

I/A Series[®] Electronic Vortex Flowmeters

83W-D, -T, and -F Intelligent Flowmeters
and
83W-A Analog Flowmeters

Wafer Body

Style A

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.

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Foxboro[®]
by **Schneider** Electric

MODEL CODE

Model Code

Description	Model
I/A Series Vortex Flowmeter – Wafer Body	83W
Electronics Type	
Analog/Pulse Electronics	-A
Intelligent (Digital/Analog/Pulse) Electronics, FoxCom Communication	-D
Intelligent (Digital/Analog/Pulse) Electronics, HART Communication	-T
Intelligent (Digital) Electronics, FOUNDATION fieldbus Communication	-F
Nominal Line Size	
3/4 in (15 mm)	3Q
1 in (25 mm)	01
1 1/2 in (40 mm)	1H
2 in (50 mm)	02
3 in (80 mm)	03
4 in (100 mm)	04
6 in (150 mm)	06
8 in (200 mm)	08
Body Material	
ASTM A351-CF8M (316 ss) Cast Body and Shedder	S
ASTM A494-CW2M (Nickel alloy (a)) – Not Available with Size Codes 06 and 08	H
Mounting and Centering System	
Centering for ANSI Class 150, ANSI Class 300, ANSI Class 600; or	1
Centering for Metric PN 16 (Except for Size Codes 04, 06, and 08); or	
Metric PN 40 (Except for Size Code 04); Metric PN 64; Metric PN 100	
Centering for Metric PN 16 (Size Codes 04, 06, and 08 Only)	4
Centering for Metric PN 40 (Size Code 04 Only)	5
Isolation Valving	
No Isolation Valve	S
Isolation Valve (ss CF8M)	K
Sensor Type, Temperature Range, and Material	
Standard Temperature Range (Filled)	
Fluorolube Fill, 0 to 200°F (-20 to +90°C) Nickel alloy (b)	D
Fluorolube Fill, 0 to 200°F (-20 to +90°C) Stainless Steel Type CF3M	F
Silicone Fill, 0 to 400°F (-20 to +200°C) Nickel alloy (b)	R
Silicone Fill, 0 to 400°F (-20 to +200°C) Stainless Steel Type CF3M	S
Extended Temperature Range (Unfilled)	
Unfilled, 400 to 800°F (200 to 430°C) Nickel alloy (b)	C
Unfilled, 400 to 800°F (200 to 430°C) Stainless Steel Type CF3M	T
Mounting of Electronics Housing	
Integral, Top Mounted	T
Remote Mounted (See Optional Selections for Required Cable Length)	R
Local Display-Configurator/Output Indicator	
No Digital Display-Configurator or Output Indicator (Blind Unit)	N
Indicator for Electronics Type -A Only	
Analog Output Indicator (4 to 20 mA)	A
Analog Indicator Custom Scale (Legend/Markings per Sales Order)	B
Pulse Output Indicator	E
Pulse Indicator Custom Scale (Legend/Markings per Sales Order)	D
Display-Configurator for Electronic Types -D, -T, and -F Only	
Full Function Digital Display-Configurator	J
Electrical Certification	
FM nonincendive Class I, II, and III, Division 2, Groups A, B, C, D, F, and G.	A
FM Explosionproof for Class I, Division 1, Groups C and D; dust-ignitionproof for Class II & III, Div.1, Groups E, F, and G; nonincendive Class I, II, and III, Div. 2, Groups A, B, C, D, F, & G.	
No Approval/Certification Required	Z
Optional Selections	
Cable Length Selection for Remote Mounted Electronics	
20 ft (6 m) Remote Cable	-B
30 ft (9 m) Remote Cable	-D
40 ft (12 m) Remote Cable	-E
50 ft (15 m) Remote Cable	-G
Calibration Cable (For Electronic Type -A Only)	
Calibration Cable	-C

Model Code (Continued)

Description	Model
Foxboro Certifications	
Standard Certificate of Compliance	-L
Foxboro Material Certification of Process Wetted Metal (Conforms to DIN 50049-3.1b)	-M
Process Wetted Parts Conform to NACE Standard MR-01	-Q
Calibration Certificate	
Foxboro Calibration and Pressure Test Certification	-N
Cable Connections	
Hawke Cable Gland	-P
PG11 Trumpet Connection	-R
(Not available with Explosionproof or Flameproof Electrical Classifications)	
PG13.5 Trumpet Connection	-S
(Not available with Explosionproof or Flameproof Electrical Classifications)	
Meter Bolting Kit	
Meter Bolting Kit	-T
(Size Codes 3Q through 1H; available only with ANSI Class 150, 300, 600 flanges.	
Size Codes 02 and 03; available only with ANSI Class 150, 300, 600 and Metric PN 40 Flanges)	
Cleaning for Oxygen/Chlorine Service	
Cleaning of Process Wetted Parts per Compressed Gas Association's CGA G-4.1 and ASTM G93	-H
Sensor Plating	
Gold-Plated Sensor	-J

a. Equivalent to Hastelloy® C. Hastelloy is a registered trademark of Haynes International, Inc.

b. Equivalent to Hastelloy® CW2M.

Parts

Figure 1. INTEGRALLY MOUNTED FLOWMETER ASSEMBLY

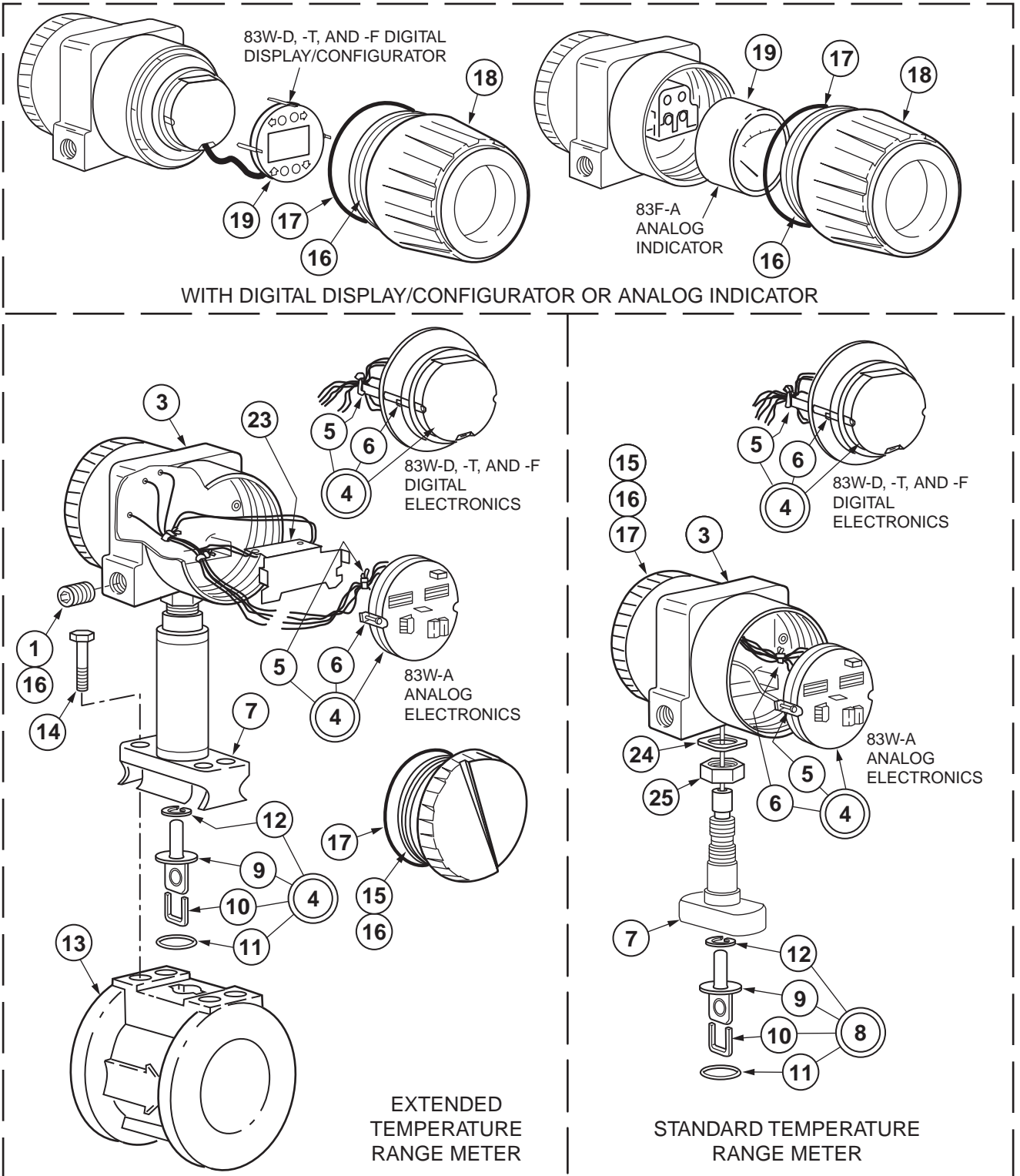


Figure 2. FLOWMETER ASSEMBLY WITH ISOLATION VALVING

(Also see Figure 1 for Items 10 and 11 without Isolation Valving)

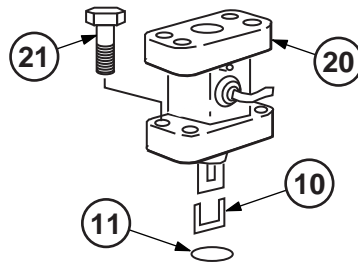


Table 1. Parts for Figure 1 and Figure 2

Item	Part No.	Qty.	Part Name
	Below	1	Instruction Manual
	MI 019-189		Analog Amplifier (83W-A)
	MI 019-194		Digital Electronics (83W-D) FoxCom Communication
	MI 019-199		Digital Electronics (83W-T) HART Communication
	MI 019-193		Digital Electronics (83W-F) FOUNDATION fieldbus Communication
1	Below	1	Plug, Pipe
	B0139CA		For Non-CENELEC Flameproof Meters
	N5100NC		For CENELEC Flameproof Meters
2	X0169LP		For CENELEC Flameproof Meters (not shown)
3	-	1	Housing Assembly (See Note 1)
*4	Below	1	Amplifier and Digital Electronic Module Kit
	B0194RF		Analog Amplifier Kit
	K0147DZ		Digital Electronic Kit (FoxCom Communication)
	K0147HX		Digital Electronic Kit (HART Communication)
	K0147VN		Digital Electronic Kit (FOUNDATION fieldbus Communication)
5	Below	2	Screw, Captive
	B0138ZY		For Analog Amplifier
	X0173RH		For Digital Electronic Module
6	N0139FR		Cable Tie
7	Note 1	1	Bonnet (See Note 1)
*8	Below	1	Sensor Replacement Kit (See Note 2)
	K0148KV		Sensor Type "D" (Nickel alloy (a) with Fluorolube Fill)
	K0148KU		Sensor Type "F" (316 ss with Fluorolube Fill)
	K0148KS		Sensor Type "R" (Nickel alloy (a) with Silicone Fill)
	K0148KR		Sensor Type "S" (316 ss with Silicone Fill)
	K0148KY		Sensor Type "C" (Nickel alloy (a), Extended Range)
	K0148KX		Sensor Type "T" (316 ss, Extended Range)
9	-	1	Sensor (See Note 2)
10	Below	1	Flow Dam (See Note 2)
	L0112KT		Standard Temperature
	K0146HK		Extended Temperature (ss)
	K0146PU		Extended Temperature (Nickel alloy (b))
11	Below	1	Gasket (See Note 2)
	L0121DT		Standard Temperature
	K0146HL		Extended Temperature (ss)
	K0146PT		Extended Temperature (Nickel alloy (b))

Table 1. Parts for Figure 1 and Figure 2 (Continued)

Item	Part No.	Qty.	Part Name
12	Below	1	O-Ring (See Note 2)
	D0100RP		Standard Temperature
	K0147CC		Extended Temperature
13	Note 3	1	Flowtube (See Note 3)
14	Below	4	Bolt (ASTM A193, Grade B7)
	X0173MC		0.437-14 x 1.5 in
	X0173PA		0.437-14 x 1.75 in (CENELEC)
15	B0138QV	2	Cover, Standard
16	Note 4	A/R	Lubricant (See Note 4)
*17	B0138QU	2	O-Ring
18	B0138QZ	1	Cover (for use w/Indicator or Display)
19	Below	1	Indicator or Digital Display/Configurator
	B0138YM		Analog Indicator (4 to 20 mA dc)
	B0135PA		Indicator (Pulse Output 12.5 to 100 Hz)
	B0135PB		Indicator (Pulse Output 90 to 400 Hz)
	B0135PC		Indicator (Pulse Output 360 to 1600 Hz)
	B0135PD		Pulse (1440 to 5000 Hz)
	K0147EK		Digital Display/Configurator
20	Below	1	Isolation Manifold
	B0194VZ		Standard Temperature (15 to 80 mm [3/4 to 3 in])
	B0194WA		Standard Temperature (100 to 200 mm [4 to 8 in])
	B0194WF		Extended Temperature (15 to 80 mm [3/4 to 3 in])
	B0194WG		Extended Temperature (100 to 300 mm [4 to 8 in])
21	X0173MC	4	Bolt (ASTM A193, Grade B7), 0.437-14 x 1.5 in
*22	Below	1	Preamplifier Kit (not shown – part of Item 4)
	K0146QG		Extended Temperature
	K0146QH		Extended Temperature (CENELEC Flameproof)
–	N0139FR		Cable Tie
–	–		Instruction, MI 019-193
23	K0146HP	1	Amplifier Calibration Cable (Option -C)
24	B0139DP	1	Pad, Restraining
25	X0171ZY	1	Nut, 0.875-14
26	N7141HX	1	Hawke Cable Gland (Option -P)
27	N7000AA	1	PG11 Cable Gland Case Connector (Part of Option -R; Note 5)
28	N7141KR	1	PG11 Cable Gland (Part of Option -R)
29	N7141DW	1	PG13.5 Trumpet Gland Case Connector (Part of Option -S; Note 6)
30	N7141KC	1	PG13.5 Trumpet Gland (Part of Option -S)

- a. Equivalent to Hastelloy® C.
b. Equivalent to Hastelloy®.

— NOTES —

- 1 This part is not usually replaced. Contact Foxboro for replacement parts.
- 2 Items 9, 10, 11, and 12 are included in the Sensor Replacement Kit (Item 8, Figure 1).
- 3 Flowtubes are not user replaceable. Return entire Flowmeter to Foxboro for repair or replacement and recalibration.
- 4 Lubricate threads when replacing indicated (see Figure 1) items with a good commercially available lubricant.
- 5 Order Items 25 and 26 together as a set.
- 6 Order Items 27 and 28 together as a set.

Figure 3. REMOTE MOUNTED CONFIGURATION

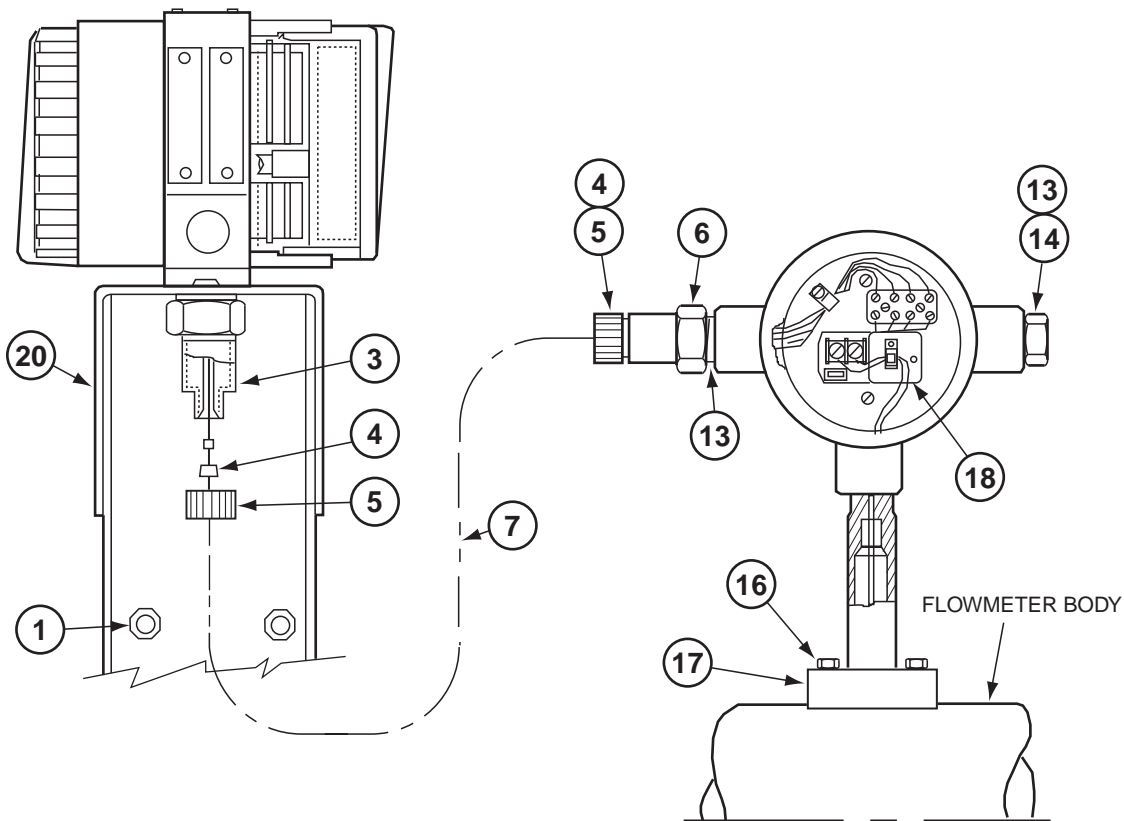


Table 2. Parts for Figure 3

Item	Part No	Qty	Part Name
1	0011962	2	Nut, 0.313-18
2	D0114SM	1	U-Bolt (Not shown)
3-7	Table 1		Connector, Bushing, Nut, Adapters, and Cable
*8	Below	1	Sensor Replacement Kit (Not shown, see Figure 1 and Note 1)
	K0147BZ		Sensor Type "D"
	K0147BX		Sensor Type "F"
	K0147BY		Sensor Type "R"
	K0147BW		Sensor Type "S"
	K0147AV		Sensor Type "C"
	B0194QX		Sensor Type "T"

Table 2. Parts for Figure 3 (Continued)

Item	Part No	Qty	Part Name
9	–	1	Sensor (Not shown, see Figure 1 and Note 1)
10	Below	1	Flow Dam (Not shown, see Figure 1 and Note 1)
	L0112KT		Standard Temperature
	K0146HK		Extended Temperature (ss)
	K0146PU		Extended Temperature (Nickel alloy (a))
11	Below	1	Gasket (Not shown, see Figure 1 and Note 1)
	L0121DT		Standard Temperature
	K0146HL		Extended Temperature (ss)
	K0146PT		Extended Temperature (Nickel alloy (a))
12	Below	1	O-Ring (Not shown, see Figure 1 and Note 1)
	D0100RP		Standard Temperature
	K0147CC		Extended Temperature
13	Note 2	A/R	Lubricant (See Note 2)
14	Below	1	Plug, Pipe
	B0139CA		for Non-CENELEC Flameproof Meters
	N5100NC		for CENELEC Flameproof Meters
15	X0169LP		for CENELEC Flameproof Meters (not shown)
16	Below	4	Bolt (ASTM A193, Grade B7)
	X0173MC		0.437-14 x 1.5 in
	X0173PA		0.437-14 x 1.75 in (CENELEC)
17	Note 3	1	Bonnet (See Note 3)
*18	Below	1	Preamplifier Kit
	K0146QG		Remote Preamplifier
	K0146QH		Remote Preamplifier (CENELEC Flameproof)
	N0139FR	2	Cable Ties
	MI 019-193		Instruction Manual
*19	N0138MZ	1	Cover Gasket (not shown)
20	L0112DE	1	Mounting Bracket Assembly

a. Equivalent to Hastelloy®.

— NOTES

- 1 Items 9, 10, 11, and 12 are included in Sensor Replacement Kit (Item 8, Figure 1)
 - 2 Lubricate threads when replacing indicated (see Figure 3) items with a good commercially available lubricant.
 - 3 This part is not usually replaced. Contact Foxboro for replacement parts.
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Table 3. Items 3 through 7 for Remote Mounted Flowmeters (see Figure 3)

Item	Part Name	For Non-CENELEC Flameproof Meters	For CENELEC Flameproof Meters	Qty.
3	Connector	L0112DA	K0146KF	1
4	Bushing	K0146JV	K0146JX	2
5	Nut	B0185AK	K0146KD	2
6	Adapter	B0185AJ	K0146KE	1
7	Cable, 6.1 m (20 ft) Cable, 9.1 m (30 ft) Cable, 12.2 m (40 ft) Cable, 15.2 m (50 ft)	K0146JL K0146JM K0146JN K0146JP	K0146KH K0146KJ K0146KK K0146KL	1

Table 4. Alignment Sleeves (a)

Nominal Line Size	Flange Type					
	ANSI Class 300	ANSI Class 600	Metric PN 16	Metric PN 40	Metric PN 64	Metric PN 100
15 mm (3/4 in) 25 mm (1 in) 40 mm (1 1/2 in) 50 mm (2 in)	K0147HY	K0147HY	K0147HY	K0147HY	K0147HY	K0147HY
80 mm (3 in) 100 mm (4 in) 150 mm (6 in) 200 mm (8 in)	K0147HZ	K0147HZ	K0147HZ	K0147HZ	K0147HZ	K0147HZ

a. These Alignment Sleeves (centering spacers) are used only to effect flowmeter installation, and two are provided (four with 150 mm [6 in] and 200 mm [8 in]) with the initial shipment of the unit. The part numbers are listed here only for the convenience of the user.

Table 5. Bolting Kits; Option –T (a)

Flange Type	Nominal Line Size					
	15 mm (3/4 in)	25 mm (1 in)	40 mm (1 1/2 in)	50 mm (2 in)	80 mm (3 in)	100 mm (4 in)
ANSI Class 150	D0148ZF	D0148ZF	D0148ZF	A2044HB	A2044HC	A2044HC (b)
ANSI Class 300	D0148ZJ	D0148ZJ	D0148ZK	A2044HB(b)	A2044HD	A2044HD
ANSI CLASS 600	D0148ZJ	D0148ZJ	D0148ZS	A2044HC(b)	A2044HD	A2044HE
Metric PN 16	D0148ZG	D0148ZG	D0148ZU	D0148ZU	D0148ZZ	D0148ZZ
Metric PN 40	Not Available	Not Available	Not Available	D0148ZU	D0148ZZ	L0114NT

a. These kits consist of studs and nuts which conform to size and material requirements necessary to meet pressure rating of specified flange type. These are normally supplied by the user but are optionally available either through the initial specification of the flowmeter or by ordering by part number from this table.

b. Order a quantity of two (2) for this application.

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	Below B0194RF K0147DZ K0147HX K0147VN	Amplifier and Digital Electronic Module Kit Analog Amplifier Kit Digital Electronic Kit, FoxCom Digital Electronic Kit, HART Digital Electronic Kit, Fieldbus	0	0	1
	8	Below K0148KV K0148KU K0148KS K0148KR K0148KY K0148KX	Sensor Replacement Kit Sensor Type "D", Hast. C. w/Fluorolube Fill Sensor Type "F", 316 ss w/Fluorolube Fill Sensor Type "R", Hast. C. w/Silicone Fill Sensor Type "S", 316 ss w/Silicone Fill Sensor Type "C", Hast. C, Extended Range Sensor Type "T", 316 ss, Extended Range	0	1	2
	17	B0138QU	O-Ring	1	2	4
	Item 18 on Figure 3, and 22 on Figure 1	Below K0146QG K0146QH	Preamplifier Kit (Universal) Non-CENELEC Flameproof CENELEC Flameproof	0	0	1
3	19	N0138MZ	Cover Gasket	0	1	2

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