

Amphenol SOCAPEX

SIAL - SIHD

PCB Connectors

Board to Board Interconnect Solutions

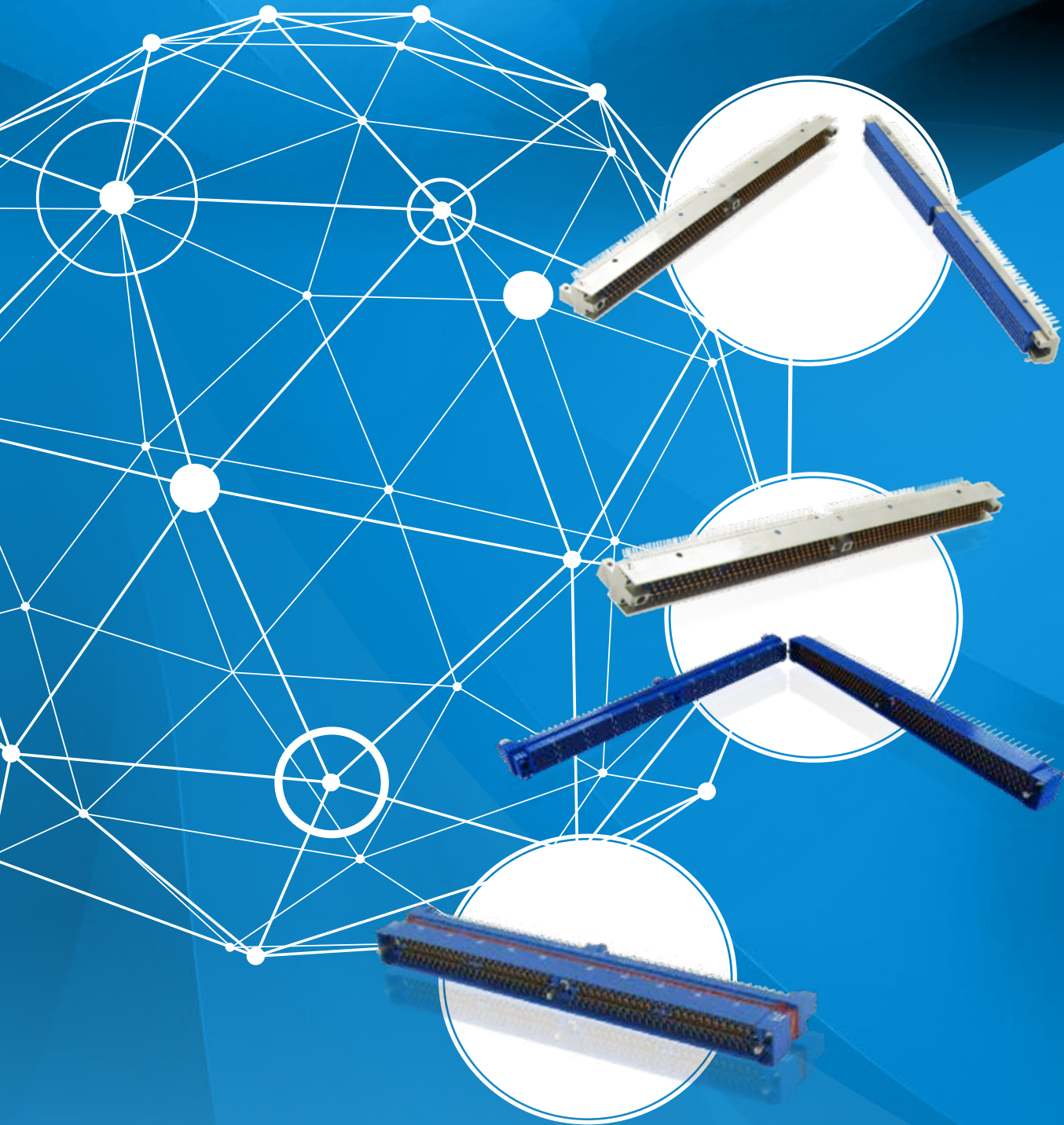


Table of Contents

About Amphenol	4
----------------------	---

SIAL - The hybrid connector for use with thermal clamps

SIAL product range	8
Signal contacts	12
Special contacts	14
Signal modules	16
Hybrid modules	16
Fittings and guiding	17
Keying	17
Realignment capability	17
Mating sequence	17
SIAL signal version typical arrangements	18
SIAL signal version layouts	20
SIAL coaxial version typical arrangements	21
SIAL coaxial version layouts	22
Tooling	24

SIHD - The monolithic connector for use with thermal clamps

SIHD product range	26
Female signal contacts for plugs	30
Male signal contacts for receptacles	31
Ground strips	31
Guiding / Keying	32
Mating sequence	32
Realignment capability	32
Fixing accessories	33
SIHD without ground strip typical arrangements	34
SIHD with ground strip typical arrangements	35
SIHD without ground strip layouts	36
SIHD with ground strip layouts	37

OUR COMPANY



Proven excellence in interconnect solutions

- Since **1947**, Amphenol Socapex has prescribed, designed and manufactured reliable and innovative interconnection solutions for harsh environments, specializing in standard and customized electrical and fiber optic connectors, contacts, accessories and cabling solutions.
- Located in the **Mont Blanc region** of France and Pune in India, Amphenol Socapex serve customers in over 100 countries around the world.
- Amphenol Socapex is part of the leading supplier of interconnect systems **Amphenol**.



1100+
employees



109 M€
Net Sales 2022
71% Export - 29% France



Thyez, **France**
Pune, **India**



Our expertise has no boundaries

Integrated Production in France & India

- 24 000 m² manufacturing capacity on 2 sites
- Design and manufacturing centers in France and India
- State-of-the-art manufacturing technology

Our markets



Military



**Commercial
Aerospace**



Space



Industry



TECHNOLOGIES & INNOVATION

Engineering Laboratory



Product testing and qualification expertise in many fields:

- Environmental, mechanical, electrical, chemical, climatic skills
- RF and fiber optics expertise

High-Speed Expertise



Strong expertise in high-speed signals

- 3D EM simulation software & EM models
- Time Domain and frequency domain

Materials Expertise



Focus on materials expertise and manufacturing techniques to produce faster, smaller and stronger products

- Advanced technology research and development: polymers, metals, platings, resins ...
- Cutting edge characterizations of interconnects: Radio Frequency, partial discharges ...
- 3D CAD mechanical software, simulation & analysis

Eco-responsibility



Sustainable environment approach, with pro-active management of regulations (REACH / RoHS / Conflict minerals...)

- New materials development, plating, and suitable processes
- Recycling and rational resources consumption

Our workshops



Our workshops located in France & India provide consistent quality adapted to your volume requirements.

Automation & Tooling : Tools for our different activities : molding, machining, assembly

Molding : Solid expertise in thermoplastic elastomer and thermoset molding

Machining : Manufacturing of cylindrical shells and rectangular shells

Screw Machining : Manufacturing of electrical contacts

Plating : Plating with cadmium, nickel, electroless nickel, silver, black zinc nickel, gold

Assembly : Connector and harness assembly (electrical & optical)

Our certifications

Product certifications : MIL-DTL38999, EN3645, EN3155, VG (VG95328, VG95319, VG96944, VG95218, VG96949)



Certified Management System



Certified Management System



Certified Management System



Certified Management System

Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium



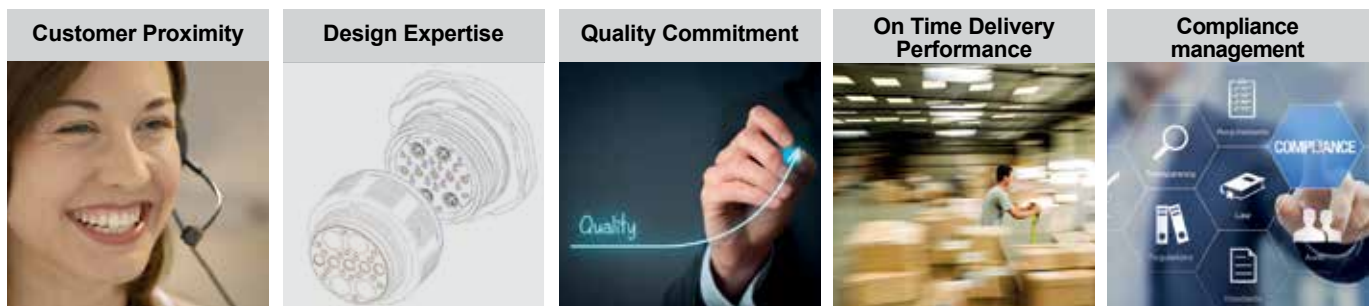
CUSTOMER EXPERIENCE



Service

► We have a strong reputation for helping customers solve their toughest challenges. This approach of serving your needs is ingrained in our company – from our sales team to our product development engineers.





A partner you can trust



Buy our solutions

You can access our solutions through our global network of sales offices or through our distributors.

Field Sales Team :

-  10 in France
-  15 in Europe
-  100+ in North America and rest of the world.
-  5 Business Development Managers supporting local sales force Europe, North America and the rest of the world

-  **Technical Advisement & Multilingual Customer Service :**
- 20 people

Worldwide Distribution Network :

Our range of circular connectors, contacts, fiber optic connectors, PCB connectors and accessories are available thru our extensive distribution network.

It includes qualified distributors (QPL approved) for assembling MIL-DTL-38999 & derivatives and PT/451 (VG95328) connectors.

[Check our product inventory](#)



[Product Selectors & 3D Files](#)



NEW

OUR HISTORY

1947



- Socapex creation in Suresnes, France
- 1st radio connector

1956-57



- Manufacturing unit in Cluses (74), France
- Thomson-CSF becomes primary shareholder

Early 1960's



- 1st board level connectors: HE8
- 1st "licence Bendix" manufactured connectors
- SL Series

1973



- New factory in Thyez (74) France with 250 people, 13 000m²

1975



- Production of 38999 connectors

1986

Amphenol
Socapex

- Amphenol becomes primary shareholder

1995-96



- Expanded Beam connector CTOS launch
- Headquarters transferred to Thyez

2004



- RJ Field Electronica launch, "Award"

2005



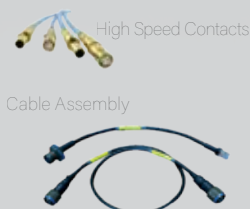
- New factory in Pune, India

2010's



- LuxBeam™ and HDAS launch

2014-2017



- New workshops : Cable Assembly & Contact Manufacturing workshop

2019



- Increased manufacturing capacity with 2nd building in Pune, India

2022



- Harness in the box solution launch

Today & tomorrow



- New technologies : Investment in automation & technical expertise



- Amphenol SOCAPEX joins the "Convention des Entreprises pour le Climat".
- Our goal: to accelerate our transition to a more sustainable operation.

SIAL

The hybrid connector for use with thermal clamps

SIAL is a modular high density interconnection system that has the capability to mix signal and coax contacts. The contact technology developed for this connector allows the use of thermal clamps. With 3 sizes of modules, the SIAL connectors provide the arrangement needed, from 18 to 392 contacts. In a staggered grid pattern (2.54 x 1.905 [.100x.075]), this connector houses 5 rows of contacts in a low profile board to board format. Additionally, SIAL connectors provide shielding on both plug & receptacle, which allows the dissipation of all the electrical charge while mating.

The concept

3 standard modules are available with 18, 58 and 98 signal contacts on 5 rows. These allow arrangements up to 392 contacts. The various modules are maintained in a metallic shell, allowing both protection of male contacts on the plug, and a mix of signal and coax modules.

Compatible with the use of thermal clamps

Its standard contact technology, already used in the monolithic SIHD connector, permits the lateral displacement (± 0.25 [.010]) of the pin into the socket without generating any stress on the contact termination on the PCB.

This feature allows the use of thermal clamps to keep the daughter board in position after mating, as well as the dissipation of energy generated by the components on the board from the heat sink (thermal drain) to the cold wall (liquid cooled) or to the chassis. The locking of the thermal clamps provides the lateral movement of the plug into the receptacle. The SIAL allows this lateral displacement of ± 0.25 [.010] without creating stress on the solder joints or on the contact area.

A complete range for test, programming, maintenance

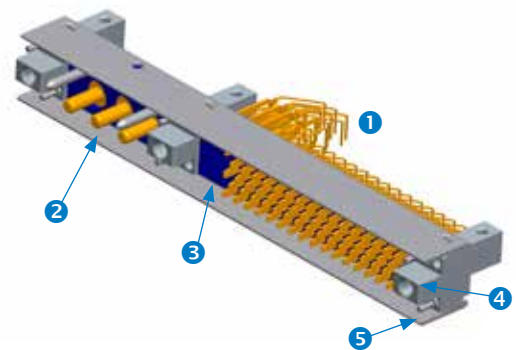
E = Female receptacle for mother board

F = Male plug for daughter board














T = Female test receptacle for daughter board

S = Male test plug

P = Female extender receptacle



QUICK SELECTION GUIDE

Signal contacts 1	Coax contacts 2	Modules 3	Fittings & Guiding 4	Keying 5
FEMALE for receptacles  for extender receptacles  MALE for plugs   for test plugs 	COAX SIZE 12  COAX SIZE 16  3 COAX / MODULE  5 COAX / MODULE 	NUMBER OF SIGNAL CONTACTS 018, 036, 058, 076, 098, 116, 156, 196, 214, 254, 312, 370, 392 NUMBER OF COAX CONTACTS Size 12: 03, 06, 09, 12 Size 16: 05, 10	FITTING  FEMALE SOCKET GUIDE  MALE GUIDE PIN 	5 polarizing pins / connector 
PAGE 13 PAGE 12	PAGE 14	PAGE 16	PAGE 17	PAGE 17

The SIAL series serves various markets, including:



Commercial avionics & airframe



Military avionics & airframe



Space

All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL Series

Lateral displacement compatibility



SIAL Series

Table of contents

SIAL product range	8
Signal contacts	12
Special contacts	14
Signal modules	16
Hybrid modules	16
Fittings and guiding	17
Keying	17
Realignment capability	17
Mating sequence	17
SIAL signal version typical arrangements	18
SIAL signal version layouts	20
SIAL coaxial version typical arrangements	21
SIAL coaxial version layouts	22
Tooling	24

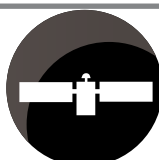
The SIAL series serves various **markets**, including:



Commercial Avionics
& Airframe



Military Avionics & Airframe



Space

SIAL>>> GENERAL SPECIFICATIONS



MEDIUM DENSITY

- Modular connector mixing signal and coax contacts in many arrangements
- Lateral displacement capability allowing the use of thermal clamps: ± 0.25 [$\pm .010$]
- Complete range for test, programming and maintenance
- Designed for severe mechanical environments
- 2.54 [.100] staggered grid (1.27 [.050] offset), 1.905 [.075] between rows

Main characteristics

- Medium density: 0.14 cts/mm² [90 cts/inch²]
- 13 arrangements on 5 rows of contacts, from 18 to 392 signal contacts
- 5 hybrid arrangements mixing coax and signal contacts
- 3 A per signal contacts / DWV: 750 Vrms
- Lateral rails to protect the male contacts from external damage
- Repairable contacts for easy maintenance

Markets



Main applications



Terminations



Recommended configurations



Standard

MIL-DTL-55302

CECC 75101-012

How to order

E	Female receptacle
F	Male plug
T	Female test receptacle
S	Male test plug
P	Female extender receptacle
Connector type	

C	Conductive fitting <i>Standard version</i> <i>For E and F types</i>
Blank	Non conductive fitting <i>Test versions</i> <i>and specifics</i>
Conductivity of the fitting	

Size	Male plug	Female receptacle
Size 12	KX	KT
Size 16	NX	NT
No coaxial contact	Blank	
Coax module		

000	Standard
001	ASL F or E with 5 right & left coax
010	ASL E with 2.76 _{MAX} mm PCB thickness
011	ASL E with heatshrink sleeve
100	ASL S and E 392 screw locking system
102	ASL F with Y01 contacts without lateral displacement
103	ASL SY04 straight/flex locking system
200	ASL 39758119 space customer specification
300	ASL MA3401 space customer specification
500	ASL F or E with 5 coax after signal contacts
502	ASL F or E with 5 coax before signal contacts
Deviation	

Blank: Tin lead
LF: Lead free
Termination plating

Number of signal contacts (see page 88)		
Signal contacts only		Signal & coaxial contacts
018	156	018 (+3)
036	196	058 (+3)
058	214	098 (+3)
076	254	058 (+5)
098	312	156 (+10)
098	370	196 (+5)
116	392	254 (+5)

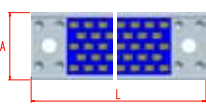
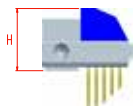
Signal contacts (see pages 84 to 85)		
	Male contact	Female contact
E		Y09, Y19
F	Y01, Y02, Y04, U04, U05, U06, U07, U08	
T		Y01, Y02, Y04, U04, U05, U06, U07, U08
P		Y01, Y02, Y04, U04, U05, U06, U07, U08
S	Y03 Y02 Y04	

Number of coax contacts (see page 93)	
Size	Number of coax
12	03
	06
	09
	12
16	05
	10
No coaxial contact	Blank

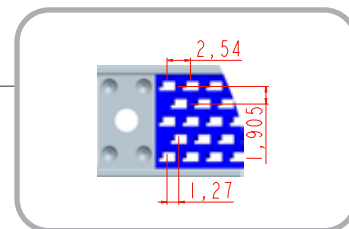
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >>> TECHNICAL SPECIFICATIONS

Dimensional characteristics



L= 22.86[.900] to 231.14[9.100] for signal version
 L= 53.34[2.100] to 180.34[7.100] for hybrid version
 A= 12.1_{MAX} [.476]
 H= 6.41_{MAX} [.252] for plug
 H= 10.26_{MAX} [.404]



Female contact



Cross cavity by Amphenol: lateral displacement compatible

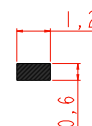
- Cross section of the lateral displacement of the male contact inside the female cavity
- Maintains 2 points of contact
- Allows a ± 0.25 [$\pm .010$] lateral displacement
- No stress on solder joints or on the contact area

Material: beryllium copper (stamped)

Plating:

- Termination: tin lead or lead free
- Active contact area: gold over nickel

Male contact



Mating end size: 0.6 x 1.2 [.047 x .024]

Contact section (mating side): 0.72mm² [.001 in²]

Material: beryllium copper (stamped)

Plating:

- Termination: tin lead or lead free
- Active contact area: gold over nickel

Materials

- **Fixing devices:** anodized aluminium
- **Guiding devices:** passivated stainless steel
- **Polarizing pins:** passivated stainless steel
- **Metallic rails:** passivated stainless steel
- **Plastic inserts:** thermoset DAP, 30% glass-fiber filled

MECHANICAL CHARACTERISTICS

Backoff ¹ (mm)	< 0.8 [.031]
Mating force per contact (N)	0.58 _{MAX}
Unmating force per contact (N)	0.16 < F < 0.58
Durability cycles	500
Sinusoidal vibrations (10 to 2000 Hz) micro discontinuity 2ns	10 g
Random vibrations (10 to 2000 Hz) micro discontinuity 2ns	0.15 g ² / Hz
Shocks micro discontinuity 1ns	100 g

ENVIRONMENTAL CHARACTERISTICS

Thermal shocks (°C)	-55 / +125
Salt Spray (hours)	144* or 96

ELECTRICAL CHARACTERISTICS

Current rating per contacts (A)	3
Insulation resistance (at 500Vdc) (GΩ)	5 _{MIN}
Contact resistance (mΩ)	25 _{MAX}
Dielectric Withstanding Voltage (Vrms)	750
Capacitance between contacts (pF)	1.5 _{MAX}
Service voltage (at 50 Hz) (Vrms)	250

* "C" standard version

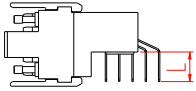
¹: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly

SIAL >>> SIGNAL CONTACTS (1)

MALE CONTACTS FOR PLUGS



Right angle PC tail



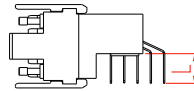
- Thru hole soldering
- Daughter board
- PCB thickness: 3.1_{MAX} [.122]



Termination style

Y01

Right angle PC tail



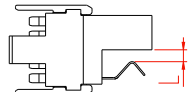
- Thru hole soldering
- Daughter board
- PCB thickness: 2.6_{MAX} [.102]



Termination style

Y02

SMT double side PCB, centered



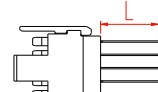
- SMT soldering
- Double-sided daughter board, centered
- PCB thickness: 2.6 ± 0.235 [.102 \pm .009]



Termination style

U04

Straight PC tail



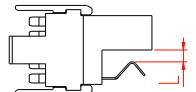
- Thru hole soldering
- Daughter board
- PCB thickness: 4.5 ± 0.45 [.177 \pm .018]



Termination style

Y04

SMT double side, centered



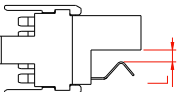
- SMT soldering
- Double-sided daughter board, centered
- PCB thickness: 1.6 ± 0.160 [.063 \pm .006]



Termination style

U06

SMT double side, centered



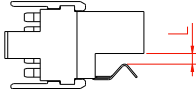
- SMT soldering
- Double-sided daughter board, centered
- PCB thickness: 2 ± 0.2 [.079 \pm .008]



Termination style

U05

SMT double side, off centered



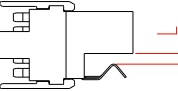
- SMT soldering
- Double-sided daughter board, offset
- PCB thickness: 2.6 ± 0.235 [.102 \pm .009]



Termination style

U08

SMT double side, off centered



- SMT soldering
- Double-sided daughter board, offset
- PCB thickness: 2.44 ± 0.42 [.096 \pm .016]



Termination style

U07

	Y01	Y02	Y04	U04	U05	U06	U07	U08
L _{MAX}	4.2 ± 0.2 [.165 ± .008]	3.7 ± 0.2 [.146 ± .008]	6 [.236]	2.6 ± 0.235 [.102 ± .009]	2 ± 0.2 [.079 ± .008]	1.6 ± 0.160 [.063 ± .006]	2.44 ± 0.42 [.096 ± .016]	2.6 ± 0.235 [.102 ± .009]
Termination section	Ø 0.4 ± 0.03 [.016 ± .001]			0.3 x 0.8 [.012 x .031]				
Mating end size	1.2 x 0.6 [.047 x .024]							
Active contact area plating μm[μin]	2 [.079] Ni + 1[.039] Au							
Termination plating μm [μin]	2 [.079] Ni + 3 [.118] SnPb or bright pure Sn for RoHS version			2 [.079] Ni + 7 [.276] SnPb or bright pure Sn for RoHS version				

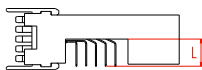
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >>> SIGNAL CONTACTS (1)

MALE CONTACT FOR TEST PLUGS



Right angle PC tail



- Thru hole soldering
- Daughter board
- PCB thickness: 1.6 ± 0.16 [.063 \pm .006]

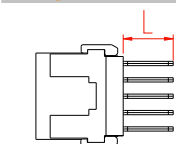


Termination style

Y03

FEMALE CONTACTS FOR RECEPTACLES

Straight PC tail, standard length



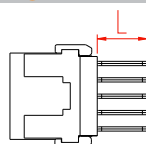
- Thru hole soldering
- Mother board
- PCB thickness: 3.75 ± 0.75 [.148 \pm .030]



Termination style

Y09

Straight PC tail, short length



- Thru hole soldering
- Mother board
- PCB thickness: up to 2 ± 0.2 [.079 \pm .008]

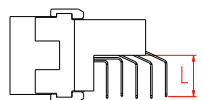


Termination style

Y19

FEMALE CONTACT FOR EXTENDER RECEPTACLES

Right angle PC tail, short length

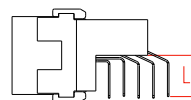


- Thru hole soldering
- Extender card
- PCB thickness: 2.6_{MAX} [.102]

Termination style

Y02

Right angle PC tail



- Thru hole soldering
- Extender card
- PCB thickness 3.1_{MAX} [.122]

Termination style

Y01

	Y03	Y02	Y01	Y09*	Y09-010	Y19
L _{MAX}	2.8 ± 0.2 [.165 ± .008]	3.7±0.2 [.146 ± .008]	4.2 ± 0.2 [.165 ± .008]	5,75 ± 0,25 [.226 ± .010]	4,5 ±0.2 [.177 ± .008]	3.7 ± 0.3 [.146 ± .012]
Mating end size	1.2 x 0.6 [.047 x .024]					
Termination section	Ø 0.4 ± 0.03 [.016 ± .001]			Ø 0.5 ± 0.03 [.020 ± .001]		
Active contact area plating μm[μin]	2 [.079] Ni + 1[.039] Au					
Termination plating μm [μin]	2 [.079] Ni + 3 [.118] SnPb or bright pure Sn for RoHS version					

* for monobloc version ASLMxx, please consult us

SIAL >>> SPECIAL CONTACTS (2)

SIZE 16 COAXIAL CONTACTS



Male contacts for plugs – 5-cavity module

Straight crimp barrel

- For 5-cavity module
- For 2 [.079] cable
- Size 16: 6 GHz depending on cable – 50 Ω

2 [.079]

320008

Straight PC tail - UT47

- For 5-cavity module
- For UT47 semi-rigid cable
- Size 16: 6 GHz depending on cable – 50 Ω

Consult us

320033

Right angle PC tail

- For 5-cavity module
- Size 16: 6 GHz depending on cable – 50 Ω

Consult us

320032

Female contacts for receptacles – 5-cavity module

Straight crimp barrel

- For 5-cavity module
- For 2, 1.2, 2.7 or 2.4 cable [for .079, .047, .106 or .094 cable]
- Size 16: 6 GHz depending on cable – 50 Ω

2 [.079]

1.2 [.047]

2.7 [.106]

2.4 [.094]

320009

320011

320017

320018

Straight PC tail - UT47

- For 5-cavity module
- For UT47 semi-rigid cable
- Size 16: 6 GHz depending on cable – 50 Ω

Consult us

320006

Straight PC tail - Sucoform

- For 5-cavity module
- For Sucoform cable 0.086 [.003]
- Size 16: 6 GHz depending on cable – 50 Ω
- No lateral displacement

Consult us

320021

SIAL >> SPECIAL CONTACTS (2)

SIZE 12 COAXIAL CONTACTS



Male contacts for plugs – 3-cavity module

Right angle PC tail

- For 3-cavity module
- Size 12: 0 to 3 GHz – 50 Ω

Consult us

320000

Straight crimp barrel

- For 3-cavity module
- Size 12: 0 to 3 GHz – 50 Ω
- Standard designation: M39029 / 28 - 211

Consult us

900340

Female contacts for receptacles – 3-cavity module

Right angle crimp barrel – KX22A

- For 3-cavity module
- For KX22A cable
- Size 12: 0 to 3 GHz – 50 Ω

Consult us

320001

Right angle crimp barrel – F 1703/66

- For 3-cavity module
- For F 1703 / 66 cable
- Size 12: 0 to 3 GHz – 50 Ω

Consult us

320004

Straight PC tail

- For 3-cavity module
- For test only, specific application
- Size 12: 0 to 3 GHz – 50 Ω
- No lateral displacement

Consult us

320002

Straight crimp barrel

- For 3-cavity module
- Standard designation: M39029 / 27 - 210
- Size 12: 0 to 3 GHz – 50 Ω
- With lateral displacement

Consult us

900354

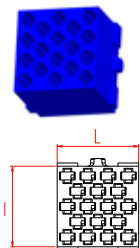
	16-SIZE CONTACT	12-SIZE CONTACT
Impedance Ω	50	50
Voltage rating V	180	180
Current rating mA	500	500
Contact retention N	≥ 50	≥ 50
Frequency range GHz	0 to 1	0 to 1
Contact resistance mΩ	≤ 12	≤ 12
VSWR at 1 GHz	1.3 _{MAX}	1.3 _{MAX}
Insertion and extraction force per contact N	1 ≤ F ≤ 15	1 ≤ F ≤ 15
Dielectric and extraction force per contact N		at sea level, 1000 V. at 15240 m, 250 V.

SIAL >> MODULES (3)

SIGNAL MODULES



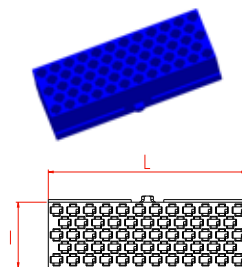
18 signal contacts



- Arrangement available:

- 18
- 18 x 2
- 18 + 58

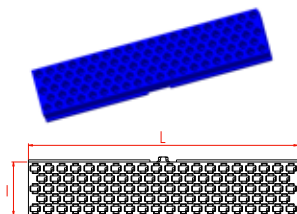
58 signal contacts



- Arrangement available:

- 58
- 58 + 18
- 58 x 2
- 58 + 98
- 58 x 2 + 98
- 58 + 98 x 2
- 58 x 2 + 98 x 2
- 58 x 3 + 98 x 2

98 signal contacts

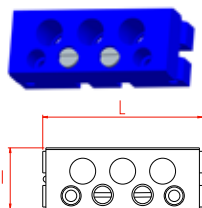


- Arrangement available:

- 98
- 98 + 58
- 98 x 2
- 98 + 2 x 58
- 98 x 2 + 58
- 98 x 2 + 58 x 2
- 98 x 2 + 58 x 3
- 98 x 4

HYBRID MODULES

3 coax contacts – size 12

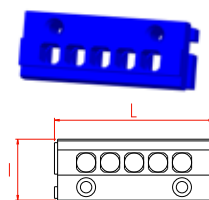


- 3-cavity module for 12-size coaxial contact

- Arrangement available:

- 3 + 18
- 3 + 58

5 coax contacts – size 16



- 5-cavity module for 16-size coaxial contact

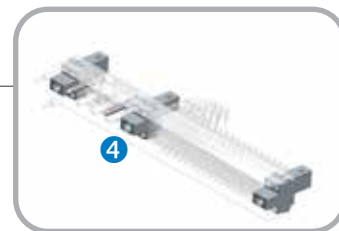
- Arrangement available:

- 5 + 98
- 5 x 2 + 98 + 58

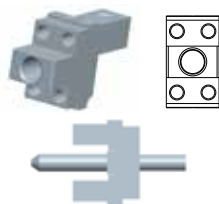
	18 signal contacts	58 signal contacts	98 signal contacts	3 coax contacts	5 coax contacts
L	10.16 [.400]	30.48 [1.200]	50.8 [2.1000]	25.4 _{MAX} [1.000]	
I					
Receptacle		10.05 [.396]		9.95 [.392]	
Plug		10.8 [.425]		10.8 [.425]	

SIAL >>> FITTINGS/GUIDING & KEYING (4 & 5)

FITTINGS / GUIDING (4)

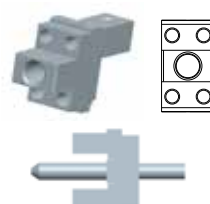


A- centered end fittings



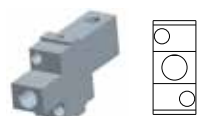
- 1 centered end fitting at one end of the connector
- Max length: 6, 35 [.250]
- Male guide pin on receptacle
- Female centered hole on plug
- 4 holes for polarizing

B- end fittings



- 1 end fitting at one end of the connector
- Max length: 6, 35 [.250]
- Male guide pin on receptacle
- Offset hole on plug
- 4 holes for polarizing pin

Central fittings



- Max length: 6, 35 [.250]
- Guiding device: Male guide pin on receptacle
- 2 holes for polarizing pin
- Signal version**
- 1 fitting for 196, 214, 254 and 312 positions
- 2 fittings for 370 positions
- 3 fittings for 392 positions

With coaxial contacts

- 1 fitting for 18 + 3, 58 + 3 and 98 + 5 positions
- 2 fittings for 98 + 58 + 5 x 2 positions

KEYING (5)

Polarizing pins

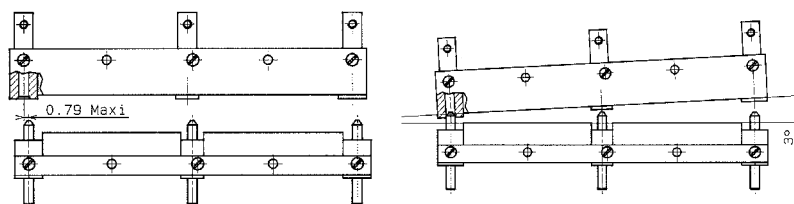


- 2 pins at each end fitting for the plug / 2 pins at each end fitting for the receptacle
- 1 pin at each central fitting for the plug / 1 pin at each central fitting for the receptacle
- Identification of keying cavities: clockwise for the plugs, counterclockwise on the receptacle
- A,B,C,D on A fitting, W,X,Y,Z on B fitting

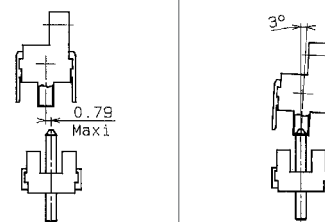


REALIGNMENT CAPABILITY

In the longitudinal axis



In the lateral axis



MATING SEQUENCE

Shell guiding	Coax guiding	Keying	Coax contact	Signal contact	Housing contact
6.8 ± 0.45 [.268 ± .018]	6.56 ± 0.45 [.258 ± .018] 3.3 ± 0.6 [.130 ± .024]	6.27 ± 0.36 [.247 ± .014] 0.24 ± 0.6 [.009 ± .024] 3.7 ± 0.7 [.121 ± .028]	3.26 ± 0.6 [.128 ± .024] 3.3 ± 0.6 [.130 ± .024]	2.14 ± 0.28 [.084 ± .011]	2.14 ± 0.28 [.084 ± .011] 2.9 ± 0.6 [.114 ± .024]

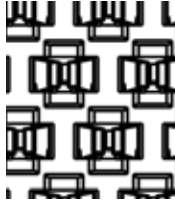
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >> SIGNAL VERSION (3)

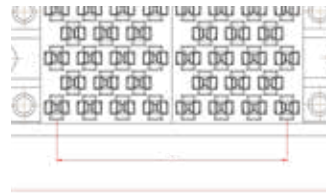
TYPICAL ARRANGEMENTS



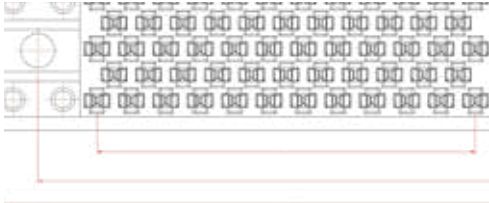
18 signal contacts



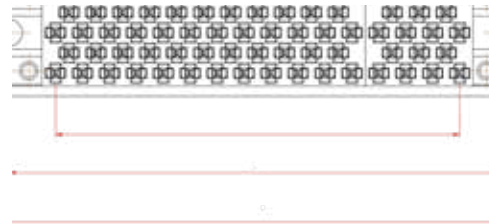
36 signal contacts



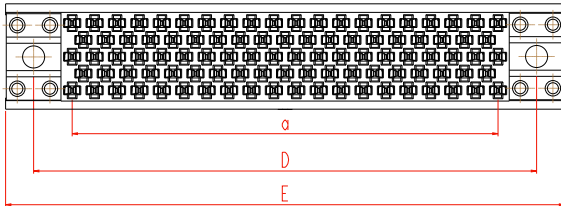
58 signal contacts



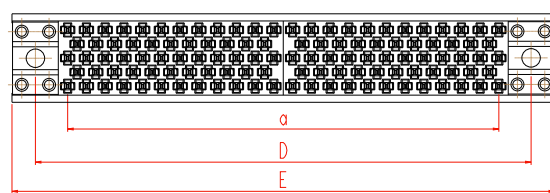
76 signal contacts



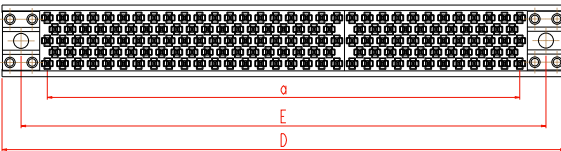
98 signal contacts



116 signal contacts



156 signal contacts



	18	36	58	76	98	116	156
D	16.51 [.650]	26.67 [1.050]	36.83 [1.450]	46.99 [1.850]	57.15 [2.250]	67.31 [2.650]	87.63 [3.450]
E_{MAX}	22.86 [.900]	33.02 [1.300]	43.18 [1.700]	53.34 [2.100]	63.5 [2.500]	73.66 [2.900]	93.98 [3.700]
a	7.62 [.340]	17.78 [.700]	27.94 [1.100]	38.1 [1.500]	48.26 [1.900]	58.42 [2.300]	81.28 [3.200]

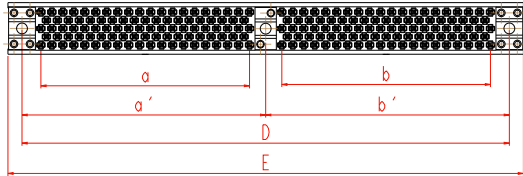
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >> SIGNAL VERSION (3)

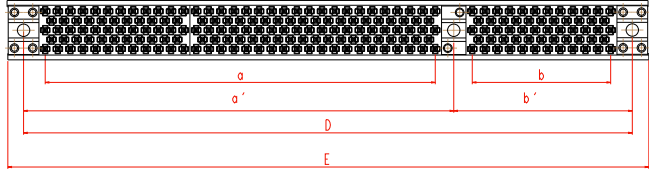
TYPICAL ARRANGEMENTS



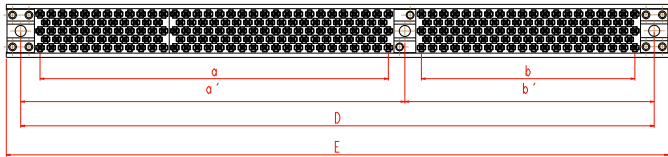
196 signal contacts



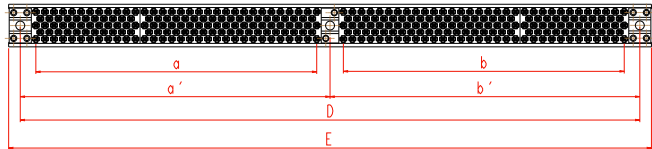
214 signal contacts



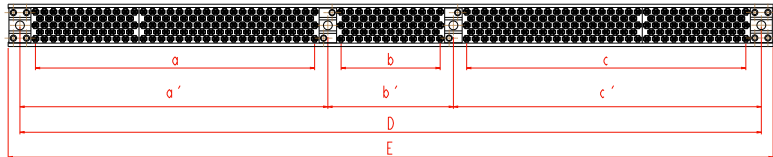
254 signal contacts



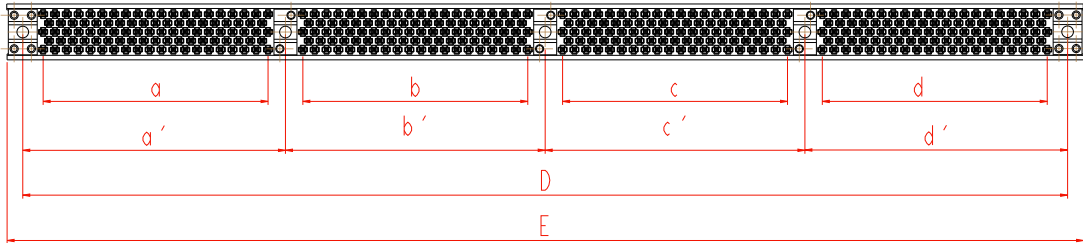
312 signal contacts



370 signal contacts



392 signal contacts



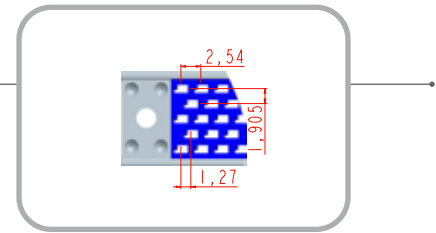
	196	214	254	312	370	392
D	113.03 [4.450]	123.19 [4.850]	143.51 [5.650]	173.99 [6.850]	209.55 [8.250]	224.79 [8.850]
E _{MAX}	119.38 [4.700]	129.54 [5.100]	149.86 [5.900]	180.34 [7.100]	215.9 [8.500]	231.14 [9.100]
a	48.26 [1.900]	81.28 [3.200]	81.28 [3.200]	81.28 [3.200]	81.28 [3.200]	48.26 [1.900]
a'	56.515 [2.225]	86.995 [3.425]	86.995 [3.425]	86.995 [3.425]	86.995 [3.425]	56.515 [2.225]
b	48.26 [1.900]	27.94 [1.100]	48.26 [1.900]	81.28 [3.200]	27.94 [1.100]	48.26 [1.900]
b'	56.515 [2.225]	36.195 [1.425]	56.515 [2.225]	86.995 [3.425]	35.56 [1.400]	55.88 [2.200]
c					81.28 [3.200]	48.26 [1.900]
c'					86.995 [3.425]	55.88 [2.200]
d						48.26 [1.900]
d'						56.515 [2.225]

All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >> SIGNAL VERSION (3)

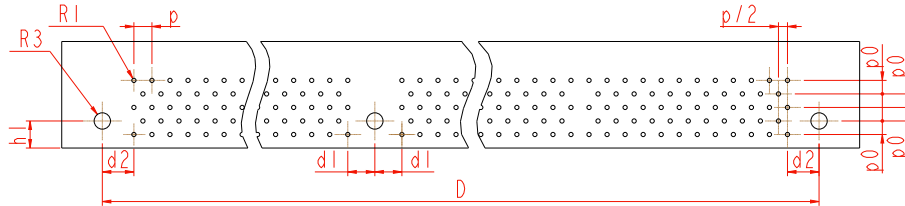
LAYOUTS

The boards are shown from the connector side
All contact locations are equidistant.



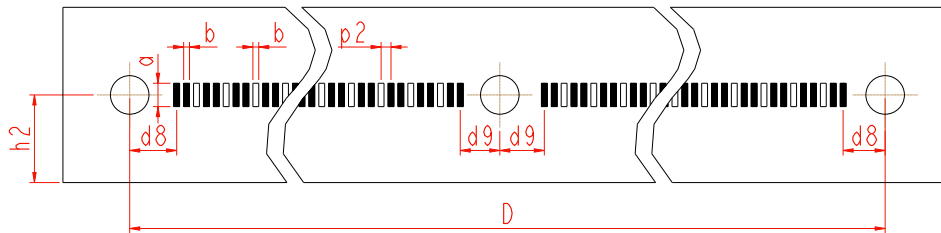
With YC signal contacts for plug

DAUGHTER
BOARD



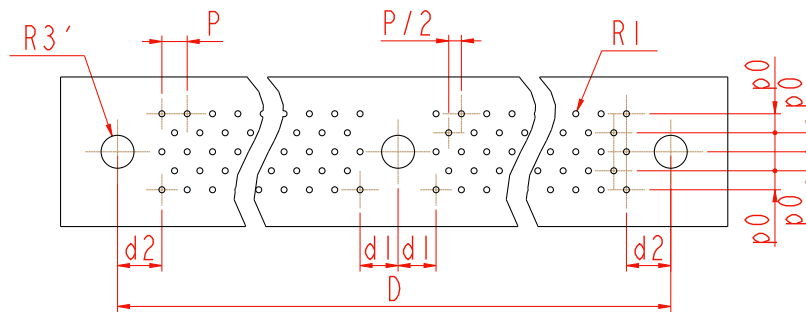
With U -- signal contacts for plug

DAUGHTER
BOARD



With Y -- signal contacts for receptacle

MOTHER
BOARD



R_1	R_3	R_3'	p	$p/2$	p_0	p_2	d_1	d_2	d_8	d_9	a	b	h_1	h_2
$\varnothing 0.6_{\text{MIN}}$ [.024]	$\varnothing 2.3^{+0.15}_{-0.1}$ [.091 ^{+.006} _{-.004}]	$\varnothing 3.3$ [.130]	2.54 [.100]	1.27 [.050]	1.905 [.075]	0.85 [.033]	3.81 [.150]	4.445 [.175]	4.02 [.158]	3.39 [.133]	2_{MAX} [.079]	0.5_{MAX} [.020]	3.81 [.150]	3.81 [.150]

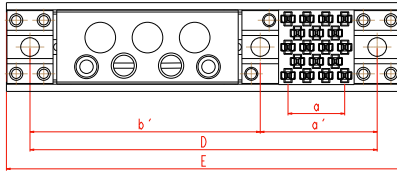
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >> COAXIAL VERSION (3)

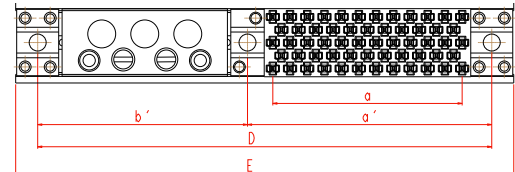
TYPICAL ARRANGEMENTS



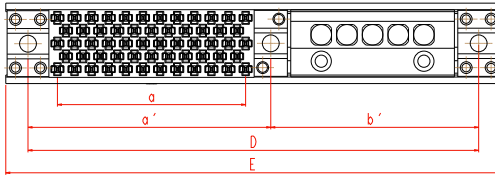
18 signal contacts + 3 coax



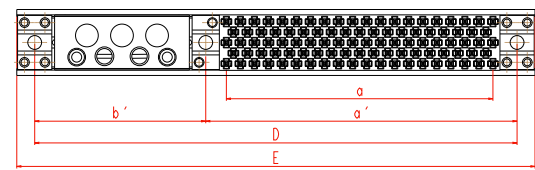
58 signal contacts + 3 coax



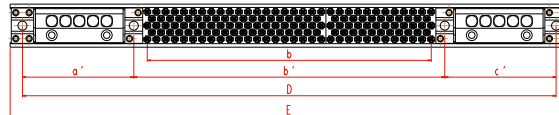
58 signal contacts + 5 coax



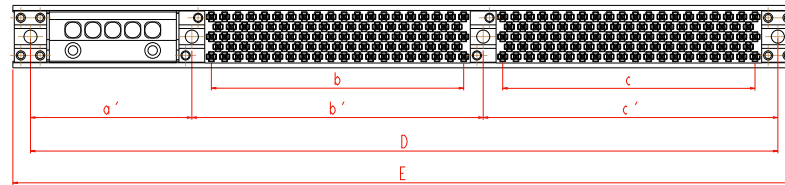
98 signal contacts + 3 coax



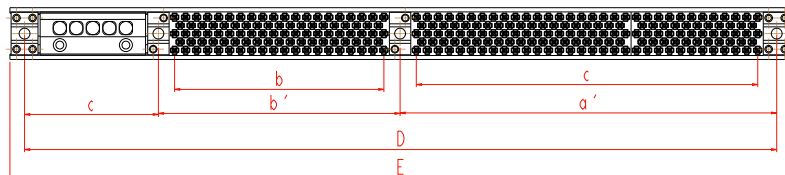
5 coax + 98 + 58 signal contacts + 5 coax



196 signal contacts + 5 coax



254 signal contacts + 5 coax

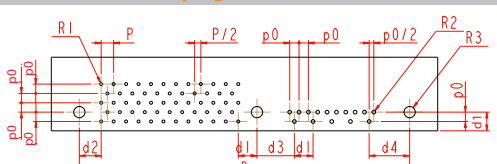
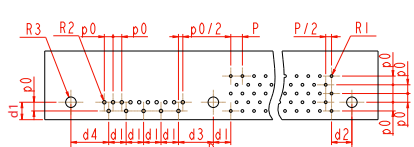
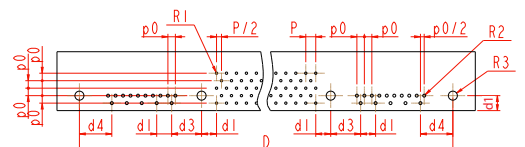
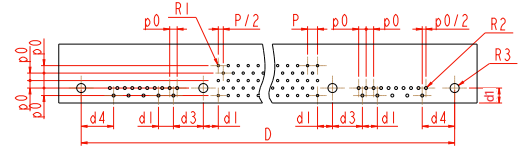
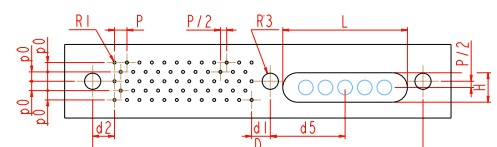
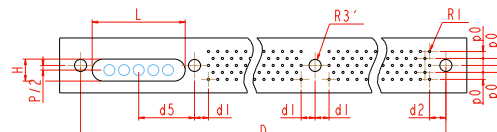
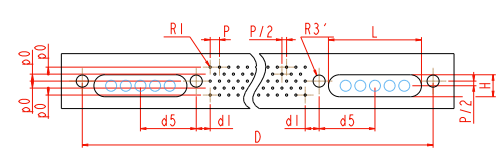


	18 + 3	58 + 3	58 + 5	98 + 3	5 + 98 + 58 + 5	196 + 5	254 + 5
D	46.99 [1.850]	67.31 [2.650]	67.31 [2.650]	87.63 [3.450]	148.59 [5.850]	143.51 [5.650]	173.99 [6.850]
E_{MAX}	53.34 [2.100]	73.66 [2.900]	73.66 [2.900]	93.98 [3.700]	154.94 [6.100]	149.86 [5.900]	180.34 [7.100]
a	7.62 [.340]	27.94 [1.100]	27.94 [1.100]	48.26 [1.900]	/	48.26 [1.900]	81.28 [3.200]
a'	15.875 [.625]	36.195 [1.425]	36.195 [1.425]	56.515 [2.225]	31.115 [1.225]	56.515 [2.225]	86.995 [3.425]
b	/	/	/	/	81.28 [3.200]	48.26 [1.900]	48.26 [1.900]
b'	31.115 [1.225]	31.115 [1.225]	31.115 [1.225]	31.115 [1.225]	86.36 [3.400]	55.88 [2.200]	55.88 [2.200]
c					31.115 [1.225]	31.115 [1.225]	31.115 [1.225]

All dimensions are given for information only and are in mm [inch], except as otherwise specified

LAYOUTS

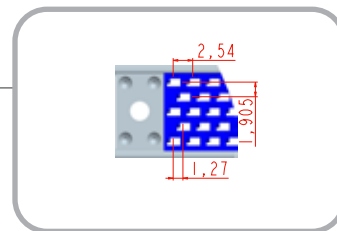
Technical drawing of a part with dimensions: 2,54, 1,905, and 1,27.

NX05-002 DAUGHTER BOARD	<p>With Y0. male signal contacts and 5 coaxial contacts for plug</p> 
NX05-000 DAUGHTER BOARD	<p>With Y0. male signal contacts and 5 coaxial contacts for plug</p> 
NX10-001 DAUGHTER BOARD	<p>With Y0. male signal contacts and 10 coaxial contacts for plug</p> 
NX10-000 DAUGHTER BOARD	<p>With Y0. male signal contacts and 10 coaxial contacts for plug</p> 
NT05-002 MOTHER BOARD	<p>With Y09 female signal contacts and 5 coaxial contacts for receptacle</p> 
NT05-000 MOTHER BOARD	<p>With Y09 female signal contacts and 5 coaxial contacts for receptacle</p> 
NT10-000 MOTHER BOARD	<p>With Y09 female signal contacts and 10 coaxial contacts for receptacle</p> 

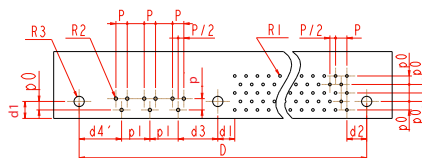
SIAL >> SIZE 12 COAXIAL VERSION (3)

LAYOUTS

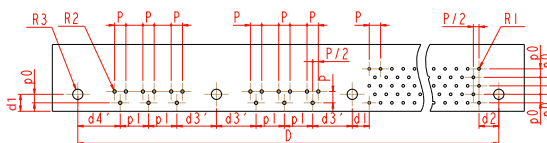
The boards are shown from the connector side
All contact locations are equidistant.



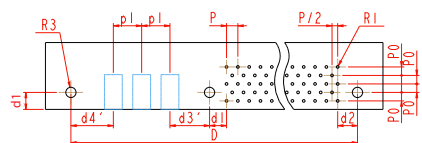
With Y male signal contacts and 3x320000 right angle dip solder coaxial contacts/plug

K(2)03-000
DAUGHTER
BOARD

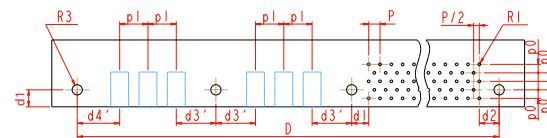
With Y0 male signal contacts and 6x320000 right angle dip solder coaxial contacts/plug

K(2)06-000
DAUGHTER
BOARD

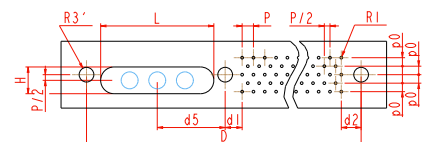
With Y male signal contacts and 3x900340 crimp coaxial contacts/plug

K(1)03-000
DAUGHTER
BOARD

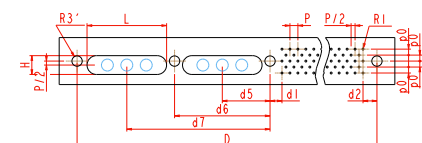
With Y0 male signal contacts and 6x900340 crimp coaxial contacts/plug

K(1)06-000
DAUGHTER
BOARD

With Y09 female signal contacts and 3 coaxial contacts/receptacle

KT03-000
MOTHER BOARD

With Y09 female signal contacts and 6 coaxial contacts/receptacle

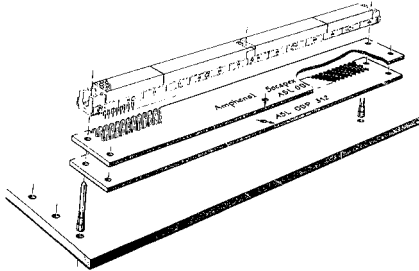
KT06-000
MOTHER BOARD

R_1	R_2	R_3	R_3'	p	$p/2$	p_1	p_0	$p_0/2$	L	H
$\emptyset 0.6_{\text{MIN}}$ [.024]	$\emptyset 0.75_{\text{MIN}}$ [.340]	$\emptyset 23^{+0.15}_{-0.1}$ [.091 ^{+.006} _{-.004}]	$\emptyset 33^{+0.15}_{-0.1}$ [.130 ^{+.006} _{-.004}]	2.54 [.100]	1.27 [.050]	6.35 [.250]	1.905 [.075]	0.9525 [.037]	25.4_{MAX} [1.000] 19_{MIN} [.748]	6_{MIN} [.236]
d_1	d_2	d_3	d_4	d_5	d_6	d_7	d_3'	d_4'		
3.81 [.150]	4.445 [.175]	7.62 [.300]	8.255 [.325]	15.24 [.600]	30.48 [1.200]	45.72 [1.800]	8.89 [.350]	9.525 [.375]		

All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >>> TOOLING

Receptacle mounting on mother board (Y09)

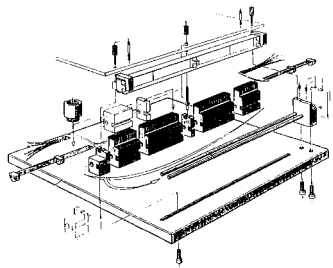


- Insertion of all connector sizes with Y09 dip solder contacts
- Into 0.6 mm [.024] thru plated holes
- Consult us for additional references

ASL ODP 058
ASL ODP 098
ASL ODP 116

ASL ODP 156
ASL ODP 254
ASL ODP 312

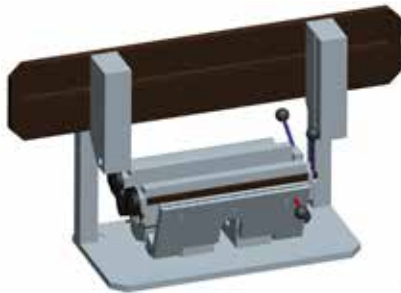
Plug mounting on daughter board (Y01 or Y02)



- Insertion of all connector sizes with Y01 or Y02 right angle dip solder contacts
- Into 0.6 mm [.024] thru plated holes
- Consult us for additional references

ASL ODI YC 312
ASL ODI YC 392

Plug mounting on daughter board (SMT)



- Insertion of all connector sizes with U04, U05, U06, U07 or U08 SMT contacts (Surface Mount Terminations)
- Consult us for additional references

ASL ODI SMT

Mounting tool for size 16 coax contacts



- On mother board or daughter board
- Consult us for additional references
- For ASLF *** NX05-002 and ASLF *** NX05-502 connectors, use the ASL ODP NX10 tool.

ASL ODP NX05

ASL ODP NX10

Extraction tool for coax contacts

Size 12



809839

Size 16



ASL OD COAX FEMELLE TAILLE 16

SIAL >>> TOOLING

CRIMPING TOOL FOR 12-SIZE COAX CONTACTS

Inner contact crimping tool



- For 12-size coaxial contacts
- Additional turret:
PN 809932 (M22520/2-34)
- Military reference : M22520/2-01

Part number

809801

Outer contact crimping tool




- For 12-size coaxial contacts
- Additional turret:
PN 809927 (M22520/31-02)
- Military reference : M22520/3-1-01

Part number

809926

INSERTION AND REMOVAL TOOLS FOR 12-SIZE COAX CONTACTS

Insertion tool




- Size 12
- Metallic

Part number

809838

Removal tool




- Size 12
- Metallic
- For 900340 and 900354 contacts

Part number

809839

Insertion/Removal tool




- Size 12
- Plastic

Part number

809859

Removal tool



- Size 12
- Metallic
- For 320001 contact

Part number

809933

SIHD

The monolithic connector for use with thermal clamps

The SIHD connector combines excellent electrical performances with high contact density within a robust housing, which can withstand extreme environmental conditions. In addition, the lateral displacement capability allows the use of thermal clamps for heat management, as well as a more relaxed positional tolerance on the backplane. The optional central ground strip provides cross talk protection and permits the routing of differential pairs. Contacts can be repaired and replaced individually.

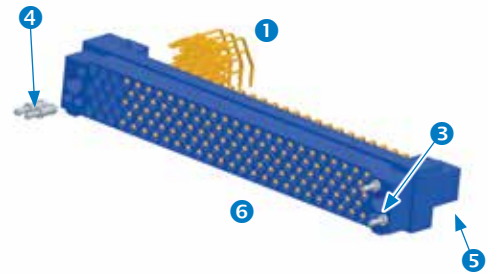
The ability to include ground strips

- Transmission of high-speed signals made easy by reducing self inductance with the inclusion of central ground strips
- Cross talk and self impedance levels reduced impedance 70Ω to 120Ω
- Capacitance distributed along signal contacts

Compatible with the use of thermal clamps

Its standard contact technology, already used in the SIAL connector, permits the lateral displacement (± 0.25 [.010]) of the pin into the socket without generating any stress on the contact termination on the PCB.

This feature allows the use of thermal clamps to keep the daughter board in position after mating, as well as the dissipation of energy generated by the components on the board from the heat sink (thermal drain) to the cold wall (liquid cooled) or to the chassis. The locking of the thermal clamps provides the lateral movement of the plug into the receptacle. The SIHD allows this lateral displacement of ± 0.25 [.010] without creating stress on the solder joints or on the contact area.



QUICK SELECTION GUIDE

Signal contacts 1	Ground Strip 2	Keying 4	Fittings 5	Housings 6
FEMALE  MALE 	 Reduced cross talk level Reduced self impedance level Capacitance distributed along signal contacts	250 positions available  10 or 6 holes Half of the pins on the plug Half of the pins on the receptacle	For receptacles: style A and B (guiding) For plugs: fixing on thermal drain or on PCB	Without ground strip: 128, 158, 256, 390 With ground strip: 102C, 204C, 230C
PAGE 30 PAGE 31	PAGE 31	PAGE 32	PAGE 33	PAGE 34

SIHD Series

Lateral displacement compatibility




SIHD Series


Table of contents

SIHD product range	98
Female signal contacts for plugs	26
Male signal contacts for receptacles	31
Ground strips	31
Guiding / Keying	32
Mating sequence	32
Realignment capability	32
Fixing accessories	33
SIHD without ground strip: typical arrangements	34
SIHD with ground strip: typical arrangements	35
SIHD without ground strip: layouts	35
SIHD with ground strip: layouts	37


The SIHD series serves various **markets**, including:




Commercial Avionics
& Airframe



Military Avionics & Airframe



Navy



Space

SIHD>>> GENERAL SPECIFICATIONS



- 2.54 [.100] staggered grid (1.27 [.050] offset), 1.905 [.075] between rows
- Lateral displacement capability allowing the use of thermal clamps: $\pm 0.25 [\pm .010]$
- Possibility to have a central ground strip
- Designed for severe mechanical environments
- Low weight

Main characteristics

- Medium density: 0.14 cts/mm² [90 cts / inch²]
- 7 variations: 5 rows from 102 to 390 signal contacts
- 3 A per signal contacts / DWV: 750* Vrms
- Lateral rails to protect the male contact from external damage
- Repairable contacts for easy maintenance

Markets



Main applications



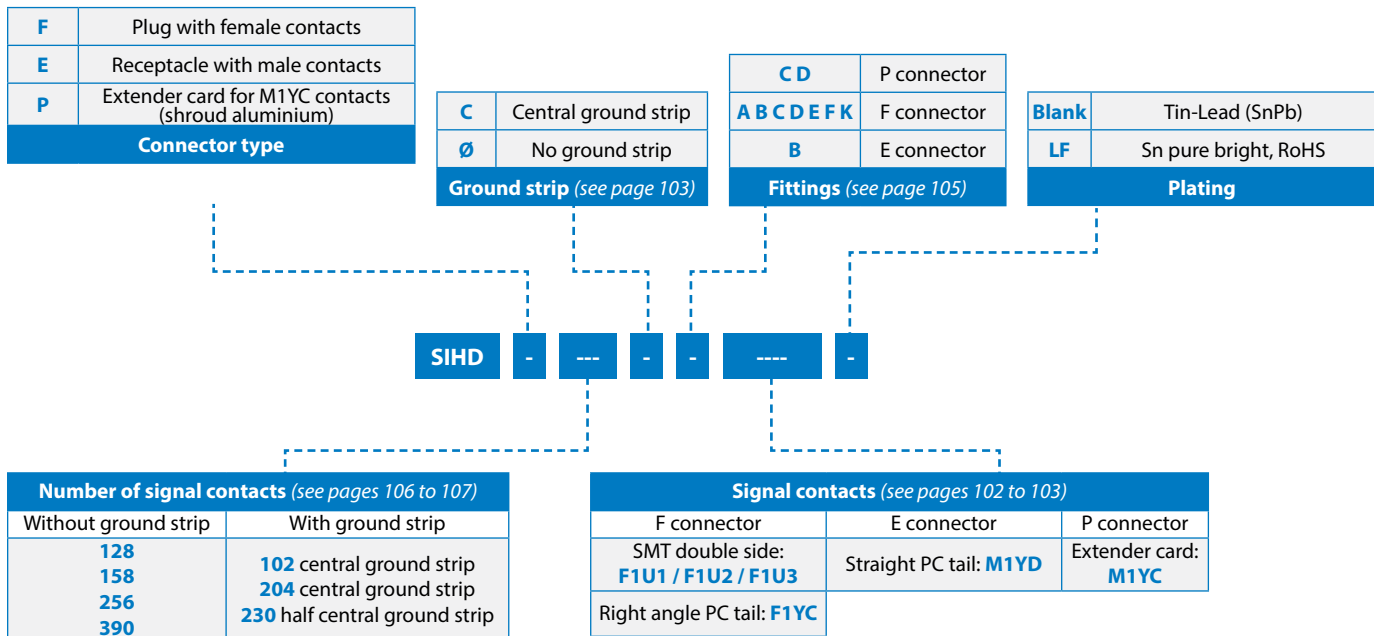
Terminations



Recommended configurations



How to order

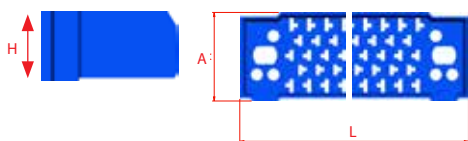


* 375Vrms only for F1U2 cts

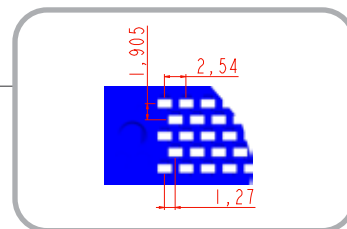
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD >>> TECHNICAL SPECIFICATIONS

Dimensional characteristics



H = 16.9 to 17.95 [.665 to .707] for plug
 H = 10.22 to 11.15 [.402 to .439] for receptacle
 A = 11.6 to 15 [.457 to .591]
 L = 77.86 to 221 [3.065 to 8.701]



Female contact



Cross cavity by Amphenol: lateral displacement compatible

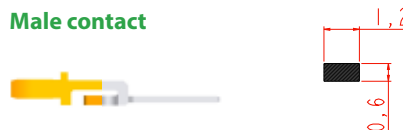
- Cross section of the lateral displacement of the male contact inside the female cavity
- Maintains 2 points of contact
- Allows a ± 0.25 [$\pm .010$] lateral displacement
- No stress on solder joints or on the contact area

Material: beryllium copper (stamped)

Plating:

- Terminations: tin lead or lead free on other contacts (F1U1, F1U2, F1U3, F1YC)
- Active contact area: gold over nickel

Male contact



Mating end size: 0.6 x 1.2 [.047 x .024]

Contact section (mating side): 0.72 mm² [.001 in²]

Material: phosphorous bronze (stamped)

Plating:

- Terminations - tin lead or lead free on other contacts (M1YD & M1YC)
- Active contact area - gold over nickel

Materials

- **Guiding devices:** passivated stainless steel 303
- **Polarizing pins:** passivated stainless steel 303
- **Plastic insert:** thermoset DAP, 40% glass fiber filled

MECHANICAL CHARACTERISTICS

Backoff ¹ (mm)	1
Mating force per contact (N)	0.58 _{MAX}
Unmating force per contact (N)	0.16 < F < 0.58
Durability cycles	500
Sinusoidal vibrations (10 to 2000 Hz) micro discontinuity 10ns	
- unloaded PCB	20 g
- loaded PCB	10 g
Random vibrations (50 to 2000 Hz) micro discontinuity 10ns	0.1 g ² / Hz
Shocks 6ms 1/2 sinus micro discontinuity 10ns	100 g
Recommended tightening torques	
- nuts for Ø 2 mm screws, brass m.N	0.2
- nuts for Ø 2.5 mm screws, brass m.N	0.25

ENVIRONMENTAL CHARACTERISTICS

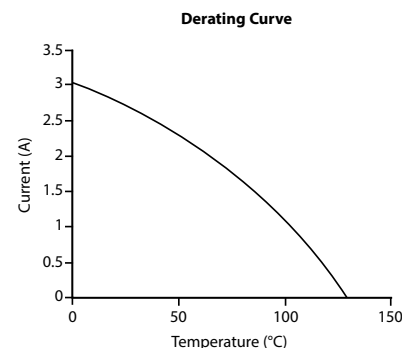
Thermal shocks (°C)	-55 / +125
Salt Spray (hours)	96
Humidity	
Days	56
Temperature (°C)	40
Humidity rate (%)	90-95

ELECTRICAL CHARACTERISTICS

Current rating per contacts (A)	3 - See derating curve
Insulation resistance (at 500Vdc) (GΩ)	5 _{MIN}
Contact resistance (mΩ)	12 _{MAX}
Dielectric Withstanding Voltage (Vrms)	750*
Capacitance between contacts (pF)	2.5 _{MAX}
Self induction (nH)	25 _{MAX}
Immunity against noise of groundings for connectors with central ground strips	Noise ≤ 400mV for 0.1 A intensity per contact and signal rise time of 2ns

* 375Vrms only for F1U2 cts

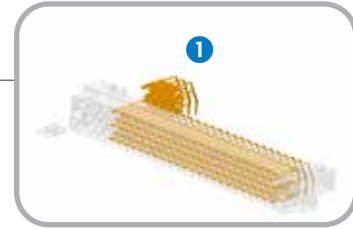
¹: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly



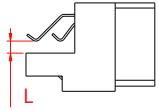
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD >>> SIGNAL CONTACTS (1)

FEMALE CONTACTS FOR PLUGS WITHOUT GROUND STRIP



Double sided SMT



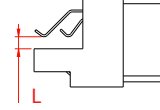
- SMT soldering
- Double sided daughter board
- Surface mount area: 0.7x0.8 [.028x.031]
- PCB thickness: 2.3 to 3.2 [.091 to .126]



Termination style

F1U1

Double sided SMT



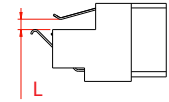
- SMT soldering
- Double sided daughter board
- Surface mount area: 0.7x0.8 [.028x.031]
- PCB thickness: 4.56 to 5.37 [.180 to .211]



Termination style

F1U2

Double sided SMT



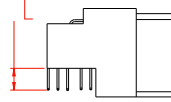
- SMT soldering
- Double sided daughter board, offset
- Surface mount area: 0.7x0.8 [.028x.031]
- PCB thickness: 1.8 to 2.65 [.071 to .104]



Termination style

F1U3

Right angle solder PC tail



- Thru hole soldering
- Daughter board
- PCB thickness
 - With heat sink: 2.9 to 3.41 [.114 to .134]
 - Without heat sink: 1.4 to 1.8 [.055 to .071]



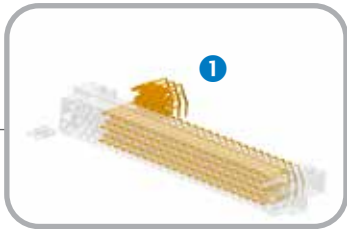
Termination style

F1YC

	F1U1	F1U2	F1U3	F1YC
L_{MAX}	3.21 [.126]	5.37 [.211]	2.65 [.104]	With heat sink: 4.4 [.173] Without heat sink: 2.8 [.110]
Termination section	0.6 x 0.25 [.024 X .010]			Ø 0.5 ± 0.03 [.020 ± .001]
Active contact area plating μm [μin]	2 [.080] Ni + 1 [.039] Au			
Termination plating μm [μin]	2 [.080] Ni + 7 [.276] SnPb or bright pure Sn for RoHS version			2 [.080] Ni + 3 [.118] SnPb or bright pure Sn for RoHS version

SIHD >>> SIGNAL CONTACTS & GROUND STRIP TECHNOLOGY (1 & 2)

MALE CONTACTS FOR RECEPTACLES WITHOUT GROUND STRIP (1)



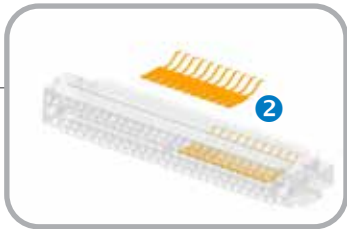
Straight solder PC tail

- Thru hole soldering
- Mother board
- PCB thickness: up to 4.3 ± 0.3 [.169 ± .012]

Termination style

M1YD

	M1YD
L	5.3 ± 0.3 [.209 ± .012]
Termination section	Ø 0.5 ± 0.03 [.020 ± .001]
Mating end size	1.2 x 0,6 [.024 x .047]
Active contact area plating µm [µin]	2 [.080] Ni + 1 [.039] Au
Termination plating µm [µin]	2 [.080] Ni + 3 [.118] SnPb or bright pure Sn for RoHS version



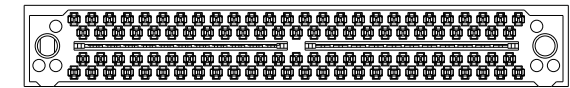
GROUND STRIP TECHNOLOGY (2)

Ground strip benefits



- Reduced cross talk level
- Impedance 70Ω to 120Ω
- Reduced self impedance level
- Capacitance distributed along signal contacts

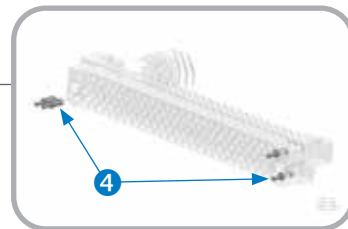
Central ground strip technology



Arrangements available: 102 & 204 signal contacts
Compatibility: M1YD, M1W3, F1YC, F1U1, F1U2 & F1U3

SIHD >>> KEYING

KEYING (4)



Polarizing pins



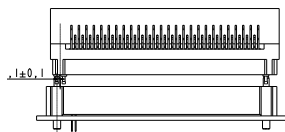
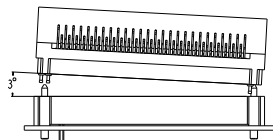
- 250 different positions available.
- Depends on the arrangement, plug and receptacle have 10 or 6 holes.
- For arrangements with 10 holes, 5 pins delivered with each connector.
- For arrangements with 6 holes, 3 pins delivered with each connector.
- If pins are located in opposite holes for both plug and receptacle, mating is not possible.

MATING SEQUENCE

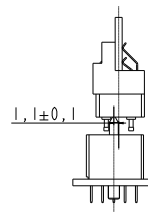
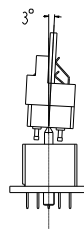
Guiding	Keying	Housing contact	Signal contact	Mated connector
8.3 [.327]	6.2 [.244]	5.5 [.217]	1 ± 0.3 [.039 ± .012] 1.2 [.047]	0

REALIGNMENT CAPABILITY

In the longitudinal axis



In the lateral axis



SIHD >>> FIXING ACCESSORIES (5)

FIXING ACCESSORIES FOR RECEPTACLES = GUIDING



B style

Receptacles with M1YD contacts are delivered with:

- 2 or 3 guides
- 2 or 3 washers
- 2 or 3 hexagonal nuts

Passivated stainless steel

SIHD E --- B M1YD	B
-------------------	----------

FIXING ACCESSORIES FOR PLUGS

PCB with a thermal drain

A style - For F1U1/F1U2 female contacts

- Mounted to heat sink
- PCB with a heat sink

Passivated stainless steel

SIHD F --- A F1U1	A
SIHD F --- A F1U2	

PCB without a thermal drain

D style - For F1YC female contacts

- Mounted to PCB
- PCB without a heat sink

Passivated stainless steel

SIHD F --- D F1YC	D
-------------------	----------

B style - For F1U1 female contacts

- Mounted to PCB
- PCB with a heat sink

Passivated stainless steel

SIHD F --- B F1U1	B
-------------------	----------

E style - For F1U3 female contacts

- Mounted to PCB
- PCB without a heat sink

Passivated stainless steel

SIHD F --- E F1U3	E
-------------------	----------

C style - For F1YC

- Mounted to PCB
- PCB with a heat sink

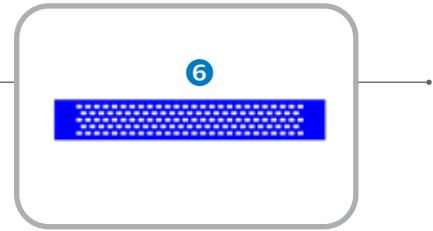
Passivated stainless steel

SIHD F --- C F1YC	C
-------------------	----------

Fixing accessories for plugs equipped with female contacts					
	A style	B style	C style	D style	E style
A_{MIN}	F1U1 4.16 [.164] F1U2 3.08 [.121]	F1U1 4.16 [.164]	F1YC 7.72 [.304]	F1YC 7.62 [.300]	F1U3 7.61 [.300]

All dimensions are given for information only and are in mm [inch], except as otherwise specified

TYPICAL ARRANGEMENTS



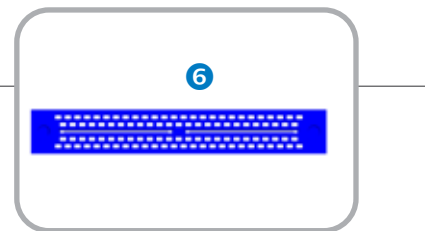
	Plug	Receptacle
128		
158		
256		
390		

Nb of contacts	128		158		256		390	
	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle
C	63.5 [2.500]		78.74 [3.100]		63.5 [2.500]		96.52 [3.800]	
D	71.12 [2.800]		86.36 [3.400]		71.12 [2.800]		106.68 [4.200]	
E _{MAX}	77.86 [3.065]	78.38 [3.086]	93.1 [3.665]	93.62 [3.686]	148.98 [5.865]	149.5 [5.886]	220.35 [8.675]	221 [8.701]
h _{MAX}	11.6 [.457]	12.4 [.488]	11.6 [.457]	13.4 [.528]	11.6 [.457]	12.4 [.488]	11.75 [.463]	15 [.591]
D'	72.39 [2.850]	/	87.63 [3.450]	/	71.755 [2.825]	/	106.68 [4.200]	/
I _{MAX}	16.9 [.665]	10.3 [.406]	16.9 [.665]	11.15 [.439]	16.9 [.665]	10.3 [.406]	17.95 [.707]	10.2 [.402]

All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD >>> WITH GROUND STRIP (6)

TYPICAL ARRANGEMENTS



	Plug	Receptacle
128		
204		
230		

	Plug			Receptacle		
Nb of contacts	102	204	230	102	204	230
C	63.5 [2.500]					
D	71.12 [2.800]					
E _{MAX}	77.86 [3.065]	148.98 [5.865]		78.38 [3.086]	149.5 [5.886]	
h _{MAX}	11.6 [.457]			12.4 [.488]		
D'	72.39 [2.850]	71.755 [2.825]		/		
l _{MAX}	16.9 [.665]			10.3 [.406]		

All dimensions are given for information only and are in mm [inch], except as otherwise specified

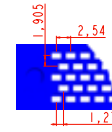
SIHD >>> WITHOUT GROUND STRIP (6)

LAYOUTS

The boards are shown from the connector side.

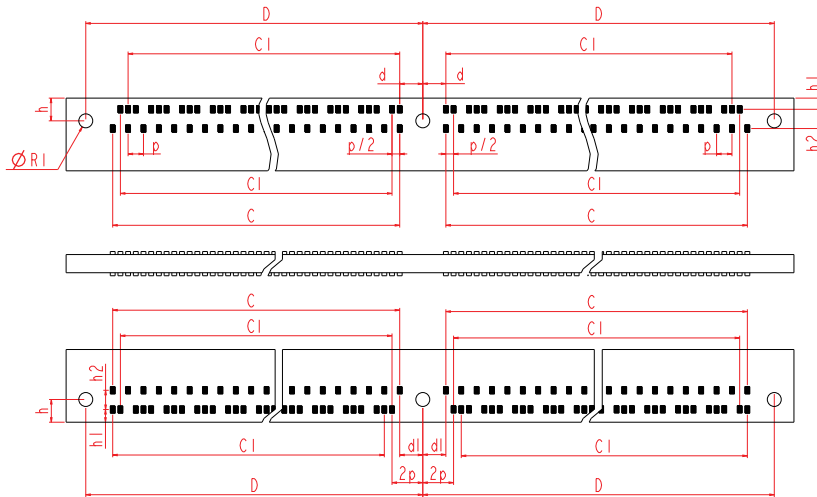
All contact locations are equidistant.

n indicates the total number of signal contacts.



F1U1/F1U2 CONTACT (female for plug)*

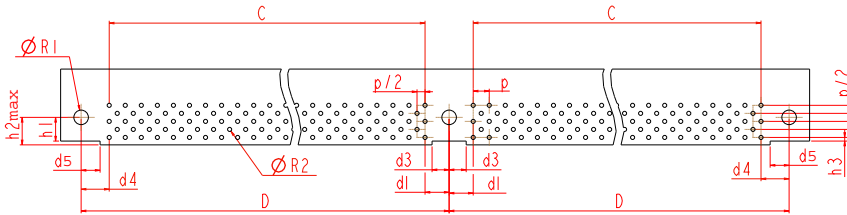
n = 128, 158, 256 or 390



C₁	$C - p = C - 2.54$
C	See pages 94 & 95
D	See pages 94 & 95

F1YC CONTACT (female for plug)*

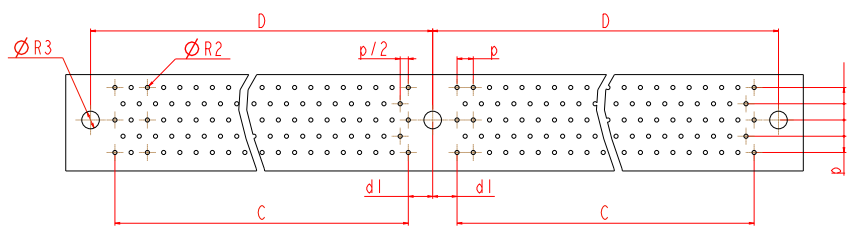
n = 128, 158, 256 or 390



C	See pages 94 & 95
D	See pages 94 & 95

M1W3/M1YD (male for receptacle)*

n = 128, 158, 256 or 390



C	See pages 94 & 95
D	See pages 94 & 95

R1	R2	R3	h	h1	h2	h3	h2 _{MAX}	
Ø 2.3 ^{+0.05 +0} [.091 ^{+0.02 +0}]	Ø 0.7 _{MIN} [.028] 0.9 _{MIN} for W3 contacts	Ø 2.75 ^{+0.05 +0} [.108 ^{+0.02 +0}]	3.75 [.148]	1.845 [.073]	3.175 [.125]	0.575 [.023]	4.35 _{MAX} [.171]	
d1	d2	d3	d4	d5	p1	p	2p	p/2
3.81 [.150]	4.445 [.175]	2.7 ^{+0.1 +0} [.106 ^{+0.04 +0.00}]	4.47 [.176]	3 ± 0.1 [.118 ± .004]	1.905 [.075]	2.54 [.100]	5.08 [.200]	1.27 [.050]

* in mm: 1mm = 0.03937 inch

All dimensions are given for information only and are in mm [inch], except as otherwise specified

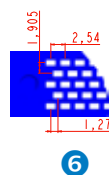
SIHD >>> WITH GROUND STRIP (6)

LAYOUTS

The boards are shown from the connector side.

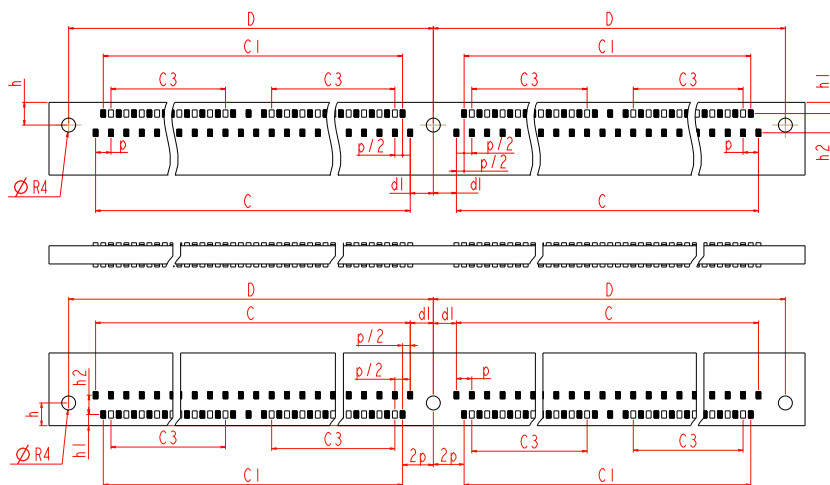
All contact locations are equidistant.

n indicates the total number of signal contacts.



F1U1/F1U2 CONTACT (female for plug)*

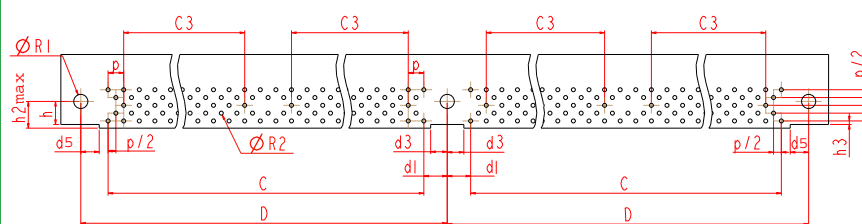
n = 102, 204 or 230



C_1	$C - p = C - 2.54$
C_3	$(C - 5p) / 2$
C	See pages 94 & 95
D	See pages 94 & 95

F1YC CONTACT (female for plug)*

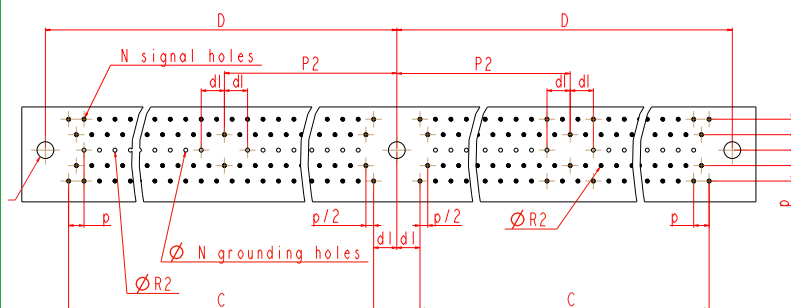
n = 102, 204 or 230



C_1	$C - p = C - 2.54$
C_3	$(C - 5p) / 2$
C	See pages 94 & 95
D	See pages 94 & 95

M1W3/M1YD (male for receptacle)*

n = 102, 204 or 230



P_2	$C / 2$
C	See pages 94 & 95
D	See pages 94 & 95

R1	R2	R3	R4	p1	p	2p	p/2
$\varnothing 2.3^{+0.05}_{+0.002}$ [.091 ⁺ ₀]	$\varnothing 0.7^{+0.05}_{-0.002}$ MIN [.028] 0.9 MIN for W3 contacts	$\varnothing 2.75^{+0.05}_{+0.002}$ [.108 ⁺ ₀]	$\varnothing 2.7_{MAX}$ [.106]	1.905 [.075]	2.54 [.100]	5.08 [.200]	1.27 [.050]
d1	d3	d5	h	h1	h2	h3	h2 _{MAX}
3.81 [.150]	$2.7^{+0.1}_{+0}$ [.106 ⁺ ₀]	3 ± 0.1 [.118 ± .004]	3.75 [.148]	1.845 [.073]	3.175 [.125]	0.575 [.023]	4.35_{MAX} [.171]

* in mm: 1mm = 0.03937 inch

All dimensions are given for information only and are in mm [inch], except as otherwise specified

NOTES

ABOUT AMPHENOL

Founded in 1932, **Amphenol** is one of the largest manufacturers of interconnect products in the world. The company designs, manufactures, and markets electrical, electronic, and fiber optic connectors, interconnect systems, and coaxial and specialty cables.

Amphenol has a diversified presence as a leader in high growth areas of the interconnect industry and provides solutions for customers in the automotive, broadband, industrial, information technology and data communications, military and aerospace, mobile devices, and mobile networks markets.

More info on www.amphenol.com

Amphenol
ENABLING THE ELECTRONICS REVOLUTION

Europe

FRANCE	Amphenol AIR LB	2 rue Clément Ader, ZAC de Wé - 08110 Carignan	+33 3 24 22 78 49
FRANCE	Amphenol SEFEE	Z.I. des Cazes – BP243 - 12402 Saint-Affrique Cedex	+33 5 65 98 11 00
GERMANY	Amphenol AIR LB GMBH	Am Kleinbahnhof 4 - 66740 Saarlouis	+49 6831 981 00
ITALY	Amphenol EUROPEAN SALES OPERATIONS	Via Barbaiana n.5 - 20020 Lainate - Milano	+39 293 254 214
UNITED KINGDOM	Amphenol INVOTEC	Unit 1-3, Hedging Lane Industrial Estate, Dosthill - Tamworth, B77 5HH	+44 1827 263 000
UNITED KINGDOM	Amphenol IONIX SYSTEMS	Prospect House, Taylor Business Park, Risley, Warrington, WA3 6HP	+44 1 942 685 200
UNITED KINGDOM	Amphenol LTD	Thanet Way, Whitstable - KENT, CT53JF	+44 1227 773 200
UNITED KINGDOM	Amphenol MARTEC	St Augustines Business Park, Swalecliffe Whitstable - Kent CT5 2QJ	+44 1227 793 733

North America

CANADA	Amphenol CANADA	605 Milner avenue - Toronto, Ontario	+1 416 291 0647
USA	Amphenol AEROSPACE OPERATIONS	40-60 Delaware street - Sidney, NY 13838	+1 800 678 0141
USA	Amphenol BORISH TECHNOLOGIES	4511 East Paris AVE - Grand Rapids, MI 49512	+1 616 554 9820
USA	Amphenol FSI	1300 Central Expwy N, Suite 100 - Allen, TX 75013	+1 214 547 2400
USA	Amphenol GRIFFITH ENTERPRISES	6000 East Coury Drive - Cottonwood, AZ 86326	+1 928 634 3685
USA	Amphenol NEXUS TECHNOLOGIES	50 Sunnyside Avenue - Stamford, CT 06902	+1 203 327 7300
USA	Amphenol PCD	72 Cherry Hill Drive - Beverly, MA. 01915	+1 978 624 3400
USA	Amphenol PRINTED CIRCUIT	Board Technology, 91 Northeastern Boulevard - Nashua, NH 03062	+1 603 324 4500
USA	Amphenol SV MICROWAVE	2400 Centrepark West Drive - West Palm Beach, FL	+1 561 840 1800
USA	Amphenol TIMES MICROWAVE	358 Hall Avenue - Wallingford, CT 06492	+1 800 867 2629

Asia

CHINA	Amphenol PCD CO.	Building 21, 1 st Liao Keng Industrial Zone, Shi Yan Street - Bao An District - Shenzhen 518108	+86 755 8173 8000/8286
INDIA	Amphenol INTERCONNECT INDIA	105 Bhosari Industrial Area - Pune 411 026	+91 20 27120363
JAPAN	Amphenol JAPAN	471-1, Deba, Ritto-City - Shiga 520 3041	+81 77 553 8501
KOREA	Amphenol DAESHIN	558 SongNae-Dong SoSa-Gu, Bucheon-city, Kyunggi-Do - 420-130	+81 32 610 3830/3845
SINGAPORE	Amphenol EAST ASIA	26/F, Railway Plaza, 39 Chatham Road South, Tsim Sha Tsui, Kowloon, Hong Kong	+65 6294 2128

Other Areas

AFRICA	Amphenol AFRICA	30 Impala Rd - Sandton 2146	+27 82 410 5179
ARGENTINA	Amphenol ARGENTINA	Av. Callao 930 2do piso Oficina B "Plaza" C1023 - AAP Buenos Aires	+54 11 4815 6886
AUSTRALIA	Amphenol AUSTRALIA PTY	2 Fiveways Blvd., Keysborough - Melbourne - Victoria 3173	+61 3 8796 8888
BRAZIL	Amphenol DO BRAZIL	Rua Diogo Moreira, 132, 20 andar, rooms 2001-2-3	+55 11 3815 1003
ISRAEL	Amphenol BAR-TEC	3 Hagavish Street, K fir-Barkan Bldg. East Industrial Zone - Kfar-Sava, 44102	+972 9 764 4100
MEXICO	Amphenol OPTIMIZE	Carretera Internacional Km 6.5, Col. Parque Industrial, Nogales, Sonora, C.P. 84094	+52 631 311 160
NEW ZEALAND	Amphenol PHITEK	Level 4, 2 Kingdon Street, Newmarket, Auckland 1023	+64 9 524 2984
RUSSIA	Amphenol RUSSIA	Yaroslavskaja Street 8 - 129164 Moscow	+7 495 937 6341
TURKEY	Amphenol TURKEY	Sun Plaza 15 Kat: 15 Maslak Hah. Bilim Sok. No.5 - Sisli/Istanbul, 34398	+90 212 367 92 19

Amphenol SOCAPEX



Amphenol Socapex

948, promenade de l'Arve BP29
74311 Thyez Cedex - France
+33 (0)4 50 89 28 00
contact@amphenol-socapex.fr
www.amphenol-socapex.com



For Technical Support

+33 (0)4 50 89 28 49
technicalsupport@amphenol-socapex.fr



To buy our products

+33 (0)4 50 90 28 00
contact@amphenol-socapex.fr
www.amphenol-socapex.com/amphenol/sales
Request a quote online at www.amphenol-socapex.com/quotation_request



Documentation

www.amphenol-socapex.com/documentation
To order a paper version of our catalogs, send an e-mail to communication@amphenol-socapex.fr

Check our product
inventory



Product Selectors
& 3D Files



NEW



www.amphenol-socapex.com

Follow Amphenol Socapex on social media :



This catalog uses paper from managed forests, PEFC & FSC labels, and is printed by a printer certified "Imprim'Vert®"

We reserve the right to modify our products in any way we deem necessary.
Any duplication is prohibited, unless approved in writing.

Designed by Amphenol Socapex
PDF Only - February 2023