

Dura-Con™ Combi

COMBINATION CONNECTORS

VARYING CONTACT ARRANGEMENTS FOR USE IN HARSH ENVIRONMENTS



Combination Connectors

Features

Both plug and socket available in varying contact arrangements
 Aluminium shell provides extra strength and EMI/RFI shielding capability
 Rugged twist-pin contacts offer resistant to shock and vibration
 Tested to Mil-DTL-83513
 Metal shell Dura-Con is an excellent choice for harsh environments



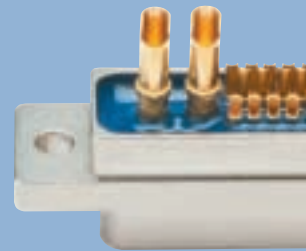
Materials

Insulator: Polyphenylene Sulfide >PPS< per Mil-M-24519
 Contacts: Pins - Beryllium Copper, Sockets - Copper Alloy (machined) Brass
 Signal: 1.27µ Au per Mil-G-45204
 Power: Aluminium Alloy per SAE-AMS-QQ-A-250
 Contact Plating: Electroless Nickel, Cadmium or Olive Drab
 Shell: Stainless Steel 300 series
 Shell Plating: High Impact Resin Compound
 Hardware: Consult Cinch for other options
 Encapsulant:



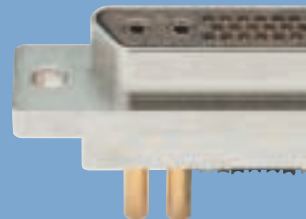
Environmental

Operating Temperature: -55°C to +135°C
 Shock: 50 G's, Mil-STD 1344, Method 2004, Condition E
 Vibration: 20 G's, Mil-STD-1344, Method 2005, Condition IV
 Salt Spray (Corrosion): 48 Hours, Mil-STD-1344, Method 2004, Condition E



Electrical

Current Rating: 3 Amps maximum
 Signal: 15 Amps maximum
 Power: 600 VAC RMS @ sea level
 Withstanding Voltage: 8 milliohms maximum
 Contact Resistance:



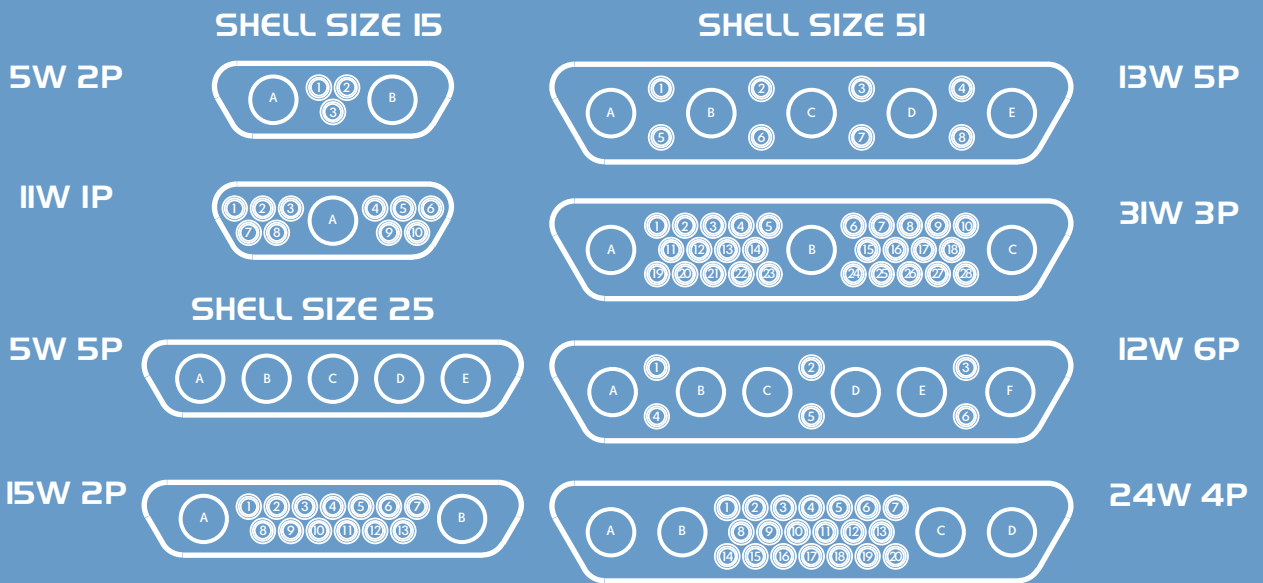
Mechanical

Individual Contact: 6 oz. (170.40g) maximum insertion force. 0.5 oz (14.20g) minimum withdrawal
 Signal: 30 oz. (850.50g) maximum insertion force. 2.5 oz (70.90g) minimum withdrawal
 Power: 500 mate/unmate cycles minimum
 Durability:

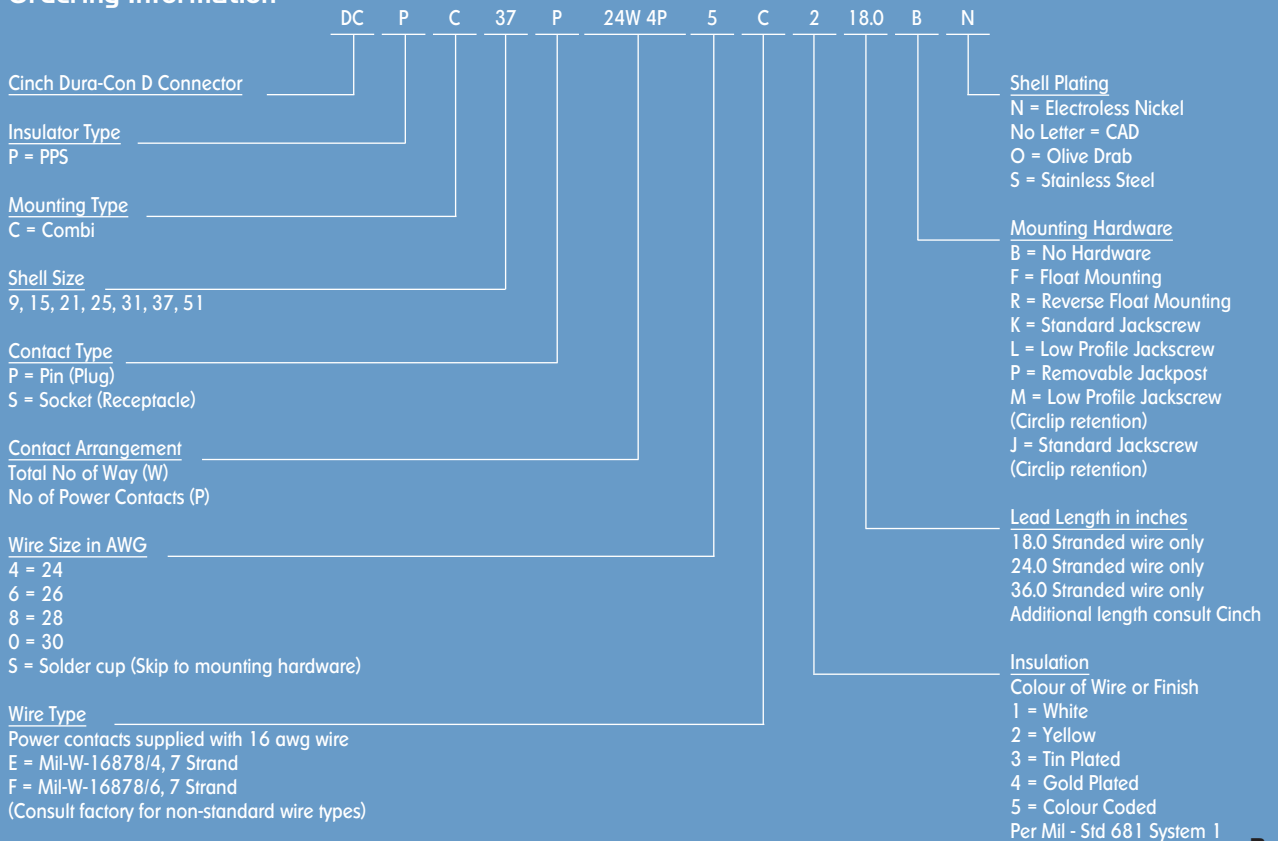


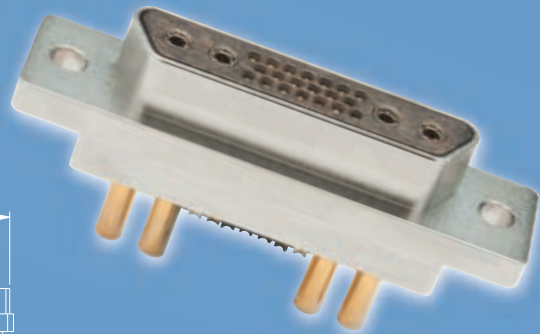
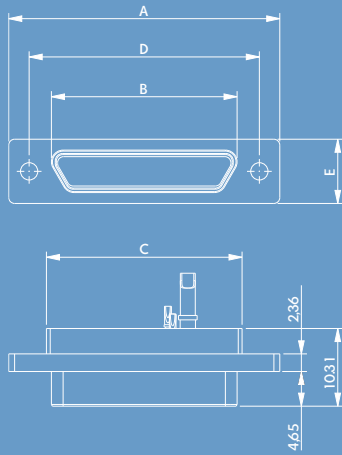
Contact Arrangements

Face view of pin insert. Use reverse order for socket side.



Ordering Information

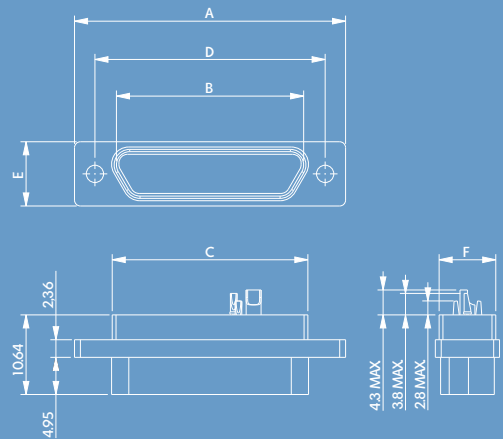




Plug Arrangement



Socket Arrangement



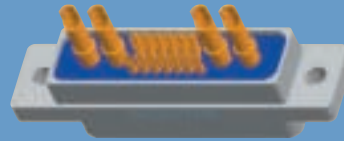
Shell Size/Gender	A ±0.25 (0.01")		B MAX. (Plug) B MIN. (Socket)		C +0.25/-0.46 (0.01/0.018")		D ±0.13 (0.005")		E ±0.25 (0.01")		F MAX	
	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm	inches
A Plug (9P)	19.68	0.775	8.48	0.3338	9.91	0.39	14.35	0.565	7.57	0.298	6.68	0.27
A Socket (9S)	19.68	0.775	8.49	0.3342	9.91	0.39	14.35	0.565	7.57	0.298	6.68	0.27
B Plug (15P)	23.5	0.925	12.29	0.4838	13.72	0.54	18.16	0.715	7.57	0.298	6.68	0.27
B Socket (15S)	23.5	0.925	12.3	0.4842	13.72	0.54	18.16	0.715	7.57	0.298	6.68	0.27
C Plug (21P)	27.3	1.075	16.1	0.6338	17.53	0.69	21.97	0.865	7.57	0.298	6.68	0.27
C Socket (21S)	27.3	1.075	16.11	0.6342	17.53	0.69	21.97	0.865	7.57	0.298	6.68	0.27
D Plug (25P)	29.84	1.175	18.64	0.7338	20.07	0.79	24.51	0.965	7.57	0.298	6.68	0.27
D Socket (25S)	29.84	1.175	18.65	0.7342	20.07	0.79	24.51	0.965	7.57	0.298	6.68	0.27
E Plug (31P)	33.66	1.325	22.45	0.8838	23.88	0.94	28.32	1.115	7.57	0.298	6.68	0.27
E Socket (31S)	33.66	1.325	22.46	0.8842	23.88	0.94	28.32	1.115	7.57	0.298	6.68	0.27
F Plug (37P)	37.46	1.475	26.26	1.0338	27.69	1.09	32.13	1.265	7.57	0.298	6.68	0.27
F Socket (37S)	37.46	1.475	26.27	1.0342	27.69	1.09	32.13	1.265	7.57	0.298	6.68	0.27
G Plug (51P)	36.2	1.425	24.99	0.9838	26.42	1.04	30.86	1.215	8.66	0.341	7.87	0.31
G Socket (51S)	36.2	1.425	25	0.9842	26.42	1.04	30.86	1.215	8.66	0.341	7.87	0.31
H Plug (100P)	54.86	2.16	35.15	1.3838	36.38	1.432	45.71	1.8	9.75	0.384	9.15	0.36
H Socket (100S)	54.86	2.16	35.16	1.3842	36.38	1.432	45.71	1.8	9.75	0.384	9.15	0.36



Termination Details

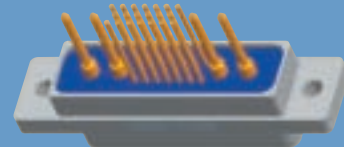
Combi Solder Pot Connector

Offering a combination of terminations.
Power contact for 16 awg wire or smaller
Micro contact for 26 awg wire or smaller



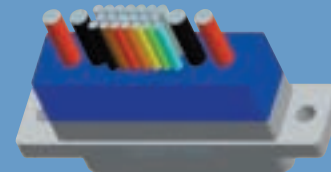
Combi PC Tail Connector

Suitable for termination to flexible circuits or rigid boards
Consult Cinch Connectors Ltd for options

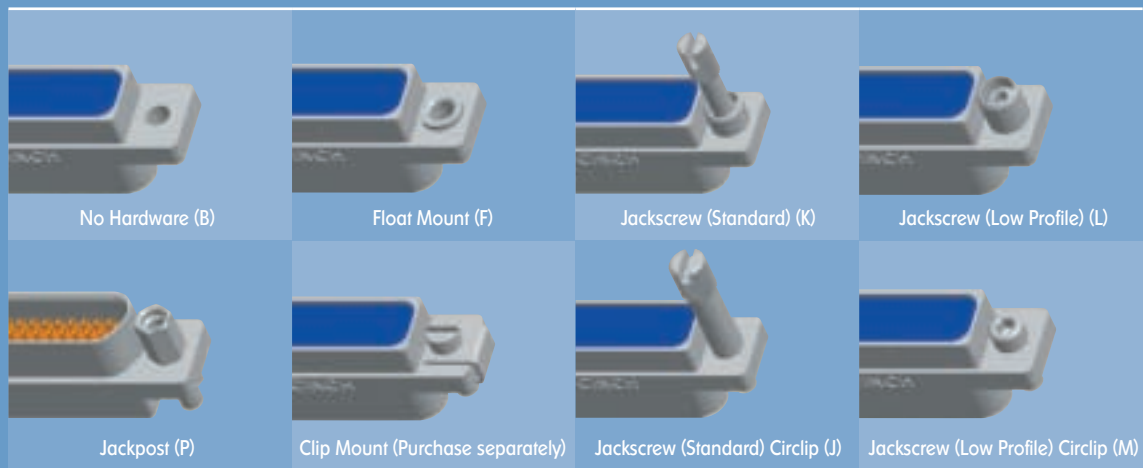


Combi Flying Lead

Supplied pre-terminated with insulated wire
Encapsulated with high impact resin compound
See ordering information for wire options available
Power contacts supplied with 16 awg wire
6.5mm max potting height
See ordering information for details of options available



Mounting Hardware



Mating Unmating Force	No. of Contacts	Maximum Mating Force		Minimum Unmating Force	
		lb	kg	lb	kg
	9	5.63	2.56	0.28	0.13
15	9.38	4.26	0.47	0.21	
21	13.13	5.96	0.66	0.30	
25	15.63	7.10	0.78	0.35	
31	19.38	8.80	0.97	0.44	
37	23.13	10.50	1.16	0.53	
51	31.88	14.47	1.59	0.72	
100	62.50	28.38	3.13	1.42	



Connector Performance Specifications

Property	Requirement	Test Method
Current Rating		
Signal	3 Amp maximum	
Power	15 Amp maximum	
Dielectric Withstanding Voltage		
Sea level	900 VAC	MIL-STD-1344, Method 3001
Contact Resistance	8 milliohms maximum	MIL-STD-202, Method 307
Low Level Contact resistance	32 milliohms maximum	MIL-STD-1344, Method 3002
Insulation Resistance	5000 megohms minimum	MIL-STD-1344, Method 3003
Magnetic Permeability	2.0 maximum	ASTM A342
Mating Force		
Signal	(10 ounces max.) x (# of contacts)	MIL-DTL-83513
Power	30 ounces maximum	
Unmating Force		
Signal	(0.5 ounces min.) x (# of contacts) MIL-DTL-83513	
Power	2.5 ounces minimum	
Contact Retention	5 pounds minimum	MIL-STD-1344, Method 2007
Operating Temperature	-55°C. to 125°C.	
Durability	500 mating cycles minimum	MIL-DTL-83515, Para 4.5.16
Salt Spray (corrosion)	48 hours	MIL-DTL-1344, Method 2004, Condition E
Crimp Tensile Strength		
Wire Type M22759/11	5 pounds minimum	MIL-DTL-83513, Para 4.5.20
Wire Type M22759/33	10 pounds minimum	
Shock	50 G's	MIL-STD-1344, Method 2004, Condition E
Vibration	20 G's	MIL-STD-1344, Method 2005, Condition IV



Engineer's Check List

SECTOR

- Sea
- Aerospace
- Sub-Terrain
- Ground Support
- Armoured Vehicle
- Rail
- Space
- Radar
- Avionics
- Munitions / Missile

CONNECTOR STYLE

- Rectangular
- Circular
- Z Axis Compression
- Power & Signal
- Hermetic
- IPC Rated
- Filtered
- Edge Connector
- Multipole
- High Speed
- Rugged Enclosure

WIRE TYPE

- Stranded
- Solid
- Twisted pairs
- Co-Axial
- Colour Code Single / Multi
- Multi Core
- Shielded
- Wire AWG
- Custom Cable

ENVIRONMENT

- Dust
- Moisture Resistant
- Full Water Immersion
- Chemical Compatibility
- RoHS
- Low Smoke / Zero Halogen
- Extreme Temperature Tolerance
- Flame Retardant

MARKET SEGMENT

- Oil Petroleum Gas (OPG).
- Renewable Energy
- Military & Defence
- Commercial
- Computer
- Industrial
- Telecommunications
- Medical

CONSTRUCTION

- Male Female
- Crimp
- Solder
- PC Tail 90° 180°
- RF Signals
- Number Contact Points
- Contact Pitch
- Housing Material
- Plastic Metal

CUSTOM INTERCONNECT

- Single Ended
- Double Ended
- Multi Limb Cable Assembly
- Strain Relief Backshell
- Environmental Backshell / Boot
- 3600 Screened Backshell
- Moulded Strain Relief
- Woven
- Flexible Circuit

SPECIFICATION

- Operating Temperature Range
- Mating Cycles
- Electrical
- Voltage Rating
- Current Rating
- Filtration Rating
- Materials / Finish
- Contact Plating
- Housing Plating

At Cinch our philosophy is that anything is possible.

With over 70 years' experience as a global supplier we offer simple, effective solutions to our customers' interconnect and integration needs. From basic interconnect to complex integration requiring bespoke design, we focus primarily on quality, ingenuity and reliability, meeting the high performance demands of industries such as Defence, Aerospace, Space, Telecom, High Speed Data Servers and Industrial Transportation.

**TOGETHER
WE STIMULATE,
WE INNOVATE,
WE CREATE.**



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Cinch has manufacturing and sales sites located globally approved to AS9100.

