



# Combo-D with High Efficiency Power Contacts: Smaller. Lighter. More Current Capacity.

ITT Cannon's innovative Combo-D with High Efficiency Power (HEP) Contacts feature canted coil spring technology that increases electrical current carrying capacity, improves efficiency and reduces costs.

Combo-D with HEP Contacts is the latest addition to the ITT Cannon Combination D-Subminiature product line. Engineered for use in a variety of markets and applications—from ordnance and military transports to shipboard radar and satellite systems—these versatile interconnect solutions help transmit more power in an increasingly connected world.

## The Cannon Difference

- One of the first high power contacts with canted coil spring technology
- Offers up to 75% increase in electrical current carrying capacity over conventional high-power contacts
- Among the smallest, high performance designs available
- Offers exceptional versatility and use in a wide range of markets & applications



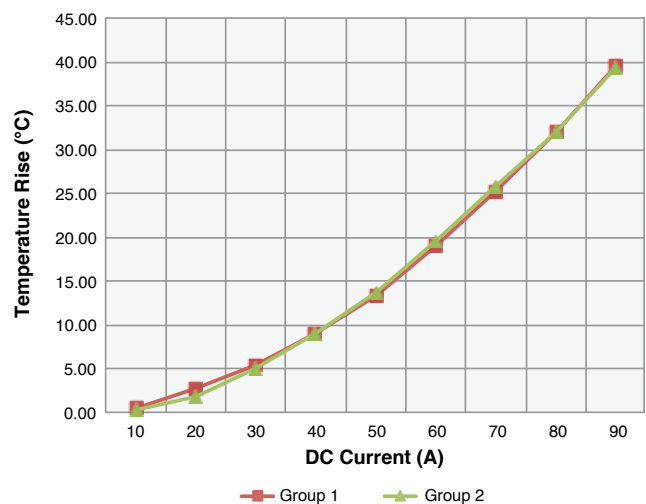
HEP Contacts

Standard Contacts

## Key Features

- Lower mating force enables easy, quick and convenient component connection and disconnection
- Innovative canted coil spring technology increases the 40A electrical current rating in a standard size 8 contact to a range of 65A to 70A, representing as much as a 75% increase
- Available in crimp, solder, PCB (straight, right angle) terminations
- HEP Contacts can be used in any Cannon brand or competitors' Combo-D connector
- Industry standard size 8 cavity can be retrofitted
- Must be used as a mated pair

Temperature Rise vs. DC Current (Two Sample Groups)



## Markets & Applications



Military Vehicles



Satellite Systems



Shipboard Systems



Shipboard Radar

# Combo-D with HEP Contacts



## How to Order | Part Number Configurator

DBM E 9E4 P J K87

### Product Family Designator

- D\*M = Industrial & Space/Non-Magnetic Applications (Solder Cup, Straight & 90° PCB)  
Flash & 30 microinch gold over nickel contacts
- D\*MM = Military/Hi-Rel, 50 microinch gold plating (Solder Cup, Straight & 90° PCB)
- D\*A = Crimp
- Shell Sizes = E, A, B, C, D

### Hardware Modifier

- blank = .120" (3.05mm) Through Hole
- C = 90° Metal Bracket, #4-40 Fastener and Boardlock
- D = 90° Metal Bracket, #4-40 Fastener and #4-40 Screwlock
- E = #4-40 Clinchnut
- G = 90° Metal Bracket, #4-40 Fastener, #4-40 Screwlock, Boardlock
- H = .300" (7.6mm) #4-40 Standoff, #4-40 Screwlock
- J = 90° Metal Bracket, M3 Fastener, M3 Screwlock, Boardlock
- K = .162" (4.11mm) Through Hole
- L = 90° Metal Bracket, M3 Fastener, Boardlock
- N = .300" (7.6 mm) #4-40 Standoff, #4-40 Screwlock, Boardlock
- O = 90° Metal Bracket, M3 Fastener, M3 Screwlock
- P = 90° Metal Bracket, #4-40 Fastener
- Q = .300" (7.6 mm) M3 standoff, Boardlock
- S = 90° Metal Bracket, M3 Fastener
- T = .300" (7.6 mm) M3 standoff
- U = .300" (7.6 mm) M3 Standoff, M3 Screwlock and Boardlock
- V = .300" (7.6 mm) #4-40 Standoff
- W = .300" (7.6mm) M3 Standoff, M3 Screwlock
- X = M3 Clinchnut
- Y = Dual Float Mounts
- Z = .300" (7.6mm) #4-40 Standoff, Boardlock

### Shell Material and Plating Modification Code

- blank = Carbon steel, Yellow chromate over zinc shells  
Flash gold over nickel contacts
- A101 = Carbon steel, Yellow chromate over cadmium
- A197 = Carbon steel, Pure Tin over Nickel (socket side only) **RoHS**
- K87 = Carbon steel, Pure Tin over Nickel (pin shell with grounding dimples) **RoHS**
- F225 = Stainless steel, Passivated **RoHS**
- NMBK52 = Brass, gold over copper (non-magnetic for space applications)

### Contact Termination Code

- blank = Solder cup (D\*M/D\*MM)  
Crimp (D\*A)
- J = 90° PCB signal contact, (ø.030" × .170" long)
- N = Straight PCB signal contact, (ø.030" × .178" long)
- V = 90° PCB signal contact, (ø.024" × .157" long)
- Y = Straight PCB signal contact, (ø.024" × .178" long)

### Contact Gender

- P = Pin /Male (plug)
- S = Socket /Female (receptacle)

### Layout (Example: 5W1- Total number of 5 contacts with 1 size 8 cavity)

- Shell Size E: 2W2, 2WK2,\* 5W1
- Shell Size A: 3W3, 3WK3,\* 7W2, 11W1
- Shell Size B: 5W5, 9W4, 13W3, 17W2, 21W1
- Shell Size C: 8W8, 13W6, 17W5, 21WA4, 25W3, 27W2
- Shell Size D: 24W7, 36W4, 43W2, 47W1

\*K = Indicates keyed layout where one cavity is opposite gender

- W = Empty size 8 cavities
- C = 75 Ohm Coax installed (straight or 90° PCB)
- X = 50 Ohm Coax installed (straight or 90° PCB)
- H = High power installed (straight or 90° PCB)
- P = High power installed (Euro, 90° PCB only)
- V = High voltage installed (available in straight PC only)
- G = Guide pin or guide socket installed
- R = Mini High Power 90° installed
- E = HEP contact installed or supplied loose



## Why ITT

ITT is a focused, multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. ITT Cannon is a leading global manufacturer of connector products serving international customers in the aerospace and defense, industrial and medical end markets. We design and engineer a variety of interconnect solutions that make it possible to transfer data, signal and power in an increasingly connected world.

Connect with your ITT Cannon representative today or visit [www.ittcannon.com](http://www.ittcannon.com)

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