



Electronic Components

# Cannon APD DIN 72585 Connectors



*Engineered for life*

## ***Interconnect Technologies & Solutions for the Transportation Industry***

For over 90 years, ITT has been developing innovative solutions for harsh environment applications. We have a proven track record of demonstrating our expertise and commitment to the transportation industry, offering the broadest portfolio of interconnect products.

### ***Off-Road / Heavy Vehicle***

Our interconnect range include sealed circulars, plastic and metal shell bayonet coupling circulars, miniature metal shell circulars, PC board header connectors and sensor and direct device connectors. ITT is also a systems supplier, providing value-added module and harness assemblies.

***In addition to our APD DIN 72585 series,  
we also offer these connectivity solutions:***



#### **VEAM VBN**

Completely intermateable with VEAM VG95234/CIR reverse bayonet connectors.



#### **Cannon CA-Bayonet**

Signal and power connectors with exceptional sealing against the ingress of fluids and will withstand the effects of high vibrations.

#### **Cannon Trident**

Versatile range of electrical connectors based on a standard contact design. Options include; industrial grade, harsh environment and shielded circulars.



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# Cannon APD / DIN 72585 Connectors

# Product Overview

<b>APD / DIN 72585</b>							
Series	4-way	4-way	4-way	6-/7-way	6-/7-way	6-/7-way	37-way
Type	Plug	Flange Receptacle	Jam Nut Receptacle	Plug	Flange Receptacle	Jam Nut Receptacle	Plug/Flange Receptacle
Max. current	21 A 29 A 34 A	21 A 29 A 34 A	21 A 29 A 34 A	12 A 19 A	12 A 19 A	12 A 19 A	12 A
Contact Resistance	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ	≤ 5 mΩ
Contacts	Copper alloy tinned	Copper alloy tinned	Copper alloy tinned	Copper alloy tinned	Copper alloy tinned	Copper alloy tinned	Copper alloy, tinned, gold-plated
Sealed Cap	-	121583-0021	121583-0021	-	121583-0021	121583-0021	-
Straight End Bell for Flex Tube	ø 8,5 mm 058-8578-100	-	-	ø 8,5 mm 058-8578-100	-	-	-
	ø 10 mm 058-8578-102	-	-	ø 10 mm 058-8578-102	-	-	-
90° End Bell for Flex Tube	ø 8,5 mm 058-8578-101	-	-	ø 8,5 mm 058-8578-101	-	-	-
	ø 10 mm 058-8578-103	-	-	ø 10 mm 058-8578-103	-	-	-
Dust Cap	025-8636-005	025-0480-000	025-0480-000	025-8636-005	025-0480-000	025-0480-000	-
Wire Filler	273-8506-007	273-8506-007	273-8506-007	273-8506-011	273-8506-011	273-8506-011	121667-0025
Page Number	6	7	8	12	13	14	18-19

<b>APD / DIN 72585</b>							
Series	High Power 1-way	High Power 1-way	High Power 1-way	High Power 2-way	High Power 2-way	High Power 2-way	51-way
Type	Plug	Flange Receptacle	Jam Nut Receptacle	Plug	Flange Receptacle	Jam Nut Receptacle	Plug/Snap-in/Flange Receptacle
Max. current	245 A	245 A	245 A	74 A	74 A	74 A	0 A
Contact Resistance	≤ 0,4 mΩ	≤ 0,4 mΩ	≤ 0,4 mΩ	≤ 2 mΩ	≤ 2 mΩ	≤ 2 mΩ	≤ 5 mΩ
Contacts	Copper alloy silver plated	Copper alloy silver plated	Copper alloy silver plated	Copper alloy silver plated	Copper alloy silver plated	Copper alloy silver plated	Copper alloy, tinned, gold-plated
Sealed Cap	-	121583-0021	121583-0021	-	121583-0021	121583-0021	-
Flex Tube Adapter	980-8672-010	-	-	980-8672-010	-	-	058-8545-000
90° End Bell (up to 25 mm wire)	980-8672-004	-	-	-	-	-	-
Dust Cap	025-8636-005	025-0480-000	025-0480-000	025-8636-005	025-0480-000	025-0480-000	-
Hexagonal Nut	217-8516-010	217-8516-010	217-8516-010	217-8516-010	217-8516-010	217-8516-010	-
Page Number	29	30	31	37	37	38	21-26



Dimensions shown in mm  
Specifications and dimensions subject to change

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APD is a direct, in-line and bulkhead sensor connector that is resistant to engine, transmission and brake fluid. It also boasts very low contact resistance, so you can benefit from maximum signal integrity. APD is available in 1-, 2-, 3-, 4-, 6- and 7 position versions and has been designed to meet all DIN 72585 requirements.

Applications for the 4- and 7-way connector include:

- Sensors
- Traction / Anti Skid Control
- Brake Control (ABS)
- Magnetic Switch Control Systems
- Valve Control (Water, Oil, Air, Pressure)
- Lightening systems on Trucks and Trailers



### Performance Specifications

Contact Resistance	≤ 5mΩ
Insulation Resistance	≤ 10MΩ
Current Rating	21 A max. for wire size 1,5 mm <sup>2</sup> / 25°C 29 A max. for wire size 2,5 mm <sup>2</sup> / 25°C 34 A max. for wire size 4,0 mm <sup>2</sup> / 25°C
Voltage	48 VDC max.
Test Voltage	1000 VAC (Ueff)
Operating Temperature	-40°C / 125°C
Sealing acc. to IEC 529 and DIN 40050, Part 9	Class K2: -40°C / 140°C contact temperature IP67 and IP69K
Shock / Vibration	30g acc. to DIN 72585
Durability	50 mating cycles

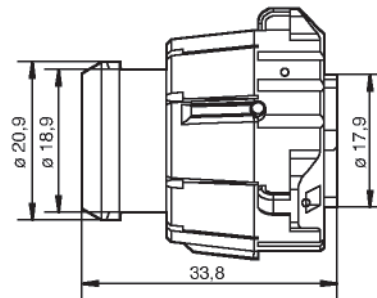
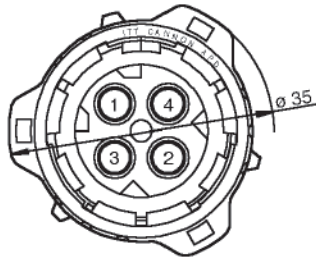
### Materials and Finishes

Connector Housing	PBT
O-ring	HNBR
Contacts	Copper alloy, tinned
Coupling Nut	PA

### Standards and Specifications (in accordance with DIN 72585) Environmental

DIN 40050, Part 9	Sealing
DIN 50016	Humidity
DIN 50021	Resistance against fluids, salt spray test
DIN 51512	Lubricants such as engine oil, grease, etc.
DIN EN 590	Diesel fuel, gasoline
DIN ISO 4925	Brake fluids, anti-freeze, coolants

Plug, 4-way



Order No.	Designation	Code	Color
121583-0000	APD-1BS-K2	1	black (RAL 9005)
121583-0001	APD-2BS-K2	2	gray (RAL 7036)
121583-0002	APD-3BS-K2	3	green (RAL 6029)
121583-0003	APD-4BS-K2	4	blue (RAL 5012)

Packaging unit 100 pcs.

Socket Crimp Contacts, Individual wire-seal, Wire filler, see page 9.  
Accessories, see page 41 and 42.

Coding, 4-way layouts

View on Mating Face



code 1  
black



code 2  
gray



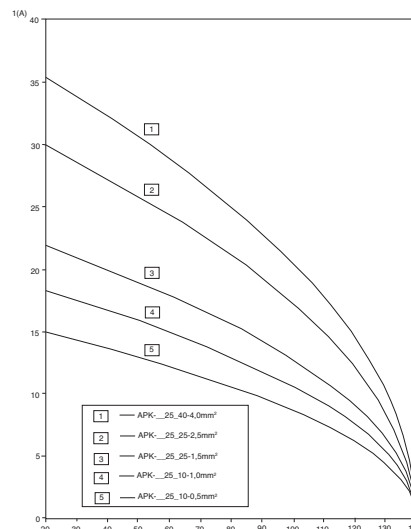
code 3  
green



code 4  
blue

Note: The connectors offer both mechanical keying and visual coding by different colors

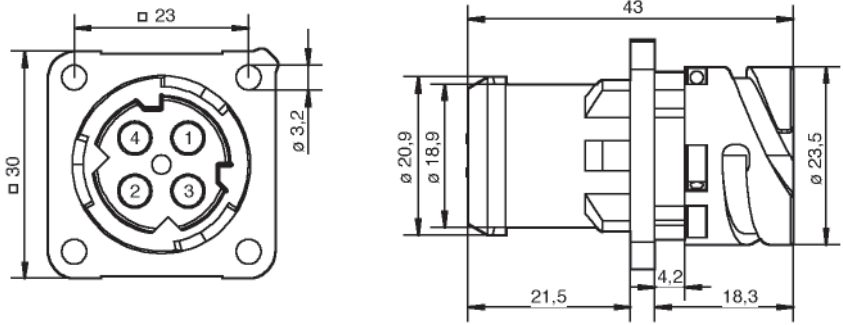
Derating Curve



Dimensions shown in mm  
Specifications and dimensions subject to change

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Flange Receptacle, 4-way



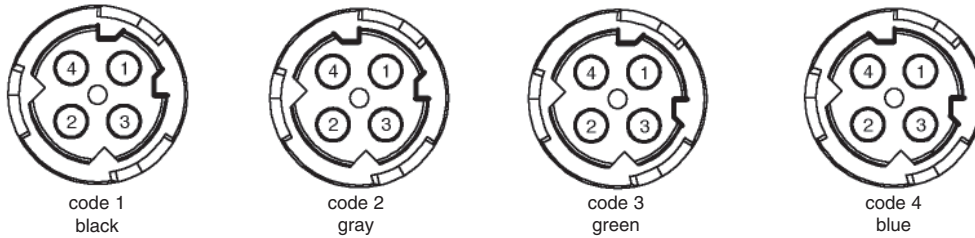
Order No.	Designation	Code	Color
121583-0004	APD-1AP-K2	1	black (RAL 9005)
121583-0005	APD-2AP-K2	2	gray (RAL 7036)
121583-0006	APD-3AP-K2	3	green (RAL 6029)
121583-0007	APD-4AP-K2	4	blue (RAL 5012)

Packaging unit 100 pcs.

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 9.  
Accessories, see page 41 and 42.

Coding, 4-way layouts

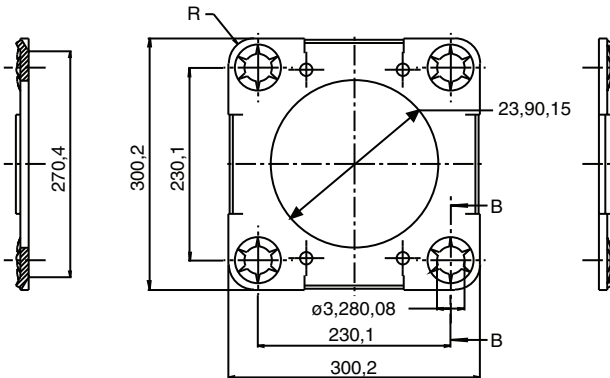
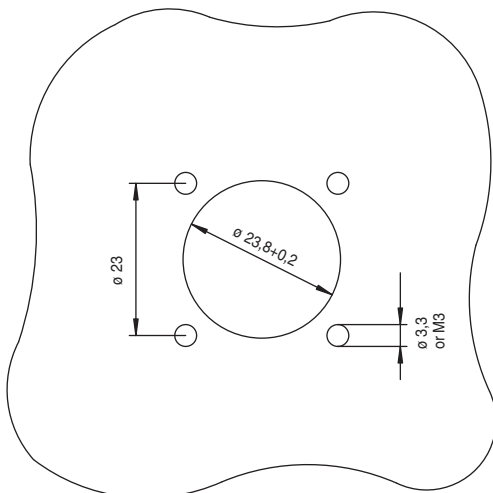
View on Mating Face



Note: The connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out

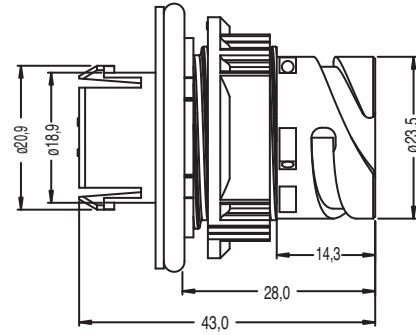
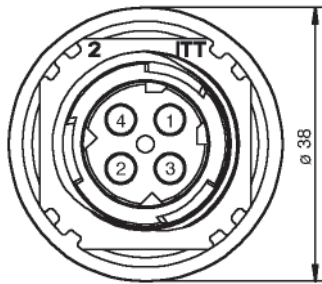
Flange for all Flange Receptacles



Order Number: 066-8516-005

Dimensions shown in mm  
Specifications and dimensions subject to change

Jam Nut Receptacle, 4-way



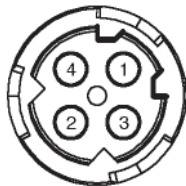
Order No.	Designation	Code	Color
121583-0008	APD-1CP-K2	1	black (RAL 9005)
121583-0009	APD-2CP-K2	2	gray (RAL 7036)
121583-0010	APD-3CP-K2	3	green (RAL 6029)
121583-0011	APD-4CP-K2	4	blue (RAL 5012)

Packaging unit 100 pcs.

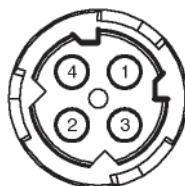
Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 9.  
Accessories, see page 41 and 42.

Coding, 4-way layouts

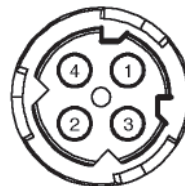
View on Mating Face



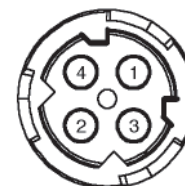
code 1  
black



code 2  
gray



code 3  
green

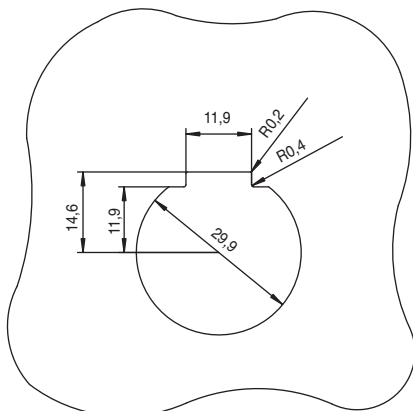


code 4  
blue

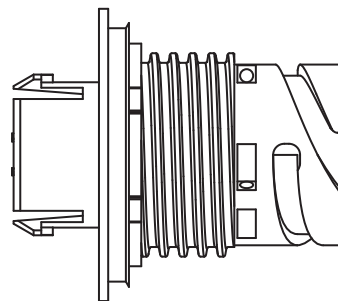
Note: The connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out

Piece Parts / Assembly Instruction



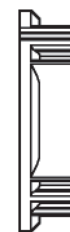
Thickness: Standard: min. 1,0 / max. 4,0 mm Special: min. 2,0 / max. 5,0 mm



Housing



O-ring



Jam Nut

Jam Nut, special

Designation	Order No.
for special wall thickness 2,0 - 5,0 mm	217-8516-001



Dimensions shown in mm  
Specifications and dimensions subject to change

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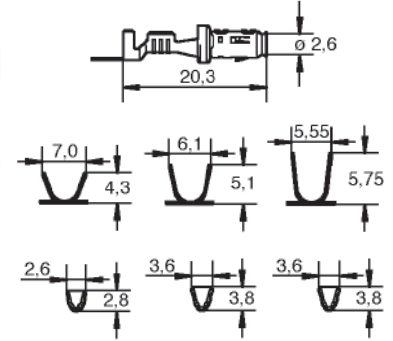


**Socket Crimp-Contacts Standard Tinned, 3000 contacts per reel**

Designation - Standard	Order No.
APK-SB25A10-002 (0,5 - 1,5 mm <sup>2</sup> )	121668-0125
APK-SB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	121668-0126
APK-SB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	121668-0127

Optional with Au-flash	
* APK-SB25H10-002 (0,5 - 1,5 mm <sup>2</sup> )	121668-0022
* APK-SB25H25-002 (1,5 - 2,5 mm <sup>2</sup> )	121668-0128
* APK-SB25H40-002 (2,5 - 4,0 mm <sup>2</sup> )	121668-0124

\* Available only by request

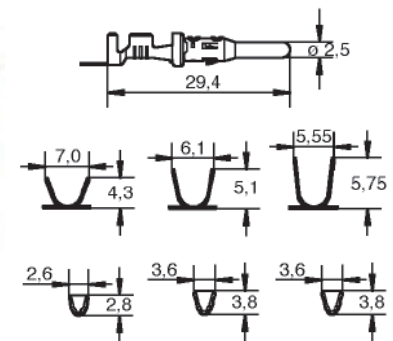


**Pin Crimp-Contacts Standard Tinned, 3000 contacts per reel**

Designation - Standard	Order No.
APK-PB25A10-002 (0,5 - 1,5 mm <sup>2</sup> )	121668-0026
APK-PB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	121668-0027
APK-PB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	121668-0020

Optional with Au-flash	
* APK-PB25H10-002 (0,5 - 1,5 mm <sup>2</sup> )	121668-0021
* APK-PB25H25-002 (1,5 - 2,5 mm <sup>2</sup> )	121668-0029
* APK-PB25H40-002 (2,5 - 4,0 mm <sup>2</sup> )	121668-0025

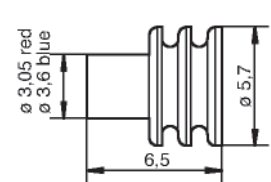
\* Available only by request



**Individual Wire Seals**

For all versions 4-way

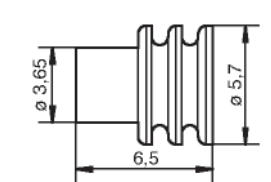
Designation	Order No.
10RD5821	121668-0032
Wire insulation $\varnothing$ 1,4 - 2,0 mm / red	
15BL5822	121668-0033
Wire insulation $\varnothing$ 2,0 - 2,9 mm / blue	



**Wire Filler**

For all versions 4-way

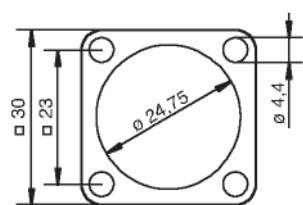
Designation	Order No.
15WH5823	121668-0034
white	



**Flange Gasket**

For Flange Receptacle, 4-way

Order No.
075-8503-000 (-55/125° C)
075-8503-004 (-30/200° C)
Packaging unit 100 pcs.



Dimensions shown in mm  
Specifications and dimensions subject to change

## Crimp and Assembly Tools for APK 25 Contacts

Contact / Socket	Hand Crimp Tool / Order No.	Crimp-Dies
APK-SB25A10-002 (0,5 - 1,0 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-289
APK-SB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-290
APK-SB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-292

Contact / Pin	Hand Crimp Tool / Order No.	Crimp-Dies
APK-PB25A10-002 (0,5 - 1,0 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-289
APK-PB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-290
APK-PB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	M22520-5-01 / 995-0001-761	CT121586-292

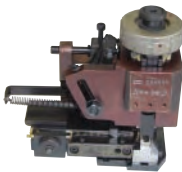
Hand-Tool	M22520-5-01	
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## Crimp Machine for volume production



Designation	Order No.
EPS 2000	121586-5043

## Quick Change Tool for above Crimp Machine: (Mini Applicator)



Contact / Socket	Designation	Order No. (to be mentioned on order)
APK-SB25A10-002 (0,5 - 1,0 mm <sup>2</sup> )	WWZ.20-100-APK25-10-002	121586-5134
APK-SB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	WWZ.20-100-APK25-25-002	121586-5135
APK-SB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	WWZ.20-100-APK25-40-002	121586-5136

Contact / Pin	Designation	Order No. (to be mentioned on order)
APK-PB25A10-002 (0,5 - 1,0 mm <sup>2</sup> )	WWZ.20-100-APK25-10-002	121586-5134
APK-PB25A25-002 (1,5 - 2,5 mm <sup>2</sup> )	WWZ.20-100-APK25-25-002	121586-5135
APK-PB25A40-002 (2,5 - 4,0 mm <sup>2</sup> )	WWZ.20-100-APK25-40-002	121586-5136

## Contact Extraction Tool



Designation	Order No.
CET-APK25	192900-0176

APD is a direct, in-line and bulkhead sensor connector that is resistant to engine, transmission and brake fluid. It also boasts very low contact resistance, so you can benefit from maximum signal integrity. APD is available in 1-, 2-, 3-, 4-, 6- and 7 position versions and has been designed to meet all DIN 72585 requirements.

Applications for the 4- and 7-way connector include:

- Sensors
- Traction / Anti Skid Control
- Brake Control (ABS)
- Magnetic Switch Control Systems
- Valve Control (Water, Oil, Air, Pressure)
- Lightening systems on Trucks and Trailers



**Electrical Data**

Voltage	48 VDC max.
Current	12 A max. for wire size 0,5 mm <sup>2</sup> / 25°C
	19 A max. for wire size 1,5 mm <sup>2</sup> / 25°C
Contact resistance	≤ 5mΩ
Test Voltage	1000 VAC (Ueff)
Insulation resistance	10MΩ

**Mechanical Data**

Sealing acc. to IEC 529 and DIN 40050, Part 9	IP 67 and IP 69K
Operating Temperature Range	-40°C / 125°C
Shock / Vibration	20g acc. to DIN 72585
Durability	50 Mating cycles

**Materials**

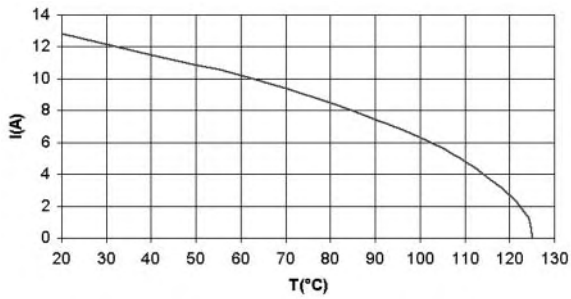
Connector housing	PBT
O-ring	HNBR
Contacts	Copper alloy, tinned
Coupling nut	PA

**Standards and Specifications (in accordance with DIN 72585) Environmental**

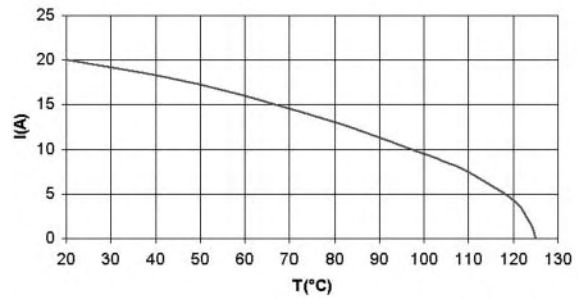
DIN 40050, Part 9	Sealing
DIN 50016	Humidity
DIN 50021	Resistance against fluids, Salt spray test
DIN 51512	Lubricants such as engine oil, grease, etc.
DIN EN 590	Diesel fuel, gasoline
DIN ISO 4925	Brake fluids, anti-freeze, coolants

Derating Curve

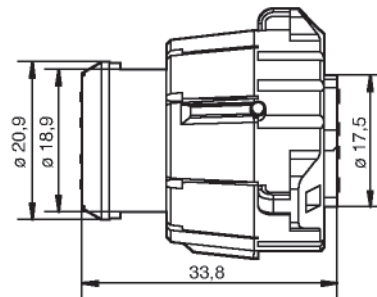
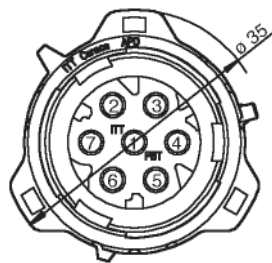
APD 6-/7-WAY  
Cable 0,5 mm<sup>2</sup>



APD 6-/7-WAY  
Cable 1,5 mm<sup>2</sup>



Plug, 6/7-way



	Order No.	Designation	Code	Color
7 way	121583-0018	APD-1BS7	1	black (RAL 9005)
6 way	120110-0024	APD-1BS6`	1	black (RAL 9005)
				contact cavity 1 closed

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual wire-seal, Wire filler, see page 15.  
Accessories, see page 41 and 42.

Coding, 6/7-way Layouts

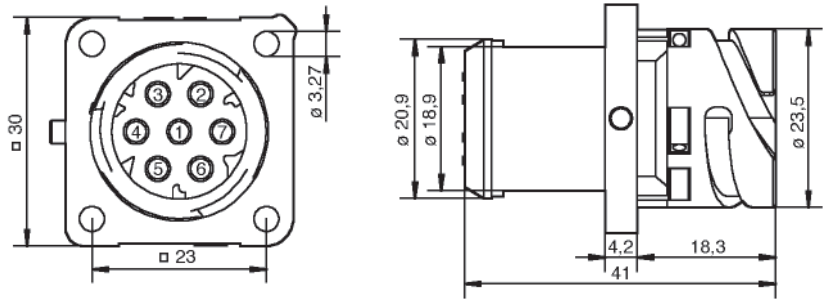


7 way



6 way

**Flange Receptacle, 6-/7-way for standard contacts**

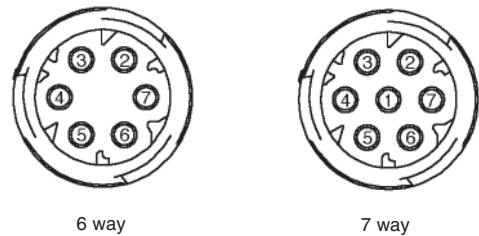


	Order No.	Designation	Code	Color
7 way	121583-0020	APD-1AP7	1	black (RAL 9005)
Optional 6 way	120110-0083	APD-1AP6-SPL	1	black (contact cavity 1 closed)
7 way	120110-0020			black

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 15.  
Accessories, see page 41 and 42.

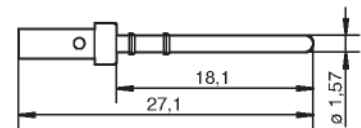
**Flange Receptacle, 6-/7-way for crimp press-in contacts**

Order No. 120110-0020 6-way Flange Receptacle  
Order No. upon request 7-way Flange Receptacle



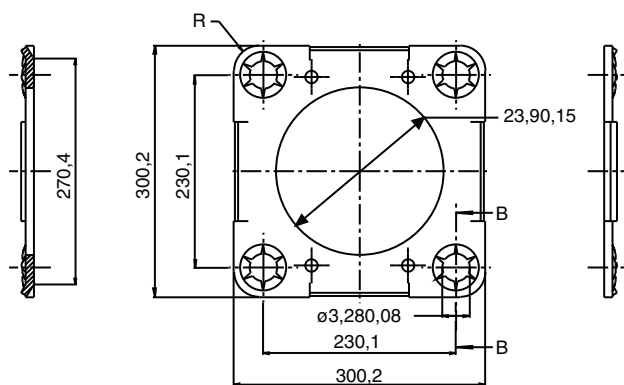
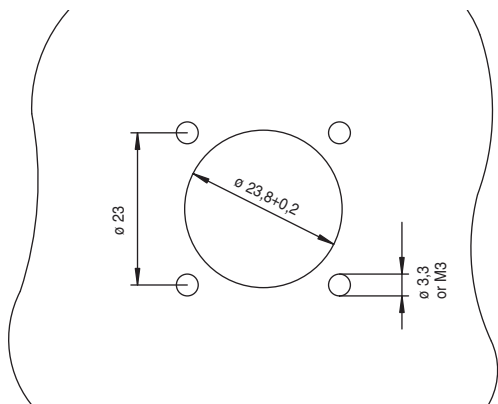
**Press-in Crimp Contact For Flange and Jam Nut Receptacle 6-/7-way**

Order No. 330-8672-021 (tinned) (0,75 - 1,5 mm<sup>2</sup>)  
330-8672-019 (tinned) (0,35 - 0,75 mm<sup>2</sup>)  
with gold flash plate upon request  
Packaging unit: 100 pcs



Note - Press-in Crimp Contacts are not removable after insertion

**Panel Cut Out Flange for all Flange Receptacles**

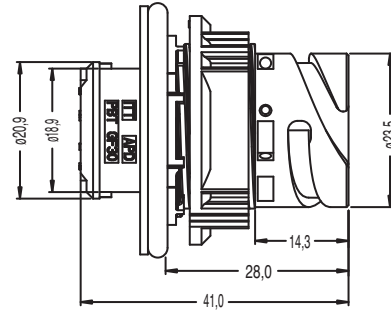
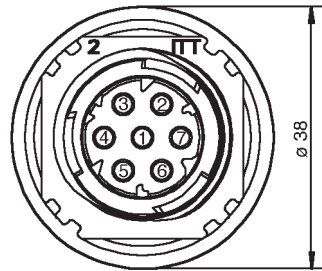


Order Number: 066-8516-005

Dimensions shown in mm  
Specifications and dimensions subject to change



Jam Nut Receptacle, 6-/7-way for standard contacts



	Order No.	Designation	Code	Color
7 way	121583-0019	APD-1CP7	1	black (RAL 9005)

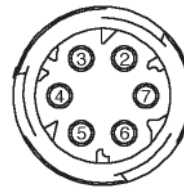
Packaging unit 100 pcs.

Crimp-Contacts, Individual wire-seal, Wire filler, see page 15.  
Accessories, see page 41 and 42.

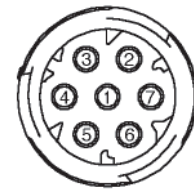
Jam Nut Receptacle, 6-/7-way for crimp press-in contacts

Order No. upon request 6-way Jam Nut Receptacle

Order No. upon request 7-way Jam Nut Receptacle



6 way

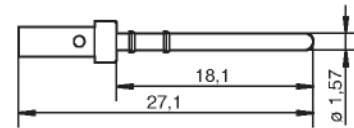


7 way

Press-in Crimp Contact

For Flange and Jam Nut Receptacle 7-way

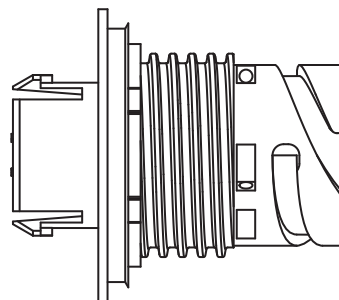
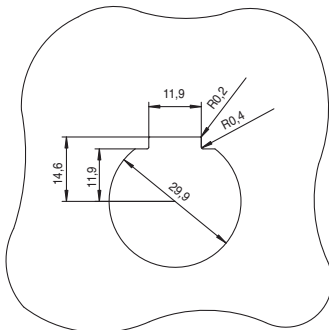
Order No.  
330-8672-021 (tinned) (0,75 - 1,5 mm<sup>2</sup>)  
330-8672-019 (tinned) (0,35 - 0,75 mm<sup>2</sup>)  
with gold flash plate upon request  
Packaging unit: 100 pcs



Note - Press-in Crimp Contacts are not removable after insertion

Panel Cut Out

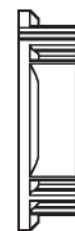
Flange for all Flange Receptacles



Housing



O-ring



Jam Nut

Thickness: Standard: min. 1,0 / max. 4,0 mm Special: min. 2,0 / max. 5,0 mm

Jam Nut, special

Designation for special wall thickness 2,0 - 5,0 mm Order No. 217-8516-001



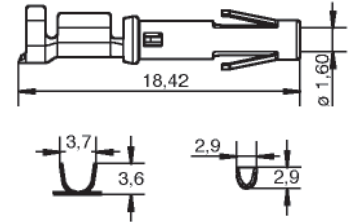
Dimensions shown in mm  
Specifications and dimensions subject to change

www.ittcannon.com

Socket Crimp-Contacts 1,6 mm Standard Tinned, 3000 contacts per reel

Order No. 192900-0001 \* (0,5 - 1,5 mm<sup>2</sup>)  
 192900-0003 Loose Piece Bulk-pack

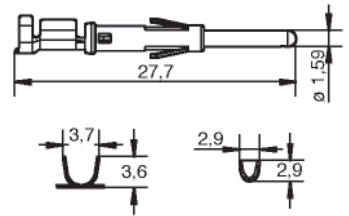
\* Crimp Tool - 112108-0014



Pin Crimp-Contacts 1,6 mm Standard Tinned, 3000 contacts per reel

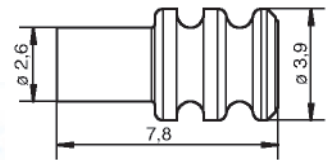
Order No. 192900-0000 \* (0,5 - 1,5 mm<sup>2</sup>)  
 192900-0002 Loose Piece Bulk-pack

\* Crimp Tool - 112108-0014



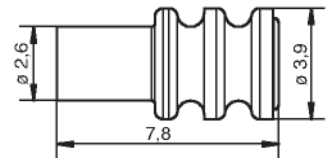
Individual Wire Seals

Designation	Order No.	Part Number
10GR3940 Wire insulation ø 1,4 - 2,0 mm / gray	273-8506-008	121667-0022
10YE3940 Wire insulation ø 1,9 - 2,1 mm / yellow	273-8506-009	121667-0023
10RD3940 Wire insulation ø 1,2 - 1,6 mm / red	273-8506-010	121667-0024



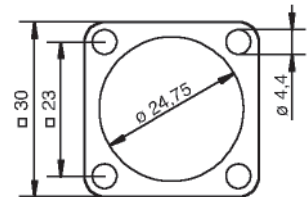
Wire Filler

Designation	Order No.	Part Number
10WH3940 white	273-8506-011	121667-0025



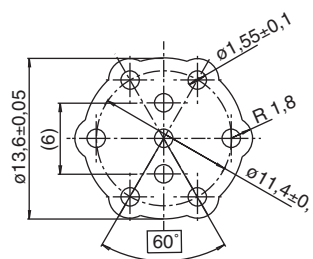
Gasket for all Flange Receptacles

Order No. \_\_\_\_\_  
 075-8503-000 (-55/125° C)  
 075-8503-004 (-30/200° C)  
 Packaging unit 100 pcs.



Alignment Disc

Order No. 052-8509-002  
 for pin contact only



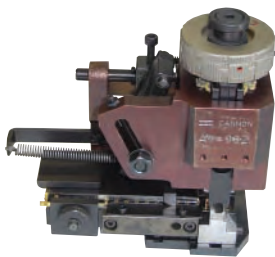
Dimensions shown in mm  
 Specifications and dimensions subject to change

**Crimp Machine for Volume Production**



Designation:	Order No.
EPS 2000	121586-5043

**Quick Change Tool for above Crimp Machine: (Mini Applicator)**



Contact / Socket	Designation	Order No. (to be mentioned on order)
192900-0001 (0,5 - 1,5 mm <sup>2</sup> )	WWZ.20-100-Trident 16-18-002	121586-5190
Contact / Socket	Designation	Order No. (to be mentioned on order)
192900-0000 (0,5 - 1,5 mm <sup>2</sup> )	WWZ.20-100-Trident 16-18-002	121586-5190

**Contact Extraction Tool**



Description	Order No.
Trident Extraction Tool Wire Insulation Stripping length: 4,5 mm	192922-1450

**Crimp and assembly Tools for press in contacts**



Basic - Hand Crimp Tool	Order No.
M22520-1-01	995-0001-585

Insertion Tool	
CIT-APD 16-TIP	317-8648-008

Hand Lever - Press	
CHPZ-240	121586-0081

Ragged Tool	192990-7600
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APD 37-way is a highly reliable, cost effective multi-pin connector with signal contacts (multi-layout power / signal on demand). It offers wire to wire and wire to board connection solutions. According to DIN 72585, the connector is dedicated for harsh environmental usage. Various customer specific designs (e.g. different coding) are possible.



## Electrical Data

Voltage	48 VDC max.
Current Carrying Capacity:	max. 12 A at 85°C / 105 °C short time, for wire size 1,5 mm <sup>2</sup> (for a limited no. of contacts) max. 2 A at 120°C or 5 A, for wire size 1,5 mm <sup>2</sup> (for a limited no. of contacts)
Contact Resistance	Initially: max. 5 mΩ After climatic tests: max 10 MΩ
Test Voltage	1.000 VAC
Insulation Resistance	> 1.000 MΩ

## Mechanical Data

Sealing acc. to IEC 60529 and DIN 40050	IP 67: 0,1 bar / 30 minutes IP 69K. Jet water 85°C
Operating Temperature Range	-40°C / 125°C
Shock	50g / 11ms half sine IEC 60512
Vibration	Sine wave 70-2.000 Hz, 18/20g 100 hours / axis, 50% of test time at 120°C (test conditions) DIN 72585
Durability	20 Mating cycles
Coupling Torque	close: max 4 Nm open: min 1 Nm; max 4 Nm
Contact Retention Force	min 80 N
Mechanical Robustness	Static, lateral load: 150N / 10s Dynamic impact, ball drop 2 Joules, Cable drop 1m height EN ISO 8092
Humidity, cyclic:	23°C/ 83% - 40°C/ 95%; 168h
Industrial Atmosphere	Condensed water / SO <sub>2</sub> ; 3 cycles

## Materials

Connector housing	PA66
O-Ring	FKM
Contacts	Copper alloy, tinned, gold-plated
Coupling nut	PA

## Standards and Specifications (in accordance with DIN 72585) Environmental

Resistance against Fluids:	Diesel DIN EN 590 Diesel + test fuel FAM2 Motor oil SAE30 Motor oil DIN 51 5111 Gearbox oil, different types e.g. SAE 80W90 Brake Fluid DIN ISO 4925 Cleaning agent
Salt Spray Test:	48h DIN 50021

\* Contact layout is not specified by DIN 72585

Dimensions shown in mm  
Specifications and dimensions subject to change

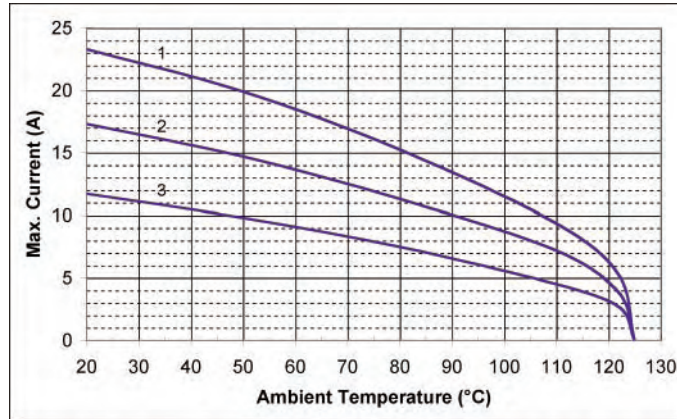
www.ittcannon.com



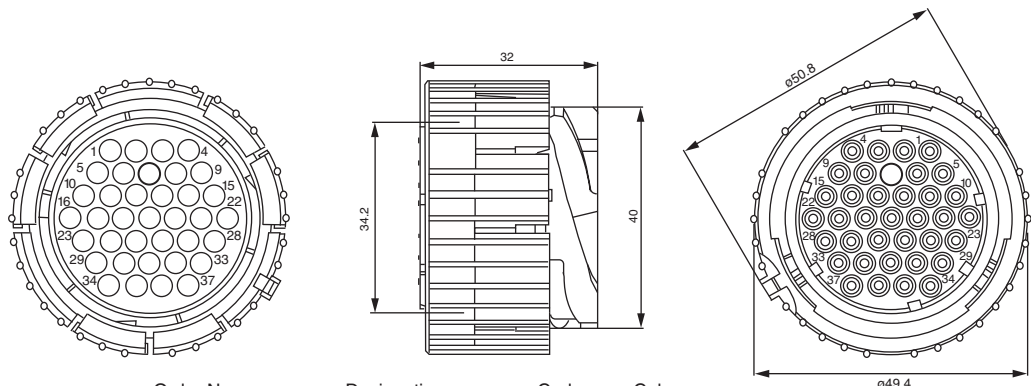
Derating Curve

For a single contact under load.

- 1. Cable Size: 1,5 mm<sup>2</sup>
- 2. Cable Size: 0,75 mm<sup>2</sup>
- 3. Cable Size: 0,35 mm<sup>2</sup>



37-way



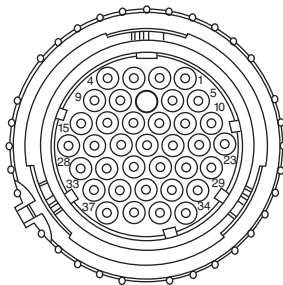
Order No.	Designation	Code	Color
121583-0058	APD-1BS37	1	black (RAL 9005)
121583-0059	APD-1B537		with endbell and contacts

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 37-way layout

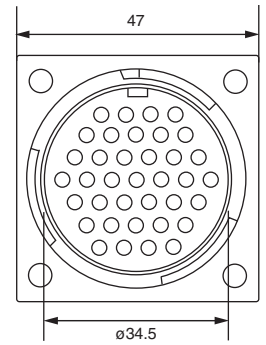
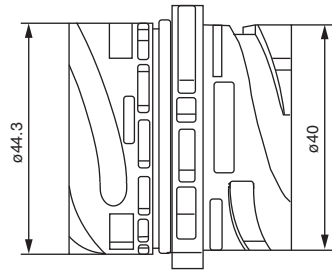
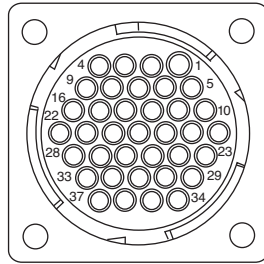
View on Mating Face



Note: Additional coding on demand.



Flange Receptacle, 37-way



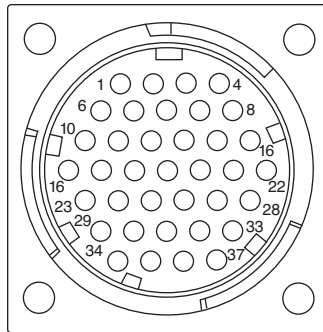
Order No.	Designation	Code	Color
249-8619-017	APD-1AP37	1	black (RAL 9005)
with O-ring			

Packaging unit 100 pcs.

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 37-way layout

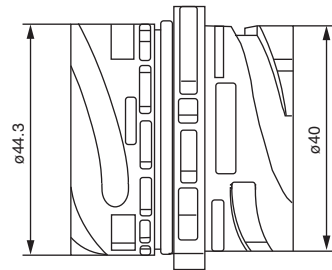
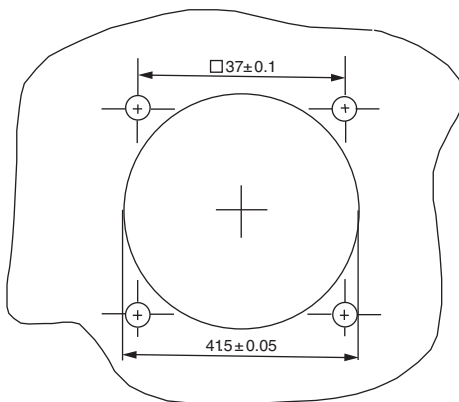
View on Mating Face



Note: Additional coding on demand.

Panel Cut Out

Flange for all Flange Receptacles



Dimensions shown in mm  
Specifications and dimensions subject to change

www.ittcannon.com



The APD 51-way connector offers the same features as the 37-way solution. Furthermore it is available in 2 versions, standard and secondary lock for added security. The connector features up to 8 mechanical key and visual color coding options for better mating identification and to avoid mis-mating.

Standard                      Code 1: Green  
    Code 2: Yellow  
    Code 3: Brown  
    Code 4: Purple

Other coding available by request

## Electrical Data

Voltage	48 VDC max.
Current Carrying Capacity:	max. 12 A at 85°C / 105 °C short time, for wire size 1,5 mm <sup>2</sup> (for a limited no. of contacts) max. 2 A at 120°C, for wire size 1,5 mm <sup>2</sup>
Contact Resistance	Initially: max. 5 m $\Omega$ After climatic tests: max 10 M $\Omega$
Test Voltage	1.000 VAC
Insulation Resistance	> 1.000 M $\Omega$

## Mechanical Data

Sealing acc. to IEC 60529 and DIN 40050	IP 67: 0,1 bar / 30 minutes IP 69K. Jet water 85°C
Operating Temperature Range	-40°C / 125°C
Shock	50g / 11ms half sine IEC 60512
Vibration	Random 10-350Hz, max. 0,02 g <sup>2</sup> / Hz 124 hours/ axis (test conditions)
Durability	40 Mating cycles
Coupling Torque	close: max 4,5 Nm open: min 1,5 Nm; max 4,5 Nm
Contact Retention Force	min 80 N min 100 N (secondary locking version)
Mechanical Robustness	Static, lateral load: 150N / 10s Dynamic impact, ball drop 2 Joules,
Humidity, cyclic:	23°C/ 83% - 40°C/ 95%; 168h; IEC 60512
Industrial Atmosphere	Condensed water / SO <sub>2</sub> ; 3 cycles

## Materials

Connector housing	PBT
O-Ring	FKM
Contacts	Copper alloy, tinned, gold-plated
Coupling nut	PA

## Standards and Specifications (in accordance with DIN 72585) Environmental

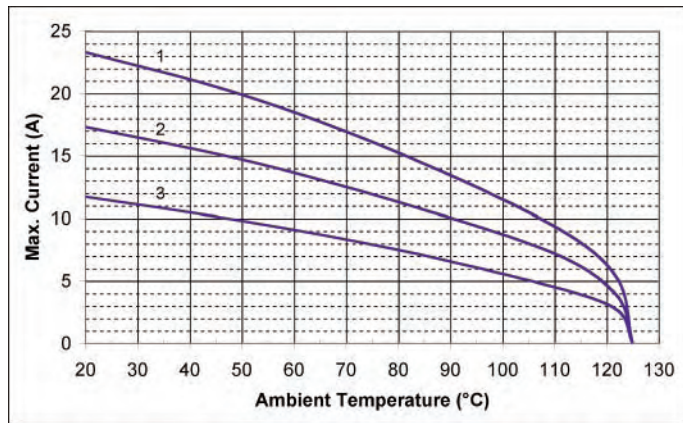
Resistance against Fluids:	Diesel DIN EN 590 Diesel + test fuel FAM2 Motor oil SAE30 Motor oil DIN 51 5111 Gearbox oil, different types e.g. SAE 80W90 Hydraulic oil (Mineral base) Brake Fluid DIN ISO 4925 Cleaning agent, anti-freeze Agricultural chemicals (NPK fertilizer, Urea nitrogen, etc)
Salt Spray Test:	48h                                      DIN 50021

Derating Curve

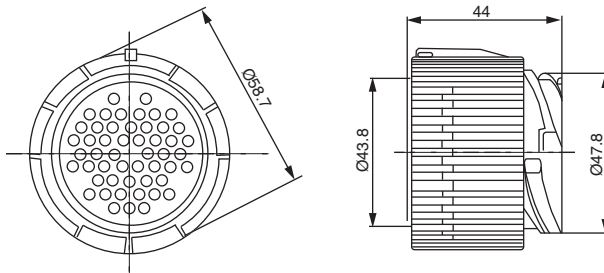
For a single contact under load.

- 1. Cable Size: 1,5 mm<sup>2</sup>
- 2. Cable Size: 0,75 mm<sup>2</sup>
- 3. Cable Size: 0,35 mm<sup>2</sup>

\* Contact layout is not specified by DIN 72585



Plug, 51-way, Standard Version



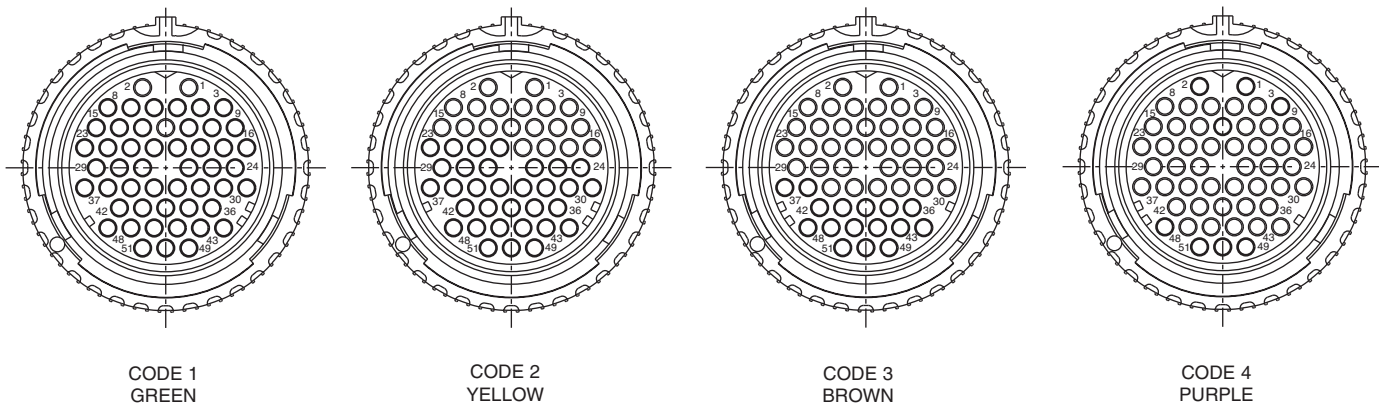
Order No.	Designation	Code	Color
121583-0032	APD-1BP51	1	green (RAL 6018)
121583-0033	APD-2BP51	2	yellow (RAL 1018)
121583-0030	APD-3BP51	3	brown (RAL 3009)
121583-0031	APD-4BP51	4	purple (RAL 4001)

Packaging unit 100 pcs.

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

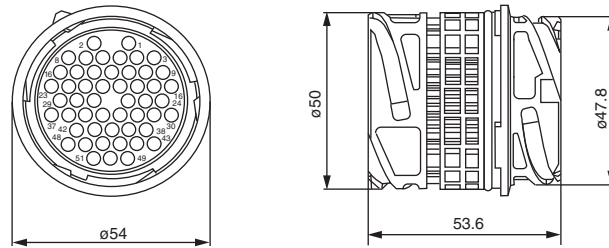
Coding 51-way layout

View on Mating Face



Note: The connectors offer both mechanical keying and visual coding by different colors.

Snap-In Receptacle, 51-way, Standard Version



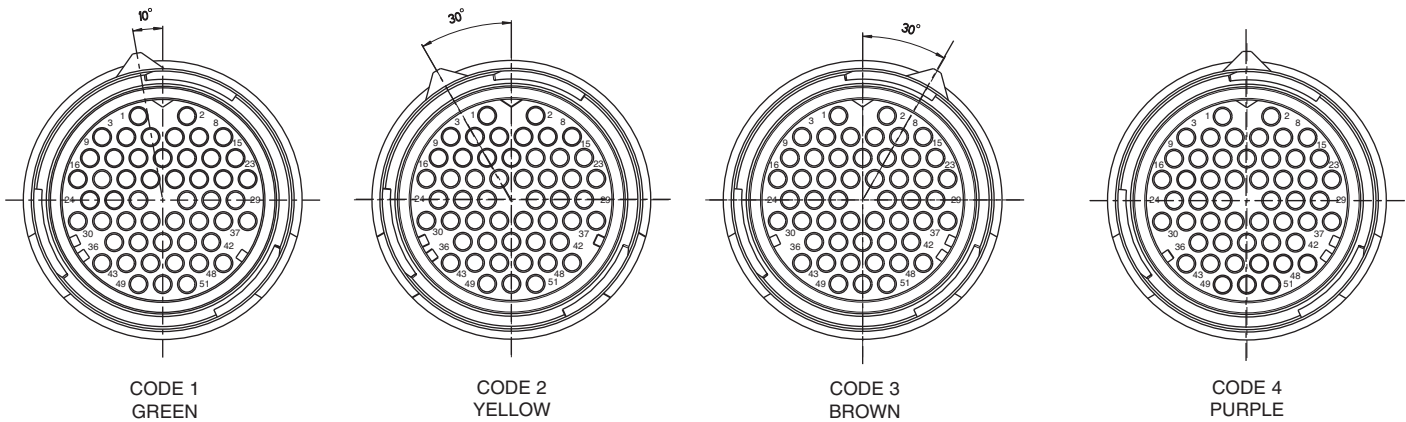
Order No.	Designation	Code	Color
249-8619-003	APD-1SS51	1	green (RAL 6018)
249-8619-004	APD-2SS51	2	yellow (RAL 1018)
249-8619-001	APD-3SS51	3	brown (RAL 3009)
249-8619-002	APD-4SS51	4	purple (RAL 4001)

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 51-way layout

View on Mating Face



CODE 1  
GREEN

CODE 2  
YELLOW

CODE 3  
BROWN

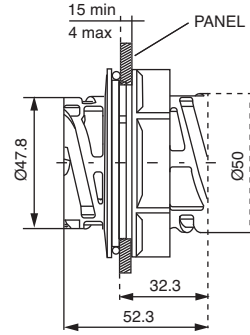
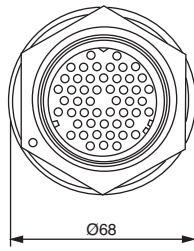
CODE 4  
PURPLE

Note: The connectors offer both mechanical keying and visual coding by different colors

Snap-In dimension on demand 3-D-image available.

Assembling Tools	Part Number	Description
Assembly fixture for plug connector	121586-5202	MA-APD-51-P-SEC-LOCK
Assembly fixture for receptacle connector	121586-5203	MA-APD-51-R-SEC-LOCK
Assembly fixture for Jam Nut receptacle	121586-5206	MA-APD-51-FL-SEC-LOCK
Unlocking device	317-8675-054	OET-APD-51 (extr. sleeve)

Jam Nut Receptacle, 51-way, Standard Version



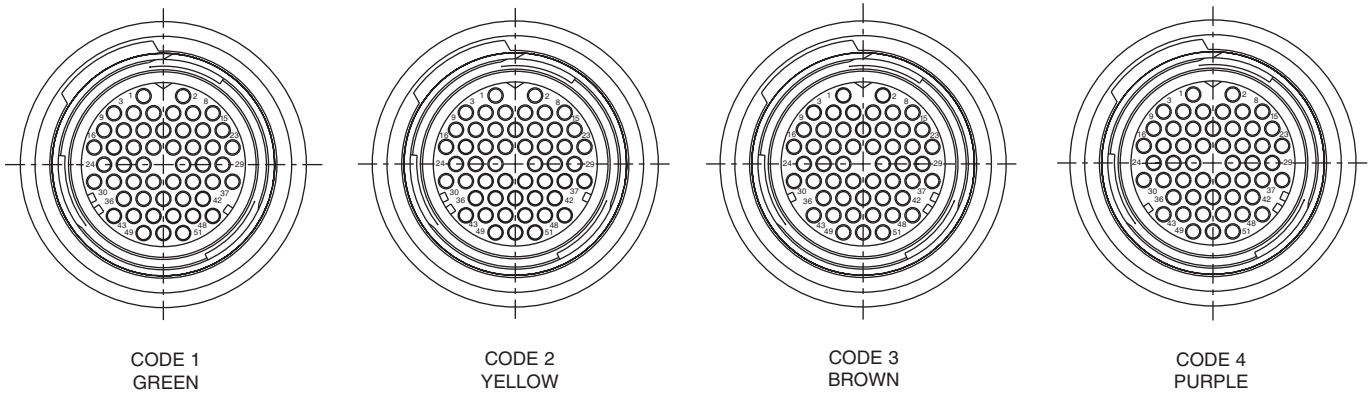
Order No.	Designation	Code	Color
121583-0081	APD-1CS51	1	green (RAL 6018)
121583-0082	APD-2CS51	2	yellow (RAL 1018)
121583-0079	APD-3CS51	3	brown (RAL 3009)
121583-0080	APD-4CS51	4	purple (RAL 4001)

Packaging unit 100 pcs.

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

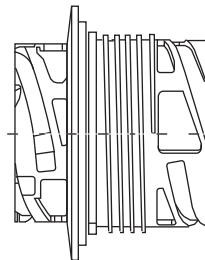
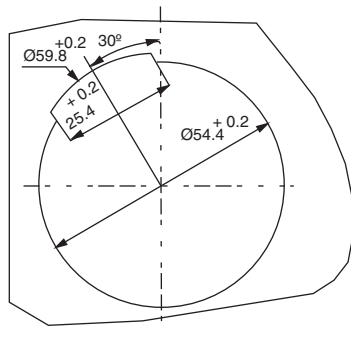
Coding 51-way layout

View on Mating Face



Note: The connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out Piece Parts / Assembly Instruction



Thickness  
Standard: min. 1,5 / max. 4,0 mm

Housing

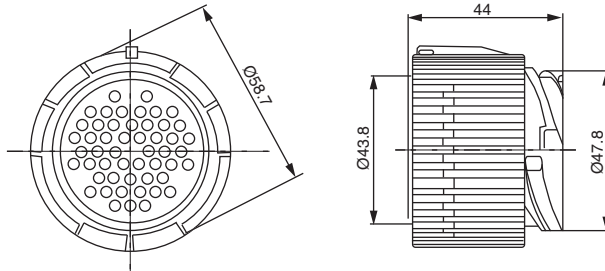
O-Ring

Jam Nut

Dimensions shown in mm  
Specifications and dimensions subject to change



Plug, 51-way, Secondary Lock Version



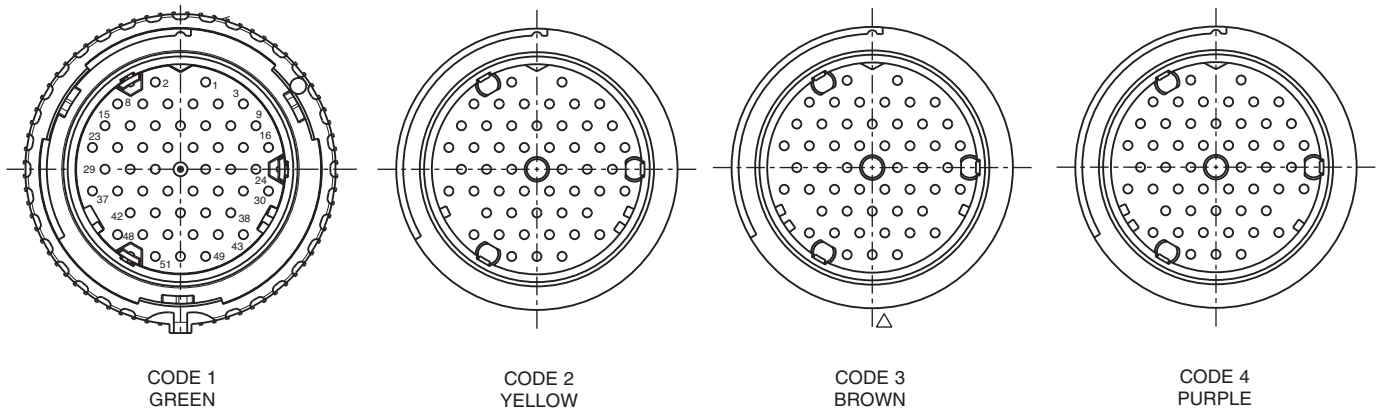
Order No.	Designation	Code	Color
121583-0087	APD-1BP51S	1	green (RAL 6018)
121583-0088	APD-2BP51S	2	yellow (RAL 1018)
121583-0089	APD-3BP51S	3	brown (RAL 3009)
121583-0090	APD-4BP51S	4	purple (RAL 4001)

Packaging unit 100 pcs.

Pin Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 51-way layout

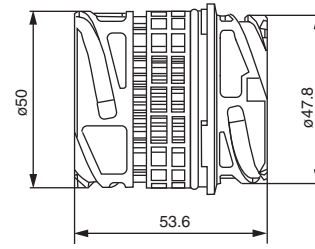
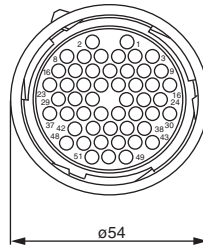
View on Mating Face



Note: The connectors offer both mechanical keying and visual coding by different colors.



Snap-In Receptacle, 51-way, Secondary Lock Version



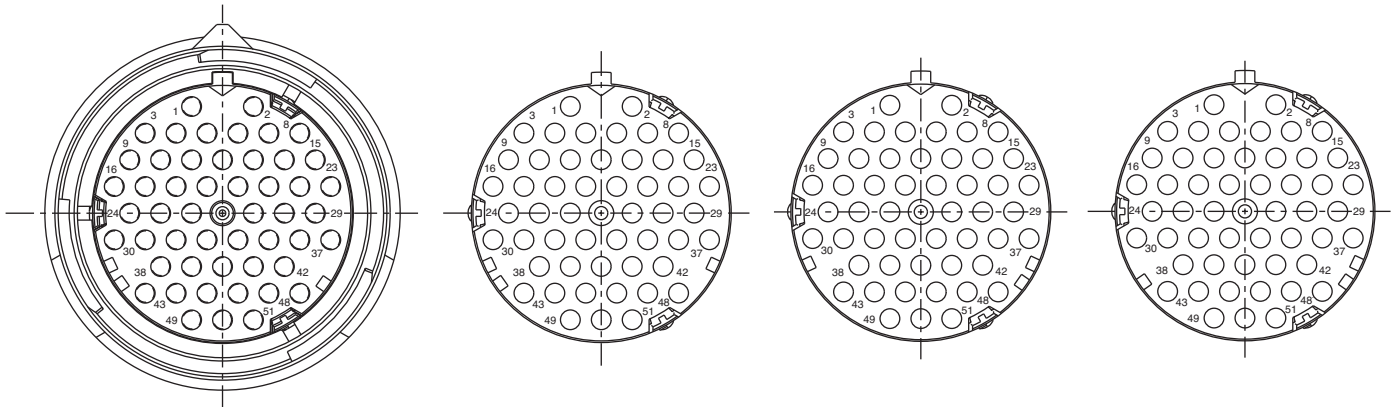
Order No.	Designation	Code	Color
121583-0091	APD-1SS51S	1	green (RAL 6018)
121583-0092	APD-2SS51S	2	yellow (RAL 1018)
121583-0093	APD-3SS51S	3	brown (RAL 3009))
121583-0094	APD-4SS51S	4	purple (RAL 4001)

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 51-way layout

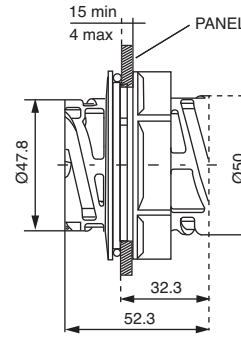
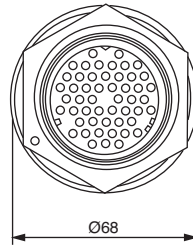
View on Mating Face



Note: The connectors offer both mechanical keying and visual coding by different colors

Snap-In dimension on demand 3-D-image available.

Jam Nut Receptacle, 51-way, Secondary Lock Version



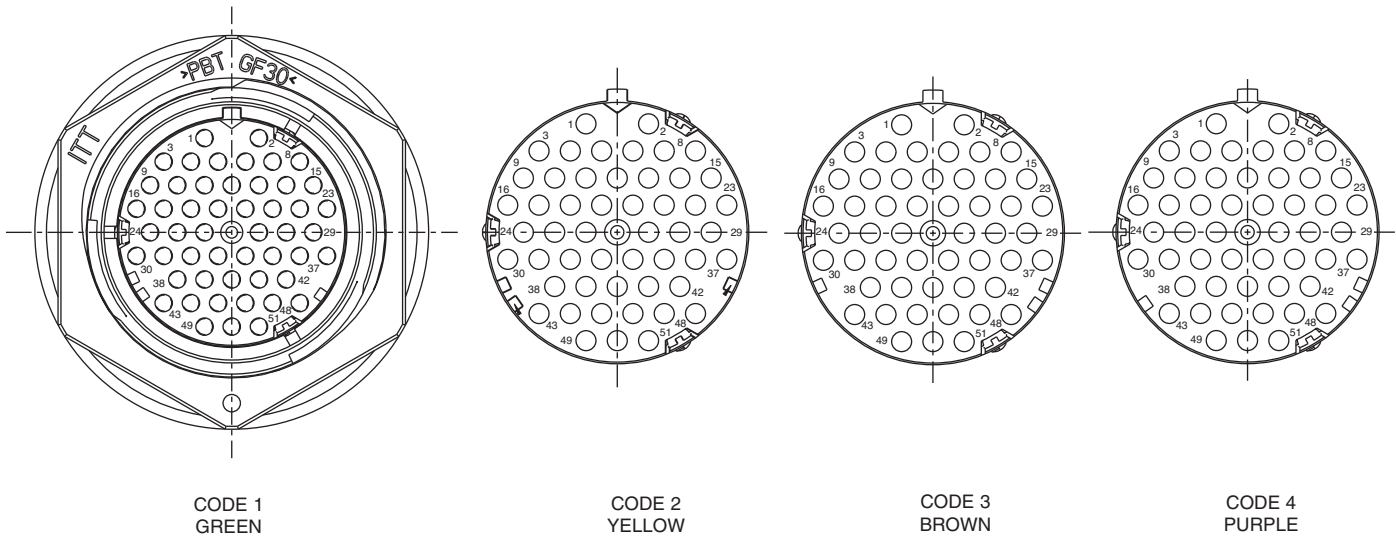
Order No.	Designation	Code	Color
121583-0095	APD-1CS51S	1	green (RAL 6018)
121583-0096	APD-2CS51S	2	yellow (RAL 1018)
121583-0097	APD-3CS51S	3	brown (RAL 3009)
121583-0098	APD-4CS51S	4	purple (RAL 4001)

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual wire-seal, Wire filler, Flange gasket, see page 27.  
Accessories, see page 41 and 42.

Coding 51-way layout

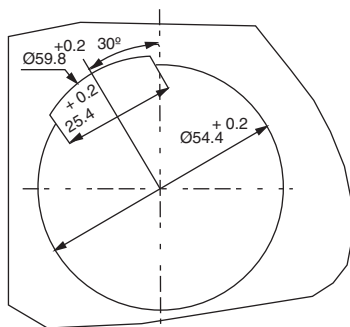
View on Mating Face



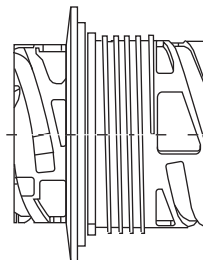
Note: The connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out

Piece Parts / Assembly Instruction



Thickness  
Standard: min. 1,5 / max. 4,0 mm



O-Ring



Jam Nut



Housing



Dimensions shown in mm  
Specifications and dimensions subject to change

## CONTACTS



- Low contact resistance (max. 5mΩ) for maximum signal integrity
- Current carrying capacity: 12A max.
- Press-in contacts for PCB mounting
- Plating with special material available by request
- Machined press-in contacts. (other machined contacts available by request)

## For APD 37-way and 51-way Standard Version

Contacts (stamped & formed)	Plating	Crimp Range	Designation	Part Number
Socket Contacts	tin	0,35 - 0,75 mm <sup>2</sup>	APK-SA16A07-002-C	121668-0220
		0,75 - 1,50 mm <sup>2</sup>	APK-SA16A15-002-C	121668-0222
	gold (0,8 μm)	0,35 - 0,75 mm <sup>2</sup>	APK-SA16G07-002-C	121668-0266
		0,75 - 1,50 mm <sup>2</sup>	APK-SA16G15-002-C	121668-0268
Pin Contacts	tin	0,35 - 0,75 mm <sup>2</sup>	APK-PA16A07-002-C	121668-0254
		0,75 - 1,50 mm <sup>2</sup>	APK-PA16A15-002-C	121668-0255
	gold (0,8 μm)	0,35 - 0,75 mm <sup>2</sup>	APK-PA16G07-002-C	121668-0265
		0,75 - 1,50 mm <sup>2</sup>	APK-PA16G15-002-C	121668-0267

## Press-In Contacts (machined)

Pin Contacts	tin	0,30 - 0,60 mm <sup>2</sup>	APK-PA16A06-E	330-8674-020
	gold (0,8 μm)	0,50 - 1,00 mm <sup>2</sup>	APK-PA16G10-E	330-8674-025

## For APD 51-way Secondary Lock Version

## Contacts (stamped &amp; formed)

Socket Contacts	tin	0,75 - 1,50 mm <sup>2</sup>	APK-SA16A15-002	121668-0202
		0,35 - 0,75 mm <sup>2</sup>	APK-SA16G07-002	121668-0270
	gold (0,8 μm)	0,75 - 1,50 mm <sup>2</sup>	APK-SA16G15-002	121668-0272
		0,35 - 0,75 mm <sup>2</sup>	APK-PA16A07-002	121668-0252
Pin Contacts	tin	0,75 - 1,50 mm <sup>2</sup>	APK-PA16A15-002	121668-0253
		0,35 - 0,75 mm <sup>2</sup>	APK-PA16G07-002	121668-0269
	gold (0,8 μm)	0,75 - 1,50 mm <sup>2</sup>	APK-PA16G15-002	121668-0271

## Accessories

Description	Cross Section	Color	Designation	Part Number
Single Wire Sealing	1,2 - 1,6 mm	Red	10RD3940	121667-0024
	1,4 - 2,0 mm	Grey	10GR3940	121667-0022
	1,9 - 2,1 mm	Yellow	10YE3940	121667-0023
Blind Seal	1,4 - 2,0 mm	White	10WH3940	121667-0025

Description	Part Number
Dust cap for APD 37-way (plug)	025-8636-037
Dust cap for APD 37-way (receptacle)	025-8636-053

Dimensions shown in mm  
Specifications and dimensions subject to change





**Electrical Data**

Voltage	48 VDC max.
Current	245 A max. for wire size 50 mm <sup>2</sup> / 25°C
Contact resistance	≤ 0,4 mΩ
Test Voltage	1000 VAC (Ueff)
Insulation resistance	10MΩ

**Mechanical Data**

Sealing acc. to IEC 529 and DIN 40050, Part 9	IP 67 and IP 69K
Operating Temperature Range	-40°C / 125°C
Shock / Vibration	acc. to DIN 72585
Durability	50 Mating cycles

**Materials**

Connector housing	PBT
O-ring	HNBR
Contacts	Copper alloy, silver plated
Coupling nut	PA

**Standards and Specifications (in accordance with DIN 72585) Environmental**

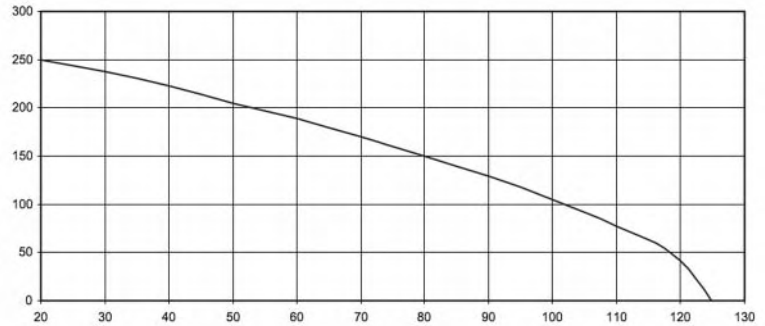
DIN 40050, Part 9	Sealing
DIN 50016	Humidity
DIN 50021	Resistance against fluids, Salt spray test
DIN 51512	Lubricants such as engine oil, grease, etc.
DIN EN 590	Diesel fuel, gasoline
DIN ISO 4925	Brake fluids, anti-freeze, coolants

\* Contact layout not specified by DIN 72585

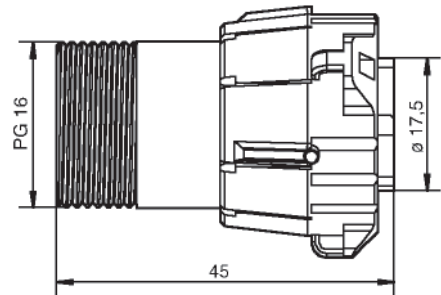
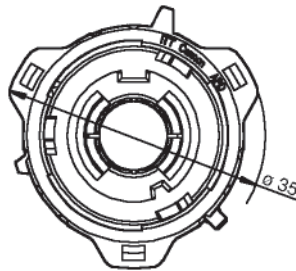
Derating Curve

APD 1-WAY  
Cable 50 mm<sup>2</sup>

APD - High Power Contacts # 500, wire size 50mm<sup>2</sup> (AWG 0)



High Power Plug, 1-way



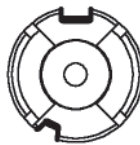
Order No.	Designation	Code	Color
121583-0012	APD-5BSH	5	blue (RAL 5012)
121583-0013	APD-6BSH	6	red (RAL 2002)
121583-0042	APD-7BSH	7	black (RAL 9005)
249-8619-005	CNH version Flange snap-in		

Packaging unit 100 pcs.

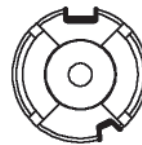
Socket Crimp-Contacts, Cable seal, Hexagonal nut, see pages 32 and 33.  
Accessories, see page 41 and 42.

Coding, 1-way layouts

View on Mating Face



code 5  
blue



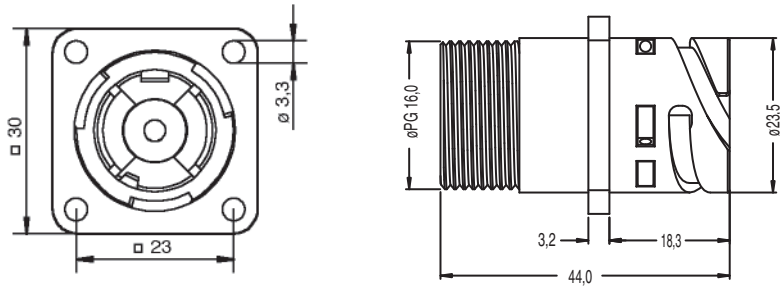
code 6  
red



code 7  
black

Note: the connectors offer both mechanical keying and visual coding by different colors

High Power Flange Receptacle, 1-way



Order No.	Designation	Code	Color
121583-0014	APD-5APH	5	blue (RAL 5012)
121583-0015	APD-6APH	6	red (RAL 2002)
121583-0043	APD-7APH	7	black (RAL 9005)

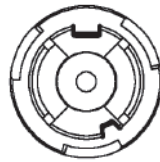
Packaging unit 100 pcs.

Machined Pin-Contacts, Contact for ring lock termination, O-ring, Cable seal, Hexagonal nut, Flange gasket, see pages 32 and 33.

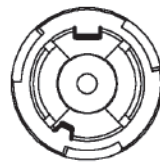
Accessories, see page 41 and 42.

Coding, 1-way layouts

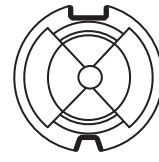
View on Mating Face



code 5  
blue



code 6  
red

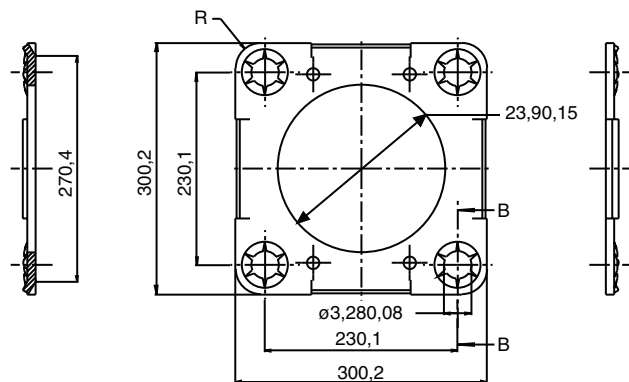
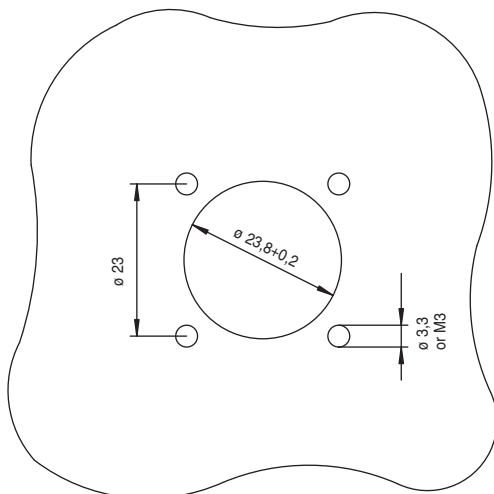


code 7  
black

Note: the connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out

Flange for all Flange Receptacles



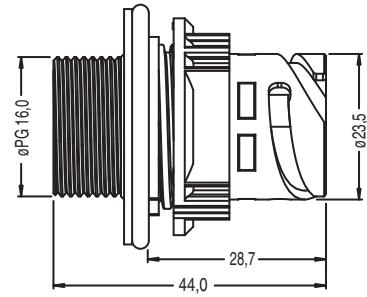
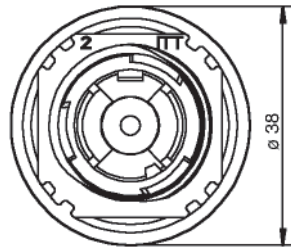
Order Number: 066-8516-005



Dimensions shown in mm  
Specifications and dimensions subject to change

www.ittcannon.com

High Power Jam Nut Receptacle, 1-way



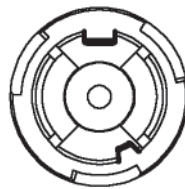
Order No.	Designation	Code	Color
121583-0016	APD-5CPH	5	blue (RAL 5012)
121583-0017	APD-6CPH	6	red (RAL 2002)
Upon request	APD-7CPH	7	black (RAL 9005)

Packaging unit 100 pcs.

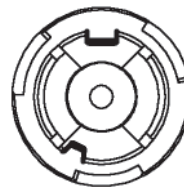
Machined Pin-Contacts, Contact for ring lock termination, O-ring, Cable seal, Hexagonal nut, Flange gasket, see pages 32 and 33.  
Accessories, see page 41 and 42.

Coding, 1-way layouts

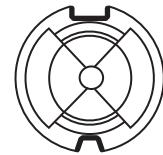
View on Mating Face



code 5  
blue



code 6  
red

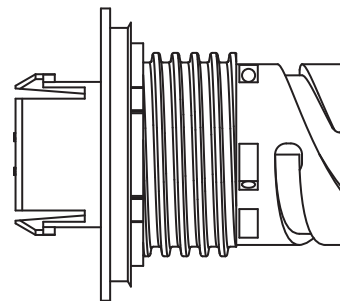
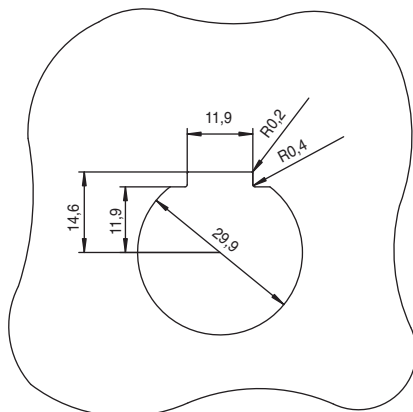


code 7  
black

Note: the connectors offer both mechanical keying and visual coding by different colors

Panel Cut Out

Flange for all Flange Receptacles



Housing



O-ring



Jam Nut

Thickness: Standard: min. 1,0 / max. 4,0 mm Special: min. 2,0 / max. 5,0 mm

Jam Nut, special

Designation	Order No.
for special wall thickness 2,0 - 5,0 mm	217-8516-001

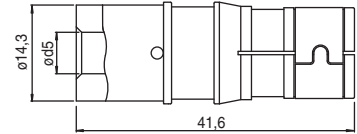
Dimensions shown in mm  
Specifications and dimensions subject to change

**Machined Socket Crimp-Contacts Standard, Silver plated**

Order No.	AWG	Contact size	d5+0,15
031-8521-030 (16,00 mm <sup>2</sup> )		0	6,2
031-8521-010 (25,00 mm <sup>2</sup> )	4	0	7,6
031-8521-020 (35,00 mm <sup>2</sup> )	2	0	9,1
Contact Customer Service (50,00 mm <sup>2</sup> )		0	10,7
Contact Customer Service (53,40 mm <sup>2</sup> )	0	0	11,5

Packaging unit 100 pcs

Available by Request



**Machined Pin Crimp Contacts, Standard Silver plated**

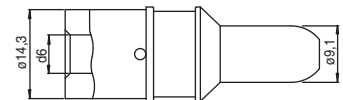
Order No.	AWG	contact size	d6+0,15
030-8614-030 (16,00 mm <sup>2</sup> )		0	6,2
030-8614-010 (25,00 mm <sup>2</sup> )	4	0	7,6
030-8614-020 (35,00 mm <sup>2</sup> )	2	0	9,1
* (50,00 mm <sup>2</sup> )		0	10,7
* (53,40 mm <sup>2</sup> )	0	0	11,5

Packaging unit 100 pcs

\* Available by request, please contact Customer Service.

Extraction Tools

Pin Extraction Tool	121586-5192
Socket Extraction Tool	121586-5193



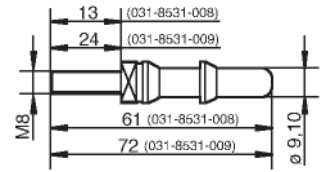


**Contact for ring lock terminals\* For Flange and Jam Nut Receptacle, High Power 1-way**

Order No.	Thread
Contact Customer Service	M8 X 13
Contact Customer Service	M8 X 24

Packaging unit 100 pcs

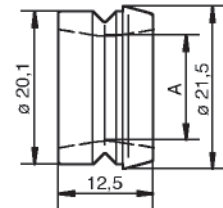
Available by Request



**Cable Seal for Cable (in acc. to DIN 670722 FLY/ DIN 72551 FLRY) For all Style, High Power 1-way**

Order No.	Insulation $\phi$	$\phi$ A mm
351-8697-005	5,8 - 7,4	5,4
351-8697-009	8,4 - 10,0	8,0
351-8697-001	10,4 - 12,0	10,0
351-8697-002	12,3 - 13,5	11,6
351-8697-003	14,2 - 15,8	13,8

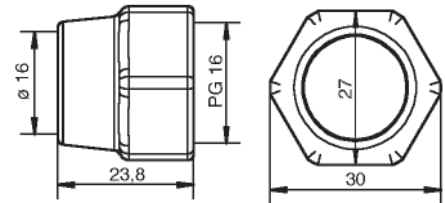
Packaging unit 100 pcs.



**Hexagonal Nut For all Style, High Power 1-way**

Order No. 217-8516-010

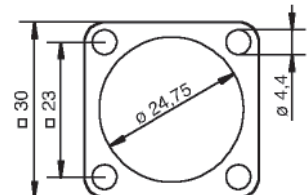
Packaging unit 100 pcs



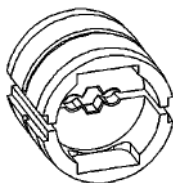
**Flange Gasket For Flange Receptacle, High Power 1-way**

Order No.	
	075-8503-000 (-55/125° C)
	075-8503-004 (-30/200° C)

Packaging unit 100 pcs.



Tooling for 1-way High Power Connectors

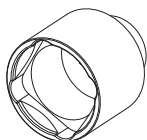


Contact / Socket	Crimp-Dies
031-8521-000 (53,40 mm <sup>2</sup> / AWG 0)	121586-5160
031-8561-000 (50,00 mm <sup>2</sup> )	121586-5160
031-8521-020 (35,00 mm <sup>2</sup> / AWG 2)	121586-5160
031-8521-010 (25,00 mm <sup>2</sup> / AWG 4)	121586-5160
031-8521-030 (16,00 mm <sup>2</sup> )	121586-5160

Contact / Socket	Crimp-Dies
030-8614-000 (53,40 mm <sup>2</sup> / AWG 0)	121586-5160
030-8592-000 (50,00 mm <sup>2</sup> )	121586-5160
030-8614-020 (35,00 mm <sup>2</sup> / AWG 2)	121586-5160
030-8614-010 (25,00 mm <sup>2</sup> / AWG 4)	121586-5160
030-8614-030 (16,00 mm <sup>2</sup> )	121586-5160

Assembly Tools Jam Nut Receptacle

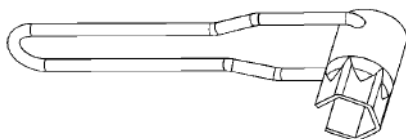
Square box spanner for torque moment wrench to fix the jam nut



Order No. \_\_\_\_\_ CT317-8649-034

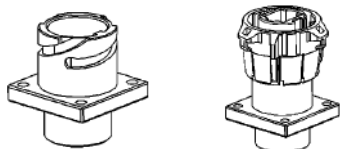
Assembly Tools (Hexagonal Nut)

To fix the hexagonal fixing nut 217-8516-010



Order No. \_\_\_\_\_ 980-8672-005

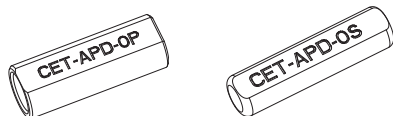
Assembly and Torque Wrench Adapter



Designation	Order No.
MA-APD-112-P	248-8653-063
MA-APD-112-R	249-8619-010

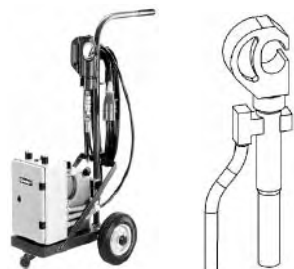
Contract Extraction Tool

Housing can not be reused



Designation	Order No.
CET-APD#0-Pin	121586-5192
CET-APD#0-Socket	121586-5193

Crimp Tool



Crimp Tool	Designation	Order No.
Hydraulic, hand operated:	HK120	CT121586-5077
Electro-hydraulic, 230 V AC operated	HK12-EL	CT121586-5075

For detailed assembly instruction please see CAS 25023



Custom Made Versions



High density APD connector with 37 respectively 51 signal contacts (16 Amp. max.). Combinations of signal and power contacts upon request.



2 to 4-way APD Sensor connector with machined crimp contacts. (Other termination methods are possible). Connector is fixed either by joint flared or over mold.



Y splice Box  
(other configurations / arrangements are possible).



Pressure transmitter sensor-connector with PCB terminals. (Other termination methods are possible). Connector is fixed either by flared joint or overmold.



Sensor Application  
Pressure transducer with press fit contacts for high sealing requirements.



Sensor Application  
PCB mount, low profile, high volume, over-molded contacts.

	Part Number
Sensor application	120110-0066
Contacts	330-8674-021
ISK	248-8653-048

Electrical Data

Voltage	48 VDC max.
Current	74 A max. for wire size 10 mm <sup>2</sup> / 25°C
Contact resistance	≤ 2 mΩ
Test Voltage	1000 VAC (Ueff)
Insulation resistance	10MΩ

Mechanical Data

Sealing acc. to IEC 529 and DIN 40050, Part 9	IP 69K
Operating Temperature Range	-40°C / 125°C
Shock / Vibration	acc. to DIN 72585
Durability	50 Mating cycles

Materials

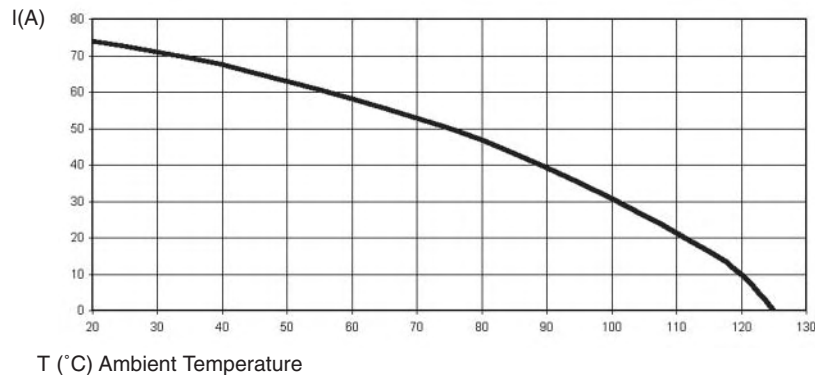
Connector housing	PBT
O-ring	HNBR
Contacts	Copper alloy, silver plated
Coupling nut	PA

Standards and Specifications (in accordance with DIN 72585) Environmental

DIN 40050, Part 9	Sealing
DIN 50016	Humidity
DIN 50021	Resistance against fluids, Salt spray test
DIN 51512	Lubricants such as engine oil, grease, etc.
DIN EN 590	Diesel fuel, gasoline
DIN ISO 4925	Brake fluids, anti-freeze, coolants

Derating Curve

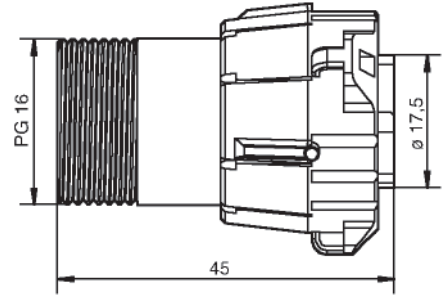
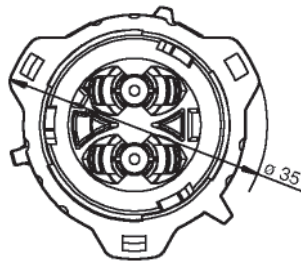
APD 2-WAY  
Cable 10 mm<sup>2</sup>  
16 mm<sup>2</sup> not shown in the graphic



\* Contact layout is not specified by DIN 72585. Other Derating Curves available by request.



High Power Plug, 2-way

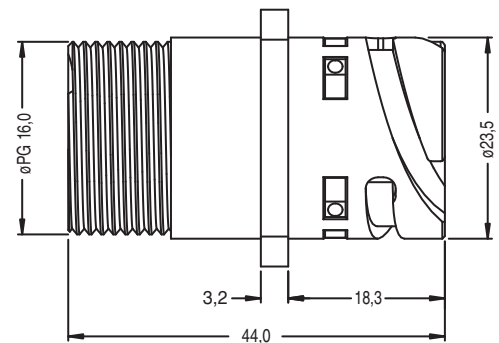
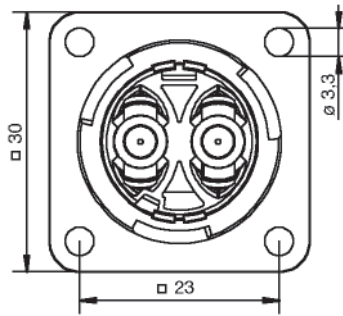


Order No.	Designation	Code	Color
121583-0083	APD-1BSH8-2	5	grey
121583-0025	APD-1BSH8-2	5	black (RAL 9005)
121583-0084	APD-1BSH8-2	5	blue

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual Wire Seal, Cable Seal, Hexagonal Nut, see page 40.  
Accessories, see page 41 and 42.

High Power Flange Receptacle, 2-way



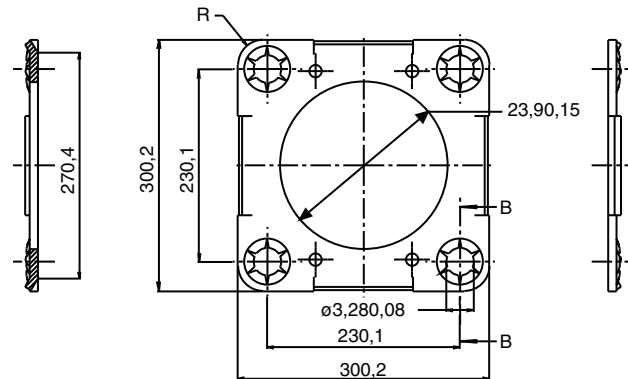
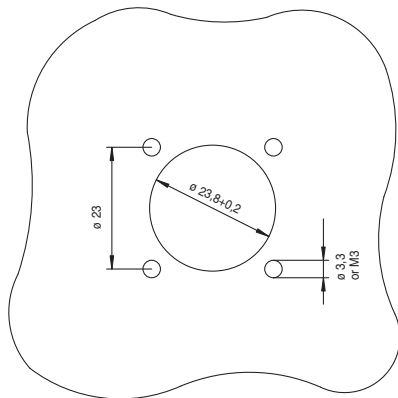
Order No.	Designation	Code	Color
121583-0026	APD-1APH8-2	5	black (RAL 9005)

Packaging unit 100 pcs.

Socket Crimp-Contacts, Individual Wire Seal, Cable Seal, Hexagonal Nut, see page 40.  
Accessories, see page 41 and 42.

Panel Cut Out

Flange for all Flange Receptacles



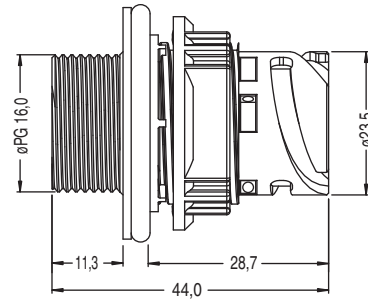
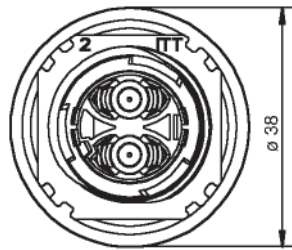
Order Number: 066-8516-005

Dimensions shown in mm  
Specifications and dimensions subject to change

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High Power Jam Nut Receptacle, 2-way



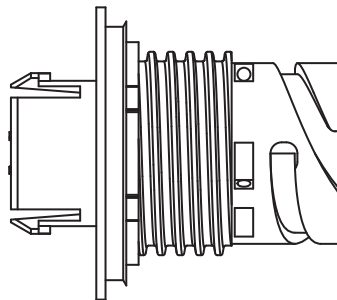
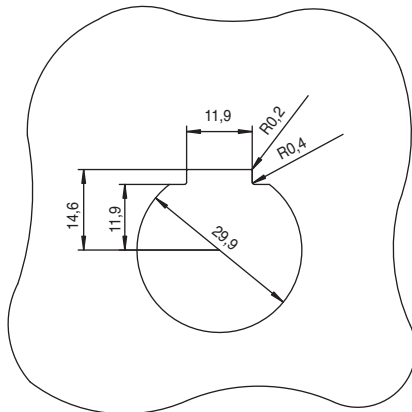
Order No.	Designation	Code	Color
121583-0085	APD-1CPH8-2	5	blue
121583-0027	APD-1CPH8-2	5	black (RAL 9005)
121583-0086	APD-1CPH8-2	5	grey

Packaging unit 100 pcs.

Machined Pin-Contacts, Individual Wire Seal, Cable Seal, Hexagonal Nut, see page 40.  
Accessories, see page 41 and 42.

Panel Cut Out

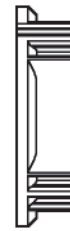
Flange for all Flange Receptacles



Housing



O-ring



Jam Nut

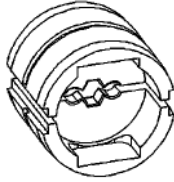
Thickness:

Standard: min. 1,0 / max. 4,0 mm  
Special: min. 2,0 / max. 5,0 mm

Jam Nut, special

Designation	Order No.
for special wall thickness 2,0 - 5,0 mm	217-8516-001

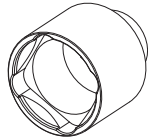
Tooling for 2-way High Power Connectors



Contact / Socket	Crimp-Dies
031-8646-010 (6,00 mm <sup>2</sup> )	CT120090-165
with individual wire seal	
031-8646-011 (10,00 mm <sup>2</sup> )	CT120090-165
031-8646-002 (AWG 8)	CT120090-165
031-8646-003 (AWG 6)	CT120090-165
031-8646-001 (16,0 mm <sup>2</sup> )	CT120090-171
Contact / Socket	Crimp-Dies
430-8645-000 (6,00 mm <sup>2</sup> )	CT120090-165
with individual wire seal	
430-8645-009 (10,00 mm <sup>2</sup> )	CT120090-165
430-8645-003 (AWG 8)	CT120090-165
430-8645-002 (AWG 6)	CT120090-165
430-8645-007 (16,0 mm <sup>2</sup> )	CT120090-171

Assembly Tools Jam Nut Receptacle

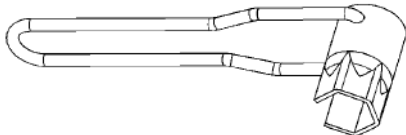
Square box spanner for torque wrench to tighten the jam nut



Order No.	CT317-8649-034
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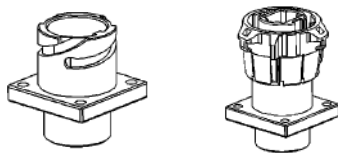
Assembly Tools Hexagonal Nut

To tighten the hexagonal fixing nut 217-8516-010



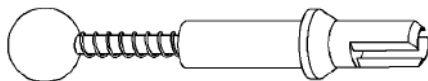
Order No.	980-8672-005
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Assembly and Torque Wrench Adapter



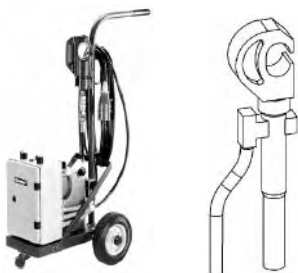
Designation	Order No.
MA-APD-112-P	248-8653-063
MA-APD-112-R	249-8619-010

Contract Extraction Tool



Designation	Order No.
CET- APD-2	121586-5149

Crimp Tool



Crimp Tool	Designation	Order No.
Hydraulic, hand operated:	HK120	CT121586-5077
Electro-hydraulic, 230 V AC operated	HK12-EL	CT121586-5075

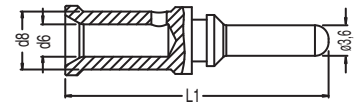
For detailed assembly instruction please see CAS 25024

Dimensions shown in mm  
Specifications and dimensions subject to change

**Machined Pin Crimp Contacts, Standard Silver Plated** for Plug, High Power 2-way

Order No.	d6	d8	L1
430-8645-000 (6,00 mm <sup>2</sup> ) *	3,4	6,8	33,4
430-8645-009 (10,00 mm <sup>2</sup> )	4,3	6,8	30,9
430-8645-003 (AWG 8)	3,8	6,8	30,9
430-8645-002 (AWG 6)	5,3	6,8	30,9
430-8645-007 (16,00 mm <sup>2</sup> )	5,5	7,5	30,9

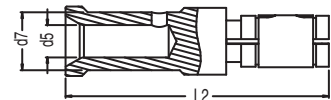
Packaging unit 100 pcs  
\* for individual wire seal and grommet



**Machined Socket Crimp Contacts, Standard Silver Plated**

Order No.	d5	d7	L2
031-8646-010 (6,00 mm <sup>2</sup> ) *	3,4	6,8	33,4
031-8646-011 (10,00 mm <sup>2</sup> )	4,3	6,8	30,9
031-8646-002 (AWG 8)	3,8	6,8	30,9
031-8646-003 (AWG 6)	5,3	6,8	30,9
031-8646-001 (16,00 mm <sup>2</sup> )	5,5	7,5	30,9

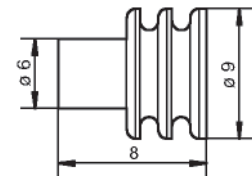
Packaging unit 100 pcs  
\* for individual wire seal and grommet



**Individual Wire Seals** For High Power 2-way 6 mm<sup>2</sup> only

Designation	Order No.:	Part Number
16GN5824	273-8506-012	121668-0035

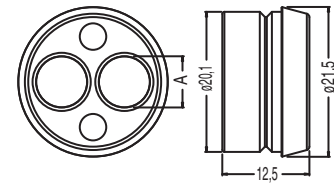
wire insulation  $\phi$  4,3 - 4,8 mm / green



**Grommet/Cable Seal for Cable (acc. to DIN 670722 FLY/DIN 72551 FLRY)** For High Power 2-way

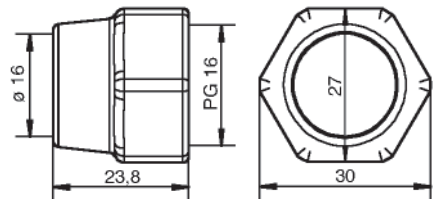
Order No.	Wire Insulation $\phi$	$\phi$ A mm
351-8697-000 (6,00 mm <sup>2</sup> )	4,2 - 5,8	3,8
351-8697-007 (10,00 mm <sup>2</sup> )	5,7 - 7,3	5,3
351-8697-010 (16,00 mm <sup>2</sup> )	6,8 - 8,3	6,5
351-8697-013 (6,00 mm <sup>2</sup> )	3,7 - 5,0	3,3

Packaging unit 100 pcs.



**Hexagonal Nut** For High Power 2-way

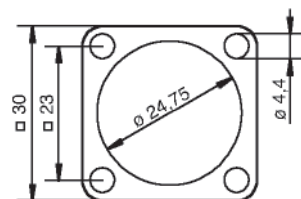
Order No. 217-8516-010  
Packaging unit 100 pcs.



**Flange Gasket** For Flange Receptacle, High Power 2-way

Order No.
075-8503-000 (-55/125°C)
075-8503-004 (-30/200°C)

Packaging unit 100 pcs.





**Sealing Cap for Receptacle**

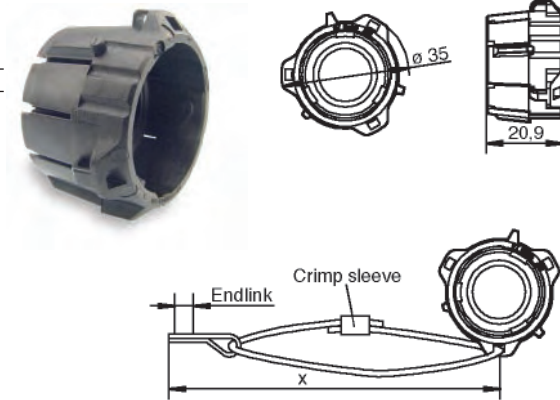
Applicable for 4-way and 7-way, 1-way HP and 2-way HP

Designation	Order No.
APD-DP	121583-0021

Packaging unit 100 pcs

APD-DP with rope, end link and crimp sleeve available upon request  
 X = Total rope length upon request

AP:	Part Number
	120110-0026

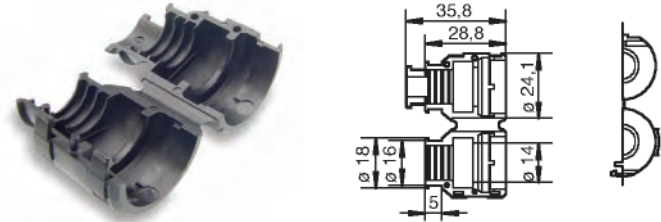


**Straight Endbell for Flex Tube**

Applicable for 4-way and 7-way

Order No.	058-8578-100 (ø 8,5 mm)
	058-8578-102 (ø 10,0 mm)

Packaging unit 100 pcs

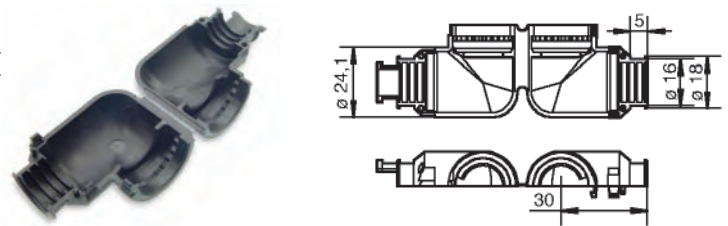


**90° End Bell for Flex Tube**

Applicable for 4-way and 7-way

Order No.	058-8578-101 (ø 8,5 mm)
	058-8578-103 (ø 10,0 mm)

Packaging unit 100 pcs



**Adaptor for Flex Tube**

Applicable for 1-way and 2-way High Power

Order No.	980-8672-010 (ø 17 mm)
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Packaging unit 100 pcs



**90° End Bell**

Applicable for 1-way High Power up to 25 mm² wire

Order No.:	980-8672-004
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Packaging unit 100 pcs

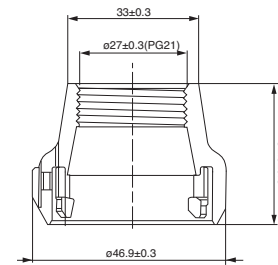


Dimensions shown in mm  
 Specifications and dimensions subject to change

**Endbell, 37-way**

Order No.	Designation	Code	Color
044-8597-000	Endbell for APD 37-way version only	1	black (RAL 9005)

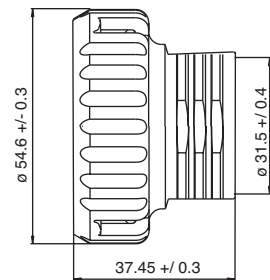
Packaging unit 100 pcs.



**Endbell, 51-way**

Order No.	Designation	Code	Color
120110-0075	Endbell for APD 51-way version only	1	black (RAL 9005)

Packaging unit 100 pcs.

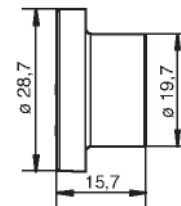


**Dust Cap for Plug**

Applicable for all APD Plugs

Order No. 025-8636-005

Packaging unit 100 pcs

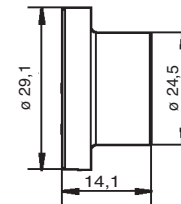


**Dust Cap for Receptacle**

Applicable for all APD Receptacles

Order No. 025-0480-000

Packaging unit 100 pcs



Cross Reference AWG Size / metric size (mm<sup>2</sup>)

AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>	AWG	mm <sup>2</sup>
6/0	170,3	10	5,27	25	0,163
5/0	135,1	11	4,15	26	0,128
4/0	107,2	12	3,31	27	0,102
3/0	85,0	13	2,63	28	0,0804
2/0	67,5	14	2,08	29	0,0646
0	53,4	15	1,65	30	0,0503
1	42,4	16	1,31	31	0,0400
2	33,6	17	1,04	32	0,0320
3	26,7	18	0,823	33	0,0252
4	21,2	19	0,653	34	0,0200
5	16,8	20	0,519	35	0,0161
6	13,3	21	0,412	36	0,0123
7	10,6	22	0,325	37	0,0100
8	8,35	23	0,259	38	0,00795
9	6,62	24	0,205	39	0,00632

Conversion Chart for MM to Inches

mm	Inches	mm	Inches	mm	Inches
1	0.04	18	0.71	35	1.38
2	0.08	19	0.75	36	1.42
3	0.12	20	0.79	37	1.46
4	0.16	21	0.83	38	1.50
5	0.20	22	0.87	39	1.54
6	0.24	23	0.91	40	1.57
7	0.28	24	0.94	41	1.61
8	0.31	25	0.98	42	1.65
9	0.35	26	1.02	43	1.69
10	0.39	27	1.06	44	1.73
11	0.43	28	1.10	45	1.77
12	0.47	29	1.14	46	1.81
13	0.51	30	1.18	47	1.85
14	0.55	31	1.22	48	1.89
15	0.59	32	1.26	49	1.93
16	0.63	33	1.30	50	1.97
17	0.67	34	1.34		

Equation for converting mm to inches:  
mm divided by 25.4 = inches

Conversion Chart for Centigrade to Fahrenheit

°C	°F	°C	°F	°C	°F
-40	-40.0	-10	+14.0	+10	+50.0
-38	-36.4	-9	+15.8	+11	+51.8
-36	-32.8	-8	+17.6	+12	+53.6
-34	-29.2	-7	+19.4	+13	+55.4
-32	-25.6	-6	+21.2	+14	+57.2
-30	-22.0	-5	+23.0	+15	+59.0
-28	-18.4	-4	+24.8	+16	+60.8
-26	-14.8	-3	+26.6	+17	+62.6
-24	-11.2	-2	+28.4	+18	+64.4
-22	-7.6	-1	+30.2	+19	+66.2
-20	-4.0	0	+32.0	+20	+68.0
-19	-2.2	+1	+33.8	+21	+69.8
-18	+0.4	+2	+35.6	+22	+71.6
-17	+1.4	+3	+37.4	+23	+73.4
-16	+3.2	+4	+39.2	+24	+75.2
-15	+5.0	+5	+41.0	+25	+77.0
-14	+6.8	+6	+42.8	+26	+78.8
-13	+8.6	+7	+44.6	+27	+80.6
-12	+10.4	+8	+46.4	+29	+82.4
-11	+12.2	+9	+48.2	+29	+84.2
				+30	+86.0

Equation for converting Centigrade to Fahrenheit:  
32 + (C° x 1.8) = Fahrenheit



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120110-0075	42	121586-5149	39	351-8697-001	33
120110-0083	13	121586-5190	16	351-8697-002	33
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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.

## 1. 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.

## 2. 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, ionization 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 carbonization 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.

## 3. 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.

## 4. DISPOSAL

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

## 5. 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. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. 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

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Fax: 49.7151.699.217

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