

Amphenol SOCAPEX

NEW

Harness off-the-shelf

High performance & quality harnesses with HDAS or microHDAS connectors

Description

To better meet your needs for speed and efficiency, Amphenol Socapex now offers a complete range of off-the-shelf standard harnesses, available quickly.
Equipped with HDAS and microHDAS series connectors, these ready-to-use harnesses combine reliability, compactness, and performance to simplify and accelerate your integrations in the most demanding environments.

Main Features

Benefits

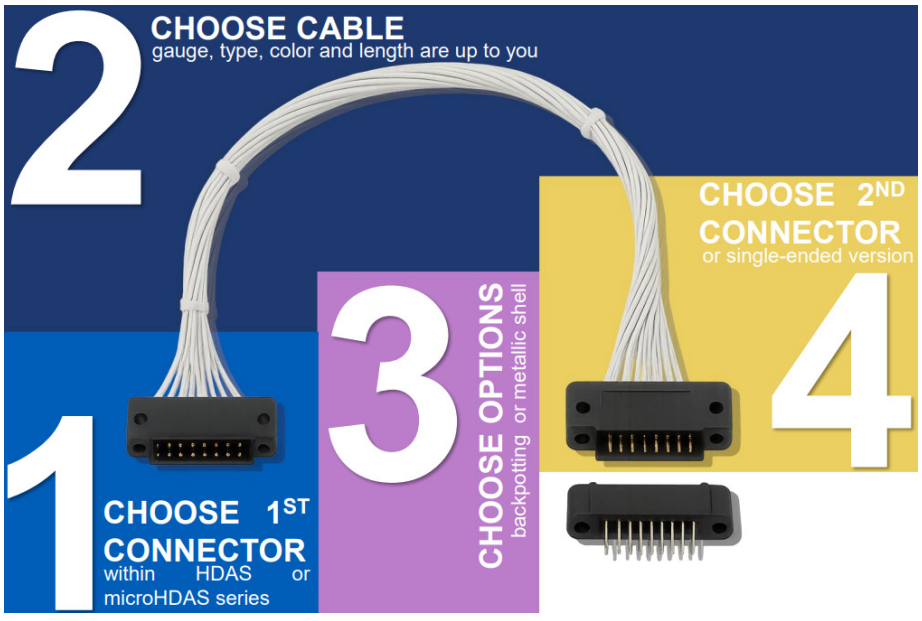
- Manufactured following IPC/WHMA-A-620 class 3
- Quick availability of jumpers or fly-lead harnesses
- MIL-DTL-55302 compliant connnectors designed for harsh environments
- Wide range of cables and accessories

Environmental characteristics:

- 500 mating/unmating cycles
- Operating temperature: -65 to 150 °C *depending on cable*

Electrical characteristics:

- With HDAS connectors:
  4,5 A *depending on cable*
  DWV 1000 Vrms at sea level
- With microHDAS connectors:
  up to 5 A *depending on cable*
  DWV 750 Vrms at sea level



Markets & Applications

C6ISR · Ground Vehicle · Military Aerospace · Commercial Aerospace · Missiles

Harness off-the-shelf



1. Choose the first connector

	HDAS	MHDAS
TECHNICAL CHARACTERISTICS		
Backoff (mm)	1.2	1.27
Signal contact engagement & separation forces Engagement force per contact (N) Separation force per contact (N)	 0,6 < F < 0,8 0,3 < F < 0,5	 0,39 < F < 0,68 0,16 < F < 0,21
Connector mating and unmating forces Mating Force (N) Unmating force (N)	 3_{MAX} x number of contacts 0.45_{MIN} x number of contacts	 $0,44_{MAX}$ x number of contacts $0,31_{MIN}$ x number of contacts
Durability cycles	500	500
Sinusoidal vibrations	Up to 15 g	Up to 45 g
Shocks (sawtooth/6ms)	Up to 100 g	Up to 160 g
ENVIRONMENTAL CHARACTERISTICS		
Operating Temperature (°C)	-65/+150	-65/+150
Salt spray (hours)	144	96
Humidity (25-65°C / 90-95%)	10 cycles of 24 hours	10 cycles of 24 hours
Thermal vacuum outgassing TML : Total Mass Loss CVCM : Max Volatile Condensable Material	 TML<1,00% of the original mass CVCM<0,10% of the original mass	 TML < 1,00% of the original mass CVCM < 0,10% of the original mass
ELECTRICAL CHARACTERISTICS		
Current rating per contact (A)	Depending on cable, up to 4.5	Depending on cable, up to 5
Insulation resistance (at 500Vdc) (GΩ)	5_{MIN}	5_{MIN}
Contact resistance (mΩ)	10_{MAX}	8_{MAX}
Dielectric withstanding voltage (Vrms) at sea level	1000_{VRMS}	750_{VRMS}

2. Choose the cable

Cable characteristics:

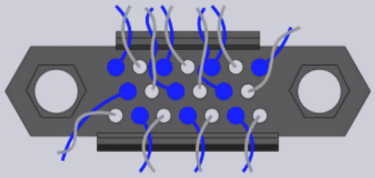
	Cable Type	Operating Temperature	Cable color
K	KZ cable (standard)	200°C	● or ○
T	Twisted pair with KZ cables	200°C	◑
X	Personalized cable on request	/	Upon request

Twisted pair cabling:

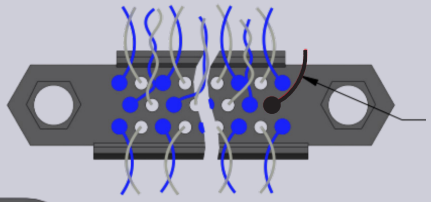
This option enhances reliability and performance by minimizing electromagnetic interference and signal distorsion.

HDAS: view from the back

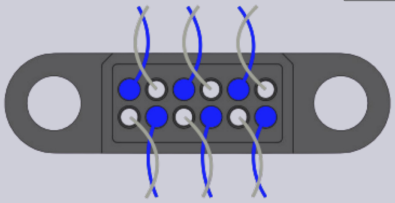
For pair plugs (20 & 50), twisted pair cables are wired this way



For impair plugs (11, 29, 41 & 77), twisted pair cables are wired this way



MHDAS: view from the back



Harness off-the-shelf

3. Choose options

First Option: Backpotting



Backpotting involves pouring resin at the rear of the connector, around the wires. It allows:

- **Strain relief**: helps to prevent wires from moving or disconnecting under tension or vibration.
- **Moisture protection**: seals the back of the connector to avoid water ingress.
- **Mechanical reinforcement:** stabilizes wires and solder joints, increasing the connector's lifespan.

Backpotting used is

- ***DOW Corning 3140 RTV*** on HDAS connectors
- ***Stycast 2651 MM*** and ***Catalyst 9*** on MHDAS connectors

It is useful to ensure the optimal performances of the connectors, especially the dieletric and thermal specifications. If the harness is not single-ended, backpotting is applied on both connectors.

Second Option: Shell & Metallic braid



The aim of the shell, made of **nickel over aluminium**, is to protect the connector and ensures reliability in demanding environments:

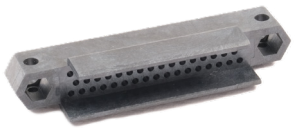
- **Electromagnetic shielding**: reduces EMI/RFI interference to maintain good signal quality.
- **Mechanical protection**: prevents damage caused by shocks, vibrations, or cable twisting.
- **Environmental protection**: makes the connector resistant to water, dust, and humidity.
- **Secure locking**: enhances a firm connection and helps to prevent from accidental disconnection.

Depending on the strand diameter, the suitable protected shielding over wire is mounted on the shell with a hose clamp.

4. Choose the other end

- **Open-end** : Ideal for custom installations, allowing direct integration into your system for maximum flexibility.
- **Jumper** : HDAS or MHDAS connectors depending on the range chosen on first connector.

Exploded views of HDAS and MHDAS connector:

CONTACTS	INSULATORS	FITTINGS		
				For MHDAS only
		 Jackscrews	 Male Guiding	 Female Guiding
Clip Technology (socket) & machined pins contacts with gold plate	Molded LCP Polarized *(plug only with HDAS connector)* *(plug or receptacle with MHDAS connector)*	Stainless Steel		

5. Instructions to use insertion & extraction tools

Insertion & extraction tool:	Reference	Description	Pictures	Instructions
HDAS Insertion tool	**HDAS ODI C**	Insertion for HDAS signal crimp contacts		Access our technical note with instructions:
HDAS Extraction tool	**HDAS ODE C**	Extraction for HDAS signal crimp contacts		Access our technical note with instructions:
MHDAS tool	**MHDAS ODI EC**	Insertion and extraction for MHDAS signal crimp contacts		Access our technical note with instructions:

Harness off-the-shelf



How to order - HDAS

1.	2.	3.	4.	-	5.	6.	7.	8.	9.	-	11.	12
Series	1st connector gender	Connector size	1st connector fittings	-	Cable gauge	Cable type	Cable color	Cable length	Accessories	-	2nd connector gender	2nd connector fittings
HDAS	F	020	5	-	24	K	0	0100	B	-	F	5

1. Series name

HDAS	HDAS 1.905 mm pitch

2. 1st Connector gender

F	Plug only with male contacts

3. Connector size

Number of contacts	011 020 029 041 050 077

4. 1st connector fittings

0	Straight guiding and keying
2	Straight guiding
5	Straight jackscrew M2,5
C	Captive screw M2,5
L	Latch *(011 to 041 contacts only)*
S	Locking captive screw (shell)

5. Cable gauge

AWG	22
	24
	26
	28

6. Cable type

K	KZ cable (standard)
T	Twisted pair with KZ cables
X	Personalized cable on request

7. Cable color

0	Black
1	White
2	White & Blue *(only for twisted pair* **T***)*

8. Cable length

0 / ±25mm	0 / ±50mm
0100	*0400*
0150	*0500*
0200	*0600*
0250	*0700*
0300	*0800*
	0900
	1000

9. Accessories

B	Backpotting
S	Metallic Shell & Braid
N	No accessories

11. 2nd Connector gender

F	Plug only with male contacts
S	Single ended / Fly lead

12. 2nd connector fittings

0	Straight guiding and keying
2	Straight guiding
5	Straight jackscrew M2,5
C	Captive screw M2,5
L	Latch *(011 to 041 contacts only)*
S	Locking captive screw (shell)
blank	Open-end / Fly lead

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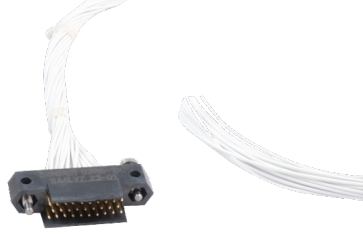

How to order - MHDAS

1.	2.	3.	4.	-	5.	6.	7.	8.	9.	-	11.	12
Series	1st connector gender	Connector size	1st connector fittings	-	Cable gauge	Cable type	Cable color	Cable length	Accessories	-	2nd connector gender	2nd connector fittings
MHDAS	F	006	50	-	24	K	0	0100	B	-	F	50

1. Series name

MHDAS	Micro HDAS 1,27 mm pitch

2. 1st Connector gender

M	Plug with Male contacts
F	Receptacle with Female contacts

3. Connector size

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

4. 1st connector fittings

01	Jackscrew for harness M2
02	Captive screw for harness M2
03	Jackscrew for PCB/panel mount
10	Male straight guiding
50	Straight threaded socket M2
53	Straight threaded socket M1,6
60	Female straight guiding
S1	Locking screw to be used with shell and panel thickness : 2 mm
S2	Locking screw to be used with shell and panel thickness : 1,5 mm
S3	Locking screw to be used with shell and panel thickness : 1 mm
S4	Locking screw to be used with shell and panel thickness : 0,5 mm

5. Cable gauge

AWG	24
	26
	28
	30

6. Cable type

K	KZ cable (standard)
T	Twisted pair with KZ cables
X	Personalized cable on request

7. Cable color

0	Black
1	White
2	White & Blue *(only for twisted pair* **T***)*

8. Cable length

0 / ±25mm	0 / ±50mm
0100	*0400*
0150	*0500*
0200	*0600*
0250	*0700*
0300	*0800*
	0900
	1000

9. Accessories

B	Backpotting
S	Metallic Shell & Braid
N	No accesories

11. 2nd Connector gender

M	Plug with Male contacts)
F	Receptacle with Female contacts)
S	Single ended / Fly lead

12. 2nd connector fittings

blank	Open-end / Fly lead
01	Jackscrew for harness M2
02	Captive screw for harness M2
03	Jackscrew for PCB/panel mount
10	Male straight fitting
50	Straight threaded socket M2
53	Straight threaded socket M1,6
60	Female straight guiding
S1	Locking screw to be used with shell and panel thickness : 2 mm
S2	Locking screw to be used with shell and panel thickness : 1,5 mm
S3	Locking screw to be used with shell and panel thickness : 1 mm
S4	Locking screw to be used with shell and panel thickness : 0,5 mm

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