

Applications

- Machines / Robotics
- Process control
- Instrumentation
- Railways

Standards



Description

- Plastic low cost connector
- A retention plate system allowing insertion/extraction of the contacts without the need for tooling
- A high sealing level up to IP68
- Facilities to use trade backshells with the electrical thread adaptor (PG)

Characteristics

Mechanical

- Monobloc shell and insulator in thermoplastic* material self-extinguishing to UL 94 VO
- 180° screw coupling with positive audible safety latch
- Scoop proof
- Copper alloy contacts, machined or stamped and formed :
 - plating : gold flash on active part
- Mechanical endurance :
 - connector : 250 cycles mating / unmating
 - retention plate : 50 cycles mating / unmating
- Retention force :
 - Ø 1 mm → 70 N
 - Ø 1.6 mm → 90 N
- Vibration :
 - frequency range : 10-2000 Hz, 20 g
 - 10 cycles in accordance with CEI 68-2-6

* Composite version are under development. Consult FCI.

Electrical

- Withstand voltage : 1500 Vrms min or in accordance with DIN 57110b
- Contact resistance < 10 mΩ
- Current rating per contact :
 - machined contacts :
 - Ø 1 mm (7 A), Ø 1.6 mm (13 A)
 - stamped and formed contacts :
 - Ø 1 mm (5 A), Ø 1.6 mm (10 A)

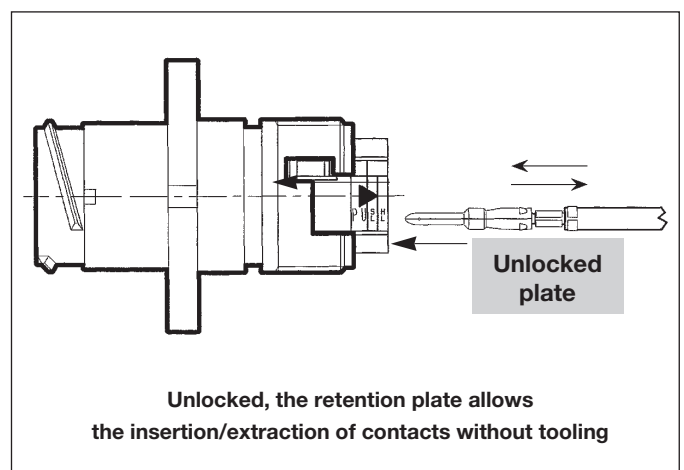
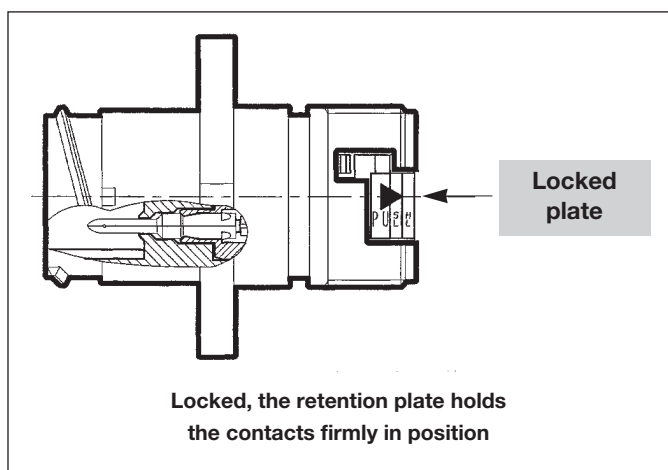
Climatic

- Working temperature :
 - 40°C to +125°C
- Sealing
 - examples :
 - connector + sealing gland : IP68
 - connector + grommet : IP67
- Resistance to salt spray :
 - 48 h min
 - > 1000 h (sealed mated connectors)

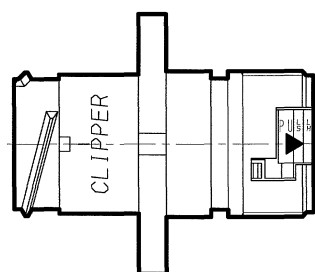
Resistance to fluids

- oil,
- petrol, fuel,
- lubricants
- other fluids : consult FCI

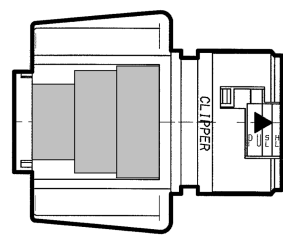
Retention plate principle



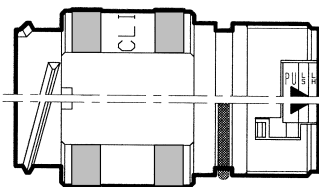
Styles available



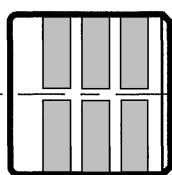
Square flange receptacle



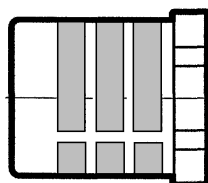
Plug



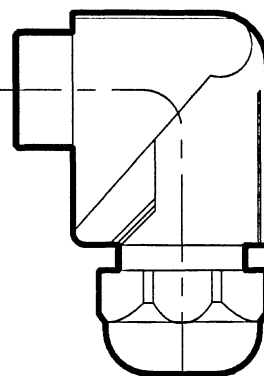
In line-receptacle



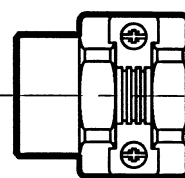
Backnut



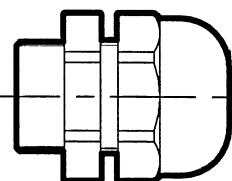
Adaptor



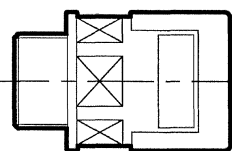
Elbow backshell with sealing gland



Straight cable clamp



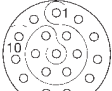
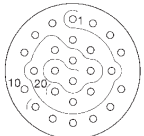
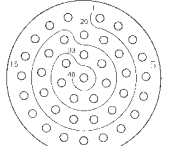


Sealing gland backshell with anti-decoupling system





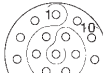
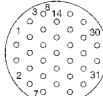
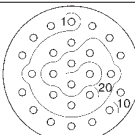
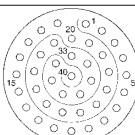


Straight backshell for flexible conduit systems

Square flange receptacle and in-line receptacle

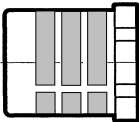
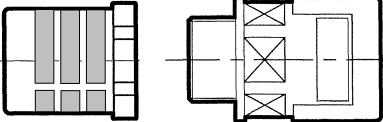
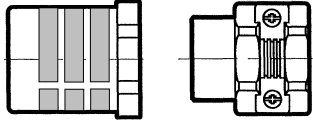
Receptacle types without contacts		Part numbers							
		Unsealed receptacle (without o'ring)		Sealed receptacle (with o'ring) for use with backshell		Sealed receptacle (with o'ring and panel gasket)		In-line receptacle	
		for male contacts	for female contacts	for male contacts	for female contacts	for male contacts	for female contacts	unsealed for male contacts	sealed for male contacts
Shell sizes	1	4 cts Ø 1.6 mm  Class 2 - VDE 380 V							
	2	9 cts Ø 1 mm  Class 2 - VDE 250 V							
	3	18 cts Ø 1.6 mm  Class 2 - VDE 250 V							
	4	26 cts Ø 1.6 mm  Class 2 - VDE 250 V							
		40 cts Ø 1.6 mm 							

Plug and backnut

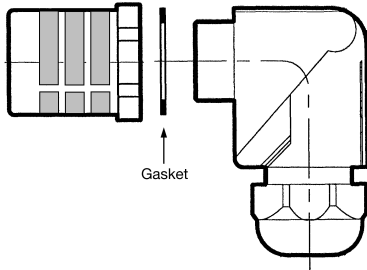
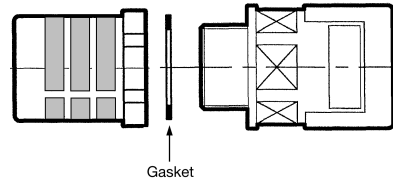
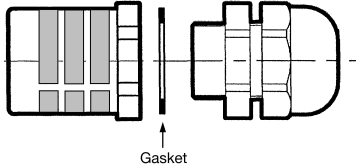
			Part numbers							
<div>Plug types without contacts</div> <div>Contact layouts</div>			Unsealed plug (without o'ring and mating seal)		Sealed plug (with o'ring and mating seal)		Backnut sealed		Backnut unsealed	
			for male contacts	for female contacts	for male contacts	for female contacts	for male contacts	for female contacts	for male and female contacts	
Shell sizes	1	4 cts Ø 1.6 mm  Class 2 - VDE 380 V	CL1P1100	CL1F1100	CL1P1101	CL1F1101 (IP67) CL1F1103 (IP68)	CL111102	CL111101	CL111000	
		9 cts Ø 1 mm 		CL1F1200		CL1F1201 (IP67) CL1F1203 (IP68)	CL111202	CL111201		
	2	9 cts Ø 1.6 mm  Class 2 - VDE 250 V	CL1P2100	CL1F2100	CL1P2101	CL1F2101 (IP67) CL1F2103 (IP68)	CL112102	CL112101	CL112000	
		14 cts Ø 1 mm 		CL1F2200		CL1F2201 (IP67) CL1F2203 (IP68)				
	3	18 cts Ø 1.6 mm  Class 2 - VDE 250 V	CL1P3100	CL1F3100	CL1P3101	CL1F3101 (IP67) CL1F3103 (IP68)	CL113102	CL113101	CL113000	
		31 cts Ø 1 mm 		CL1F3200		CL1F3201 (IP67) CL1F3203 (IP68)				
	4	26 cts Ø 1.6 mm  Class 2 - VDE 380 V		CL1F4100		CL1F4101 (IP67) CL1F4103 (IP68)	CL114102	CL114101	CL114000	
		40 cts Ø 1.6 mm 	CL1P4200	CL1F4200	CL1P4201	CL1F4201 (IP67) CL1F4203 (IP68)	CL114202	CL114201		

Adaptor and electrical thread backshells (PG)

Unsealed

Type	Description	Part numbers				
		Shell sizes				
		1 (PG 13.5)	2 (PG 16)	3 (PG 21)	4 (PG 29)	5 (PG 36)
	Adaptor	CL101000	CL102000	CL103000	CL124000	CL104000
	Straight backshell for flexible conduit systems	CL101040	CL102040	CL103040	CL124040	CL104040
	Straight cable clamp	CL101030	CL102030	CL103030	CL124030	-

Sealed

	Elbow backshell with sealing gland IP67	CL101051	CL102051	CL103051	CL124051	-
	Straight backshell for flexible conduit systems IP67	CL101041	CL102041	CL103041	CL124041	CL104041
	Anti-decoupling sealing gland backshell IP68	CL101021	CL102021	CL103021	CL124021	CL104021

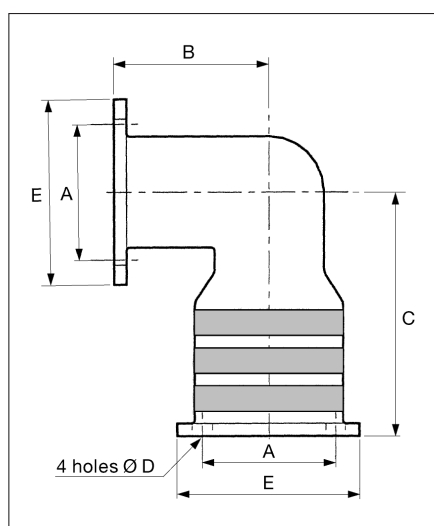
Note : Electrical thread backshells are always supplied complete with the adaptor.

Accessories

Panel gasket (for square flange receptacle)

Shell sizes	1	2	3	4
Part numbers	CL191001	CL192001	CL193001	CL194001

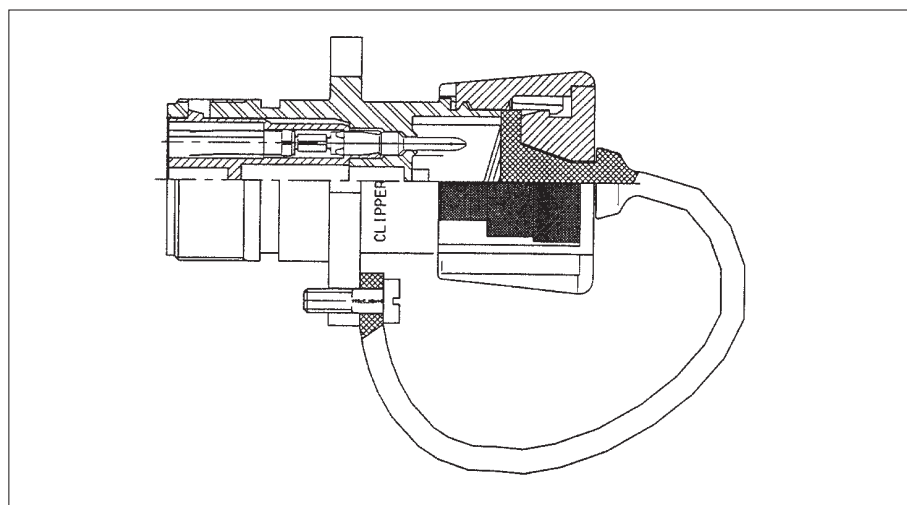
Elbow adaptors for receptacles



Dim. (mm)	A	B	C	D	E
Shell sizes					
1	21.4	24.5	38.7	3.2	29.2
2	24.6	28.0	39.7	3.2	30.8
3	28.5	30.5	42.8	3.8	35.6
4	36.5	39.4	49.5	3.8	47.5

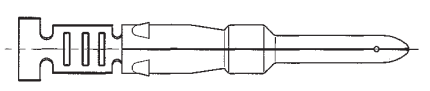
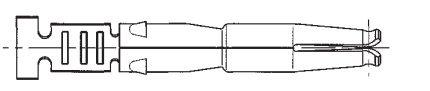
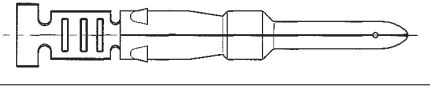
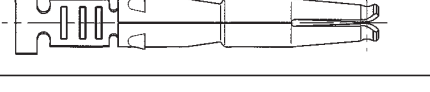
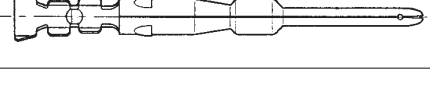
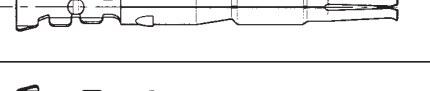
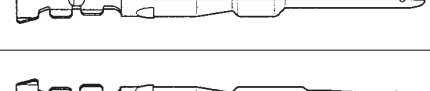
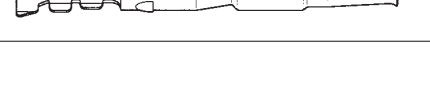
Elbow adaptors for receptacles Shell 1 to 4		
Shell	Part numbers	
	Sealed	Unsealed
1	CL131001	CL131000
2	CL132001	CL132000
3	CL133001	CL133000
4	CL134001	CL134000

Dust cap for receptacle IP67



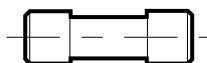
Shell	Part numbers
1	CL141001
2	CL142001
3	CL143001
4	CL144001

Stamped and formed contacts

Packaging	Contact types with insulation support		Ø (mm)	Wire insul. diameter Ø (mm)	Cable acceptance (mm²)	Part numbers
Bulk		male	1.6	2.00 min.	0.70 to 1.50	CF16PC10RF
		female		3.00 Max.	0.70 to 1.50	CF16SC10RF
Reel 5000 pieces		male	1.6	2.00 min.	0.70 to 1.50	CF16PC19RF
		female		3.00 Max.	0.70 to 1.50	CF16SC19RF
Bulk		male	1	1.20 min.	0.35 to 0.60	CF10PC10RF
		female		2.10 Max.	0.35 to 0.60	CF10SC10RF
Reel 5000 pieces		male	1	1.20 min.	0.35 to 0.60	CF10PC19RF
		female		2.10 Max.	0.35 to 0.60	CF10SC19RF

Plating RF : gold flash on active part for standard version.

Filler plug Ø 1.6 mm
(for un-used contact cavities)



Part number : 8500 479 CL

For other platings, consult FCI.

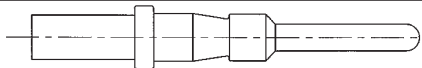
Machined contacts

Packaging	Contact types		Ø (mm)	Wire insul. diameter Ø (mm)	Cable acceptance (mm²)	Part numbers
Bulk	crimp	male	1.6	2.00 min.	0.93 to 1.91	CM16PC10MQ
					0.6 *	CM16PC20MQ
		female		3.00 Max.	0.93 to 1.91	CM16SC10MQ
					0.6 *	CM16SC20MQ
Bulk	solder	male	1.6	2.00 min.	1.91 Max.	CM16PS10MQ
		female		3.00 Max.	1.91 Max.	CM16SS10MQ
Bulk	crimp	male	1	1.20 min.	0.21 to 0.93	CM10PC10MQ
					0.06 to 0.21*	CM10PC20MQ
		female		2.10 Max.	0.21 to 0.93	CM10SC10MQ
					0.06 to 0.21*	CM10SC20MQ
Bulk	solder	male	1	1.20 min.	0.93 Max.	CM10PS10MQ
		female		2.10 Max.	0.93 Max.	CM10SS10MQ

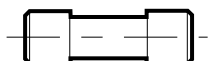
* Delivered with reducing sleeve

Plating MQ : 0.4 µ min gold on active part for standard version

Extended ground contact-crimp (+ 1 mm)

Bulk		male	1.6	2.00 min. 3.00 Max.	0.93 to 1.91	8501 9641
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Filler plug Ø 1.6 mm
(for un-used contact cavities)

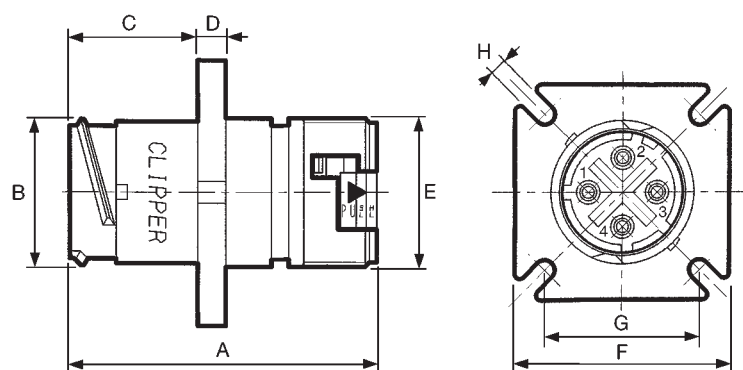


Part number : 8500 479 CL

For other platings, consult FCI.

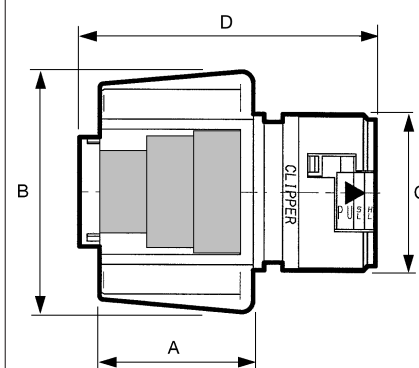
Dimensions

Square flange receptacle



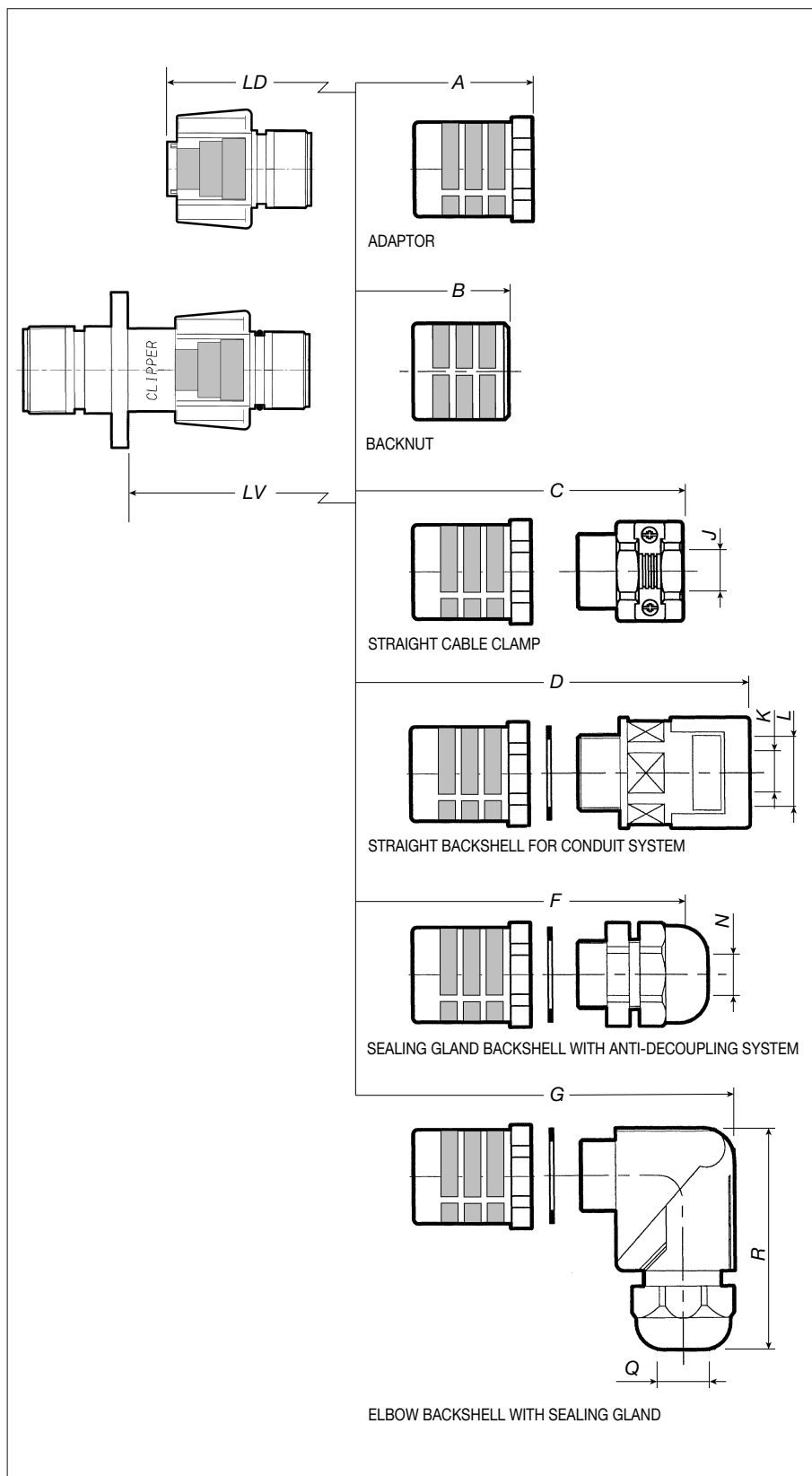
Dim. (mm) \ Shell sizes	1	2	3	4
A	42.4	42.4	42.4	42.4
B	21.0	24.5	29.0	40.5
C	18.0	18.0	18.0	18.0
D	4.0	4.0	4.0	4.0
E	20.5	24.0	28.5	40.0
F	29.7	31.3	36.0	47.9
G	min. 21.1 Max. 23.3	24.3 24.9	28.3 29.7	36.2 40.0
H	3.2	3.2	3.8	3.8

Plug



Dim. (mm) \ Shell sizes	1	2	3	4
A	20.20	20.20	20.20	20.20
B	29.10	32.50	37.10	48.80
C	20.50	24.00	28.50	40.00
D	38.60	39.60	39.60	39.60

Mated and unmated connectors with backshells



dimensions

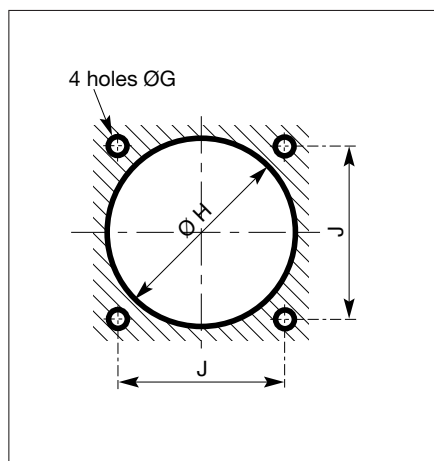
Shell	1	2	3	4	
Dim. (mm)				(PG 29)	(PG 36)
LDA	51	53.2	53.2	55.2	55.2
LVA	58.2	59.2	59.2	61.2	61.2
LDB	46	47	47	-	47
LVB	53	53	53	-	53
LDC	68	72.5	77	86.5	-
LVC	75.5	78.5	83	91.5	-
LDD	86.5	89	92	94	108
LVD	94	95	98	100	113.5
LDF	80	83	85	95	102
LVF	87	89	91	101	108
LDG	84	88	96	109	-
LVG	91	94	102	115	-
R Max.	57	59.5	73	91	-

cable acceptance *

Shell	1	2	3	4	
Dim. (mm)				(PG 29)	(PG 36)
J	6/14	6/16	8/21	10/28	
Conduit L Pmaxflex	17	17	23	29	36
K Max.	16	16	21,5	27,5	36
N	6/12	10/14	13/18	18/25	22/32
Q	6/12	10/14	13/18	18/25	-

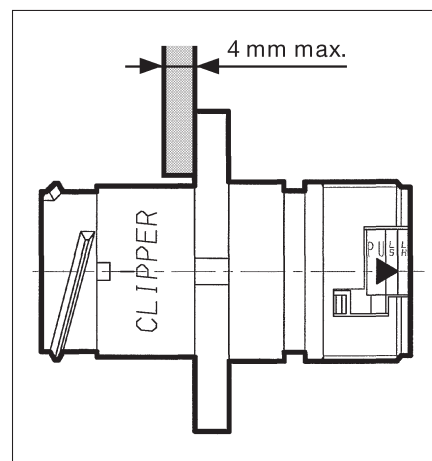
* For other needs, consult FCI.

Panel cut-out



Shell sizes Dim. (mm)	1	2	3	4
H	21.5	25	31	41
J	21.4	24.6	28.6	36.5
G	3.2	3.2	3.8	3.8

Panel mounting

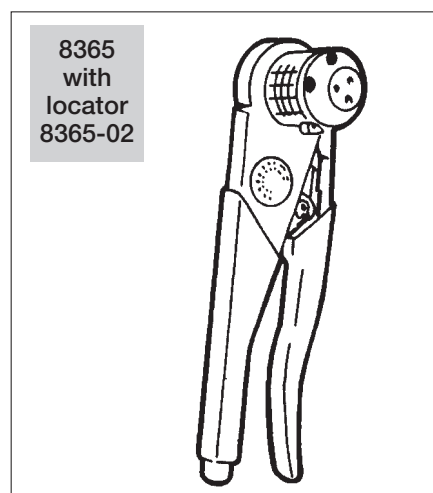
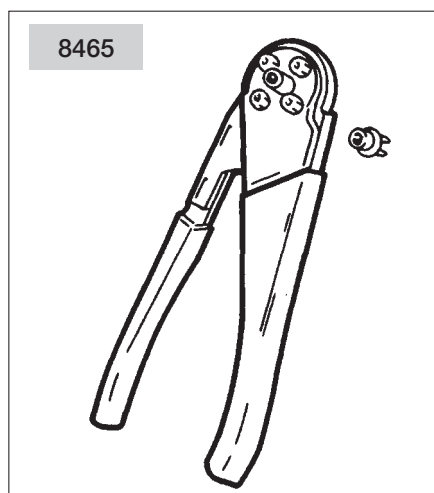


Interchangeability with MIL-C-5015

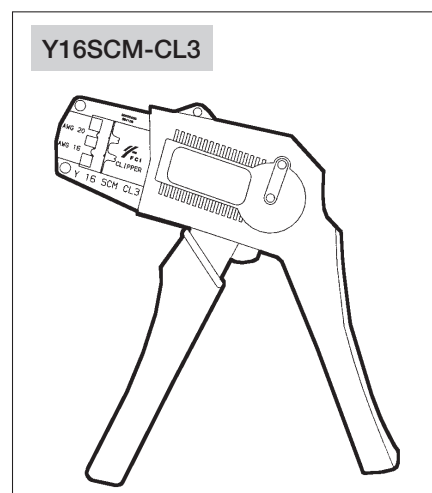
CLIPPER	MIL-C-5015
Shell 1	Shell 14
Shell 2	Shell 16
Shell 3	Shell 20
Shell 4	Shell 28

Crimping tools *

Machined contacts (Ø 1 mm - Ø 1.6 mm)



Stamped and formed contacts (Ø 1 mm - Ø 1.6 mm)



* Other manual or semi-automatrical crimping tool available, consult FCI.
See wiring instructions.

General technical informations

Degree of protection in accordance with CEI 529, DIN 40050, NF EN 60529

First index Protection against accidental or inadvertent contact. Prot. against ingress of foreign bodies.		Second index Protection against ingress of water		Third index Protection against mechanical strength	
Index	Test	0 No protection	2 Protection against diagonal drop water drips (up to < of 15° of vertical)	0 No protection	Troisième chiffre
0	IP00 No protection	IPx0			
1	IP11 Ball Ø 50 mm Protection against contact with any large area by hand, prot. against large solid foreign bodies with Ø > 50 mm.	1 Protection against vertical drop water drips. IPx1		1 Impact strength : 0,225 J 250 g 15 cm IPxx1	
2	IP22 Ball Ø 12,5 mm Test finger Protection against contact with the fingers, prot. against solid foreign bodies with Ø 12,5 mm			3 Impact strength : 0,5 J 250 g 20 cm IPxx3	
3	IP33 Steel wire Ø 2,5 mm Protection against tools wires or similar objects with Ø > 2,5 mm, prot. against small foreign solid bodies with Ø > 2,5 mm	3 Protection against diagonal drop water drips (up to < of 60° out of vertical) IPx3	4 Protection against splash water from all directions IPx4	5 Impact strength : 2 J 500 g 40 cm IPxx5	
4	IP44 Steel wire Ø 1 mm Protection against tools wires or similar objects with Ø > 1 mm, prot. against small foreign solid bodies with Ø > 1 mm	5 Protection against water (out of a nozzle) from all directions IPx5		7 Impact strength : 6 J 1,5 kg 40 cm IPxx7	
5	IP55 Full protection against acid, or inadiv. contact. Prot. against interior injurious dust deposits.	6 Proof against temporary flooding IPx6		9 Impact strength : 20 J 5 kg 40 cm IPxx9	
6	Total protection against acid, or inadiv. contact. Protection against of dust.	7 Protection against water plunging Proof against temporary water plunging IPx7	8 Water tight W Proof against water pressure		

EXAMPLE : IP66-5 means: - Total protection against dust
- Proof against temporary flooding
- Proof against impact strength of 2 Joule