

POWERSAFE 38999 HIGH-POWER CONNECTOR

Derived from MIL-DTL-38999 Series III for power applications up to 500V

PDS - 359



HIGH POWER CONNECTOR WITH SAFETY DESIGN, DERIVED FROM MIL-DTL-38999

Amphenol's PowerSafe MIL-DTL-38999 Series III High Power Connector uses first mate/last break and last mate/first break technology and is designed for transmitting high power with voltages up to 500V in harsh environments, all while keeping user safety in mind. PowerSafe offers six contact arrangements for three phase and single-phase applications. Ideal for C5ISR, military avionics and ground vehicles, and missile and naval applications.

FEATURES & BENEFITS:

- Designed for power applications up to 500V with user safety in mind
- First Mate/Last Break and Last Mate/First Break technology
- Same panel drilling as standard MIL-DTL-38999 Series III
- Compatible with standard caps and M85049 backshells
- Available in aluminum, stainless steel and bronze shell materials
- Standard Amphenol plating options and shell styles available

ENVIRONMENTAL & ELECTRICAL CHARACTERISTICS

- 500 mating cycles
- Temperature range from -85° F (-65° C) to 302° F (150° C) or 392° F (200° C), depending on material, plating and insert type
- IP68 when mated, IP28 unmated (socket version)
- Shell to shell conductivity between 1 and 5 mΩ
- EMI/RFI Protection: Shell to shell bottoming and grounding fingers on plug shell

CONTACT OPTIONS:

- Six contact arrangements:
 - 2 X three-phase inserts and
 - 4 X single-phase inserts
- Contact sizes range from 20 to 4 AWG, 16 to 100 amps
- Power (phase), ground and pilot pins
- Crimp contacts – gold plating for pilot contact and silver plating for protective, phase and neutral contacts



HOW TO ORDER

1. Connector Type	2. Shell Style	3. Service Class	4. Shell Size - Insert Arrangement	5. Contact Type	6. Alternate Positions	7. Modifications (Optional)
TV	06	RW	15-V4	P	A	

1: Connector Type

Contact Type	
TV	Tri-Start 175°F(175°C)
TVS	Tri-Start, 392°F(200°C)
TVP	Tri-Start, Panel Mounted, 347°F(175°C)
TVPS	Tri-Start, Panel Mounted, 392°F (200°C)

2: Shell Style

Shell Type	
06	Straight Plug
00	Square Flange Receptacle
07	Jam Nut Receptacle

3: Class: Material & Finish

Class: Material & Finish			
	Shell Material	Shell Finish	
RW	Aluminum	Olive Drab Cadmium	
RF		Nickel	
ZN		Black Zinc Nickel	
ZR		Black Zinc Nickel without Chromium 6+	
TZ		Tin Zinc	
RB	Marine Bronze	-	
RK	Stainless Steel	Passivated	
RS		Nickel	

4: Shell Size & Insert Arrangement

Shell Size - Insert Arrangement	
13-E4	Size 13-4 Contacts
15-E4	Size 13-4 Contacts
17-E6	Size 13-6 Contacts
21-E4	Size 13-4 Contacts
23-E4	Size 13-4 Contacts
25-E6	Size 13-6 Contacts

5: Contact Type

Contact Type	
P	Pin
S	Socket

Please note that standard inserts have a Comparative Tracking Index (CTI) <100V and can withstand a temperature up to 392°F(200°C) depending on shell material and platings.

13-V4	Size 13-4 Contacts
15-V4	Size 15-4 Contacts
17-V6	Size 17-6 Contacts
21-V4	Size 21-4 Contacts
23-V4	Size 23-4 Contacts
25-V6	Size 25-6 Contacts

Please note that VG inserts have a Comparative Tracking Index (CTI) between 175 & 400V (Material Group IIIa) and can withstand a temperature up to 302°F(150°C).

6: Alternate Position

Alternate Positions						
Size	Normal Leave Blank	A	B	C	D	
13	100	80	68	132	120	
15	100	79	66	134	121	
17	100	82	70	130	118	
21	100	85	70	130	118	
23	100	85	74	126	115	
21	100	85	74	126	115	

7: Modifications

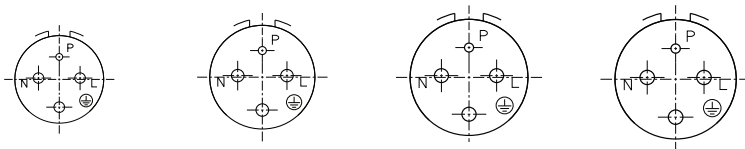
Modifications (Optional)	
F312	Reduced flange receptacle with standard nut (Jam Nut Only)

INSERT ARRANGMENT

Amphenol PowerSafe range offers 6 contact arrangements to fit all your power needs, with single-phase & three-phase layouts, and a choice of 2 insert materials for each layout depending on the need :

- **V** inserts : developed according to VG96944 standard with a material less impacted by the disconnection under load. Able to withstand a maximum temperature of 302°F(150°C) & have a CTI between 175 & 400 (Material Group IIIa)
- **E** inserts : using the same material than our 38999 series connectors and able to withstand a temperature up to 392°F (200°C)

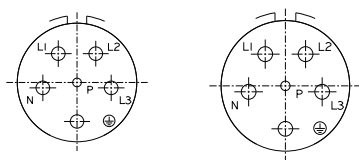
SINGLE-PHASE LAYOUTS:



V Insert	13-V4	15-V4	21-V4	23-V4
E Insert	13-E4	15-E4	21-E4	23-E4
Pilot Contact (P)	1 Size 20	1 Size 16	1 Size 16	1 Size 16
Phase & Neutral (N & L)	2 Size 16	2 Size 12	2 Size 6	2 Size 4
Protective Contact	1 Size 16	1 Size 12	1 Size 6	1 Size 4

Contact Arrangement	Pilot Contact - P		Phase, Neutral and Protective Contact - N, L &		Test Voltage AC
	Contact Rating	Operating Voltage	Contact Rating	Operating Voltage AC or DC	
13-V4 / 13-E4	0.5 A	60 V	16 A	250 V	1500 V
15-V4 / 15-E4	0.5 A	60 V	25 A	250 V	1500 V
21-V4 / 21-E4	0.5 A	60 V	63 A	500 V	2500 V
23-V4 / 23-E4	0.5 A	60 V	100 A	500 V	2500 V

THREE-PHASE LAYOUTS:



V Insert	17-V6	25-V6
E Insert	17-E6	25-E6
Pilot contact (P)	1 Size 16	1 Size 16
Phase & neutral (N & L)	4 Size 12	4 Size 6
Protective Contact	1 Size 12	1 Size 6

Contact Arrangement	Pilot Contact - P		Phase, Neutral and Protective Contact - N, L1, L2, L3 &		Test Voltage AC
	Contact Rating	Operating Voltage	Contact Rating	Operating Voltage AC or DC	
17-V6 / 17-E6	0.5 A	60 V	16 A	250 V	1500 V
25-V6 / 25-E6	0.5 A	60 V	25 A	250 V	1500 V