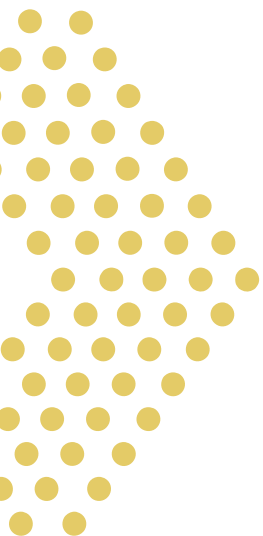




PCB CONNECTORS MICRO HDAS



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EXPORT CONTROL CLASSIFICATION

OUR OFFER

38999 SERIES



RUGGED ETHERNET, USB & DISPLAY CONNECTORS



2M MICRO MINIATURE



ACCESSORIES



PT/451 - 26482 SERIES



SL61 & SOCA



RFM SERIES



PCB CONNECTORS



FIBER OPTIC SOLUTIONS



CONTACTS



ETHERNET SWITCH & MEDIA CONVERTER



USB KEYS & EXTENDERS



PS SERIES : Power Devices Solutions



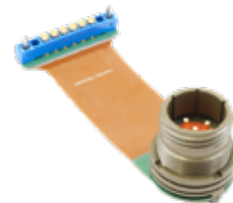
CORDSETS & JUMPERS



CABLE ASSEMBLY



HARNESS IN THE BOX



CUSTOMIZED PRODUCTS AND SOLUTIONS

From cable assembly to customized solutions, we're here to add value to your projects.
We look forward to hearing from you.

[CONSULT US](#)

OUR COMPANY

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.

Amphenol Socapex, based in the Mont Blanc region of France and with operations in India and Tunisia, has a global presence in over 100 countries.

OUR MARKETS



**BATTLEFIELD
COMMUNICATION**



**GROUND
VEHICLES**



**MILITARY AIRCRAFT /
STRUCTURE**



**COMMERCIAL
AVIATION**



OTHERS



TECHNOLOGIES & INNOVATIONS

RESEARCH & DEVELOPMENT



- » **ENGINEERING LABORATORY:** 320m2 state-of-the-art facilities in France and India with advanced testing and analysis equipment.
- » **EXPERTISE:** 30+ specialists handling 300+ product tests and 1,400+ metrology requests annually.
- » **TECHNOLOGY:** Plating engineering, material development, high voltage analysis, 3D EM simulation, fiber optics, and assembly.
- » **METROLOGY:** Internal verification of the conformity of measuring instruments and ensuring that our measurement management system complies with the recommendations of ISO 10012.

OUR WORKSHOPS



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

- » **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)
- » **AUTOMATION & TOOLING:** Tools for our different activities : molding, machining, assembly

JOIN US ! WE'RE HIRING

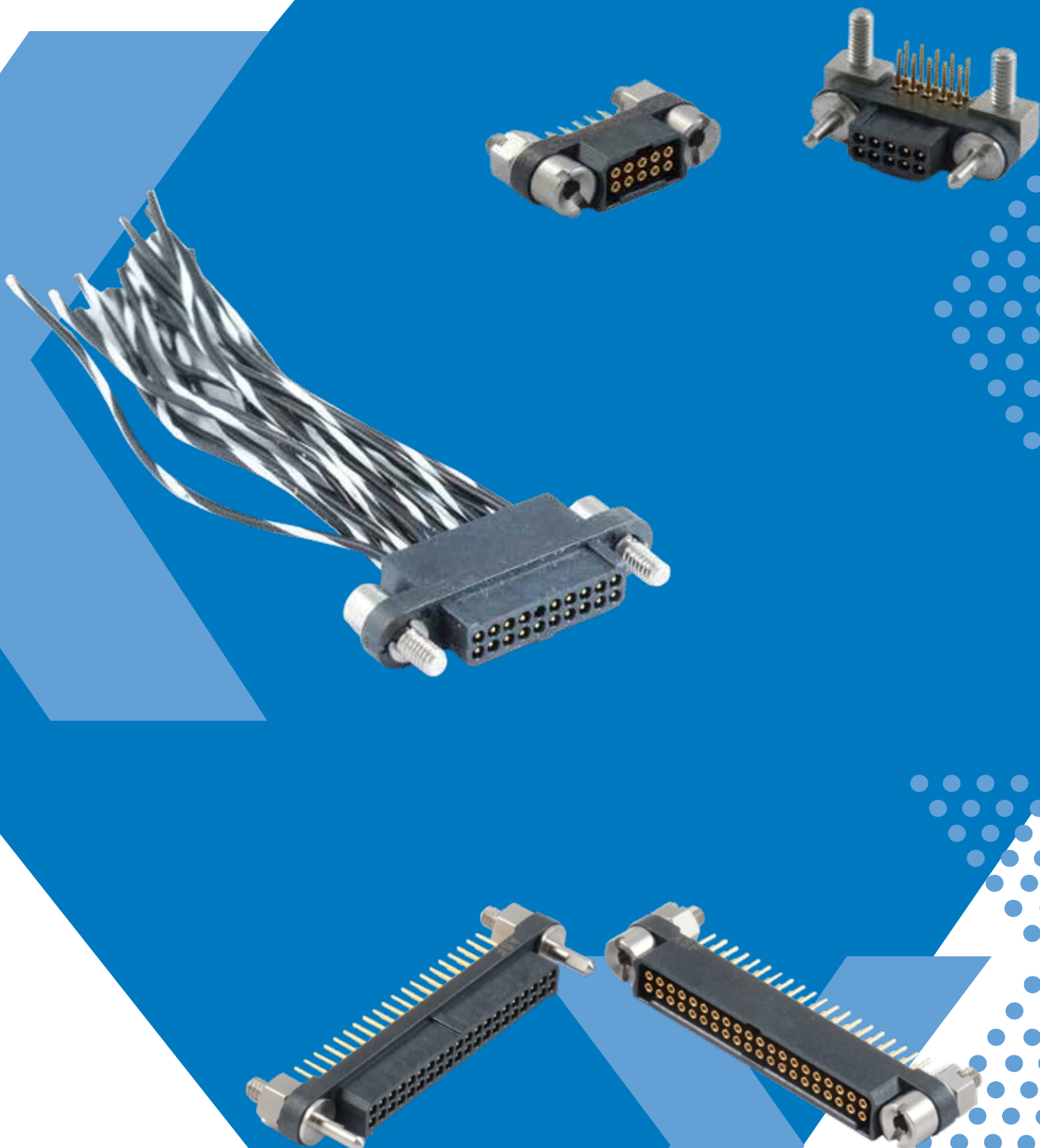


TABLE OF CONTENTS

Our ressources & our offer	2
Our company & our market	4
MICRO HDAS - High performance & versatile	7
General characteristics	8
Overall dimensions	10
Fittings	12
PCB layout	14
How to order	15
Tooling and instruction	18



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.

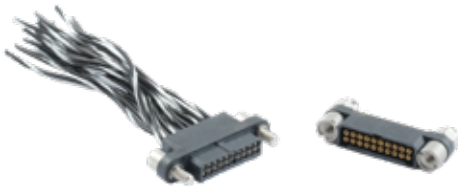
Benefits

- 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



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) Unmating force per contact (N)	0,39 < F < 0,68 0,16 < F < 0,21	4.5.3
Mating and unmating forces - Initial - Tested on a 30 ways connector Mating forces (N) - average per contact Unmating forces (N) - average per contact	0,44 0,31	4.5.4
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 YD/YC	3,4A 3,9A	2,5A 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

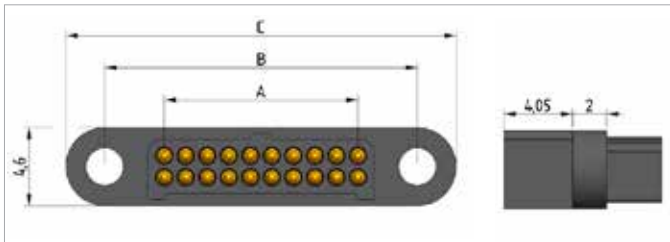
Series name : MHDAS = Micro HDAS

Contact type : as specified in our how to order

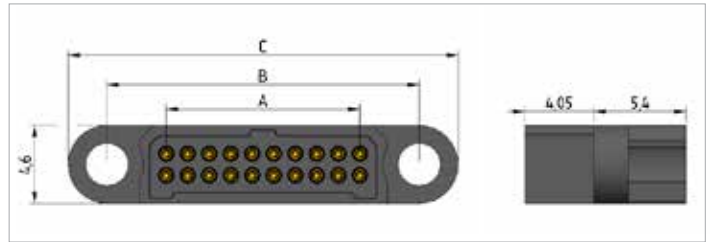
YYWW : year + week batch

OVERALL DIMENSIONS - MICRO HDAS

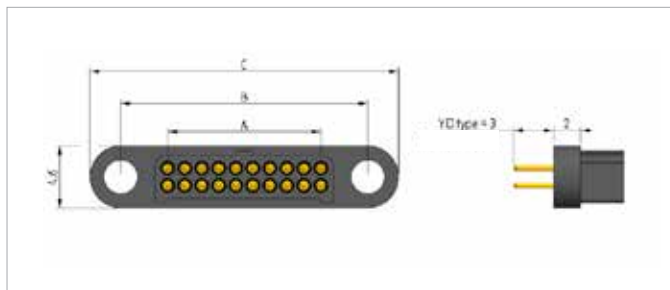
Male for cable



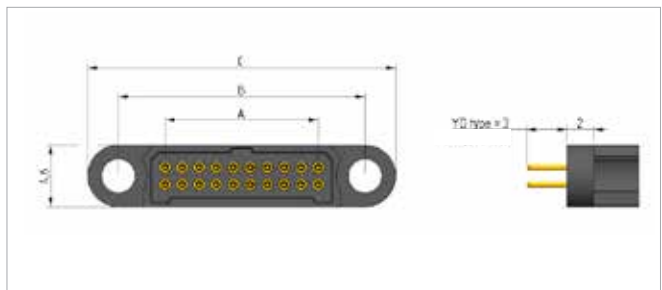
Female for cable



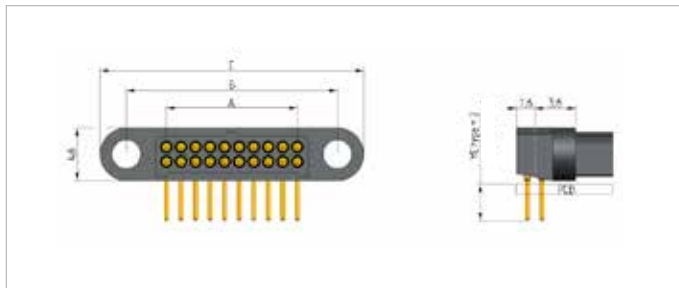
Male Straight Thru Hole



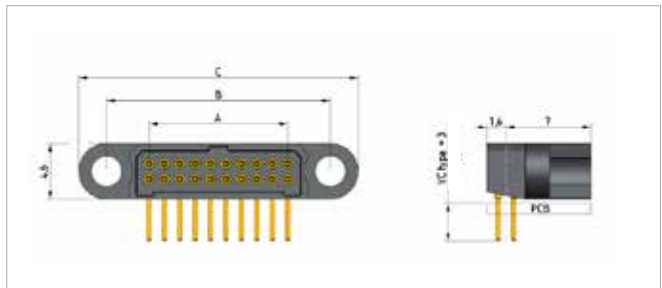
Female Straight Thru Hole



Male 90° Thru Hole



Female 90° Thru Hole

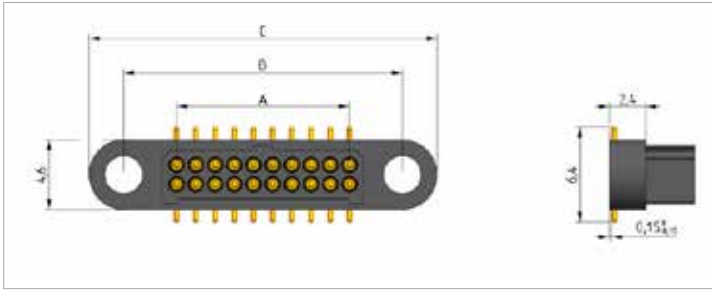


Dimension table

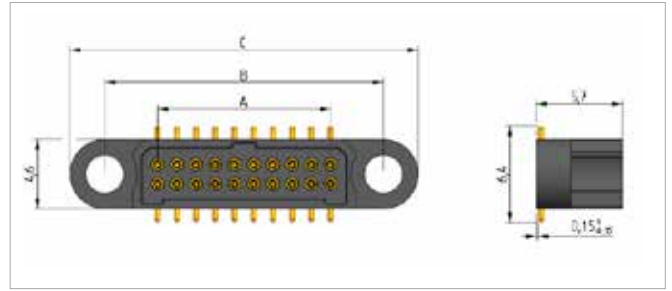
LF contact number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
A = Distance between pins (mm)	1.27	2.54	3.81	5.08	6.35	7.62	8.89	10.16	11.43	12.70	13.97	15.24	16.51	17.78	19.05	20.32	21.59	22.86	24.13	25.40	26.67	27.94	29.21	30.48	31.75	33.02	34.29	35.56	36.83
B = 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

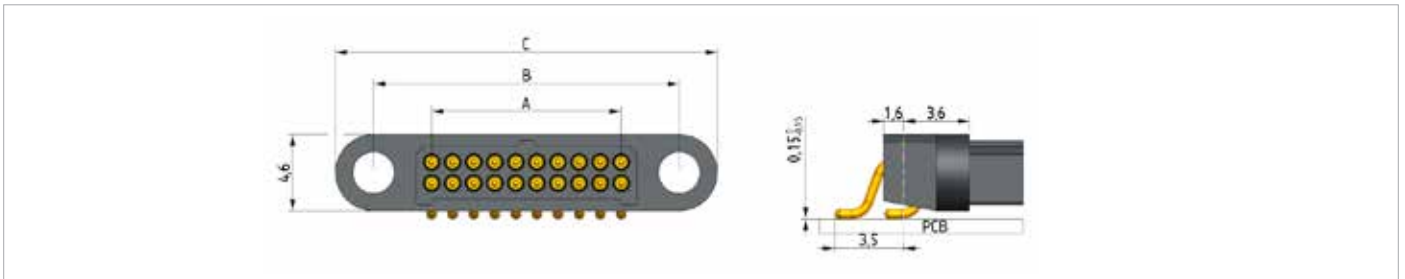
Male Straight SMT



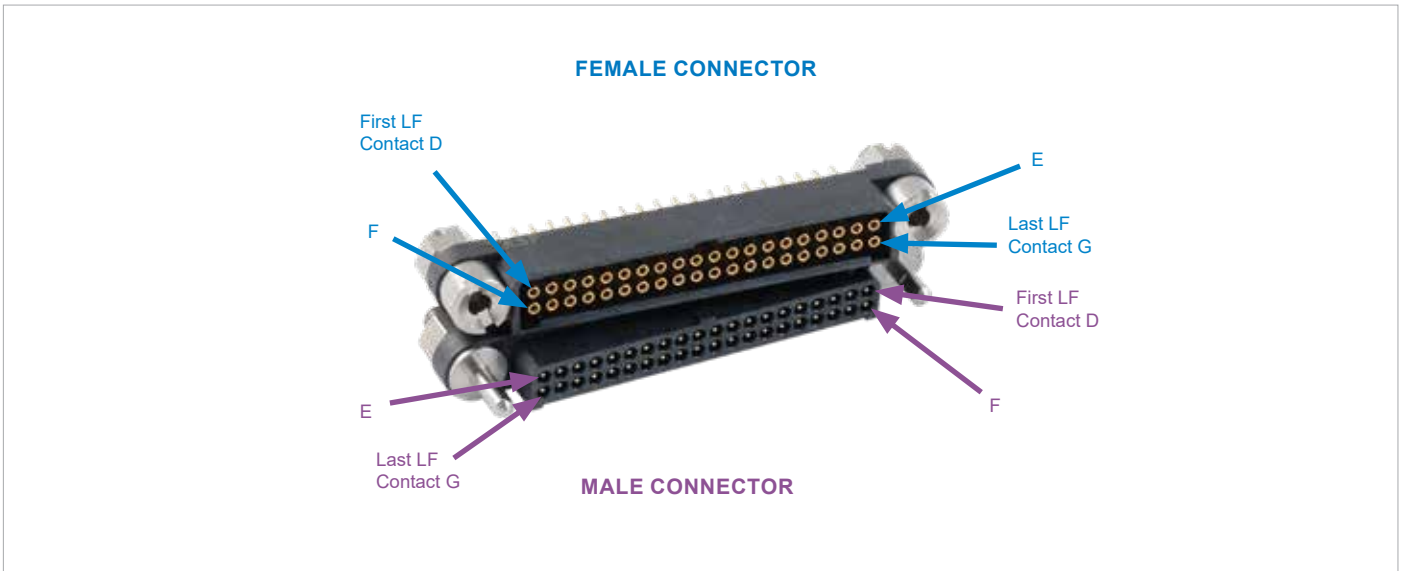
Female Straight SMT



Male 90° SMT



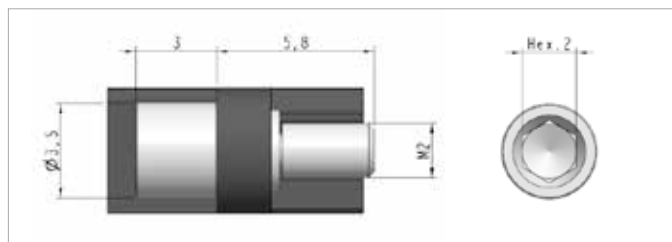
Contact location



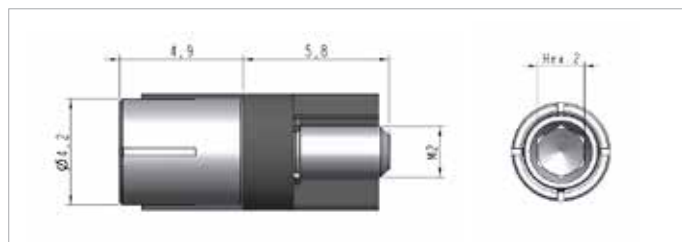
Dimension table																													
LF contact number	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
A = Distance between pins (mm)	1.27	2.54	3.81	5.08	6.35	7.62	8.89	10.16	11.43	12.70	13.97	15.24	16.51	17.78	19.05	20.32	21.59	22.86	24.13	25.40	26.67	27.94	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

FITTINGS - MICRO HDAS

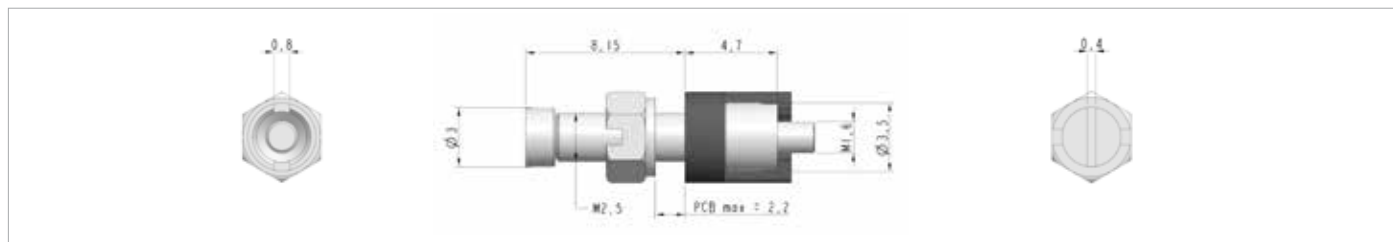
E01



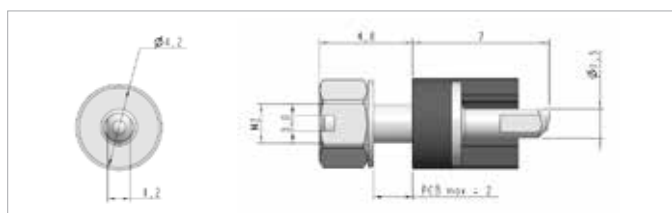
E02



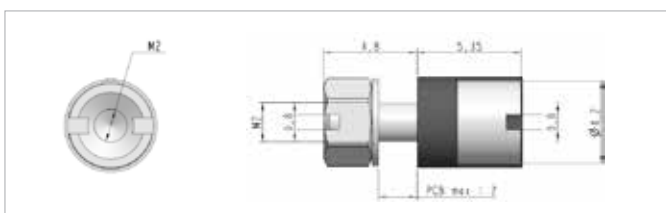
E03



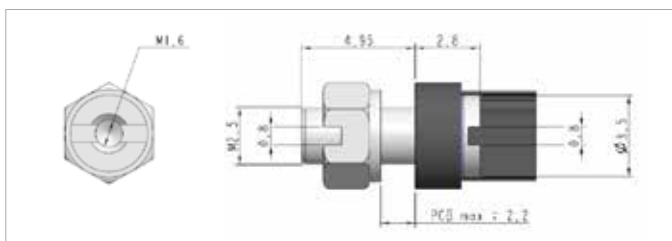
E10



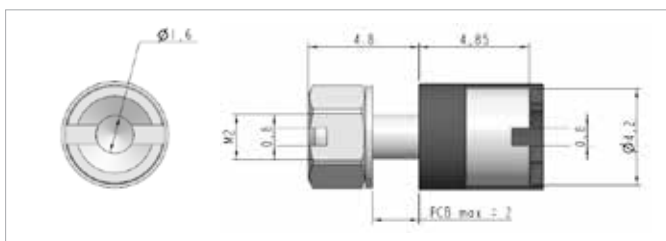
E50



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

Technical drawing of a 1/2 inch NPT female plug. The drawing includes a front view on the left and a side view on the right. The front view shows a circular face with a central hole and a hexagonal base. The side view shows the profile of the plug with a hexagonal base. Dimensions are provided in inches:

- Top diameter: $\varnothing 1.6$
- Top section length: 1.6
- Top section outer diameter: 6.45
- Top section height: 5.1
- Hexagonal base height: 4.8
- Hexagonal base width: $W2$
- Maximum length: $PCB_{max} = 2$

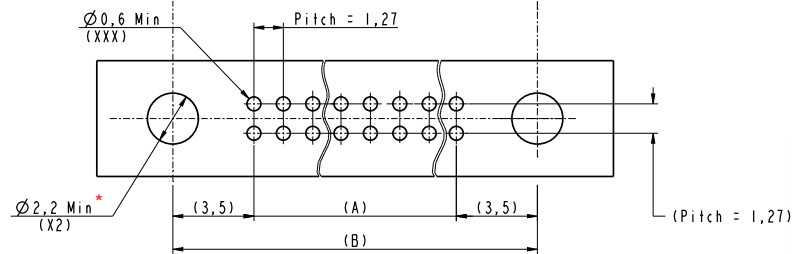
Technical drawing of a hexagonal nut. The side view shows a height of 2,8. The top view shows a hexagonal shape with a central hole, labeled "Hex 4".

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	

PCB LAYOUT - MICRO HDAS

Straight/90° on PCB

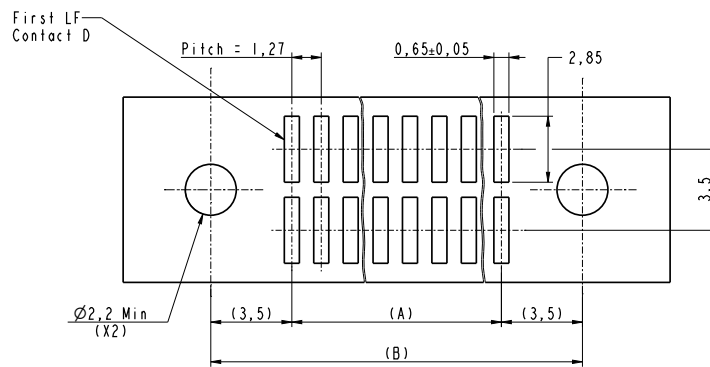
THROUGH-HOLE PCB LAYOUT



* Ø2.8 Min with E03 and E53 fittings

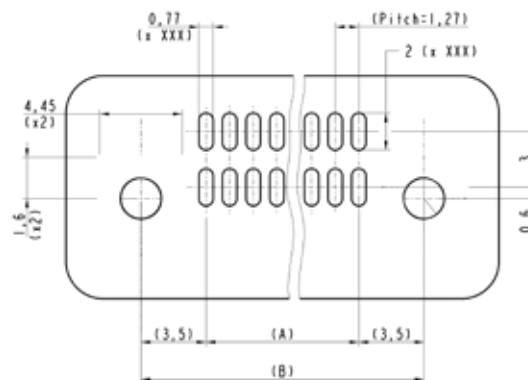
Straight on PCB

SMT TYPE PCB LAYOUT



90° on PCB

SMT TYPE PCB LAYOUT



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

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

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



YD Straight PC tail standard ✓

T Straight SMT ✓

6. Fitting type

E10 Male straight guiding

E50 Female straight jackscrew

E60 Female straight guiding

E01 Jackscrew for harness

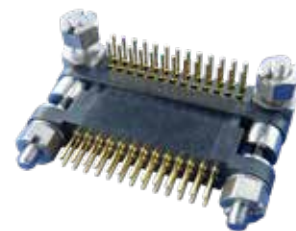
E02 Captive screw for harness

E03 Jackscrew for PCB/Panel mount

E53 Female straight jackscrew

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

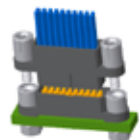
Reference	Description
MHDASODIEC	Insertion and extraction tool for Micro HDAS signal contacts

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 recommend to do backpotting with Stycast 2651MM and Catalyst 9 (10%).



NOTES

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

NOTES

Handwriting practice lines consisting of 20 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 specially 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

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UNITED KINGDOM	Amphenol MARTEC	St Augustines Business Park, Swalecliffe Whitstable - Kent CT5 2QJ	+44 1227 793 733

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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
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