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# KPTC

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C O N N E C T O R S



## Introduction

The miniature circular connectors series KPTC from ITT Cannon are especially used in the machine and in the automotive industries. They are designed for the usage with crimp contacts which are to be ordered separately. The contacts are packed separately for the termination process.

To keep up with the market trends and for logistic reasons ITT Cannon offers zinc / cobalt as an alternative to nickel. For current projects, the nickel finish is still offered. However, zinc / cobalt should be the preferred finish as it features a much higher corrosion resistance.

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## Technical Data

### Material and Finishes

Shell	Aluminium alloy, zink/cobalt-plating or galvanic nickel
Insulator	Polychloroprene
Grommet and seal	Polychloroprene
Contacts	Copper alloy, had gold or hard silver plated

### Mechanical Data

Shell styles	0 - wall mounting receptacle
	2 - box mounting receptacle
	6 - straight plug
	7 - jam nut receptacle
Shell sizes	8 - 24
Polarization/Coupling	five keyways/3-point bayonet coupling
Service classes	E - with grommet seal
	F - with grommet seal and strain relief
	D -with endbell for PG adapters

Water tightness                      Acc to VG 95319 Teil 2, Test Nr. 5.9.2  
for shell styles A to E, J to W, Z1, Z2 and Z3 as well as gaskets A and B  
Test pressure 0,2bar overpressure                      Test duration 48 h  
Test temperature 25 ± 0,3°C  
Connector to be free of moisture

### Electrical Data

Number of contacts	2 through 61			
Wire size	0,4 - 2,0 mm <sup>2</sup>			
Contact termination	Crimp technique			
Contact rating	Size	Rated Amps	Test current A	Millivolt drop mV
	20	7,5	7,5	less than 55
	16	22	13	less than 50
Service rating	Test voltage	Service rating	V <sub>rms</sub>	VDC
	at sea level	1	1500	2100
		2	2300	3200
	at 21336 m height	1	375	535
		2	550	770
	The hereunder service rating information are valid for male or female connectors mated or unmated			
	at sea level	21336 m		
Average flashover	1500 V	500 V		
Test voltage	1000 V	325 V		
The operation voltage is to be selected acc. to VDE 0110				

Operating voltage and connector usage                      Connectors are equipment which must not be separated or mated when used as per determination. Acc to specification the connectors are suitable for an operating voltage of 50 V (see product safety information). However, this is only valid when the connectors are free accessible during operation and consequently might be touchable. When connectors will be operated with line voltage, ITT Cannon offers a solution, too. Please consult factory.

# KPTC

## General Purpose Connectors with Crimp Contacts



KPTC0



KPTC2



KPTC7



KPTC6

### How to order

**KPTC 0 E 18 - 32 P W C**

**Series** \_\_\_\_\_  
ITT Cannon designation

**Shell style** \_\_\_\_\_  
0 - Wall mounting receptacle  
2 - Box mounting receptacle  
6 - Straight plug  
7 - Jam nut receptacle

**Service class** \_\_\_\_\_  
E - Grommet seal  
(not for shell style 2)  
F - Grommet seal with strain relief  
(not for shell style 2)

**Shell size** \_\_\_\_\_  
8, 10, 12, 14, 16, 18, 20, 22 and 24








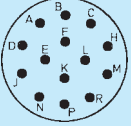

**Contact arrangement** \_\_\_\_\_  
see pages 5 - 8

**Contact type** \_\_\_\_\_  
P - Pin  
S - Socket

**Insulator position** \_\_\_\_\_  
W, X, Y, Z (omit for normal position -  
see page 8)

**Modification** \_\_\_\_\_  
C - Electroless nickel plating  
F - Zinc / cobalt

Contact Arrangements

	Contact number	Contact arrangement Contact size AWG	Service rating	Insulator position			
				W	X	Y	Z
	2	<b>8-2 *</b> 20	1	58	122	-	-
	3	<b>8-3 *</b> 20	1	60	210	-	-
	3	<b>8-33 *</b> 16S	1	90	-	-	-
	4	<b>8-4 *</b> 16S	1	45	-	-	-
	6	<b>10-6</b> 20	1	90	-	-	-
	3	<b>12-3</b> 16	2	-	-	180	-
	10	<b>12-10</b> 20	1	60	155	270	295
	14	<b>12-14 *</b> 20	2	-	-	-	-
	5	<b>14-5</b> 16	2	40	92	184	273

● Please consult factory  
\* Special contacts required - see page 20

Contact Arrangements

	Contact number	Contact arrangement Contact size AWG	Service rating	Insulator position			
				W	X	Y	Z
	12	<b>14-12</b> ● 20 (8) 16 (4)	1	43	90	-	-
	15	<b>14-15</b> ● 20 (14) 16 (1)	1	17	110	155	124
	19	<b>14-19</b> 20	1	30	165	315	-
	5	<b>14-22</b> ● 12 (4) 20 (1)	1	-	-	-	-
	8	<b>16-8</b> ● 16	2	54	152	180	331
	23	<b>16-23</b> ● 20 (22) 16 (1)	1	158	270	-	-
	26	<b>16-26</b> 20	1	60	-	275	338
	11	<b>18-11</b> ● 16	2	62	119	241	340
	32 20	<b>18-32</b>	1	85	138	222	265

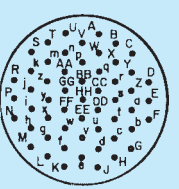
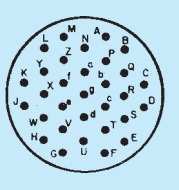
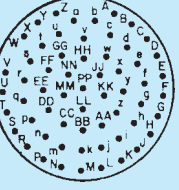
● Please consult factory

Contact Arrangements

	Contact number	Contact arrangement Contact size AWG	Service rating	Insulator position			
				W	X	Y	Z
	16	20-16 ● 16	2	238	318	333	347
	24	20-24 ● 20	1	70	145	215	290
	39	20-39 ● 20 (37) 16 (2)	1	63	114	252	333
	41	20-41 ● 20	1	45	126	225	-
	21	22-21 ● 16	2	16	135	175	349
	36	22-36 ● 20	1	72	144	216	288
	41	22-41 20 (27) 16 (14)	1 2	39	135	264	-

● Please consult factory

Contact Arrangements

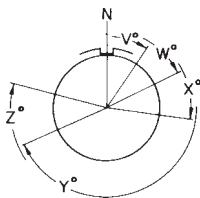
Contact number	Contact arrangement Contact size AWG	Service rating	Insulator position			
			W	X	Y	Z
	55 22-55 20	1	30	142	226	314
	31 24A31 ● 16	1	90	225	-	-
	61 24-61 ● 20	1	90	180	270	324

● Please consult factory

Contact Arrangements

Insulator positions

The drawing indicates alternate insert positions. The six positions N, V, W, X, Y and Z differ in the degree of rotation for various connector sizes and contact arrangements. For each degree of rotation, and for the list of contact arrangements and the alternate insert positions, please refer to the opposite table.

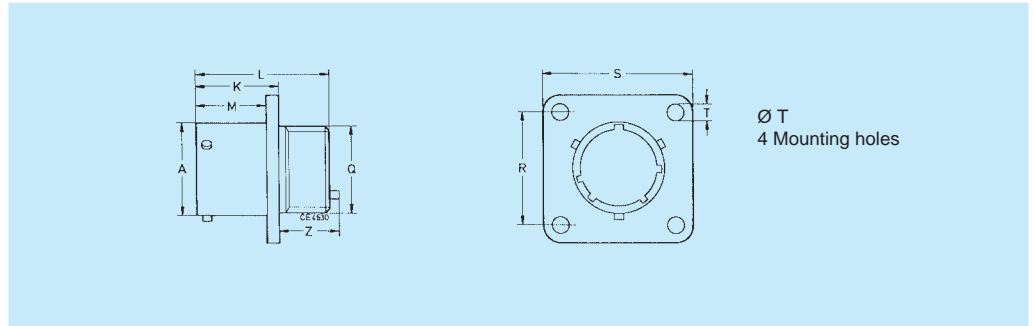


Face view of pin insert

Shell size	Contact number	Contact arrangement	Insulator position/Degree of rotation				
			V	W	X	Y	Z
8	2	8-2	-	58	122	-	-
	3	8-3	-	60	210	-	-
	3	8-3A	-	60	-	-	-
	3	8-33	-	90	-	-	-
	4	8-4	-	45	-	-	-
10	6	10-6	-	90	-	-	-
	3	12-3	-	-	-	180	-
12	10	12-10	-	60	155	270	295
	5	14-22	-	-	-	-	-
14	5	14-5	-	40	92	184	273
	12	14-12	-	43	90	-	-
	15	14-15	-	17	110	155	234
	19	14-19	-	30	165	315	.
	8	16-8	-	54	152	180	331
16	23	16-23	-	158	270	-	-
	26	16-26	-	60	.	275	338
	11	18-11	-	62	119	241	340
18	32	18-32	-	85	138	222	265
	16	20-16	-	238	318	333	347
	24	20-24	-	70	145	215	290
20	39	20-39	-	63	114	252	333
	41	20-41	-	45	126	225	-
	21	22-21	-	16	135	175	349
	36	22-36	-	72	144	216	288
22	41	22-41	-	39	135	264	-
	55	22-55	-	30	142	226	314
	31	24A31	-	90	225	-	-
	61	24-61	-	90	180	270	324



## Box mounting receptacle KPTC2



without endbell

Dimensions are mm

Shell size*	Ø A	L	N Ø	K	M	R	S	Ø T	Z
	+0,03-0,13	max.	max.	±0,25	±0,15	±0,15	max.	±0,15	max.
8	12,0	21,1	11,1	13,5	11,6	15,1	21,0	3,05	12,3
10	15,0	21,1	14,3	13,5	11,6	18,3	24,2	3,05	12,3
12	19,05	21,1	17,5	13,5	11,6	20,6	26,6	3,05	12,3
14	22,23	21,1	20,6	13,5	11,6	23,0	29,0	3,05	12,3
16	25,40	21,1	23,8	13,5	11,6	24,6	31,3	3,05	12,3
18	28,58	21,1	27,0	13,5	11,6	27,0	33,7	3,05	12,3
20	31,75	22,7	30,2	16,5	14,25	29,4	36,9	3,05	10,8
22	34,93	22,7	33,4	16,5	14,25	31,8	40,1	3,05	10,8
24	38,10	22,7	36,5	17,3	15,1	34,9	43,3	3,75	10,0

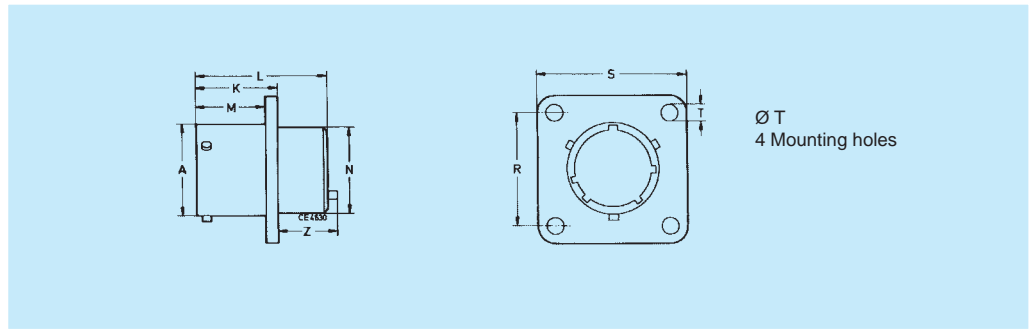
\*) How to order see page 4

Dimensions are inches

Shell size*	A	L	N max	K	M	R	S	T	Z
	+ .001 - .005	max	max	±.010	±.006	±.006	max	±.006	max
8	.472	.831	.437	.531	.457	.594	.827	.120	.484
10	.591	.831	.563	.531	.457	.720	.953	.120	.484
12	.750	.831	.689	.531	.457	.811	1.047	.120	.484
14	.875	.831	.811	.531	.457	.906	1.142	.120	.484
16	1.000	.831	.937	.531	.457	.969	1.232	.120	.484
18	1.125	.831	1.063	.531	.457	1.063	1.327	.120	.484
20	1.250	.894	1.189	.650	.561	1.157	1.453	.120	.425
22	1.375	.894	1.315	.650	.561	1.252	1.579	.120	.425
24	1.500	.894	1.437	.681	.594	1.374	1.705	.148	.394

\*) How to order see page 4

## Wall mounting receptacle KPTC0



without endbell

Dimensions are mm

Shell size*	Ø A	L	Q	K	M	R	S	T Ø	Z
	+0,03	max.	Thread Class 2A	±0,25	±0,15	±0,15	max.	±0,15	max.
8	12,00	21,6	7/16-28UNEF	13,5	11,6	15,1	21,0	3,05	12,3
10	15,00	21,6	9/16-24UNEF	13,5	11,6	18,3	24,2	3,05	12,3
12	19,05	21,6	1-1/16-24UNEF	13,5	11,6	20,6	26,6	3,05	12,3
14	22,3	21,6	1-3/16-20UNEF	13,5	11,6	23,0	29,0	3,05	12,3
16	25,40	21,6	1-5/16-20UNEF	13,5	11,6	24,6	31,3	3,05	12,3
18	28,58	21,6	1-1/16-18UNEF	13,5	11,6	27,0	33,7	3,05	12,3
20	31,75	26,8	1-3/16-18UNEF	16,5	14,25	29,4	36,9	3,05	10,8
22	34,93	26,8	1-5/16-18UNEF	16,5	14,25	31,8	40,1	3,05	10,8
24	38,10	26,8	1-7/16-18UNEF	17,3	15,1	34,9	43,3	3,75	10,0

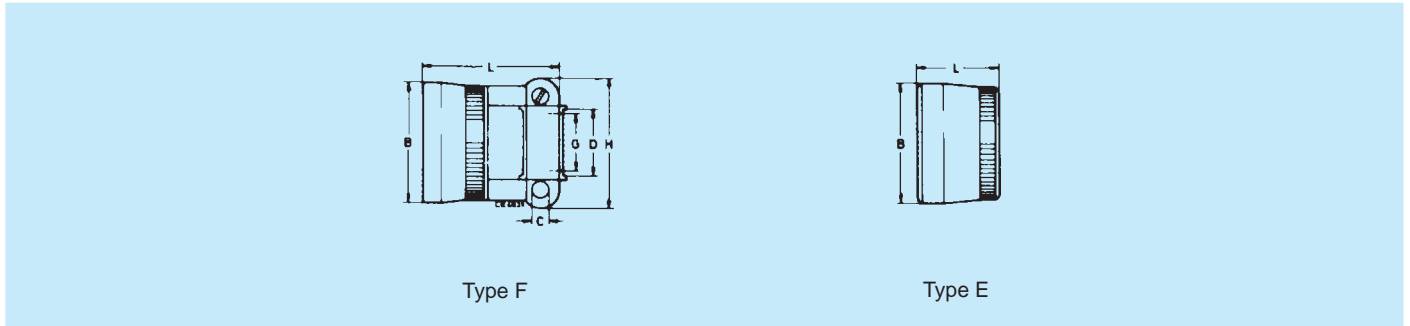
\*) How to order see page 4

Dimensions are inches

Shell size*	A	L	Q	K	M	R	S	T /E	Z
	+0.01-.005	max	Thread Type 2A	±.010		±.006	max	±.006	max
8	.472	.850	7/16-28UNEF	.531	.457	.594	.827	.120	.484
10	.591	.850	9/16-24UNEF	.531	.457	.720	.953	.120	.484
12	.750	.850	1-1/16-24UNEF	.531	.457	.811	1.047	.120	.484
14	.875	.850	1-3/16-20UNEF	.531	.457	.906	1.142	.120	.484
16	1.000	.850	1-5/16-20UNEF	.531	.457	.969	1.232	.120	.484
18	1.125	.850	1-1/16-18UNEF	.531	.457	1.063	1.327	.120	.484
20	1.250	1.055	1-3/16-18UNEF	.650	.561	1.157	1.453	.120	.425
22	1.375	1.055	1-5/16-18UNEF	.650	.561	1.252	1.579	.120	.425
24	1.500	1.055	1-7/16-18UNEF	.681	.594	1.374	1.705	.148	.394

\*) How to order see page 4

## Wall mounting receptacle KPTC0



with endbell

Dimensions are mm

Shell size*	Type F						Type E	
	B <sub>F</sub> max.	C Thread	D <sub>F</sub> min.	G <sub>F</sub> min.	H <sub>F</sub> max.	L <sub>F</sub> max.	B <sub>E</sub> max.	L <sub>E</sub> max.
8	14,0	6-32	6,0	2,9	19,3	45,1	14,2	34,0
10	17,2	6-32	,5	4,5	20,8	45,1	17,2	34,0
12	20,4	6-32	10,7	7,7	24,4	45,1	20,4	34,0
14	23,6	6-32	13,9	9,3	27,2	45,1	23,4	34,0
16	26,7	6-32	15,5	12,4	28,7	48,2	26,6	34,0
18	29,5	8-32	19,6	15,6	35,3	48,2	29,6	34,0
20	32,7	8-32	19,6	15,6	35,3	50,0	32,8	36,0
22	35,9	8-32	23,6	18,8	39,9	50,0	36,0	36,0
24	39,0	8-32	25,2	20,1	43,2	50,0	39,2	36,0

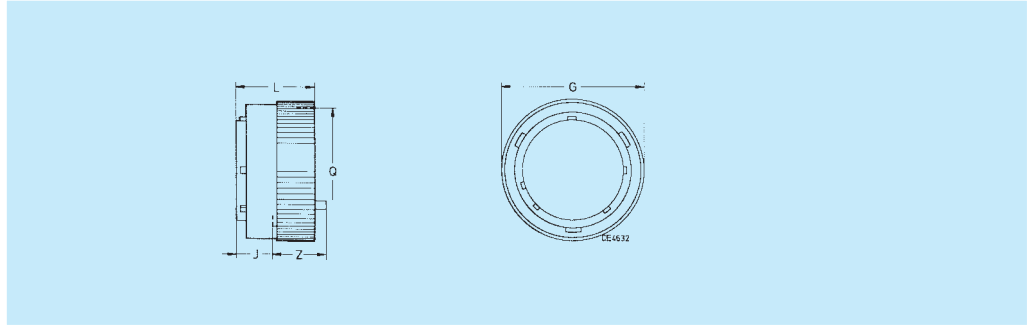
\*) How to order see page 4

Dimensions are inches

Shell size*	Type F					Type E		
	B <sub>F</sub> max	C Thread	D <sub>F</sub> min	G <sub>F</sub> min	H <sub>F</sub> max	L <sub>F</sub> max	B <sub>E</sub> max	L <sub>E</sub> max
8	.551	6-32	.236	.114	.760	1.776	.559	1.339
10	.677	6-32	.295	.177	.819	1.776	.677	1.339
12	.803	6-32	.421	.303	.961	1.776	.803	1.339
14	.929	6-32	.547	.366	1.071	1.776	.921	1.339
16	1.051	6-32	.610	.488	1.130	1.898	1.047	1.339
18	1.161	8-32	.772	.614	1.390	1.898	1.165	1.339
20	1.287	8-32	.772	.614	1.390	1.969	1.291	1.417
22	1.413	8-32	.929	.740	1.571	1.969	1.417	1.417
24	1.535	8-32	.992	.791	1.701	1.969	1.543	1.417

\*) How to order see page 4

## Straight Plug KPTC6



without endbell

Dimensions are mm

Shell size*	G max.	J ±0,15	L max.	Q Thread Class 2 A	Z max.
8	19,8	9,1	21,4	7/16-28UNEF	16,3
10	23,6	9,1	21,4	9/16-24UNEF	16,3
12	26,5	9,1	21,4	1-1/16-24UNEF	16,3
14	30,1	9,1	21,4	1-3/16-20UNEF	16,3
16	33,2	9,1	21,4	1-5/16-20UNEF	16,3
18	35,4	9,1	21,4	1-1/16-18UNEF	16,3
20	39,0	10,7	25,1	1-3/16-18UNEF	15,0
22	42,1	10,7	25,1	1-5/16-18UNEF	15,0
24	45,2	10,7	25,1	1-7/16-18UNEF	15,0

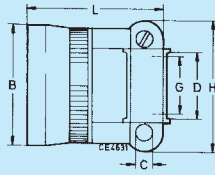
\*) How to order see page 4

Dimensions are inches

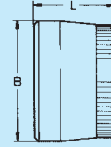
Shell size*	G max	J ±.006	L max	Q Thread Type 2A	Z max
8	.780	.358	.843	7/16-28UNEF	.642
10	.929	.358	.843	9/16-24UNEF	.642
12	1.043	.358	.843	1-1/16-24UNEF	.642
14	1.185	.358	.843	1-3/16-20UNEF	.642
16	1.307	.358	.843	1-5/16-20UNEF	.642
18	1.394	.358	.843	1-1/16-18UNEF	.642
20	1.535	.421	.988	1-3/16-18UNEF	.591
22	1.657	.421	.988	1-5/16-18UNEF	.591
24	1.780	.421	.988	1-7/16-18UNEF	.591

\*) How to order see page 4

## Straight Plug KPTC6



Type F



Type E

with endbell

Dimensions are mm

Shell size*	Type F						Type E	
	B <sub>F</sub> Ø max.	C Thread	G <sub>F</sub> Ø min.	G <sub>F</sub> min.	H <sub>F</sub> max.	L <sub>F</sub> max.	B <sub>E</sub> max.	L <sub>E</sub> max.
8	14,0	6-32	6,0	2,9	19,3	46,0	14,2	32,5
10	17,2	6-32	7,5	4,5	20,8	46,0	17,2	32,5
12	20,4	6-32	10,7	7,7	24,4	46,0	20,4	32,5
14	23,6	6-32	13,9	9,3	27,2	46,0	23,4	32,5
16	26,7	6-32	15,5	12,4	28,7	49,0	26,5	32,5
18	29,5	8-32	19,6	15,6	35,3	49,0	29,6	32,5
20	32,7	8-32	19,6	15,6	35,3	49,0	32,8	34,5
22	35,9	8-32	23,6	18,8	39,9	49,0	36,0	34,5
24	39,0	8-32	25,2	20,1	43,2	49,0	39,2	34,5

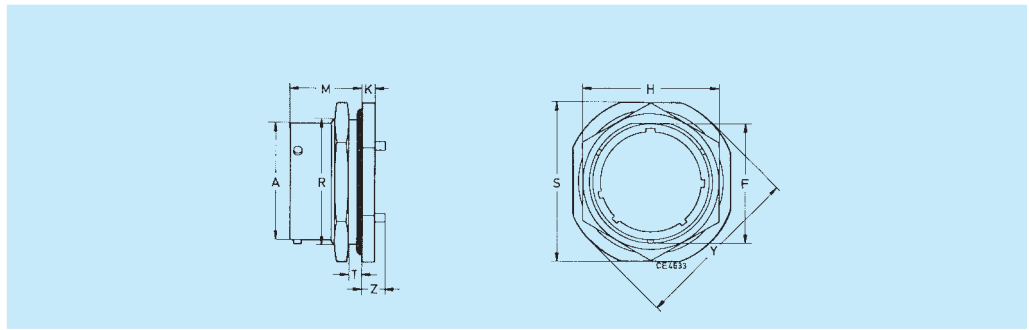
\*) How to order see page 4

Dimensions are inches

Shell size	Type F						Type E	
	B <sub>F</sub> max	C Thread	D <sub>F</sub> min	G <sub>F</sub> Æ min	H <sub>F</sub> max	L <sub>F</sub> max	B <sub>E</sub> max	LE <sub>E</sub> max
8	.551	6-32	.236	.114	.760	1.811	.559	1.280
10	.677	6-32	.295	.177	.819	1.811	.677	1.280
12	.803	6-32	.421	.303	.961	1.881	.803	1.280
14	.929	6-32	.547	.366	1.071	1.881	.921	1.280
16	1.051	6-32	.610	.488	1.130	1.929	1.043	1.280
18	1.161	8-32	.772	.614	1.390	1.929	1.165	1.280
20	1.287	8-32	.772	.614	1.390	1.969	1.291	1.358
22	1.413	8-32	.929	.740	1.571	1.969	1.417	1.358
24	1.535	8-32	.992	.791	1.701	1.969	1.543	1.358

\*) How to order see page 4

## Jam Nut Receptacle KPTC7



without endbell

Dimensions are mm

Shell size*	A Ø	F	H	K	M	R	S	T Panel thickness		Ø Y	Z
	+0,03-0,13	±0,15	±0,15	±0,25	±0,15	Thread Class 2 A	±0,5	min.	max.	max.	max.
8	12,0	13,3	19,0	3,2	17,7	9/16-24UNEF	24,0	1,6	3,5	28,0	7,9
10	15,0	16,5	22,2	3,2	17,7	11/16-24UNEF	27,0	1,6	3,5	31,0	7,9
12	19,05	20,6	27,0	3,2	17,7	7/8-20UNEF	32,0	1,6	3,5	36,0	7,9
14	22,23	23,8	30,2	3,2	17,7	1-20UNEF	35,0	1,6	3,5	39,0	7,9
16	25,40	26,9	33,3	3,2	17,7	1-1/8-18UNEF	38,5	1,6	3,5	42,0	7,9
18	28,58	30,1	36,5	3,2	17,7	1-1/4-18UNEF	41,5	1,6	3,5	45,0	7,9
20	31,75	33,3	39,7	4,0	22,5	1-3/8-18UNEF	46,0	1,6	6,5	50,0	4,7
22	34,93	36,5	42,9	4,0	22,5	1-1/2-18UNEF	49,5	1,6	6,5	55,0	4,7
24	38,10	39,6	46,0	4,0	23,3	1-5/8-18UNEF	52,5	1,6	6,5	57,0	3,8

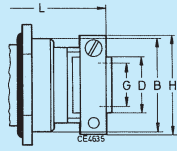
\*) How to order see page 4

Dimensions are inches

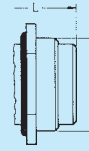
Shell size*	A	F	H	K	M	R	S	T Panel thickness		Y →	Z
	+ .001-.005	±.006	±.006	±.010	±.006	Thread Class 2	±.010	min	max	max	max
8	.472	.524	.748	.126	.697	9/16-24UNEF	.945	.063	.138	1.102	.311
10	.591	.650	.874	.126	.697	11/16-24UNEF	1.063	.063	.138	1.220	.311
12	.750	.811	1.063	.126	.697	7/8-20UNEF	1.260	.063	.138	1.417	.311
14	.875	.937	1.189	.126	.697	1-20UNEF	1.378	.063	.138	1.535	.311
16	1.000	1.059	1.311	.126	.697	1-1/8-18UNEF	1.516	.063	.138	1.654	.311
18	1.125	1.185	1.437	.126	.697	1-1/4-18UNEF	1.634	.063	.138	1.772	.311
20	1.250	1.311	1.563	.157	.886	1-3/8-18UNEF	1.811	.063	.256	1.969	.185
22	1.375	1.437	1.689	.157	.886	1-1/2-18UNEF	1.949	.063	.256	2.165	.185
24	1.500	1.559	1.811	.157	.917	1-5/8-18UNEF	2.067	.063	.256	2.244	.150

\*) How to order see page 4

## Jam Nut Receptacle KPTC7



Type F



Typ E

with endbell

Dimensions are mm

Shell size*	Type F					Type E	
	B <sub>F</sub> max.	D <sub>F</sub> Ø min.	G <sub>F</sub> Ø min.	H <sub>F</sub> max.	L <sub>F</sub> max.	B <sub>E</sub> max.	L <sub>E</sub> max.
8	18,2	6,0	2,9	19,3	44,9	18,2	33,5
10	21,5	7,5	4,5	20,8	44,9	21,5	33,5
12	24,6	10,7	7,7	24,2	44,9	24,6	33,5
14	27,8	13,9	9,3	27,2	44,9	27,8	33,5
16	31,0	15,5	12,4	28,7	48,4	31,0	33,5
18	34,1	19,6	15,6	35,3	48,4	34,1	33,5
20	38,1	19,6	15,6	35,3	50,3	38,1	39,0
22	41,2	23,6	18,8	39,8	50,3	41,3	39,0
24	44,5	25,2	20,1	43,2	50,3	44,5	39,0

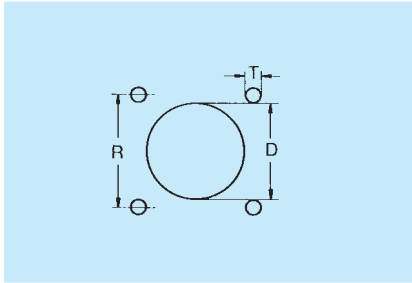
\*) How to order see page 4

Dimensions are inches

Shell size*	Type F					Type E	
	B <sub>F</sub> max	D <sub>F</sub> Ø min	G <sub>F</sub> Ø min	H <sub>F</sub> max	L <sub>F</sub> max	B <sub>E</sub> max	L <sub>E</sub> max
8	.717	.236	.114	.760	1.768	.717	1.319
10	.846	.295	.177	.819	1.768	.846	1.319
12	.969	.421	.303	.953	1.768	.969	1.319
14	1.094	.547	.366	1.071	1.768	1.094	1.319
16	1.220	.610	.488	1.130	1.906	1.220	1.319
18	1.343	.772	.614	1.390	1.906	1.343	1.319
20	1.500	.772	.614	1.390	1.980	1.500	1.535
22	1.622	.929	.740	1.567	1.980	1.622	1.553
24	1.752	.992	.791	1.701	1.980	1.752	1.535

\*) How to order see page 4

## Panel Cutouts



## Box mounting receptacle

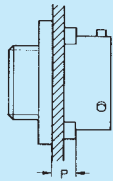
Dimensions are mm

Shell size	for rear mounting D +0,25 -0	for front mounting D +0,25 - 0	R ± 0,15	T + 0,3
8	15,7	14,6	15,1	3,1
10	18,7	17,8	18,3	3,1
12	22,4	21,0	20,6	3,1
14	25,5	24,1	23,0	3,1
16	28,3	27,3	24,6	3,1
18	31,3	30,5	27,0	3,1
20	34,5	33,7	29,4	3,1
22	37,7	38,8	31,8	3,1
24	40,9	40,0	34,9	3,1

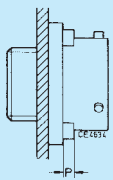
Dimensions are inches

Shell size	for rear mounting D +.010-.000	for front mounting D +.010-.000	R ± .006	T +.012
8	.618	.575	.595	.122
10	.736	.701	.720	.122
12	.882	.827	.811	.122
14	1.004	.949	.906	.122
16	1.184	1.075	.969	.122
18	1.232	1.201	1.063	.122
20	1.358	1.327	1.157	.122
22	1.484	1.449	1.252	.122
24	1.610	1.575	1.374	.142

Front mounting



Rear mounting



## Mounting hole diameter

Dimensions are mm

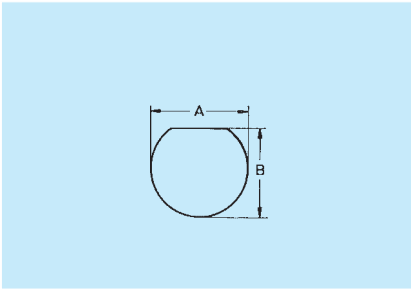
Shell size	P max. (for rear mounting panel thickness is included)
8	2,20
10	2,20
12	2,20
14	2,20
16	2,20
18	2,20
20	5,40
22	5,40
24	5,40

Dimensions are inches

Shell size	P max (for rear mounting panel thickness is included)
8	.087
10	.087
12	.087
14	.087
16	.087
18	.087
20	.213
22	.213
24	.213



## Panel Cutouts



## Jam nut receptacle

Dimensions are mm

Shell size	A +0,25 -0	B +0 -0,12
8	14,7	13,8
10	17,9	17,0
12	22,6	21,1
14	25,8	24,3
16	29,0	27,5
18	32,1	30,7
20	35,3	33,9
22	38,5	37,1
24	41,7	40,2

Dimensions are inches

Shell size	A + .010 - .000	B + .000 - .0058
8	.579	.543
10	.705	.669
12	.890	.831
14	1.016	1.083
16	1.142	1.083
18	1.264	1.209
20	1.390	1.335
22	1.516	1.461
24	1.642	1.583

## Protective Caps

### Materials

Protective cap	Aluminum alloy
Cord	Polyamide, olive
Rivet	Stainless steel, passivated
End link	Stainless steel, passivated
Clip	Stainless steel, passivated
Gasket	Fluor silicone

### How to order

**KPTC 81 - 12 C - A**

#### Series

- 80 - protective cap for plug
- 81 - protective cap for receptacle

#### Shell size

8, 10, 12, 14, 16, 18, 20, 22 und 24

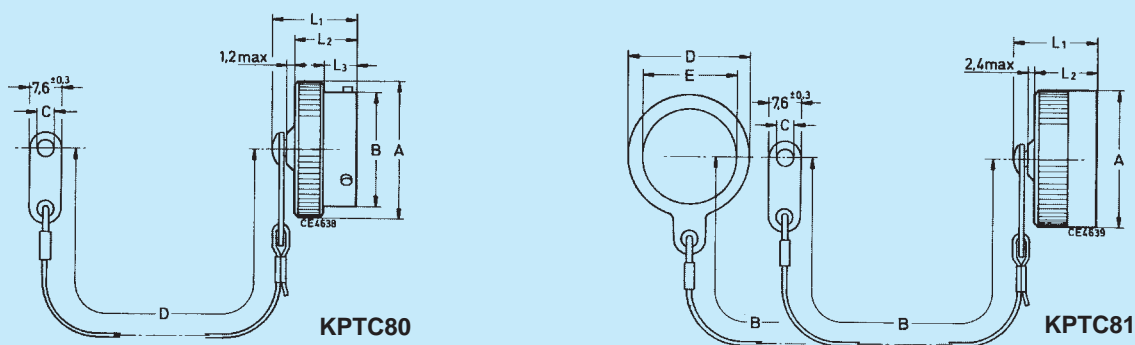
#### Fixing

- C - with cord and loop
- N - with cord and ring

#### Modification

- A - yellow drab chromate over zinc plating
- B - olive drab chromate over zinc plating

### Dimensions



## Protective Caps

### KPTC 80

Dimensions are mm

Shell size	A max.	B Ø +0,03 -0,13	C +0,25 -0,13	D +12,7 -6,35	L1 max.	L2 max.	L3 +0,79
8	18,26	12,0	4,24	76,2	19,84	14,27	9,35
10	21,44	15,0	4,24	76,2	19,84	14,27	9,35
12	25,40	19,05	4,24	88,9	19,84	14,27	9,35
14	28,58	22,23	4,24	88,9	19,84	14,27	9,35
16	31,75	25,40	4,24	88,9	19,84	14,27	9,35
18	34,92	28,58	4,24	88,9	19,84	14,27	9,35
20	38,10	31,75	4,24	101,6	21,44	15,88	10,92
22	41,28	34,93	4,24	101,6	21,44	15,88	10,92
24	44,45	38,10	4,24	101,6	22,22	16,71	11,76

### KPTC 81

Dimensions are mm

Shell size	A Ø max.	B +12,7 -6,35	C +0,25 -0,13	D max.	E min.	L1 max.	L2 max.
8	18,64	76,2	4,24	22,62	14,68	21,44	14,27
10	21,82	76,2	4,24	25,40	17,86	21,44	14,27
12	25,40	88,9	4,24	30,18	22,63	21,44	14,27
14	28,58	88,9	4,24	36,53	25,81	21,44	14,27
16	31,75	88,9	4,24	39,67	28,98	21,44	14,27
18	34,92	88,9	4,24	42,88	32,16	21,44	14,27
20	38,10	101,6	4,24	46,02	35,33	21,44	14,27
22	41,28	101,6	4,24	49,23	38,51	21,44	14,27
24	44,45	101,6	4,24	52,37	41,68	22,22	15,29

### KPTC 80

Dimensions are inches

Shell size	A max.	B Ø + .001- .005	C + .010- .005	D + .500- .250	L1 max	L2 max	L3 + .031
8	.719	.472	.167	3.000	.781	.562	.368
10	.844	.591	.167	3.000	.781	.562	.368
12	1.000	.750	.167	3.500	.781	.562	.368
14	1.125	.875	.167	3.500	.781	.562	.368
16	1.250	1.000	.167	3.500	.781	.562	.368
18	1.375	1.125	.167	3.500	.781	.562	.368
20	1.500	1.250	.167	4.000	.844	.625	.430
22	1.625	1.375	.167	4.000	.844	.625	.430
24	1.750	1.500	.167	4.000	.875	.658	.463

### KPTC 81

Dimensions are inches

Shell size	A Ø max.	B + .500- .250	C + .010- .005	D max.	E min.	L1 max.	L2 max.
8	.734	3.000	.167	.890	.578	.844	.562
10	.859	3.000	.167	1.000	.703	.844	.562
12	1.000	3.500	.167	1.188	.891	.844	.562
14	1.125	3.500	.167	1.438	1.016	.844	.562
16	1.250	3.500	.167	1.562	1.141	.844	.562
18	1.375	3.500	.167	1.688	1.266	.844	.562
20	1.500	4.000	.167	1.812	1.391	.844	.562
22	1.625	4.000	.167	1.938	1.516	.844	.562
24	1.750	4.000	.167	2.062	1.641	.875	.602

## Flange Gaskets

Shell size	Alu-Flex conductive	Chloroprene non-conductive
8	075-8543-000	075-8543-010
10	075-8543-001	075-8543-011
12	075-8543-002	075-8543-012
14	075-8543-003	075-8543-013
16	075-8543-004	075-8543-014
18	075-8543-005	075-8543-015
20	075-8543-006	075-8543-016
22	075-8543-007	075-8543-017
24	075-8543-008	075-8543-018

## Wire hole fillers

Contact size	Colour code	ITT Cannon
20	Red	225-1012-000
16	Blue	225-1011-000

## Mounting adapter

see KPTC Assembly instructions

## Contacts

Contact size	Order reference Hard gold plated
20 Socket	031-8704-508
20 Pin	430-8560-404
16 Socket	031-8704-502
16 Pin	430-8560-406

for shell size 8  
and contact arrangement 12-14 only:

Contact size	Order reference	
	Hard gold plated	Hard silver plated
20 Socket	031-8704-509	031-8704-506
20 Pin	430-8560-411	430-8560-410

## Wire Sizes

Contact size 20	Wire size metric:	0,4-0,75 mm <sup>2</sup>
	Sealing area (Insulation Ø)	1,4-2,15 mm / .0022 - .0033
Contact size 18	Wire size metric:	1,0-2,0 mm <sup>2</sup>
	Sealing area (Insulation Ø)	1,6-2,7 mm / .0025 - .0042

## Customer application tools

### Crimp tools

Hand tool	Turret for contact size 20, 16	Test gage for hand tool
M22520/1-01	M22520/1-02	M22520-/3-1

Semi-automatic Crimpstation  
Pneumatic tool, bench mounted

HACS-KPTC  
612141 with turret M22520/1-02

### Insertion tools

Contact size	Tool	Spare tip
20	CITG-20A	CITG-20A-Tip
16	CIT-16	CIT-16-Tip
Contact size	Tool (pair of pliers)	
20	CIT-KPTC-20	
16	CIT-F80-16	

### Extraction tools

Contact size	Tool	Spare tip
20	CET-KPTC-20	CET-KPTC-20-Tip
16	CET-KPTC-16	CET-KPTC-16-Tip

Product Safety Information

**THIS NOTE SHOULD BE READ IN CON-JUNCTION WITH THE PRODUCT DATA SHEET/CATALOGUE. FAILURE TO OB-SERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/ CATALOGUE COULD RESULT IN HAZAR-DUOUS 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, 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 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 strangs 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 oxid 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 of insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undersired 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.

ITT Cannon manufactures the highest quality products available in the marketplace; however these products are intended to be used in accordance with the specifications in this catalog. Any use or application that deviates from stated operating specifications is not recommended and may be unsafe. No information and data contained in this catalog shall be construed to create any liability on the part of ITT Cannon. Any new issue of this catalog shall automatically invalidate and supersede any and all previous issues. **A limited warranty applies to ITT Cannon products. Except for obligations assumed by ITT Cannon under this warranty, ITT Cannon shall not be liable for any loss, damage, cost of repairs, incidental or consequential damages of any kind, whether or not based on express or implied warranty, contract, negligence or strict liability arising in connection with the design, manufacture, sale, use or repair of the products.** Product availability, prices and delivery dates are exclusively subject to our respective order confirmation form; the same applies to orders based on development samples delivered. This catalog is not be construed as an offer. It is intended merely as an invitation to make an offer. By this publication, ITT Cannon does not assume responsibility or any liability for any patent infringements or other rights of third parties which may result from its use. Reprinting this catalog is generally permitted, indicating the source. However, ITT Cannon's prior consent must be obtained in all cases.

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