

Micro HDAS

Miniature High-Density & Reliability
1,27mm / .050" pitch PCB connector



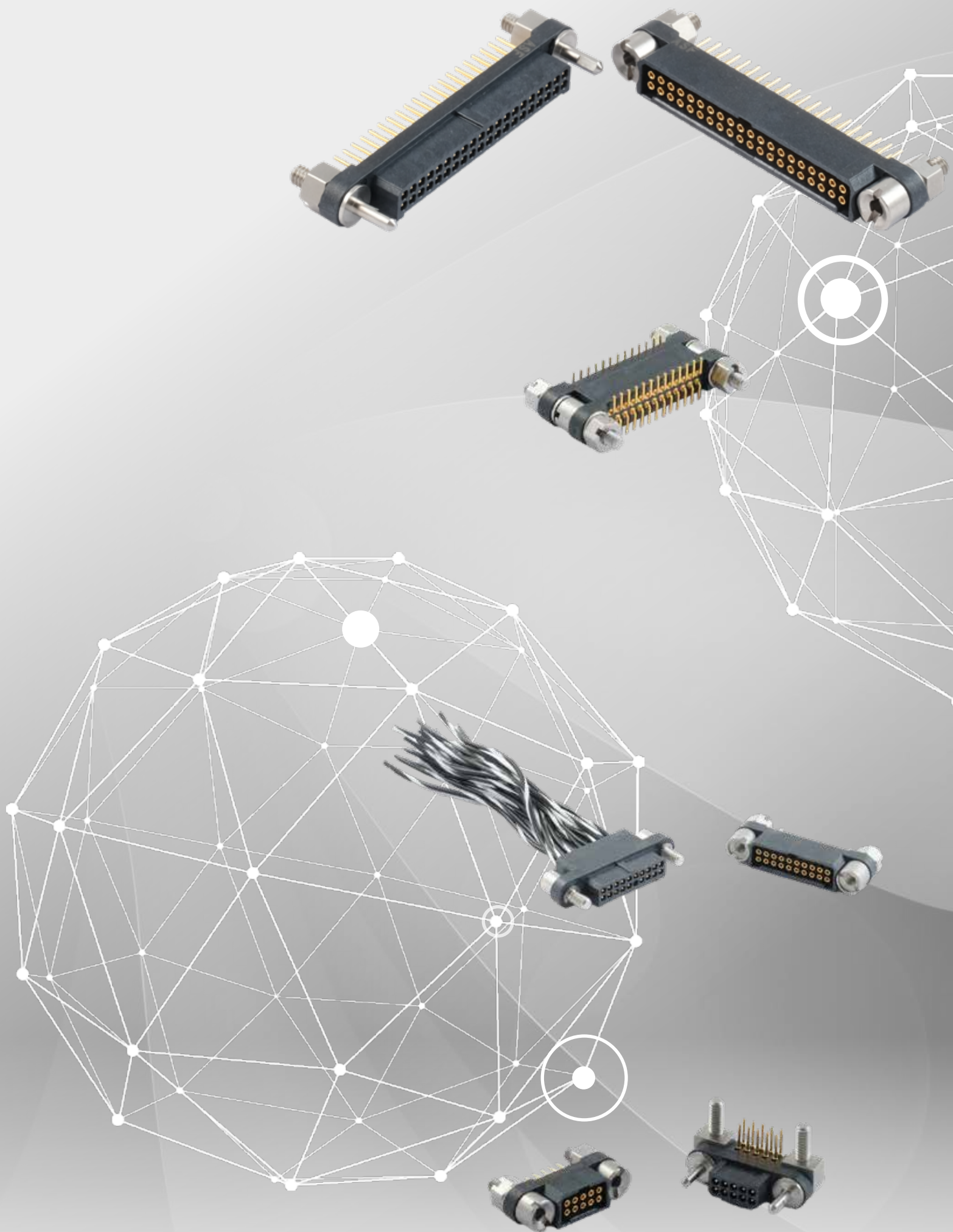


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OUR COMPANY



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)



Certified Management System



Certified Management System



Certified Management System



Certified Management System

Our memberships

Member of CMG (Connecting Manufacturing Group) Consortium



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.

[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.**

MARKETS AND APPLICATIONS



Commercial Aerospace

- Fadec/Engine control
- Landing gear
- Braking system
- Display unit - Power unit
- Actuator - Flight control system



Military Aerospace

- Countermeasure
- Power unit - Radar
- Display unit - Flight control system
- POD - Braking system
- FADEC/Engine control
- UAV



Ground Vehicle



C4ISR

- Countermeasure
- Threat detection system
- Rugged computer
- Digital radio
- Ground radio - Communication systems



Missile

- Missile launcher
- POD
- Missile



Space

- Space vehicles
- Satellites
- Launchers



MICRO HDAS

Amphenol SOCAPEX



GENERAL CHARACTERISTICS - MICRO HDAS



High performance and high density miniature connector

Description

Amphenol Socapex introduce the Micro HDAS, its new micro board to board and board to wire connector. Micro HDAS allows you to save space on your board while maintaining a high level of performances. Offering you PC Tail, SMT & crimp contact terminations, Micro HDAS provides a modularity to fit all your needs.

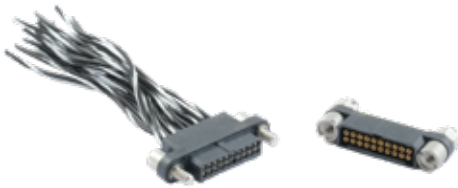
Benefits

- Space & weight reduction to meet your miniaturization needs
- High density : 1.27mm [.050"] pitch
- Protected contacts by design
- 7,4mm distance between boards

Features

- 29 arrangements, from 4 to 60 contacts
- PC Tail, SMT & Crimp contacts
- Meet & Exceed MIL-DTL-55302G & 83513G
- Full range of fittings to answers your needs

Configurations



Board to wire
(Crimp AWG 24 to 30)



Mezzanine



Mother board to
Daughter board

Exploded views and Materials

CONTACTS



Male pins: copper alloy, 0.75µm gold

Female pins (inner): beryllium copper, 1.27µm gold
Female pins (outer): copper alloy, 0.125µm gold

INSULATORS



30% glass-filled thermoplastic (LCP)
UL94V-0
Polarized

FITTINGS



Jackscrews

Male Guiding

Female Guiding

Passivated Stainless Steel

Online configurator & 3D model download



Scan me



GENERAL CHARACTERISTICS - MICRO HDAS SERIES



Technical Specifications

MECHANICAL CHARACTERISTICS	MICRO HDAS	MIL-DTL-55302	
Backoff - Electrical security (mm)	1,27	N/A	
Contact engagement & separation forces			
Mating force per contact (N)	0,39 < F < 0,68	4.5.3	
Unmating force per contact (N)	0,16 < F < 0,21		
Mating and unmating forces - Initial - Tested on a 30 ways connector			
Mating forces (N) - average per contact	0,44	4.5.4	
Unmating forces (N) - average per contact	0,31		
Durability cycles	500	4.5.9	
Sinusoidal vibrations	Up to 45g	4.5.10	
Shocks (sawtooth/6ms)	Up to 160g	4.5.10	
Fixing torque between connector and PCB (N.m)	0,3	N/A	
Fixing torque between connectors (N.m)	0,2	N/A	
Crimp tensile strength	AWG 24 > 49,98N	N/A	
	AWG 26 > 36,64N		
	AWG 28 > 19,90N		
	AWG 30 > 11,30N		
ENVIRONMENTAL CHARACTERISTICS			
Operating Temperature (°C)	-65/+150	4.5.13	
Salt spray (hours)	96	4.5.11	
Humidity - 25/65°C - 90-95%	10 cycles of 24 hours	4.5.15	
Thermal vacuum outgassing Applicable to LCP housing, PEEK ring (AWG 24 contact) and backpotting Stycast 2651 MM + Catalyst 9	Total mass loss : TML < 1% of the original mass Max volatile condensable material : CVCM < 0.1% of the original mass	ASTM E595 (ECSS-Q-ST-70 02C)	
ELECTRICAL CHARACTERISTICS			
Current rating per contact (A) - 30 ways connector	Contact configuration	@25°C	@85°C
	YD/YD	3,4A	2,5A
	YD/YC	3,9A	2,6A
	YD/CRIMP	Depending on cable, up to 5A	
Insulation resistance (at 500Vdc) (GΩ)	> 5	4.5.8	
Contact resistance (mΩ)	< 8	4.5.5	
Dielectric withstanding voltage (Vrms) at sea level	750	4.5.7.1	
Dielectric withstanding voltage (Vrms) 70 000 feet (between contacts)	480		

Connector marking

Micro HDAS connectors are laser marked.

Exemple of marking :

Series name	Contact type	Date code
MHDAS	YC	YYWW

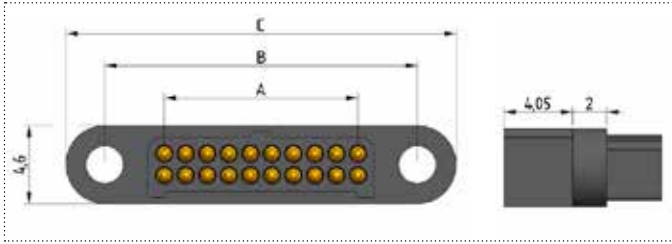
Series name : MHDAS = Micro HDAS

Contact type : as specified in our how to order

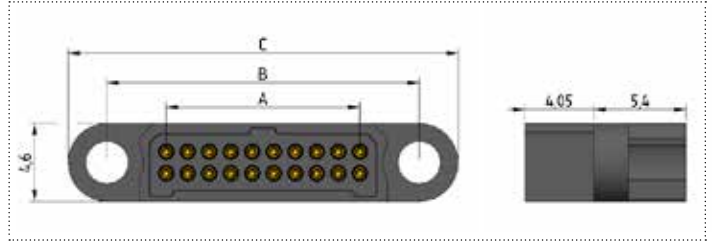
YYWW : year + week batch

OVERALL DIMENSIONS - MICRO HDAS

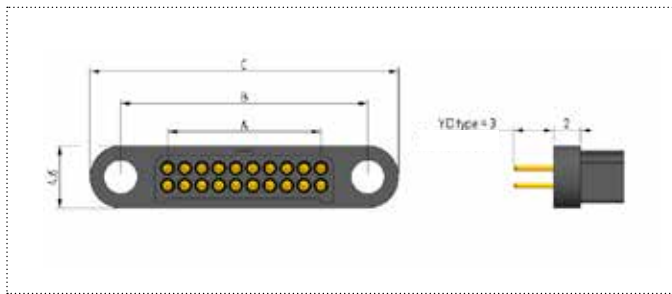
Male for cable



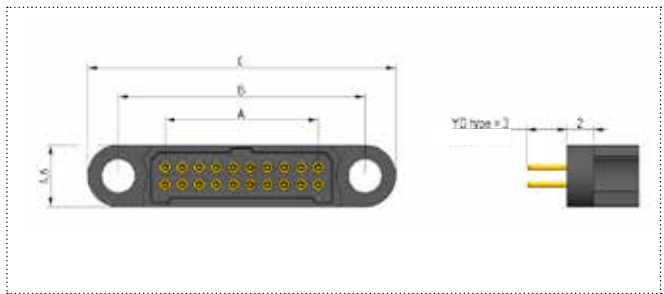
Female for cable



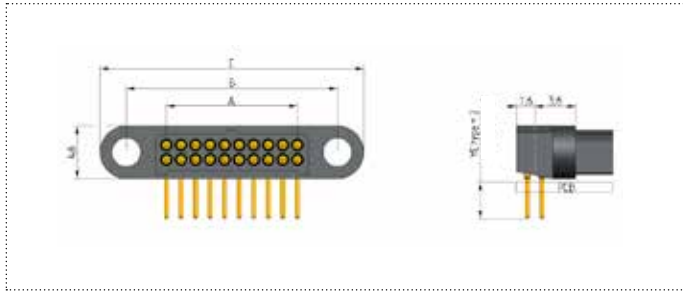
Male Straight Thru Hole



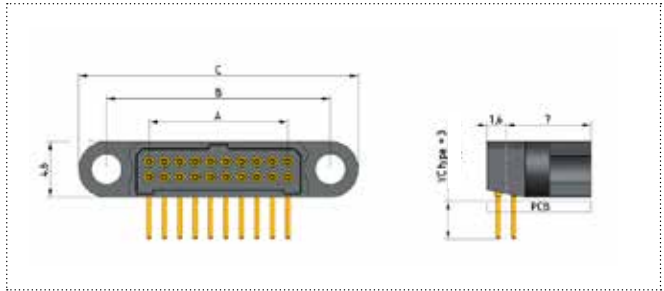
Female Straight Thru Hole



Male 90° Thru Hole



Female 90° Thru Hole

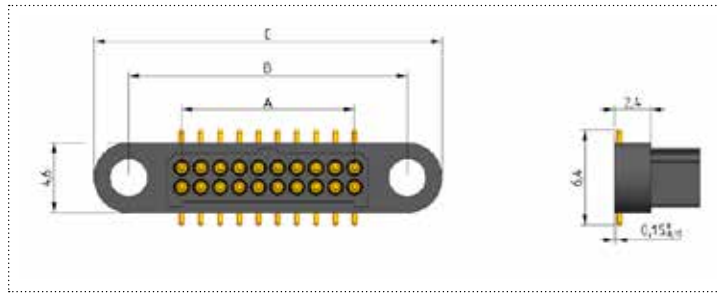


Dimension table

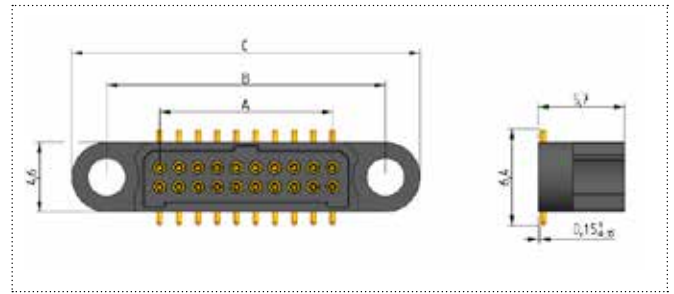
LF contact number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
A = Distance between pins (mm)	1.27	2.54	3.81	5.08	6.35	7.62	8.89	10.16	11.43	12.70	13.97	15.24	16.51	17.78	19.05	20.32	21.59	22.86	24.13	25.40	26.67	27.94	29.21	30.48	31.75	33.02	34.29	35.56	36.83
B = Distance between fittings (mm)	8.27	9.54	10.81	12.08	13.35	14.62	15.89	17.16	18.43	19.70	20.97	22.24	23.51	24.78	26.05	27.32	28.59	29.86	31.13	32.4	33.67	34.94	36.21	37.48	38.75	40.02	41.29	42.56	43.83
C = Distance between extremities (mm)	12.87	14.14	15.41	16.68	17.95	19.22	20.49	21.76	23.03	24.3	25.57	26.84	28.11	29.38	30.65	31.92	33.19	34.46	35.73	37	38.27	39.54	40.81	42.02	43.35	44.62	45.89	47.16	48.43

OVERALL DIMENSIONS - MICRO HDAS

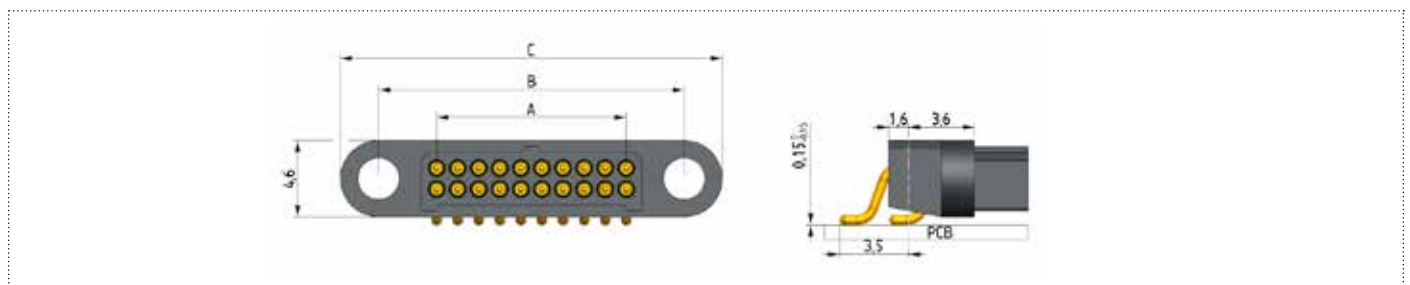
Male Straight SMT



Female Straight SMT



Male 90° SMT

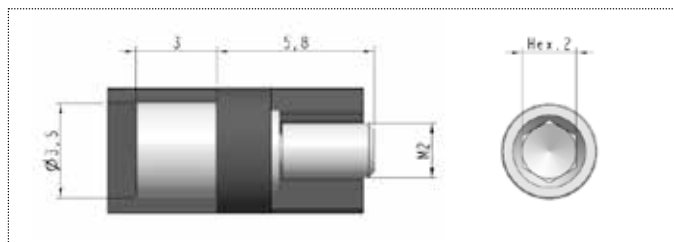


Dimension table

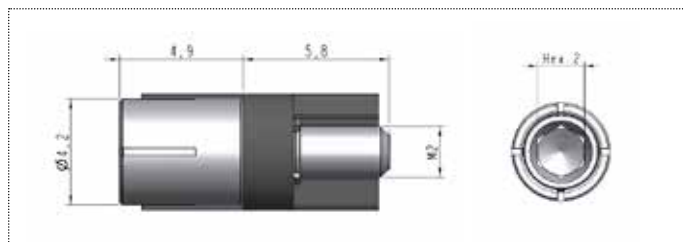
LF contact number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
A = Distance between pins (mm)	1.27	2.54	3.81	5.08	6.35	7.62	8.89	10.16	11.43	12.70	13.97	15.24	16.51	17.78	19.05	20.32	21.59	22.86	24.13	25.40	26.67	27.94	29.21	30.48	31.75	33.02	34.29	35.56	36.83
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C = Distance between extremities (mm)	12.87	14.14	15.41	16.68	17.95	19.22	20.49	21.76	23.03	24.3	25.57	26.84	28.11	29.38	30.65	31.92	33.19	34.46	35.73	37	38.27	39.54	40.81	42.02	43.35	44.62	45.89	47.16	48.43

FITTINGS - MICRO HDAS

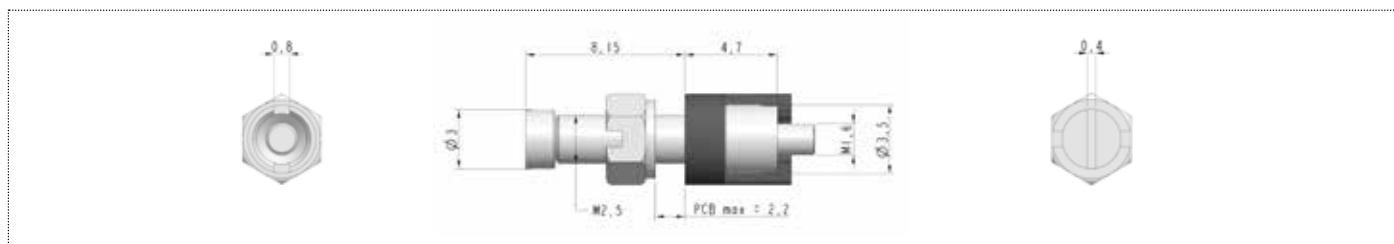
E01



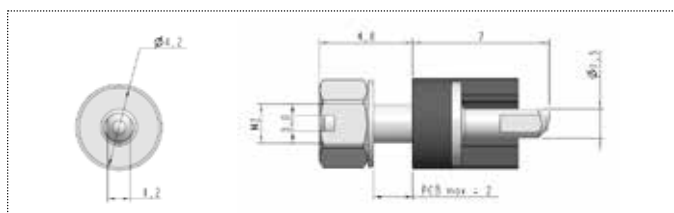
E02



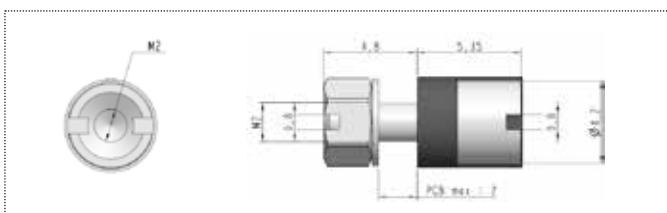
E03



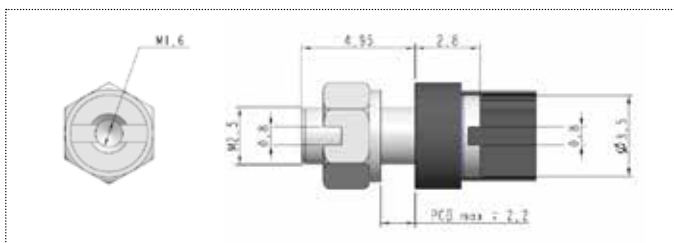
E10



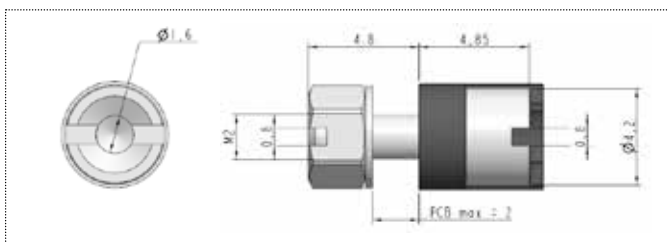
E50



E53



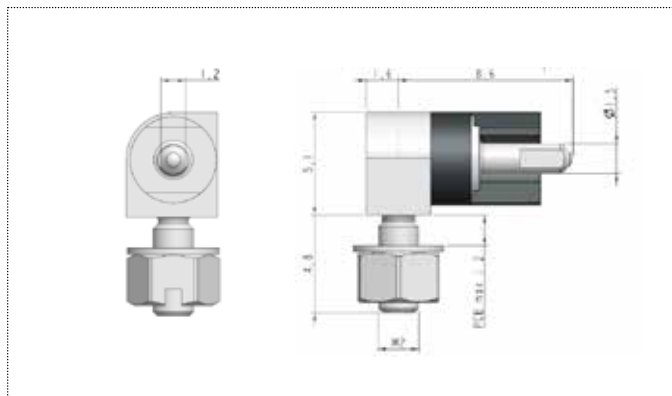
E60



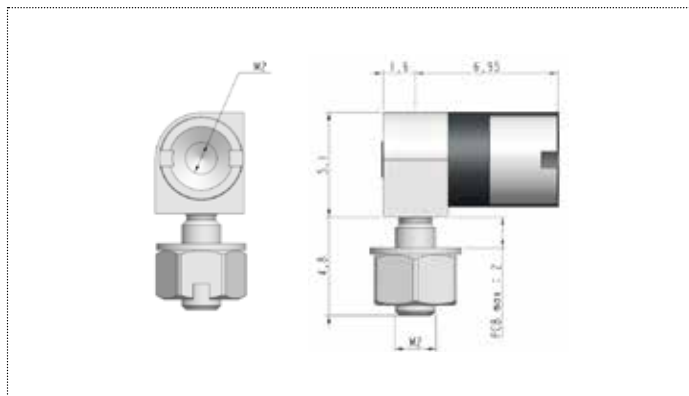
Fittings compatibility

Signal Contact	Fitting	Torque (N.m)		Compatible with
A - B - G - YD - T	E01	0.3		E50 or E51
	E02	0.3		E50 or E51
	E03	On PCB: 0.25	On coupled part: 0.16	E53 or E63
	E10	0.3		E60 or E61
	E50	0.3		E01 or E02
	E53	0.3		E03
YC - R	E60	0.3		E10 or E11
	E11	0.3		E60 or E61
	E51	0.3		E01 or E02
	E61	0.3		E10 or E11
	E63	0.3		E03

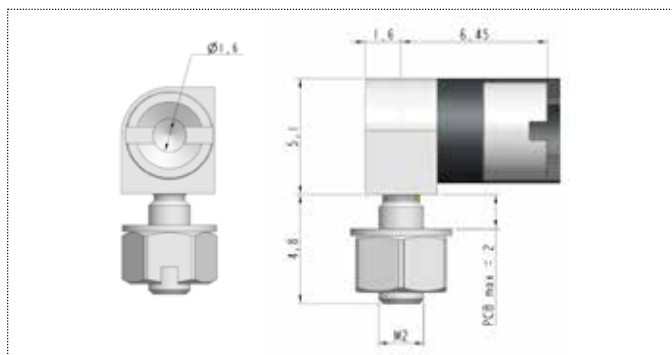
E11



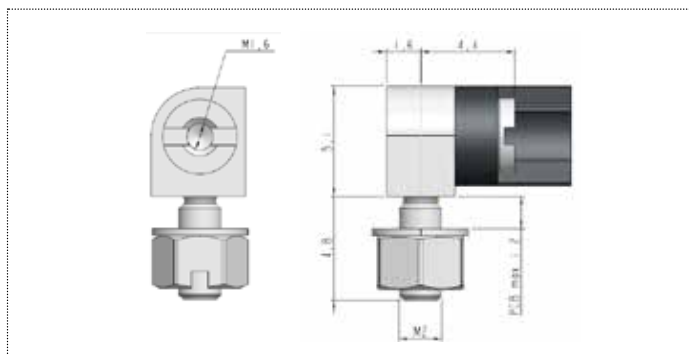
E51



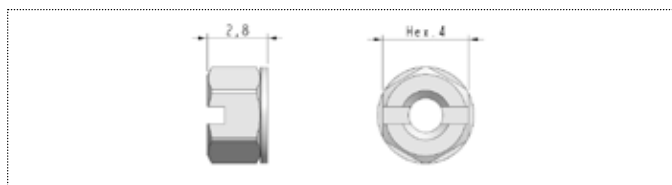
E61



E63



Nut + washer



Fittings compatibility

Signal Contact	Fitting		Torque (N.m)		Compatible with
A - B - G - YD - T	E01	Jackscrew for harness	0.3		E50 or E51
	E02	Captive Screw for harness	0.3		E50 or E51
	E03	Jackscrew for PCB/Panel mount	On PCB: 0.25	On coupled part: 0.16	E53 or E63
	E10	Male straight guiding	0.3		E60 or E61
	E50	Female straight jackscrew	0.3		E01 or E02
	E53	Female straight jackscrew	0.3		E03
	E60	Female straight guiding	0.3		E10 or E11
YC - R	E11	Male 90° guiding	0.3		E60 or E61
	E51	Female 90° jackscrew	0.3		E01 or E02
	E61	Female 90° guiding	0.3		E10 or E11
	E63	Female 90° jackscrew	0.3		E03

HOW TO ORDER - MICRO HDAS



Straight on PCB

90° on PCB

For Harnesses

1.

2.

3.

4.

5.

6.

Series	Number of rows	Connector type	Number of contacts	Contact type	Fitting type
MHDAS	2	M	016	YD	E10

1. Series

MHDAS Micro HDAS 1.27mm pitch

5. Contact type

YD Straight PC tail standard ✓
T Straight SMT ✓



2. Number of rows

2 2 rows connector

6. Fitting type

E10 Male straight guiding
E50 Female straight jackscrew
E60 Female straight guiding
E01 Jackscrew for harness
E02 Captive screw for harness
E03 Jackscrew for PCB/Panel mount
E53 Female straight jackscrew

3. Connector type

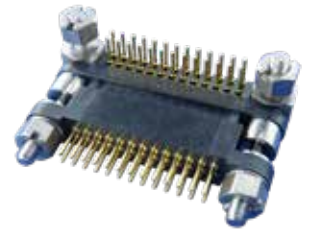
M Male connector
F Female connector

4. Number of contacts

004	024	044
006	026	046
008	028	048
010	030	050
012	032	052
014	034	054
016	036	056
018	038	058
020	040	060
022	042	

All the fittings type are compatible with male and female contacts.

HOW TO ORDER - MICRO HDAS



Straight on PCB

90° on PCB

For Harnesses

1.	2.	3.	4.	5.	6.
Series	Number of rows	Connector type	Number of contacts	Contact type	Fitting type
MHDAS	2	M	016	YC	E11

1. Series

MHDAS	Micro HDAS 1.27mm pitch
-------	-------------------------

2. Number of rows

2	2 rows connector
---	------------------

3. Connector type

M	Male connector
F	Female connector

4. Number of contacts

004	024	044
006	026	046
008	028	048
010	030	050
012	032	052
014	034	054
016	036	056
018	038	058
020	040	060
022	042	

5. Contact type



YC	Right angle PC tail standard ✓
R	Right angle SMT (only male) ✓

6. Fitting type

E11	Male 90° guiding
E51	Female 90° jackscrew
E61	Female 90° guiding
E63	Female 90° jackscrew

All the fittings type are compatible with male and female contacts.

HOW TO ORDER - MICRO HDAS

Straight on PCB

90° on PCB

For Harnesses



1.	2.	3.	4.	5.	6.
Series	Number of rows	Connector type	Number of contacts	Contact type	Fitting type
MHDAS	2	M	016	A	E02

1. Series

MHDAS Micro HDAS 1.27mm pitch

2. Number of rows

2 2 rows connector

3. Connector type

M Male connector
F Female connector

4. Number of contacts

004	024	044
006	026	046
008	028	048
010	030	050
012	032	052
014	034	054
016	036	056
018	038	058
020	040	060
022	042	

For harnesses, backpotting is recommended for enhanced protection.

5. Contact type



A Crimp AWG 24 ✓
B Crimp AWG 26 ✓
G Crimp AWG 28-30 ✓

Contacts A and B are the same ones. The differentiation comes from the addition of a ring in peek to crimp the AWG 24.

6. Fitting type

E01 Jackscrew for harness
E02 Captive screw for harness
E10 Male straight guiding
E50 Female straight jackscrew
E60 Female straight guiding
E03 Jackscrew for PCB/Panel mount
E53 Female straight jackscrew

All the fittings type are compatible with male and female contacts.

Order contacts:

Code	Reference		Type	Cable gauge
	Male	Female		
A	MHDASMAB	MHDASFAB	To be crimped	AWG 24
	MHDASARING			
B	MHDASMAB	MHDASFAB		AWG 26
G	MHDASMG	MHDASFG		AWG 28-30

Feel free to contact us if you require a full wired solution.

TOOLING & INSTRUCTION - MICRO HDAS

Signal contact crimping tool

Reference	Description
MH800	Hand crimp tool DANIELS
K2024	Positioner for Micro HDAS signal contacts

Access our crimping instruction for Micro HDAS connector signal contacts : PCB-ER-020-Ext.



Scan me



TECHNICAL NOTE

MHDAS : CRIMPING INSTRUCTIONS

Signal contact insertion and extraction tool

Reference	Description
MHDASODIEC	Insertion and extraction tool for Micro HDAS signal contacts

Access our insertion and extraction instruction for Micro HDAS connector signal contacts : PCB-ER-016-Ext.



Scan me



TECHNICAL NOTE

MHDAS : CRIMP CONTACT
INSERTION/EXTRACTION
INSTRUCTION

Backpotting

Amphenol Socapex recomend to do backpotting with Stycast 2651MM and Catalyst 9 (10%).

NOTES

Notes section with horizontal lines for writing.

NOTES

Area for handwritten notes, consisting of multiple horizontal dotted lines.

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

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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

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KOREA	Amphenol DAESHIN	558 SongNae-Dong SoSa-Gu, Bucheon-city, Kyunggi-Do - 420-130	+81 32 610 3830/3845
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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
TURKEY	Amphenol TURKEY	Sun Plaza 15 Kat: 15 Maslak Hah. Bilim Sok. No.5 - Sisli/Istanbul, 34398	+90 212 367 92 19

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