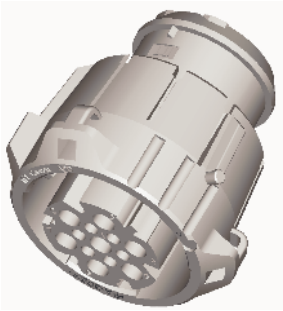
ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

Assembly instruction
APD 6-/7-way

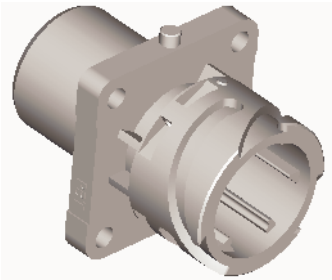
Fixed connector
Jam nut receptacle

Free connector



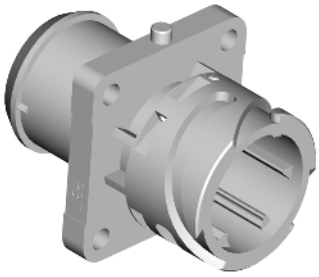
Fixed connector
Flange receptacle

APD-1AP6, 6-way for stamped contacts
APD-1AP6-EP 6-way for press in contacts
APD-1AP7-EP 7-way for press in contacts



No endbell mountable
Front panel mounting possible

APD-1AP7, 7-way for stamped contacts



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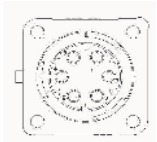
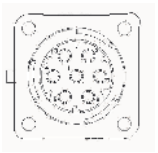
Content

ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

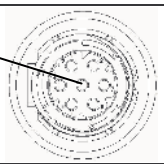
I.) APD 6-/7-way with stamped crimp contacts

1.) Connector Types

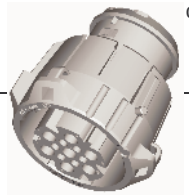
Fixed connector
Flange receptacle — packaging unit 100 pieces

	Order number	Order name.	Code	Colour
 6-way 	120110-0083	APD-1AP6	1	black (1. contact cavity closed)
 7-way 	121583-0020	APD-1AP7	1	black

Fixed connector
Jam nut receptacle — packaging unit 100 pieces

	Order number	Order name.	Code	Colour
Contact cavity closed  6-way 	121583-0061	APD-1CP6	1	black (1. contact cavity closed)
7-way 	121583-0019	APD-1CP7	1	black

Free connector — packaging unit 100 pieces

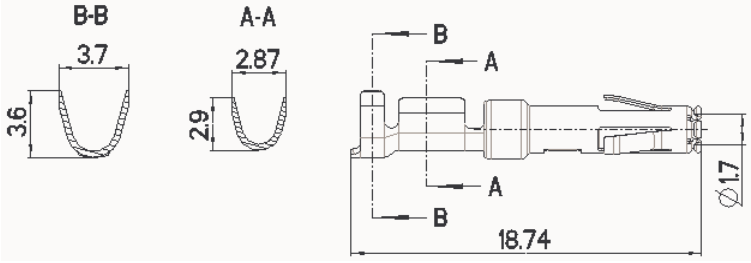
	Order number	Order name.	Code	Colour
Contact cavity closed  6-way 	120110-0024	APD-1BS6	1	black (1. contact cavity closed)
7-way 	121583-0018	APD-1BS7	1	black

ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

2.) Stamped Crimp Contacts

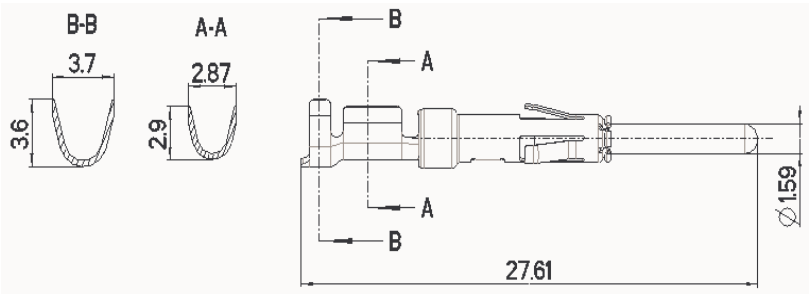
The pin and socket contacts are built of high conductive material.

Socket contact, size 1,6mm



Order number.: 192900-0001
Crimp diameter: 0,75-1,5mm²
Standard plating: tinned
3000 contacts per reel
Single contact, order number 192900-0003

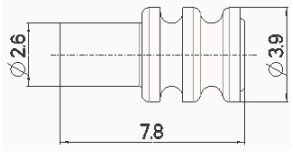
Pin contact, size 1,6mm



Order number.: 192900-0000
Crimp diameter: 0,75-1,5mm²
Standard plating: tinned
3000 contacts per reel
Single contact, order number 192900-0002

The contacts get crimped with insulation crimp. The crimping measurements are the same for pin and socket contacts in uncrimped condition.

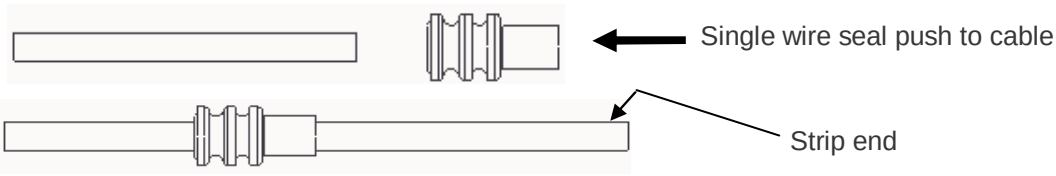
3.) Single Wire Seal



Before skinning the cable, push single wire seal in direction of arrow onto the cable..
(optional)

The single wire sealing is not going to be crimped

Bestell-Bez.	**Bestell-Nr.**
10GR3940	121667-0022
∅ 1,4 – 2,0mm grau	
10YE3940	121667-0023
∅ 1,9 – 2,1mm gelb	
10RD3940	121667-0024
∅ 1,2 – 1,6mm rot	



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4.) Crimp with Hand Crimp Tool

Single contacts are going to be crimped with hand crimp tool..

Wire size	Order number.
16-18 AWG; 0,75–1,5mm²	CHT-Trident 121586-5237

During the processing the crimping specification CAS25047 is to be considered

5.) Crimp with Crimp Machine

For high volume production, crimp machinery with interchangeable crimp tool as the Mecal-TT and WWZ-Mecal-EVS (mini applicator) are used.

Crimp machine Mecal-TT Press

Order name:	Order number:
Mecal-TT	121586-5225

Crimp tool
(mini applicator) WWZ-Mecal-EVS

Order name:	Order number:
WWZ-Mecal-EVS	121586-5217

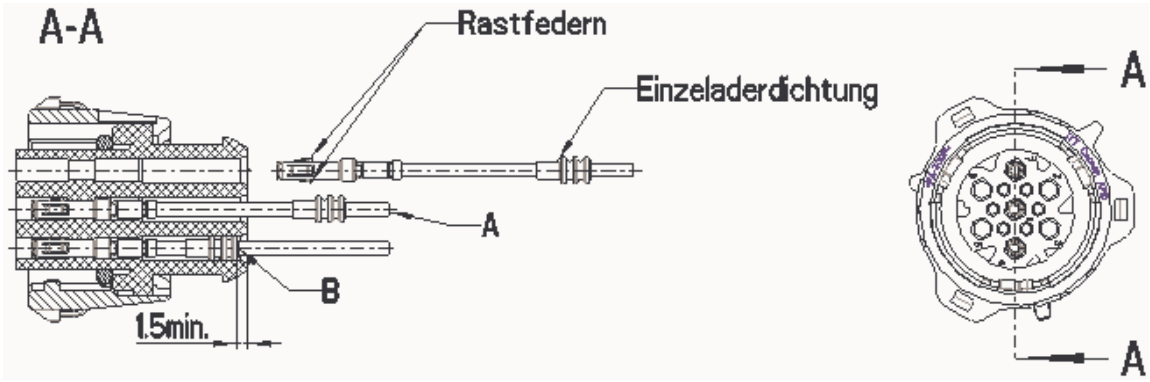
During the processing the crimping specification CAS25046 is to be considered

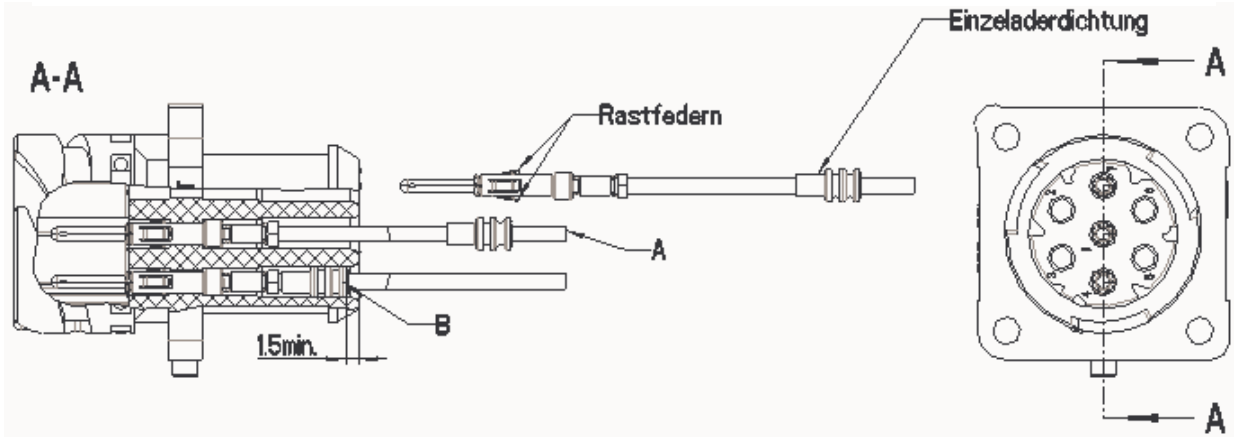
ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

6.) Insertion and Extraction of Stamped Contacts

There is no need of insertion tools.

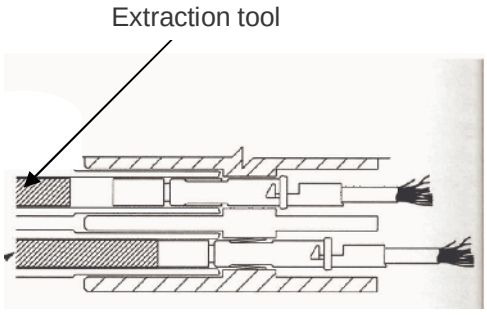
A.) The stamped contacts get mounted from the rear panel of the connector into the contact cavity by hand until it snaps in. To the front, the contact is bounded by the shoulder at the contact.
B.) Single Wire Seal push into connector housing. (Optional)





Extraction
The extraction of stamped contacts, pin and socket from the housing occurs from the front with the extraction tool. The extraction tool gets inserted into the contact cavity on the mating face. See picture 1. Eventually the snap springs get clamped and the cable can be pulled out from the cable face. See picture 2.

Extraction tool
Order number: 192922-1450



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ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

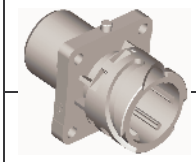
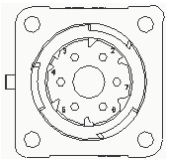
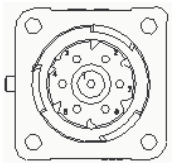
II.) Assembly instruction with Press-in Contacts (pin contacts only)

In addition to the standard contacts also press-in contacts may be used for the APD 6-/ 7-way fixed connector. The pressed-in contacts cannot be exchanged anymore.

1.) Connector Types

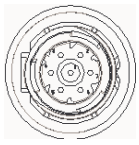
Fixed connector
Flange receptacle

Packaging unit: 100 pieces

		Bestell-Nr.	Bestell-Bez.	Code	Farbe
 6-way		120110-0020	APD-1AP6-EP	1	black (1. contact cavity closed)
7-qay		121583-0205	APD-1AP7-EP	1	black

Fixed connector
Jam nut receptacle

Packaging unit: 100 pieces

		Bestell-Nr.	Bestell-Bez.	Code	Farbe
 6-polig		Auf Anfrage	APD-1CP6-EP	1	black (1. contact cavity closed)
7-polig		121583-0028	APD-1CP7-EP	1	black

2.) Press-In Contacts (1,6mm)

Order number:
330-8672-021 (tinned), (0,75-1,5mm²)
330-8672-019 (tinned), (0,35-0,75mm²)
With plating, flash plated, on request
Packaging unit: 100 pieces

ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

3.) Stripping the Cable

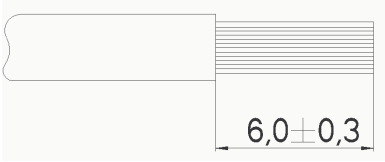
Hand crimp tool

The crimping process occurs with a hand crimp tool:
tool M22520-1-01
locator CT 120090-163

The crimp adjustment should be read of and adjusted at the locator.

	Hand crimp tool	Order no.:
Pin contact 330-8672-021 330-8672-019	M22520-1-01	995-0001-585
	Locator for hand crimp tool CT120090-163	120090-0163

4.) Crimp instruction for Press-in Contacts



The stripping length for the press-in contact is 6,0+/- 0,3mm. Strip it with the proper stripping clamp or stripping machine.
The stranded wires must not be damaged during this process.

1.) Strip to the proper length

2.) Add the right locator (turret) to the hand crimp tool

3.) Adjust the crimp diameter with the rotatable scale (see note Turret)

4. Place the contact in the locator and insert the stripped cable into the contact

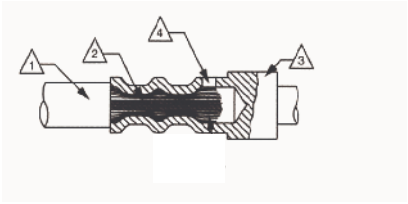
5.) Press the clamp until reopening is possible

6.) Remove and check the contact crimp. Check the accurate position of the stranded wires through the visual holes.

ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

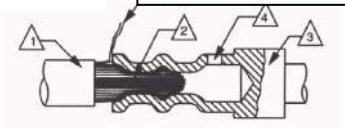
Crimp error

All right!



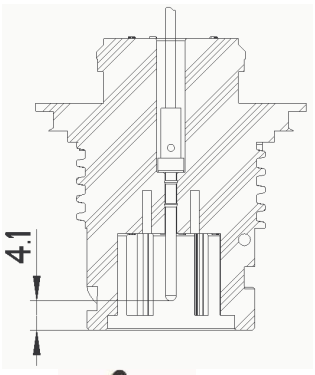
1 Cable insulation
2 Stranded wire
3 Contact
4 Visual hole

Wrong Loose stranded



The minimum retention force are fixed in the standard DIN EN 60352-2-2006
These depend to consider on the cable diameter.

5.) Insertion of Press-in Contacts



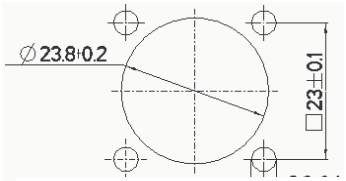
After having crimped, the press-in contact gets inserted into the insulator from the cable face (contact cavity). With the insertion tool CIT-APD-16 TIP that is integrated in the hand gear press, the press-in contact gets pressed-in until catch (control measurement 4,1mm).
The insertion tool has to press on the shoulder of the contact during process

Order name:	**Order umber:**
Hand gear press CHPZ-240	121586-0081
Insertion tool CIT-APD-16 TIP	317-8648-008

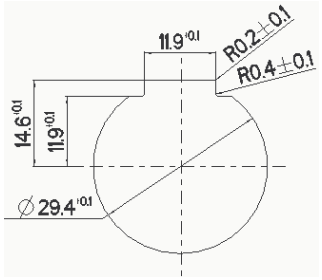
ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

III.) Mounting Cut-out and Accessory

1.) Mounting Cut-out



or M3

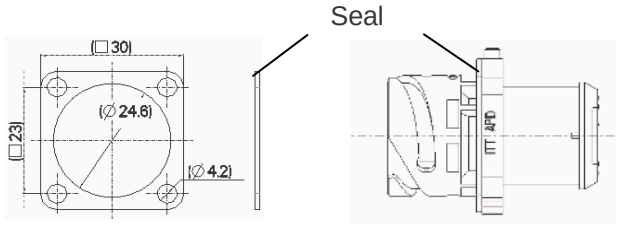


Mounting cut-out for all APD 6-/7-way fixed connectors, Flange receptacles. The thread in the bulkhead conforms with the max. torque for M3 screws.

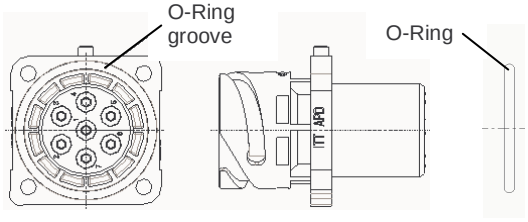
Mounting cut-out for all
APD 6-/7-way fixed connectors,
Jam nut receptacle.

2.) Flange Sealing

Order number.: 075-8503-000



Rear panel mounting
Flange sealing, rubber, for sealing the flange receptacle.
The sealing gets mounted from the mating face.

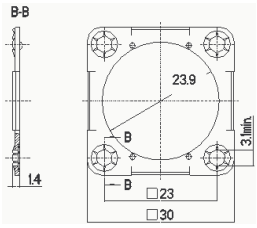


Front panel mounting
An O-Ring is used for front panel mounting.

Inappropriate for 121583-0020
APD-1AP7 (for Trident contacts).

3.) Metal Flange Support

Order number.: 066-8516-005



Flange support for all fixed connectors, flange receptacles. The flange gets inserted from the mating face with its plane surface (rear panel) pressing the flange of the receptacle (front panel mounting).

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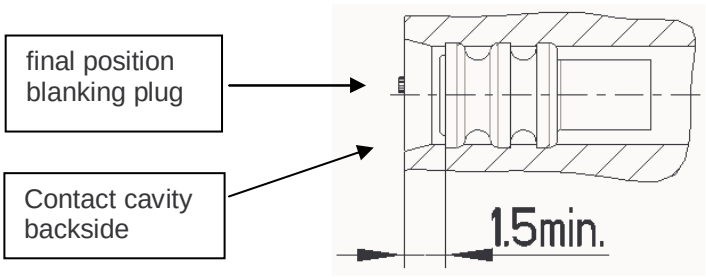
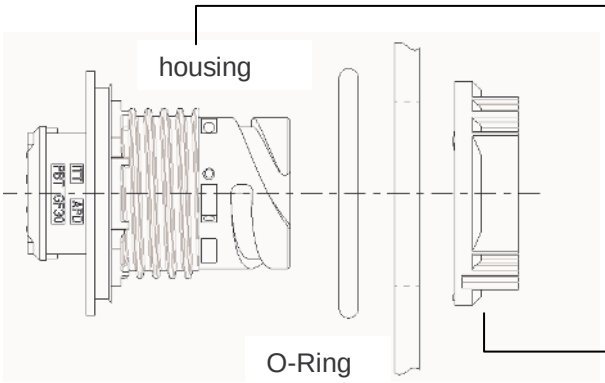
4.) Blanking Plug (Blind seal, wire filler)



For empty contact cavities, there are blanking plugs for sealing. Insert the blanking plug as shown in the draft final position.

Order name:	**Order number:**
10WH3940	121667-0025

5.) Mounting of Jam Nut Receptacle



Jam nut receptacle

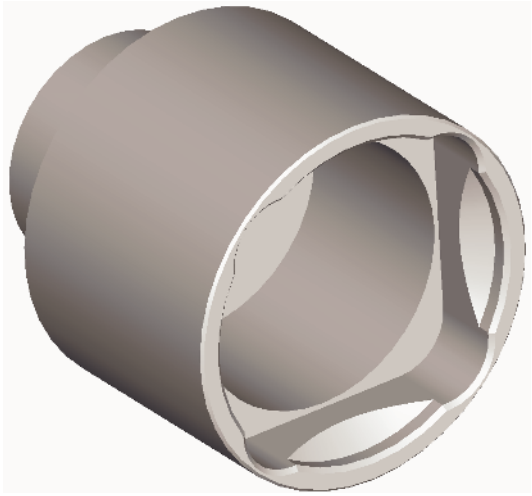
Jam nut
Standard: 217-8516-002
Special: 217-8516-001
Torque: 6 +1 Nm

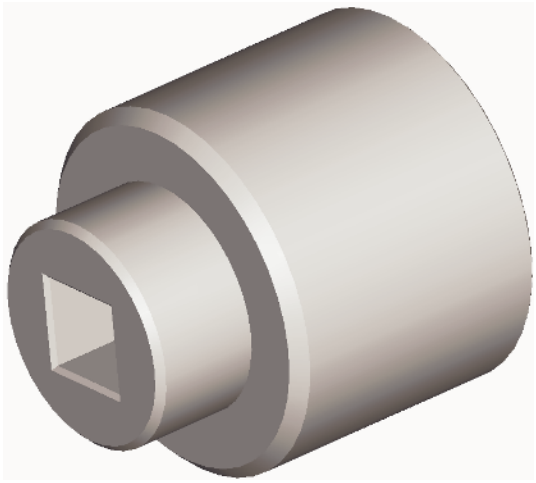
Schottwanddicke
Standard: 1,0 – 4,0mm
Special: 2,0 – 5,0mm
HNBR, ∅31,5 x 3

ITT Industries	**Assembly instruction** APD 6-/7-way	**CAS25022E**

6.) Tools for Tighten the Jam Nut

Order number: 317-8649-034





IV.) Product safety and warranty

THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG.

Failure to observe the advice in this information sheet and the operating conditions specified in the Product Data Sheet/Catalog could result in hazardous situations.

MATERIAL CONTENT AND PHYSICAL FORM
Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.
a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD
There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionisation and burning.
Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock.
If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonisation of insulation and tracking paths.
Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

HANDLING
Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers.
Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

DISPOSAL
Incineration of certain materials may release noxious or even toxic fumes.

APPLICATION
Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac. or 42.5 V dc
are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles.
Insulation resistance should be checked to make certain that no low resistance joints or spurious conducting paths are existing between contacts and exposed metal parts of the connector body. Further, the contact resistance of the connectors should be measured within the electrical circuit in order to identify high resistances, which result in excessive connector heating.
Always use the correct application tools as specified in the Data Sheet/Catalogue. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

IMPORTANT GENERAL INFORMATION
(i) Air and creepage paths/Operating voltage
The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations.

For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.
(ii) Temperature
All information given are temperature limits.
The operation temperature depends on the individual application.
(iii) Other important information
ITT Industries continuously endeavours to improve their products. Therefore, ITT Industries products may deviate from the description, technical data and shape as shown in this catalog and data sheets.
(iv) Harnessing and Assembly Instructions
If applicable, our special harnessing and/or assembly instruction has to be adhered to.
This is provided on request.

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