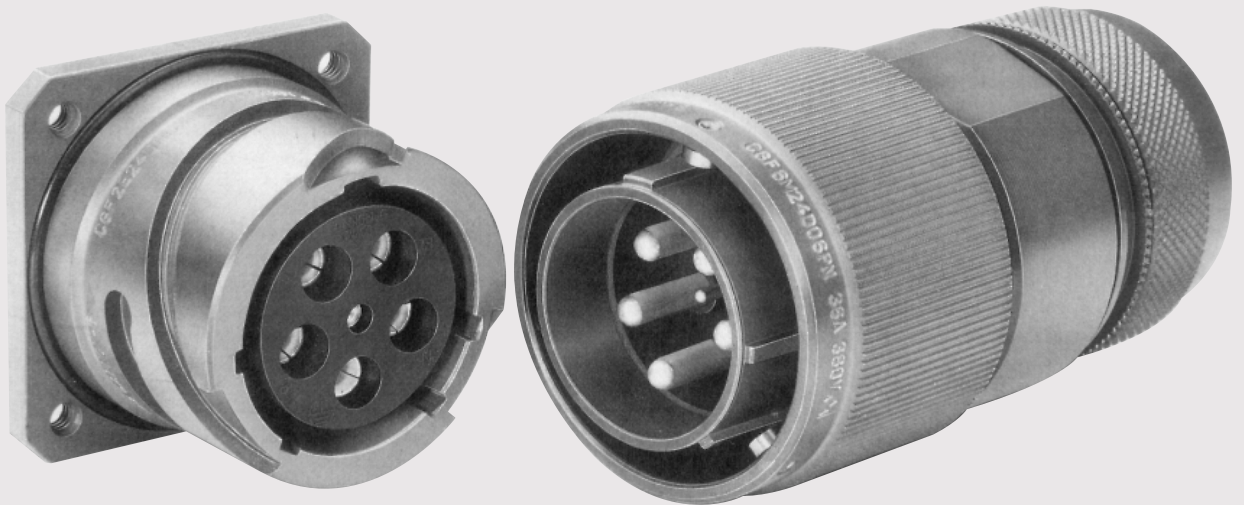


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# CGF

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POWER SUPPLY CONNECTOR



CGF-6/399

Cannon



**ITT Industries**  
*Engineered for life*

Description

The circular connectors of the Cannon CGF series are employed to transmit high power in systems with voltages over 50 V. Cables according to MIL-W-5086, TL6145-009, TL6145-011 and MTV6145-005 can be used.

Features

- First-to-mate ground contact according to VDE 0623 connected to the shell
- First-to-break pilot contact according to VDE 0623 for mating and unmating without power
- Air and creepage paths according to VDE 0110, Insulation Group C, for 380 V
- Earthing continuity from receptacle to plug through grounding finger ring under coupling nut
- Contact arrangement and identification according to VDE 0623 requirements
- Endbells for shielding braid and heat shrinkable boots
- Five keyway shell polarisation ensures positive mating

Following shell styles are available:

**Box mounting receptacle**

optionally for front or rear mounting

**Wall mounting receptacle**

for shielding braid and heat shrinkable boots acc. to VG 95343

**Plug**

straight, for shielding braid and heat shrinkable boots acc. to VG 95343

**Accessories**

Series CA Bayonet gaskets (shielded and unshielded) can be used

How to order

CGF 6 M 36 D 06 P N - \*

**Series**

CGF - Cannon designation

**Shell style**

- 0 - wall mounting receptacle with M endbell
- 2 - box mounting receptacle
- 6 - straight plug with M endbell

**Class**

- E - environmental (shell style 2)
- M - endbell for shielding and heat shrink boot (shell style 0 and 6)

**Shell size**

16, 20, 22, 24, 36

**Termination**

D - Crimp type

**Contact arrangement**

- 06 - 6-way, with pilot contact
- 05 - 5-way, without pilot contact
- 03 - 3-way

**Contact type**

- P - pin contact
- S - socket contact

**Insert position**

N - normal position 95°

Upon request:

- A - 80°
- B - 70°
- C - 130°
- D - 120°

**Modification**

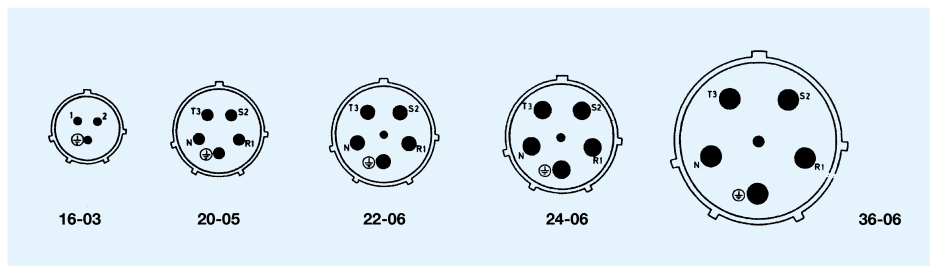
- 002 - flange with 4 through holes
- 003 - crimp termination for cable 16 mm<sup>2</sup>, shell size 36
- 006 - crimp termination for cable 4 mm<sup>2</sup>, shell size 22

## Technical data

Shell size	Contact arrangement	Current A	Voltage V	Air/Creepage path mm min.	Test voltage KV/Veff	Power contact mm <sup>2</sup>	Wire size AWG	Pilot contact mm <sup>2</sup>
16	16-03	16	250	2,8	2,5	1,5	16	-
20	20-05	16	380	3,8	2,8	1,5	16	-
22	22-06	32	380	4,2	3,0	2,5 (4,0)	12	0,75
24	24-06	63	380	5,0	3,5	10,0	-	0,75
36	36-06	125	380	7,5	4,5	25,0 (16)	-	1,5

## Contact Arrangements

Pin front view



## Materials

Shell	aluminum alloy
Shell finish	cadmium plated, olive chromate
Insulator	chloroprene elastomere
Contacts	copper alloy
Contact finish	hard silver plate and passivated

## Metal dust caps

### for receptacles

Shell size	with polyamide rope Standard (A66)	with chain
16	CGF 121003-7415	CGF 121003-7400
20	CGF 121003-7416	CGF 121003-7401
22	CGF 121003-7417	CGF 121003-7402
24	CGF 121003-7418	CGF 121003-7403
36	CGF 121003-7419	CGF 121003-7404

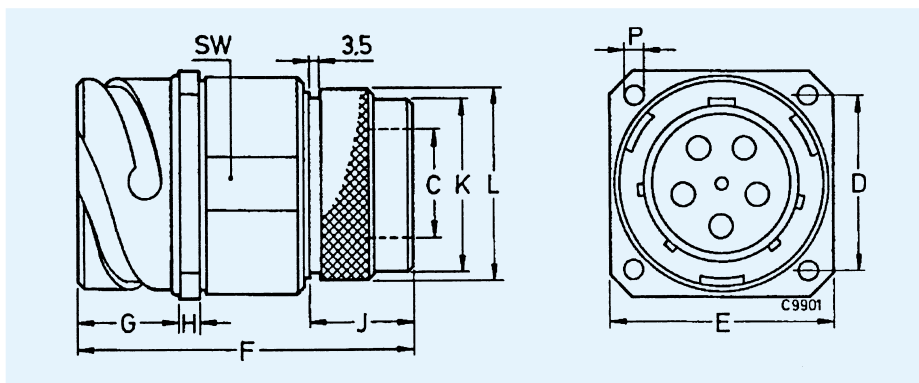
### for plugs

Shell size	with polyamide rope Standard (A66)	with chain
16	CGF 121004-7115	CGF 121004-7100
20	CGF 121004-7116	CGF 121004-7101
22	CGF 121004-7117	CGF 121004-7102
24	CGF 121004-7118	CGF 121004-7103
36	CGF 121004-7119	CGF 121004-7104

Types with polyamide rope are preferred types

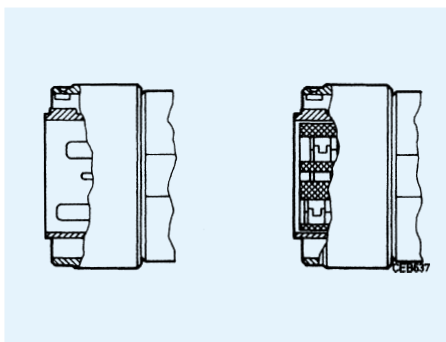
**Wall mounting receptacle**

Shell style 0 with endbell and heat shrink boot)



Shell size	Termination mm <sup>2</sup>	C + 0,2	D	E ±0,1 max	F max	G ±0,25	H ±0,2	J max	K	L ±0,2	SW	P Mod 002 H13	
16	1,5	10,0	24,6	32,8	63	18,3	4,0	21	21,0	23,5	24	M4	4,2
20	1,5	12,2	29,4	38,3	69	23,2	4,0	21	23,0	25,5	32	M4	4,2
22	2,5/0,75	12,2	31,8	41,3	77	30,0	4,0	21	23,0	25,5	36	M4	4,2
	4,0/0,75	19,0	31,8	41,3	77	30,0	4,0	21	31,5	35,5	36	M4	4,2
24	10,0/0,75	23,0	34,9	45,4	82	30,0	4,0	26	37,5	41,5	41	M4	4,2
36	16,0/0,75	28,0	49,2	64,5	87	30,0	6,0	26	45,0	50,0	57	M5	5,3
	25,0/1,5	34,0	49,2	64,5	87	30,0	6,0	26	48,0	53,0	57	M5	5,3

**First-to-mate contact**

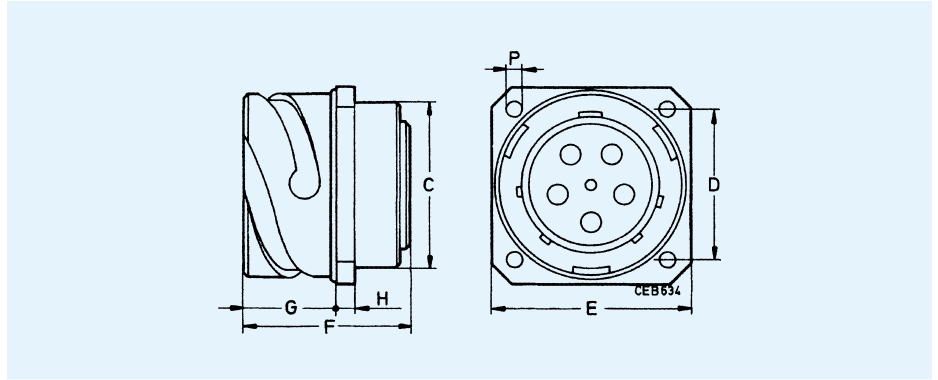


**Mounting dimensions**

min. hole dia.	# 16	# 20	# 22	# 24	# 36
Front mounting	22,9	29,5	32,7	38,7	54,6
Rear mounting	24,9	34,8	37,8	41,4	60,0
max wall thickness	8,0	8,0	10,0	10,0	10,0

**Box mounting receptacle**

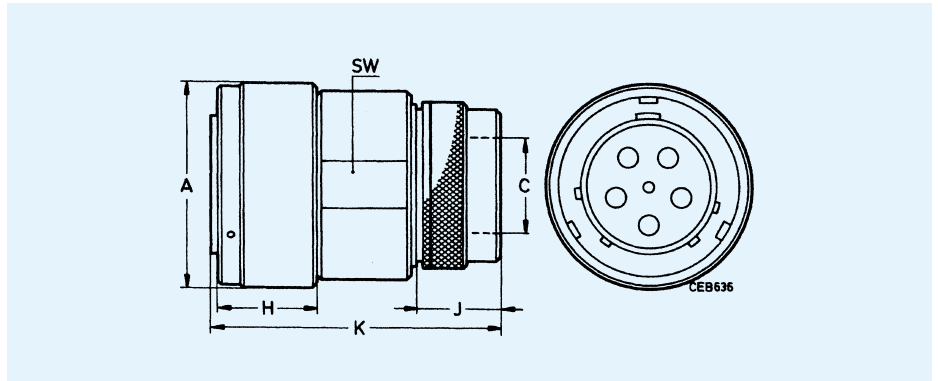
Shell style 2



Shell size	C max	D 0,1	E max	F max	G 0,25	H 0,2	P	
								Mod 002 H13
16	22,4	24,6	32,8	33	18,3	4,0	M4	4,2
20	29,0	29,4	38,3	42	23,2	4,0	M4	4,2
22	32,2	31,8	41,3	44	30,0	4,0	M4	4,2
24	38,2	34,9	45,4	48	30,0	4,0	M4	4,2
36	54,1	49,2	64,5	54	30,0	6,0	M5	5,3

**Straight plug**

Shell style 6 with endbell for shielding braid and and shrink boot



Shell size	Termination mm <sup>2</sup>	C + 0,2	D	F max	H ±0,2	J max	K	SW	P	
										Mod 002 H13
16	1,5	10,0	24,6	63	4,0	21	21,0	24	M4	4,2
20	1,5	12,2	29,4	69	4,0	21	23,0	32	M4	4,2
22	2,5/0,75	12,2	31,8	77	4,0	21	23,0	36	M4	4,2
	4,0/0,75	19,0	31,8	77	4,0	21	31,5	36	M4	4,2
24	10,0/0,75	23,0	34,9	82	4,0	26	37,5	41	M4	4,2
36	16,0/0,75	28,0	49,2	87	6,0	26	45,0	57	M5	5,3
	25,0/1,5	34,0	49,2	87	6,0	26	48,0	57	M5	5,3

## Tools

**Crimping of contacts**0,75 – 4,0 mm<sup>2</sup> / AWG 16 – 12

Hand crimp tool	M22520/1-01
Locator	TH 452 (P+S)
Hand crimp tool for ground contacts	CCT-CGF-E (P+S)
Pneumatic bench presses and semiautomatic crimp station	upon request

P – Pin contact, S – Socket contact

Contacts 10, 16 und 25 mm<sup>2</sup>

Electro hydraulic crimp tools	upon request
Hand pump	4601.00000.330
Foot pedal for hand pump	4601.51000.330
High pressure hose	4604.00000.020
Crimp head	4632.00000.601

Hex crimp dies for crimp head

10 mm <sup>2</sup>	upper part	317-8531-000
	lower part	317-8531-001
16 mm <sup>2</sup>	upper part	317-8532-000
	lower part	317-8532-001
25 mm <sup>2</sup>	upper part	317-8643-001
	lower part	317-8643-002

**Insertion and Extraction of contacts**

	Insertion	Extraction
0,75 – 1,5 mm <sup>2</sup> / AWG 16 incl. ground and pilot contacts Guiding pin	CIT-F80-16 or CIT-16 226-1017-000	CET-F80-16
2,5 – 4,0 mm <sup>2</sup> / AWG 12 incl. ground contact Guiding pin	CIT-F80-12 or CIT-12 226-1018-000	CET-F80-12
10 mm <sup>2</sup> incl. ground contact	CIT-8	CET-8
16 mm <sup>2</sup> incl. ground contact	CIT-CGF-160/250	CET-4
25 mm <sup>2</sup> incl. ground contact	CIT-CGF-160/250	CET-0

# Produkt Safety Information

**THIS NOTE SHOULD BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOGUE. FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/CATALOGUE 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, 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/Catalogue 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.

## 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 can not 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 path 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 tramper with connectors.

For operation voltage please see appropriate national regulations.

## IMPORTANT GENERAL INFORMATION.

1. 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.

## 2. Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

## 3. Other important information

Cannon continuously endeavours to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalogue and data sheets.

## 4. Harnessing and Assembly Instructions

If applicable, our special harnessing and/or assembly instruction has to be adhered to. This is provided at request.

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