

**871CR-A, -B, -C Series
Conductivity/Resistivity Sensors
—
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

Description	Model
Conductivity/Resistivity Sensor	871CR
Cell Factor Selection	
0.1 cm ⁻¹ Conductivity/Resistivity Sensor with Class B 1000 Ω RTD	-A
0.1 cm ⁻¹ Resistivity Sensor with Class A 1000 Ω RTD (a)	-B
10 cm ⁻¹ Conductivity Sensor with Class B 1000 Ω RTD	-C
Insulator Material	
CPVC (b)	1
Virgin PVDF (c)	2
Virgin PEEK (c)	3
Glass-Filled PEEK (d)	4
Glass-Filled Noryl (d)	5
Electrode Material	
Graphite (d)	G
Monel (c)	M
Titanium (c)	T
Insertion Length	
Standard	1
4-inch	4
6-inch	6
Sensor Mounting	
Universal Bore Piece with 3/4 NPT CPVC Bushing (b) (e)	A
Universal Bore Piece with 3/4 NPT Virgin PVDF Bushing (c) (f)	B
Universal Bore Piece with 3/4 NPT Virgin PEEK Bushing (c) (g)	C
Universal Bore Piece with 3/4 NPT Glass-Filled PEEK Bushing (d) (h)	D
Universal Bore Piece with 3/4 NPT Glass-Filled Noryl Bushing (d) (i)	E
Universal Bore Piece with 1 1/2-inch Tri-Clamp Fitting (j) (k)	F
Insertion Sensor for use with 1 1/4-inch PVDF Ball Valve Assembly (f) (l) (m) (n)	G
Insertion Sensor for use with 1-inch S.S. Ball Valve Assembly (l) (m) (n) (o)	H
Universal Bore Piece (p)	J
Universal Bore Piece with Integral Conduit Fitting (p) (q)	K
Temperature Compensation	
1000 ohm RTD	1
Cable Selection	
Standard 20 ft (6 m) Length, Standard Temperature Cable	A
Standard 20 ft (6 m) Length, High Temperature Cable	B
30 ft (9 m) Length, Standard Temperature Cable	C
30 ft (9 m) Length, High Temperature Cable	D
40 ft (12 m) Length, Standard Temperature Cable	E
40 ft (12 m) Length, High Temperature Cable	F
60 ft (18 m) Length, Standard Temperature Cable	G
60 ft (18 m) Length, High Temperature Cable	H
80 ft (24 m) Length, Standard Temperature Cable	J
80 ft (24 m) Length, High Temperature Cable	K
No Cable (Integral Connector on Sensor) (r) (s) (t) (u)	L
Variable Length, Standard Temperature Cable (v)	M
Variable Length, High Temperature Cable (v)	N
Termination	
Cable with #6 Spade Lugs	1
Cable with Connector at End (r) (u) (w)	2
Integral Connector on Sensor (r) (s) (u) (x)	3

MODEL CODE

MODEL CODE (Continued)

Description	Model
Options	
Calibration Cert/Cell Factor determined in Foxboro Pure Water Loop (a) (y)	-R
Calibration Cert/Cell Factor/Cert NIST Traceable (Use for USP23/24) (c)	-S

- a. Recommended for optimum resistivity measurements.
- b. -A Cell Factor only.
- c. -A and -B Cell Factor only.
- d. -C Cell Factor only.
- e. Insulator Material 1 only.
- f. Insulator Material 2 only.
- g. Insulator Material 3 only.
- h. Insulator Material 4 only.
- i. Insulator Material 5 only.
- j. Insertion Lengths 4 and 6 only.
- k. -A and -B Cell Factors use titanium Tri-Clamp fitting;
-C Cell Factor uses 316 ss Tri-Clamp fitting.
- l. Insertion Lengths 1 and 4 only.
- m. Ball valve assembly required for new installations. Specify separately.
- n. Insertion sensors must be selected with high temperature cable only.
- o. Electrode material G or T only.
- p. No mounting accessories included.
- q. Not available with Cable Selection L.
- r. Not recommended for optimum resistivity accuracy.
- s. Not available with Sensor Mounting G, H, or K.
- t. Termination Selection 3 only.
- u. Patch cable required. Specify separately.
- v. Variable length offered up to 100 ft (30 m) maximum. Specify length on sales order.
- w. Not available with high temp Cable Selections.
- x. Cable Selection L only.
- y. Option -R is for use with Virgin PVDF Insulator sensors only. For this option with Virgin PEEK Insulator sensors, contact Foxboro.

Figure 1. 871CR-A, -B Series Sensor

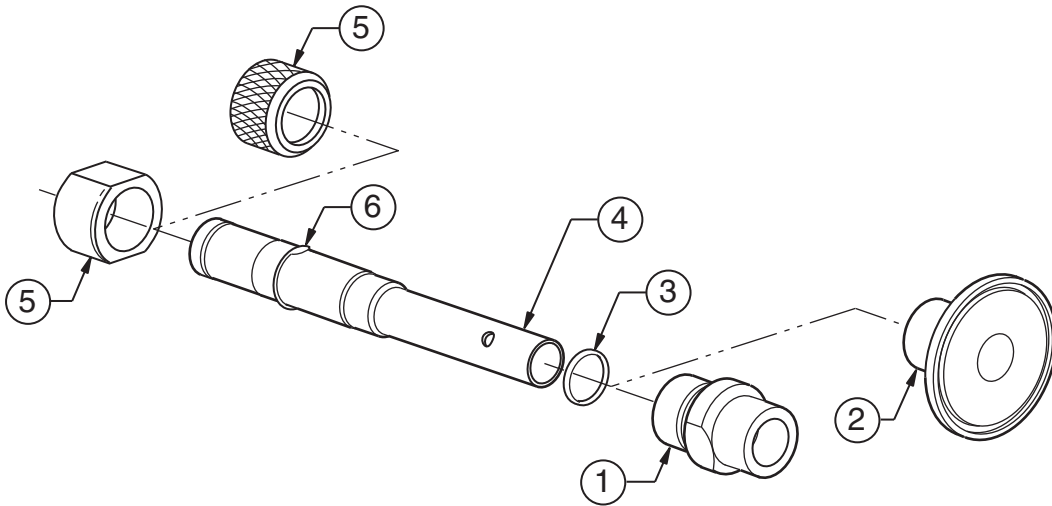


Table 1. Parts for Figure 1

Item	Part No.	Qty.	Part Name
1	Below	1	Bushing, CPVC
	BS809HR		3/4 NPT
	BS809HQ		1 NPT
	BS809FE		ISO 7/1, R 1-1/2
	BS809FJ		ISO 7/1, R 2
1	Below	1	Bushing, Virgin PVDF
	BS809ES		3/4 NPT
	BS809EW		1 NPT
	BS809FD		ISO 7/1, R 1-1/2
	BS809FH		ISO 7/1, R 2
1	Below	1	Bushing, Virgin PEEK
	BS809EQ		3/4 NPT
	BS809EU		1 NPT
	BS809FB		ISO 7/1, R 1-1/2
	BS809FF		ISO 7/1, R 2
1	Below	1	Bushing, Titanium
	BS809ER		3/4 NPT
	BS809EV		1 NPT
	BS809FC		ISO 7/1, R 1-1/2
	BS809FG		ISO 7/1, R 2
1	Below	1	Bushing, 316 ss
	BS809TV		3/4 NPT
	BS812VZ		1 NPT
	BS812WA		ISO 7/1, R 1-1/2
	BS812WB		ISO 7/1, R 2

Table 1. Parts for Figure 1 (Continued)

Item	Part No.	Qty.	Part Name
2	Below	1	Tri-Clamp Fitting
	BS809AA		1 1/2-inch; Titanium
	BS809AB		2-inch; Titanium
	BS808KD		1 1/2-inch; 316 ss
	BS808KC		2-inch; 316 ss
*3	X0201FE	1	O-Ring, 2-016 EPR
			TFE-coated
4	per MS Code	1	Sensor
5	Below	1	Locking Cap
	BS809HP		CPVC; Wrench Flats Head
	BS809EZ		Virgin PVDF; Wrench Flats Head
	BS809EY		Virgin PEEK; Wrench Flats Head
	BS808KB		Titanium; Knurled Head
	BS809AJ		316 ss; Knurled Head
6	X0173YS	1	Retaining Ring

Figure 2. 871CR-C Series Sensor

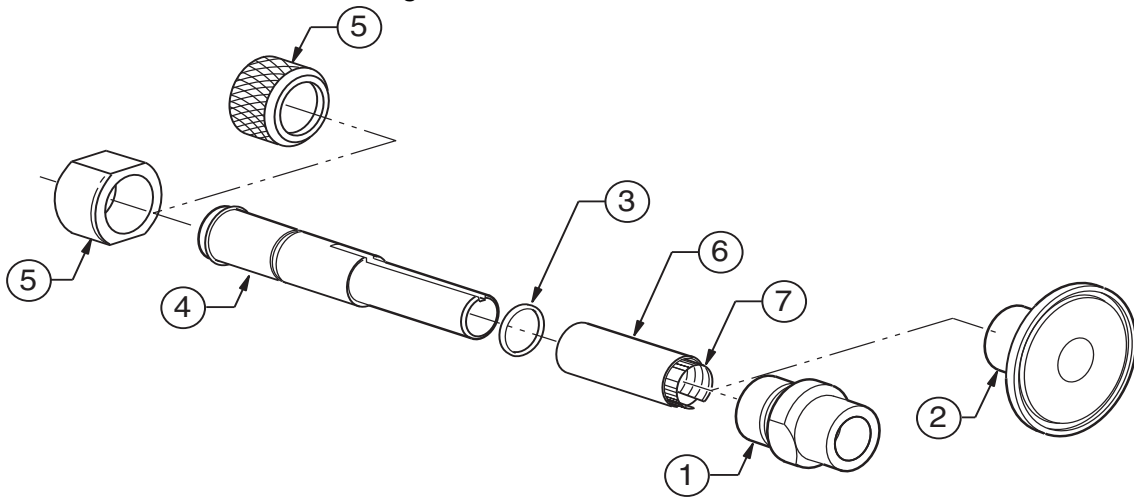


Table 2. Parts for Figure 2

Item	Part No.	Qty.	Part Name
1	Below	1	Bushing, Glass Filled Noryl
	BS809HU		3/4 NPT
	BS809QV		1 NPT
	BS809QW		ISO 7/1, R 1-1/2
	BS809QX		ISO 7/1, R 2
1	Below	1	Bushing, Glass Filled PEEK
	BS809DW		3/4 NPT
	BS809DY		1 NPT
	BS809EA		ISO 7/1, R 1-1/2
	BS809EC		ISO 7/1, R 2

Table 2. Parts for Figure 2 (Continued)

Item	Part No.	Qty.	Part Name
1	Below	1	Bushing, 316 ss
	BS809DX		3/4 NPT
	BS809DZ		1 NPT
	BS809EB		ISO 7/1, R 1-1/2
	BS809ED		ISO 7/1, R 2
2	Below	1	Tri-Clamp Fitting
	BS809DS		1 1/2-inch, 316 ss
	BS809DU		2-inch, 316 ss
3	X0201FE	1	O-Ring, 2-016 EPR tfe-coated
4	per MS Code	1	Sensor
5	Below	1	Locking Cap
	BS809HV		Glass Filled Noryl; Wrench Flats Head
	BS809EJ		Glass Filled PEEK; Wrench Flats Head
	BS809AJ		316 ss; Knurled Head
6	BS809EF	1	Sleeve, Removable
7	BS810BK	1	Liner, Teflon

Figure 3. 871CR-A, -B Series Flange Mount

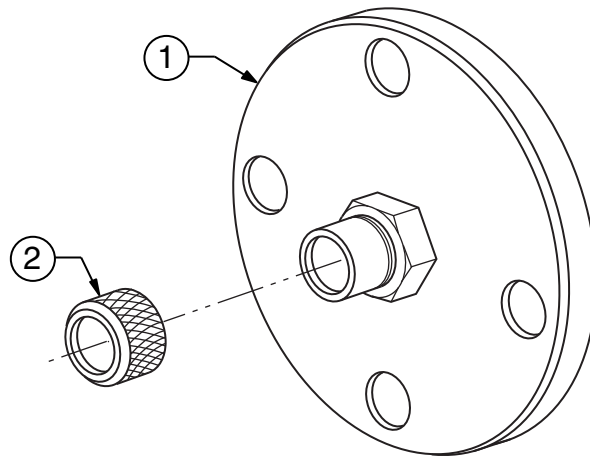


Table 3. Parts for Figure 3

Item	Part No.	Qty.	Part Name
1	Below	1	Flange Mount, 316 ss
	BS809LT		2-inch ANSI Class 150
	BS809LU		2 1/2-inch ANSI Class 150
	BS808MN		4-inch ANSI Class 150
	BS809PC		Metric, DN50
	BS809PD		Metric, DN100
2	Below	1	Locking Cap; See Note below
	BS809HP		CPVC; Wrench Flats Head
	BS808EZ		Virgin PVDF; Wrench Flats Head
	BS809EY		Virgin PEEK; Wrench Flats Head
	BS808KB		Titanium; Knurled Head
	BS809AJ		316 ss; Knurled Head

— NOTE —

The 316 ss and Titanium locking caps have a knurled head (as shown); the CPVC, VPVDF, and VPEEK locking caps have a wrench flats head (not shown).

Figure 4. 871CR-C Series Flange Mount

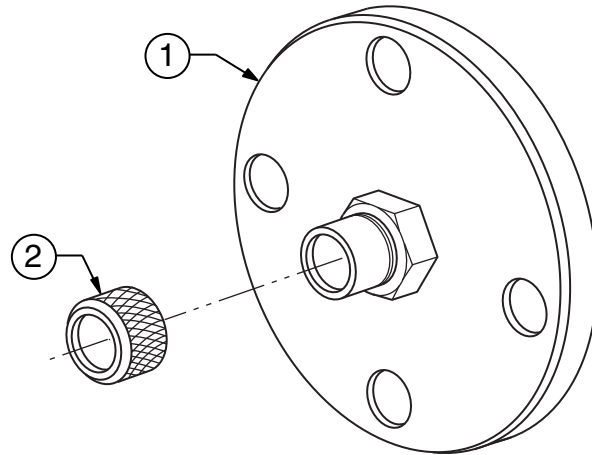


Table 4. Parts for Figure 4

Item	Part No.	Qty.	Part Name
1	Below	1	Flange Mount; 316 ss
	BS809UQ		2-inch ANSI Class 150
	BS809UR		2 1/2-inch ANSI Class 150
	BS809US		4-inch ANSI Class 150
	BS809UT		Metric, DN50
	BS809UU		Metric, DN100
2	Below	1	Locking Cap, See Note below
	BS809HV		Glass-Filled Noryl; Wrench Flats Head
	BS809EJ		Glass-Filled PEEK; Wrench Flats Head
	BS809AJ		316 ss; Knurled Head

— NOTE —

The 316 ss locking cap has a knurled head (as shown); the glass-filled Noryl and glass-filled PEEK locking caps have a wrench flats head (not shown).

Figure 5. Flow Cell Kits for 871CR-A, -B, and -C

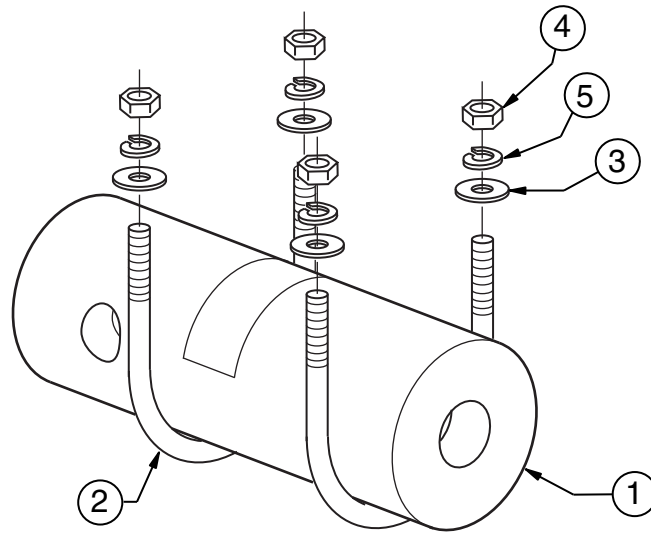


Table 5. Parts for Figure 5

Item	Part No.	Qty.	Part Name
–	0051180	–	Flow Cell Assembly, 316 ss; for 871CR-A, -B, and -C
1	1345103	1	Flow Chamber, 316 ss; 3/4 NPT x 1/4 NPT Ports
2	2805043	2	U-Bolt
3	2800639	4	Flat Washer
4	2800287	4	Hex Nut
5	A2015AA	4	Lock Washer
–	0051182	–	Flow Cell Assembly, PVC; for 871CR-A and -B only
1	1345106	1	Flow Chamber, PVC; 3/4 NPT x 1/4 NPT Ports
2	2805043	2	U-Bolt
3	2800639	4	Flat Washer
4	2800287	4	Hex Nut
5	A2015AA	4	Lock Washer
–	BS805GR	–	Flow Cell Assembly, Virgin PVDF; for 871CR-A and -B only
1	BS805HN	1	Flow Chamber, VPVDF; 3/4 NPT x 1/4 NPT Ports
2	2805043	2	U-Bolt
3	2800639	4	Flat Washer
4	2800287	4	Hex Nut
5	A2015AA	4	Lock Washer
–	BS809SF	–	Flow Cell Assembly, CPVC; for 871CR-A and -B only
1	BS809QY	1	Flow Chamber, CPVC; 1 NPT x 1/2 NPT Ports
2	BS806VS	2	U-Bolt
3	X0143AZ	4	Flat Washer
4	X0142BW	4	Hex Nut
5	A2015AB	4	Lock Washer
–	BS809SG	–	Flow Cell Assembly, Virgin PEEK; for 871CR-A and -B only
1	BS809EP	1	Flow Chamber, VPEEK, 3/4 NPT x 1/4 NPT Ports
2	2805043	2	U-Bolt
3	2800639	4	Flat Washer
4	2800287	4	Hex Nut
5	A2015AA	4	Lock Washer

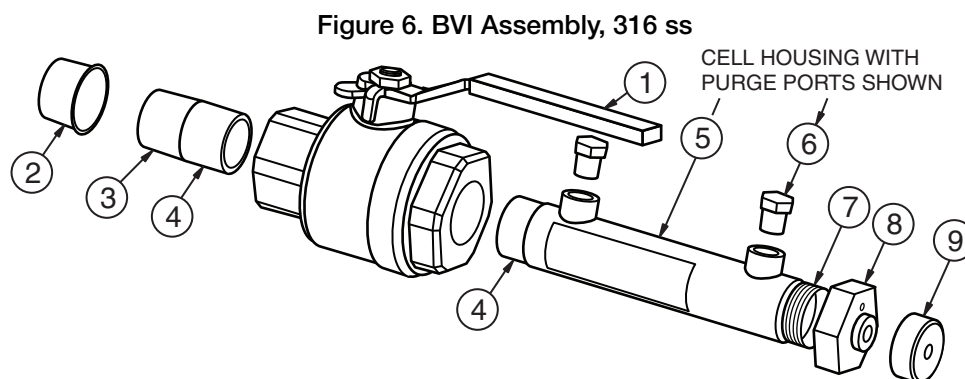


Table 6. Parts for Figure 6

Item	Part No.	Qty.	Part Name
-	Below	1	BVI Assembly, 316 ss; 1 inch Schedule 80 Pipe; see Note below.
	BS809NJ		No Purge Ports; for 871CR-A, -B, and -C
	BS811EN		with Two Purge Ports (see Item 5)
1	X0176BU	1	Valve, Ball; ss; 1 inch
2	2100280	1	Plug, Cap; 15-X; Polyethylene
3	1340002	1	Nipple, 316 ss; 1 NPT
4	X0117AN	A/R	Tape; TFE
5	Below	1	Housing, Cell; BVI
	BS809NK		7.06 in long; No Purge Ports
	BS811EM		8.18 in long; Two Purge Ports
6	2700245	2	Plug, 316 ss; 1/4 NPT; used with Purge Ports
7	1600584	A/R	Grease, Molykote
8	2705017	1	Nut, Hexhd; 1.250-20 internal thread, 0.750-27 external thread
9	2705016	1	Lock, Cell; 0.750-27 internal thread; 316 ss

NOTES

- 1 BVI Assembly BS809NJ has a standard 7.06 in retraction chamber for standard length sensors, including 871CR-C.G1.
- 2 BVI Assembly BS811EN has an extended 8.18 in retraction chamber for all extended length sensors whether 0.1 cm^{-1} cell factor or 10 cm^{-1} cell factor, e.g., with 10 cm^{-1} sensor 871CR-C.G4.

Figure 7. BVI Assembly, PVDF

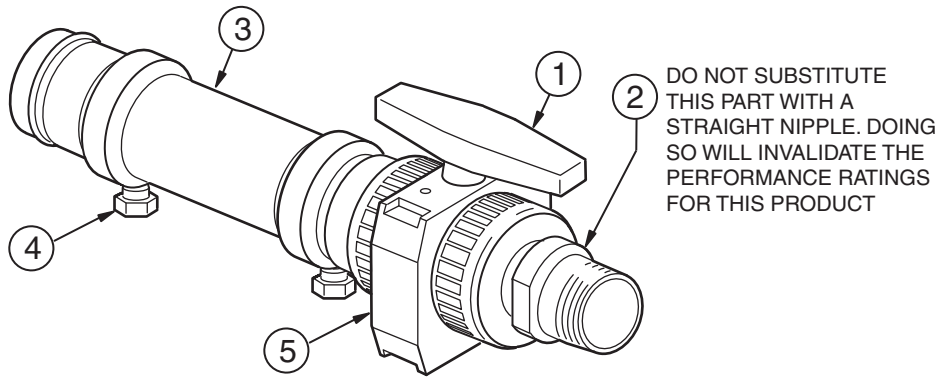


Table 7. Parts for Figure 7

Item	Part No.	Qty.	Part Name
–	BS809DH	1	BVI Assembly, PVDF; 1 1/4 in Pipe
1	X0176BH	1	1 1/4 -inch PVDF Ball Valve
2	BS809DR	1	Process Connector, 1 1/4 NPT
3	BS809DJ	1	Retraction Chamber
4	BS810FU	2	Plug, PVDF, 1/4 NPT
5	X0178HS	1	Mounting Bracket, PVC

Table 8. Accessories For 871CR–A, –B, And –C Sensors

Part Number	Part Name	Length (ft)
BS809GA	Patch Cord with Connector, PVC	10
BS809GB	Patch Cord with Connector, PVC	20
BS809GC	Patch Cord with Connector, PVC	40
BS809GD	Patch Cord with Connector, PVC	60
BS809GF	Patch Cord with Connector, PVC	80
BS809TF	Extension Cable with Lugs, PVC	10
BS809TG	Extension Cable with Lugs, PVC	20
BS809TH	Extension Cable with Lugs, PVC	40
BS809TJ	Extension Cable with Lugs, PVC	60
BS809TK	Extension Cable with Lugs, PVC	80
P0170LF	Cable, Plain, PVC	(a)
P0170TJ	Cable, Plain, tfe	(a)
0051052	Junction Box	

a. Specify length.

Recommended Spare Parts Summary

Figure Number	Item Number	Part Number	Part Name	Number of Parts Recommended for		
				1 Inst.	5 Inst.	20 Inst.
1	3	X0201FE	O-Ring, 2-016 EPR TFE-coated	5	15	24
	6	X0173YS	Retaining Ring	5	15	24
2	3	X0201FE	O-Ring, 2-016 EPR TFE-coated	5	15	24
	6	BS809EF	Sleeve, Removable	1	1	2
	7	BS810BK	Liner, Teflon	1	2	4

