

## 2800 Series Flanged Magnetic Flowtubes

—  
with ptfе or Polyurethane Lining

Model	Sizes	End Connection	Lining	Style
280H to 281H	15 to 40 mm (1/2 to 1 1/2 in)	Flanged	ptfe	B
2802 to 2812	50 to 300 mm (2 to 12 in)	Flanged	ptfe, poly	C

See Model Codes Section for:

280H to 2812 Flanged Magnetic Flowtubes

**\*Parts preceded by an asterisk are recommended spare parts.  
Give Instrument Model Number and Style when ordering.  
See Recommended Spare Parts Summary section for quantities.**

**TO ORDER PARTS, CALL INVENSYS SYSTEMS INC. AT 1-866-746-6477.**

**MODEL CODES**

**ptfe Lined Flanged Magnetic Flowtubes - Models 280H to 2812**

<b><u>Nominal Line Size</u></b>	<b><u>Code</u></b>
15 mm (1/2 in) Line Size	280H
25 mm (1 in) Line Size	2801
40 mm (1 1/2 in) Line Size	281H
50 mm (2 in) Line Size	2802
80 mm (3 in) Line Size	2803
100 mm (4 in) Line Size	2804
150 mm (6 in) Line Size	2806
200 mm (8 in) Line Size	2808
250 mm (10 in) Line Size	2810
300 mm (12 in) Line Size	2812
<b><u>Tube Construction</u></b>	
280H Size Only: Stainless Steel - Investment Casting	-SB
2801 through 2812 Sizes only. 304 ss, Schedule 10	-SA
<b><u>End Connections</u></b>	
ANSI Class 150 Flange, Carbon Steel (cs)	BA
ANSI Class 150 Flange, 316 ss	BB
ANSI Class 300 Flange, cs (280H to 2808 Only)	BD
EN 1092-1, PN 10 Flange, cs	ZD
EN 1092-1, PN 16 Flange, cs	ZE
EN 1092-1, PN 25 Flange, cs	ZF
EN 1092-1, PN 40 Flange, cs	ZG
EN 1092-1, PN 10 Flange, 316 ss (280H to 2808 Only)	ZL
EN 1092-1, PN 16 Flange, 316 ss (280H to 2808 Only)	ZM
EN 1092-1, PN 25 Flange, 316 ss (280H to 2808 Only)	ZN
EN 1092-1, PN 40 Flange, 316 ss (280H to 2808 Only)	ZP
<b><u>Flowtube Lining</u></b>	
ptfe (polytetrafluoroethylene)	-T
<b><u>Electrode Material and Head Style</u></b>	
Tantalum-tungsten - Flat Head	B
316L ss - Conical Head (not available with 280H)	C
Hastelloy C - Flat Head (with ptfe Lining Only)	H
Hastelloy C - Conical Head (not available with 280H)	K
Platinum-10% iridium - Flat Head	P
316L ss - Flat Head	S
Titanium - Flat Head	T
<b><u>Nominal Supply Voltage and Frequency</u></b>	
Used with 120 V, 60 Hz (E96) (Series or Parallel Coils) (a)	A
Used with 240 V, 60 Hz (E96) (Series Coils only) (a)	B
Used with 220 V, 50 Hz (E96) (Series or Parallel Coils) (a)	D
Used with 240 V, 50 Hz (E96) (Series Coils only)	E
Used with Pulsed dc from 896 Transmitter (Series Coils only) (b)	F
Dual Calibration for Pulsed dc from 896 Transmitter (b) or 120 V or 240 V, 60 Hz, as specified	G
Calibration for use with IMT96, 60 Hz	K
Calibration for use with IMT96, 50 Hz	L
Dual Calibration for use with IMT96, or 120 V, 60 Hz (E96) (a)	M
Dual Calibration for use with IMT96, or 240 V, 60 Hz (E96) (a)	N
Dual Calibration for use with IMT96, or 120 V, 50 Hz (E96) (a)	Q
Dual Calibration for use with IMT96, or 230 V, 50 Hz (E96) (a)	R
Dual Calibration for use with IMT96, or 240 V, 50 Hz (E96) (a)	S

Model Code continued on next page.

**MODEL CODES (Cont.)**

**ptfe Lined Flanged Magnetic Flowtubes - Models 280H to 2812 (Cont.)**

<b>Housing Construction</b>	
General Purpose, NEMA 4X Housing	-G
Total/Accidental Submergence Housing (c)(d)	-N
High Humidity/Condensate Housing (e)	-C
<b>Optional Selections (More than one of the Options below may be selected, as applicable)</b>	
Cable Glands; Select for Nonconduit Applications (not available with “-S” Option) (f)	-G
Signal Cable Seal; Select for Conduit Applications (not available with “-G” Option) (f)	-S
ptfe Lining Protector (with ptfe Flowtube Lining Only)	-T
Ultrasonic Electrode Cleaning - Transducer with Oscillator and Cable (2802 to 2812 Only)	-U
Ultrasonic Electrode Cleaning - Transducer, Cable, and Junction Box for Portable Oscillator (2802 to 2812 Only)	-W
Ultrasonic Electrode Cleaning - Transducer Only (2802 to 2812 Only)	-Z
Examples: 280H-SBBB-ATA-G-G; 2812-SASD-ASD-G-GW; 2802-SABB-TBA-GTU	

- (a) When ordering these flowtubes with the Model IMT25 Transmitter, ECEP 13420D must be specified. Contact Invensys Systems.
- (b) 896 Series Transmitters have been withdrawn from sale. However, you can use this selection for a replacement tube used with existing 896 Transmitter.
- (c) Not available for flowtubes with integrally mounted E96T Transmitters.
- (d) Sealed for accidental or continuous operation under water up to 9 m (30 ft) deep. Supplied with a field kit for sealing after installation.
- (e) The -C Housing is recommended for warm ambient, cold process service; e.g. brewery, dairy.
- (f) The cable glands (“-G” option) selected here provide glands for field wiring to the flowtube junction box. Glands are generally specified in nonconduit applications. For conduit applications, specify Signal Cable Seal Option “-S”.

MODEL CODES (Cont.)

**Polyurethane Lined Flanged Magnetic Flowtubes - Models 2802 to 2812**

<b><u>Nominal Line Size</u></b>	<b><u>Code</u></b>
50 mm (2 in) Line Size	2802
80 mm (3 in) Line Size	2803
100 mm (4 in) Line Size	2804
150 mm (6 in) Line Size	2806
200 mm (8 in) Line Size	2808
250 mm (10 in) Line Size	2810
300 mm (12 in) Line Size	2812
<b><u>Tube Construction</u></b>	
AISI Type 304 Stainless Steel (304 ss), Schedule 10	-SA
<b><u>End Connections</u></b>	
ANSI Class 150 Flange, Carbon Steel (cs)	BA
ANSI Class 300 Flange, cs	BD
EN 1092-1, PN 10 Flange, cs	ZD
EN 1092-1, PN 16 Flange, cs	ZE
EN 1092-1, PN 25 Flange, cs	ZF
EN 1092-1, PN 40 Flange, cs	ZG
<b><u>Flowtube Lining</u></b>	
Polyurethane	-A
<b><u>Electrode Material</u></b>	
316L ss	S
<b><u>Nominal Supply Voltage and Frequency</u></b>	
Used with 120 V, 60 Hz (E96) (Series or Parallel Coils) (a)	A
Used with 240 V, 60 Hz (E96) (Series Coils only) (a)	B
Used with 220 V, 50 Hz (E96) (Series or Parallel Coils) (a)	D
Used with 240 V, 50 Hz (E96) (Series Coils only)	E
Used with Pulsed dc from 896 Transmitter (Series Coils only) (b)	F
Dual Calibration for Pulsed dc from 896 Transmitter (b) or 120 V or 240 V, 60 Hz, as specified	G
Calibration for use with IMT96, 60 Hz	K
Calibration for use with IMT96, 50 Hz	L
Dual Calibration for use with IMT96, or 120 V, 60 Hz (E96) (a)	M
Dual Calibration for use with IMT96, or 240 V, 60 Hz (E96) (a)	N
Dual Calibration for use with IMT96, or 120 V, 50 Hz (E96) (a)	Q
Dual Calibration for use with IMT96, or 230 V, 50 Hz (E96) (a)	R
Dual Calibration for use with IMT96, or 240 V, 50 Hz (E96) (a)	S
<b><u>Housing Construction</u></b>	
General Purpose, NEMA 4X Housing	-G
Total/Accidental Submergence Housing (c)(d)	-N
High Humidity/Condensate Housing (e)	-C

Model Code continued on next page.

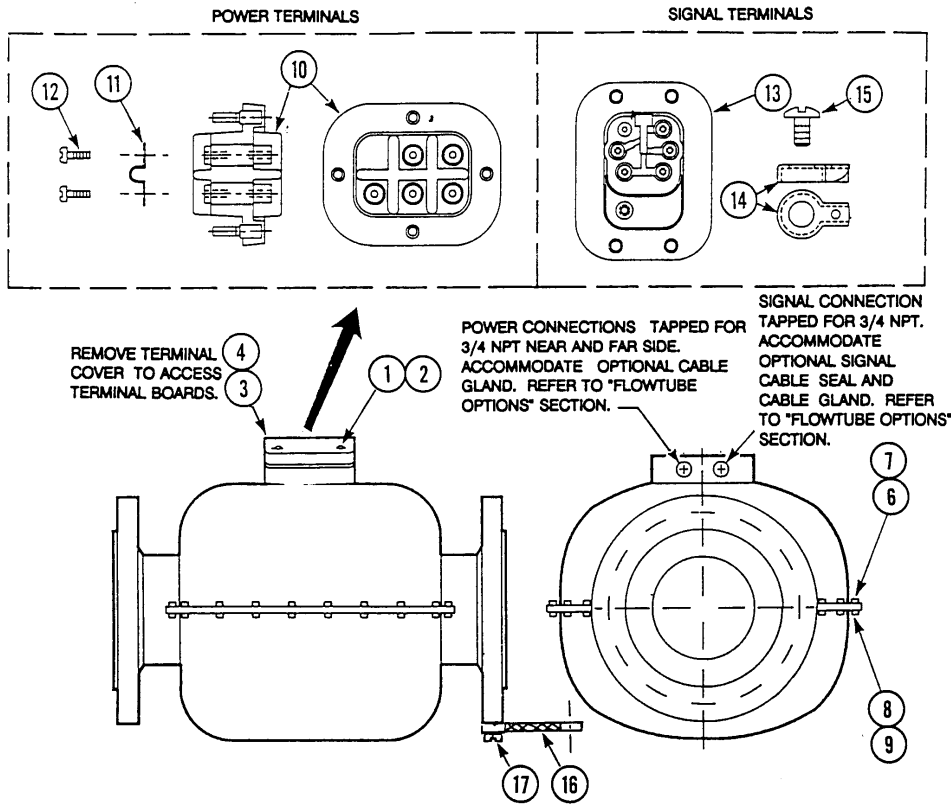
**MODEL CODES (Cont.)**

**Polyurethane Lined Flanged Magnetic Flowtubes - Models 2802 to 2812 (Cont.)**

<b>Optional Selections (More than one of the Options below may be selected, as applicable)</b>	
Cable Glands; Select for Nonconduit Applications (not available with “-S” Option) (f)	-G
Signal Cable Seal; Select for Conduit Applications (not available with “-G” Option) (f)	-S
Ultrasonic Electrode Cleaning - Transducer with Oscillator and Cable	-U
Ultrasonic Electrode Cleaning - Transducer, Cable, and Junction Box for Portable Oscillator	-W
Ultrasonic Electrode Cleaning - Transducer Only	-Z
Examples: 280H-SBBB-ATA-G-G; 2812-SASD-ASD-G-GW; 2802-SABB-TBA-GU	

- (a) When ordering these flowtubes with the Model IMT25 Transmitter, ECEP 13420D must be specified. Contact Invensys Systems.
- (b) 896 Series Transmitters have been withdrawn from sale. However, you can use this selection for a replacement tube used with existing 896 Transmitter.
- (c) Not available for flowtubes with integrally mounted E96T Transmitters.
- (d) Sealed for accidental or continuous operation under water up to 9 m (30 ft) deep. Supplied with a field kit for sealing after installation.
- (e) The -C Housing is recommended for warm ambient, cold process service; e.g. brewery, dairy.
- (f) The cable glands (“-G” option) selected here provide glands for field wiring to the flowtube junction box. Glands are generally specified in nonconduit applications. For conduit applications, specify Signal Cable Seal Option “-S”.

280H to 2812 FLANGED MAGNETIC FLOWTUBES (Figure 1)



Item	Part No.	Qty.	Part Name
1	K0123EX	6	Screw, pnh, 0.250-20 x 0.812
*2	C0100CK	6	O-Ring, 5.3 mm (0.21 in) I.D.
3	Below K0123ES K0123EZ K0123BX	1	Terminal Cover for General Purpose Application Total/Accidental Submergence Application Type Y Purge Application
*4	K0123EW	1	Terminal Cover Gasket (see Note)
*5	Below K0126HM K0126HN K0126HP K0126HQ K0126HR K0126HS K0126HU K0126HV K0126HW K0126HX	2	Flange Gasket, ptfе, used with optional TLP; Not Shown 15 mm (1/2 in) Size 25 mm (1 in) Size 40 mm (1 1/2 in) Size 50 mm (2 in) Size 80 mm (3 in) Size 100 mm (4 in) Size 150 mm (6 in) Size 200 mm (8 in) Size 250 mm (10 in) Size 300 mm (12 in) Size

**280H to 2812 FLANGED MAGNETIC FLOWTUBES (Figure 1) (Cont.)**

<b>Item</b>	<b>Part No.</b>	<b>Qty.</b>	<b>Part Name</b>
6	Below A0101SP X0100LT X0118CK	4-10	Screw, Hex Hd, 0.312-18 1.250 in long for 1/2 to 4 in Sizes 1.500 in long for 6 in Sizes 1.750 in long for 8 to 12 in Sizes
7	X0143AY	4-10	Washer, plain, 0.312 I.D.
8	A0101SN	4-10	Lockwasher, 0.312 I.D.
9	X0104CT	4-10	Nut, 0.312-18
10	K0111ZW	1	Terminal Board, Power
11	K0107RF	2	Jumper
12	X0116CY	A/R	Screw, pnh, 0.190-32 x 0.312
13	K0123CL	1	Terminal Board, Signal
14	K0123CP	5	Terminal Lug
15	K0123KL	5	Screw, pnh, 0.125-40 x 0.375

**— NOTE**

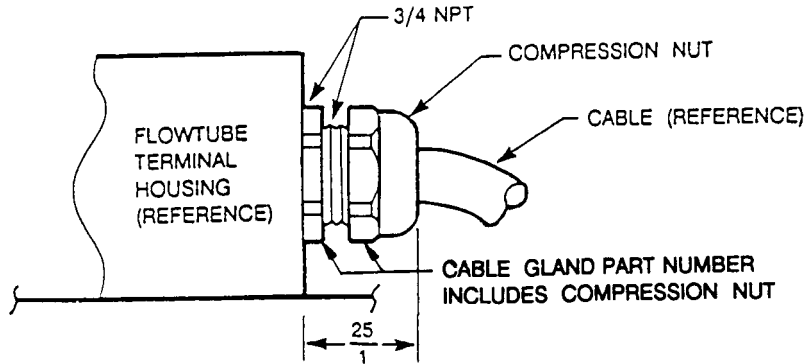

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Terminal Cover Gasket (Item 4) also incorporates gasketing for the power and signal terminal board compartments, Items 10 and 13.

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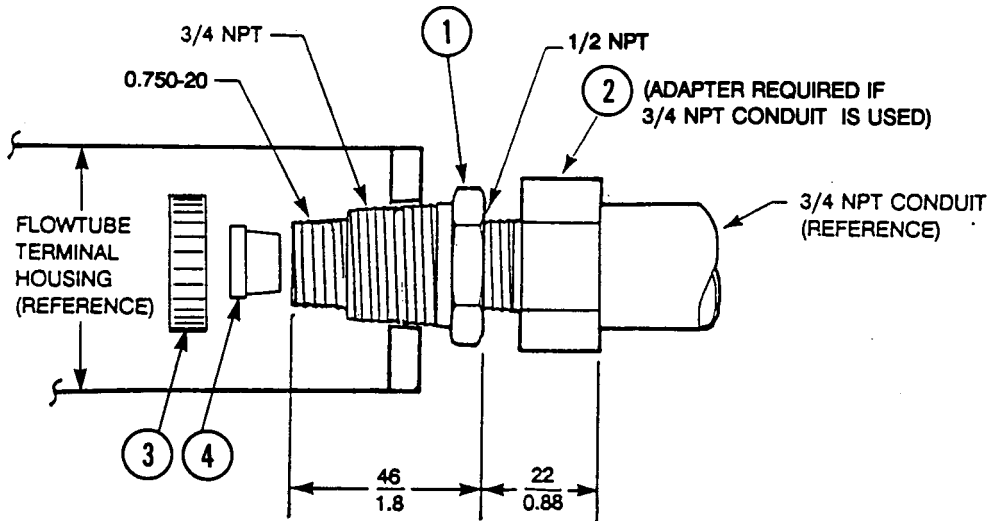
**FLOWTUBE OPTIONS**

**Optional Cable Gland for Nonconduit Applications - Option -G (Figure 2)**



Item	Part No.	Qty.	Part Name
1	X0173CW	3	Cable Gland (Option -G)

**Optional Signal Cable Seal for Conduit Applications (Figure 3)**



Item	Part No.	Qty.	Part Name
1	K0123FR	1	Reducer, 3/4 NPT to 1/2 NPT
2	K0136 BF	1	Adapter, 1/2 NPT to 3/4 NPT
3	K0123LF	1	Nut with Gland Washer, 0.750-20
4	K0123LE	1	Bushing, Neoprene, 0.437 I.D.

**RECOMMENDED SPARE PARTS SUMMARY**

Figure Number	Item Number	Part Number	Part Name	Number of Parts Recommended for		
				1 Inst.	5 Inst.	20 Inst.
1	2	C0100CK	O-Ring, Buna-N, 5.3 mm (0.21 in) I.D.	6	12	36
	4	K0123EW	Gasket, Terminal Cover	1	2	6
	5	Below K0126HM K0126HN K0126HP K0126HQ K0126HR K0126HS K0126HU K0126HV K0126HW K0126HX	Gasket, Flange, ptfe; see Note below 15 mm (1/2 in) size 25 mm (1 in) size 40 mm (1 1/2 in) size 50 mm (2 in) size 80 mm (3 in) size 100 mm (4 in) size 150 mm (6 in) size 200 mm (8 in) size 250 mm (10 in) size 300 mm (12 in) size	2	4	6

**— NOTE —**

Item 5 above is for use with the optional Teflon Lining Protector (TLP).

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