING below  |
| 14   | K0148TQ  | 2    | Nut Jam; 1.250 Hexhead; ss; 0.500-20   |
| 15   | K0149HR  | 1    | Bracket Assembly, Mounting; painted steel  |
| 16   | D0114SM  | 1    | U-Bolt, 0.312-18; plated steel   |
| 17   | 0011962  | 2    | Nut, 0.312-18; plated steel  |
| *18  | Below    | 1    | Sensor Interface Assembly  |
|      | L0123HH  |      | Standard and Extended Temperature, intrinsically safe transmitters (no preamplifier).                              |
|      | L0123HF  |      | Standard and Extended Temperature, flameproof or explosionproof transmitters with barrier (no preamplifier).       |
| 19   | K0152JY  | 1    | Physical Ground (PE) Shield Assembly (flameproof units only)   |
| 20   | X0173UN  | 2    | Screw, Panhead; Cross Recessed; ss; M4 x 0.7 x 9 mm (.03 x 0.35 in) with barrier (no preamplifier)                 |
| 21   | Below    | 1    | Cup, Housing Neck  |
|      | K0152TP  |      | Cup - Standard   |
|      | K0148TX  |      | Cup - for use with CSA certifications only (see WARNING below)   |
| 22   | X0143SL  | 1    | Washer, Lock; Extended Tooth; ss; 0.875  |
| 25   | D0197PS  | 1    | Clip, Retaining  |
| 26   | X0174EK  | 1    | Screw, Button Head   |

- a. pp Recommended lubricant and thread sealant is indicated for threaded parts. An equivalent commercially available equivalent lubricant or thread sealant may also be used.
- b. The cable assembly is provided potted on the electronics housing end. The opposite end is assembled to the connection head assembly using a bushing (Item 9) and a knurled nut (Item 10) as described in instruction document MI 019-202 and MI 019-211. When a conduit is used during installation, a conduit connector is used at each end of the cable assembly.

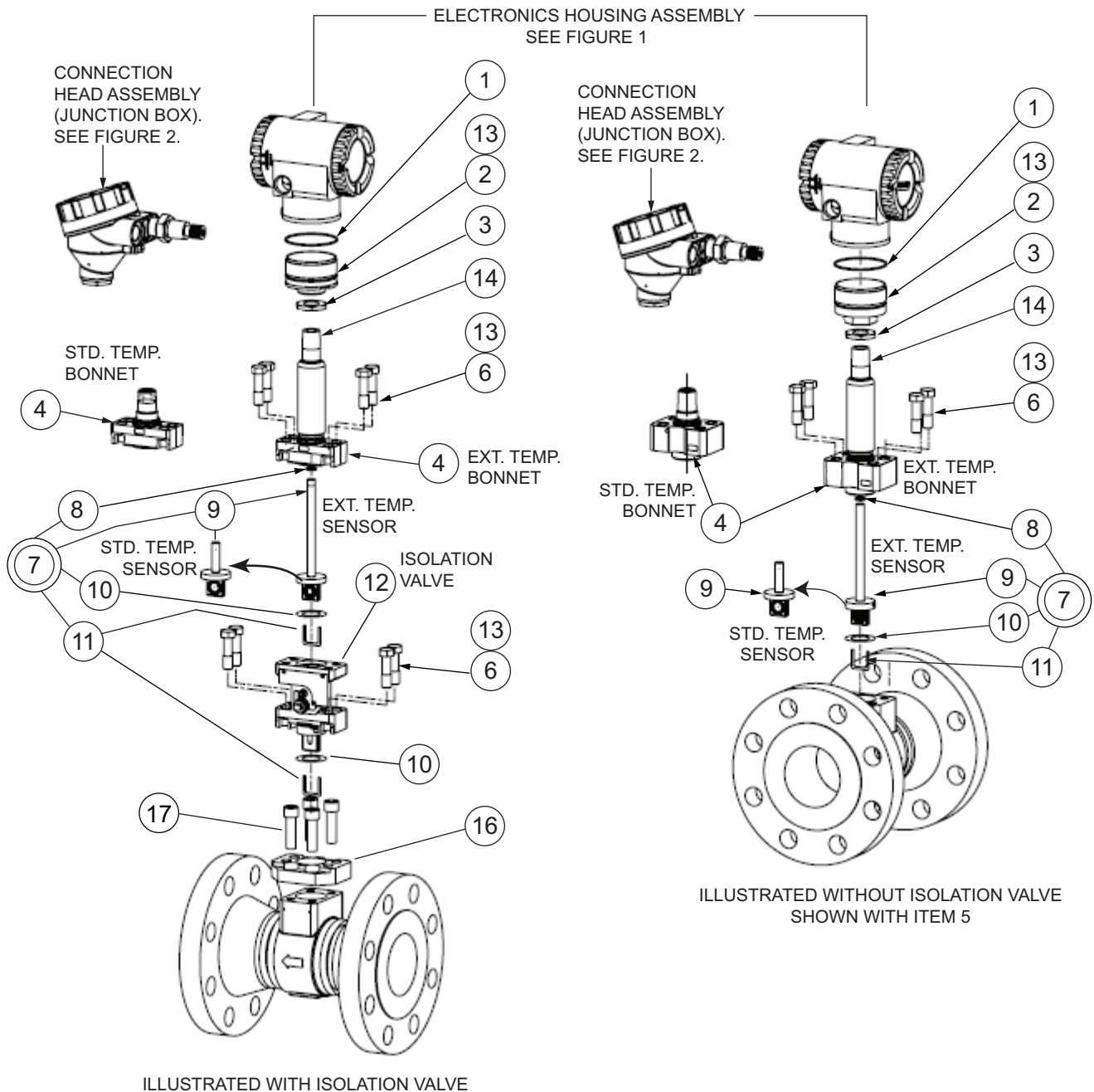
**▲ WARNING**

**RISK OF ANSI/ISA NONCOMPLIANCE**

Failure to install the proper Housing Neck O-ring and Housing Neck Cup (Items 13 and 21) for CSA-labeled products violates ANSI/ISA 12.27.01.

**Failure to follow these instructions can result in death or serious injury.**

**Figure 3. Model 84F (Style B) - Single Measurement Flowmeters  
Standard or Extended Temperature, with or without Isolation Manifold**



PARTS

Parts for Figure 3

| Item                      | Part No. | Qty. | Part Name   |
|---------------------------|----------|------|---|
| *1                        | Below    | 1    | O-ring, Housing Neck  |
|                           | X0201LY  |      | O-ring - Standard   |
|                           | X0144KW  |      | O-ring - for use with CSA certifications only (see WARNING below)                               |
| 2                         | Below    | 1    | Cup, Housing Neck   |
|                           | K0152TP  |      | Cup - Standard  |
|                           | K0148TX  |      | Cup - for use with CSA certifications only (see WARNING below)                                  |
| 3                         | K0148TQ  | 1    | Nut, Jam; Hexhead; ss; 0.500-14   |
| 4                         | Table 3  | 1    | Bonnet Assembly, Standard or Extended Temperature Ranges (a)                                    |
| 6                         | Below    | –    | Bolts (Also part of Item 7) (b)   |
|                           | X0173SV  | 4    | Standard Temperature, ASTM A193, Grade B7, plated steel. Hexhead (0.625 hex); 0.437-14 x 2.     |
|                           | X0174EY  | 4    | Extended Temperature, ASTM A453, Stainless Steel, grade 660. Hexhead (0.625 hex); 0.437-14 x 2. |
| Single Isolation Manifold |          |      |   |
|                           | X0173MC  | 8    | Hexhead (0.625 hex); 0.437-14 x 1.5 (Standard Temperature)                                      |
|                           | X0174EZ  | 8    | Hexhead (0.625 hex); 0.437-14 x 1.5 (Extended Temperature)                                      |
| *7                        | Table 4  | –    | Sensor Replacement Kit (Items 6, 8, 9, 10, and 11) (a) (c) (d)                                  |
| 8                         | Table 4  | 1    | O-ring, Standard or Extended Temperature Range  |
| 9                         | Table 4  | 1    | Sensor, Types D, F, R, S, C, or T (Selections)  |
| 10                        | Table 4  | 1    | Gasket, Standard or Extended Temperature Range  |
| 11                        | Table 4  | 1    | Flow Dam, Standard or Extended Temperature Range  |
| 12                        | Below    | 1    | Isolation Valve   |
|                           | K0168SC  |      | Standard Temperature Range; 15 to 80 mm (3/4 to 3 in) Sizes                                     |
|                           | K0168PJ  |      | Standard Temperature Range; 100 to 300 mm (4 to 12 in) Sizes                                    |
|                           | K0155JF  |      | Extended Temperature Range; 15 to 80 mm (3/4 to 3 in) Sizes                                     |
|                           | K0168PC  |      | Extended Temperature Range; 100 to 300 mm (4 to 12 in) Sizes                                    |
| 13                        | X0114AT  | A/R  | Grease; 14 ounce can  |
| 14                        | B1270KE  | A/R  | Sealant, Thread (e)   |
| 16                        | K0153BE  | 1    | Adapter Plate (with isolation manifold only)  |
| 17                        | X0174FD  | 4    | 3/4" Socket, Hex Cap Screw, 7/16"-14, Grade B7 (with isolation manifold only)                   |

- a. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.
- b. Four bolts required when no isolation valve is used; eight bolts required when an isolation valve is used. Threads may be lubricated with an equivalent commercially available lubricant.
- c. Do not use Sensor Replacement Kits and Sensor Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- d. For gold plated sensor replacement, contact Global Customer Support.
- e. An equivalent commercially available thread sealant may also be used.

|   |
|---|
| <b>⚠ WARNING</b>  |
| <b>RISK OF ANSI/ISA NONCOMPLIANCE</b>   |
| Failure to install the proper Housing Neck O-ring and Housing Neck Cup (Items 1 and 2) for CSA-labeled products violates ANSI/ISA 12.27.01. |
| <b>Failure to follow these instructions can result in death or serious injury.</b>  |

Table 3. Bonnet Assembly (a)

| Line Size Code | Single Isolation Valve Manifold | Standard Temperature      |                                      | Extended Temperature      |                                      |
|----------------|---------------------------------|---------------------------|--------------------------------------|---------------------------|--------------------------------------|
|                |                                 | Non-Explosion Proof Certs | Explosion Proof and Flameproof Certs | Non-Explosion Proof Certs | Explosion Proof and Flameproof Certs |
| 3Q to 03       | No                              | K0152TV                   | K0152TW                              | K0156JY                   | K0156JW                              |
| 3Q to 03       | Yes                             | K0147GU                   | K0147GT                              | K0147GY                   | K0147GX                              |
| 04 to 12       | No                              | K0152TX                   | K0152TY                              | K0156JZ                   | K0156JX                              |
| 04 to 12       | Yes                             | K0147GU                   | K0147GT                              | K0147GY                   | K0147GX                              |

a. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.

Table 4. Sensor Replacement Kits (a) (b)

| Kit Number  | Replaces Sensor Code | Fill Fluid (c) | Material (d)          | Item 6 Bolt (4) | Item 8 O-Ring | Item 9 Sensor (e) | Item 10 Gasket | Item 11 Flow Dam |
|---|----------------------|----------------|-----------------------|-----------------|---------------|-------------------|----------------|------------------|
| Sensor Replacement Kits for ATEX, CSA, IECEx, NEPSI, EAC, INMETRO, and KOSHA Certification Codes H, D, B, S, 2, 4, and 5 only (See Notes)                                   |                      |                |                       |                 |               |                   |                |                  |
| For Standard Temperature Range Flowmeters   |                      |                |                       |                 |               |                   |                |                  |
| K0161FL   | D                    | Fl.            | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JK           | L0121DT        | L0112KT          |
| K0161FK   | F                    | Fl.            | ss                    | X0173SV         | D0100RP       | K0148JJ           | L0121DT        | L0112KT          |
| K0161FJ   | R                    | Sil.           | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JH           | L0121DT        | L0112KT          |
| K0161FH   | S                    | Sil.           | ss                    | X0173SV         | D0100RP       | K0148JG           | L0121DT        | L0112KT          |
| For Extended Temperature Range Flowmeters   |                      |                |                       |                 |               |                   |                |                  |
| K0161FN   | A and E              | None           | Nickel alloy CW2M (f) | X0174EY         | K0147CC       | K0148KQ           | K0146PT        | K0148VB          |
| K0161FM   | B and G              | None           | ss                    | X0174EY         | K0147CC       | K0148KN           | K0146HL        | K0148VA          |
| Sensor Replacement Kits for other than ATEX, CSA, IECEx, NEPSI, EAC, INMETRO, and KOSHA Certification Codes H, D, B, S, 2, 4, and 5 only Certification Codes H, D, B, and S |                      |                |                       |                 |               |                   |                |                  |
| For Standard Temperature Range Flowmeters   |                      |                |                       |                 |               |                   |                |                  |
| K0161FE   | D                    | Fl.            | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JF           | L0121DT        | L0112KT          |
| K0161FD   | F                    | Fl.            | ss                    | X0173SV         | D0100RP       | K0148JE           | L0121DT        | L0112KT          |
| K0161FC   | R                    | Sil.           | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JD           | L0121DT        | L0112KT          |
| K0161FB   | S                    | Sil.           | ss                    | X0173SV         | D0100RP       | K0148JC           | L0121DT        | L0112KT          |

PARTS

Table 4. Sensor Replacement Kits (a) (b) (Continued)

| Kit Number                                       | Replaces Sensor Code | Fill Fluid (c) | Material (d)          | Item 6 Bolt (4) | Item 8 O-Ring | Item 9 Sensor (e) | Item 10 Gasket | Item 11 Flow Dam |
|--|----------------------|----------------|-----------------------|-----------------|---------------|-------------------|----------------|------------------|
| <b>For Extended Temperature Range Flowmeters</b> |                      |                |                       |                 |               |                   |                |                  |
| K0161FG  | A and E              | None           | Nickel alloy CW2M (f) | X0174EY         | K0147CC       | K0148KM           | K0146PT        | K0148VB          |
| K0161FF  | B and G              | None           | ss                    | X0174EY         | K0147CC       | K0148KK           | K0146HL        | K0148VA          |

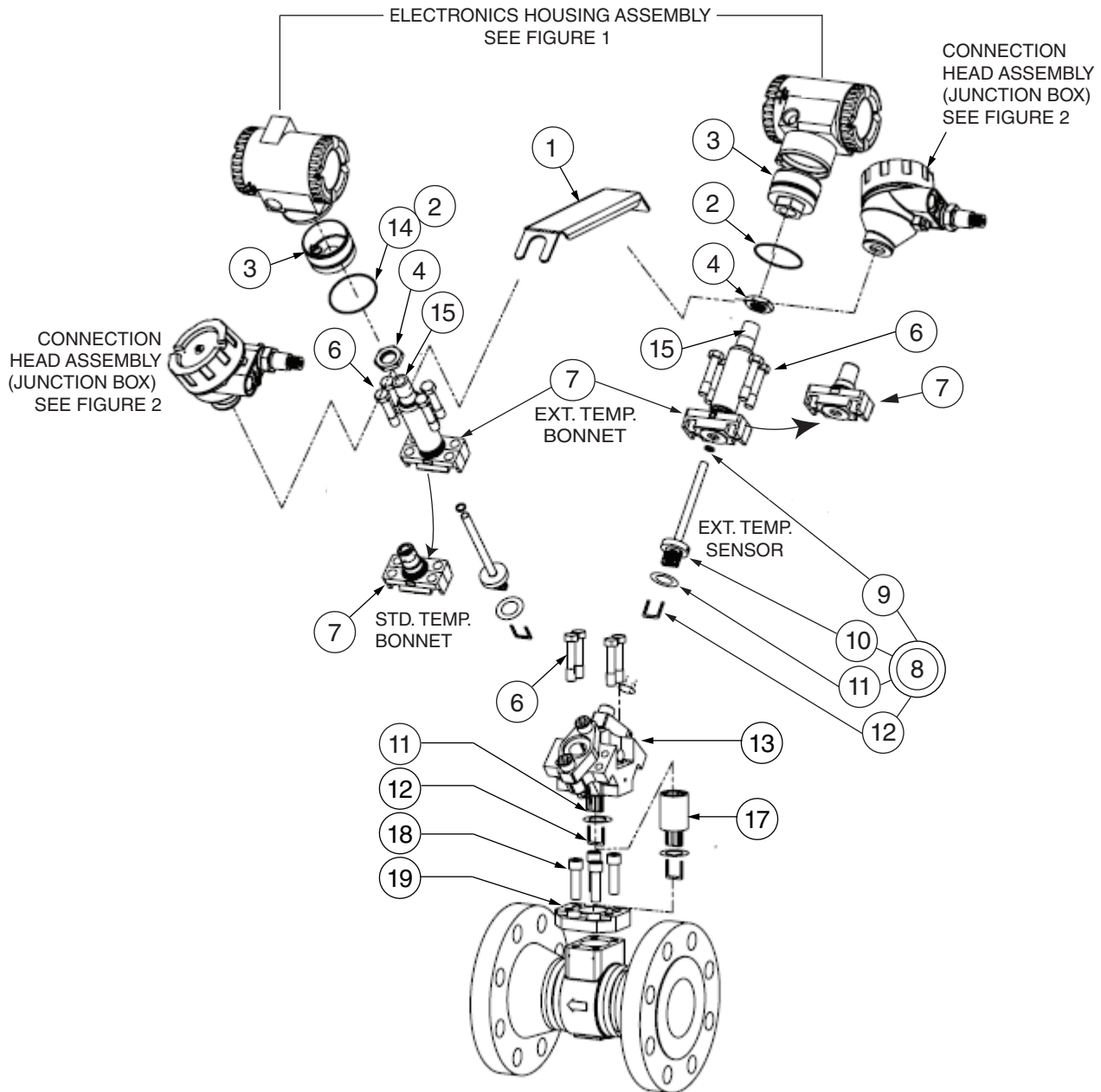
- a. Do not use Sensor Replacement Kits and Sensor Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- b. For gold plated sensor replacement, contact Global Customer Support.
- c. Fl. is Fluorinert; and Sil. is Silicone.
- d. ss is Stainless Steel Type CF3M.
- e. For kits without a sensor, see Table 5 "Sensor Seal Kits" on page 13.
- f. Equivalent to Hastelloy® C-4C.

Table 5. Sensor Seal Kits (a) (b) (c)

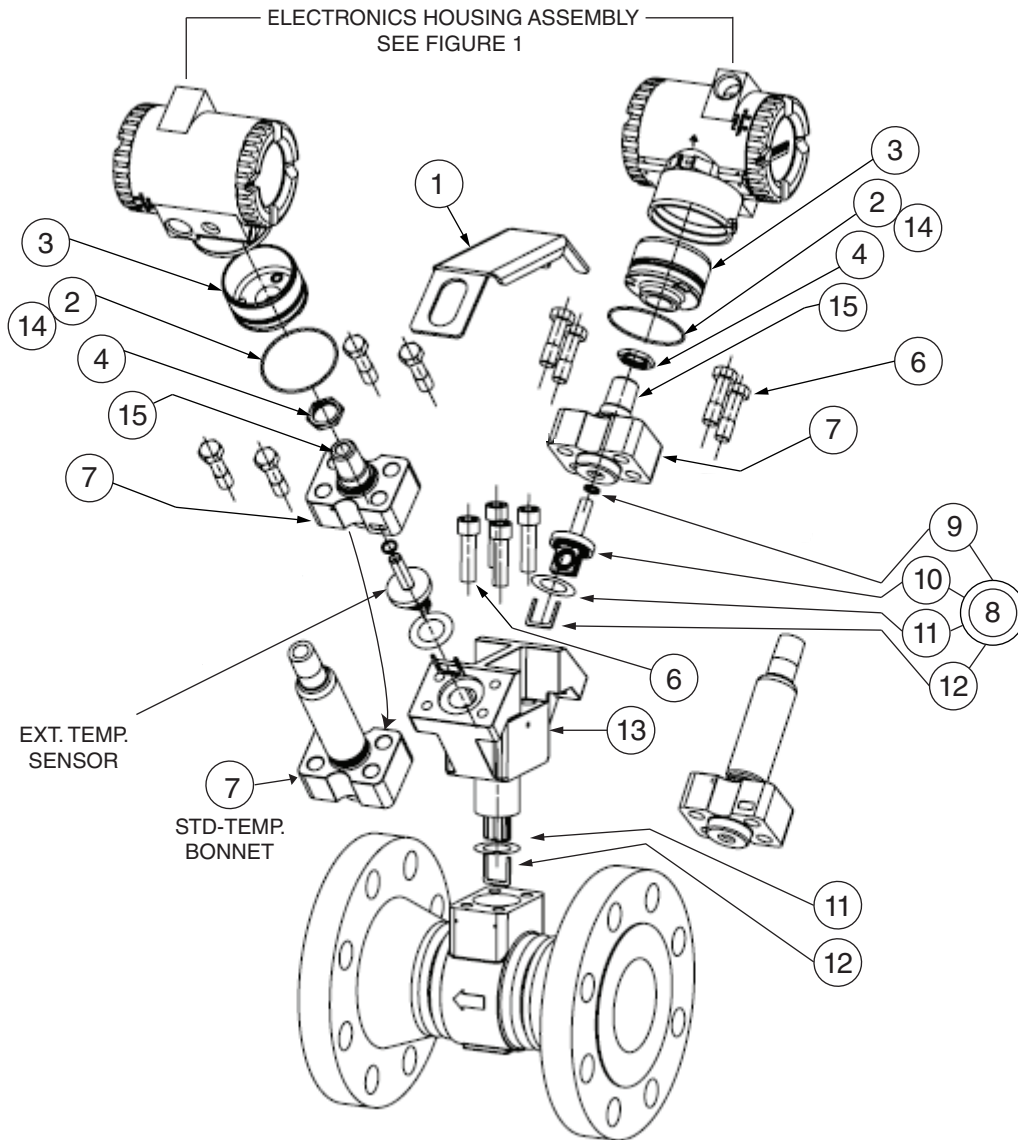
| Kit Number  | Item 6 Bolt (4) | Item 8 O-Ring | Item 10 Gasket | Item 11 Flow Dam |
|---|-----------------|---------------|----------------|------------------|
| <b>Standard Temperature - Sensor Types D, F, R, and S</b>                       |                 |               |                |                  |
| K0161EY   | X0173SV         | D0100RP       | L0121DT        | L0112KT          |
| <b>Extended Temperature - ss used for Sensor Type B and G</b>                   |                 |               |                |                  |
| K0161EZ   | X0174EY         | K0147CC       | K0146HL        | K0148VA          |
| <b>Extended Temperature - Nickel alloy (d)CW2M used for Sensor Type A and E</b> |                 |               |                |                  |
| K0161FA   | X0174EY         | K0147CC       | K0146PT        | K0148VB          |

- a. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.
- b. Do not use Sensor Replacement Kits and Sensor Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- c. For gold plated sensor replacement, contact Global Customer Support.
- d. Equivalent to Hastelloy® C-4C.

Figure 4. Model 84F (Style B) - Dual Measurement Flowmeters  
Standard or Extended Temperature, Manifold With Isolation Valves



**Figure 5. Model 84F (Style B) - Dual Measurement Flowmeters  
Standard or Extended Temperature, Manifold Without Isolation Valves**



Parts for Figure 4 and Figure 5

| Item | Part No. | Qty. | Part Name   |
|------|----------|------|---|
| 1    | Below    | 1    | Stabilizer Bracket  |
|      | K0148TU  |      | Standard Temperature Unit — Dual manifold with Valves             |
|      | K0148TV  |      | Extended Temperature Unit — Dual manifold with Valves             |
|      | K0163AB  |      | Standard Temperature Unit — Dual manifold without Valves          |
|      | K0153BF  |      | Extended Temperature Unit — Dual manifold without Valves          |
| *2   | Below    | 1    | O-ring, Housing Neck  |
|      | X0201LY  |      | O-ring - Standard   |
|      | X0144KW  |      | O-ring - for use with CSA certifications only (see WARNING below) |
| 3    | Below    | 1    | Cup, Housing Neck   |
|      | K0152TP  |      | Cup - Standard  |
|      | K0148TX  |      | Cup - for use with CSA certifications only (see WARNING below)    |

Parts for Figure 4 and Figure 5 (Continued)

| Item | Part No. | Qty. | Part Name  |
|------|----------|------|--|
| 4    | K0148TQ  | 2    | Nut, Jam; Hexhead; 0.500-14  |
| 6    | Below    | –    | Bolt, ASTM A193, Grade B7, plated steel (a) (b) (Also Part of Item 8)        |
|      | X0173SV  | 8    | Hexhead (0.625 hex); 0.437-14 x 2; Dual without isolation valve              |
|      | X0173TF  | 8    | Hexhead (0.625 hex); 0.437-14 x 2.5 Dual with isolation valve                |
|      | X0174FG  | 4    | 2.5" Socket Hex Cap Screws, Dual without isolation valve                     |
|      | X0174FH  | 4    | 2.25" Hex Cap Screws, Dual with isolation valve                              |
| 7    | Table 6  | 2    | Bonnet Assembly, Standard or Extended Temperature Ranges (c)                 |
| 8    | Table 7  | –    | Sensor Replacement Kit (Items 6, 9, 10, 11, and 12) (c) (d) (e)              |
| 9    | Table 7  | 1    | O-ring, Standard or Extended Temperature Range                               |
| 10   | Table 7  | 1    | Sensor, Types D, F, R, S, C, or T  |
| 11   | Table 7  | 1    | Gasket, Standard or Extended Temperature Range                               |
| 12   | Table 7  | 1    | Flow Dam, Standard or Extended Temperature Range                             |
| 13   | Below    | 1    | Dual manifold  |
|      | K0153BB  |      | without Valves, Std. or Ext. Temperature, 15 to 80 mm (3/4 to 3 in) Sizes    |
|      | K0153BD  |      | without Valves, Std. or Ext. Temperature, 100 to 300 mm (4 to 12 in) Sizes   |
|      | K0147AJ  |      | with Valves, Std. Temperature, 15 to 80 mm (3/4 to 3 in) Sizes               |
|      | K0147BD  |      | with Valves, Extended Temperature, 15 to 80 mm (3/4 to 3 in) Sizes           |
| 14   | X0114AT  | A/R  | Grease; 14 ounce can   |
| 15   | B1270KE  | A/R  | Sealant, Thread (f)  |
| 17   | K0168AU  | 1    | End Plate Adaptor with K0147AJ and K0147BD, 15 to 80 mm (3/4 to 3 in) Sizes  |
|      | K0155JC  |      | End Plate Adaptor with K0147AJ and K0147BD, 100 to 300 mm (4 to 12 in) Sizes |
| 18   | X0174FD  | 4    | Socket Hex Cap Screws  |
| 19   | K0153BE  | 1    | Adaptor Plate  |

- a. Do not use Sensor Replacement and Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- b. An equivalent commercially available thread sealant may also be used.
- c. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.
- d. Do not use Sensor Replacement and Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- e. For gold plated sensor replacement, contact Global Customer Support.
- f. An equivalent commercially available thread sealant may also be used.

**▲ WARNING**

**RISK OF ANSI/ISA NONCOMPLIANCE**

Failure to install the proper Housing Neck O-ring and Housing Neck Cup (Items 2 and 3) for CSA-labeled products violates ANSI/ISA 12.27.01.

**Failure to follow these instructions can result in death or serious injury.**



Table 6. Bonnet Assembly (a)

| Line Size Code | Single Isolation Valve Manifold | Standard Temperature      |                                      | Extended Temperature      |                                      |
|----------------|---------------------------------|---------------------------|--------------------------------------|---------------------------|--------------------------------------|
|                |                                 | Non-Explosion Proof Certs | Explosion Proof and Flameproof Certs | Non-Explosion Proof Certs | Explosion Proof and Flameproof Certs |
| 3Q to 03       | No                              | K0152TV                   | K0152TW                              | K0156JY                   | K0156JW                              |
| 3Q to 03       | Yes                             | K0147GU                   | K0147GT                              | K0147GY                   | K0147GX                              |
| 04 to 12       | No                              | K0152TX                   | K0152TY                              | K0156JZ                   | K0156JX                              |
| 04 to 12       | Yes                             | K0147GU                   | K0147GT                              | K0147GY                   | K0147GX                              |

- a. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.

Table 7. Sensor Replacement Kits (a) (b)

| Kit Number  | Replaces Sensor Code | Fill Fluid (c) | Material (d)          | Item 6 Bolt (4) | Item 9 O-Ring | Item 10 Sensor (e) | Item 11 Gasket | Item 12 Flow Dam |
|---|----------------------|----------------|-----------------------|-----------------|---------------|--------------------|----------------|------------------|
| <b>Sensor Replacement Kits for ATEX, CSA, IECEx, NEPSI, EAC, INMETRO, and KOSHA Certification Codes H, D, B, S, 2, 4, and 5 only</b>              |                      |                |                       |                 |               |                    |                |                  |
| <b>For Standard Temperature Range Flowmeters</b>  |                      |                |                       |                 |               |                    |                |                  |
| K0161FL   | D                    | Fl.            | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JK            | L0121DT        | L0112KT          |
| K0161FK   | F                    | Fl.            | ss                    | X0173SV         | D0100RP       | K0148JJ            | L0121DT        | L0112KT          |
| K0161FJ   | R                    | Sil.           | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JH            | L0121DT        | L0112KT          |
| K0161FH   | S                    | Sil.           | ss                    | X0173SV         | D0100RP       | K0148JG            | L0121DT        | L0112KT          |
| <b>For Extended Temperature Range Flowmeters</b>  |                      |                |                       |                 |               |                    |                |                  |
| K0161FN   | A and E              | None           | Nickel alloy CW2M (f) | X0174EY         | K0147CC       | K0148KQ            | K0146PT        | K0148VB          |
| K0161FM   | B and G              | None           | ss                    | X0174EY         | K0147CC       | K0148KN            | K0146HL        | K0148VA          |
| <b>Sensor Replacement Kits for <u>other than</u> ATEX, CSA, IECEx, NEPSI, EAC, INMETRO, and KOSHA Certification Codes H, D, B, S, 2, 4, and 5</b> |                      |                |                       |                 |               |                    |                |                  |
| <b>For Standard Temperature Range Flowmeters</b>  |                      |                |                       |                 |               |                    |                |                  |
| K0161FE   | D                    | Fl.            | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JF            | L0121DT        | L0112KT          |
| K0161FD   | F                    | Fl.            | ss                    | X0173SV         | D0100RP       | K0148JE            | L0121DT        | L0112KT          |
| K0161FC   | R                    | Sil.           | Nickel alloy CW2M (f) | X0173SV         | D0100RP       | K0148JD            | L0121DT        | L0112KT          |
| K0161FB   | S                    | Sil.           | ss                    | X0173SV         | D0100RP       | K0148JC            | L0121DT        | L0112KT          |
| <b>For Extended Temperature Range Flowmeters</b>  |                      |                |                       |                 |               |                    |                |                  |
| K0161FG   | A and E              | None           | Nickel alloy CW2M (f) | X0174EY         | K0147CC       | K0148KM            | K0146PT        | K0148VB          |
| K0161FF   | B and G              | None           | ss                    | X0174EY         | K0147CC       | K0148KK            | K0146HL        | K0148VA          |

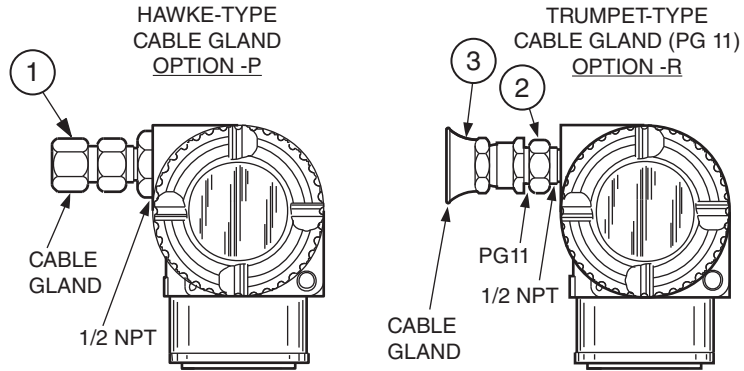
- a. Do not use Sensor Replacement and Seal Kits (Tables 4 and 5) for sensors that are used for oxygen service. These require special cleaning. Contact Global Customer Support.
- b. For gold plated sensor replacement, contact Global Customer Support.
- c. Fl. is Fluorinert; and Sil. is Silicone.
- d. ss is Stainless Steel Type CF3M.
- e. For kits without a sensor, see Table 8.
- f. Equivalent to Hastelloy® C-4C.

Table 8. Sensor Seal Kit (a) (b) (c)

| Kit Number   | Item 6 Bolt (4) | Item 8 O-Ring | Item 10 Gasket | Item 11 Flow Dam |
|--|-----------------|---------------|----------------|------------------|
| Standard Temperature: Used for Sensor Types D, F, R, and S                   |                 |               |                |                  |
| K0161EY  | X0173SV         | D0100RP       | L0121DT        | L0112KT          |
| Extended Temperature - ss used for Sensor Type B and G                       |                 |               |                |                  |
| K0161EZ  | X0174EY         | K0147CC       | K0146HL        | K0148VA          |
| Extended Temperature: Nickel alloy CX2MW (d) (Used for Sensor Types A and E) |                 |               |                |                  |
| K0161FA  | X0174EY         | K0147CC       | K0146PT        | K0148VB          |

- a. The bonnet assembly and sensor kits are pressure containment components. Replacement of any of these components requires pressure safety testing. Refer to Instruction manual.
- b. For gold plated sensor replacement, contact Global Customer Support.
- c. An equivalent commercially available thread sealant may also be used.
- d. Equivalent to Hastelloy® C-22.

Figure 6. Model 84F (Style B) – Optional Cable Selections -P and R



Parts for Figure 6

| Item | Part No. | Qty. | Part Name  |
|------|----------|------|--|
| 1    | N7141HX  | 1    | Hawke-Type Cable Gland (Option -P) (a)                       |
| 2    | N7141KR  | 1    | Adapter, 1/2 NPT to PG 11 (Part of Option -R) (a) (b)        |
| 3    | N7000AA  | 1    | Trumpet-type Cable Gland - PG 11 (Part of Option -R) (a) (b) |

- a. Cable connector options -P and -R are offered for use with Electrical Housing Codes T and R only (1/2 NPT).
- b. Option -R (Items 2 and 3) should be ordered as a set.

**RECOMMENDED SPARE PARTS SUMMARY**

| Figure Number | Item Number | Part Number   | Part Name   | Number of Parts Recommended for |         |          |
|---------------|-------------|---|---|---------------------------------|---------|----------|
|               |             |   |   | 1 Inst.                         | 5 Inst. | 20 Inst. |
| 1             | 4           | X0201FC   | O-ring, Electronics Housing Cover   | 2                               | 4       | 8        |
|               | 5           | Below<br>K0147VT<br>K0148SL<br>K0152PD                        | Electronics Module Assembly<br>with Pulse Output (Version -T)<br>without Pulse Output (Version -U)<br>LOW POWER with Pulse Output (Version -L)  | 0                               | 0       | 1        |
|               | 9           | K0149GV   | LCD Indicator/Configurator Replacement Kit  | 0                               | 0       | 1        |
|               | 10          | D0162WM   | Screw, Cover Lock (a)   | 2                               | 4       | 8        |
|               | 12          | Below<br>L0123HH<br><br>L0123HF<br><br>L0123HG<br><br>L0123HD | Sensor Interface Assembly (b) (c)<br>Standard Temperature; intrinsically safe;<br>no preamp<br>Standard Temperature; flameproof/<br>explosionproof; no preamp<br>Extended Temperature; intrinsically safe;<br>with barrier; with preamp<br>Extended Temperature; flameproof/<br>explosionproof; with barrier; with preamp | 0                               | 0       | 1        |
|               | 13          | Below<br>X0201LY<br>X0144KW                                   | O-Ring, Housing Neck<br>O-ring - Standard<br>O-ring - for use with CSA Certifications only  | 1                               | 2       | 4        |
| 2             | 3           | Below<br>L0123HT<br>L0123HV                                   | Preamplifier Assembly<br>Standard Temperature<br>Extended Temperature   | 0                               | 0       | 1        |
|               | 6           | D0179EG   | O-ring, Cover - for Connection Head Assembly  | 1                               | 2       | 4        |
|               | 13          | Below<br>X0201LY<br>X0144KW                                   | O-ring, Housing Neck<br>O-ring - Standard<br>O-ring - for use with CSA Certifications only  | 1                               | 2       | 4        |
| 3             | 1           | Below<br>X0201LY<br>X0144KW                                   | O-ring, Housing Neck<br>O-ring - Standard<br>O-ring - for use with CSA Certifications only  | 1                               | 2       | 4        |
| 4             | 2           | Below<br>X0201LY<br>X0144KW                                   | O-ring, Housing Neck<br>O-ring - Standard<br>O-ring - for use with CSA Certifications only  | 2                               | 4       | 8        |

- a. Two cover lock screws are used with Electrical Safety Codes H, B, and S (ATEX, IECEx, and NEPSI) and 2,4, and 5 (EAC, INMETRO, and KOSHA) flameproof units).
- b. Type D, F, R, and S sensors are for standard temperature applications.
- c. Type C and T sensors are for high temperature applications.

**— NOTE —**

Sensor replacement kits and sensor seal kits are also recommended for spares. These kits include applicable sensor type, an O-ring, a gasket, a flow dam, new bolts, and instructions. See Tables 4, 5, 7, and 8 for specific kit part numbers.

Schneider Electric Systems USA, Inc.  
38 Neponset Avenue  
Foxboro, MA 02035  
United States of America  
<http://www.schneider-electric.com>

Global Customer Support  
Inside U.S.: 1-866-746-6477  
Outside U.S.: 1-508-549-2424  
<https://pasupport.schneider-electric.com>

Copyright 2011-2018 Schneider Electric Systems USA, Inc. All rights reserved.

Schneider Electric and I/A Series are of Schneider Electric Systems USA, Inc., its subsidiaries, and affiliates. All other trademarks are the property of their respective owners.

