

Model EHA3201
EnviroNET G.SHDSL Router

Quick Start Guide



Important — This is a Class A device and is intended for use in a light industrial environment. It is not intended nor approved for use in an industrial or residential environment.



WARNING

- Do not open the device when the power cord is connected. For systems without a power switch and without an external power adapter, line voltages are present within the device when the power cord is connected.
- For devices with an external power adapter, the power adapter shall be a listed *Limited Power Source*. The mains outlet that is utilized to power the device shall be within 10 feet (3 meters) of the device, shall be easily accessible, and protected by a circuit breaker in compliance with local regulatory requirements.
- For AC powered devices, ensure that the power cable used meets all applicable standards for the country in which it is to be installed.
- For AC powered devices which have 3 conductor power plugs (L1, L2 & GND or Hot, Neutral & Safety/Protective Ground), the wall outlet (or socket) must have an earth ground.
- For DC powered devices, ensure that the interconnecting cables are rated for proper voltage, current, anticipated temperature, flammability, and mechanical serviceability.
- WAN, LAN & PSTN ports (connections) may have hazardous voltages present regardless of whether the device is powered ON or OFF. PSTN relates to interfaces such as telephone lines, FXS, FXO, DSL, xDSL, T1, E1, ISDN, Voice, etc. These are known as "hazardous network voltages" and to avoid electric shock use caution when working near these ports. When disconnecting cables for these ports, detach the far end connection first.
- Do not work on the device or connect or disconnect cables during periods of lightning activity.



WARNING

When the EHA3201 is mounted, it shall be secured in such a way as to withstand a vertical shear force of 90N or 20lbs.



In accordance with the requirements of council directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE), ensure that at end-of-life you separate this product from other waste and scrap and deliver to the WEEE collection system in your country for recycling.



Electrostatic Discharge (ESD) can damage equipment and impair electrical circuitry. It occurs when electronic printed circuit cards are improperly handled and can result in complete or intermittent failures. Do the following to prevent ESD:

- Always follow ESD prevention procedures when removing and replacing cards.
- Wear an ESD-preventive wrist strap, ensuring that it makes good skin contact. Connect the clip to an unpainted surface of the chassis frame to safely channel unwanted ESD voltages to ground.
- To properly guard against ESD damage and shocks, the wrist strap and cord must operate effectively. If no wrist strap is available, ground yourself by touching the metal part of the chassis.

1.0 Installing the EHA3201

To install the EHA3201, follow these steps:

1. Make a ground connection for the unit (refer to section 1.1, "Grounding the EHA3201" on page 4).
2. Connect the line interface between the units (refer to section 1.2, "Connecting the Twisted-Pair Line Interface" on page 4)

Note See **figure 1** for the EHA3201 unit's bottom panel arrangements.

3. Connect the Ethernet interface (refer to section 1.3, "Connecting the 10/100Base-T Ethernet Interface" on page 4).
4. Connect the power plug (refer to section 1.4, "Connecting Power" on page 5).

EnviroNET
EHA3201

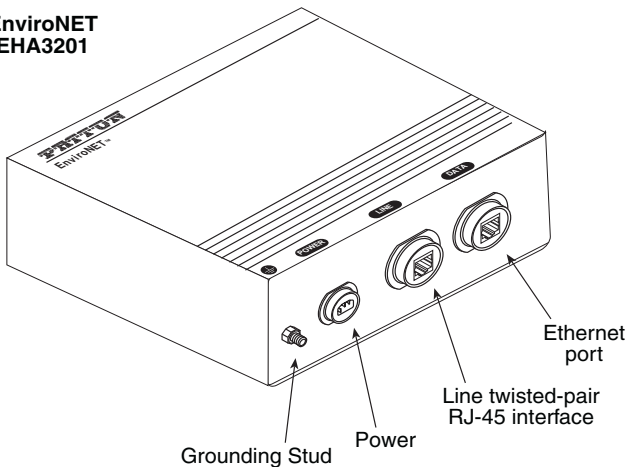


Figure 1. EHA3201 Bottom Panel

1.1 Grounding the EHA3201

Before installing the EnviroNET G.SHDSL Router, it is important to establish a good grounding connection first.

1. Assemble a ground wire using #10 AWG wire with green-and-yellow-colored insulation and two ring terminals. Make the wire long enough to reach one of the following earth ground sources:
 - The building ground rod (generally located at the site's main service entrance)
 - A sprinkler system pipe
 - A cold-water pipe
 - Building structural steel
2. Install the grounding wire between the grounding stud (see Figure 1 on page 3) and the grounding source.

1.2 Connecting the Twisted-Pair Line Interface

To function properly, the G.SHDSL Router must be connected using twisted-pair, unconditioned, dry, metal wire, between 19 (0.9mm) and 26 AWG (0.4mm). Leased circuits that run through signal equalization equipment are not acceptable.

The G.SHDSL Router is equipped with an RJ-45 interface jack (Line), which is a two-wire interface. Observe the signal/pin relationships on the G.SHDSL Router's Line interface jack. The signal/pin relationship is shown in figure 2.

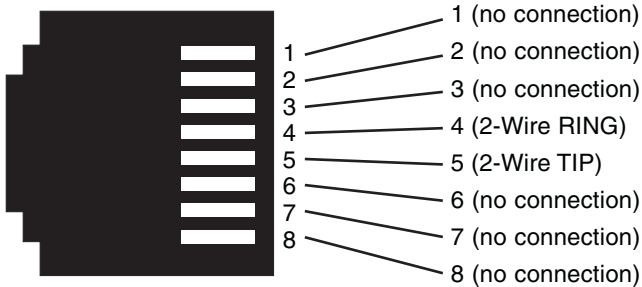


Figure 2. EnviroNET G.SHDSL Router (RJ-45) twisted pair line interface.

1.3 Connecting the 10/100Base-T Ethernet Interface

The G.SHDSL Router has an unshielded RJ-45 auto-MDIX10/100Base-T interface. This port is designed to connect directly to a 10/100Base-T network. **figure 3** shows the signal/pin relationships on this interface. You may connect this port to a hub or PC using a straight through or crossover cable that is up to 328 ft long.

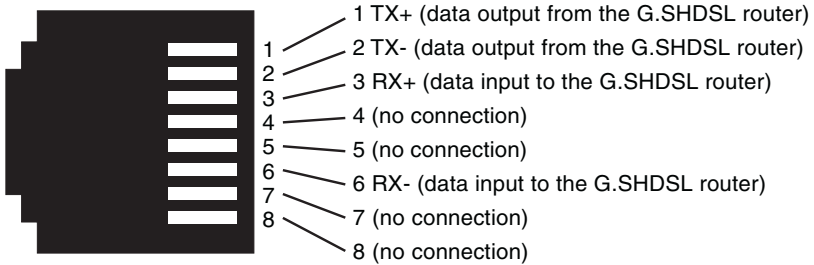


Figure 3. EnviroNET G.SHDSL Router 10/100Base-T RJ-45 Connector Pinout

1.4 Connecting Power

The EHA3201 is an internally powered unit. The power connection is made via the 3-pin power connector on the bottom panel of the EnviroNET G.SHDSL Router. A mating connector is provided to create the mating cable (see figure 4). No configuration is necessary for the power supply.

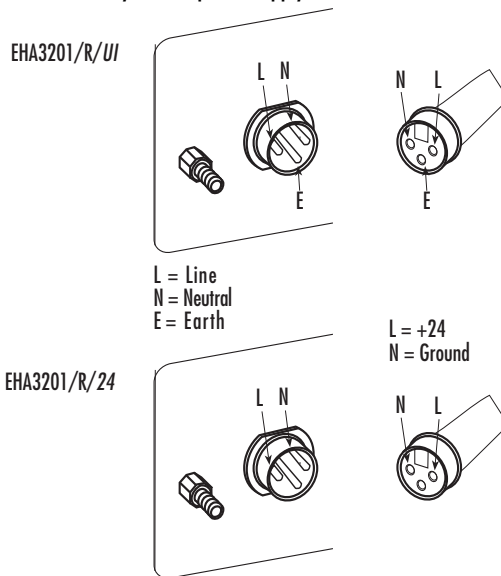


Figure 4. Connecting the power cable

The EnviroNET G.SHDSL Router does not have a power switch, so it powers up as soon as it is plugged in.



There are no user-serviceable parts in the EnviroNET G.SHDSL Router. Fuse replacement should only be performed by qualified service personnel. Contact Patton Electronics Technical support at (301) 975-1007 for more information.

Note It does not matter whether the positive (+) or negative (-) side of the DC power supply is grounded. However, the polarity on the power source must be matched up properly to the EHA3201 power input (i.e. negative power source terminal to negative power input; positive power source terminal to positive power input).

2.0 Configuring the EHA3201

The EnviroNET G.SHDSL Router comes pre-configured to communicate with other devices on the network. To further configure the EHA3201, you may log into the web management system.

2.1 Connect to a PC

1. Connect the EHA3201's *Data* port to your PC (see figure 5).
2. The PC used for configuring the EHA3201 should be set for DHCP client.
3. Connect the EHA3201 to a power source to turn on the unit.
4. The EHA3201 *Data* port uses the DHCP client to automatically assign an IP address and netmask. The EHA3201 will send the IP address to the PC.
5. Enter the EHA3201's IP address in the address bar of the web browser.
6. Log in and perform any desired configuration changes through the EHA3201's web browser interface.

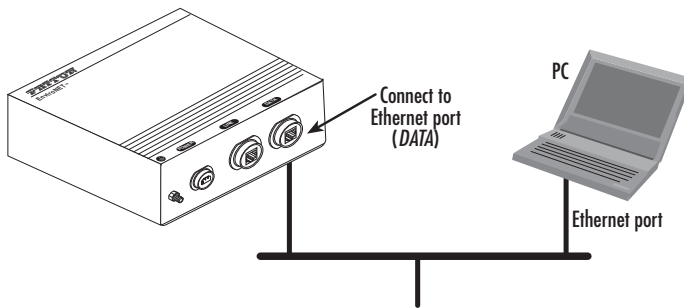


Figure 5. Connecting the EHA3201 to the local IP network

For information on changing the IP address, refer to Chapter 3 "Quick Start Installation" in the *Model 3201 & 3241 User Manual*.

2.2 Configuring applications

The EHA3201 is typically used in a bridged or routed application. For instruction on how to configure the EHA3201 for an application, refer to the *Model 3201 & 3241 User Manual*.

Bridged Applications

- For a bridged application connecting standalone units back-to-back, see pages 29-32 in the *Model 3201 & 3241 User Manual*.
- For a bridged application connecting the CPE to a DSLAM, see pages 38-46 in the *Model 3201 & 3241 User Manual*.

Routed Applications

- For a routed application connecting standalone units back-to-back, see pages 32-38 in the *Model 3201 & 3241 User Manual*.
- For a routed application connecting the CPE to a DSLAM, see pages 46-77 in the *Model 3201 & 3241 User Manual*.

3.0 Additional Information

For detailed information about configuring and operating guidance, set up procedures, and troubleshooting, refer to the *DiamondLink 3201 & 3241 User Manual* available online at www.patton.com/manuals/3201.pdf.

A.0 Customer and Technical Support

Toll-Free VoIP support: call `sip:support@patton.com` with a VoIP SIP phone

Online support: www.patton.com

E-mail support: `support@patton.com`— answered within 1 business day

Telephone support:

- Standard: +1 (301) 975-1007 (USA), Monday–Friday: 8:00 am to 5:00 pm EST (1300 to 2200 UTC/GMT)
- Alternate: +41 (0)31 985 25 55 (Switzerland), Monday–Friday: 8:00 am to 5:00 pm CET (0900 to 1800 UTC/GMT)

Fax: +1 (253) 663-5693 (USA) or +41 (0)31 985 25 26 (Switzerland)

B.0 EHA Case Specifications

B.1 Power Requirements

- UAC: 110, 220VAC, 2.25W

B.2 Temperature Range

- -40–185°F (-40–85°C)

B.3 Humidity

- Up to 90% non-condensing.

B.4 Dimensions

- 8"H x 9.25"W x 3.25"D

B.5 Weight

- 6.4lb (2.9kg)

Note For Model 3201 unit specifications, refer to the *Model 3201 & 3241 User Manual* available online at www.patton.com/manuals.

C.0 Compliance Information

C.1 Compliance

EMC:

- FCC Part 15, Class A
- EN55022, Class A
- EN55024

Safety:

- UL 60950-1/CSA C22.2 NO. 60950-1
- IEC/EN60950-1
- AS/NZS 60950-1

PSTN Regulatory:

- FCC Part 68
- CS-03
- AS/ACIF S043:2003

C.2 FCC Part 68 (ACTA) Statement

This equipment complies with Part 68 of FCC rules and the requirements adopted by ACTA. On the bottom side of this equipment is a label that contains —among other information— a product identifier in the format *US: AAAEQ##TXXXX*. If requested, this number must be provided to the telephone company.

The method used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If trouble is experienced with this equipment, for repair or warranty information, please contact our company. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

3.3 Industry Canada Notice

This equipment meets the applicable Industry Canada Terminal Equipment Technical Specifications. This is confirmed by the registration number. The abbreviation, IC, before the registration number signifies that registration was performed based on a Declaration of Conformity indicating that Industry Canada technical specifications were met. It does not imply that Industry Canada approved the equipment.

This Declaration of Conformity means that the equipment meets certain telecommunications network protective, operational and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction. Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single line individual service may be extended by means of a certified connector assembly (telephone extension cord). The customer should be aware that compliance with the above condition may not prevent degradation of service in some situations. Repairs to some certified equipment should be made by an authorized maintenance facility designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment. Users should ensure for their own protection that the ground connections of the power utility, telephone lines and internal metallic water pipe system, are connected together. This protection may be particularly important in rural areas.

C.4 Radio and TV Interference (FCC Part 15)

This equipment generates and uses radio frequency energy, and if not installed and used properly—that is, in strict accordance with the manufacturer's instructions—may cause interference to radio and television reception. This equipment has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection from such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If the equipment causes interference to radio or television reception, which can be determined by disconnecting the cables, try to correct the interference by one or more of the following measures: moving the computing equipment away from the receiver, re-orienting the receiving antenna, and/or plugging the receiving equipment into a different AC outlet (such that the computing equipment and receiver are on different branches).

C.5 EC Declaration of Conformity

Product Description: Models 3201 & 3241

We certify that the apparatus identified above conforms to the requirements of Council Directive 1999/5/EC on the approximation of the laws of the member states relating to Radio and Telecommunication Terminal Equipment and the mutual recognition of their conformity.



The safety advises in the documentation accompanying the products shall be obeyed. The conformity to the above directive is indicated by the CE sign on the device.

The signed Declaration of Conformity can be downloaded from www.patton.com/certifications/.

C.6 Authorized European Representative

D R M Green
European Compliance Services Limited.
Oakdene House, Oak Road
Watchfield,
Swindon, Wilts SN6 8TD, UK

Copyright statement

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Warranty, Trademark, & Compliance Information

For warranty, trademark and compliance information, refer to the *DiamondLink 3201 & 3241 User Manual* located online at www.patton.com/manuals.

D.O Buccaneer 400 Series Environmentally Sealed Connectors



The following instructions are provided by Bulgin UK for assembling the 400 Series Buccaneer IP68 Sealed Electrical Cable Connectors.

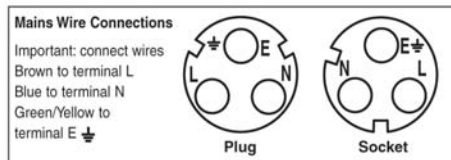
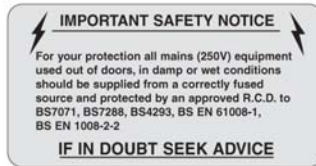
400 Series Buccaneer

IP68 Sealed Electrical Cable Connectors

Wiring and Assembly Instructions



Caution: Not for interrupting current
Attention: Ne pas utiliser pour couper le courant



Leaflet No: 14072 Iss No: 3

IMPORTANT - PLEASE READ INSTRUCTIONS PRIOR TO ASSEMBLY

Before using the connector, it is important that these instructions are carefully read and understood to ensure the connector system is completely water tight and electrically safe. **IF IN DOUBT PLEASE CONSULT A QUALIFIED ELECTRICIAN.**

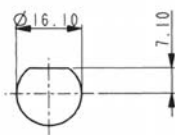
Body Moulding

The body moulding is a snap fit assembly. This is a once only fit to be completed after the connector has been wired. **Do not snap on before wiring is complete.**

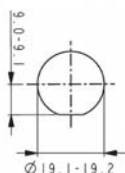
Cable Glands

To ensure the correct cable sealing pairs of cable glands and collets are available to accurately fit cable diameters from 3.0 up to 7.0mm in 0.5mm steps. It is important to match the correct gland and collet to the cable used, these are:

Cable diameter	Gland/Collet Colour	Cable diameter	Gland/Collet Colour
3.0-3.5mm	Light Grey	5.0-5.5mm	Yellow
3.5-4.0mm	Grey	5.5-6.0mm	Blue
4.0-4.5mm	Green	6.0-6.5mm	White
4.5-5.0mm	Red	6.5-7.0mm	Black



Panel cut out details for PX0412

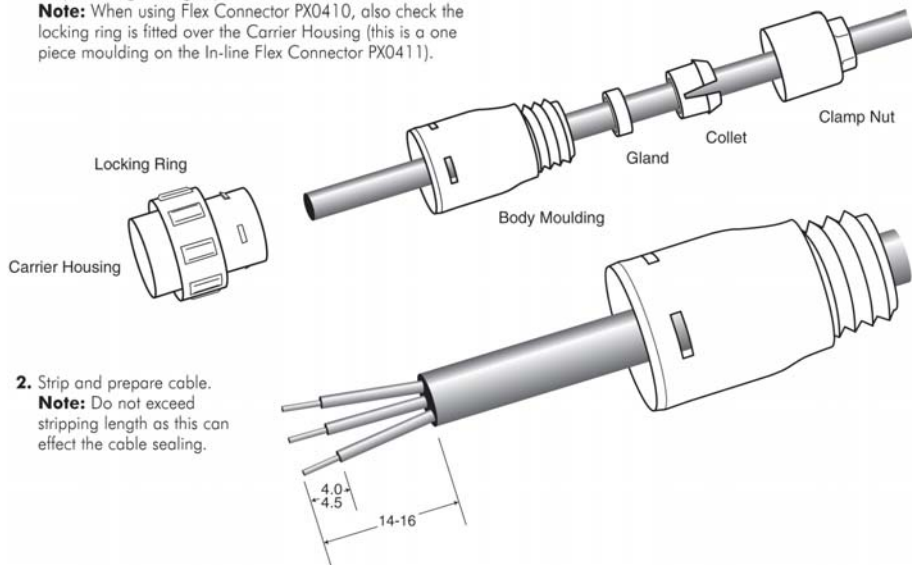


Panel cut out details for PX0413

ASSEMBLY/WIRING INSTRUCTIONS

1. Thread the Clamp Nut, Collet, Gland and Body Moulding on to the cable. Also thread on the sealing cap retaining straps if using sealing caps with the flex connectors.

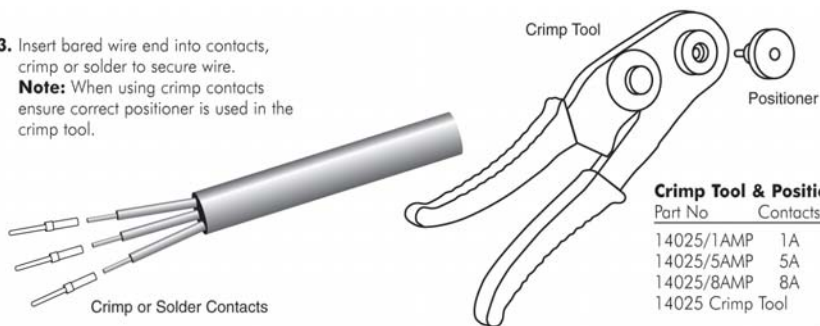
Note: When using Flex Connector PX0410, also check the locking ring is fitted over the Carrier Housing (this is a one piece moulding on the In-line Flex Connector PX0411).



2. Strip and prepare cable.

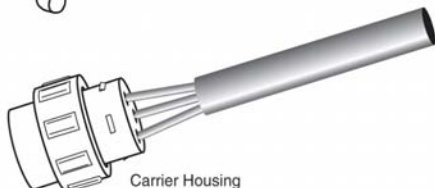
Note: Do not exceed stripping length as this can effect the cable sealing.

3. Insert bared wire end into contacts, crimp or solder to secure wire.
Note: When using crimp contacts ensure correct positioner is used in the crimp tool.



Crimp Tool & Positioners		
Part No	Contacts	Colour
14025/1AMP	1A	Green
14025/5AMP	5A	Red
14025/8AMP	8A	Blue
14025 Crimp Tool		

4. Assemble contacts in to the Carrier Housing ensuring they are in the correct location and pushed fully home. A contact insertion/extraction tool is available:
 Part No 13027 - 1 amp
 Part No 13027/1 - 5 amp
 Part No 13027/2 - 8 amp



Pin identification:

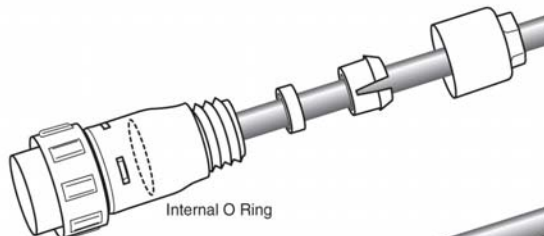
Sockets -
viewed from
cable side



Plugs -
viewed from
cable side

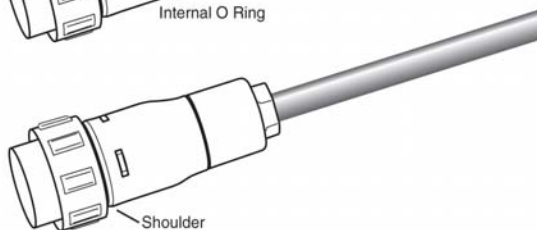


5. Check the internal O Ring is in place and correctly seated. Bring the Body Moulding down the cable and snap firmly over the carrier moulding ensuring that the steps on the blue Carrier Housing are aligned with the apertures in the Body Moulding and that the sealing cap strap is not over the blue Carrier Housing.



Note: once the Body Moulding is snapped over it cannot be removed.

6. Bring the Gland and Collet down the cable and locate in the Body Moulding. Screw the Clamp Nut onto the body moulding and tighten as close to the shoulder as possible. If the Sealing Cap Assembly is being used, slide over the Body Assembly and locate over the shoulder of the Body Moulding.



SPECIFICATION

Electrical:

Poles:	2, 3	4, 6, 8	10, 12
Current Rating:	8A	5A	1A
Voltage Rating:	250V	125V	50V
Contact Resistance:	<5mΩ		
Insulation Resistance:	>10 ⁶ MΩ (@ 500V a.c.)		
AC Breakdown Voltage:	2.5kV		
Operating Temperature Range:	-40° to +80°C		
Approvals:	UL, CSA & VDE		

Mechanical:

Sealing:	IP68, EN 60529						
Cable Acceptance:	3.0 - 7.0mm						
Contact Accommodation:	2, 3 pole, 20 - 24 AWG 4, 6, 8 pole, 22 - 26 AWG 10, 12 pole, 24 - 28 AWG						
Termination:	Crimp, solder and PCB						
Insertion/Withdrawal Force:							
No. poles:	2	3	4	6	8	10	12
Insertion Force (typ):	19N	25N	27N	27N	28N	55N	62N
Withdrawal Force (typ):	12N	17N	17N	21N	22N	25N	29N
Cable Retention force:	80N						

Dimensions:

Overall dimensions of connectors when mated together	
Flex + Flex In-Line	80mm
Dia. over coupling ring	19.1mm

Material:

Body Mouldings:	Polyamide
Flammibility Rating:	UL94V-0
UV Resistance:	To EN 50021:1999
Contacts:	Copper alloy, Gold plated
O Rings:	Nitrile
Chassis Sealing O Ring:	Nitrile
RoHS	Compliant