

Wire and Cable

Heat-shrink Tubing

Non-shrink Tubing

Braided Sleeving

Screening Braids

Moulded Parts

Terminals and Splices

Wire and Cable Markers

Accessories

Connectors

Backshells

Bonding Leads

Metal Braids

Relays and Contactors

Switches and Grips

Adhesives and Tapes

Application Equipment

Added Value Services

1 Range of High Performance 2 Connectors

3 Working closely with suppliers and
4 manufacturers worldwide we offer a
5 comprehensive range of connectors and
6 associated products for the Defence,
7 Aerospace, Marine and Industrial markets.

8 Our breadth of experience and knowledge
9 enables us to provide you with advice and
10 support on the optimum product for your
11 application.

Fast Factory Quick Response & Turnaround

Through our supply partners we able to offer a 'Fast Factory' quick response and turnaround supply service to our customers, for key connector styles, including...

MIL-DTL-38999 Series III • EN 3645

MIL-DTL-26482 Series II

MIL-DTL-83723 Series I and III

Product ranges built in the 'Fast Factory' are offered on a 2 to 3 weeks lead-time for quantities of up to 200 pieces and when required 'Fast Factory' is able to offer 48-hour production for small batches.

In addition to this, there is a low MOQ for these items with the aim of offering maximum flexibility, to help our customers supply logistics and order consolidation.

The 'Fast Factory' has its own dedicated teams. This facility serves industries such as aerospace, defence and marine and also the rail market and all customers from other industries requiring high performance connector products.

'Fast Factory' is a value added service provider for IS-Rayfast on Deutsch products to serve the European and EMEA markets. This hub and facility are capable of delivering and assembling on demand products.



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Military and Aerospace			
MIL-DTL-****	High performance specification connectors	page 354	2
MIL-DTL-38999 Series III	Part numbering guide	page 355	3
Commercial			
DT Series	Family of tough cable to cable connectors	page 356	4

Although not included in these pages, we can also offer a broader range of connector series as outlined below. Please contact us for additional information or to discuss your requirements further.

HDP20 Series



HDP20 connectors are a versatile connector solution for harsh environment applications in the construction, mining, marine, and agricultural industries.

These heavy-duty thermoplastic, circular shaped connectors feature quick connect-disconnect bayonet couplings, silicone seals, and a rear insertion/rear removal contact system.

Offered in two shell sizes and in 19 different configurations, ranging from 2 to 47 cavities and accommodate multiple size contacts & wire sizes.

HD30 Series



HD30 connectors are constructed with a rugged aluminum shell developed to meet the needs of the heavy-duty truck, bus and off-highway industries.

These connectors offer multiple pin configurations that accept contact sizes 4 to 20. HD30 connectors are circular shaped and feature quick connect-disconnect bayonet couplings, silicone seals and a rear insertion/rear removal contact system.

Also offers adaptor and cable clamp modifications that support the wires while reducing strain on the connectors.

DRC Series



DRC connectors are designed for off-road, heavy-duty industrial, recreational, and agricultural applications.

The environmentally sealed, rectangular shaped DRC connectors are offered with insert arrangements of 24, 40, 50, 60, 64, 70, and 76 cavities that accept size 16 and 20 contacts. Several mounting options are available including in-line, flange mount, and PCB mount.

Materials Selection Guide for Harsh Environments

For a connector design to perform in different harsh environments and applications the materials selected are critical to their operation. Connector shells are often metal and can be aluminium, stainless steel, brass, titanium, or even composite to meet the demanding harsh environment conditions.

Common Connector Materials

Aluminium

Effective for the majority of interconnect applications, as satisfies both environmental and interconnect requirements. Aluminium is strong, lightweight, corrosion resistant and cost effective, with a variety of surface finishes available to enable it to satisfy various application requirements and environments.

Nickel Aluminium Bronze

Ideal for marine applications where traditional plating finishes can quickly be eroded by sand and dust revealing weaker base materials, whereas Nickel Aluminium Bronze will remain robust in the harshest of environments.

Stainless Steel

Corrosion resistant steel (CRES) available in 303, 304 and 316 grades, offers excellent corrosion and chemical resistance plus it is stronger than aluminium and needs no additional plating. More expensive than aluminium by 3 to 4 times depending on grade of material.

Brass

Brass is corrosion resistant by design and being relatively soft, machines easily. It has the added advantage of being a non-sparking metal. Brass does not require additional surface treatment but it is often nickel and chrome plated for increased hardness, wear resistance and enhanced appearance.

Composite

Key advantages over alternative materials include light weight, superior corrosion resistance and can be lower cost when manufactured in high volumes. Manufacturers can also plate composites for increased surface hardness and conductivity.

Titanium

Often specified where corrosion resistance and weight are of paramount importance. Titanium is also used in high temperature environments. Substantially higher in cost than aluminium components.

Common Plating Finishes

Cadmium

The historical standard finish of military and industrial connectors offering excellent salt spray corrosion resistance but falls foul of RoHS compliance legislation.

Electroless Nickel

Commonly used on industrial and high temperature applications, where a non-reflective finish and high corrosion resistance is not important.

Black Zinc Nickel

The latest RoHS compliant solution to environmental plating of connectors, offering high levels of compatibility with other plating materials.

Nickel PTFE

A lower cost alternative to Black Zinc Nickel. However, the average bath lifetime of the chemical nickel PTFE is half that of electroless nickel and ten times less than nickel alloy (zinc-nickel).

Shell Materials	Nickel Aluminium Bronze	Stainless Steel	Composite
Salt Spray	2,000 hours	2,000 hours	2,000 hours

Plating Finish	Cadmium	Electroless Nickel	Black Zinc Nickel	Black Zinc Cobalt	Green Zinc Cobalt
Colour	Olive Drab	Shiny Silver	Black (non-reflective)	Black (non-reflective)	Dark Green
Shell Continuity	2.5 mΩ	1.0 mΩ	2.5 mΩ	2.5 mΩ	2.5 mΩ
Durability	500 cycles	500 cycles	500 cycles	500 cycles	500 cycles
Temp Range	-65°C to +175°C max	-65°C to +200°C max	-65°C to +175°C max	-55°C to +125°C max	-55°C to +125°C max
EMI Shielding	>90dB @ 100 MHz	>90dB @ 100 MHz	>90dB @ 100 MHz	>80dB @ 100 MHz	>80dB @ 100 MHz
Shell Conductivity	2.5mV max	1.0mV max	2.5mV max	5.0mV max	5.0mV max
Salt Spray	500 hours	48 hours	500 hours	48 hours	96 hours
RoHS Compliant	No	Yes	Yes	Yes	No



Connectors

MIL-DTL-**** Range

Fast Factory Turnaround
Military and Aerospace

- 1 Key 'Fast Factory' products include...
- 2 MIL-DTL-38999 Series III • EN 3645
- 3 MIL-DTL-26482 Series II
- 4 MIL-DTL-83723 Series I and III



5 Drawing from our supplier portfolio we have access to a strong inventory of over 5,000 different part numbers of connectors that are maintained on stock. Product ranges built in the 'Fast Factory' are offering assembling on demand products.



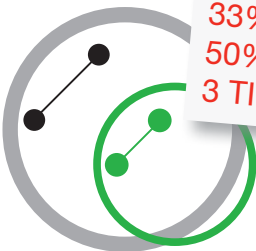
6 A broad range of alternative designs and brands are also available...

7 ...Including MIL-DTL-38999 Micro Derivatives

8 Because of the widespread popularity of 38999 Series III connectors, manufacturers have used this form for numerous designs to meet a variety of high density, smaller configurations beyond those of MIL-DTL-38999. Offering a familiar, reliable connector and access to a full range of backshells and other accessories.



13 D38999 Series III



14 Same number of contacts in a smaller connector!
15 **33%** Smaller Diameter
16 **50%** Shorter Length
17 **3 TIMES** Lighter

18 D38999 Micro

Military Designation Part No. example

D38999 / 26 Z E 35 P N -L/C

Connector Style

Standard	/20	Square Flange Receptacle
	/24	Jam Nut Receptacle
	/26	Straight Plug
	-	Box Mount Receptacle
Hermetic	/21	Square Flange Receptacle
	/23	Jam Nut Receptacle
	/25	Solder Flange
	/27	Weld Flange

Material and Finish

Aluminium	F	Electroless Nickel
	G	Space-Grade Electroless Nickel
	T	Nickel PTFE
	W	Olive Drab Cadmium
Composite	Z	Black Zinc Nickel
	M	Electroless Nickel Plated
Stainless Steel	J	Olive Drab Cadmium
	K	Passivated SS, Firewall
	S	Electro-deposited Nickel SS Firewall
Hermetic	L	Electro-deposited Nickel
	Y	Stainless Steel, Passivated
	N	Stainless Steel, Electro-deposited Nickel
	H	Space Grade

Shell Sizes

A (9), B (11), C (13), D (15), E (17), F (19), G (21), H (23), J (25)
Letters = Military | Numbers = DTS Commercial

Insert Arrangements

Contact us for full arrangements table.

Contact Type (MIL-C-39029)

Standard	P = Pin S = Socket H = 1500 cycle pin
	J = 1500 cycle socket A = Less Pin
	B = Less Socket
Hermetic	P = Pin, Solder Cup S = Socket, Solder Cup
	C = PC Tail Pin D = PC Tail Socket
	X = Eyelet Pin Z = Eyelet Socket

Insert Rotation

N = Normal (standard) | U = Universal
For full details & options refer to separate MIL arrangement charts.

Modification Code

OMIT for standard contacts | L/C = Less Contacts
For full list of options please contact us

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Connectors

DT Series

Connector Series and Types, Overview
Commercial High Performance

1 Range of environmentally sealed connectors
designed for cable to cable applications.
2 Thermoplastic housings offer a wide operating
temperature range plus silicone rear wire
3 and interface seals allow the connectors to
withstand conditions of extreme temperature
and moisture.

4 Contact insertion and removal does not require
any special tools, with contacts retained in a
5 locked position by integral dielectric fingers.
Secondary wedge-locks are assembled at the
mating interfaces to provide proper contact
positioning.

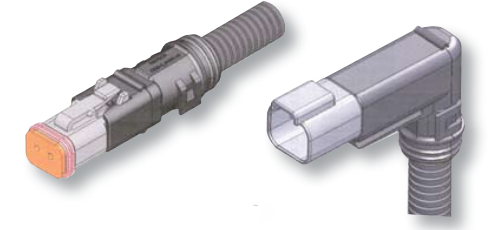
6 **DT Series** - Environmentally sealed connector
designed for cable to cable applications on
7 the engine or transmission, under the bonnet,
on the chassis or in the cab. On signal level
8 circuits in harsh environment conditions - Size
16 contacts

9 **DTM Series** - Feature miniature contacts with
enhanced design based on the DT Series.
DTM is the connector to be used in harsh
10 environmental applications such as around the
engine, transmission and under the bonnet -
Size 20 contacts

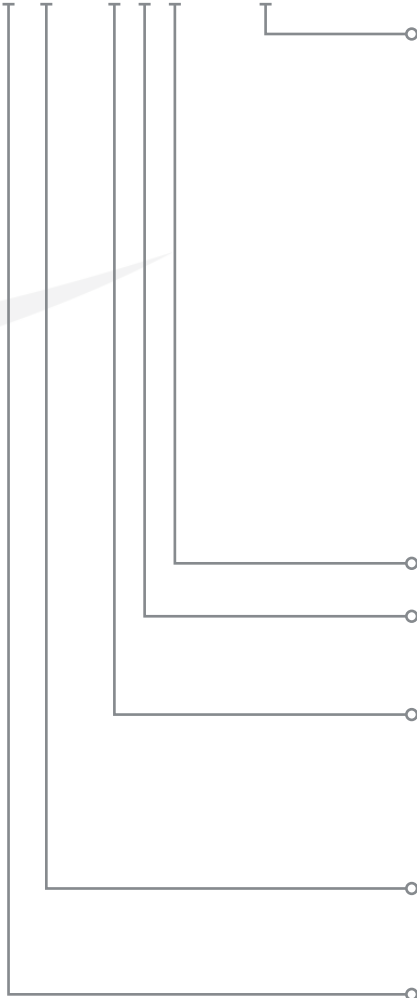
11 **DTHD Series** - Offers an environmentally
sealed, single power circuit termination with a
12 current rating from 25 to 100 Amps. The plug
features an integral coupling latch that provides
13 tactile and audible feedback during coupling -
Size 4, 8 or 12 contact.

14 **DTP Series** - Designed for power applications,
to fill the need for higher amperage, multi-
15 pin connectors. Offers ability to use multiple
12 gauge contacts, each with a 25 amp
continuous capacity, within a single shell - Size
12 contacts

16 Full Range of Backshells,
17 Mounting Clips and Accessories
18 Available for the Complete
Solution



DT* 06 - 2 S * - XXXX



Part Numbering

Special Modifications

- B016** Prevents mis-mating for DT12
- P012** Enhanced front seal
- E008** DT - Boot adaptor (grey)[#]
- CE04** DT - Boot adaptor (grey)[§]
- EP11** DT Plug - Boot adaptor (black)[#]
- CE13** DT Plug (2,3,4) - Boot adaptor (black)[§]
- CE14** DT Plug (8,12)- Boot adaptor (black)[§]
- EE01** DT Receptacle - Boot adaptor (black)[#]
- CE09** DT Receptacle - Boot adaptor (black)[§]
- E007** DTM - Boot adaptor (grey)
- C015** Smaller wire seal
- E003** Rear cap
- E004** Black connector body
- E005** Black connector body and rear cap

Flange modifications are also available, please contact us for details

[#] Standard wall wire (2.24 to 3.68mm)

[§] Thin wall wire (1.35 to 3.05mm)

Polarizing Position (if applicable)

Contacts

- P** Pin
- S** Socket

Number of Contacts

- 2, 3, 4, 6, 8 or 12** DT and DTM Series, size 16
- 2 or 4** DTP Series, size 20
- 1-4** DTHD Series, size 4
- 1-8** DTHD Series, size 8
- 1-12** DTHD Series, size 12

Style

- 04** Receptacle
- 06** Plug

Series

- DT Series
- M** DTM Series
- P** DTP Series
- HD** DTHD Series

Please note that all DT Series connectors require secondary wedgelocks which are sold separately, see following pages. The wedgelocks help ensure proper contact alignment within each connector.

Connectors

DT Series

Wedgelocks

Required Components

1 DT style electrical connectors require secondary wedgelocks which are sold separately. The wedgelocks help ensure proper contact alignment within each connector.

2 Secondary wedgelocks are assembled at the mating interface and click into place. If by chance the secondary wedgelocks are not

properly seated during assembly, they will be pressed into locked position during the mating of the connector.

Adding to the design flexibility of the DT Series, several wedgelocks offer keying options.

Wedgelocks for enhanced seal retention plugs (P012) are also available.



DT Series Receptacle Wedgelocks

7	W2P*	Wedgelock for 2 way receptacle. *A, B, C, D keying available
8	W3P*	Wedgelock for 3 way receptacle. *J1939 keying available
9	W4P*	Wedgelock for 4 way receptacle. *A, B, C, D keying available
10	W6P	Wedgelock for 6 way receptacle.
11	W8P	Wedgelock for 8 way receptacle.
12	W12P	Wedgelock for 12 way receptacle.

DT Series Plug Wedgelocks

7	W2S*	Wedgelock for 2 way plug. *A, B, C, D keying available
8	W3S*	Wedgelock for 3 way plug. *J1939 keying available
9	W4S*	Wedgelock for 4 way plug. *A, B, C, D keying available
10	W6S	Wedgelock for 6 way plug.
11	W8S	Wedgelock for 8 way plug.
12	W12S	Wedgelock for 12 way plug.



DTM Series Receptacle Wedgelocks

15	WM-2P*	Wedgelock for 2 way receptacle. *A, B, C, D keying available
16	WM-3P	Wedgelock for 3 way receptacle.
17	WM-4P	Wedgelock for 4 way receptacle.
18	WM-6P	Wedgelock for 6 way receptacle.
19	WM-8P	Wedgelock for 8 way receptacle.
20	WM-12P	Wedgelock for 12 way receptacle.

DTM Series Plug Wedgelocks

15	WM-2S*	Wedgelock for 2 way plug. *A, B, C, D keying available
16	WM-3S	Wedgelock for 3 way plug.
17	WM-4S	Wedgelock for 4 way plug.
18	WM-6S	Wedgelock for 6 way plug.
19	WM-8S	Wedgelock for 8 way plug.
20	WM-12S	Wedgelock for 12 way plug.

DT Series

Wedgelocks, Sealing Plugs
Required and Optional Accessories



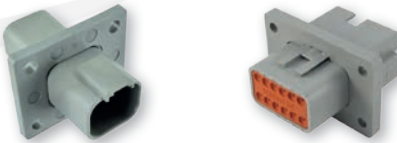
DTP Series Receptacle Wedgelocks

WP-2P	Wedgelock for 2 way receptacle.
WP-3P	Wedgelock for 3 way receptacle.



DTP Series Plug Wedgelocks

WP-2S	Wedgelock for 2 way plug.
WP-3S	Wedgelock for 3 way plug.



Flange Modification - Receptacles only

Grey		Black	
Std Wall	Thin Wall	Std Wall	Thin Wall
L012	CL03	LE14	CL06

Modification number is applied for housings regardless of the number of ways.



EEC Series PCB Enclosures and Headers

The enclosure features a through hole mounting flange on each side, as well as optional venting. Designed with space to accommodate one or more DT or DTM series interfaces, the headers feature 90° pins. A radial flange seal provides environmental sealing to the enclosure. The headers mate with the DT and DTM standard plugs.



Sealing Plugs

Maintains the environmental integrity of the connector if not all contact positions utilised.

01413-204-2005	Contact size 20
114017	Contact size 16-12
114018	Contact size 8
114019	Contact size 4



Tooling

Various hand crimp tools are available, including the **HDT-04-08** above (four ident crimp) for contact sizes 12, 16 and 20. For additional information or contact size crimp options please contact us.

