

D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

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.

The standard density D-Subminiature series are widely used for numerous applications in many market segments. Amphenol offers Delta-D (single shell design) and Frugal-D (two shell design) under this category. Standard density D-subminiature connectors available in solder bucket, straight and angled version. They come with a large number of mounting options.



FEATURES

- A Basic I/O connector comes with five shell size and housing design
- Has a D-shaped shell design
- Meets DIN 41652 and MIL-C-24308 dimensional standards
- Available in Straight, Angle, Wire Wrap, Solder Bucket, Crimp terminations
- Delta-D design (1 shell + 1 housing) with stamped & formed contacts
- 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

- Most popular Rugged and sturdy I/O connector
- Supports the need for polarisation
- Interchangeable and intermateable with other makes
- Support both PCB & Cable mounting requirements
- Price competitive
- 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

► D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

TARGET MARKETS/APPLICATIONS



Asymmetric Digital Subscriber Line
(ADSL)
Base Station
Switching
Transmission



Set-top Box



Desktop and Laptop
Storage System
Router and Server



Automotive Diagnostics
Control Drives
Energy Meter
Gaming Machine
Test Equipment
Office Automation
POS & Handheld terminal
Power Supplies
Parking Meter
Printer and Copier
Renewable Energy
Robotics
Surveillance Camera
Avionics



Medical Instrument



Military Equipment

RIGHT ANGLE SOLDER TO BOARD



- In compliance with DIN 41652



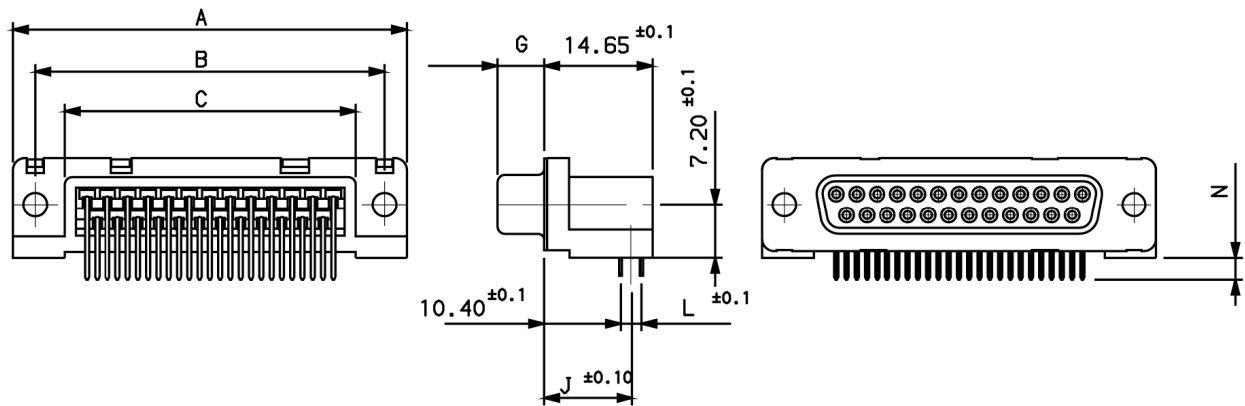
ORDERING INFORMATION

D	25	P	13A	4	GV	00LF
Series:						
Number of Contacts						
09						
15						
25						
37						
Contacts						
Pin P						
Socket S						
RoHS Status						
Standard, RoHS compatible 00LF						
Mounting Options						
Standard hole PA						
Threaded insert M3 PL						
Threaded insert UNC 4-40 PX						
Female screw UNC 4-40 PV						
Harpoons + insert M3 + elec. continuity GL						
Harpoons + insert UNC 4-40 + elec. continuity GX ✓						
Harpoons + female screw UNC 4-40+ elec. continuity GV ✓						
Harpoons + female screw M3 + elec. continuity GI						
Elec. continuity UA						
Insert M3 + elec. continuity UL						
Insert UNC 4-40 + elec. continuity UX						
Female screw UNC 4-40 + elec. continuity UV						
Durability						
Standard class (≥200 mating/unmating) 4						
High performance class (≥500 mating/unmating) 6						
Termination						
Code						
Type						
Footprint/ Pitch						
Length of Termination						
PCB Thickness						
Right angled – Europe standard 10.4/ 2.54mm 2.90 1.6 13A ✓						
Right angled – Europe standard 10.4/ 2.54mm 3.70 2.4 and 1.6 13B						
Right angled – Europe standard 10.4/ 2.84mm 2.90 1.6 23A						
Right angled – Europe standard 10.4/ 2.84mm 3.70 2.4 and 1.6 23B						
Right angled – US standard 8.08/ 2.84mm 3.18 1.6 33E ✓						

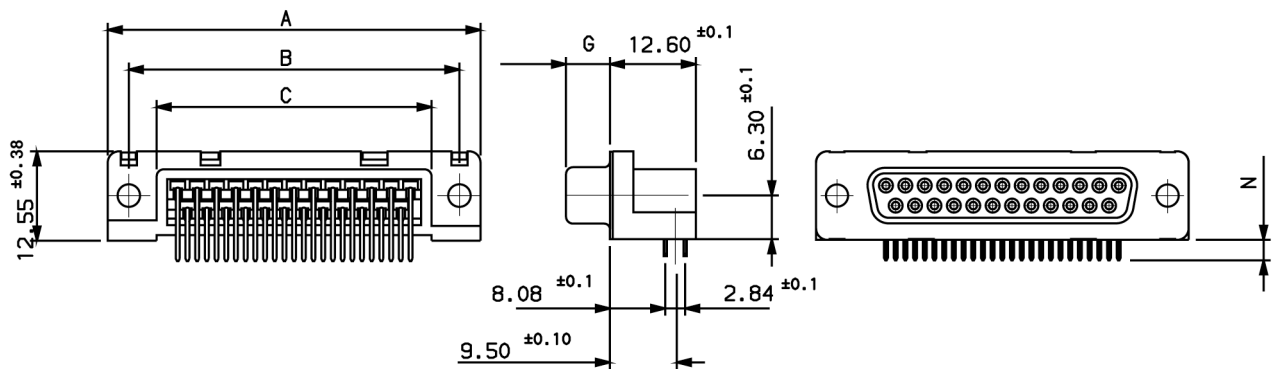
▶ D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

SPECIFIC DIMENSIONS

EUROPE STANDARD



US STANDARD



		A $\pm 0,38$	B $\pm 0,12$	C $\pm 0,10$	G $-0/+0,25$	J $\pm 0,10$		L $\pm 0,10$		N $\pm 0,30$		
						Termination		Termination		Termination Length		
						13	23	13	23	13A 23A	13B 23B	33E
09	P	30.81	24.99	16.96	5.90 $-0/+0,15$	11.67	11.82	2.54	2.84	2.90	3.70	3.18
	S	30.81	24.99	16.96	6.05	11.67	11.82	2.54	2.84	2.90	3.70	3.18
15	P	39.14	33.32	25.18	5.90 $-0/+0,15$	11.67	11.82	2.54	2.84	2.90	3.70	3.18
	S	39.14	33.32	25.18	6.05	11.67	11.82	2.54	2.84	2.90	3.70	3.18
25	P	53.03	47.04	39.12	5.70	11.67	11.82	2.54	2.84	2.90	3.70	3.18
	S	53.03	47.04	39.12	6.05	11.67	11.82	2.54	2.84	2.90	3.70	3.18
37	P	69.32	63.50	55.68	5.70	11.67	11.82	2.54	2.84	2.90	3.70	3.18
	S	69.32	63.50	55.68	6.05	11.67	11.82	2.54	2.84	2.90	3.70	3.18

Dimensions in mm

RIGHT ANGLE PRESS FIT

UL® **UL RECOGNISED FILE E66906**



ORDERING INFORMATION

D	25	P	82C	4	PA	00LF
----------	-----------	----------	------------	----------	-----------	-------------

Series:

Number of Contacts

09
15
25
37
50*

Contacts

Pin	P
Socket	S

Durability

Standard class (≥200 mating/unmating)	4
High performance class (≥500 mating/unmating)	6

RoHS Status

Standard, RoHS compatible	00LF
---------------------------	------

Mouting Options

Standard hole	PA
Threaded insert M3	PL
Threaded insert UNC 4-40	PX
Female screw UNC 4-40	PV
Harpoons + insert M3	GL
Harpoons + insert UNC 4-40	GX
Harpoons + female screw UNC 4-40	GV

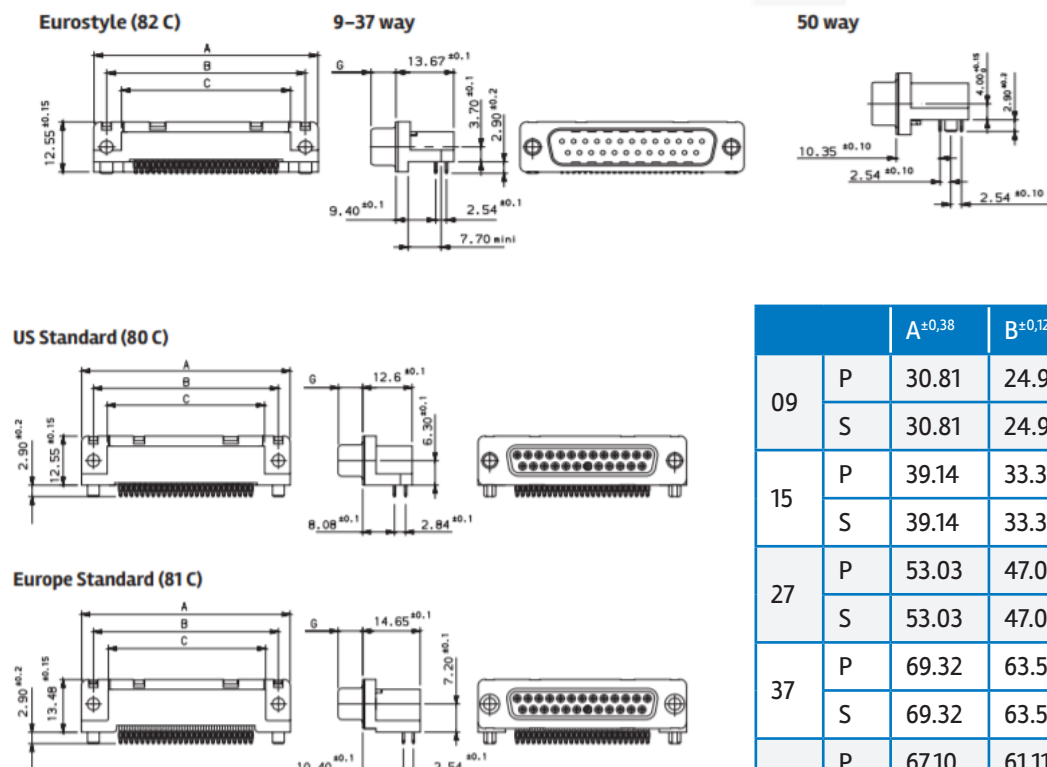
Termination

Type	Footprint/Pitch	Code
Eurostyle	9.4/2.54 – 9 to 37 way 10.3/2.54 – 50 way	82C
US standard	8.08/2.84 – 9 to 37 way	80C
Europe standard*	10.4/2.54 – 9 to 37 way	81C

*Only for Eurostyle version Preferred Option

► D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

SPECIFIC DIMENSIONS



		A ± 0.38	B ± 0.12	C ± 0.10	G $-0/+0.25$
09	P	30.81	24.99	16.96	5.90 $-0/+0.15$
	S	30.81	24.99	16.96	6.05
15	P	39.14	33.32	25.18	5.90 $-0/+0.15$
	S	39.14	33.32	25.18	6.05
27	P	53.03	47.04	39.12	5.70
	S	53.03	47.04	39.12	6.05
37	P	69.32	63.50	55.68	5.70
	S	69.32	63.50	55.68	6.05
50*	P	67.10	61.11	54.10	5.70
	S	67.10	61.11	54.10	6.05

*Only for Eurostyle version Preferred Option

SPECIFIC DIMENSIONS

- Application by pressure on insulator
- D-Subminiature insertion kit: 8846 3064 01
- Eye of the needle design

METALLIZED HOLE DIMENSIONS

			Press-fit Contacts	Press-fit Harpoons
P.C.B hole definition (note 1 and 2)		Drill diameter	Ø 1.15 ref (note 3)	Ø 3.22 ref (note 3)
		Drilled hole	Ø 1.18 – 1.2	Ø 3.19 – 3.25
		Copper plating	25µm min. (recommended 50µ max.)	25µm min. (recommended 50µ max.)
	non RoHS	Tin-lead plating	15µm max. (recommended 5µ min.)	15µm max. (recommended 5µ min.)
		Finish hole (after reflow)	Ø 0.94 – 1.09	Ø 3.02 – 3.20
	RoHS	Tin plating	0.8 to 1.2µm	0.8 to 1.2µm
		Finish hole (after reflow)	Ø 1.00 – 1.09	Ø 3.08 – 3.20

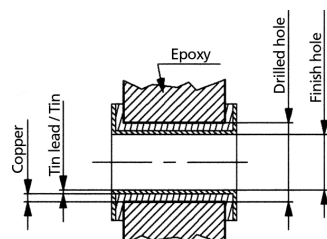
Note 1: These dimensions must be respected to ensure press-fit pin performance

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	≤100 N	≤120 N
Extraction force	≥30 N	≥30 N



► D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

RIGHT ANGLE PIN-IN-PASTE

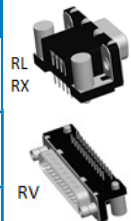
In compliance with DIN 41652:

- Reflow type: JSTD-020C
- Packaging: IEA-481-B
- Plating: BELLCORE CO GR-1217



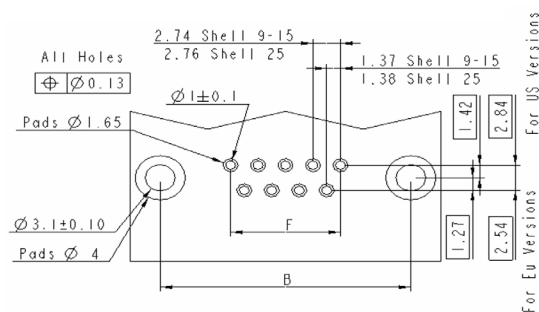
ORDERING INFORMATION

D	09	P	13A	6	RV	12	00LF
Series:							LF: RoHS compatible EU directive 2002/95/EC
Number of Contacts							
09							
15							
25							
Contacts							
Pin	P						
Socket	S						
Termination Type							
Type	Footprint/ Pitch	Termination Length	PCB Thickness	Code			
Right angled – Europe standard	10.4/ 2.54mm	2.0mm	1.6mm	13A			
Right angled – US standard	8.08/ 2.84mm	2.0mm	1.6mm	33E			
Durability							
High performance class (≥500 mating/unmating)		6					
Packaging							
Tray for manual positioning		09					
Tape and Reel for automatic pick and place		12					
Mouting Options							
Insert M3 + metal peg + elec. continuity		RL					
Insert UNC 4-40 + metal peg + elec. continuity		RX					
Female screw UNC 4-40 + metal peg + elec. continuity		RV					



RECOMMENDED LAYOUTS AND PAD DIMENSIONS

Contacts	B±0.10	F	G
09	24.99	10.96	8.22
15	33.32	19.18	16.44
25	47.04	33.12	30.36



TECHNICAL INFORMATION

MATERIAL

- Shell: Nickel plated
- Housing: Thermoplastic HT UL940-V
- Contacts: Copper alloy
 - Active Part: Gold over nickel
 - Termination: Matt tin over nickel
- Accessories: Brass
- Front Accessories: Nickel
- Metal Pegs: Tin over nickel

ELECTRICAL PERFORMANCE

- Current rating: 5A
- Insulation resistance: $\geq 5000M\Omega$
- Contact resistance: $<10m\Omega$
- Dielectric withstanding voltage: 1000V RMS

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500 min.

ENVIRONMENTAL

- Operating Temperature Range: $-55^{\circ}C$ to $125^{\circ}C$

APPROVALS AND CERTIFICATIONS

- Product lead free in accordance to RoHS 2002/EC/95

TARGET MARKETS/APPLICATIONS



Asymmetric Digital Subscriber Line (ADSL)
Base Station
Switching
Transmission



Set-top Box



Desktop and Laptop
Storage System
Router and Server



Automotive Diagnostics
Control Drives
Energy Meter
Gaming Machine
Test Equipment
Office Automation
POS & Handheld terminal
Power Supplies
Parking Meter
Printer and Copier
Renewable Energy
Robotics
Surveillance Camera
Avionics



Medical Instrument

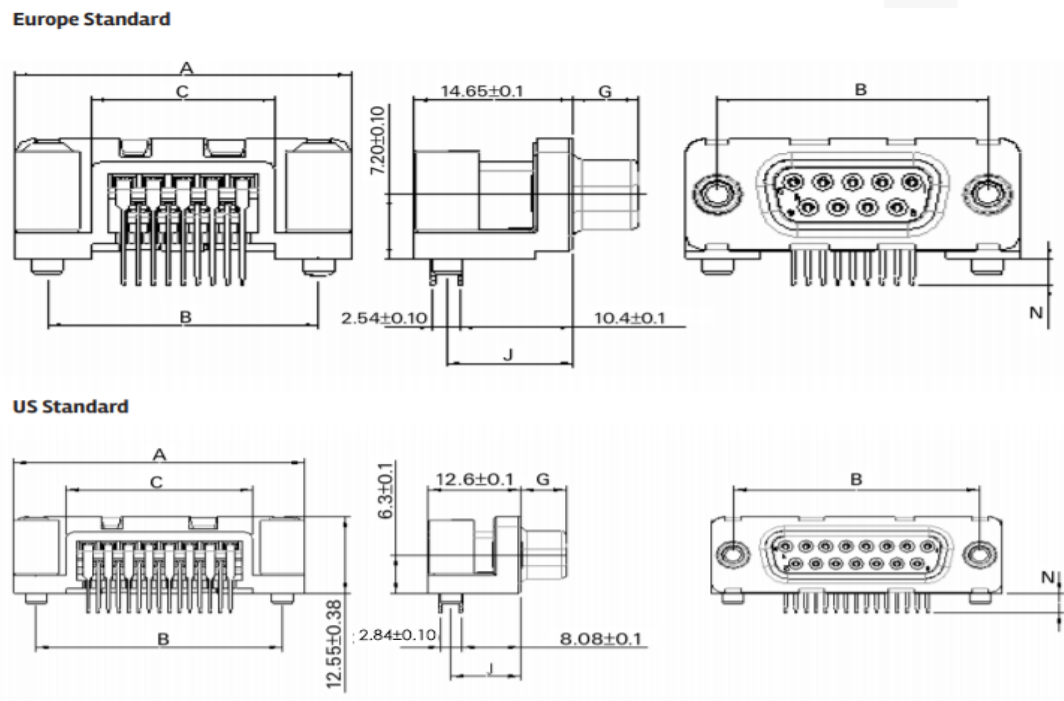


Military Equipment

▶ D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

SPECIFIC DIMENSIONS

EUROPE STANDARD



Dimensions									
		A±0,38	B±0,12	C±0,10	G-0/+0.25	J±0,10		N±0,30	
						Termination		Terminal Length	
						13	33	13A 33E	13B
09	P	30.81	24.99	16.96	5.90 -0/+0.15	11.67	9.50	2.00	2.90
	S	30.81	24.99	16.96	6.05	11.67	9.50	2.00	2.90
15	P	39.14	33.32	25.18	5.90 -0/+0.15	11.67	9.50	2.00	2.90
	S	39.14	33.32	25.18	6.05	11.67	9.50	2.00	2.90
25	P	53.03	47.04	39.12	5.70	11.67	9.50	2.00	2.90
	S	53.03	47.04	39.12	6.05	11.67	9.50	2.00	2.90

Dimensions in mm

STRAIGHT SOLDER TO BOARD

UL RECOGNISED FILE E66906



ORDERING INFORMATION

D

Serie

25

Number of Contacts

09

15

25

37

50

P

Contacts

PinP

SocketS

24A

4

Durability

Standard class
(≥200 mating/
unmating)

4

High performance
class (≥500
mating/unmating)

6

GV

Mouting Options

Standard hole

PA

Threaded insert M3

PL

Threaded insert UNC 4-40

PX

Female screw UNC 4-40

PV

Harpoons + insert M3 +
elec. continuity

GL

Harpoons + insert UNC
4-40 + elec. continuity

GX

Harpoons + female screw
UNC 4-40 + elec. continuit

GV

00LF

Standard series, RoHS compatible

Termination Type

Type

Footprint/
Pitch

Termination
Length

PCB
Thickness

Code

Straight version
(low profile)

5.6/2.84mm

2.90

1.6mm

14A

Straight version

6/2.84mm

2.90

1.6mm

24A

Straight version

6/2.84mm

3.70

2.4mm

24B

Straight version

6.9/2.84mm

2.90

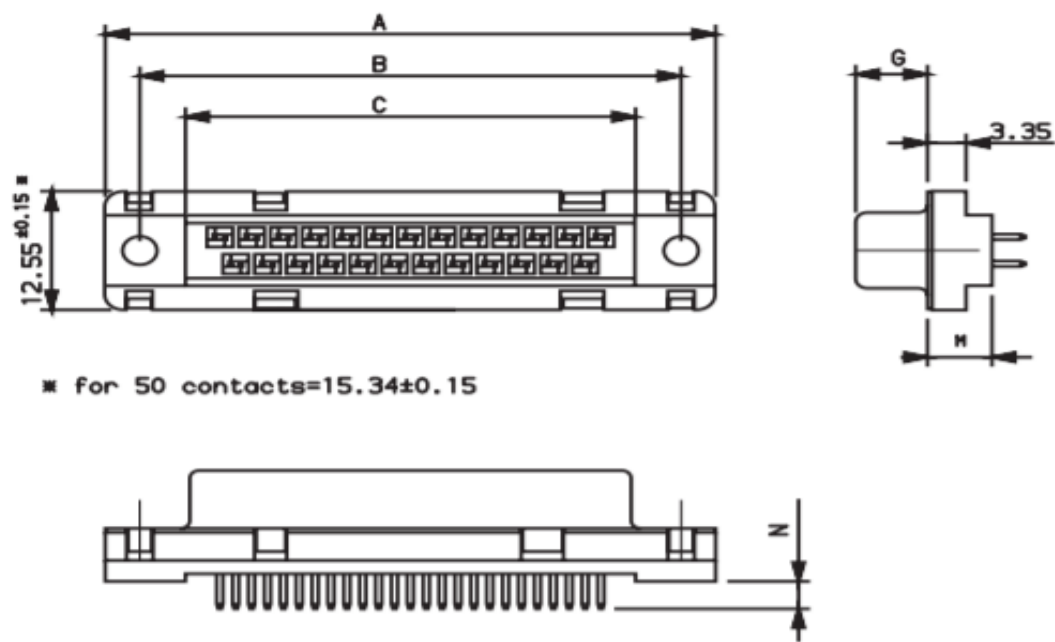
1.6mm

34A

Preferred Option

D-SUBMINIATURE SIGNAL PCB CONNECTORS DELTA D

SPECIFIC DIMENSIONS



Dimensions										
		A $\pm 0,38$	B $\pm 0,12$	C $\pm 0,10$	G $-0/+0,25$	M $\pm 0,10$			N $\pm 0,30$	
						Terminal			Terminal Length	
						14	24	34	14A 24A 34A	24B
09	P	30.81	24.99	16.96	5.90 $-0/+0,15$	5.60	6.00	6.90	2.90	3.70
	S	30.81	24.99	16.96	6.05	5.60	6.00	6.90	2.90	3.70
15	P	39.14	33.32	25.18	5.90 $-0/+0,15$	5.60	6.00	6.90	2.90	3.70
	S	39.14	33.32	25.18	6.05	5.60	6.00	6.90	2.90	3.70
25	P	53.03	47.04	39.12	5.70	5.60	6.00	6.90	2.90	3.70
	S	53.03	47.04	39.12	6.05	5.60	6.00	6.90	2.90	3.70
37	P	69.32	63.50	55.68	5.70	5.60	6.00	6.90	2.90	3.70
	S	69.32	63.50	55.68	6.05	5.60	6.00	6.90	2.90	3.70
50	P	67.10	61.11	54.11	5.70	5.60	6.00	6.90	2.90	3.70
	S	67.10	61.11	54.11	6.05	5.60	6.00	6.90	2.90	3.70

Dimensions in mm

STRAIGHT PRESS-FIT



- This new Press-fit connectors eliminate soldering process and saves cost
- Compatible with PCB thicknesses of 1.60 mm & 2.40 mm
- The “eye of the needle” termination combined with a special flat rock design (easy application by pressure on insulator) make this product line very attractive

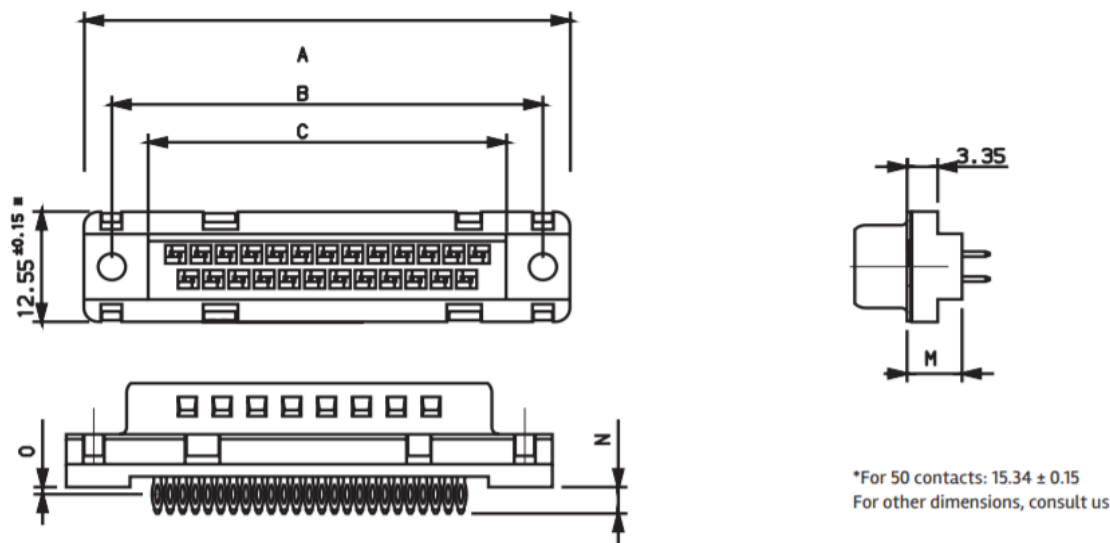


ORDERING INFORMATION

D	25	P	91C	4	PA	00LF	RoHS Status	
Series							Standard, RoHS compatible	00LF ✓
Number of Contacts						Mounting Options		
09						Standard hole PA		
15						Threaded insert M3 PL		
25						Threaded insert UNC 4-40 PX ✓		
37						Female screw UNC 4-40 PV ✓		
50						Harpoons + insert M3 + elec. continuity GL		
						Harpoons + insert UNC 4-40 + elec. continuity GX		
						Harpoons + female screw UNC 4-40 + elec. continuity GV		
		Contacts		Durability				
		Pin P		Standard class ≥200 mating/ unmating 4				
		Socket S		High performance mating/unmating) 6				
Termination Type								
Type						Code		
Press-fit suitable for PCB thickness 1.6mm & 2.4mm – Europe Standard						91C		
Press-fit suitable for PCB thickness 1.6mm & 2.4mm – Low Profile						90C		

Preferred Option ✓

SPECIFIC DIMENSIONS



Size	A±0,38	B±0,12	C±0,10
09	30.81	24.99	16.96
15	39.14	33.32	25.18
25	53.03	47.04	39.12
37	69.32	63.50	55.68
50	66.93	61.11	53.11

Termination Type	M±0.3	N±0.3	O±0.2
90C	5.60	3.40	1.20
91C	6.00	3.00	0.80

PRESS-FIT FEATURES

- Application by pressure on insulator
- D-Sub insertion kit: 8646 3064 01
- Eye of the needle design

METALLIZED HOLE DIMENSIONS

			Press-fit Contacts	Press-fit Harpoons
P.C.B hole definition (note 1 and 2)		Drill diameter	Ø 1.15 ref (note 3)	Ø 3.22 ref (note 3)
		Drilled hole	Ø 1.18 – 1.2	Ø 3.19 – 3.25
		Copper plating	25µm min. (recommended 50µ max.)	25µm min. (recommended 50µ max.)
	non RoHS	Tin-lead plating	15µm max. (recommended 5µ min.)	15µm max. (recommended 5µ min.)
		Finish hole (after reflow)	Ø 0.94 – 1.09	Ø 3.02– 3.20
	RoHS	Tin plating	0.8 to 1.2µm	0.8 to 1.2µm
		Finish hole (after reflow)	Ø 1.00 – 1.09	Ø 3.08 – 3.20

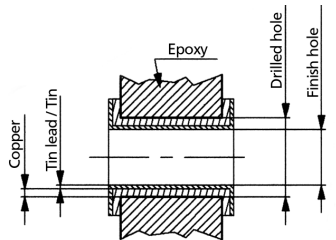
Note 1: These dimensions must be respected to ensure press-fit pin performance


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	≤100 N	≤120 N
Extraction force	≥30 N	≥30 N



- 

ORDERING INFORMATION

D
Series

09
Number of Contacts
09
15
25
37
50

P
Contacts
Pin P
Socket S

24A
Termination Type
Type Footprint/Pitch Termination Length PCB Thickness Code
Straight version 6.0/2.84mm 2.0mm 1.6mm 24A
Straight version 6/2.84mm 2.9mm 2.4mm 24B

6
Durability
High performance class (>500 mating/unmating) 6

RV
LF: RoHS compatible
EU directive 2002/95/EC

12
LF: RoHS compatible
EU directive 2002/95/EC

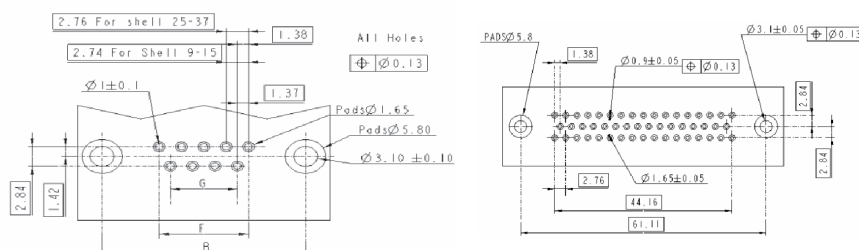
LF
LF: RoHS compatible
EU directive 2002/95/EC

Mounting Options
Insert M3 + metal peg + elec. continuity RL
Insert UNC 4-40 + metal peg + elec. continuity RX
Female screw UNC 4-40 + metal peg + elec. continuity RV

Packaging
Tray for manual positioning 09
Tape and Reel for automatic pick and gripper device (not available in 37 and 50 ways) 12
Tape and Reel and pick-up cap for vacuum nozzle device (not available in 37 and 50 ways) 22

RECOMMENDED LAYOUTS AND PAD DIMENSIONS

Contacts	B ± 0.10	F	G
09	24.99	10.96	8.22
15	33.32	19.18	16.44
25	47.04	33.12	30.36
37	63.50	49.68	46.92



TECHNICAL INFORMATION

MATERIAL

- Shell: Steel, nickel plated
- Housing: HT UL94V-0
- Contacts: Copper alloy
 - Active part: Gold over nickel
 - Termination: Matt tin over nickel
- Accessories: Brass, bright tin over nickel

ELECTRICAL PERFORMANCE

- Current rating: 5A
- Insulation Resistance: $\geq 5000M\Omega$
- Contact Resistance: $<10m\Omega$
- Dielectric Withstanding Voltage: 1000V RMS

MECHANICAL PERFORMANCE

- Mating/unmating cycles: 500 min.

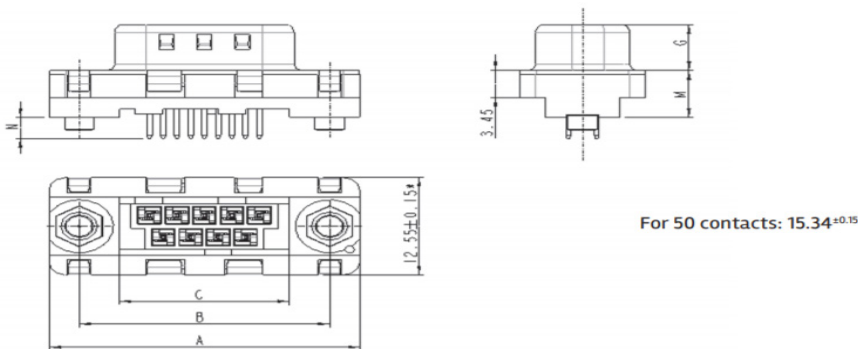
ENVIRONMENTAL

- Operating Temperature Range: $-55^{\circ}C$ to $125^{\circ}C$

APPROVALS AND CERTIFICATIONS

- Product lead free in accordance to RoHS 2002/EC/95

SPECIFIC DIMENSIONS



Dimensions								
		A $\pm 0,38$	B $\pm 0,12$	C $\pm 0,10$	G $-0/+0,25$	M $\pm 0,10$	N $\pm 0,30$	
							Terminal Length	
							24A	24B
09	P	30.81	24.99	16.96	5.90 $-0/+0,15$	6.00	2.00	2.90
	S	30.81	24.99	16.96	6.05	6.00	2.00	2.90
15	P	39.14	33.32	25.18	5.90 $-0/+0,15$	6.00	2.00	2.90
	S	39.14	33.32	25.18	6.05	6.00	2.00	2.90
25	P	53.03	47.04	39.12	5.70	6.00	2.00	2.90
	S	53.03	47.04	39.12	6.05	6.00	2.00	2.90
37	P	69.32	63.50	55.68	5.70	6.00	2.00	2.90
	S	69.32	63.50	55.68	6.05	6.00	2.00	2.90
50	P	67.10	61.11	54.11	5.70	6.00	2.00	2.90
	S	67.10	61.11	54.11	6.05	6.00	2.00	2.90

Dimensions in mm

IN0DSUBSGD002/EA4

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

FCI / Amphenol:

<u>D09S91C6PX00LF</u>	<u>D09P80C4PA00LF</u>	<u>D09P80C6GV00LF</u>	<u>D09P80C6GX00LF</u>	<u>D09P80C6PA00LF</u>
<u>D09P81C4GV00LF</u>	<u>D09P81C6GL00LF</u>	<u>D09P81C6GV00LF</u>	<u>D09P81C6GX00LF</u>	<u>D09P82C4GL00LF</u>
<u>D09P82C4GV00LF</u>	<u>D09P82C4GX00LF</u>	<u>D09P82C6GL00LF</u>	<u>D09P82C6GV00LF</u>	<u>D09P82C6GX00LF</u>
<u>D09P82C6PA00LF</u>	<u>D09P90C6GL00LF</u>	<u>D09P90C6GV00LF</u>	<u>D09P90C6PA00LF</u>	<u>D09P90C6PV00LF</u>
<u>D09P90C6PX00LF</u>	<u>D09P91C4GV00LF</u>	<u>D09P91C4PA00LF</u>	<u>D09P91C4PL00LF</u>	<u>D09P91C4PV00LF</u>
<u>D09P91C4PX00LF</u>	<u>D09P91C6GV00LF</u>	<u>D09P91C6GX00LF</u>	<u>D09P91C6PA00LF</u>	<u>D09P91C6PL00LF</u>
<u>D09P91C6PV00LF</u>	<u>D09P91C6PX00LF</u>	<u>D09S24A6RV12LF</u>	<u>D09S80C6GV00LF</u>	<u>D09S80C6GX00LF</u>
<u>D09S80C6PA00LF</u>	<u>D09S81C4GL00LF</u>	<u>D09S81C4GX00LF</u>	<u>D09S81C6GL00LF</u>	<u>D09S81C6GV00LF</u>
<u>D09S81C6GX00LF</u>	<u>D09S82C4GL00LF</u>	<u>D09S82C4GV00LF</u>	<u>D09S82C4GX00LF</u>	<u>D09S82C6GL00LF</u>
<u>D09S82C6GV00LF</u>	<u>D09S82C6GX00LF</u>	<u>D09S90C4PA00LF</u>	<u>D09S90C6GL00LF</u>	<u>D09S90C6GV00LF</u>
<u>D09S90C6GX00LF</u>	<u>D09S90C6PV00LF</u>	<u>D09S90C6PX00LF</u>	<u>D09S91C4GV00LF</u>	<u>D09S91C4GX00LF</u>
<u>D09S91C4PA00LF</u>	<u>D09S91C4PL00LF</u>	<u>D09S91C4PV00LF</u>	<u>D09S91C4PX00LF</u>	<u>D09S91C6GL00LF</u>
<u>D09S91C6GV00LF</u>	<u>D09S91C6GX00LF</u>	<u>D09S91C6PA00LF</u>	<u>D09S91C6PL00LF</u>	<u>D09S91C6PV00LF</u>
<u>D15P80C6GL00LF</u>	<u>D15P80C6PA00LF</u>	<u>D15P81C6GL00LF</u>	<u>D15P81C6GX00LF</u>	<u>D15P82C4PA00LF</u>
<u>D15P82C6GL00LF</u>	<u>D15P82C6GX00LF</u>	<u>D15P90C6GV00LF</u>	<u>D15P90C6PA00LF</u>	<u>D15P90C6PV00LF</u>
<u>D15P90C6PX00LF</u>	<u>D15P91C4GV00LF</u>	<u>D15P91C4PA00LF</u>	<u>D15P91C4PL00LF</u>	<u>D15P91C4PV00LF</u>
<u>D15P91C4PX00LF</u>	<u>D15P91C6GL00LF</u>	<u>D15P91C6GV00LF</u>	<u>D15P91C6PA00LF</u>	<u>D15P91C6PL00LF</u>
<u>D15P91C6PV00LF</u>	<u>D15P91C6PX00LF</u>	<u>D15S80C6GX00LF</u>	<u>D15S80C6PA00LF</u>	<u>D15S81C4GX00LF</u>
<u>D15S81C6GL00LF</u>	<u>D15S81C6GX00LF</u>	<u>D15S82C4GL00LF</u>	<u>D15S82C4GX00LF</u>	<u>D15S82C6GL00LF</u>
<u>D15S82C6GV00LF</u>	<u>D15S82C6GX00LF</u>	<u>D15S90C6GV00LF</u>	<u>D15S90C6GX00LF</u>	<u>D15S90C6PA00LF</u>