cannon

CGL Connectors

ITT

ENGINEERED FOR LIFE

ITT Corporation

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. The company generated 2015 revenues of $2.5 billion. For more information, visit www.itt.com.

Our connector portfolio remains the most extensive in the industry, offering a reliable and cost effective range of interconnect solutions with the brands of Cannon, VEAM and BIW Connector Systems. Continuous investment in technology and research & development have enabled ITT to provide new, innovative products and solutions to markets including:

Our connector portfolio remains the most extensive

in the industry, offering a reliable and cost effective range of interconnect solutions

Introduction to CGL

Circular connectors featured by metal shells are usually only good for an operating voltage of 50 Volts. Voltages in access to that are considered to be potentially hazardous for any human body. ITT Cannon already in 1987 took appropriate measures to develop the essential design features to respond to this fact.

There was an increasing need for connectors of such nature seen in industrial applications like motors and drives and numerous other options wherever goods or things have to be moved. Usually such applications are featured by the utilization of mains power which often has to be connected.

Features and benefits

- The products in this catalogue are designed to be utilized with mains power which means 250 – 700 V_{RMS} depending on the insulator style and the contact arrangement.
- All the plugs and receptacles equipped with a first to mate last to break grounding contact are electrically linked to the shell.
- There are various backshell or adapter options available like PG and metric gland adapters. As there are hundreds of PG and metric gland versions on the market available we would like our valued customers to purchase these parts separately.
- The Universal Endbell is an ITT Cannon development which offers a shielding option and sealing up to IP69k.
- The 700 V products are coined by a UL certification.

Contact us for detail or your request for a customized solution.

Table of contents

How to use

This catalog is split in several sections that help you to

- get a general overview of all product lines (product overview)
- get all required detail information (dimensions, product details)
- get all required support products (accessories, tooling)

The fastest way to find your product of choice is to follow these steps

First section: CGL 250 V–500 V (see page 7–20)

1 Select your product using the “ordering reference”

2 Use the detail pages to better understand the available options and choose the best solution for your needs

3 Add accessories and tooling as required on the related pages

4 Use the contact information on the back cover to contact us for further questions or to get advise on where you can purchase our products

Second section: CGL 700 special versions (see page 21–25)

1 Select your product using the “contact arrangement” on page 22

2 Use the detail pages to better understand the available options and choose the best solution for your needs

3 Add contacts from the contact tables and tooling as required on the related pages

4 Use the contact information on the back cover to contact us for further questions or to get advise on where you can purchase our products

Product overview CGL 250 V–500 V

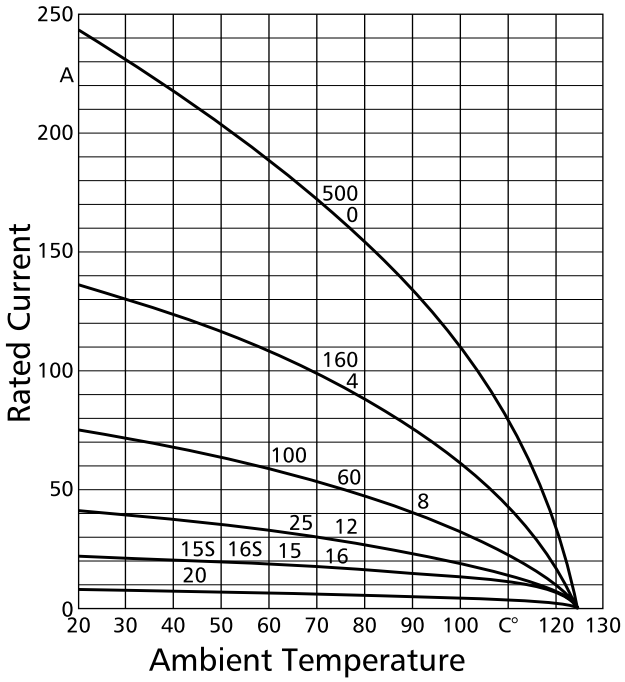
ELECTRICAL DATA

Contact rating at 20°C (68°F)

Contact size (AWG/metric)	Rated Current ($A_{max.}$)
16S/15S	22
16/15	22
12	41
	74
4/160	135

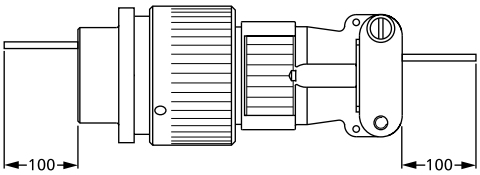
For air and creepage paths, test and operating voltage see page 10-11

Current rating



Contacts resistance

The contact resistance has to be tested acc. to VG95319 part 2, Test no 5.10.1



Contact size		Contact resistance
metric	AWG	P Ÿ P D [
15S/15	16S/16	6,0
25	12	3,0
60/100		1,0
160	4	0,3

MECHANICAL FEATURES

Ambient temperature

–55/125°C (–67/257°F)

Safety provisions

% D \ R Q H W F R X S O L Q J , 3 D F F W R , 6 2 E D U S U H V

Threaded coupling: IP65 acc. to ISO 20653

Vibration test

200 m/s² at 10–2000 Hz

Mating cycles

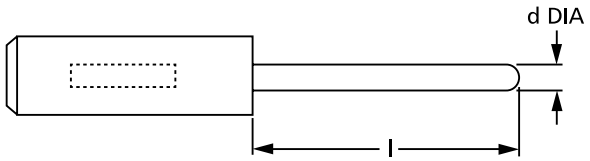
min. 500

Separating force per contact

The separating force has to be measured acc. to VG 95319 part 2, test no 5.7. using the required test gage.

Contact size		Separating force	
metric	AWG	N min	Gage
15S/15	16S/16	1,0	G 1,56
25	12	1,5	G 2,36
60/100		3,0	*
160	4	4,0	G 5,69

Gage see also VG95234 Part 1



Gage	d DIA +0,01	l –1
G 1,56	1,56	9
G 2,36	2,36	12
*		13
G 5,69	5,69	13

Contact retention

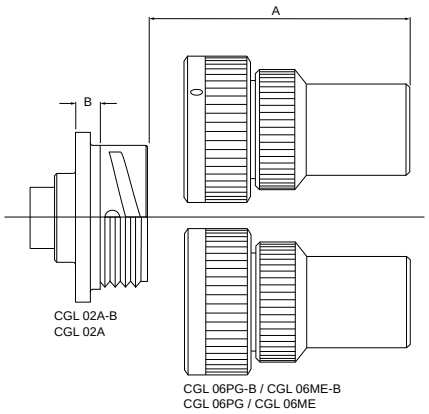
The contact retention has to be tested acc. to VG95319 part 2, Test no 5.4. Apply test force in mating direction

Contact size		Test force
metric	AWG	N
15S/15	16S/16	35
25	12	55
60/100		
160	4	90

Product overview CGL 250 V–500 V

MECHANICAL FEATURES (continued)

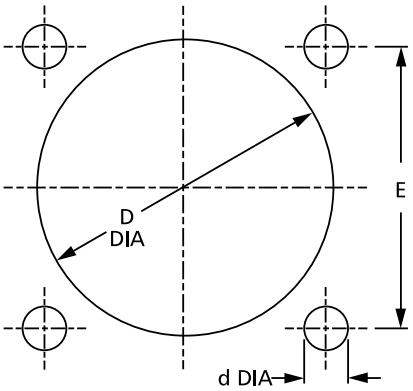
Separating and mating force



Shell size	A min.	B max
10SL		7,2
	90	7,2
20	100	7,2
22	100	
24	110	9,5
	110	9,5

MECHANICAL FEATURES (continued)

Mounting dimension



Mounting holes for box mounting connectors, Style CGL02/CGL02-B

Shell size	CGL02		CGL02-B		CGL02/CGL02-B
	ØD H12	ØD H13	ØD H12	ØD H13	E ± 0,1
10SL	16,0	3,1		3,2	
		3,1	31,1	3,2	27,0
20		3,1	34,5	3,2	29,4
22	35,0	3,1		3,2	
24		3,7	41,3	3,7	34,9
	44,5	3,7	47,1	3,7	39,7

Coupling torques

The allowable coupling torques have to be tested under full bundle conditions of
WKH FRQQHFWRUV DFF WR 9* SDUW 7HVW QR

Shell size	Allowable coupling torque Nm	
	Closing and opening CGL-B max.	Opening CGL/CGL-B min.
10SL	1,7	0,23
20	9,0	0,70
22	11,0	
24	14,0	
	17,0	0,92

Ordering reference

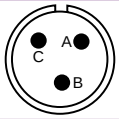
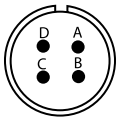
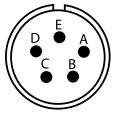
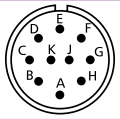
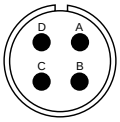
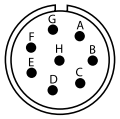
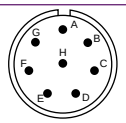
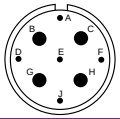
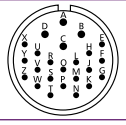
Part number explanation

CGL 08 IN 28 A16 P D1 L – B – F80 D14 ***

Series	
Shell type	
02 – box mounting receptacle with square flange	see page 12
06 – straight plug	see page 13
² SOXJ ZLWK ƒ DGDSWHU	see page 14
Class	
IN – Universal Endbell (nickel plated)	
PG – with PG adapter (nickel plated)	
ME – with metric adapter (nickel plated)	
A – without endbell (style 02 only)	
Shell size	
6 /	
Contact arrangement	see page 10–11
Contact type	
P – pin	
S – socket	
Performance class	
A1, C1, D1 – dependent on layout, see page 10	
Insulator type	
L – long insulator = 250 V / 500 V	
Bayonet coupling (for threaded version: omit indication)	
Contacts*	
) ² FULPS FRQWDFWV	
Outer cable diameter (Universal Endbell only)	
Modification	
F0 – without contacts	
F42 – without endbell	

*Crimp contacts are solderable

CONTACT ARRANGEMENTS

Shell size	Figure	Contact arrangement	Contact number Contact size	Grounding contact in cavity	Admissible operating voltage (VAC)	Examples of available connectors
10SL		10SL-3	3 16S	C	250	CGL02A10SL-3P-C1L*** CGL06PG10SL-3S-C1L-***
		18-10	4 12	D	500	&*/ $ 3 '/ &*/ $ 6 '/ &*/ 3* 3 '/ &*/ 3* 6 '/ &*/ 3* 6 '/ &*/ ,1 6 '/
		18-11	5 12	C	500	&*/ $ 3 &/ &*/ 3* 6 &/ &*/ 3* 6 &/
20		20G10	10 10x16	A	400	CGL02A20G10P-A1L-*** CGL02A20G10S-A1L-*** CGL06PG20G10P-A1L-*** CGL06PG20G10S-A1L-***
22		22-22	4	D	500	CGL02A22-22P-D1L-*** CGL02A22-22S-D1L-*** CGL06PG22-22P-D1L-*** CGL06PG22-22S-D1L-*** &*/ 3* 6 '/
		22-23	12	D	400	CGL02A22-23P-D1L-*** CGL02A22-23S-D1L-*** CGL06PG22-23P-D1L-*** CGL06PG22-23S-D1L-*** &*/ 3* 6 '/
24		24G8*	12	A	400	&*/ $+ * 3 $ / &*/ $+ * 6 $ / &*/ 3*+ * 3 $ / &*/ 3*+ * 6 $ /
		28A16	9 4x4 5x36	D	400	&*/ $ $ 3 '/ &*/ $ $ 6 '/ &*/ 3* $ 3 '/ &*/ 3* $ 6 '/
		28G24*	24 4x12 20x16	A	500	&*/ $+ * 3 $ / &*/ $+ * 6 $ / &*/ 3*+ * 3 $ / &*/ 3*+ * 6 $ /

*The insulator material is FKM.

***Modification codes please see ordering reference, page 9

CONTACT ARRANGEMENTS

LAYOUT SPECIFIC DATA

Contact arrangement	Min. air distance (mm) / mating face				Rated Voltage
	Power-Contact	Power-Grounding	Signal-Contact	Signal-Grounding	Class
10SL-3	3,3	3,3	–	–	250 V
	5,0	5,0	–	–	500 V
	5,0	5,0	–	–	500 V
20G10	4,3	4,0	–	–	400 V
22-22	6,1	5,4	–	–	500 V
22-23	4,3	4,0	–	–	400 V
*	5,9	4,0	–	–	400 V
$		4,6	6,1	5,0	400 V
*	7,5	5,6	3,4	2,7	500 V

Contact arrangement	Min. creepage distance (mm) / mating face				Rated Voltage
	Power-Contact	Power-Grounding	Signal-Contact	Signal-Grounding	Class
10SL-3	3,3	3,3	–	–	250 V
	5,0	5,0	–	–	500 V
	5,0	5,0	–	–	500 V
20G10	4,3	4,3	–	–	400 V
22-22	6,1	6,1	–	–	500 V
22-23	4,3	4,3	–	–	400 V
*	5,9	4,0	–	–	400 V
$		4,6	6,1	5,0	400 V
*	7,5	5,6	3,4	2,7	500 V

Admissible operating voltage

The admissible operating voltages indicated in this catalogue are mainly based on customer information for certain projects. The tables above indicate the actual value for the air and creepage distances and can be used as a calculation basis in connection with ',1 (1 $OO WKH SOXJV DQG UHFHSWDFOHV HTXLSSHG ZLWK D ILUVW WR PDWH to the shell.

Basis and assumptions

The pollution degree for industrial plants is normally "3". However, the calculation of the admissible operating voltage is based on the pollution degree "2", as the connectors are completely sealed and the contact parts are not subject to direct contamination or humidity.

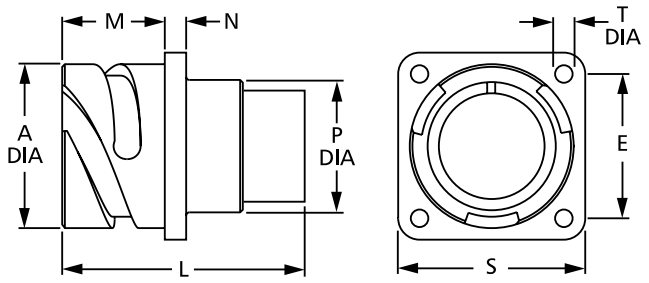
Caculation basis for rated connector impulse voltage

Overvoltage category 250/500 V III
Material class 250/500 V III

BOX MOUNTING RECEPTACLE CLASS E CGL02

CGL02A-B with bayonet coupling

&*/ % LV D ER[PRXQWLQJ UHFHSWDFOH IRU IURQW SDQHO PRXQWLQJ ,W PDWHV ZLWK SOXJV &*/ % DQG

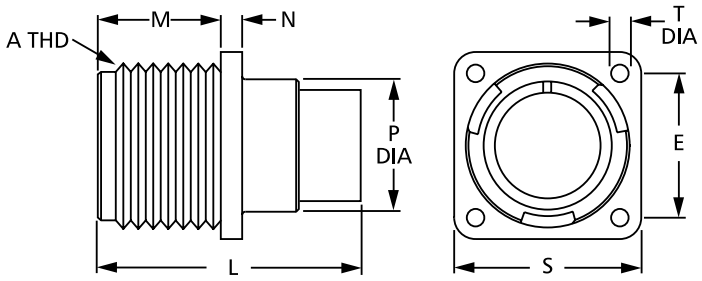


Part No. (pin insert)	Ø A max.	E ± 0,1	L max.	M +0,4	N ± 0,3	Ø P max.	S ± 0,3	Ø T +0,2/–0,1
&*/ $ 6/ 3 & / %)			33,6	14,2		16,2	25,4	3,2
&*/ $ 3 ' / %)		27,0	46,0	19,0	4,0	25,6	35,0	3,2
&*/ $ 3 & / %)		27,0		19,0	4,0	25,6	35,0	3,2
&*/ $ * 3 $ / %)	34,2	29,4		19,0	4,0	29,0		3,2
&*/ $ 3 ' / %)	37,4		46,0	19,0	4,0	32,2	41,0	3,2
&*/ $ 3 ' / %)	37,4		46,0	19,0	4,0	32,2	41,0	3,2
&*/ $+ * 3 $ / %)	40,9	34,9	46,0	20,6	4,0	35,3	44,5	3,7
&*/ $ $ 3 ' / %)	46,7	39,7	46,0	20,6	4,0	41,4		3,7
&*/ $+ * 3 $ / %)	46,7	39,7	46,0	20,6	4,0	41,4		3,7

For socket inserts substitute P with S

CGL02A with threaded coupling

&*/ $ LV D ER[PRXQWLQJ UHFHSWDFOH IRU IURQW SDQHO PRXQWLQJ ,W PDWHV ZLWK SOXJV &*/ DQG &*/



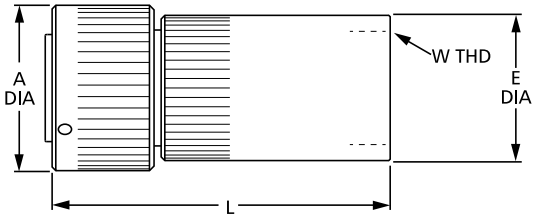
Part No. (pin insert)	A Thread	E ±0,1	L max.	M +0,4	N ±0,3	Ø P max.	S ±0,3	Ø T +0,2/–0,1
&*/ $ 6/ 3 & /)	8 1 ( ) $		33,6	14,2		15,9	25,4	3,1
&*/ $ 3 ' /)	8 1 ( )	$ 27,0	46,0	19,0	4,0	25,4	35,0	3,1
&*/ $ 3 & /)	8 1 ( )	$ 27,0	46,0	19,0	4,0	25,4	35,0	3,1
&*/ $ * 3 $ /)	8 1 ( )	$ 29,4	47,0	19,0	4,0	29,0		3,1
&*/ $ 3 ' /)	8 1 ( )	$	46,0	19,0	4,0	32,2	41,0	3,1
&*/ $ 3 ' /)	8 1 ( )	$	46,0	19,0	4,0	32,2	41,0	3,1
&*/ $+ * 3 $ /)	8 1 ( )	$ 34,9	46,0	20,6	4,0	35,3	44,5	3,7
&*/ $ $ 3 ' /)	8 1 6	$ 39,7	46,0	20,6	4,0	41,2		3,7
&*/ $+ * 3 $ /)	8 1 6	$ 39,7	46,0	20,6	4,0	41,2		3,7

For socket inserts substitute P with S

STRAIGHT PLUG CLASS PG CGL06

CGL06PG/ME-B with bayonet coupling

CGL06PG/ME-B designates a straight plug for the use of heat shrink boots or PG terminations (optional a metric adapter is available). It mates with receptacle CGL02A-B



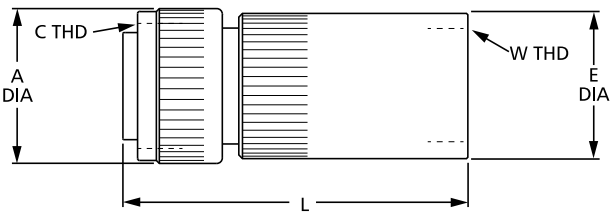
Part No. (socket insert)	Ø A max.	Ø E max.	L max.	W PG Thread	W ME Thread
&*/ 3* 6/ 6 & / %)		21,0		PG9	M 16x1,5
&*/ 3* 6 ' / %)	36,5	32,0	70,0	PG21	M 25x1,5
&*/ 3* 6 & / %)	36,5	32,0	70,0	PG21	M 25x1,5
&*/ 3* * 6 $ / %)	39,9	32,0	77,0	PG21	M 25x1,5
&*/ 3* 6 ' / %)	43,1	32,0		PG21	M 32x1,5
&*/ 3* 6 ' / %)	43,1	32,0		PG21	M 32x1,5
&*/ 3*+ * 6 $ / %)	46,6	40,0		3*	M 32x1,5
&*/ 3* $ 6 ' / %)	53,4	50,0		PG36	M 32x1,5
&*/ 3*+ * 6 $ / %)	53,4	50,0		PG36	M 32x1,5

For pin inserts substitute S with P

For ME-adapter substitute PG with ME

CGL06PG/ME with threaded coupling

CGL06PG/ME designates a straight plug for the use of heat shrink boots or PG terminations (optional a metric adapter is available). It mates with receptacle CGL02A.



Part No. (socket insert)	Ø A max.	C Thread	Ø E max.	L max.	W PG Thread	W ME Thread
&*/ 3* 6/ 6 & /)	24,1	8 1 ( ) %	21,0	60,0	PG9	M 16x1,5
&*/ 3* 6 ' /)	36,5	8 1 ( ) %	32,0	70,0	PG21	M 25x1,5
&*/ 3* 6 & /)	36,5	8 1 ( ) %	32,0	70,0	PG21	M 25x1,5
&*/ 3* * 6 $ /)	37,3	8 1 ( ) %	32,0	77,0	PG21	M 25x1,5
&*/ 3* 6 ' /)	43,1	8 1 ( ) %	32,0		PG21	M 32x1,5
&*/ 3* 6 ' /)	40,5	8 1 ( ) %	32,0		PG21	M 32x1,5
&*/ 3*+ * 6 $ /)	43,7	8 1 ( ) %	40,0		PG29	M 32x1,5
&*/ 3* $ 6 ' /)	50,0	8 1 6 %	50,0		PG36	M 32x1,5
&*/ 3*+ * 6 $ /)	50,0	8 1 6 %	50,0		PG36	M 32x1,5

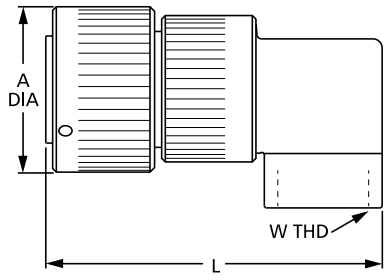
For pin inserts substitute S with P

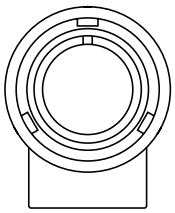
For ME-adapter substitute PG with ME

90° PLUG &/$66 3* &*/

&*/ 3* % ZLWK ED\RQHW FRXSOLQJ

&*/ 3* % GHVLJQDWHV D ƒ SOXJ IRU WKH XVH RI KHDW VKULQN ERRWV RU 3* WHUPLQDWLRQV ,W PDWHV ZL



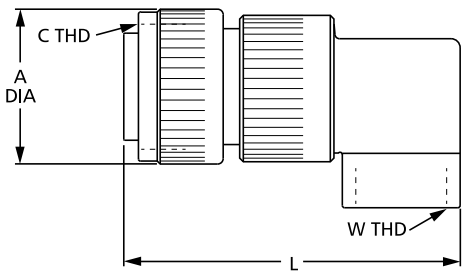


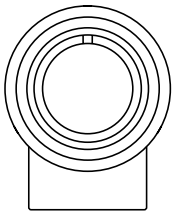
Part No. (pin Insert)	Ø A max.	L max.	W PG Thread
&*/ 3* 6/ 3 & / %)		57,0	PG9
&*/ 3* 3 ' / %)	36,5	77,0	PG16
&*/ 3* 3 & / %)	36,5	77,0	PG16
&*/ 3* * 3 ' / %)	39,9		PG21
&*/ 3* 3 ' / %)	43,1		PG21
&*/ 3* 3) / %)	43,1		PG21

For socket inserts substitute P with S

&*/ 3* ZLWK WKUHDGHG FRXSOLQJ

&*/ 3* GHVLJQDWHV D ƒ SOXJ IRU WKH XVH RI KHDt shrink boots or PG terminations. It mates with receptacle CGL02A (metric thread option not avai



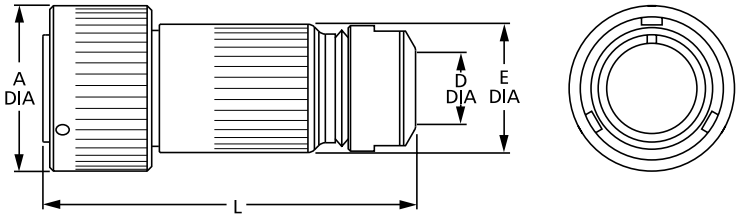


Part No. (pin Insert)	Ø A max.	C Thread	L max.	W PG Thread
&*/ 3* 6/ 3 & /)	24,1	8 1 ( ) %	57,0	PG9
&*/ 3* 3 ' /)	34,1	8 1 ( ) %	77,0	PG16
&*/ 3* 3 & /)	34,1	8 1 ( ) %	77,0	PG16
&*/ 3* * 3 ' /)	37,4	8 1 ( ) %		PG21
&*/ 3* 3 ' /)	40,5	8 1 ( ) %		PG21
&*/ 3* 3) /)	40,5	8 1 ( ) %		PG21

For socket inserts substitute P with S

CONNECTORS WITH UNIVERSAL ENDBELL, STRAIGHT PLUG

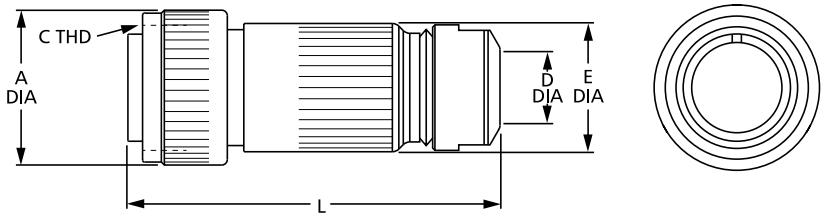
CGL06IN-B with bayonet coupling



Part No. (pin Insert)	Ø A max.	Ø E ±0,2	L max.	Cable entry diameter D	Cable sealing area
&*/ ,1 6/ 3 &/%)		17,9		D07 = 4,5 mm – 7,2 mm	D07
&*/ ,1 3'/%)	36,5	30,0		' PP ² PP	D11, D13, D14
&*/ ,1 3&/%)	36,5	30,0		D13 = 9,0 mm – 12,5 mm	D11, D13, D14
&*/ ,1 * 3$/%)	39,9	33,6	92	D14 = 11,5 mm – 14,2 mm	D13, D14, D17
&*/ ,1 3'/%)	43,1	33,6		D17 = 14,5 mm – 16,6 mm	D14, D17, D19
&*/ ,1 3'/%)	43,1	33,6		' PP ² PP	D14, D17, D19
&*/ ,1 $ 3'/%)	53,4	33,6	105	' PP ² PP	D14, D17, D19, D20
&*/ ,1+ * 3$/%)	53,4	33,6	105		D14, D17, D19, D20

For socket inserts substitute P with S

CGL06IN with threaded coupling



Part No. (pin Insert)	Ø A max.	Ø E ±0,2	L max.	C Thread	Cable entry diameter D	Cable sealing area
&*/ ,1 6/ 3 &/)		17,9		81() %	D07 = 4,5 mm – 7,2 mm	D07
&*/ ,1 3'/)	36,5	30,0		81() %	' PP ² PP	D11, D13, D14
&*/ ,1 3&/)	36,5	30,0		81() %	D13 = 9,0 mm – 12,5 mm	D11, D13, D14
&*/ ,1 * 3$/)	39,9	33,6	92,0	81() %	D14 = 11,5 mm – 14,2 mm	D13, D14, D17
&*/ ,1 3'/)	43,1	33,6		81() %	D17 = 14,5 mm – 16,6 mm	D14, D17, D19
&*/ ,1 3'/)	40,5	33,6		81() %	' PP ² PP	D14, D17, D19
&*/ ,1 $ 3'/)	53,4	33,6	105,0	816 %	' PP ² PP	D14, D17, D19, D20
&*/ ,1+ * 3$/)	53,4	33,6	105,0	816 %		D14, D17, D19, D20

For socket inserts substitute P with S

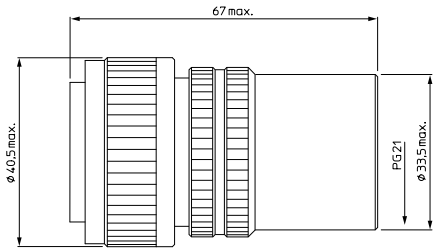
CONNECTORS WITH UNIVERSAL ENDBELL, 90°-VERSION

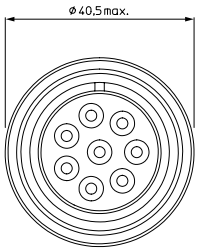
&*/ ,1 % ZLWK EDRQHW&RXSOLQJ F,R1XZSLOWKQJWKUHDGHG FRXSOLQJ

For more information please contact your local ITT customer service.

Dimensions shown in mm| Specifications and dimensions subject to change

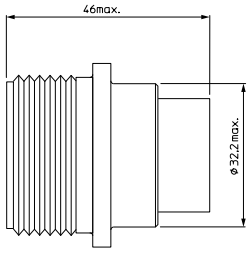
STRAIGHT PLUG WITH SHORT PG GLAND ADAPTER PIN AND SOCKET CONTACTS*

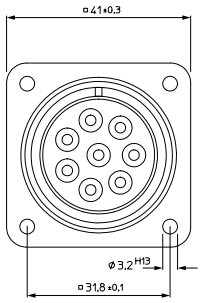




Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
CA06COM-E22-23P-F0-SPL	CA120001-47	CA06COM-E22-23S-F0-SPL	CA120001-48

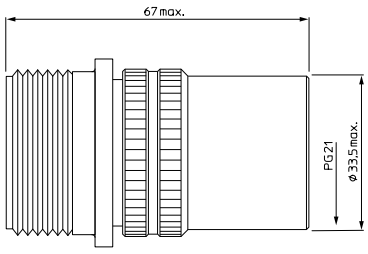
WALL MOUNTING RECEPTACLE PIN AND SOCKET CONTACTS*

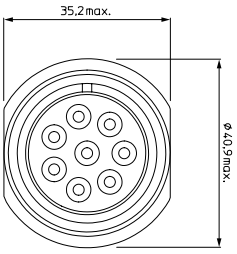




Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
CA02COM-E22-23P-F0-SPL	CA120001-49	CA02COM-E22-23S-F0-SPL	CA120001-50

CABLE CONNECTING PLUG WITH SHORT PG GLAND ADAPTER PIN CONTACTS*



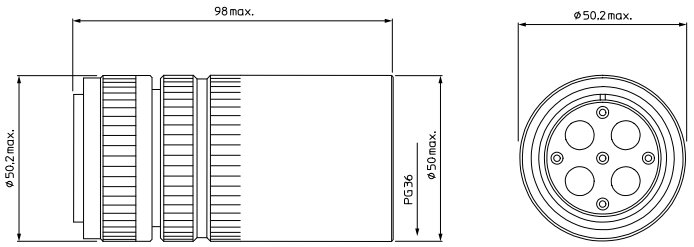


Pin contacts*	
Part number description	Ordering designation
CA01COM-E22-23P-F0-SPL	CA120001-51

*Ordering table for contacts (Contacts to be ordered separately)

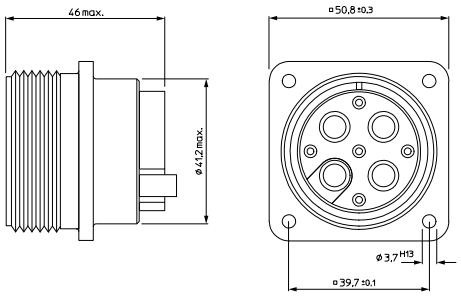
Number of contacts permitted	Contact size	Terminal size	Socket contact crimp	Pin contact crimp	Grounding screw
7	12	0,5²			–
7	12	1,5²			–
7	12	2,5²			–
7	12	4,0²			–
7	12	6,0²			–
1	12 Ground	0,5²			
1	12 Ground	1,5²			
1	12 Ground	2,5²			
1	12 Ground	4,0²			
1	12 Ground	6,0²			

STRAIGHT PLUG WITH SHORT PG ADAPTER, PIN AND SOCKET CONTACTS*



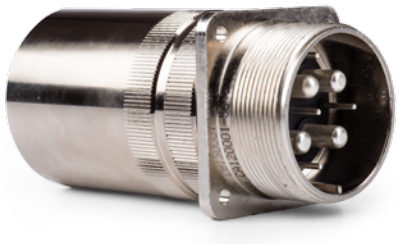
Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
&$ &20 (3)	6A1/20001-52	&$ &20 (6)	6A1/20001-53

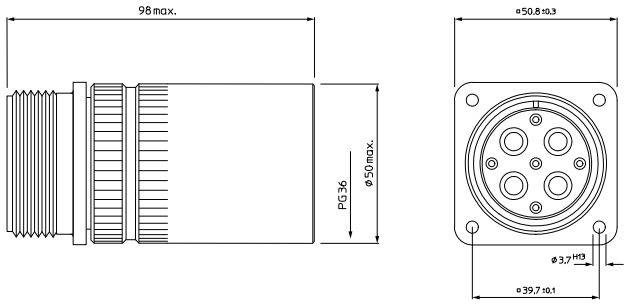
WALL MOUNTING RECEPTACLE, PIN AND SOCKET CONTACTS*



Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
&$ &20 (6)	6A1/20001-54	&$ &20 (6)	6A1/20001-55

CABLE CONNECTING PLUG WITH SHORT PG GLAND ADAPTER, PIN CONTACTS*





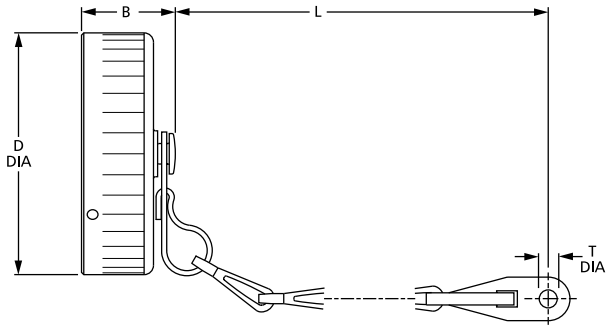
Pin contacts*	
Part number description	Ordering designation
&$ &20 (3)	6A1/20001-56

*Ordering table for contacts (Contacts to be ordered separately)

Number of contacts permitted	Contact size	Terminal size	Socket contact crimp	Pin contact crimp	Grounding screw
5	16	0,5²			–
5	16	1,5²			–
3	4	10,0²			–
3	4	16,0²			–
1	4 Ground	10,0²			
1	4 Ground	16,0²			

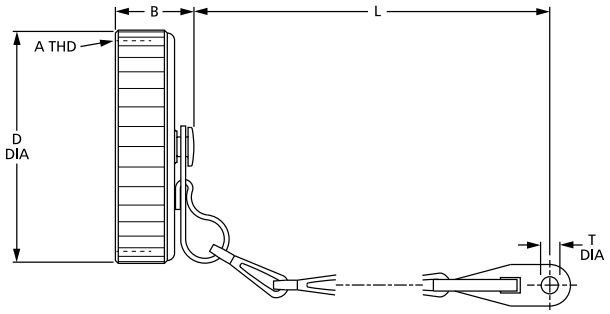
ACCESSORIES

PROTECTIVE CAPSfor receptacles with bayonet coupling



Part No.	Shell size	B max.	Ø D max.	L ±10	Ø T +0,5
CA121003-701	10SL	19,5	23,4	100	4,3
CA121003-706		24,5	36,7	113	4,3
CA121003-707	20	24,5	40,1	127	4,3
& $	22	24,5	43,3	127	4,3
CA121003-709	24	24,5		127	4,3
CA121003-710		24,5	52,6	169	5,5

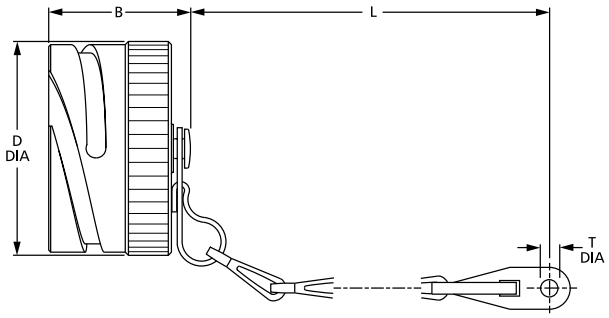
PROTECTIVE CAPSfor receptacles with threaded coupling



Part No.	Shell size	A Thread	B max.	L max.	Ø T +0,4	Ø D max.
CA121003-601	10SL	8 1 ( ) %	11,7	107	3,4	20,2
CA121003-606		8 1 ( ) %	11,7	120	3,4	32,9
CA121003-607	20	8 1 ( ) %	11,7	134	3,4	36,1
& $	22	8 1 ( ) %	11,7	134	3,4	39,4
CA121003-609	24	8 1 ( ) %	11,7	147	4,2	42,6
CA121003-610		8 1 6 %	13,3	200	4,2	

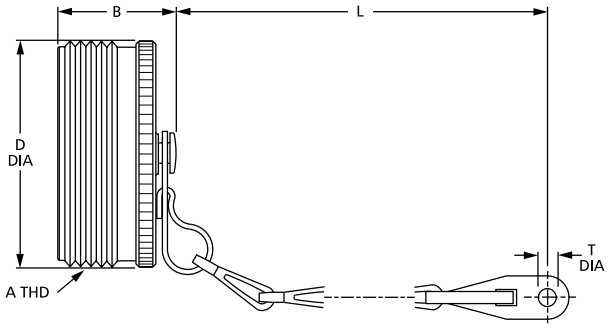
ACCESSORIES

PROTECTIVE CAPS for plugs with bayonet coupling



Part No.	Shell size	B max.	Ø D max.	L ±10	Ø T +0,5
CA121004-701	10SL	29,0	20,7	100	4,3
CA121004-706		37,0	33,3	127	4,3
CA121004-707	20	37,0	36,7	140	4,7
& $	22	37,0	39,9	140	4,7
CA121004-709	24	37,0	43,4	140	4,7
CA121004-710		37,0	49,2	197	4,7

PROTECTIVE CAPS for plugs with threated coupling



Part No.	Shell size	A Thread		B max	L max	Ø T +0,4	Ø D max.
CA121004-601	10SL	8 1 ( )	$	20,5	16,7	107	4
CA121004-606		8 1 ( )	$	25,0	29,4	120	4
CA121004-607	20	8 1 ( )	$	25,0	32,5	134	
& $	22	8 1 ( )	$	25,0	35,7	134	
CA121004-609	24	8 1 ( )	$	25,0		147	
CA121004-610		8 1 6	$	25,0	45,2	207	

TOOLING

HYDRAULIC HAND CRIMPING TOOL HPW400U-ITT

IRU FULPSLQJ FRQWDFWV RI VL]H DQG
2UGHU 1R

CRIMP DIES

Contact size	Crimp dies for hydraulic tool	Wrench Size	Locator
	& 7	5,20	& 7
160/4	& 7	7,25	

HAND CRIMPING TOOL M22520-1/01 for contacts 0,75–6,0 mm²

2UGHU 1R

CRIMP LOCATOR TH452*

Order No. 995-0002-052

HAND CRIMPING TOOL CCT-CGF-F for ground contacts 0,75–6,0 mm²

Order No.

*modified locators are availabe for connectors shown on page 16–17. Please contact factory!

INSERTION TOOLS

Description	Name	Order No. ref.
Insertion tool for contact size #16	16CIT-1612	
Insertion pliers for contact size #16	& , 7)	
Insertion tool for contact size #12	CIT-12	
Insertion pliers for contact size #12	& , 7)	
, QVHUWLRQ WRRO IRU FRQWDFW VL]H		7
Insertion tool for contact size #4	CIT-4	
Guide pin #12		7
Guide pin #16		27977-16T50
Extraction tool for #16	& (7)	
Extraction tool #12	& (7)	
([W U D F W L R Q WRRO	& (7	
Extraction tool #4	CET-4	

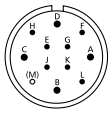
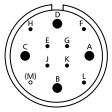
Product overview CGL 700 V

700 V POWER INPUT CONNECTOR

Specification	CGL #II (28-11)	CGL #III (36-11)
Electrical conditions		
Operating voltage	700 V (DC)	700 V (DC)
Insulation category (DIN/VDE 0110)	II	II
Degree of pollution (DIN/VDE 0110)	3	3
Rated insulation voltage (DIN/VDE 0110)	7,2 KV	7,2 KV
Insulation resistance	² 7 Ÿ 7 H U D ñ ò	² 7 Ÿ 7 H U D ñ ò
Temperature range	–50 / 140°C	–50/140°C
Current rating		
Power contacts	41 A	100 A
Signal contacts	22 A	22 A
Mating cycles	500 min.	500 min.
Degree of protection by enclosures		
ISO 20653	IP67 (mated condition)	IP67 (mated condition)
Contact arrangement / Plating / Termination		
Number of contacts	3 Power, 1 Ground, 7 Signal	3 Power, 1 Ground, 7 Signal
Contact plating	Silver	Silver
Wire size	Crimp 2,5 / 4 / 6 mm²	Crimp 6 / 10 / 16 / 25 mm²
Grounding (pin first to mate last to break)	Crimp 2,5 / 4 / 6 mm²	Crimp 6 / 10 / 16 / 25 mm²
Signal contacts	Crimp 1,5 mm²	Crimp 1,5 mm²
Receptacle housing and straight plug		
Coupling system	Bayonet	Bayonet
Plating	Nickel	Nickel
Polarization	5 key way	5 key way
Material	Aluminium alloy	Aluminium alloy
Available types	see pages 23	see pages 24
Insulator		
Material	Plastic (UL94-V0)	Plastic (UL94-V0)
Design	Fully insulated pin contact for increased creepage distance	Fully insulated pin contact for increased creepage distance
Contact insertion extraction principle	Rear release	Rear release
Sealing gaskets		
Material	Fluor elastomere	Fluor elastomere

Dimensions shown in mm| Specifications and dimensions subject to change

CONTACT ARRANGEMENTS

Shell size	Figure	Contact arrangement	Contact number Contact size	Grounding contact in cavity	Admissible operating voltage (VAC)	Available connectors
		28-11	11 4x12 7x16	D	700	&*/ 3* 3('%)63/ &*/ 3* 6('%)63/ &*/ 3* 3('%)63/ &*/ $ 3('%)63/ &*/ $ 6('%)63/
36		36-11	11 4x4 7x16	D	700	CGL66PG36-11S-E1D-B-F0-SPL CGL61PG36-11P-E1D-B-F0-SPL CGL62A36-11P-E1D-B-F0-SPL CGL66PG36-11P-E1D-B-F0-SPL CGL62A36-11S-E1D-B-F0-SPL

LAYOUT SPECIFIC DATA

Contact arrangement	Min. air distance (mm)/mating face		Min. creepage distance (mm)/mating face		Rated Voltage
	Power-Contact	Power-Grounding	Power-Power	Power-Grounding	Class
	19,7	12,5	19,7	12,5	700 V
36-11	10,3	10,3	10,3	10,3	700 V

Admissible operating voltage

The admissible operating voltages indicated in this catalogue are mainly based on customer information for certain projects. The table aboved indicates the actual value for the air and creepage paths and can be used as a calculation basis in connection with '(1 $OO WKH SOXJV DQG UHFHSWDFOHV HTXLSSHG ZLWK D ILUVW WR PDWH O to the shell.

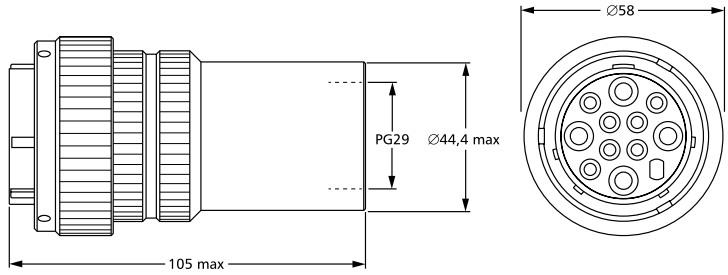
Basis and assumptions

The pollution degree for industrial plants is normally "3". However, the calculation of the admissible operating voltage is based on the pollution degree "2", as the connectors are completely sealed and the contact parts are not subject to direct contamination or humidity.

Caculation basis for rated connector impulse voltage

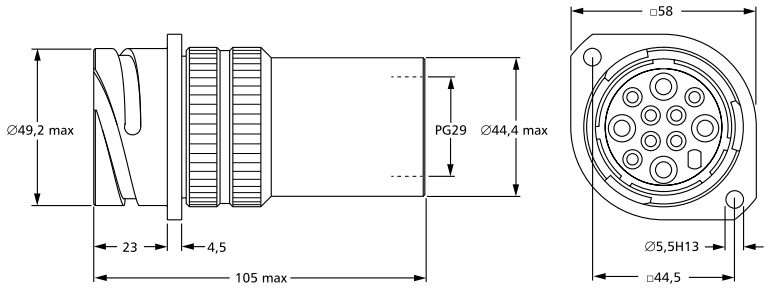
Overvoltage category 700 V III
Material class 700 V II

STRAIGHT PLUG WITH PG GLAND ADAPTER PIN AND SOCKET CONTACTS*



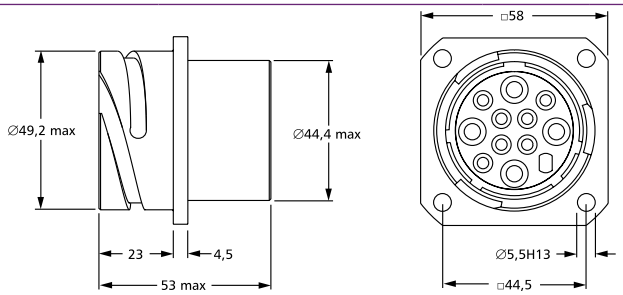
Pin contacts*	Socket contacts*
Part number description / Ordering designation	Part number description / Ordering designation
&*/ 3* 3 (' %) 6 3GL 120015-9	&*/ 3* 6 (' %) 6 3GL120015-8

CABLE CONNECTING PLUG WITH PG GLAND ADAPTER PIN CONTACTS*



Pin contacts*
Part number description / Ordering designation
&*/ 3* 3 (' %) 6 3GL120015-10

WALL MOUNTING RECEPTACLE PIN AND SOCKET CONTACTS*



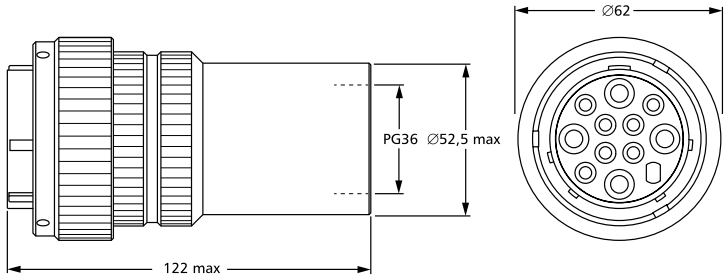
Pin contacts*	Socket contacts*
Part number description / Ordering designation	Part number description / Ordering designation
&*/ $ 3 (' %) 6 3GL120015-11	&*/ $ 6 (' %) 6 3GL120015-12

*Ordering table for contacts (Contacts to be ordered separately)

Number of contacts permitted	Contact size	Terminal size	Socket contact crimp	Pin contact crimp	Grounding screw
3	12	2,5²			–
3	12	4,0²			–
3	12	6.0²			–
1	12 Ground	2,5²			
1	12 Ground	4,0²			
1	12 Ground	6,0²			
7	16	1,5²			–

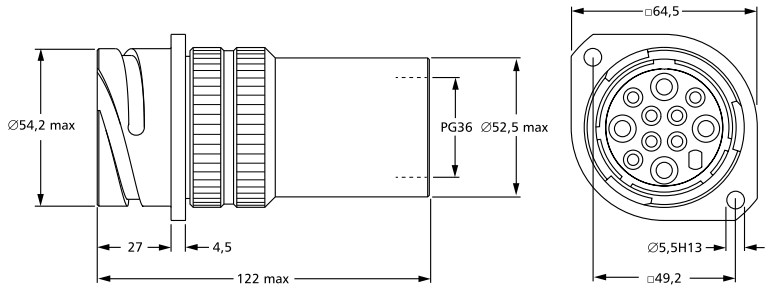
Dimensions shown in mm| Specifications and dimensions subject to change

STRAIGHT PLUG WITH PG GLAND ADAPTER PIN AND SOCKET CONTACTS*



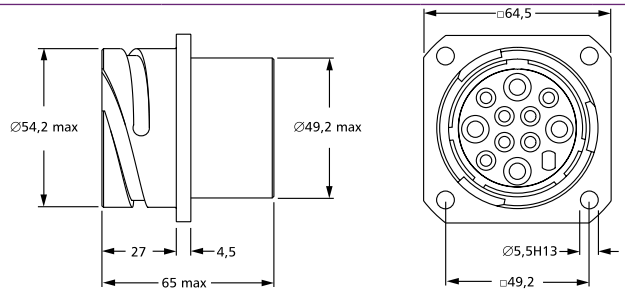
Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
CGL66PG36-11P-E1D-B-F0-SPL	CGL120015-2	CGL66PG36-11S-E1D-B-F0-SPL	CGL120015-1

CABLE CONNECTING PLUG WITH PG GLAND ADAPTER PIN CONTACTS*



Pin contacts*	
Part number description	Ordering designation
CGL61PG36-11P-E1D-B-F0-SPL	CGL120015-3

WALL MOUNTING RECEPTACLE PIN AND SOCKET CONTACTS*



Pin contacts*		Socket contacts*	
Part number description	Ordering designation	Part number description	Ordering designation
CGL62A36-11P-E1D-B-F0-SPL	CGL120015-4	CGL62A36-11S-E1D-B-F0-SPL	CGL120015-5

*Ordering table for contacts (Contacts to be ordered separately)

Number of contacts permitted	Contact size	Terminal size	Socket contact crimp	Pin contact crimp	Grounding screw
3	4	6²			
3	4	10²			
3	4	16²			
3	4	25²			
1	4 Ground	6²			
1	4 Ground	10²			
1	4 Ground	16²			
1	4 Ground	25²			
7	16	1,5²			

TOOLING

TOOLS FOR CGL #28

	Type	Contacts		Terminal size
		Pin	Socket	
Hand crimp tool (for #12 & #16 contacts as indicated)	EUS101-2			2,5²
Crimp positioner	CT120090-113			4,0²
Contact insertion tool, #12 contacts	CIT12			6,0²
Contact extraction tool, #12 contacts	& 7			
Contact insertion tool, #16 contacts	CIT16			
Contact extraction tool, #16 contacts	CET-ATR-2160			

	Type	Contacts		Terminal size
		Pin	Socket	
Hand crimp tool for grounding contact, crimp positioner included in the tool above, no insertion or extraction tool needed	CCT-CGF-E			2,5² 4,0² 6,0²

TOOLS FOR CGL #36

	Type	Contacts		Terminal size
		Pin	Socket	
Hand crimp tool (for #16 contacts as indicated)	EUS101-2			1,5²
Crimp positioner	CT120090-113			
Contact insertion tool #16 contacts	CIT16			
Contact extraction tool #16 contacts	CET-ATR-2160			

	Type	Contacts		Terminal size
		Pin	Socket	
Hydraulic crimp tool for power and grounding contacts	HPW400U-ITT			6² 10² 16² 25²
Crimp die for hydraulic tool				6² 10² 16² 25²
Contact insertion tool	CIT4			
Contact extraction tool #4 contacts	CT120090-56			

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.

⚠ CAUTION

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 30V 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

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

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