

D-SUBMINIATURE MIXED AND FULL POWER DW SERIES

Amphenol's D-Subminiature connectors are part of an industry standard for applications requiring robust and reliable connectors. These proven D-Subminiature connectors are one of the most popular Input/Output interconnects, addressing a wide variety of applications in Telecommunications, Data, Consumer, Industrial, Military, Instrumentation and Medical. Since many years Amphenol has been offering a wide range of D-Subminiature connectors to meet various design requirements including those in harsh environment.

Amphenol offers full power and mixed power versions which has been specifically developed for power applications in industrial and telecom market segment. PC board connectors are delivered with preloaded power contacts (10 - 40A). Cable crimp and solder power contacts are delivered with colour code plastic clips for an easy wire gauge identification.



TARGET MARKETS



FEATURES

- Power connectors available in various layouts from 2V2 to 36W4
- Power connectors available in full power and in mixed layout (signal + power)
- Contacts available from 10A to 75A
- Available in Straight, Angle, Solder Bucket, Crimp terminations
- Various PCB and Panel mounting accessory options available
- Hoods available in plastic, metalized and metallic form with locking screws
- Lead-free and RoHS compliant

BENEFITS

- Various layout options within the standards shell size
- Can meet both standard and Power connector requirements
- Can meet medium to high power requirements
- Support both PCB & Cable mounting requirements
- Wide variety of choices for secure connection
- Supports cable connection; Prevents risks of pulling up and accidental un-mating
- Meets environmental, health and safety requirements

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GENERAL CHARACTERISTICS

LAYOUTS

- Male insulator front view

Shell size		Layout
E	5W1	
	11W1	
A	7W2	
	3W3	
	3V3	
B	21W1	
	17W2	
	13W3	
	9W4	
	5W5	

Shell size		Layout
C	25W3	
	21WA4	
	27W2	
	8W8	
D	47W1	
	24W7	
	36W4	

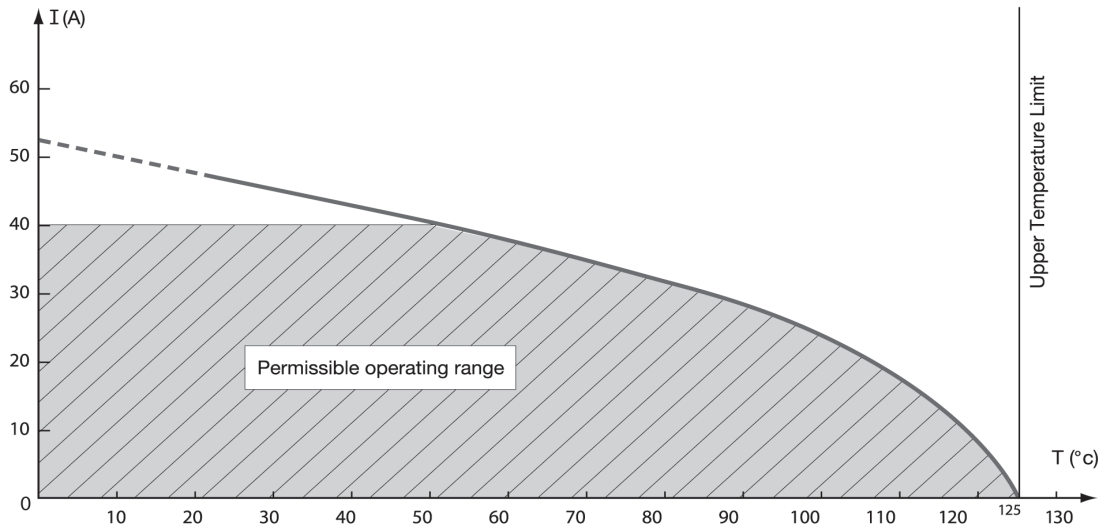
- Standard contacts
- Coaxial and power contacts

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DERATING CURVES

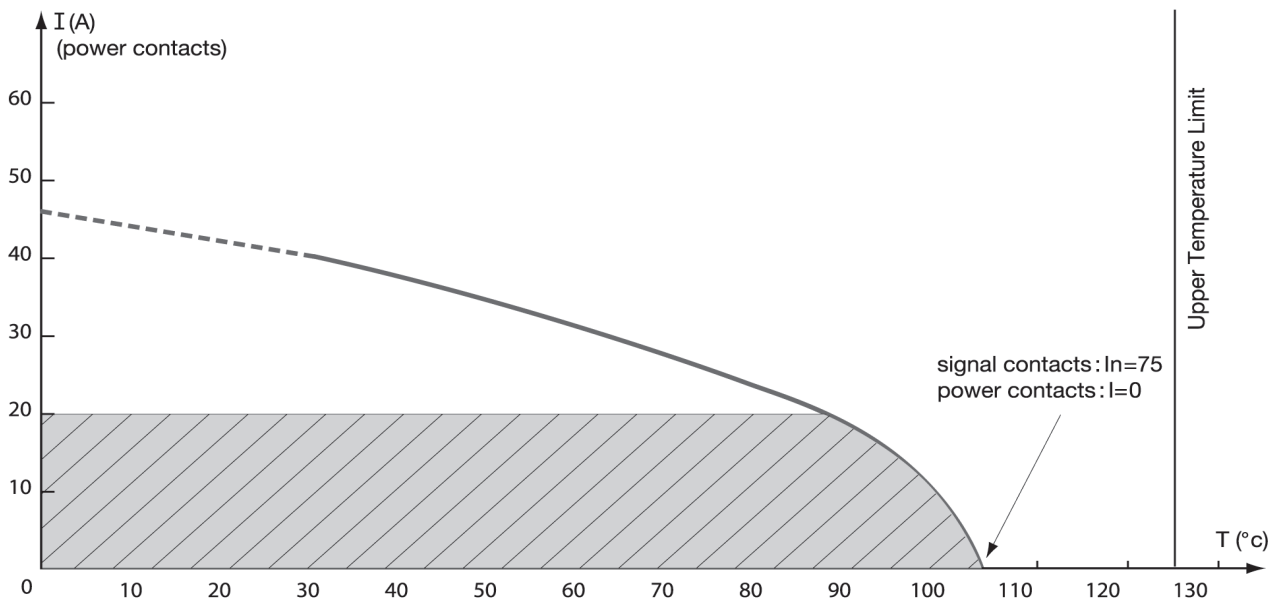
DERATING CURVE ON CONNECTOR DC8W8SA00LF

- Fitted with contacts 8638PSC4005LF (female) (I=40A)



DERATING CURVE ON CONNECTOR DB13W3PA00LF

- Fitted with power contacts 8638PPS2005LF (I=20A)
(I signal contacts=7,5A)

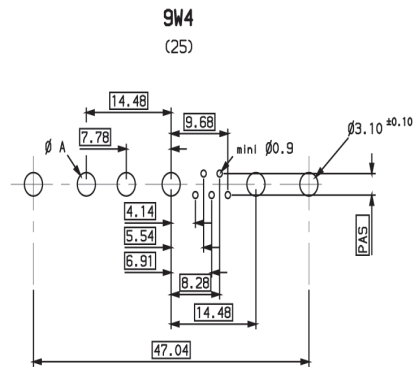
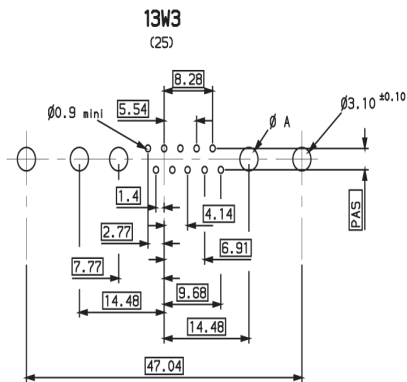
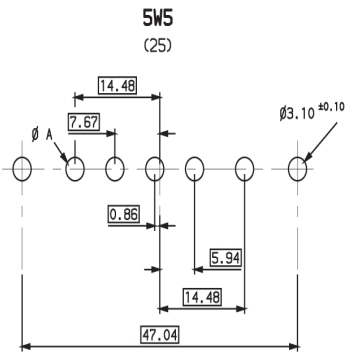
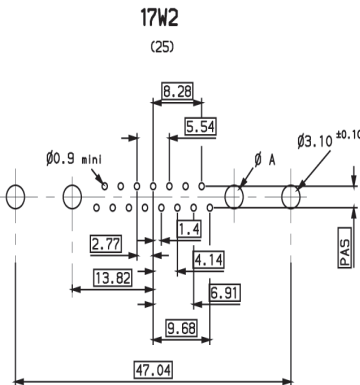
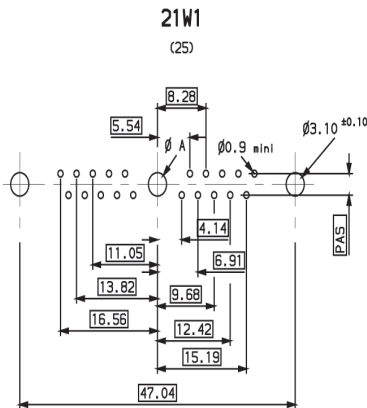
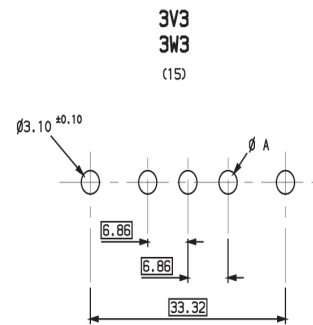
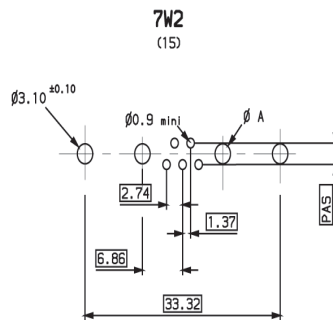
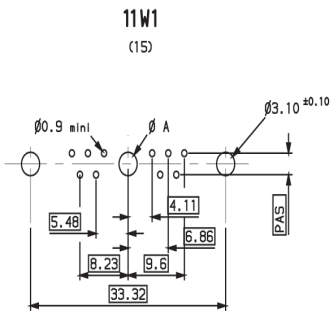
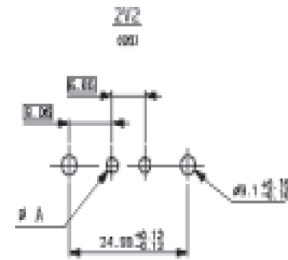
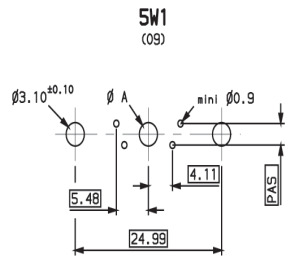


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DIMENSIONS

PC BOARD DRILLING

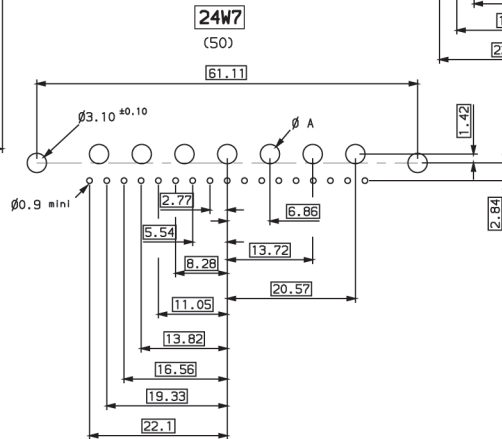
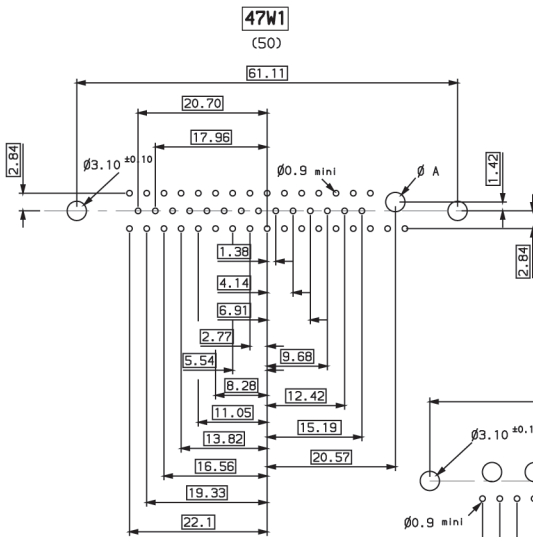
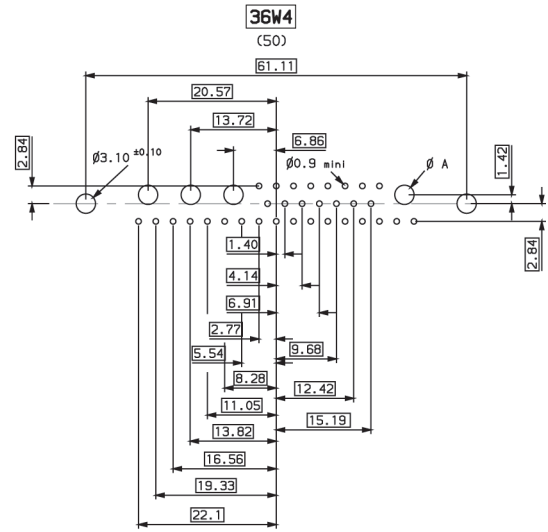
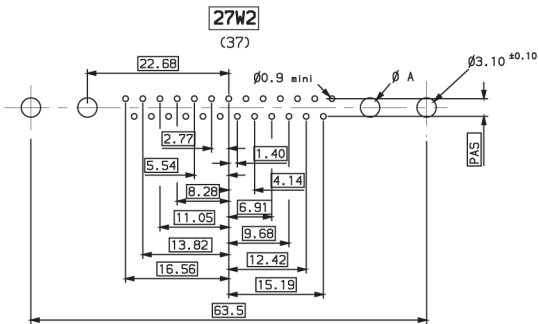
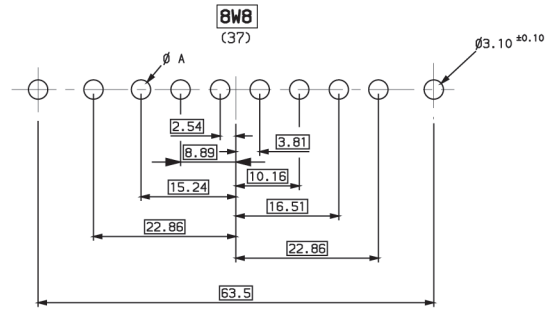
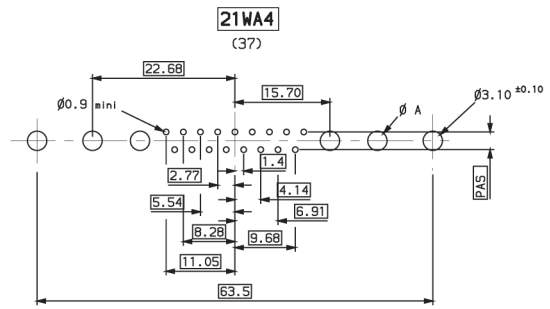
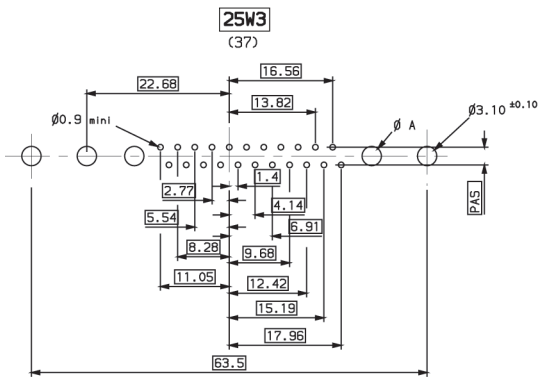
SOLDER TERMINATION			
VERSION	STEP	30A	40A
		ϕA	
3	2.84	$\phi 2.40^{\pm 0.10}$	$\phi 3.10^{\pm 0.10}$
7	2.84	$\phi 2.40^{\pm 0.10}$	
5	2.84	$\phi 2.40^{\pm 0.10}$	$\phi 3.10^{\pm 0.10}$



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DIMENSIONS

PC BOARD DRILLING



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FULL POWER RIGHT ANGLE SOLDER TO BOARD

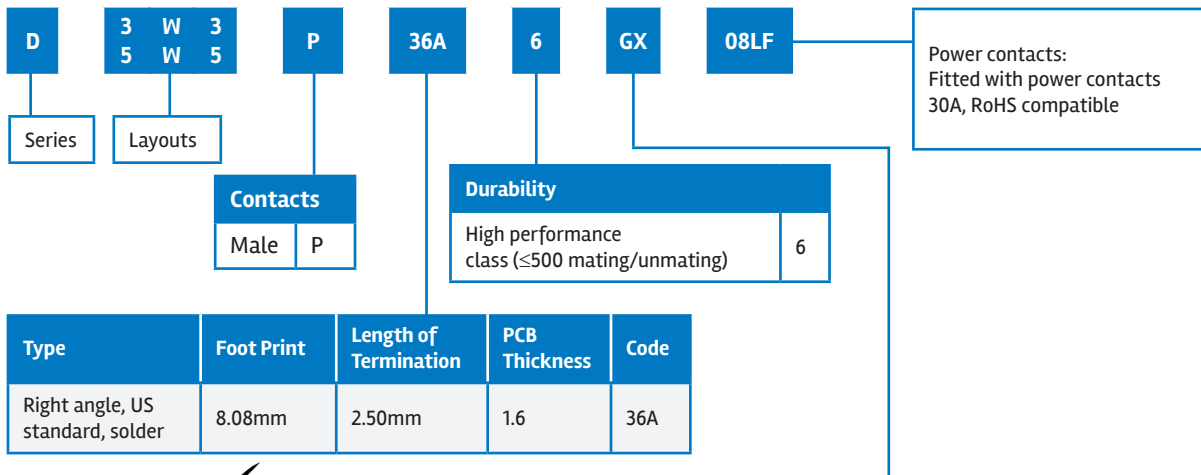


UL RECOGNISED FILE E66906 (R)

- This monobloc insulator design with stamped and formed signal contacts combines performance and cost effectiveness



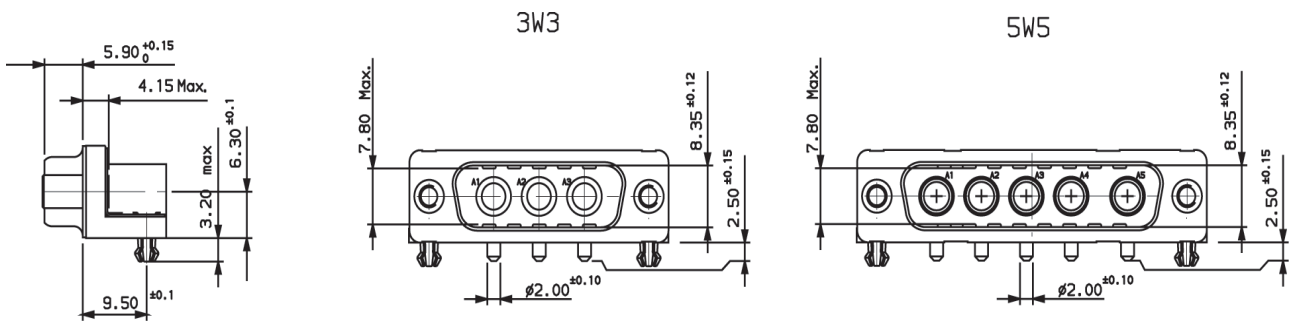
ORDERING INFORMATION



Preferred Option ✓

Mounting Options	
Harpoons + insert M3 + elec. continuity	GL
Harpoons + insert UNC 4-40 + elec. continuity	GX ✓
Harpoons + female screw UNC 4-40 + elec. continuity	GV ✓

SPECIFIC DIMENSIONS

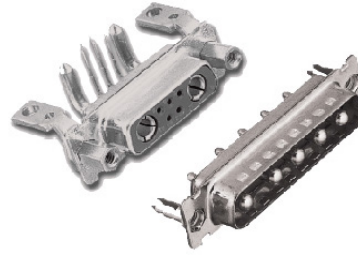


D-SUBMINIATURE MIXED AND FULL POWER DW SERIES

STRAIGHT AND RIGHT ANGLE PC BOARD VERSIONS



UL RECOGNISED FILE E66906



ORDERING INFORMATION

D **B** **L** **13** **W** **3** **P** **3** **00** **G** **30LF**

Series

Shell size (tin plated): E, A, B, C, D (only straight version)

Layout of contacts for right angled versions, 47W1, 24W7, 36W4 non available

Option 1	Blank	L	O	I	V
Straight version		X	X	X	X
Right angled	X	X	X	X	X

X: Available
Blank: without accessory
L: Threaded insert M3
O: Threaded insert UNC 4-40
I: Female screw UNC M3
V: Female screw UNC 4-40

Contacts	
Pin	P
Socket	S

Termination Type	
Straight version	3
Right angled / Europe standard	5
Right angled / US standard (5W1, 9W4 non available)	7

Durability	
200 mating/unmating	00
500 mating/unmating	43

Power Contacts	
Fitted with power contacts 30A RoHS compatible	30LF
Fitted with power contacts 40A RoHS compatible	40LF
Without power contacts, RoHS compatible	00LF

Option 2				
	A	H	G	M
Straight version	X	X	X	
Right angled	X	X	X	X

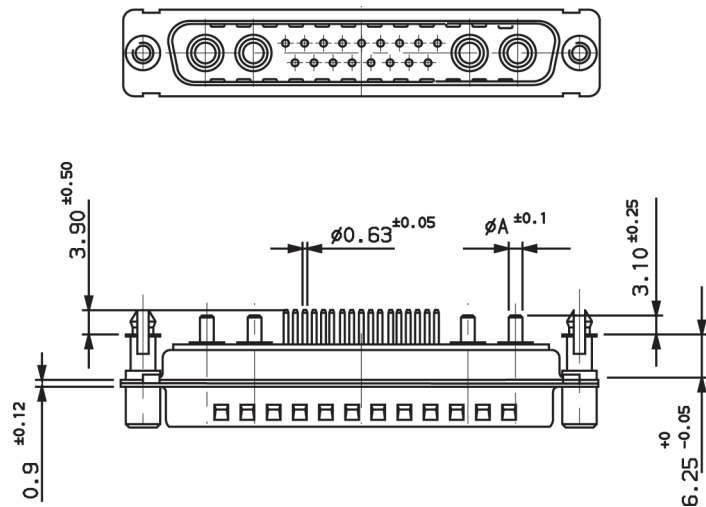
X: Available
A: Without accessory on PCB
H: Locking device used for PCB thickness 2.4mm
G: Locking device used for PCB thickness 1.6mm
M: Metal bracket

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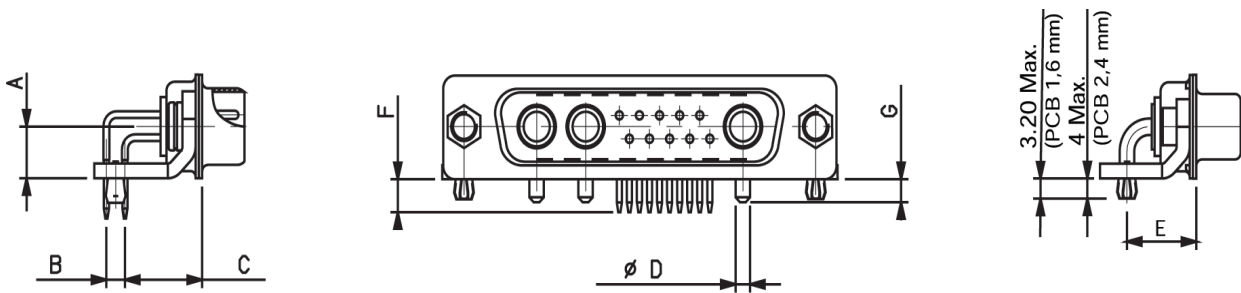
SPECIFIC DIMENSIONS

STRAIGHT VERSION

I	30A	40A
∅ A	2.0	2.8



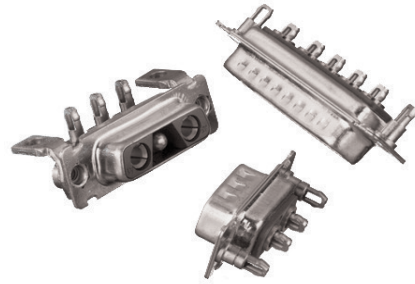
RIGHT ANGLE VERSION





	Termination Type	Amp.	A ^{±0.10}	B ^{±0.20}	C ^{±0.20}	D ^{±0.10}	E ^{±0.20}	F ^{±0.50}	G ^{±0.30}
Europe	5...	30A	7.20	2.54	10.30	2.00	11.65	4.00	3.60
		40A	7.20	2.54	10.30	2.80	11.65	4.00	3.60
U.S	7...	30A	6.30	2.84	8.08	2.00	9.50	3.90	3.60

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FULL POWER RIGHT ANGLE AND STRAIGHT PRESS-FIT



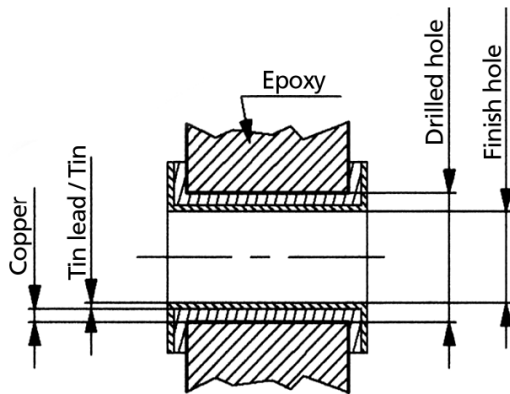
ORDERING INFORMATION

D	E	L	2	V	2	P	93C	5	G	40LF		
Series	Shell Size (tin plated): E, A, B, C		2	V	2							
			3	V	3							
			3	W	3							
			5	W	5							
			8	W	8							
Front Accessory			Layouts			Contacts		Power Contacts				
	Blank	L	O	I	V	Pin	P	Fitted with power contacts 30A RoHS compatible		30LF		
Straight version		X	X		X	Socket	S	Fitted with power contacts 40A RoHS compatible		40LF		
Right angled	X	X	X		X	Termination Type		PCB Accessory				
						Straight version	93C		M	G	A	
						Right angled / Europe standard	81C	Straight version		X		
						Right angled / US standard (5W1, 9W4 non available)	80C	Right angled	X		X	
<p>X: Available Blank: without accessory L: Threaded insert M3 O: Threaded insert UNC 4-40 I: Female screw UNC M3 V: Female screw UNC 4-40</p> 			<p>Durability</p> <table border="1"> <tr> <td>200 mating/unmating</td> <td>5</td> </tr> <tr> <td>500 mating/unmating</td> <td>6</td> </tr> </table>			200 mating/unmating	5	500 mating/unmating	6	<p>X: Available A: Without accessory G: Harpoon used for PCB thickness from 1.6mm M: Metal brackets without harpoon</p> 		
200 mating/unmating	5											
500 mating/unmating	6											

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SPECIFIC DIMENSIONS

METALIZED HOLE DIMENSIONS



Termination Type		Press-fit Contacts	Press-fit Harpoons		
P.C.B hole definition (note 1 and 2)		Drill diameter	$\varnothing 3.22^{\pm 0.03}$	$\varnothing 3.22^{\pm 0.03}$	$\varnothing 3.22 \pm 0.03$
		Drilled hole	$\varnothing 3.19 - 3.25$	$\varnothing 3.19 - 3.25$	
		Copper plating	25 μ m min. (recommended 50 μ max.)	25 μ m min. (recommended 50 μ max.)	
	non RoHS	Tin-lead plating	15 μ m max. (recommended 5 μ min.)	15 μ m max. (recommended 5 μ min.)	
		Finish hole (after reflow)	$\varnothing 3.02 - 3.20$	$\varnothing 3.02 - 3.20$	
	RoHS	Tin plating	0.8 to 1.2 μ m	0.8 to 1.2 μ m	
		Finish hole (after reflow)	$\varnothing 3.08 - 3.20$	$\varnothing 3.08 - 3.20$	

Note 1: These dimensions must be respected to ensure press-fit pin performance

Note 2: According to IEC-352-S specification

Note 3: Vital requirement for press-fit pin performance

PRESS-FIT PERFORMANCE

	Press-fit Contacts	Press-fit Harpoons
Insertion force	≤ 200 N (average insertion 160 N)	≤ 200 N (average insertion 160 N)
Extraction force	≥ 30 N	≥ 30 N

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MIXED AND FULL POWER CABLE CONNECTORS



UL RECOGNISED FILE E66906



ORDERING INFORMATION

D B L 13 W 3 P 4 00 A 00LF

Series
Shell size (tin plated): E, A, B, C, D
Layout of contacts
Contacts
RoHS compatible
Without accessory on PCB

Mounting Options						
Description	Blank	L	O	I	V	F
Solder buckets	X	X	X	X	X	X
Wire wrap	X	X	X	X	X	X

Durability	
200 mating/unmating	00
500 mating/unmating	43

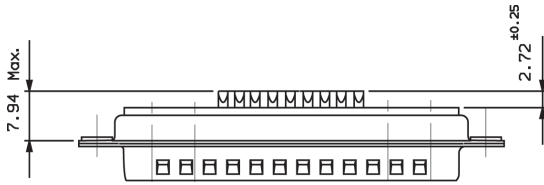
Termination Type	
Solder bucket (blank for plating 00)	00
Wire wrap (3 levels)	4

X: Available
 Blank: without accessory
 L: Threaded insert M3
 O: Threaded insert UNC 4-40
 I: Female screw UNC M3
 V: Female screw UNC 4-40

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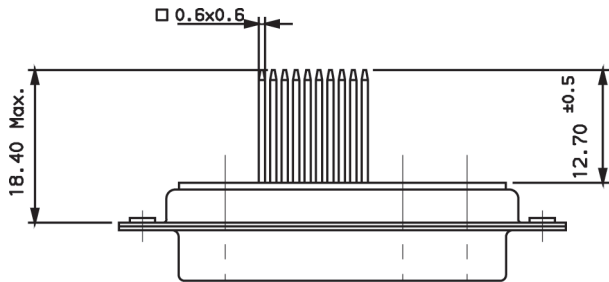
SPECIFIC DIMENSIONS

Solder Bucket

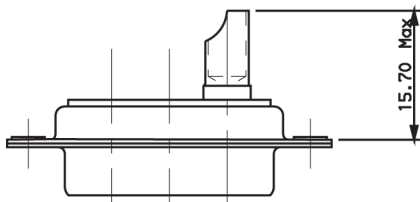


Wire Wrap

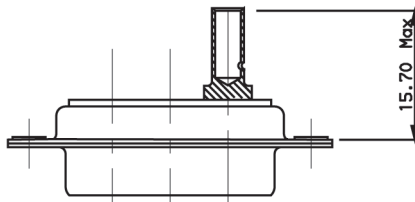
WW (3 levels)



Solder version



Crimp version

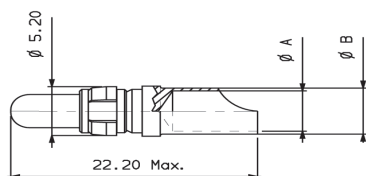


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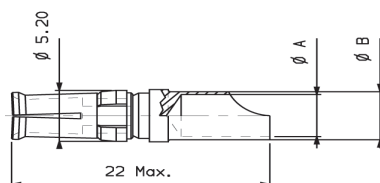
POWER SOLDER AND CRIMP CONTACTS

SOLDER CONTACTS

Male



Female



Type	Max. Current Rating	Clip Colour	RoHS* Part Number ≥200 mating/ unmating	RoHS* Part Number ≥500 mating/ unmating	Wire		Strip length mm ^{±0.5}	Ø A +0.1 +0	Ø B +0.5
					Size	Section mm ²			
Male	10A	Black	8638PPS1005LF	8638PPS1006LF	16	1.3	7	1.7	2.6
Male	15A	White	8638PPS1505LF	8638PPS1506LF	14	1.9	7	2.1	3
Male	20A	Red	8638PPS2005LF	8638PPS2006LF	12	3.2	7	2.8	3.65
Male	40A	Blue	8638PPS4005LF	8638PPS4006LF	8	9	7	4.4	5
Female	10A	Black	8638PSS1005LF	8638PSS1006LF	16	1.3	7	1.7	2.6
Female	15A	White	8638PSS1505LF	8638PSS1506LF	14	1.9	7	2.1	3
Female	20A	Red	8638PSS2005LF	8638PSS2006LF	12	3.2	7	2.8	3.65
Female	40A	Blue	8638PSS4005LF	8638PSS4006LF	8	9	7	4.4	5

Clip material: Plastic withstanding 125°C

Termination plating: Matt tin

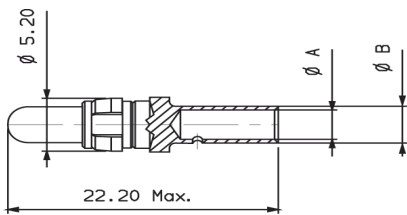
*RoHS compatible EU directive 2002/95/EC

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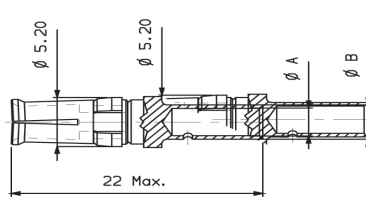
POWER SOLDER AND CRIMP CONTACTS

CRIMP CONTACTS

Male



Female



Type	Max. Current Rating	Clip Colour	RoHS* Part Number ≥200 mating/ unmating	RoHS* Part Number ≥500 mating/ unmating	Wire		Strip length mm ^{+0.5}	Ø A +0.1 +0	Ø B +0.5
					Size	Section mm ²			
Male	10A	Black	8638PPC1005LF	8638PPC1006LF	16 to 18	0.9 to 1.3	7	1.8	2.55
Male	15A	White	8638PPC1505LF	8638PPC1506LF	12 to 14	2 to 3	7	2.8	3.7
Male	20A	Red	8638PPC2005LF	8638PPC2006LF	9	6	7	3.75	4.65
Male	40A	Blue	8638PPC4005LF	8638PPC4006LF	8 to 10	5 to 8	7	4.8	5.5
Female	10A	Black	8638PSC1005LF	8638PSC1006LF	16 to 18	0.9 to 1.3	7	1.8	2.55
Female	15A	White	8638PSC1505LF	8638PSC1506LF	12 to 14	2 to 3	7	2.8	3.7
Female	20A	Red	8638PSC2005LF	8638PSC2006LF	9	6	7	3.75	4.65
Female	40A	Blue	8638PSC4005LF	8638PSC4006LF	8 to 10	5 to 8	7	4.8	5.4

Clip material: Plastic withstanding 125°C

Termination plating: Matt tin

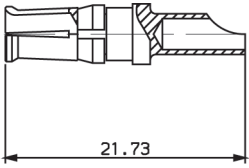
*RoHS compatible EU directive 2002/95/EC

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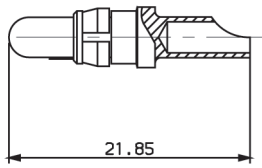
CONTACTS (OTHER VERSIONS)

POWER CONTACTS – METAL CLIP

Female



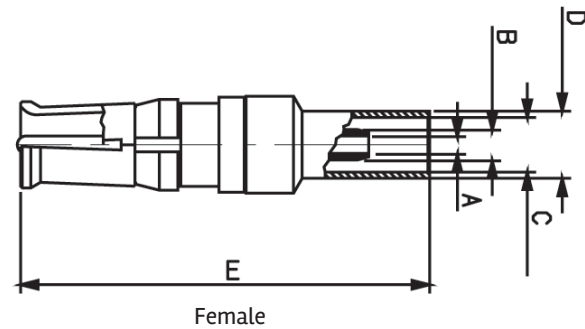
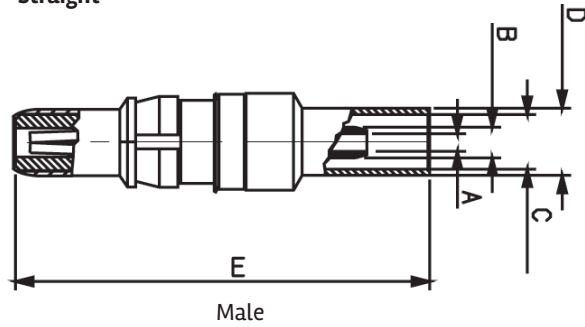
Male



Wire Size	Max. Current	Part Numbers	
		Male	Female
AWG8	40A	86303098NLF	86303099NLF
AWG12	20A	86303056NLF	86303057NLF
AWG14	15A	86303060NLF	86303061NLF
AWG16	10A	86303064NLF	86303065NLF

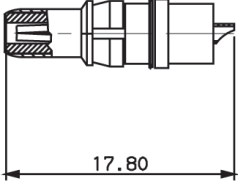
COAXIAL CONTACTS

Straight

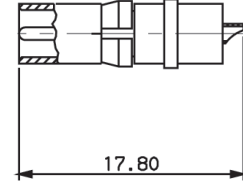


HIGH VOLTAGE CONTACTS

Male 86382000LF



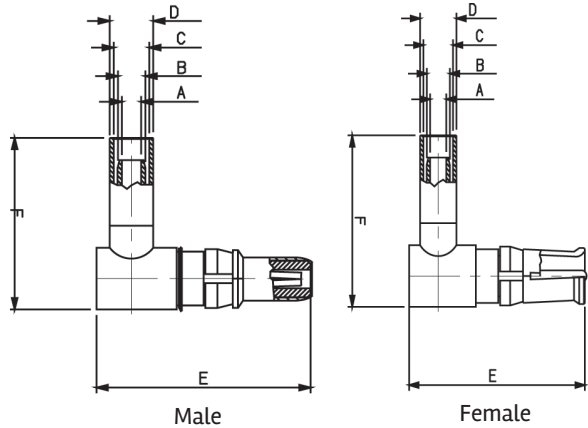
Female 86382001LF



Colors: Blue

White

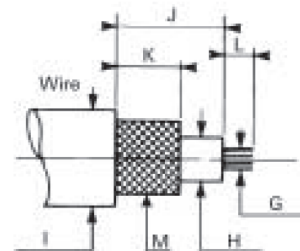
Angled



These removable contacts are suitable for the contact cavities of the DMW series and DW series.

The coaxial contacts are in compliance with:

- NFC 93569
- KMX4 specification



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TECHNICAL INFORMATION

ELECTRICAL PERFORMANCE

- Dielectric Withstanding Voltage: 2800V RMS
- Break Down Voltage: 3200V RMS
- Insulation Resistance: $10^6 M\Omega$
- Contact Resistance: $\leq 5m\Omega$
- Max. Current Rating: 5A
- Material: TEFLON

ENVIRONMENTAL

- Operating temperature range: $-55^{\circ}C$ to $+125^{\circ}C$

MECHANICAL PERFORMANCE

- Mating force per set of contact: 3 N
- Mating endurance: 200

CONTACTS (OTHER VERSIONS)

STANDARD COAXIAL CONTACTS

Contact Type		Part Numbers				Contacts Dimension					
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	A ± 0.10	B ± 0.15	C ± 0.2	D ± 0.15	E ± 0.4	F ± 0.4
Straight	male	DM537405000NCLF	KMX4M11D02	DM53740NCLF	KMXM12D02	1	1.75	2.32	3.20	23.60	
	male	DM537405008NCLF	-	-	-					21.80	
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02					23.60	
	female	DM537425006NCLF	-	-	-					21.80	
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02					18.64	15.30
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02					18.64	15.30
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	1.70	2.46	3	3.84	23.60	
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01					23.60	
Right angle	male	DM537415001NCLF	KMX4M11C01	DM537411NCLF	KMX4M12C01					18.64	15.30
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01					18.64	12.50

SPECIFIC COAXIAL CONTACTS

Contact Type		Part Numbers				Contacts Dimension					
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	A ± 0.10	B ± 0.15	C ± 0.2	D ± 0.15	E ± 0.4	F ± 0.4
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	2.75	4.40	5.45	5.95	26.30	
	female	DM537425002NCLF	-	DM537423NCLF	-					26.30	
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	3.15	4.40	5.45	5.95	23.60	
	female	DM537425004NCLF	-	DM537425NCLF	-					23.60	
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-					18.64	17.50

▶ D-SUBMINIATURE MIXED AND FULL POWER DW SERIES

STANDARD COAXIAL CONTACTS

Contact Type		Part Numbers				Cable		
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	MILC 17E	NFC 93550	Impedance
Straight	male	DM537405000NCLF	KMX4M11D02	DM53740NCLF	KMXM12D02	RG178BU	KX21A	50Ω ±2
	male	DM537405008NCLF	-	-	-			
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02			
	female	DM537425006NCLF	-	-	-			
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02	RG316U	KX22A	50Ω ±2
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02			
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	RG316U	KX22A	50Ω ±2
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01			
Right angle	male	DM537415001NCLF	KMX4M11C01	DM537411NCLF	KMX4M12C01	RG316U	KX22A	50Ω ±2
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01			

Contact Type		Part Numbers				Wire						
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	G	H	I	J	K	L	M (max.)
Straight	male	DM537405000NCLF	KMX4M11D02	DM53740NCLF	KMXM12D02	0.30	0.90	1.80	7.90	6.35	2.00	1.40
	male	DM537405008NCLF	-	-	-							
	female	DM537425000NCLF	KMX4F11D02	DM53742NCLF	KMX4F12D02							
	female	DM537425006NCLF	-	-	-							
Right angle	male	DM537415000NCLF	KMX4M11C02	DM53741NCLF	KMX4M12C02	0.50	1.50	2.50	9.50	5.95	1.60	2.05
	female	DM537435000NCLF	KMX4F11C02	DM537432NCLF	KMX4F12C02							
Straight	male	DM537405001NCLF	KMX4M11D01	DM537401NCLF	KMX4M12D01	0.50	1.50	2.50	7.90	6.35	2.00	2.05
	female	DM537425001NCLF	KMX4F11D01	DM537421NCLF	KMX4F12D01							
Right angle	male	DM537415001NCLF	KMX4M11C01	DM537411NCLF	KMX4M12C01	0.50	1.50	2.50	9.50	5.95	1.60	2.05
	female	DM537435001NCLF	KMX4F11C01	DM537433NCLF	KMX4F12C01							

▶ D-SUBMINIATURE MIXED AND FULL POWER DW SERIES

SPECIFIC COAXIAL CONTACTS

Contact Type		Part Numbers				Cable		
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	MILC 17E	NFC 93550	Impedance
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	RG180BU		95Ω ^{±2}
	female	DM537425002NCLF	-	DM537423NCLF	-			
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	RG58CU	KX15	50Ω ^{±2}
	female	DM537425004NCLF	-	DM537425NCLF	-			
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-			

Contact Type		Part Numbers				Wire						
		Soldered Screen	NFC 93569 KMX4	Crimped Screen	NFC 93569 KMX4	G	H	I	J	K	L	M (max.)
Straight	male	DM537405002NCLF	-	DM537403NCLF	-	0.30	2.60	3.58	9.70	7.90	2.00	3.14
	female	DM537425002NCLF	-	DM537423NCLF	-							
Straight	male	DM537405005NCLF	-	DM537405NCLF	-	0.90	2.95	4.95	9.50	7.90	2.00	3.81
	female	DM537425004NCLF	-	DM537425NCLF	-							
Right angle	female	DM537435004NCLF	-	DM537436NCLF	-							

μTCA – HIGH POWER I/O PCB CONNECTORS

OVERVIEW

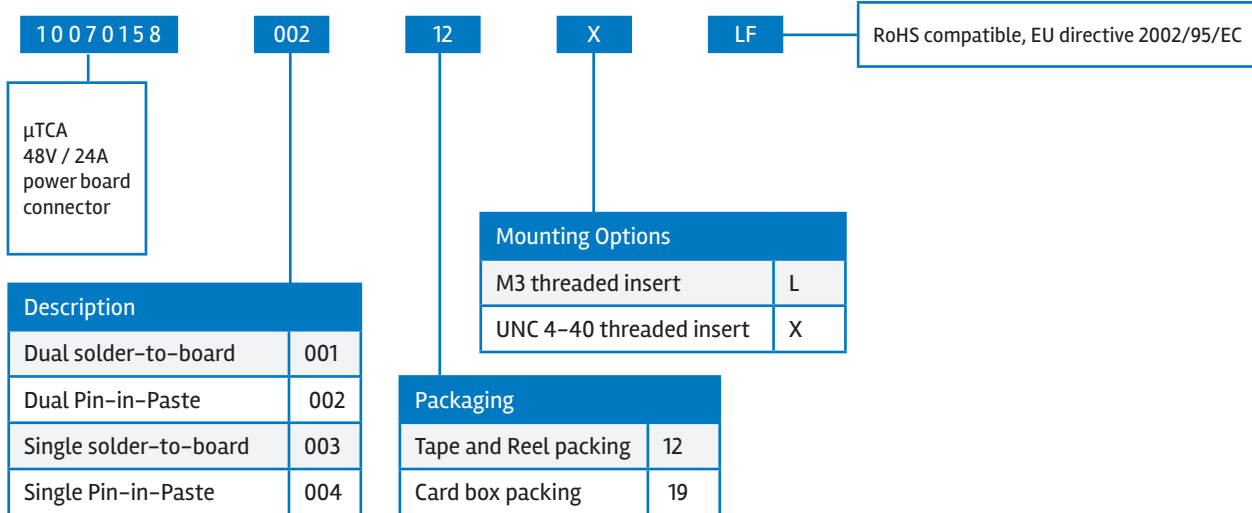
This power module I/O connectors for 48V applications are designed in accordance with μTCA specifications. The robust D-Subminiature concept based on simplified and cost effective Delta D design combines power contacts able to handle up to 24A with signal contacts. PCB connectors are proposed in traditional solder-to-board and Pin-in-Paste versions for optimized applied cost. Specific to the design of FCI is the fact that the connector's compact footprint allows for more space on the PCB for other components.



FEATURES

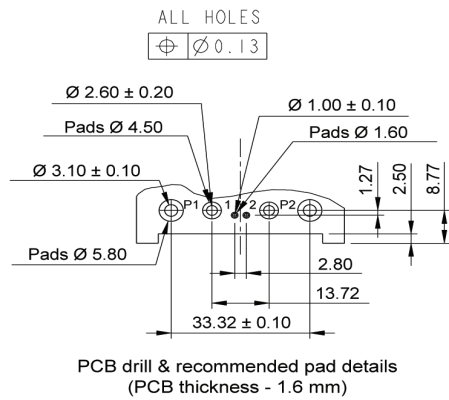
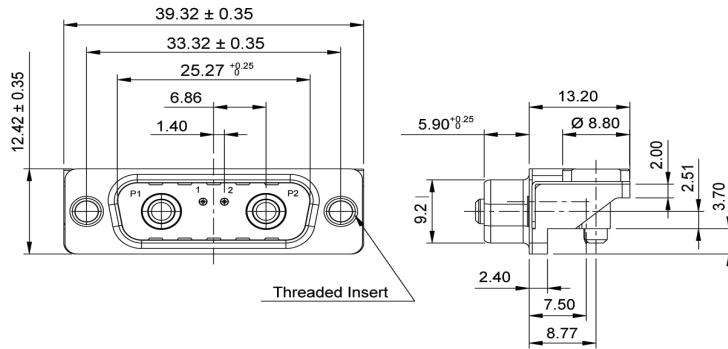
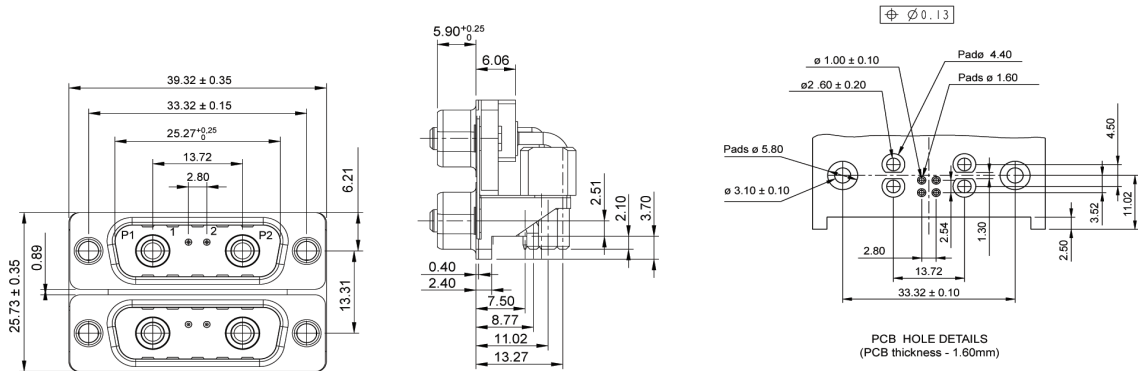
- 48V / 24A (shell size A)
- FMLB (First Mate Last Brake) functionality for hot plugging
- Field repairable

ORDERING INFORMATION



μTCA – HIGH POWER I/O PCB CONNECTORS

PRODUCT DRAWING



▶ D-SUBMINIATURE MIXED AND FULL POWER DW SERIES

μTCA – HIGH POWER I/O CABLE CONNECTORS

FEATURES

- Field repairable
- Touch proof
- Stackable hoods with high retention devices
- Cost saving jumper option for signal contacts



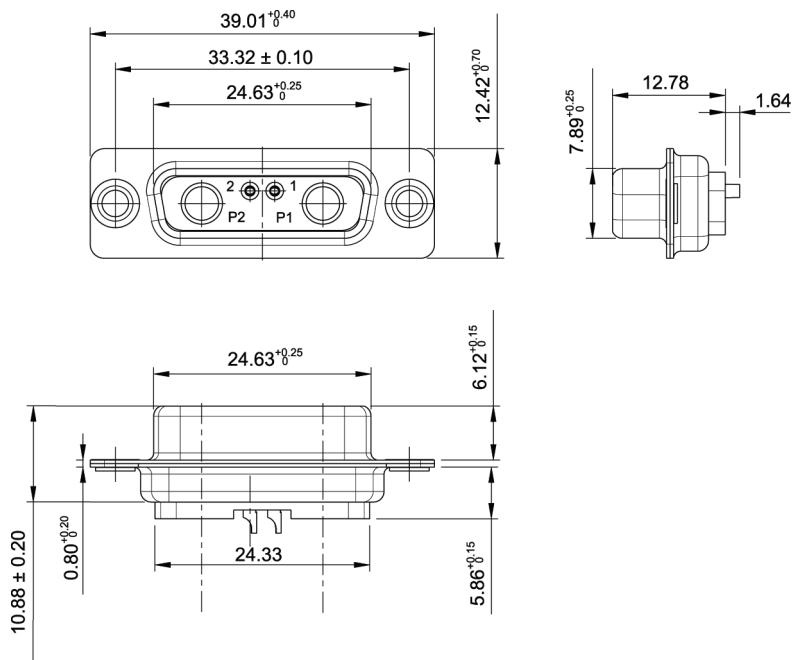
ORDERING INFORMATION

10070165	001	19ALF
μTCA 48V / 24A power board connector	Description	Packaging
	Without jumper	001
	With jumper option	002
		Card box packing

POWER CONTACTS

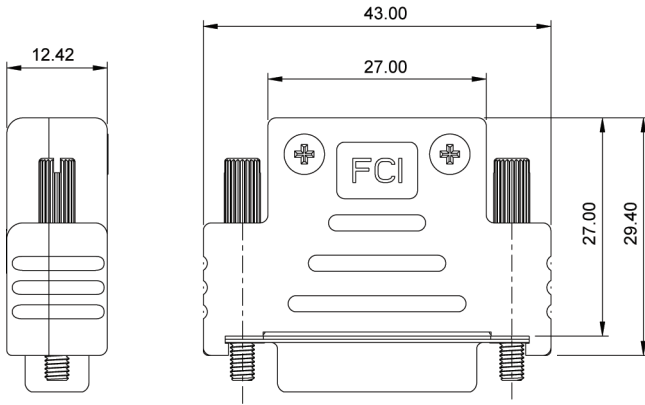
Description	Part Number
30A crimp contacts	8638PSC3005LF
40A solder bucket contacts	8638PSS4005LF

PRODUCT DRAWING



μTCA – HIGH POWER I/O CABLE CONNECTORS

HOOD (STACKABLE HOOD AND SLIM DESIGN)



Description	Part Number
HOOD (stackable hood and slim design)	10070163 - 001LF