

**I/A Series<sup>®</sup> Mass Flow and Density Meters**

—

**Model CFT50**

**Digital Coriolis Mass Flow Transmitter**

—

**with**

**HART or Modbus Communication Protocol**

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**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.

**MODEL CODE**

<b>Description</b>				
CFT50 = Digital Coriolis Mass Flow Transmitter				
<b>Mass Flowtube Interface</b>				
-B = CFS10 and CFS20 Series Flowtubes				
<b>Transmitter Mounting</b>				
1 = Remote Mounted Transmitter (a)				
<b>Language</b>				
E = English				
<b>Nominal Supply Voltage</b>				
A = 120 to 240 V ac, 50 or 60 Hz				
B = 10 to 36 V dc (24 V dc nominal), with Externally Powered I/O				
<b>Output Signals and Communication Protocol (b)(h)</b>				
	Output 1 (b)	Output 2	Output 3	Output 4
1 =	Current Output/HART	Contact Input	Pulse Output	Contact Output
2 =	Current Output/HART	Contact Input	Current Output	Contact Output
C =	Current Output/HART	Current Output	Contact Input	Pulse Output
D =	Current Output/HART	Current Output	Current Output	Pulse Output
E =	Current Output/HART	Current Output	Current Output	Contact Input
F =	Current Output/HART	Current Output	Current Output	Contact Output
G =	Modbus (+)	Modbus (-)	Current Output	Pulse Output
H =	Modbus (+)	Modbus (-)	Pulse Output	Pulse Output (g)
J =	Modbus (+)	Modbus (-)	Pulse Output	Contact Output
K =	Modbus (+)	Modbus (-)	Pulse Output	Contact Input
L =	Modbus (+)	Modbus (-)	Current Output	Current Output
M =	Modbus (+)	Modbus (-)	Current Output	Contact Output
N =	Modbus (+)	Modbus (-)	Current Output	Contact Input
<b>LCD Indicator with Pushbuttons</b>				
A = None - Blind Unit				
B = Integral LCD Indicator with Pushbuttons				
<b>Electrical Safety</b>				
Q = ATEX (KEMA), Flameproof, II 2 G, EEx de[ib], IIB, Zone 1 (c)				
M = ATEX (KEMA), Nonsparking, II 3 (2) G, EEx nA[L][ib], IIB, Zone 2 (c)				
T = ATEX (KEMA), Nonsparking, II 3 G, EEx nA [L], IIC, Zone 2 (c)				
S = CSA, Nonincendive, NI Connection, Class I, Division 2 (c)				
N = FM, Explosionproof, ib Connection, Class I, Division 1				
K = FM, Nonincendive, ib Connection, Class I, Division 2				
R = FM, Nonincendive, NI Connection, Class I, Division 2				
Z = No Approvals or Certifications required.				
<b>Optional Selections</b>				
-A = 1/2 NPT Cable Gland adapted to M20 thread in housing				
-B = 3/4 NPT Cable Gland adapted to M20 thread in housing				
-S = Tamperproof Sealing for Terminal Block and Housing Covers (d)(e)				
-T = Weights and Measures Custody Transfer/NTEP (d)(f)				
- Includes Optional Selection -S (Tamperproof Sealing)				
- Must be combined with CFS10 and CFS20 Option -T (Custody Transfer)				

(a) The cable interconnecting the transmitter and flowtube must be ordered separately. See PSS 1-2B1 A (CFS10 and CFS20 Flowtubes) for cable ordering instructions. The maximum length for proper operation is 305 m (1000 ft)

(b) The HART Communicator or PC-based Configurator can be used with the 4 to 20 mA current output signal 1 only.

(c) ATEX and CSA certifications are not available with Modbus Communication transmitters.

(d) Optional Selections -S and -T are not available when the LCD Indicator, Code A, is selected.

(e) Optional Selection -S is not available with Electrical Safety Codes M, Q, and T.

(f) Optional Selection -T is not available with following:

- Electric Safety Codes Q, M, T, and S (ATEX and CSS)

- Output Signal Codes 2, E, and F (HART).

- Output Signal Codes G (Modbus).

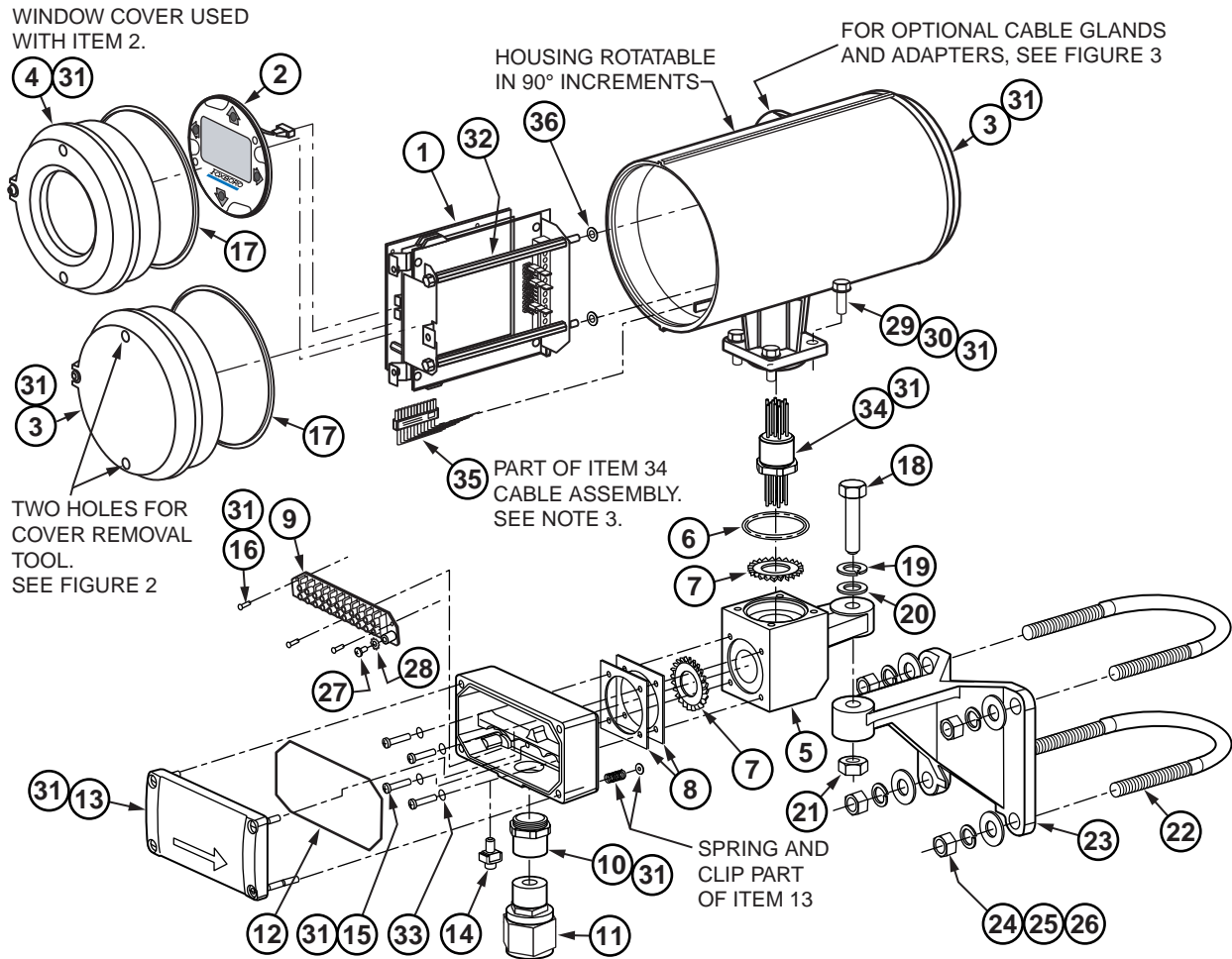
(g) If user requires Quadrature output, then Output Signal Code H must be selected.

(h) External power is required for the user's I/O.

PARTS

PARTS

Figure 1. CFT50 CORIOLIS MASS FLOW TRANSMITTER  
REMOTE MOUNTED TRANSMITTER



Item	Part No.	Qty.	Part Name
*1	Below	1	Module Assembly, Electronics; HART and Modbus Communication
	D0164YD		for ac Supply Voltage; HART Communication
	D0164ZG		for dc Supply Voltage; HART Communication
	D0168AN		for ac Supply Voltage; Modbus Communication
	D0168AP		for dc Supply Voltage; Modbus Communication
*2	D0164YE	1	Indicator Assembly, LCD; with Pushbuttons
3	Below	2	Cover Assembly – when LCD Indicator IS NOT USED (see Note 1)
	D0164YL		Blind Cover - with Certification Codes K, M, R, S, T, and Z
	D0164YQ		Blind Cover - with Certification Codes N and Q
4	Below	1	Cover Assembly – when LCD Indicator IS USED (see Note 1)
	D0164YM		Window Cover - with Certification Codes K, M, R, S, T, and Z
	D0164YN		Window Cover - with Certification Codes N and Q
5	D0164ZB	1	Swivel Assembly
*6	X0144LX	1	O-Ring, Buna-N; 1.481 - 1.493 I.D.
7	D0164YX	2	Washer, Lock, External Tooth; ss; 1.04

Item	Part No.	Qty.	Part Name
*8	D0164YY	2	Gasket, Terminal Box
9	D0164ZU	1	Terminal Block Assembly
10	X0178LR	1	Adapter, M20 to 1/2 NPT (see Note 2)
11	X0179HS	1	Cable Gland, 1/2 NPT (see Note 2)
*12	D0164YW	1	Gasket, EMI, Terminal Box Cover
13	D0164ZD	1	Cover Assembly, Terminal Box
14	D0164ZS	1	Earth (Ground) Assembly
15	X0174BN	4	Screw, Pan Head, ss, M4 x 10 mm
16	X0173UD	3	Screw, Pan Head, ss, M2.5 x 8 mm
*17	D0168AJ	2	Seal, Cover
18	X0174BF	1	Bolt, Hex Head, ss, M10 x 45 mm
19	X0174BD	1	Washer, Split, Lock, ss, M10
20	X0143BA	1	Washer, Flat, ss, M10
21	X0174BK	1	Nut, Hex Head, ss, M10
22	D0164ZA	2	U-Bolt, 0.375-16, ss
23	D0164YT	1	Bracket, Wall or Pipe Mount
24	X6000AK	4	Nut, Hex Head, ss, 0.375-16
25	A2012TZ	4	Washer, Lock, Split, ss, 0.375
26	C0133RN	4	Washer, Plain, ss, 0.375
27	X0166HV	1	Screw, Pan Head, Cross Recessed, ss, 0.138-32 x 0.250
28	X0143RK	1	Washer, Lock, External Tooth, ss, 0.138
29	X0174BJ	4	Screw, Hex Head, ss, M6 x 20 mm
30	X0174BC	4	Washer, Lock, Split, ss, M6
31	X0114AT	A/R	Grease (Thread Lubricant) - 14 ounce can
32	D0164YH	2	Screw, Module Assy Mounting, captive, 0.250 hex head, ss; M4 x 0.7-5H, 5.2 in long
33	X0143SB	4	Washer, lock, External Tooth, ss, 0.164
34	Below	1	Cable Assembly, Feed Thru
	D0164ZY		Standard, with Certification Codes K, M, R, S, T, and Z; see Note 3
	D0168AK		Explosionproof, with Certification Codes N and Q
35	P0178HM	1	Connector Assembly; 12 positions; see Note 3

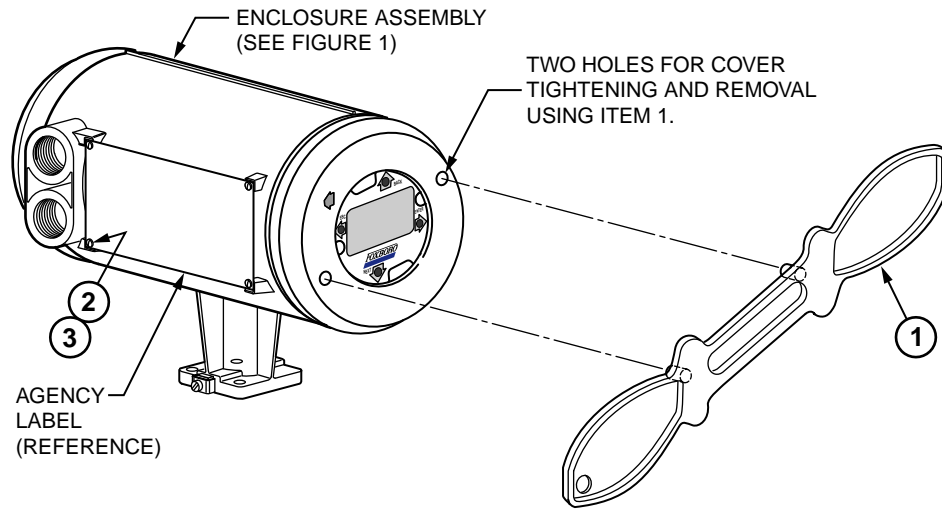
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**— NOTE —**


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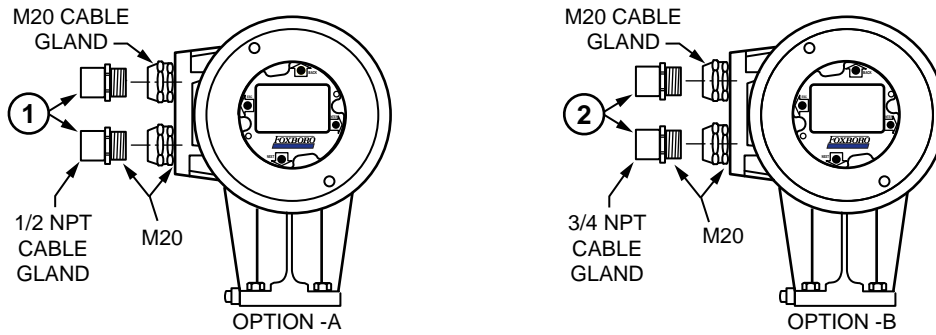
1. Electrical Certification Codes are listed with Items 3, 4, and 34. See Model Code for descriptions of these codes.
  2. Items 10 and 11 are provided with the junction for 1/2 NPT conduit or cable gland installations. If M20 conduit is used, merely remove items 10 and 11, since the junction box has an M20 thread.
  3. Connector assembly P0178HM is provided separately with the Item 34 explosionproof cable assembly part D0168AK. However, it is provided as part of the Item 34 standard cable assembly part D0164ZY. Should the standard cable need to be replaced, first remove connector assembly (Item 35) prior to snaking the cable assembly through the junction box. The connector assembly must also be removed when replacing the cable assembly.
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Figure 2. COVER REMOVAL TOOL



Item	Part No.	Qty.	Part Name
*1	D0164ZR	1	Tool, Cover Removal
2	X0161CT	4	Screw, Self-Tapping, Slotted, ss, 0.086-56 x 0.187

Figure 3. OPTIONAL NPT CABLE GLANDS/ADAPTERS (FOR OPTIONS -A AND -B)

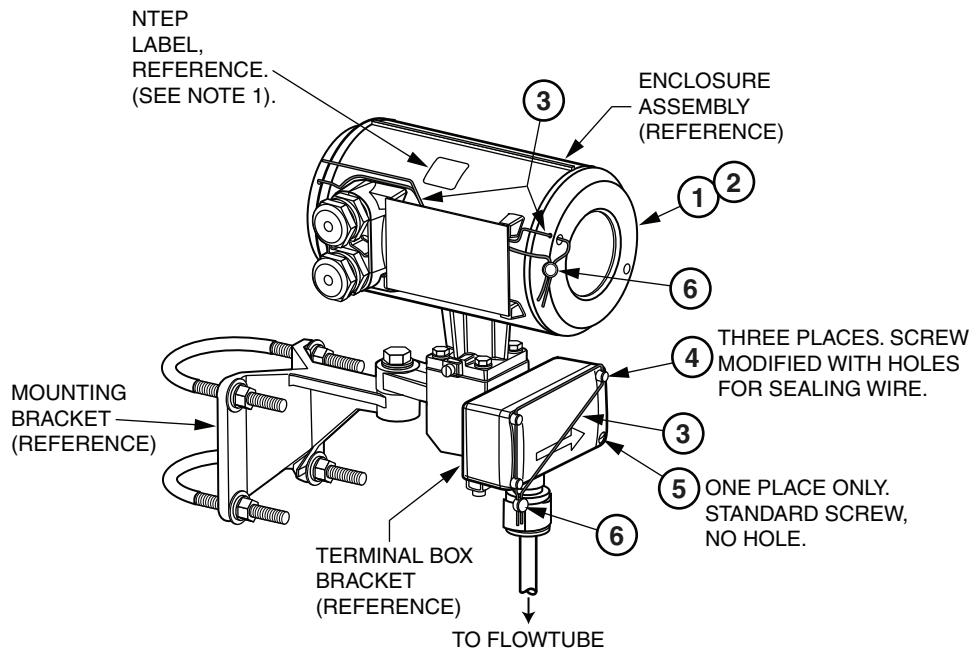


Item	Part No.	Qty.	Part Name
1	Below	2	Adapter, Cable Gland, M20 to 1/2 NPT, ss (see Note below)
	X0178LR		with Certification Codes K, M, R, S, T, and Z
	X0178LP		with Certification Codes N and Q
2	Below	2	Adapter, Cable Gland, M20 to 3/4 NPT, ss (see Note below)
	X0178LS		with Certification Codes K, M, R, S, T, and Z
	X0178LQ		with Certification Codes N and Q

— NOTE —

If Options -A or -B are specified, the 1/2 or 3/4 NPT cable glands will be shipped assembled directly to the M20 conduit threads on the housing. However, if Options -A or -B are not specified, the M20 cable glands will be shipped assembled directly to the M20 conduit threads on the housing.

Figure 4. OPTIONAL CUSTODY TRANSFER – OPTION -T  
AND OPTIONAL TAMPERPROOF SEALING – OPTION -S



Item	Part No.	Qty.	Part Name
1	Below	1/2	Cover Assembly - without window (no LCD) (part of Options -S and -T).
	D0168AZ		with Certification Codes K, M, R, S, T, and Z
	G0118CQ		with Certification Codes N and Q
1	Below	0/1	Cover Assembly - with Window (for LCD) (part of Options -S and -T).
	G0118CN		with Certification Codes K, M, R, S, T, and Z
	G0118CP		with Certification Codes N and Q
2	X0114AT	A/R	Grease (Thread Lubricant) - 14 ounce can
*3	S001807	A/R	Sealing Wire, ss; 0.06 in O.D., 40 in long (part of Options -S and -T).
4	G0118CT	3	Screw, Pan Hd; Modified; M4; with holes for sealing wire (part of Options -S and -T).
5	X0174BN	1	Screw, Pan Hd; M4 x 10 mm
*6	S001806	2	Seal, Lead (two places) (part of Options -S and -T).

Item	Part No.	Qty.	Part Name
Note 2	Below	1	CFT50 Transmitter Lockout Upgrade Kit
	K0152VC		No LCD Indicator; with Electrical Safety Codes K, M, R, S, T, and Z
	K0152VD		No LCD Indicator; with Electrical Safety Codes N and Q
	K0152JH		With an LCD Indicator; with Electrical Safety Codes K, M, R, S, T, and Z
	K0152VE		With an LCD Indicator; with Electrical Safety Codes N and Q

**NOTE**

1. The NTEP label is part of Option -T and is attached to the instrument at the factory. The instrument cannot have a label attached and be upgraded to a -T option in the field. However, users who selected the -T option, with the original sales order, can still separately order replacement cover assemblies, sealing wire and lead seals (Items 1, 3, 4, and 6), as required.
2. The kits listed are offered as a convenience for those users who did not order Option -S with the original sales order, but now wish to add this option in the field. Each kit comprises a cover assembly (1 or 2 depending on whether an LCD indicator is used), 40 inches of 0.06 inch diameter sealing wire, two lead seals, and three modified M4 screws. The kits allow the user to order the parts (Items 1, 3, 4, and 6) using only the kit number, rather than separate numbers for each part. See Note 3 if you plan to order a kit for Option -T.
3. The user can also order a kit for Option -T, but merely as a convenience for ordering a group of parts (Items 1, 3, 4, and 6). However, as stated in Note 1, merely adding the kit hardware without the NTEP label does not make the standard CFT50 an NTEP-certifiable transmitter. The NTEP label can only be attached at the factory. Contact Global Customer Support.



## RECOMMENDED SPARE PARTS SUMMARY

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Figure Number	Item Number	Part Number	Part Name	Number of Parts Recommended for		
				1 Inst.	5 Inst.	20 Inst.
1	1	Below D0164YD D0164ZG D0168AN D0168AP	Module Assembly, Electronics For AC Supply Voltage; HART Communication For DC Supply Voltage; HART Communication For DC Supply Voltage; Modbus Communication For DC Supply Voltage; Modbus Communication	1	1	1
	2	D0164YE	Indicator Assembly, LCD; with pushbuttons	1	1	2
	6	X0144LX	O-Ring, Buna-N, 1.604 - 1.624 I.D.	1	1	2
	8	D0164YY	Gasket, Terminal Box	2	2	4
	12	D0164YW	Gasket, EMI, Terminal Box Cover	1	2	2
	17	D0168AJ	Seal, Cover	2	4	4
2	1	D0164ZR	Tool, Cover Removal	2	2	5
4	3	S001807	Sealing Wire, ss; 0.06 in O.D., 40 in long	A/R	A/R	A/R
	6	S001806	Seal, Lead	6	12	24

