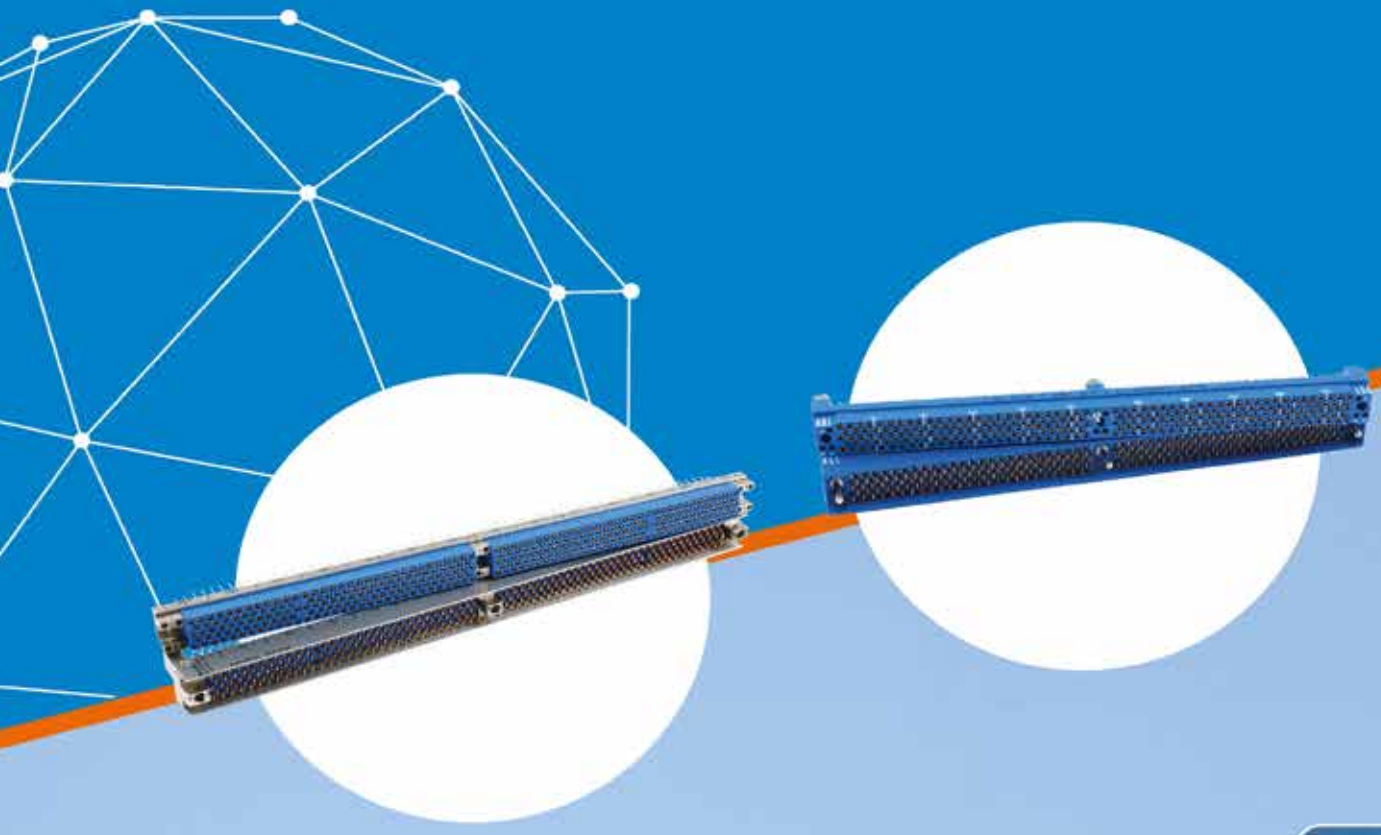
Amphenol SOCAPEX

SIAL - SIHD

PCB Connectors

Board-to-Board Interconnect Solutions



www.amphenol-socapex.com

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NOTES

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.**

1400+
employees

142 M€
Net Sales 2023
70% Export - 30% 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

Defense

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)

LRQA CERTIFIED ISO 9001 — Certified Management System
LRQA CERTIFIED AS 9100 — Certified Management System
LRQA CERTIFIED AQAP 2110 — Certified Management System
LRQA CERTIFIED ISO 14001 — Certified Management System

Our memberships

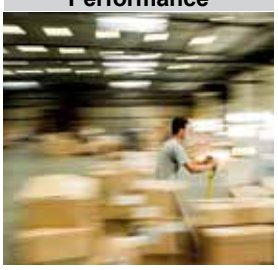
Member of CMG (Connecting Manufacturing Group) Consortium

GICAT MEMBER
GIFAS
acsiel
Réseau GREEN Arve Mont Blanc
CIMES

CUSTOMER EXPERIENCE

▸ 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

Customer Proximity	Design Expertise	Quality Commitment	On Time Delivery Performance	Compliance management
				

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.

NEW

Check our product inventory

Product Selectors & 3D Files

OUR HISTORY

1947

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

1956-57

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

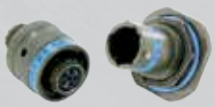
Early 1960's

- 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 launch, "Award Electronica"

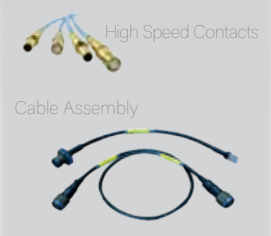
2005

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.**

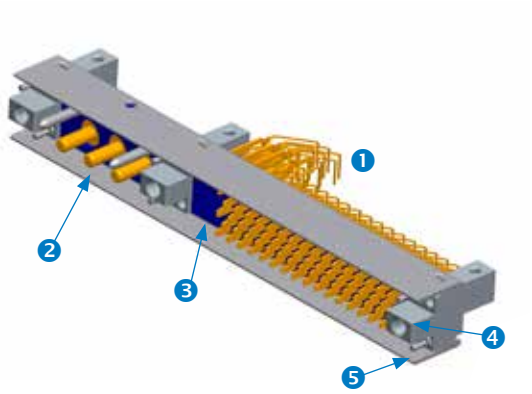
SIAL

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 ❶	Coax contacts ❷	Modules ❸	Fittings & Guiding ❹	Keying ❺
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** **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

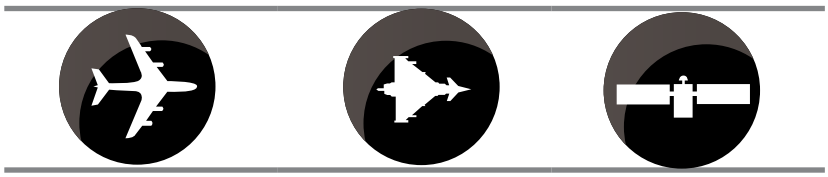
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL Series

Lateral displacement compatibility

Table of contents

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 [± .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
- 6 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 *Standard version For E and F types*
Blank	Non conductive fitting *Test versions and specifics*

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 with 5 right & left coax
501	ASL E with 5 right & left coax
000	ASL F with coax after signal contacts
002	ASL F with coax before signal contacts
500	ASL E with coax after signal contacts
502	ASL E with coax before signal contacts

Deviation

ASL	-	---	---	-	--	---	---	--

Blank: Tin lead
LF: Lead free

Termination plating

Number of signal contacts *(see page 16)*

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)
116	370	196 (+5)
	392	254 (+5)

Signal contacts *(see pages 12 to 13)*

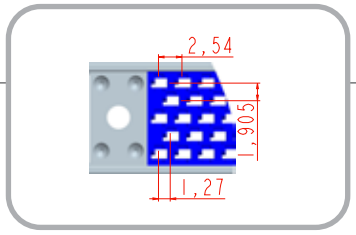
	Male contact	Female contact
E		Y09, Y19
F	Y01, Y02, Y04, U04, U05, U06, U07, U08	
T		Y01, Y02, Y04, U04, U05, U06, U07, U08
P		Y01, Y02, Y04, U04, U05, U06, U07, U08
S	Y03 Y02 Y04	

Number of coax contacts *(see page 21)*

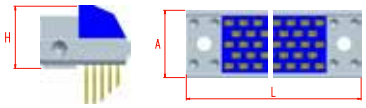
Size	Number of coax
12	03
16	05 10
No coaxial contact	Blank

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

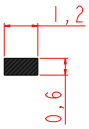
- Cross section of the lateral displacement of the male contact inside the female cavity
- Maintains 2 points of contact
- Allows a ± 0.25 [± .010] lateral displacement
- No stress on solder joints or on the contact area

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*

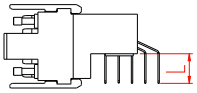
[1]: When both connectors are fully mated, the backoff is the maximum distance the connectors can be unmated while functioning properly

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

SIAL >>> SIGNAL CONTACTS (1)

MALE CONTACTS FOR PLUGS

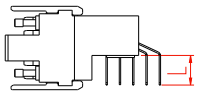
Right angle PC tail



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

Termination style **Y01**

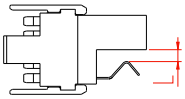
Right angle PC tail



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

Termination style **Y02**

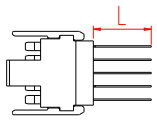
SMT double side PCB, centered



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

Termination style **U04**

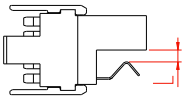
Straight PC tail



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

Termination style **Y04**

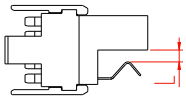
SMT double side, centered



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

Termination style **U06**

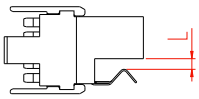
SMT double side, centered



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

Termination style **U05**

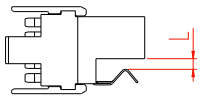
SMT double side, off centered



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

Termination style **U08**

SMT double side, off centered



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

Termination style **U07**

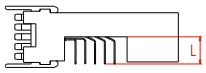
	Y01	Y02	Y04	U04	U05	U06	U07	U08
L_{MAX}	4.2 ± 0.2 [.165 ± .008]	3.7 ± 0.2 [.146 ± .008]	6 [.236]	2.6 ± 0.235 [.102 ± .009]	2 ± 0.2 [.079 ± .008]	1.6 ± 0.160 [.063 ± .006]	2.44 ± 0.42 [.096 ± .016]	2.6 ± 0.235 [.102 ± .009]
Termination section	Ø 0.4 ± 0.03 [.016 ± .001]			0.3 x 0.8 [.012 x .031]				
Mating 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

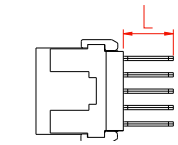


- Thru hole soldering
- Daughter board
- PCB thickness: 1.6 ± 0.16 [.063 ± .006]

Termination style	Y03

FEMALE CONTACTS FOR RECEPTACLES

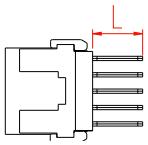
Straight PC tail, standard length



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

Termination style	Y09

Straight PC tail, short length

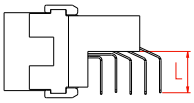


- Thru hole soldering
- Mother board
- PCB thickness: up to 2 ± 0.2 [.079 ± .008]

Termination style	Y19

FEMALE CONTACT FOR EXTENDER RECEPTACLES

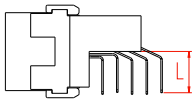
Right angle PC tail, short length



- 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

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SIAL >>> SPECIAL CONTACTS (❷)

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

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

SIAL >> SPECIAL CONTACTS (❷)

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

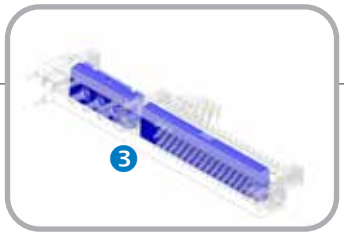
- For 3-cavity module
- Standard designation: M39029 / 27 - 210
- Size 12: 0 to 3 GHz – 50 Ω
- With lateral displacement

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.

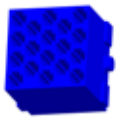
All dimensions are given for information only and are in mm [inch], except as otherwise specified

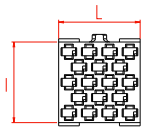
SIAL >> MODULES (3)



SIGNAL MODULES

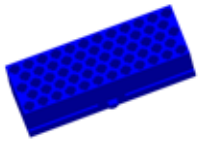
18 signal contacts

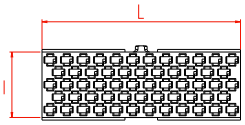




- Arrangement available:
  - 18
  - 18 x 2 = 36
  - 18 + 58 = 76

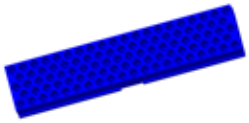
58 signal contacts

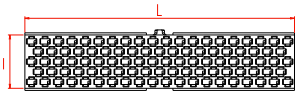




- Arrangement available:
  - 58
  - 58 + 18 = 76
  - 58 x 2 = 116
  - 58 + 98 = 156
  - 58 x 2 + 98 = 214
  - 58 + 98 x2 = 254
  - 58 x 2 + 98 x 2 = 312
  - 58 x 3 + 98 x 2 = 370

98 signal contacts

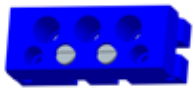


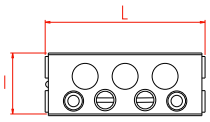


- Arrangement available:
  - 98
  - 98 + 58 = 156
  - 98 x 2 = 196
  - 98 + 2 x 58 = 214
  - 98 x 2 + 58 = 254
  - 98 x 2 + 58 x 2 = 312
  - 98 x 2 + 58 x 3 = 370
  - 98 x 4 = 392

HYBRID MODULES

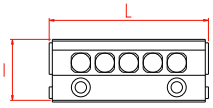
3 coax contacts – size 12





- 3-cavity module for 12-size coaxial contact
- Arrangement available:
  - 3 + 18
  - 3 + 58
  - 3 + 98

5 coax contacts – size 16

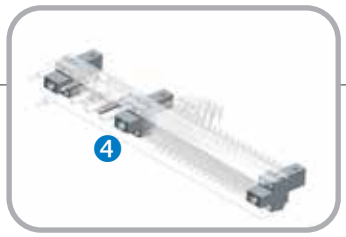


- 5-cavity module for 16-size coaxial contact
- Arrangement available:
  - 5 x 2 + 98 + 58
  - 5 x 2 + 98 x 2
  - 5 x 2 + 98 x 2 + 58

	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 Plug		10.05 [.396] 10.8 [.425]		9.95 [.392] 10.8 [.425]	

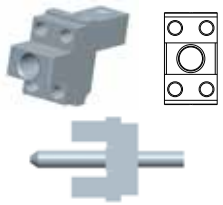
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >>> FITTINGS/GUIDING & KEYING (❹ & ❺)



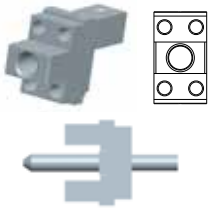
FITTINGS / GUIDING (❹)

A- centered end fittings



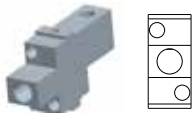
- 1 centered end fitting at one end of the connector
- Max length: 6, 35 [.250]
- Male guide pin on receptacle
- Female centered hole on plug
- 4 holes for polarizing

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

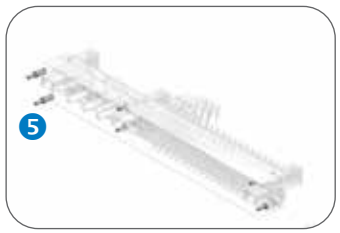
With coaxial contacts

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

KEYING (❺)

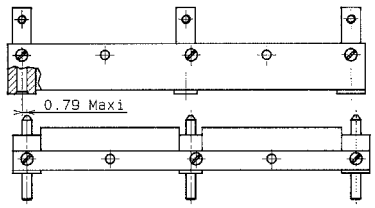
Polarizing pins

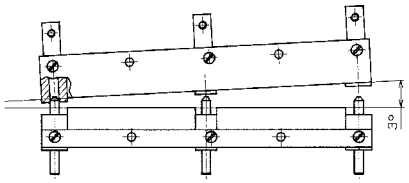
- 2 pins at each end fitting for the plug / 2 pins at each end fitting for the receptacle
- 1 pin at each central fitting for the plug / 1 pin at each central fitting for the receptacle
- Identification of keying cavities: clockwise for the plugs, counterclockwise on the receptacle
- A,B,C,D on A fitting,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



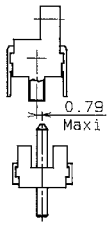
REALIGNMENT CAPABILITY

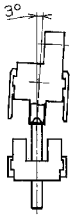
In the longitudinal axis



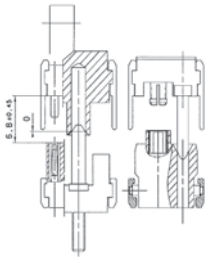
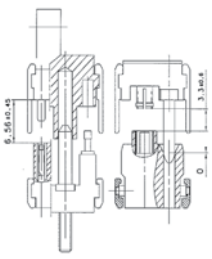
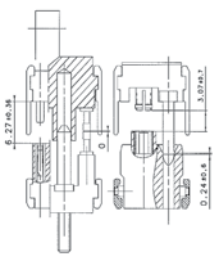
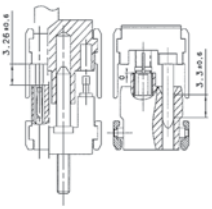
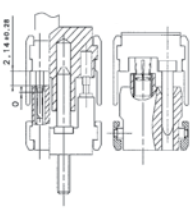
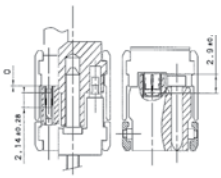


In the lateral axis





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]

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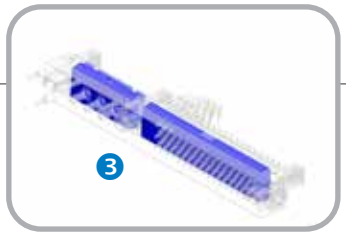
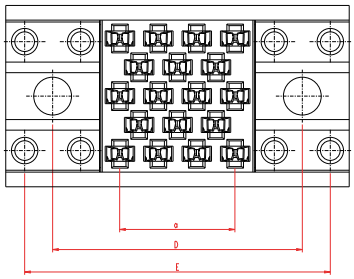
SIAL >> SIGNAL VERSION (❸)

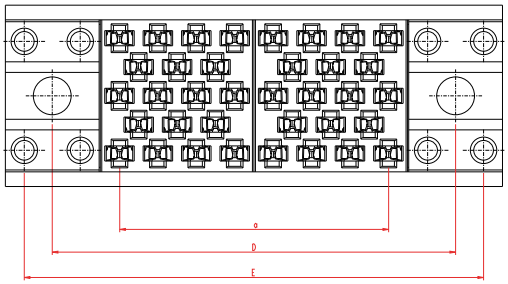


TYPICAL ARRANGEMENTS

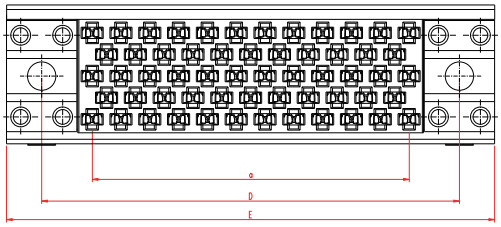
18 signal contacts



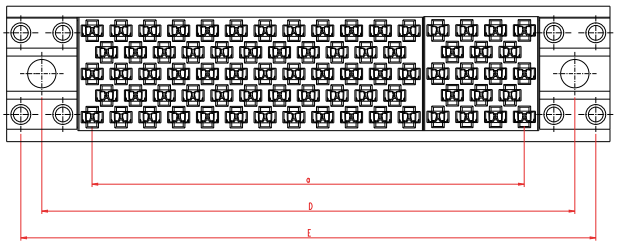
36 signal contacts



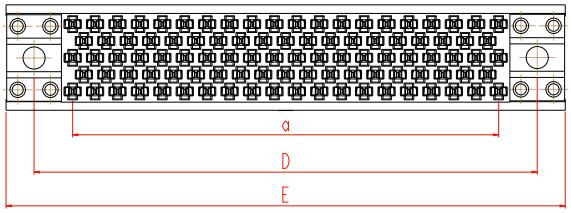
58 signal contacts



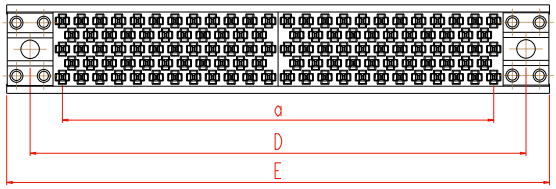
76 signal contacts



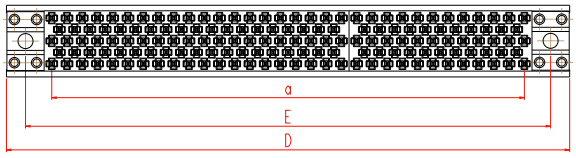
98 signal contacts



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]

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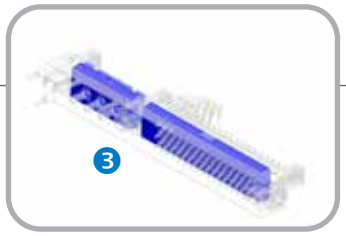
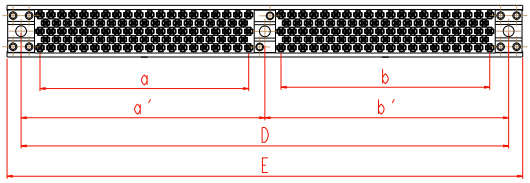
SIAL >> SIGNAL VERSION (❸)

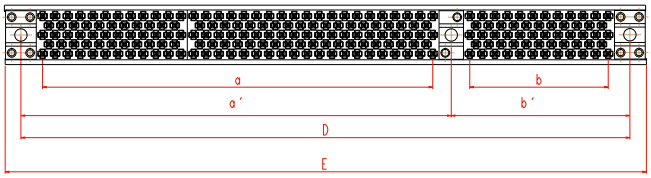


TYPICAL ARRANGEMENTS

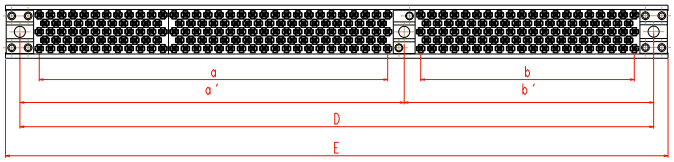
196 signal contacts



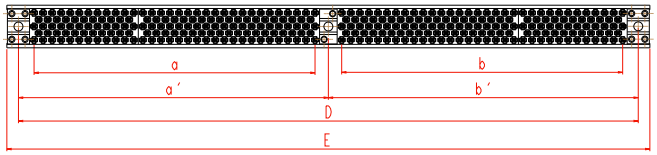
214 signal contacts



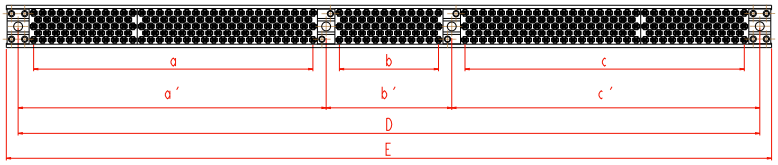
254 signal contacts



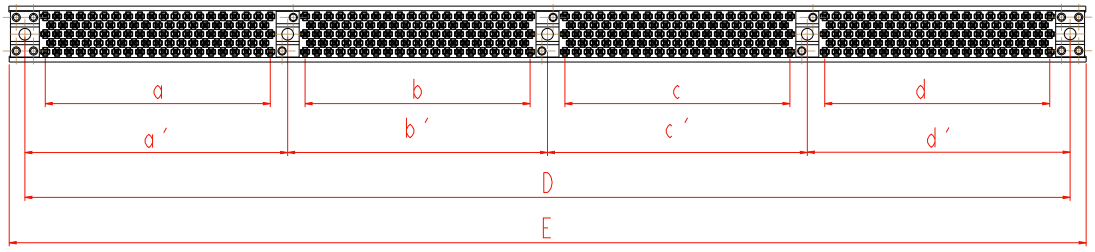
312 signal contacts



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]

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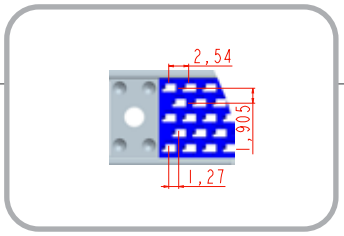
SIAL >> SIGNAL VERSION (❸)

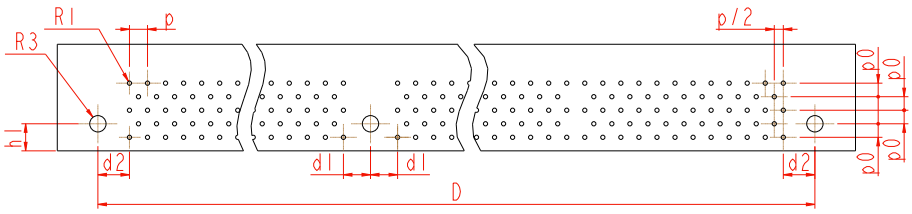


LAYOUTS

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

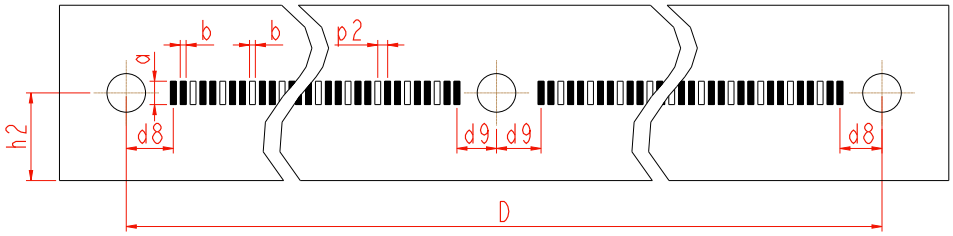
With Right Angle PC tail signal contacts for plug

DAUGHTER BOARD



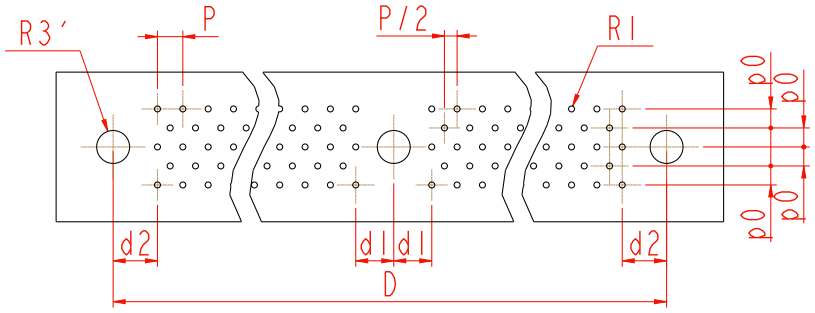
With SMT signal contacts for plug

DAUGHTER BOARD



With Straight PC tail signal contacts for receptacle

MOTHER BOARD

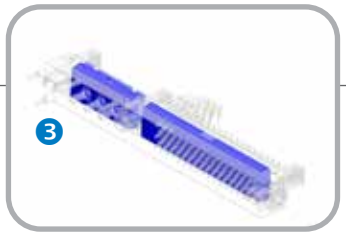


R_1	R_3	R_3'	p	p/2	p_0	p_2	d_1	d_2	d_8	d_9	a	b	h_1	h_2
Ø 0.6 MIN [.024]	Ø $2.3^{+0.15}_{-0.1}$ [.091 $^{+.006}_{-.004}$]	Ø 3.3 [.130]	2.54 [.100]	1.27 [.050]	1.905 [.075]	0.85 [.033]	3.81 [.150]	4.445 [.175]	4.02 [.158]	3.39 [.133]	2 MAX [.079]	0.5 MAX [.020]	3.81 [.150]	3.81 [.150]

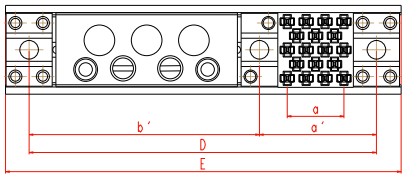
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIAL >> COAXIAL VERSION (❸)

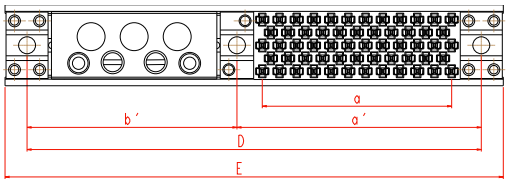
TYPICAL ARRANGEMENTS



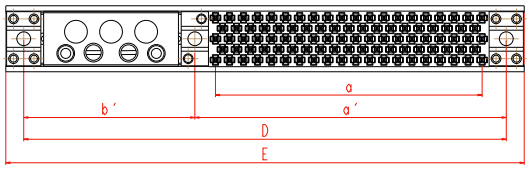
18 signal contacts + 3 coax



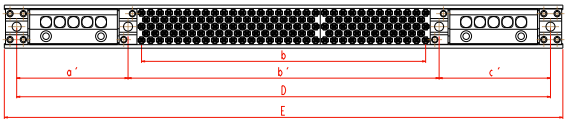
58 signal contacts + 3 coax



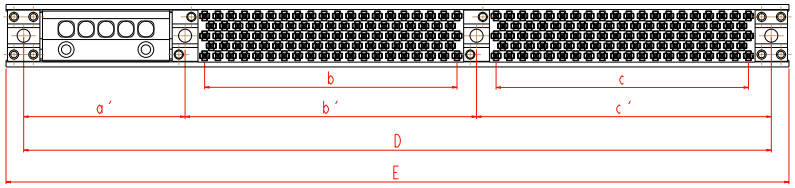
98 signal contacts + 3 coax



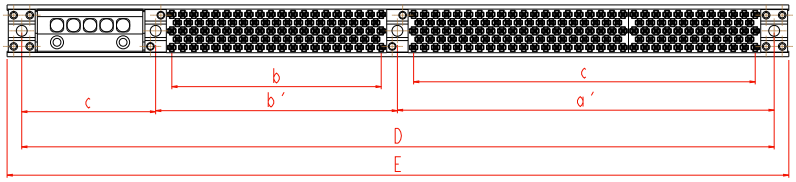
5 coax + 156 signal contacts + 5 coax



196 signal contacts + 5 coax



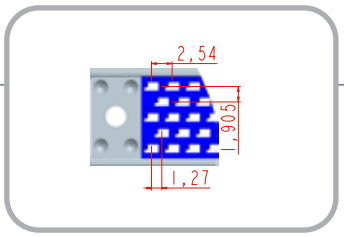
254 signal contacts + 5 coax



	18 + 3	58 + 3	98 + 3	5 + 156 +5	196 + 5	254 + 5
D	46.99 [1.850]	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]	93.98 [3.700]	154.94 [6.100]	149.86 [5.900]	180.34 [7.100]
a	7.62 [.340]	27.94 [1.100]	48.26 [1.900]	/	48.26 [1.900]	81.28 [3.200]
a'	15.875 [.625]	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]	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

SIAL >> SIZE 16 COAXIAL VERSION (❸)

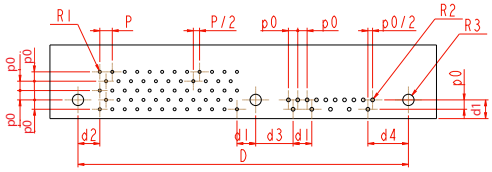


LAYOUTS

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

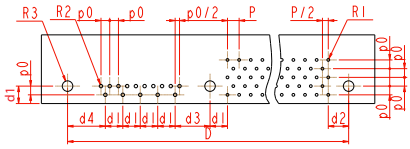
With Y0. male signal contacts and 5 coaxial contacts for plug

NX05-002 DAUGHTER BOARD



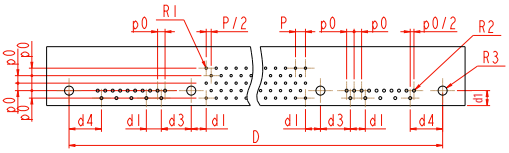
With Y0. male signal contacts and 5 coaxial contacts for plug

NX05-000 DAUGHTER BOARD



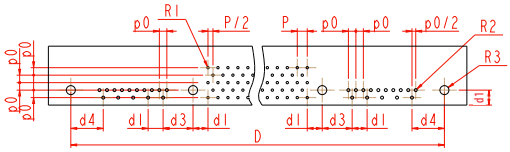
With Y0. male signal contacts and 10 coaxial contacts for plug

NX10-001 DAUGHTER BOARD



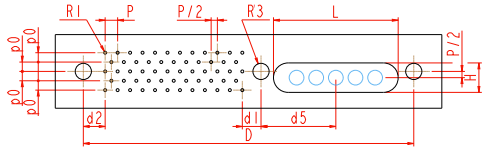
With Y0. male signal contacts and 10 coaxial contacts for plug

NX10-000 DAUGHTER BOARD



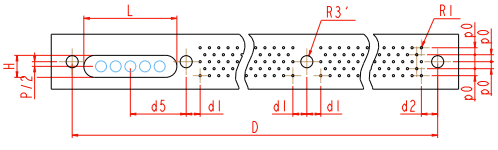
With Y09 female signal contacts and 5 coaxial contacts for receptacle

NT05-002 MOTHER BOARD



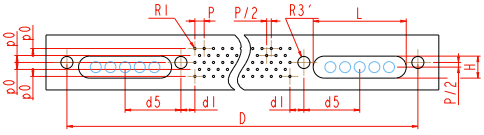
With Y09 female signal contacts and 5 coaxial contacts for receptacle

NT05-000 MOTHER BOARD



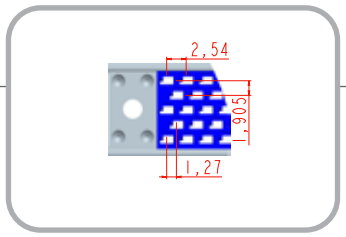
With Y09 female signal contacts and 10 coaxial contacts for receptacle

NT10-000 MOTHER BOARD



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

SIAL >> SIZE 12 COAXIAL VERSION (❸)

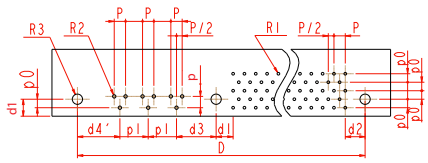


LAYOUTS

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

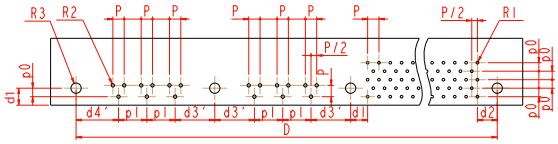
With Y0 male signal contacts and 3x320000 right angle dip solder coaxial contacts/plug

K(2)03-000 DAUGHTER BOARD



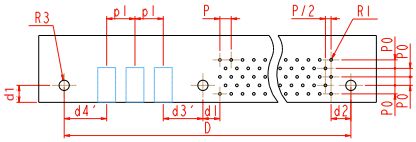
With Y0 male signal contacts and 6x320000 right angle dip solder coaxial contacts/plug

K(2)06-000 DAUGHTER BOARD



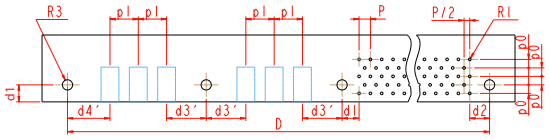
With Y0 male signal contacts and 3x900340 crimp coaxial contacts/plug

K(1)03-000 DAUGHTER BOARD



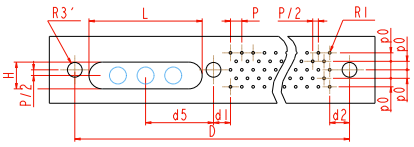
With Y0 male signal contacts and 6x900340 crimp coaxial contacts/plug

K(1)06-000 DAUGHTER BOARD



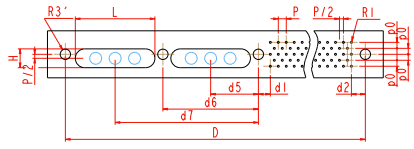
With Y09 female signal contacts and 3 coaxial contacts/receptacle

KT03-000 MOTHER BOARD



With Y09 female signal contacts and 6 coaxial contacts/receptacle

KT06-000 MOTHER BOARD



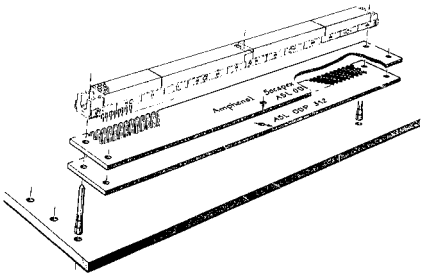
R_1	R_2	R_3	R_3'	p	p/2	p_1	p_0	$p_0/2$	L	H
Ø 0.6 MIN [.024]	Ø 0.75 MIN [.340]	Ø $2.3^{+0.15}_{-0.1}$ [.091 $^{+.006}_{-.004}$]	Ø $3.3^{+0.15}_{-0.1}$ [.130 $^{+.006}_{-.004}$]	2.54 [.100]	1.27 [.050]	6.35 [.250]	1.905 [.075]	0.9525 [.037]	25.4 MAX [1.000] 19 MIN [.748]	6 MIN [.236]

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

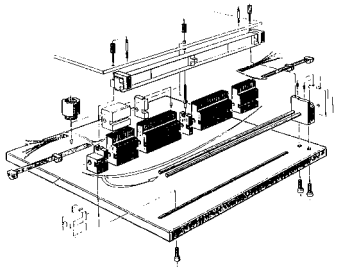
Receptacle mounting on mother board (Y09)



- 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

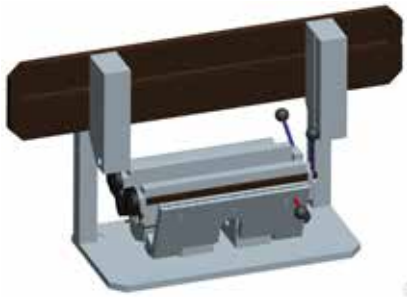
Plug mounting on daughter board (Y01 or Y02)



- 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 *** ** NXO5-002 and ASLF *** ** NXO5-502 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

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

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

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

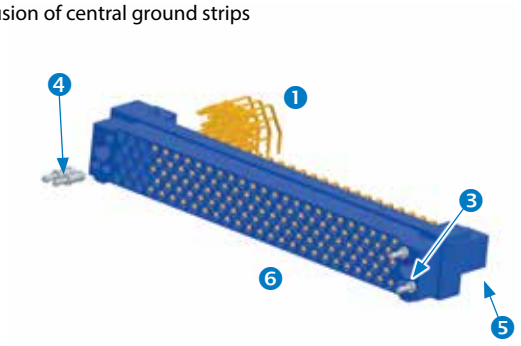
SIHD

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

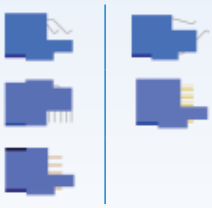
- Transmission of high-speed signals made easy by reducing self inductance with the inclusion of central ground strips
- Cross talk and self impedance levels reduced impedance 70Ω to 120Ω
- Capacitance distributed along signal contacts



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 ❶	Ground Strip ❷	Keying ❹	Fittings ❺	Housings ❻
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 B (guiding) **For plugs:** fixing on thermal drain or on PCB	**Without ground strip:** 128, 158, 256 **With ground strip:** 102C, 204C, 230C
PAGE 30 | PAGE 31	PAGE 31	PAGE 32	PAGE 33	PAGE 34

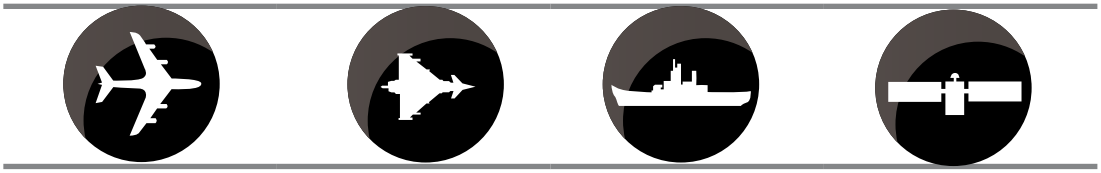
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD Series

Lateral displacement compatibility

Table of contents

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



Commercial Avionics & Airframe | Military Avionics & Airframe | Navy | Space

SIHD>>> GENERAL SPECIFICATIONS

MEDIUM DENSITY

- 2.54 [.100] staggered grid (1.27 [.050] offset), 1.905 [.075] between rows
- Lateral displacement capability allowing the use of thermal clamps: ± 0.25 [± .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 256 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

F	Plug with female contacts
E	Receptacle with male contacts
Connector type	

C	Central ground strip
Ø	No ground strip
Ground strip *(see page 31)*	

A B C D E	F connector
B	E connector
Fittings *(see page 33)*	

Blank	Tin-Lead (SnPb)
LF	Sn pure bright, RoHS
Plating	

SIHD	-	---	-	-	----	-

Number of signal contacts *(see pages 34 to 35)*	
Without ground strip	With ground strip
128 **158** **256**	**102** central ground strip **204** central ground strip **230** half central ground strip

Signal contacts *(see pages 30 to 31)*	
F connector	E connector
SMT double side: **F1U1 / F1U2 / F1U3**	Straight PC tail: **M1YD**
Right angle PC tail: **F1YC/F1YL**	

* 375Vrms only for F1U2 cts

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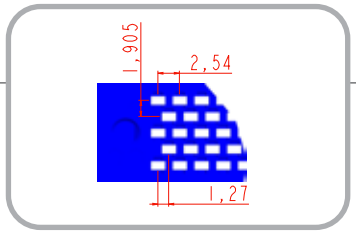
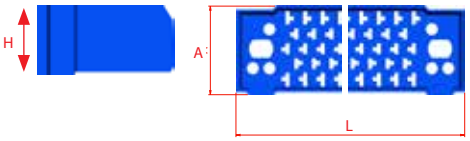
SIHD >>> TECHNICAL SPECIFICATIONS



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 [± .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, F1YL)
- Active contact area: gold over nickel

Male contact

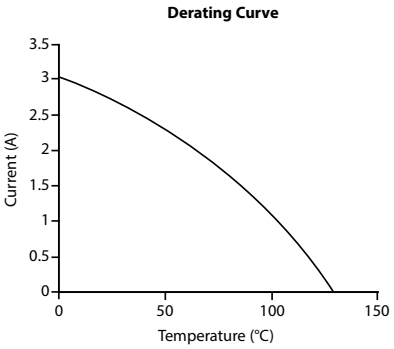
Mating end size: 0.6 x 1.2 [.047 x .024]
Contact section (mating side)**:** 0.72 mm² [.001 in²]
Material: phosphorous bronze (stamped)
Plating:
- Terminations - tin lead or lead free on other contacts (M1YD)
- Active contact area - gold over nickel

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 g² / Hz
Shocks 6ms 1/2 sinus micro discontinuity 10ns	100 g
Recommanded 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

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

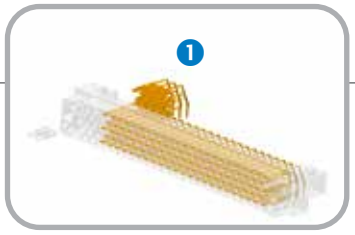


* 375Vrms only for F1U2 cts

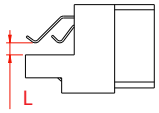
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD >>> SIGNAL CONTACTS (1)

FEMALE CONTACTS FOR PLUGS WITHOUT GROUND STRIP



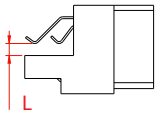
Double sided SMT



- 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

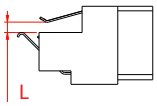
Double sided SMT



- 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

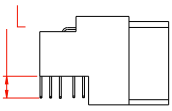
Double sided SMT



- 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

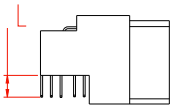
Right angle solder PC tail



- 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

Right angle solder PC Long tail



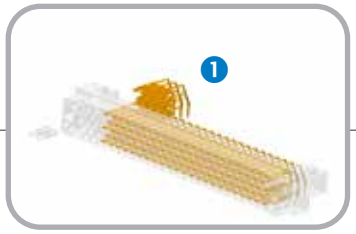
- Thru hole soldering
- Daughter board
- PCB thickness
  Without heat sink: 1.8 to 2.65 [.071 to.104]

Termination style	F1YL

	F1U1	F1U2	F1U3	F1YC	F1YL
L_{MAX}	3.21 [.126]	5.37 [.211]	2.65 [.104]	With heat sink: 4.4 [.173] Without heat sink: 2.8 [.110]	Without heat sink: 4.6 [.181]
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	

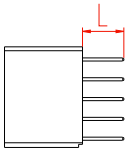
All dimensions are given for information only and are in mm [inch], except as otherwise specified

SIHD >>> SIGNAL CONTACTS & GROUND STRIP TECHNOLOGY (❶ & ❷)



MALE CONTACTS FOR RECEPTACLES WITHOUT GROUND STRIP (❶)

Straight solder PC tail



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

Termination style	M1YD

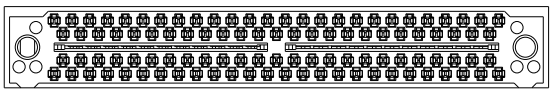
	M1YD
L	5.3 ± 0.3 [.209 ± .012]
Termination section	Ø 0.5 ± 0.03 [.020 ± .001]
Mating end size	1.2 x 0,6 [.024 x .047]
Active contact area plating µm [µin]	2 [.080] Ni + **1 [.039] Au**
Termination plating µm [µin]	2 [.080] Ni + 3 [.118] SnPb or bright pure Sn for RoHS version

GROUND STRIP TECHNOLOGY (❷)

Ground strip benefits

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

Central ground strip technology

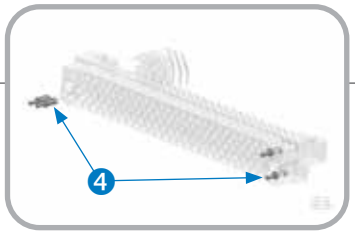


Arrangements available: 102 & 204 signal contacts & 230 signal contacts with half central ground strip
Compatibility: M1YD, F1YL, F1U1, F1U2 & F1U3

Note: ground strip has the same termination and active contact area platings as the contacts with which its mounted

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

SIHD >>> KEYING

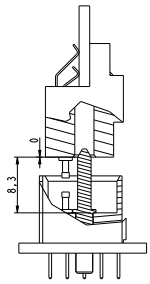
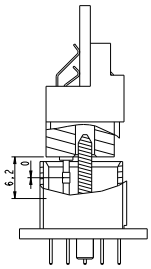
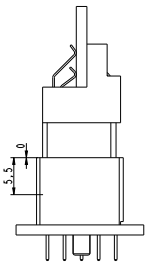
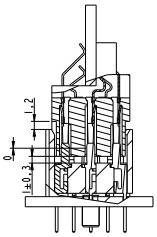
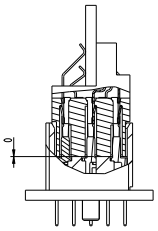


KEYING (❹)

Polarizing pins

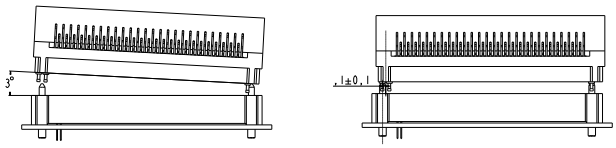
- 250 different positions available.
- Depends on the arrangement, plug and receptacle have 10 or 6 holes.
- For arrangements with 10 holes, 5 pins delivered with each connector.
- For arrangements with 6 holes, 3 pins delivered with each connector.
- If pins are located in opposite holes for both plug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

MATING SEQUENCE

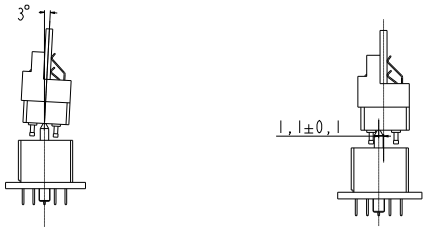
Guiding	Keying	Housing contact	Signal contact	Mated connector
				
8.3 [.327]	6.2 [.244]	5.5 [.217]	1 ± 0.3 [.039 ± .012] 1.2 [.047]	0

REALIGNMENT CAPABILITY

In the longitudinal axis

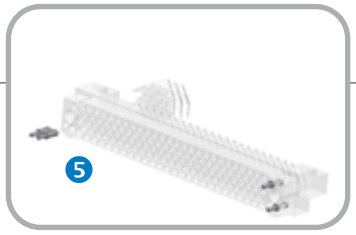


In the lateral axis



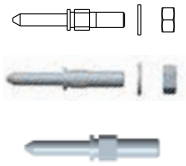
All dimensions are given for information only and are in mm [inch], except as otherwise specified

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

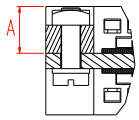
Passivated stainless steel

SIHD E --- B M1YD	B

FIXING ACCESSORIES FOR PLUGS

PCB with a thermal drain

A style - For F1U1/F1U2 female contacts

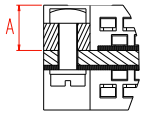


- Mounted to heat sink
- PCB with a heat sink

Passivated stainless steel

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

B style - For F1U1 female contacts

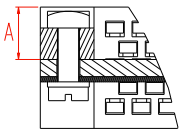


- Mounted to PCB
- PCB with a heat sink

Passivated stainless steel

SIHD F --- B F1U1	B

C style - For F1YC



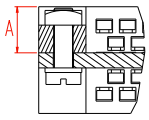
- Mounted to PCB
- PCB with a heat sink

Passivated stainless steel

SIHD F --- C F1YC	C

PCB without a thermal drain

D style - For F1YC female contacts and F1YL

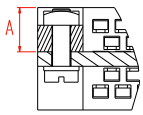


- Mounted to PCB
- PCB without a heat sink

Passivated stainless steel

SIHD F --- D F1YC	D
SIHD F --- DF1YL	

E style - For F1U3 female contacts



- Mounted to PCB
- PCB without a heat sink

Passivated stainless steel

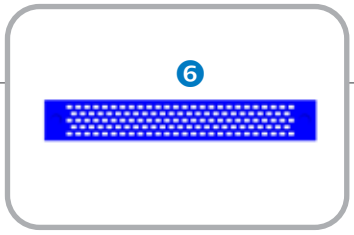
SIHD F --- E F1U3	E

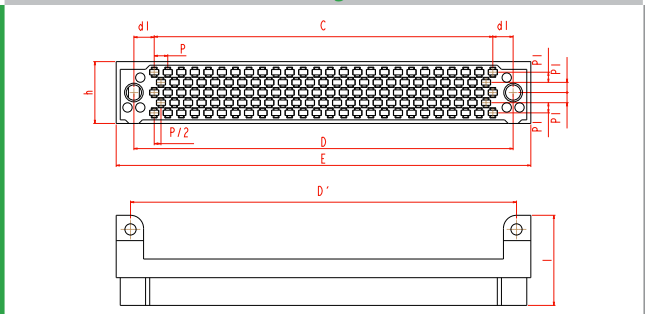
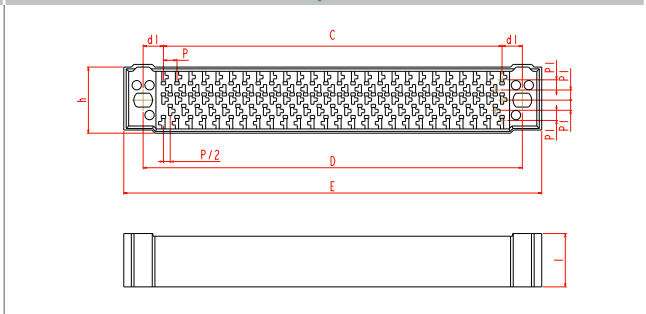
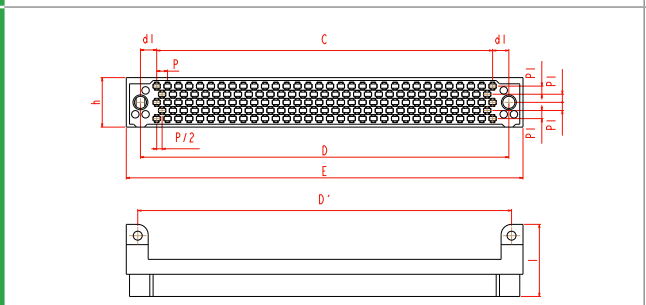
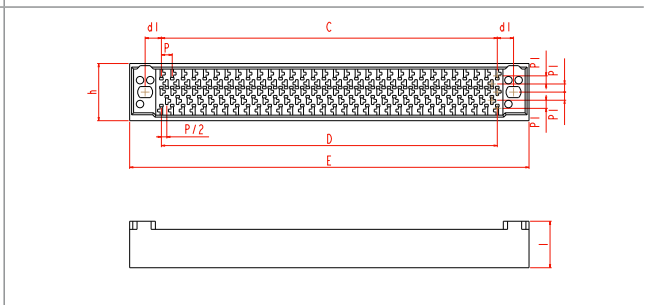
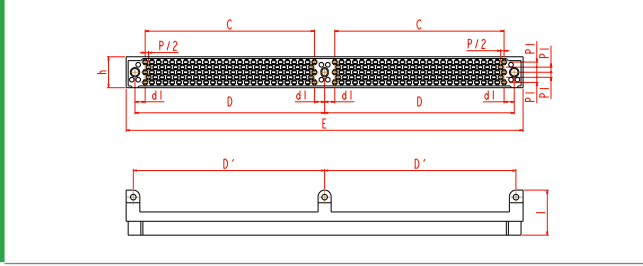
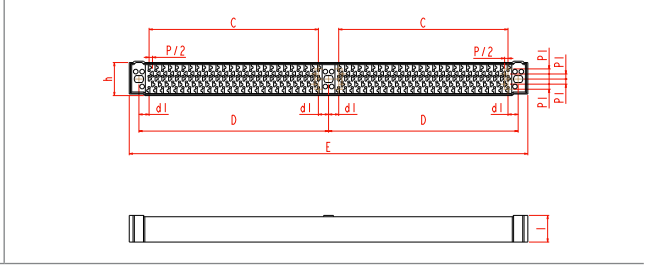
	Fixing accessories for plugs equipped with female contacts				
	A style	B style	C style	D style	E style
A_{MIN}	F1U1 4.16 [.164] F1U2 3.08 [.121]	F1U1 4.16 [.164]	F1YC 7.72 [.304]	F1YC 7.62 [.300] F1YL 7.72 [.304]	F1U3 7.61 [.300]

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

SIHD >>> WITHOUT GROUND STRIP (⑥)

TYPICAL ARRANGEMENTS



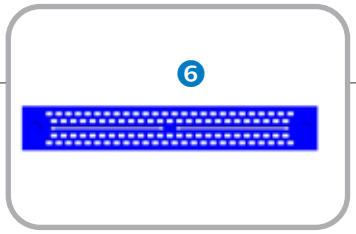
	Plug	Receptacle
128		
158		
256		

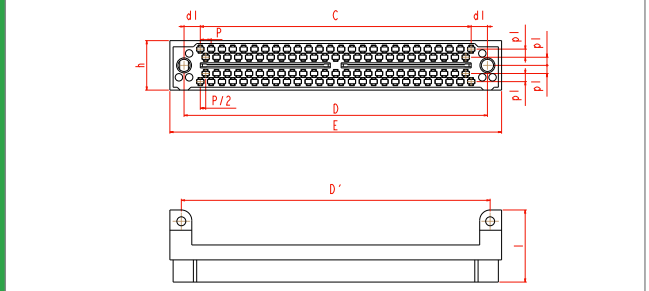
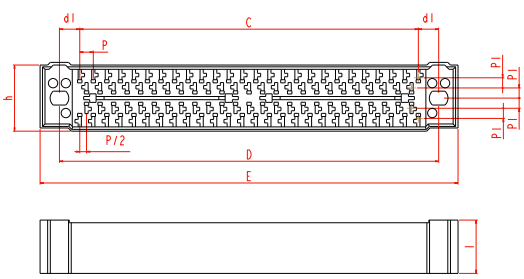
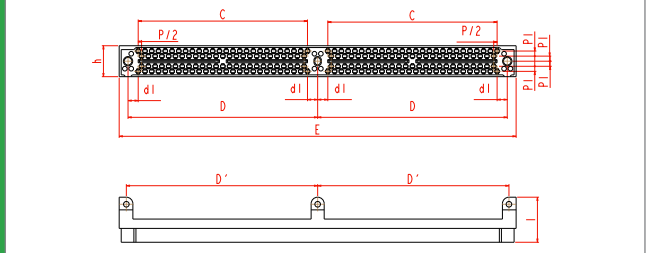
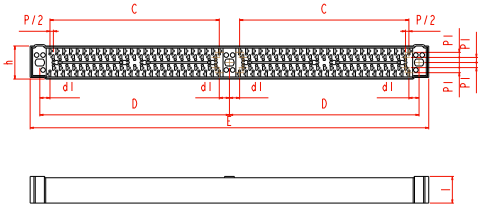
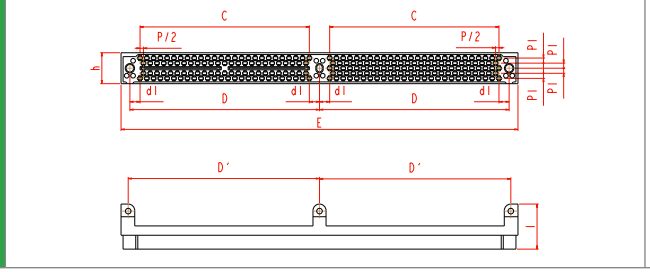
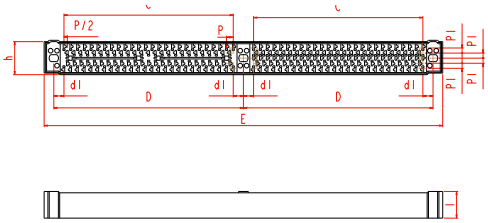
Nb of contacts	128		158		256	
	Plug	Receptacle	Plug	Receptacle	Plug	Receptacle
C	63.5 [2.500]		78.74 [3.100]		63.5 [2.500]	
D	71.12 [2.800]		86.36 [3.400]		71.12 [2.800]	
E_{MAX}	77.86 [3.065]	78.38 [3.086]	93.1 [3.665]	93.62 [3.686]	148.98 [5.865]	149.5 [5.886]
h_{MAX}	11.6 [.457]	12.4 [.488]	11.6 [.457]	13.4 [.528]	11.6 [.457]	12.4 [.488]
D'	72.39 [2.850]	/	87.63 [3.450]	/	71.755 [2.825]	/
I_{MAX}	16.9 [.665]	10.3 [.406]	16.9 [.665]	11.15 [.439]	16.9 [.665]	10.3 [.406]

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

SIHD >>> WITH GROUND STRIP (⑥)

TYPICAL ARRANGEMENTS

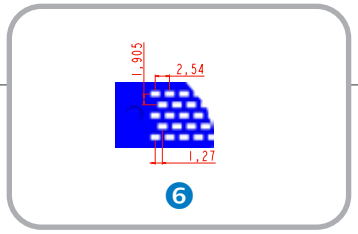


	Plug	Receptacle
128		
204		
230		

	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)

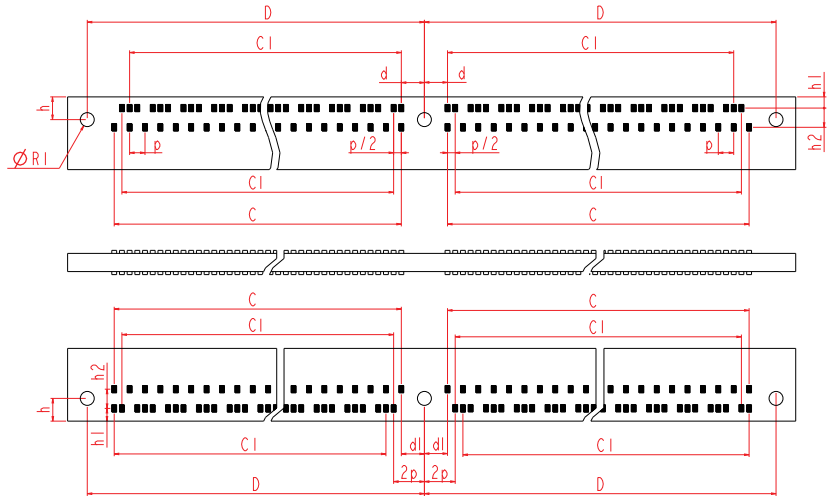


LAYOUTS

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)*

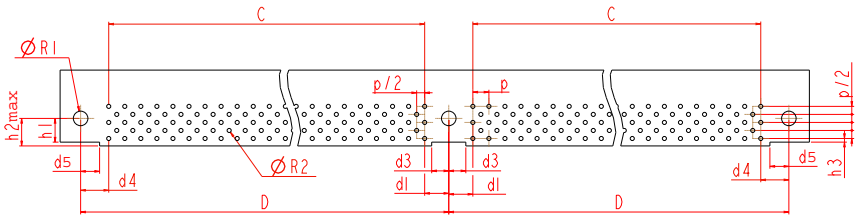
n = 128, 158 or 256



C_1	C - p = C -2.54
C	See pages 34 & 35
D	See pages 34 & 35

F1YC CONTACT (female for plug)*

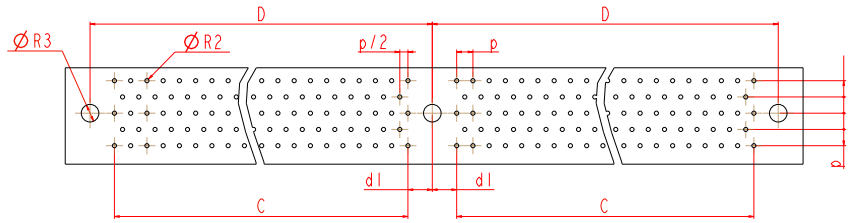
n = 128, 158 or 256



C	See pages 34 & 35
D	See pages 34 & 35

M1W3/M1YD (male for receptacle)*

n = 128, 158 or 256



C	See pages 34 & 35
D	See pages 34 & 35

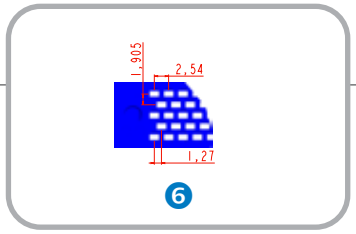
R1	R2	R3	h	h1	h2	h3	$h2_{MAX}$
Ø 2.3 $^{+0.05}_{+0}$ [.091 $^{+.002}_{+0}$]	Ø 0.7 $_{MIN}$ [.028] 0.9 $_{MIN}$ for W3 contacts	Ø 2.75 $^{+0.05}_{+0}$ [.108 $^{+.002}_{+0}$]	3.75 [.148]	1.845 [.073]	3.175 [.125]	0.575 [.023]	4.35 $_{MAX}$ [.171]

d1	d2	d3	d4	d5	p1	p	2p	p/2
3.81 [.150]	4.445 [.175]	2.7 $^{+0.1}_{+0}$ [.106 $^{+.004}_{+.000}$]	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)

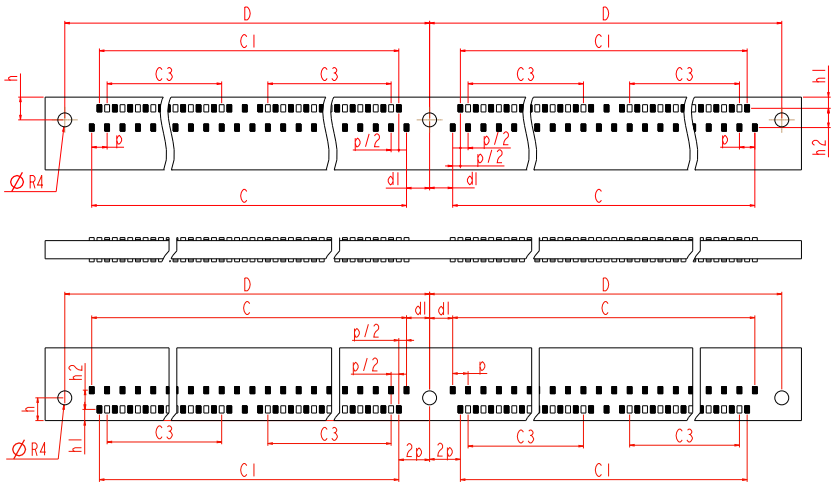


LAYOUTS

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)*

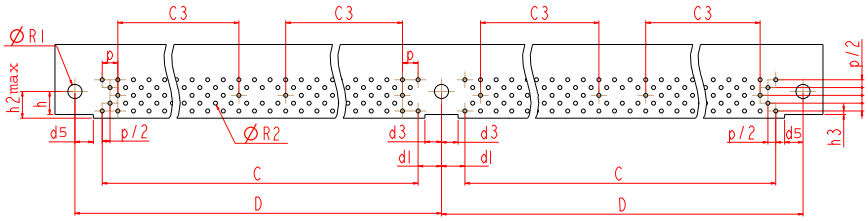
n = 102, 204 or 230



C_1	C - p = C - 2.54
C_3	(C - 5p) / 2
C	See pages 34 & 35
D	See pages 34 & 35

F1YC CONTACT (female for plug)*

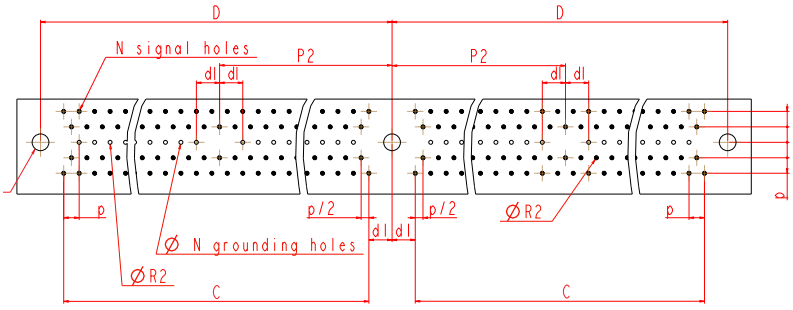
n = 102, 204 or 230



C_1	C - p = C - 2.54
C_3	(C - 5p) / 2
C	See pages 34 & 35
D	See pages 34 & 35

M1W3/M1YD (male for receptacle)*

n = 102, 204 or 230



P_2	C / 2
C	See pages 34 & 35
D	See pages 34 & 35

R1	R2	R3	R4	p1	p	2p	p/2
Ø 2.3 $^{+0.05}_{+0}$ [.091 $^{+.002}_{+0}$]	Ø 0.7 $_{MIN}$ [.028] 0.9 $_{MIN}$ for W3 contacts	Ø 2.75 $^{+0.05}_{+0}$ [.108 $^{+.002}_{+0}$]	Ø 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 $^{+.004}_{+.000}$]	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.

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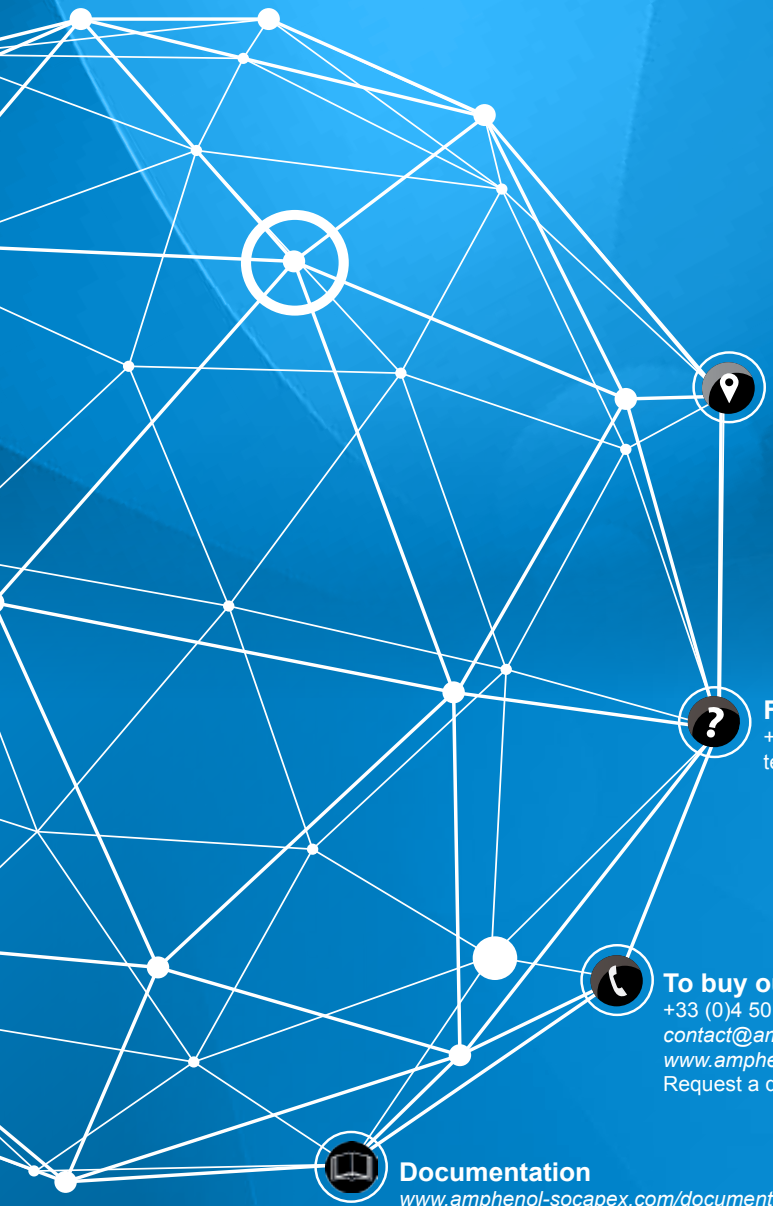

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