

APD Multi-way Composite Connector Solution



APD 37-way



APD 51-way

Cannon's new multi-way APD Series offers a **robust** and **highly reliable** composite connector for **quick and easy** bayonet coupling.

Suitable for all industrial and commercial vehicle applications, this connector solution offers high performance even in harsh environments.

Typical Applications:

- Transmission
- Powertrain
- Chassis Systems
- Off-Road Vehicle Cabine
- Industrial Automation



Technical Specifications for APD 37- and 51-way for wire sizes 0,75-1,5 mm²

Electrical

Contact Resistance	Initially: 5mΩ max. After climatic tests: 10mΩ max.
Current Carrying Capacity	max. 12 Amps at 85°C / 105°C short time max. 2 Amps at 120°C (37-way only)
Insulation Resistance	> 10MΩ
Voltage Proof	> 1000 VAC

Mechanical

Coupling Torque	open: min 1 Nm; open/close: max 4 Nm (37-way only) open: min 1,5 Nm; open/close max 4,5 Nm (51-way only)
Mating Cycles	20 (37-way only) 40 (51-way only)
Contact Retention Force	min 80 N (C-clip version) min 100 N (secondary locking version, 51-way only)
Mechanical Robustness	Static, lateral load: 150N / 10s Dynamic impact, ball drop 2 Joules*
Vibration	Good vibration resistance (further details upon request)

Environmental

Water Tightness	IP67: 0,1 bar / 30 minutes IP69K: jet water 85°C
Ambient Temperature	max 125°C (37-way only) max 85°C / 105°C short time (51-way only) (contact temperature max. 125°C)
Humidity, Cyclic	23°C / 83%; 40°C / 95%; 168 h
Salt Mist	48 h **
Industrial Atmosphere	Condensed water / SO ₂ ; 3 cycles **
Resistance Against Fluids	Diesel Diesel and test fuel FAM2 Motor Oil SAE30 Motor Oil DIN 51 5111 Gearbox Oil SAE 80W90 Gearbox Oil Shell Spirax MA80W Brake Fluid DIN ISO 4925 Cleaning agent

NOTE: All test conditions refer to DIN 72585 if not marked by (*). (**) Resistant due to plastic housing material. Specifications subject to change per design. Please confirm with Customer Service.

Cannon



APD 37-way

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.

Description	Picture	Designation	Part Number
Plug		APD-1BS37	121583-0058
Flange Receptacle with O-Ring Seal		APD-1AP37	249-8619-017
Endbell with O-Ring Seal		Endbell	044-8597-000

For individual requirements we also offer application specific solutions shown below:

Description	Picture	Part Number
Plug Without Coupling Nut		391-8547-031
Receptacle Housing		248-8653-038
Adaptor Housing		317-8681-001

Other customer specific designs available by request.



37-way Jam-Nut Version in development

APD 51-way

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



Standard Version
(mono-block plastic shell)



Secondary Lock Version
(two parts, main shell & secondary lock)

Other coding available by request

Description		Picture	Code	Designation	Part Number	
Standard Version	Plug		Code 1 - Green	APD-1BP51	121583-0032	
			Code 2 - Yellow	APD-2BP51	121583-0033	
			Code 3 - Brown	APD-3BP51	121583-0030	
			Code 4 - Purple	APD-4BP51	121583-0031	
	Receptacle	Jam Nut		Code 1 - Green	APD-1CS51	121583-0081
				Code 2 - Yellow	APD-2CS51	121583-0082
				Code 3 - Brown	APD-3CS51	121583-0079
				Code 4 - Purple	APD-4CS51	121583-0080
		Snap-In		Code 1 - Green	APD-1SS51	249-8619-003
				Code 2 - Yellow	APD-2SS51	249-8619-004
				Code 3 - Brown	APD-3SS51	249-8619-001
				Code 4 - Purple	APD-4SS51	249-8619-002
Secondary Lock Version	Plug		Code 1 - Green	APD-1BP51S	121583-0087	
			Code 2 - Yellow	APD-2BP51S	121583-0088	
			Code 3 - Brown	APD-3BP51S	121583-0089	
			Code 4 - Purple	APD-4BP51S	121583-0090	
	Receptacle	Jam Nut		Code 1 - Green	APD-1CS51S	121583-0095
				Code 2 - Yellow	APD-2CS51S	121583-0096
				Code 3 - Brown	APD-3CS51S	121583-0097
				Code 4 - Purple	APD-4CS51S	121583-0098
		Snap-In		Code 1 - Green	APD-1SS51S	121583-0091
				Code 2 - Yellow	APD-2SS51S	121583-0092
				Code 3 - Brown	APD-3SS51S	121583-0093
				Code 4 - Purple	APD-4SS51S	121583-0094

Note: Standard and secondary lock versions can be combined. Dedicated endbells are available.



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 ²	APK-SA16A07-002-C	121668-0220
		0,75 - 1,50 mm ²	APK-SA16A15-002-C	121668-0222
	gold (0,8 μm)	0,35 - 0,75 mm ²	APK-SA16G07-002-C	121668-0266
		0,75 - 1,50 mm ²	APK-SA16G15-002-C	121668-0268
Pin Contacts	tin	0,35 - 0,75 mm ²	APK-PA16A07-002-C	121668-0254
		0,75 - 1,50 mm ²	APK-PA16A15-002-C	121668-0255
	gold (0,8 μm)	0,35 - 0,75 mm ²	APK-PA16G07-002-C	121668-0265
		0,75 - 1,50 mm ²	APK-PA16G15-002-C	121668-0267

Press-In Contacts (machined)

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

For APD 51-way Secondary Lock Version

Contacts (stamped & formed)

Socket Contacts	tin	0,35 - 0,75 mm ²	APK-SA16A07-002	121668-0221
		0,75 - 1,50 mm ²	APK-SA16A15-002	121668-0202
	gold (0,8 μm)	0,35 - 0,75 mm ²	APK-SA16G07-002	121668-0270
		0,75 - 1,50 mm ²	APK-SA16G15-002	121668-0272
Pin Contacts	tin	0,35 - 0,75 mm ²	APK-PA16A07-002	121668-0252
		0,75 - 1,50 mm ²	APK-PA16A15-002	121668-0253
	gold (0,8 μm)	0,35 - 0,75 mm ²	APK-PA16G07-002	121668-0269
		0,75 - 1,50 mm ²	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

In addition to APD 37- and 51-way product series, we also offer a complete line of other environmentally sealed solutions:



APD 4- and 7-way High Power 1- and 2-way connectors

These in-line and bulkhead sensors are resistant to harsh environmental conditions (contaminants, vibration and shock).

Applications include: gearbox, powertrain, chassis systems, off-road vehicle cabine, industrial automation.



Trident

Highly reliable bayonet coupling system with either high strength metal or corrosion resistant plastic coupling rings.

Applications include: gearbox, powertrain, chassis systems, off-road vehicle cabine, industrial automation, machine-tool, instrumentation.



Sure-Seal, 1 to 10 way Mini Sure-Seal, 2 to 4 way

Unique line of sealed, circular miniature connectors. Provides a submersible seal that is resistant to water, fuels and chemicals.

Applications include: automotive and commercial vehicle as brake-lining control, cruise control, dash board, oil level gauge, fuel injection.



CLC / Y-Splice

Clip Lock circular environmental miniature connectors.

Applications include: emission control, powertrain control, chassis control, sensors and actuators.



SLC

Snap (Clip) Lock circular connectors ensure a tightly sealed connection preserving the integrity of the solid state package.

Applications include: powertrain control, sensors & actuators, forklifts, agricultural and construction equipment.



SLE

Snap Lock Environmental connectors. Protects against contaminants even when unmated.

Applications include: safety control systems, tractors, mining equipment and transmission control.

APD31 & 57 04-Sept

To learn more about our APD 37- and 51-way product line, please visit www.ittcannon.com/apd

Customer Support Locations

Americas: +1.714.557.4700
Asia: +852.2732.2720

Germany: +49.7151.699.0

UK: +44.1256.311200