

Ratings and Certifications

CE 0344 Ex II 2 G D, EEx d IIC T6, KEMA 04ATEX2179 X; -20°C ≤ Ta ≤ +50°C; IP 66/67, T70°C.
For Standard and Reverse Service, 50/60/400 Hz, 250 Vac / 125 Vdc.

CSA International, U.S. and Canadian Standards: Class I, Division 1, Groups B, C & D and Class II, Division 1, Groups F & G for Standard and Reverse Service, 60 Hz, 250 Vac. Select inserts are rated at 480 Vac non-circuit breaking.

Operation

The plug features a quick make and break design. To engage, align plug to receptacle and turn coupling sleeve clockwise. Plug will be injected automatically & close circuit. Continue turning coupling sleeve to solid to provide environmental seal. To disengage, rotate coupling sleeve counter (c.c.w.) clockwise. Plug will eject automatically. Continue turning coupling sleeve to extract the plug. Caution: Do not interfere with cable housing. Note: In reverse service applications, for safety from shock hazard, the plug cover must be threaded onto plug when plug not in use.

Materials (See Tables 5 and 6 for Material Composition data)

AF Series, Copper free (0.15-0.40% by weight) wrought Aluminum 6061-T6 with hardcoating per Mil-A-8625 Type III, black finish.
SF Series, Stainless Steel Type 316.

Assembly

Plugs are designed for easy field termination. Vantage crimp tool T-104 insures proper and safe crimping of contacts to conductors. A plug assembly tool and instructions are included. A vise, strap wrench, and blade screw driver are required.

Maintenance

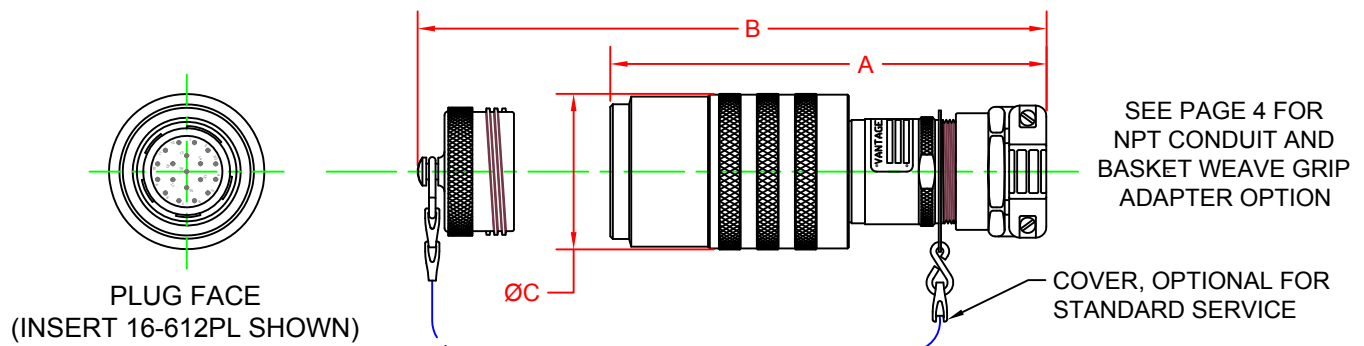
Periodic maintenance consists of inspection for termination integrity and contamination. When conditions require, lubricate coupling threads with silicone oil, Vantage Part Number VT-9400-21D.

Before Ordering

Insert: Table 3 lists the available insert configurations. The insert selection dictates the shell size of the plug. Diagrams are available for each insert configuration. See document PDS-INSERTS-AF. Pins and sockets are available in several finishes, see Table 2.

Grommet: To provide safe environmental sealing, a correctly sized grommet must be selected. Reference Table 4 to determine grommet code.

Options: Attachment plugs are available with threaded environmental covers, basket weave grips, and NPT threaded conduit backshells. Table 7 lists the available NPT sizes for each shell size.



SHELL SIZE	TABLE 1: GENERAL DIMENSIONS				Weights shown for aluminum. Multiply by factor of 2 for stainless steel.
	A IN INCHES (mm)	B IN INCHES (mm)	C IN INCHES (mm)	□ EIGHT LBS (□□)	
16	9.3 (236)	10.3 (262)	2.977 (75.6)	4.0 (1.8)	
20	10.0 (254)	11.0 (279)	3.577 (90.9)	5.2 (2.4)	
24	10.4 (264)	11.4 (289)	4.182 (106.2)	7.2 (3.3)	
28	10.9 (277)	11.9 (302)	4.814 (122.3)	9.1 (4.1)	



REVISION:	D	WTN BY: JOHN NORDECK	TITLE: AF AND SF ATTACHMENT PLUG	Vantage Technology LLC 4875 South Windermere Street Englewood, Colorado USA 80110 Phone: 303-781-2121 FAX: 303-789-4215 Email: service@vantagexp.com
		CHK BY: DARRIN LOMBARD		
		ENG BY:		
		ATEX: JOHN NORDECK		
	ISSUE DATE: DECEMBER 15, 2003	PRODUCT DATA SHEET		DOCUMENT: PDS-AF-SF-PLUG
				SHEET: 1 OF 4

TABLE 2: ATTACHMENT PLUGS PART NUMBER CODE LOGIC

AF	-	D	10	16	-	677	P	L	01	-	XX
1		2	3	4		5	6	7	8		9
1	CLASSIFICATION		AF = ALUMINUM SF = STAINLEES STEEL								
2	COVER		D = PLUG COVER BLANK = NO COVER								
3	SHELL STYLE		10 = PLUG, ATTACHMENT STYLE								
4	SHELL SIZE		16 = SHELL SIZE 16 24 = SHELL SIZE 24 20 = SHELL SIZE 20 28 = SHELL SIZE 28								
5	INSERT		SEE INSERT TABLE, TABLE 3								
6	GENDER		P = MALE (PIN) INSERT S = FEMALE (SOCKET) INSERT								
7	CONTACT PLATING		L = SILVER PLATE (STANDARD) K = GOLD OVER SILVER D = GOLD OVER NICKLE								
8	INSERT KEYING		BLANK = NORMAL KEY NUMBERED = ALTERNATE KEY								
9	ACCESSORY		XX = CABLE DIAMETER CODE, SEE TABLE 4 TC = TAPPED CONDUIT, SEE TABLE 5 B = BASKET WEAVE GRIP, INSERT AFTER 'XX'								

TABLE 3: INSERT TABLE AND AMPERE RATINGS

CONTACT QUANTITY	CONTACT SIZE (mm ²)	CONNECTOR PREFIX	SHELL SIZE	INSERT CODE NUMBER		KEY POSITIONS
				PIN	SOCKET	
10	12 (4.0)	AF or SF	16	681PL	681SL	N + 4
10	12 / G (4.0)	AF or SF	16	676PL	676SL	N + 1
19	12 / G (4.0)	AF or SF	16	612PL	612SL	N + 4
19	12 (4.0)	AF or SF	16	677PL	677SL	N + 1
19	12 (4.0)	AF or SF	20	676PL	676SL	N + 4
19	12 / G (4.0)	AF or SF	20	688PL	688SL	N
19	16 (1.5)	AF or SF	16	655PL	655SL	N + 9
20	12 (4.0)	AF or SF	20	632PL	632SL	N + 3
20	12 / G (4.0)	AF or SF	20	687PL	687SL	N + 1
37	12 (4.0)	AF or SF	20	686PL	686SL	N
37	12 / G (4.0)	AF or SF	20	650PL	650SL	N + 3
37	16 (1.5)	AF or SF	16	621PL	621SL	N + 9
55	18 (0.75)	AF or SF	16	640PL	640SL	N + 10
61	18 (0.75)	AF or SF	16	633PL	633SL	N + 4
68	16 (1.5)	AF or SF	20	613PL	613SL	N + 4
100	16 (1.5)	AF or SF	24	613PL	613SL	N + 4

CONTACT SIZE (mm ²)	 AMPERE RATING 250 Vac, 60 Hz ¹	 AMPERE RATING 250 Vac/125 Vdc, 50/60/400 Hz, Non-Circuit Breaking
18 (0.75)	3.5	10
16 (1.5)	6.5	15
12 (4.0)	10.0	20
10 (6.0)	10.0	30

1. Insert Codes VT-20-676 and VT-20-688 are also rated at 480 Vac Non-circuit Breaking.

WTN BY: JOHN NORDECK	TITLE: AF AND SF ATTACHMENT PLUG	REVISION: D
CHK BY: DARRIN LOMBARD	PRODUCT DATA SHEET	DOCUMENT: PDS-AF-SF-PLUG
ISSUE DATE: DECEMBER 15, 2003		SHEET: 2 OF 4

TABLE 4: CABLE DIAMETER GROMMET CODES						
CODE NUMBER	CABLE DIAMETER INCHES (mm)		SHELL SIZE			
	MINIMUM	MAXIMUM	16	20	24	28
06	0.250 (6.35)	0.375 (9.53)	X			
08	0.375 (9.53)	0.500 (12.70)	X			
10	0.500 (12.70)	0.625 (15.88)	X	X		
12	0.625 (15.88)	0.750 (19.05)	X	X		
14	0.750 (19.05)	0.875 (22.23)	X	X		
16	0.875 (22.23)	1.000 (25.40)	X	X	X	
18	1.000 (25.40)	1.125 (28.58)	X	X	X	
20	1.125 (28.58)	1.250 (31.75)	X	X	X	
22	1.250 (31.75)	1.375 (34.93)	X	X	X	
23	1.375 (34.93)	1.437 (36.50)	X	X	X	
24	1.375 (34.93)	1.500 (38.10)		X	X	X
26	1.500 (38.10)	1.625 (41.28)		X	X	X
28	1.625 (41.28)	1.750 (44.45)		X	X	X
30	1.750 (44.45)	1.875 (47.63)		X	X	X
31	1.875 (47.63)	1.937 (49.20)		X	X	X
32	1.875 (47.63)	2.000 (50.80)			X	X
34	2.000 (50.80)	2.125 (53.98)			X	X
36	2.125 (53.98)	2.250 (57.15)			X	X
38	2.250 (57.15)	2.375 (60.33)			X	X
39	2.375 (60.33)	2.437 (61.90)			X	X
40	2.375 (60.33)	2.500 (63.50)				X
42	2.500 (63.50)	2.625 (66.68)				X
44	2.625 (66.68)	2.750 (69.85)				X
46	2.750 (69.85)	2.875 (73.03)				X

ELEMENTAL COMPOSITIONS

TABLE 5: ELEMENTAL COMPOSITION OF ALUMINUM 6061-T6 PERCENTAGE BY EIGHT											
	Al	Cr	Cu	Fe	Mg	Mn	Si	Ti	Zn	O ₂ er Eac	O ₂ er Total
MIN	REM	0.04	0.15	-	0.80	-	0.40	-	-	-	-
MAX	REM	0.35	0.40	0.70	1.20	0.15	0.80	0.15	0.25	0.05	0.15

TABLE 6: ELEMENTAL COMPOSITION OF STAINLESS STEEL TYPE 316 PERCENTAGE BY EIGHT											
	Fe	C	Mn	Si	P	S	Cr	Mo	Ni	N	O ₂ er
MIN	REM	-	-	-	0	-	16.0	2.0	10.0	-	-
MAX	REM	0.08	2.0	0.75	0.045	0.03	18.0	3.0	14.0	0.10	-

WTN BY: JOHN NORDECK	TITLE: AF AND SF ATTACHMENT PLUG	REVISION: D
CHK BY: DARRIN LOMBARD		DOCUMENT: PDS-AF-SF-PLUG
ISSUE DATE: DECEMBER 15, 2003		SHEET: 3 OF 4

PRODUCT DATA SHEET

TABLE 7: TAPPED CONDUIT PLUG			
SHELL SIZE	THREAD 'A'	D IN INCHES (mm)	E IN INCHES (mm)
16	1 1/4 -11 1/2 NPT	6.9 (175)	7.9 (201)
20	1 1/2 -11 1/2 NPT	7.2 (183)	8.2 (208)
24	2 -11 1/2 NPT	7.4 (188)	8.4 (213)
28	2 1/2 - 8 NPT	7.8 (198)	8.8 (224)

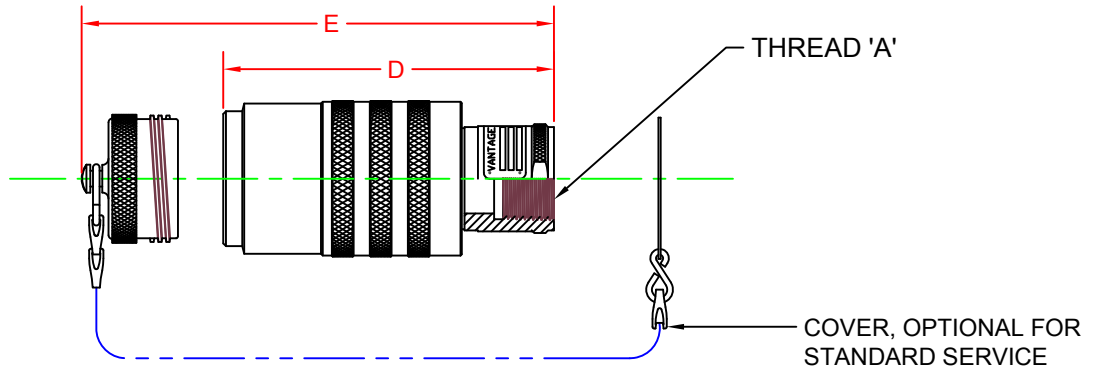
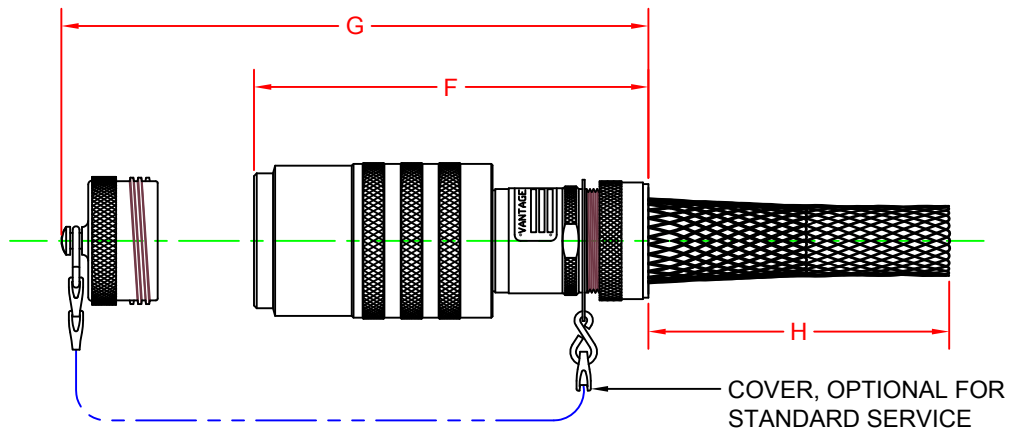


TABLE 8: BASKET WEAVE PLUG			
SHELL SIZE	F IN INCHES (mm)	G IN INCHES (mm)	H IN INCHES (mm)
16	9.5 (241)	10.5 (267)	3.75 - 10.25 (95 - 260)
20	10.2 (259)	11.2 (285)	5.75 - 14.25 (146 - 362)
24	10.5 (267)	11.5 (292)	8.25 - 17.25 (210 - 438)
28	10.9 (277)	11.9 (302)	13.75 - 19.75 (349 - 502)



NOTE: UL 1010, *Receptacle-Plug Combinations for Use in Hazardous (Classified) Locations*, REQUIRES THE USE OF A MECHANICAL CORD CLAMP STRAIN RELIEF ON CABLE ATTACHMENT CONNECTORS. CONNECTORS WITH BASKET WEAVE GRIPS ARE AVAILABLE WITH CSA AND ATEX CERTIFICATION.

WTN BY: JOHN NORDECK	TITLE:	REVISION: D
CHK BY: DARRIN LOMBARD	AF AND SF ATTACHMENT PLUG	DOCUMENT: PDS-AF-SF-PLUG
ISSUE DATE: DECEMBER 15, 2003	PRODUCT DATA SHEET	SHEET: 4 OF 4