



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 connectors designed for harsh environments
- Wide range of cables and accessories

Electrical characteristics:

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

Environmental characteristics:

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



Markets & Applications



C6ISR



Ground Vehicle



Military Aerospace



Commercial Aerospace



Missiles

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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) | 0,6 < F < 0,8 | 0,39 < F < 0,68 |
| Separation force per contact (N) | 0,3 < F < 0,5 | 0,16 < F < 0,21 |
| Connector mating and unmating forces | | |
| Mating Force (N) | 3 _{MAX} x number of contacts | 0,44 _{MAX} x number of contacts |
| Unmating force (N) | 0,45 _{MIN} 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 | TML < 1,00% of the original mass | TML < 1,00% of the original mass |
| CVCM : Max Volatile Condensable Material | CVCM < 0,10% 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 | 750 _{VRMS} | 750 _{VRMS} |

2. Choose the cable

Cable characteristics:

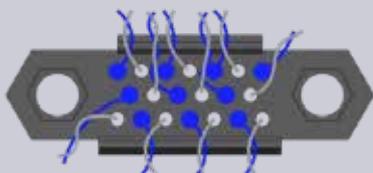
| | Cable Type | Operating Temperature | Cable color |
|----------|-------------------------------|-----------------------|--------------|
| K | KZ cable (standard) | 200°C | ● or ○ |
| T | Twisted pair with KZ cables | 200°C | ◐ |
| X | Personalized cable on request | / | Upon request |

Twisted pair cabling:

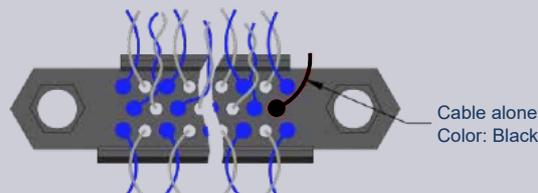
This option enhances reliability and performance by minimizing electromagnetic interference and signal distortion.

HDAS: view from the back

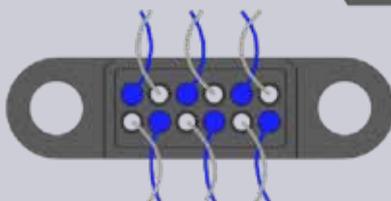
For pair plugs (20 & 50), twisted pair cables are wired this way



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



MHDAS: view from the back



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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 dielectric 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 | | |
|---|--|--|--|---|--|
|  | |  |  |  | <i>For MHDAS only</i>  |
| Clip Technology (socket) & machined pins contacts with gold plate | | Molded LCP Polarized <i>(plug only with HDAS connector)</i> <i>(plug or receptacle with MHDAS connector)</i> | Jackscrews | Male Guiding | Female Guiding |
| | | | 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:  |

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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 |
| blank | Open-end / 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 |

| 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 accessories |

| 11. 2nd Connector gender | |
|--------------------------|----------------------------------|
| M | Plug with Male contacts) |
| F | Receptacle with Female contacts) |
| blank | Open-end / Fly lead |

| 12. 2nd connector fittings | |
|----------------------------|-------------------------------|
| 01 | Jackscrew for harness M2 |
| 02 | Captive screw for harness M2 |
| 03 | Jackscrew for PCB/panel mount |
| 10 | Male straight fitting |
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