



Receptacle TMS3100



Receptacle TMS3101



Receptacle TMS3102



Plug TMS3106



Plug TMS3108

TMS

MIL-DTL-5015

- **Coupling: Thread**
- **Terminal: Solder**



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High-tech Enterprise Certificate



Foreign Invested Advanced



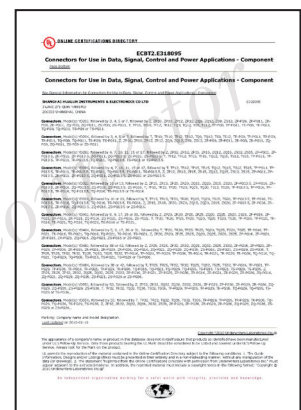
Enterprise Credit Rating AAA



Software Copyright



ISO9001, ISO14001, ISO45001



UL for YD series

Live parts should not be disassembled without authorization!!!



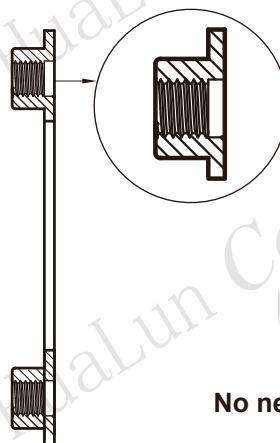
TIPS

- 1 After the wire is welded, be sure to seal the heat shrinkable sleeve at the welding site



- 2 Especially Recommended Assembly Nut Plate

The Feature of Assembly Nut Plate
Convenient and Fast! Firm!



No need 4 mounting nut

Profile

- ◆ Design according to MIL5015, interchangeable with equivalent products.
- ◆ Insert: Halogen free & fire resistance thermoplastic UL94V-0; 2-60 pins. More than 65 types.
- ◆ Shell size-arrangement: 14S, 16S, 16, 18, 20, 22, 24, 28, 32, 36, 40.
- ◆ Coupling: thread
- ◆ Terminal: solder
- ◆ Tools: hand crimp tool-M22520/1-01. Pneumatic crimp tool would be update efficiency and fit for mass crimping.
- ◆ Shell Protection degree: IP65/67
- ◆ Shock vibration: Class 1B (GB/T21563-2018 Shock and vibration test of rail transit locomotive and rolling stock equipment)
- ◆ Technical data qualified to NFF61030 (Normes francaises) & GB/T34119-2017 (Railway rolling stock-Electrical connectors) .
- ◆ Shell color: Black, Army Green
- ◆ TUV certification.

Hualun connectors are appointed by Chinese rail transport, engineering machinery, power electric power, thermoplastic machinery, industrial automation, and robot manufacturing enterprises. as a perennial supporting product.

Technical Data

Environmental

Operating Temperature	Upper limit+125°C * Lower limit-55°C
Relative Humidity	40°C±2°C 93%~95%
Salty Spray Corrosion	≥96hours
Protection Degree	IP65,IP67 (when mated,wired and mounted according to DS)
Shock Vibration	Class 1B (GB/T21563-2018 / IEC61373: 2010)

Note: * The upper limit temperature is the maximum internal hot spot temperature that occurs in either combination of electrical load and environmental conditions.

Contact current De-rating

Qty of contacts	1~10	11~20	21~30	31~50	51~80
Drop rate%	0	10	20	30	40

Mechanical Features

Type of contacts#	● 16#	⊕ 12#	⊗ 8#	⊙ 4#
retention force (min)	44.5N	66.7N	89.0N	89.0N
Minimum separation force	0.56N	0.83N	1.39N	2.78N
The contact crimp is sufficient to match the tensile strength of the cable				
Type of contacts#	Wire Gauge		OD of Cable	
	AWG	mm ²	min	max
● 16#	20	0.50	1.63	3.30
	18	0.80		
	16	1.25		
⊕ 12#	14	2.00	2.90	4.32
	12	3.15		
⊗ 8#	10	6.30	4.17	6.48
	8	8.00		
⊙ 4#	6	12.50	6.91	9.40
	4	25.00		
Mechanical Life	≥500			

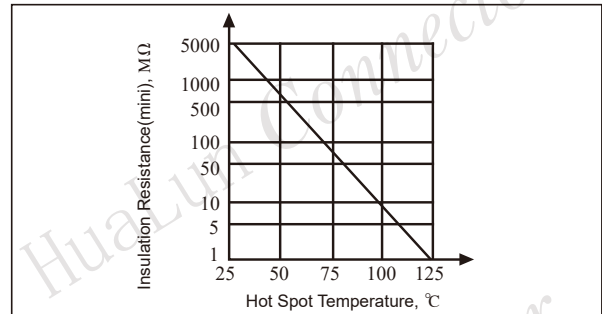
Testing Condition

Temperature: 15°C~35°C	Relative Humidity: 20%~80%	Atmospheric Pressure: 73KPa~106KPa
------------------------	----------------------------	------------------------------------

Electric Features

Service rating	Inst.	A	D	E
Rated Voltage	250VDC	700VDC	1250VDC	1750VDC
	200VAC	500VAC	900VAC	1250VAC
Dielectric Withstand Voltage	1000VAC	2000VAC	2800VAC	3500VAC
Mechanical Spacing	-	1.59mm	3.18mm	4.76mm
Creepage Distance	1.59mm	3.18mm	4.76mm	6.35mm
Insulation Resistance	Normal: >5000MΩ, (Dynamic values see tableA)			
Type of contacts#	● 16#	⊕ 12#	⊗ 8#	⊙ 4#
Working Current	13A	23A	46A	80A
Contact Resistance	2.5mΩ	1.3mΩ	0.7mΩ	0.35mΩ

TableA The limit value of insulation resistance varies with temperature



Material of Main Parts

Shell	Material	Aluminum Alloy
	Finish	Electrophoretic Paint; Zinc Passivation
Insert	Material	Halogen free & fire resistance thermoplastic material
	Flame Retardant Grade	UL94V-0
Contacts	Material	Copper Alloy
	Plating	Silver; Gold
Grommet & Bushing	Low Fire Hazard Rubber	

Part Number (Explanation)

Receptacle ①

(Panel Mounted)

(No Protective Enclosure)

e.g. **1** TMS 31 02 S18-19 N

e.g. **2** TMS 31 22 P18-19 W L

① ② ③ ④ ⑤ ⑥

Explanation

① **TMS** : Coupling (thread)

② **31** : Terminal (solder)

③ **02** : Front Mounting
22 : Rear Mounting

{ panel mounted,
No protective enclosure

④ Insert:

S (P) 18 - 19

S: Socket
P: Pin

Shell-size

Arrangement No.

Insert P/N: See Page 9-18

■ Shell Size See Page 20



⑤ Insert Orientation:

N: Cardinal Points; (Default)

W, X, Y, Z, See Page 19

⑥ Shell Color:

◆ **H**: Black

◆ **L**: Army Green

Part Number (Explanation)

Receptacle ②

(Protective Enclosure)

(Clamp/Gland)

e.g. ①	TMS	31	20	S18-19	N	18A	
e.g. ②	TMS	31	00	P18-19	Y	18A	L
	①	②	③	④	⑤	⑥	⑦

■ Shell Size See
Page 21~23

Explanation

① **TMS** : Coupling (thread)

② **31** : Terminal (solder)

③ **00** : Front Mounting
20 : Rear Mounting

{ Protective Enclosure,
Clamp/Gland

④ Insert:

S(P) 18 - 19

S: Socket
P: Pin

Shell-size

Arrangement No.

Insert P/N: See Page 9-18

⑤ Insert Orientation:

N: Cardinal Points; (Default)

W, X, Y, Z, See Page 19

⑥ Outlet Type:

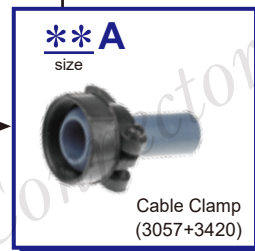
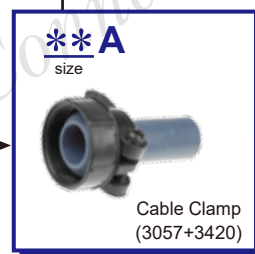
◆ ****A** : Cable Clamp (3057+3420)
size

◆ **PG **** : PG Nylon Cable Gland Outlet
size

⑦ Shell Color:

◆ **H**: Black

◆ **L**: Army Green



Part Number (Explanation)

Receptacle ③

(Free)

e.g. ① **TMS** ② **31** ③ **01** ④ **S18-19** ⑤ **N** ⑥ **18A**

e.g. ① **TMS** ② **31** ③ **01** ④ **P18-19** ⑤ **Y** ⑥ **PG13.5** ⑦ **L**

Explanation

① **TMS** : Coupling (thread)

② **31** : Terminal (solder)

③ **01** : Free Receptacle

④ Insert:

S(P) 18 - 19

S: Socket
P: Pin

Shell-size

Arrangement No.

Insert P/N: See Page 9-18

⑤ Insert Orientation:

N: Cardinal Points; (Default)

W, X, Y, Z, See Page 19

⑥ Outlet Type:

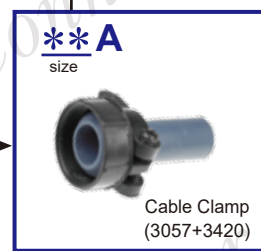
◆ ****A** : Cable Clamp (3057+3420)
size

◆ **PG **** : PG Nylon Cable Gland Outlet
size

⑦ Shell Color:

◆ **H**: Black

◆ **L**: Army Green

■ Shell Size See
Page 24


Part Number (Explanation)

Receptacle ④

(Adapter)

e.g. **1** TMS 31 022 S18-19P N

e.g. **2** TMS 31 011 P18-19S W L

① ② ③ ④ ⑤ ⑥

Explanation

① **TMS** : Coupling (thread)

② **31** : Terminal (solder)

③ **022** : Adapter (Square flange)

011 : Adapter (Round flange)

④ Insert:

S 18 - 19 P

S: Socket
P: Pin

Shell-size Arrangement
No.

P: Pin
S: Socket

Insert P/N: See Page 9-18

■ Shell Size See Page 25

022



011



⑤ Insert Orientation:

N: Cardinal Points; (Default)

W, X, Y, Z, See Page 19

⑥ Shell Color:

◆ **H**: Black

◆ **L**: Army Green

Part Number (Explanation)

Plug

e.g. **1** TMS 31 06 P18-19 N 18A

e.g. **2** TMS 31 08 S18-19 Y PG13.5 L

Explanation

1 **TMS** : Coupling (thread)

2 **31** : Terminal (solder)

3 **06** : Straight
08 : 90° Angled

{ Protective Enclosure,
Clamp/Gland

4 Insert:

S (P) 18 - 19

S: Socket
P: Pin

Shell-size

Arrangement No.

Insert P/N: See Page 9-18

5 Insert Orientation:

N: Cardinal Points; (Default)

W, X, Y, Z, See Page 19

6 Outlet Type:

◆ ****A** : Cable Clamp (3057+3420)
size

◆ **PG**** : PG Nylon Cable Gland
size

◆ **G**** : G Nylon Hose Clamp
size

7 Shell Color:

◆ **H**: Black

◆ **L**: Army Green

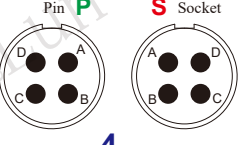
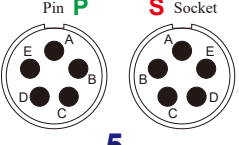
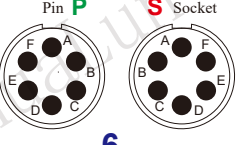
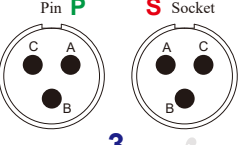
■ Shell Size See Page 26~28

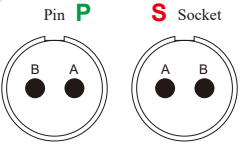
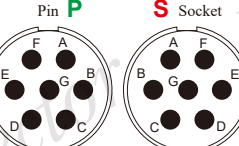
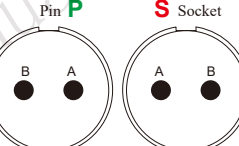
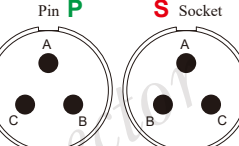


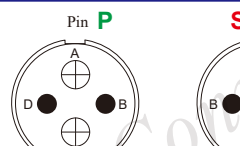
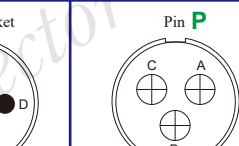
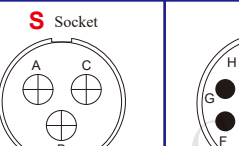
Shell Size - Arrangement No.

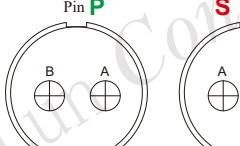
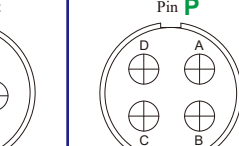
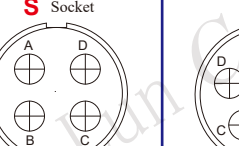
View from mating face

● 16# ⊕ 12#

Type	14S							
P Shell Size- S Arrangement No.	P14S-2	S14S-2	P14S-5	S14S-5	P14S-6	S14S-6	P14S-7	S14S-7
Contact Arrangement	 4 Contact		 5 Contact		 6 Contact		 3 Contact	
Contact Size×Contact Qty.	16# × 4		16# × 5		16# × 6		16# × 3	
Service Rating	Inst.		Inst.		Inst.		A	

Type	14S		16S					
P Shell Size- S Arrangement No.	P14S-9	S14S-9	P16S-1	S16S-1	P16S-4	S16S-4	P16S-5	S16S-5
Contact Arrangement	 2 Contact		 7 Contact		 2 Contact		 3 Contact	
Contact Size×Contact Qty.	16# × 2		16# × 7		16# × 2		16# × 3	
Service Rating	A		A		D		A	

Type	16				18	
P Shell Size- S Arrangement No.	P16-9	S16-9	P16-10	S16-10	P18-1	S18-1
Contact Arrangement	 4 Contact		 3 Contact		 10 Contact	
Contact Size×Contact Qty.	16# × 2 12# × 2		12# × 3		16# × 10	
Service Rating	A		A		B.C.F.G = A Other = Inst.	

Type	18					
P Shell Size- S Arrangement No.	P18-3	S18-3	P18-10	S18-10	P18-11	S18-11
Contact Arrangement	 2 Contact		 4 Contact		 5 Contact	
Contact Size×Contact Qty.	12# × 2		12# × 4		12# × 5	
Service Rating	D		A		A	



TUV SUD



ISO9001 ISO14001 ISO45001

华伦连接器
HuaLun Connector

Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12#

Type	18					
P Shell Size- S Arrangement No.	P18-12	S18-12	P18-19	S18-19	P18-20	S18-20
Contact Arrangement						
Contact Size×Contact Qty.	16# × 6		16# × 10		16# × 5	
Service Rating	A		A		A	

Type	18		20			
P Shell Size- S Arrangement No.	P18-22	S18-22	P20-3	S20-3	P20-4	S20-4
Contact Arrangement						
Contact Size×Contact Qty.	16# × 3		12# × 3		12# × 4	
Service Rating	D		D		D	

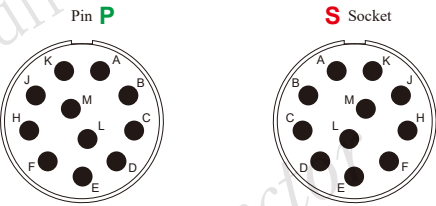
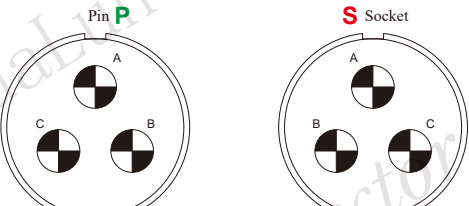
Type	20					
P Shell Size- S Arrangement No.	P20-7	S20-7	P20-15	S20-15	P20-16	S20-16
Contact Arrangement						
Contact Size×Contact Qty.	16# × 8		12# × 7		16# × 7	12# × 2
Service Rating	C.D.E.F = A A.B.G.H = D		A		A	

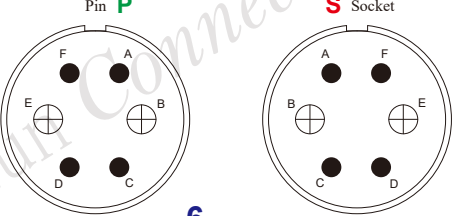
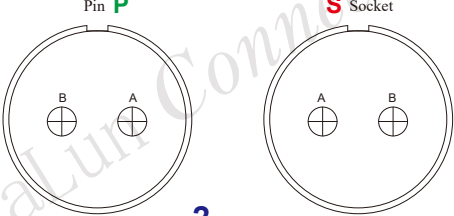
Type	20					
P Shell Size- S Arrangement No.	P20-18	S20-18	P20-27	S20-27	P20-29	S20-29
Contact Arrangement						
Contact Size×Contact Qty.	16# × 6	12# × 3	16# × 14		16# × 17	
Service Rating	A		A		A	

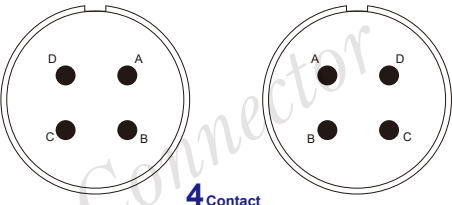
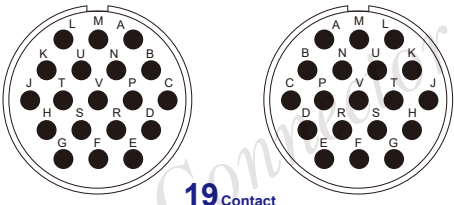
Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ◐ 8#

Type	20		22	
P Shell Size- S Arrangement No.	P20-33	S20-33	P22-2	S22-2
Contact Arrangement	 11 Contact		 3 Contact	
Contact Size×Contact Qty.	16# × 11		8# × 3	
Service Rating	A		D	

Type	22			
P Shell Size- S Arrangement No.	P22-5	S22-5	P22-8	S22-8
Contact Arrangement	 6 Contact		 2 Contact	
Contact Size×Contact Qty.	16# × 4 12# × 2		12# × 2	
Service Rating	D		E	

Type	22			
P Shell Size- S Arrangement No.	P22-10	S22-10	P22-14	S22-14
Contact Arrangement	 4 Contact		 19 Contact	
Contact Size×Contact Qty.	16# × 4		16# × 19	
Service Rating	E		A	

Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ● 8#

Type	22			
P Shell Size- S Arrangement No.	P22-18	S22-18	P22-19	S22-19
Contact Arrangement	Pin P 8 Contact	S Socket 8 Contact	Pin P 14 Contact	S Socket 14 Contact
Contact Size×Contact Qty.	16# × 8		16# × 14	
Service Rating	C.D.E = A Other = D		A	

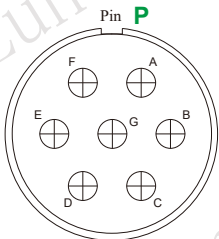
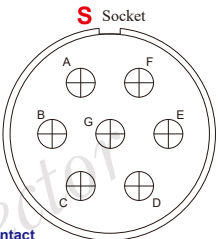
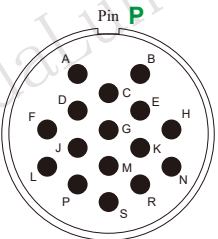
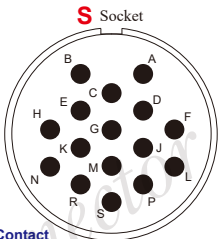
Type	22			
P Shell Size- S Arrangement No.	P22-20	S22-20	P22-22	S22-22
Contact Arrangement	Pin P 9 Contact	S Socket 9 Contact	Pin P 4 Contact	S Socket 4 Contact
Contact Size×Contact Qty.	16# × 9		8# × 4	
Service Rating	A		A	

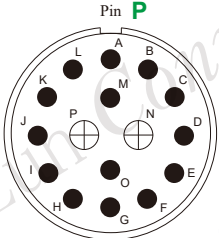
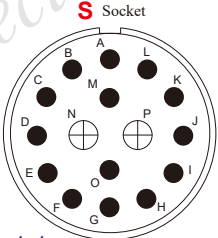
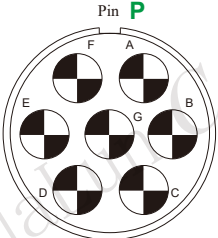
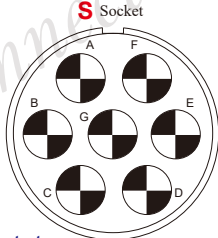
Type	22			
P Shell Size- S Arrangement No.	P22-23	S22-23	P22-28	S22-28
Contact Arrangement	Pin P 8 Contact	S Socket 8 Contact	Pin P 7 Contact	S Socket 7 Contact
Contact Size×Contact Qty.	12# × 8		12# × 7	
Service Rating	H = D Other = A		A	

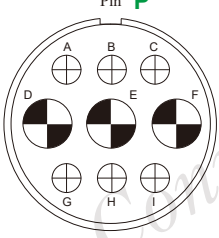
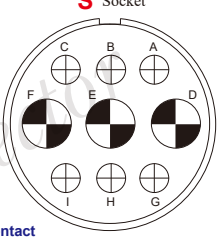
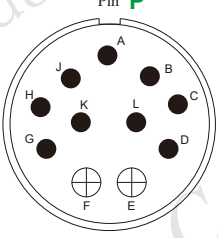
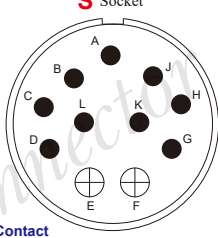
Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ⊗ 8#

Type	24			
P Shell Size- S Arrangement No.	P24-2	S24-2	P24-5	S24-5
Contact Arrangement	 Pin P 7 Contact	 S Socket 7 Contact	 Pin P 16 Contact	 S Socket 16 Contact
Contact Size×Contact Qty.	12# × 7		16# × 16	
Service Rating	D		A	

Type	24			
P Shell Size- S Arrangement No.	P24-7	S24-7	P24-10	S24-10
Contact Arrangement	 Pin P 16 Contact	 S Socket 12 Contact	 Pin P 7 Contact	 S Socket 8 Contact
Contact Size×Contact Qty.	16# × 14	12# × 2	8# × 7	
Service Rating	A		A	

Type	24			
P Shell Size- S Arrangement No.	P24-11	S24-11	P24-20	S24-20
Contact Arrangement	 Pin P 9 Contact	 S Socket 8 Contact	 Pin P 11 Contact	 S Socket 12 Contact
Contact Size×Contact Qty.	12# × 6	8# × 3	16# × 9	12# × 2
Service Rating	A		D	



TUV SUD



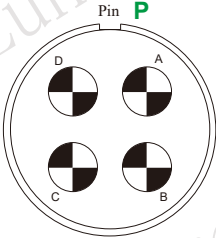
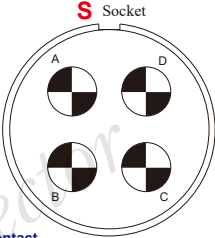
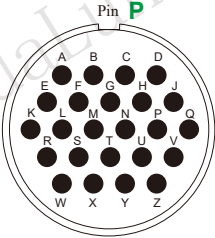
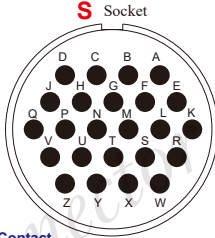
ISO9001 ISO14001 ISO45001

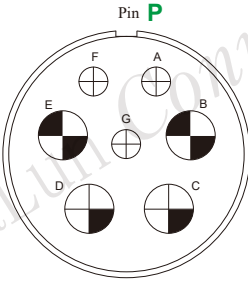
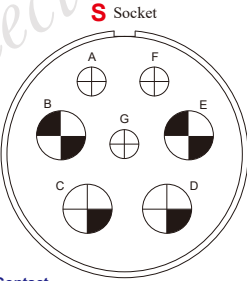
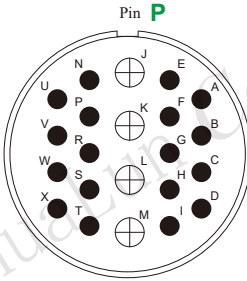
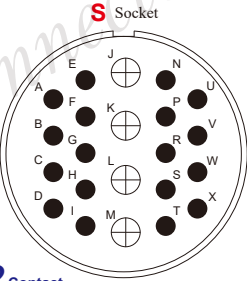
华伦连接器
HuaLun Connector

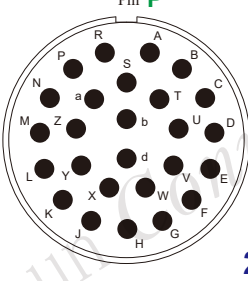
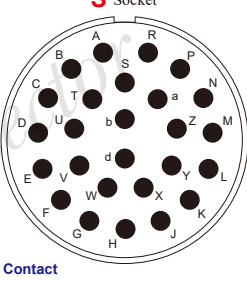
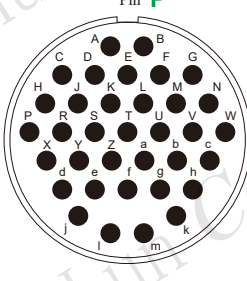
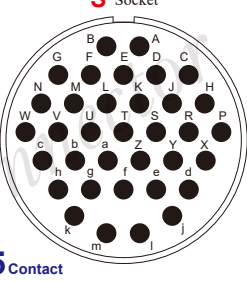
Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ⊗ 8# ⊕ 4#

Type	24			
P Shell Size- S Arrangement No.	P24-22	S24-22	P24-28	S24-28
Contact Arrangement	 4 Contact	 4 Contact	 24 Contact	 24 Contact
Contact Size×Contact Qty.	8# × 4		16# × 24	
Service Rating	D		Inst.	

Type	28			
P Shell Size- S Arrangement No.	P28-10	S28-10	P28-11	S28-11
Contact Arrangement	 7 Contact	 4# × 2	 22 Contact	 12# × 4
Contact Size×Contact Qty.	12# × 3	8# × 2	16# × 18	12# × 4
Service Rating	G = D		A	

Type	28			
P Shell Size- S Arrangement No.	P28-12	S28-12	P28-15	S28-15
Contact Arrangement	 26 Contact	 16# × 26	 35 Contact	 16# × 35
Contact Size×Contact Qty.	16# × 26		16# × 35	
Service Rating	A		A	

Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ⊗ 4#

Type	28			
P Shell Size- S Arrangement No.	P28-16	S28-16	P28-20	S28-20
Contact Arrangement	20 Contact		14 Contact	
Contact Size×Contact Qty.	16# × 20		16# × 4 12# × 10	
Service Rating	A		A	

Type	28			
P Shell Size- S Arrangement No.	P28-21	S28-21	P28-22	S28-22
Contact Arrangement	37 Contact		6 Contact	
Contact Size×Contact Qty.	16# × 37		16# × 3 4# × 3	
Service Rating	A		D	

Type	28		32	
P Shell Size- S Arrangement No.	P28-A9	S28-A9	P32-7	S32-7
Contact Arrangement	9 Contact		35 Contact	
Contact Size×Contact Qty.	16# × 5 4# × 4		16# × 28 12# × 7	
Service Rating	A		A.B.h.j = Inst. Other = A	



TUV SUD



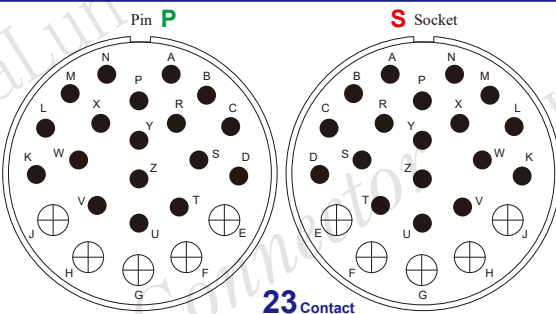
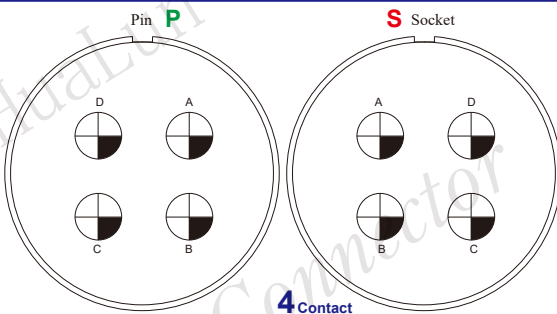
ISO9001 ISO14001 ISO45001

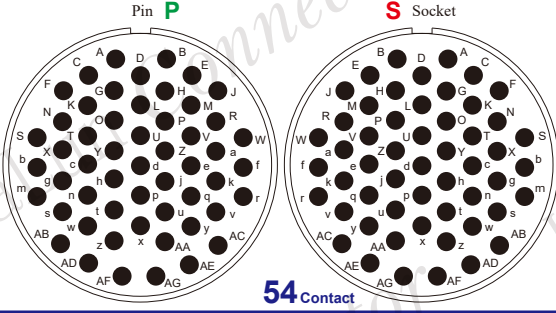
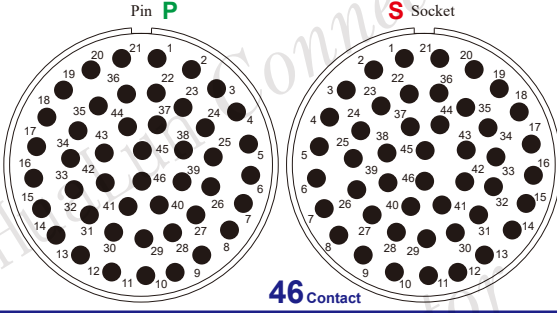
华伦连接器
HuaLun Connector

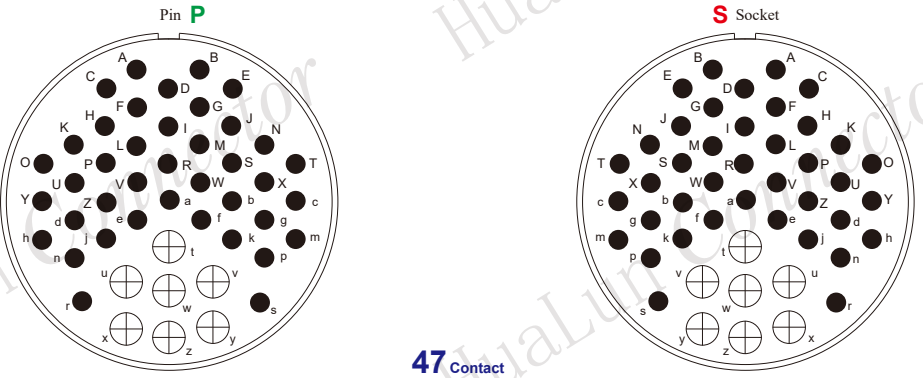
Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12# ⊕ 4#

Type	32			
P Shell Size- S Arrangement No.	P32-13	S32-13	P32-17	S32-17
Contact Arrangement				
Contact Size×Contact Qty.	16# × 18 12# × 5		4# × 4	
Service Rating	D		D	

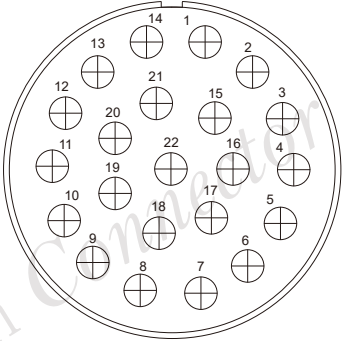
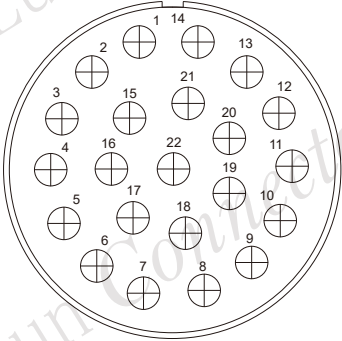
Type	32			
P Shell Size- S Arrangement No.	P32-22	S32-22	P32-73	S32-73
Contact Arrangement				
Contact Size×Contact Qty.	16# × 54		16# × 46	
Service Rating	A		A	

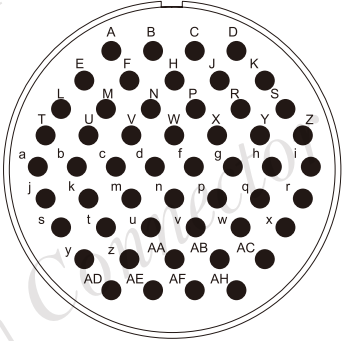
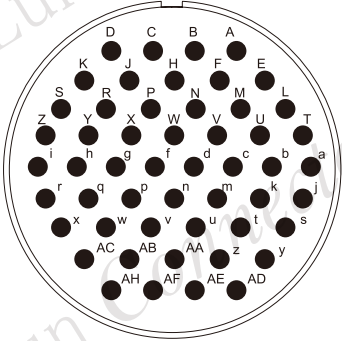
Type	36	
P Shell Size- S Arrangement No.	P36-7	S36-7
Contact Arrangement		
Contact Size×Contact Qty.	16# × 40	12# × 7
Service Rating	A	

Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12#

Type	36	
P Shell Size- S Arrangement No.	P36-A22	S36-A22
Contact Arrangement	Pin P  22 Contact S Socket 	
Contact Size×Contact Qty.	12# × 22	
Service Rating	D	

Type	36	
P Shell Size- S Arrangement No.	P36-52	S36-52
Contact Arrangement	Pin P  52 Contact S Socket 	
Contact Size×Contact Qty.	16# × 52	
Service Rating	A	



TUV SUD



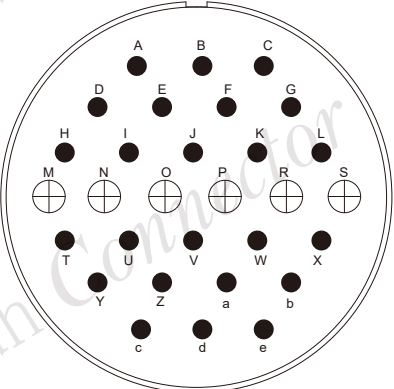
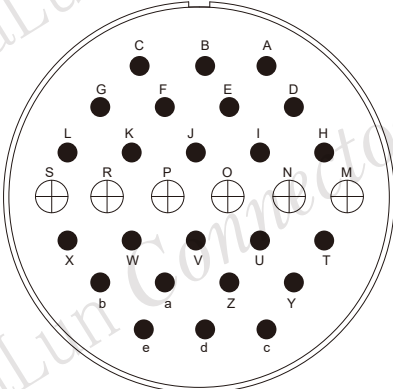
ISO9001 ISO14001 ISO45001

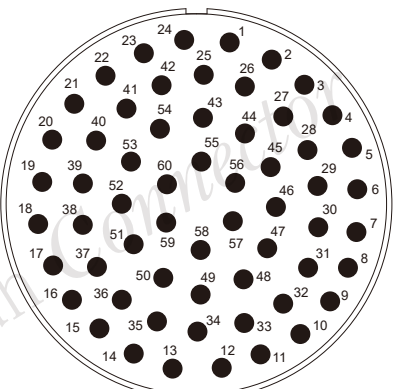
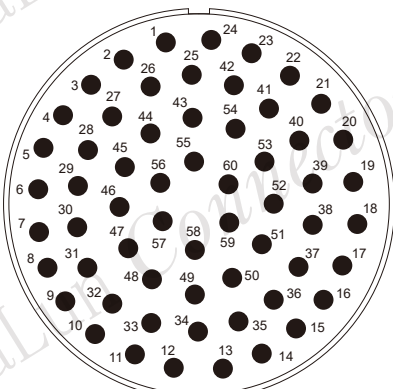
华伦连接器
HuaLun Connector

Shell Size - Arrangement No.

View from mating face

● 16# ⊕ 12#

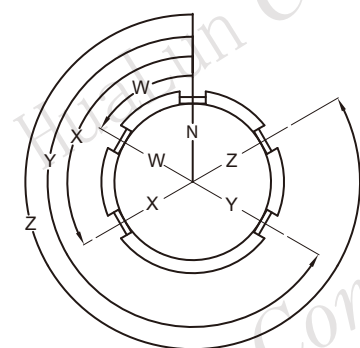
Type	40	
P Shell Size- S Arrangement No.	P40-1	S40-1
Contact Arrangement	Pin P  30 Contact S Socket 	
Contact Size×Contact Qty.	16# × 24	12# × 6
Service Rating	D	

Type	40	
P Shell Size- S Arrangement No.	P40-A60	S40-A60
Contact Arrangement	Pin P  60 Contact S Socket 	
Contact Size×Contact Qty.	16# × 60	
Service Rating	A	

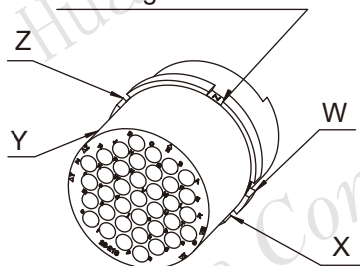
Angular Displacement Of Insert

When more than two connectors with same Insert are applied to a device together, to alternate the inserts to different angulars can prevent mismatching.

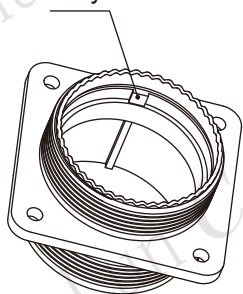
Front face of pin insert



N: Angular Position



Key



Insert Code	Angular Displacement Of Insert				
	N	W	X	Y	Z
14S-2	0	—	120	240	—
14S-5	0	—	110	—	—
14S-6	0	—	—	—	—
14S-7	0	90	180	270	—
14S-9	0	70	145	215	290
16S-1	0	80	—	—	280
16S-4	0	35	110	250	325
16S-5	0	70	145	215	290
16-9	0	35	110	250	325
16-10	0	90	180	270	—
18-1	0	70	145	215	290
18-3	0	35	110	250	325
18-10	0	—	120	240	—
18-11	0	—	170	265	—
18-12	0	80	—	—	280
18-19	0	—	120	240	—
18-20	0	90	180	270	—
18-22	0	70	145	215	290
20-3	0	70	145	215	290
20-4	0	45	110	250	—
20-7	0	80	110	250	280
20-15	0	80	—	—	280
20-16	0	80	110	250	280
20-18	0	35	110	250	325
20-27	0	35	110	250	325
20-29	0	80	—	—	280
20-33	0	—	—	—	—
22-2	0	70	145	215	290
22-5	0	35	110	250	325
22-8	0	35	110	250	325
22-10	0	35	110	250	325
22-14	0	80	110	250	280
22-18	0	80	110	250	280
22-19	0	80	110	250	280
22-20	0	35	110	250	325
22-22	0	—	110	250	—
22-23	0	35	—	250	—
22-28	0	80	—	—	280
24-2	0	80	—	—	280
24-5	0	80	110	250	280
24-7	0	80	110	250	280
24-10	0	80	—	—	280
24-11	0	35	110	250	325
24-20	0	80	110	250	280
24-22	0	45	110	250	—
24-28	0	80	110	250	280
28-10	0	80	110	250	280
28-11	0	80	110	250	280
28-12	0	90	180	270	—
28-15	0	80	110	250	280
28-16	0	80	110	250	280
28-20	0	80	110	250	280
28-21	0	80	110	250	280
28-22	0	70	145	215	290
28-A9	0	110	250	260	280
32-7	0	80	125	235	280
32-13	0	80	110	250	280
32-17	0	45	110	250	—
32-22	0	80	110	250	280
32-73	0	36	—	—	—
36-7	0	80	110	250	280
36-A22	0	80	110	250	280
36-52	0	72	144	216	288
40-1	0	65	130	235	300
40-A60	0	80	110	250	280

Note: 32-22 has two angles of U (100) and V (260), besides N, W, X, Y and Z.

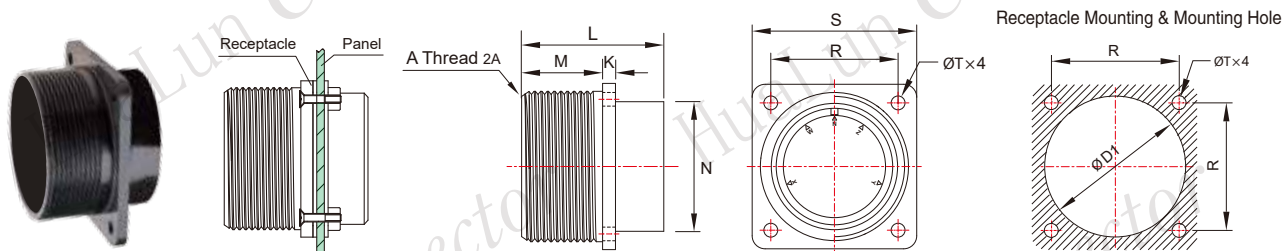
Size of Receptacle

Receptacle ①

(Panel Mounted)
(No Protective Enclosure)

Front Mounting

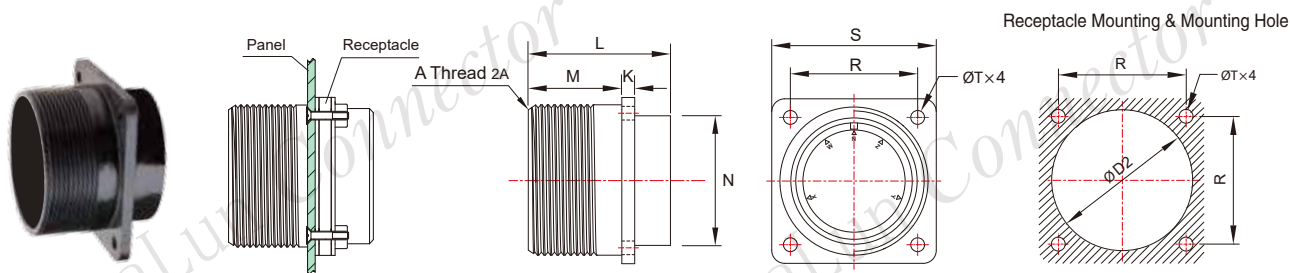
TMS3102



Shell Spec	A Thread 2A	M $\begin{smallmatrix} +0.2 \\ 0 \end{smallmatrix}$	L ± 0.3	K ± 0.2	ØN _{max}	S ± 0.3	R ± 0.1	ØT $\begin{smallmatrix} +0.1 \\ 0 \end{smallmatrix}$	ØD1 ± 0.2		
14S	$\frac{7}{8}$ -20UNEF	14.2	25.7	3.2	19.2	30.0	23.0	3.2	20.0		
16S	1-20UNEF		20.2		32.5	22.4	32.5		24.6	23.2	
16						25.6	35.0		27.0		26.6
18	$1\frac{1}{8}$ -18UNEF	29.0				38.0	29.4		30.0		
20	$1\frac{1}{4}$ -18UNEF	32.2				41.0	31.8				
22	$1\frac{3}{8}$ -18UNEF	35.3				44.5	34.9	3.7	36.3		
24	$1\frac{1}{2}$ -18UNEF	41.4	50.8		39.7	42.4					
28	$1\frac{3}{4}$ -18UNS	47.8	57.0		44.5		4.3		48.8		
32	2-18UNS	54.1	63.5		49.2	55.0					
36	$2\frac{1}{4}$ -16UN	59.0	69.9		55.5			60.0			
40	$2\frac{1}{2}$ -16UN										

Rear Mounting

TMS3122



Shell Spec	A Thread 2A	M ^{+0.2} ₀	L ±0.3	K ±0.2	ØN _{max}	S ±0.3	R ±0.1	ØT ^{+0.1} ₀	ØD2 ±0.2
14S	⁷ / ₈ -20UNEF	18.2	24.7	3.2	19.2	30.0	23.0	3.2	26.0
16S	1-20UNEF				22.4	32.5	24.6		28.4
16									
18	1 ¹ / ₈ -18UNEF	23.05	33.8		25.6	35.0	27.0		
20	1 ¹ / ₄ -18UNEF				29.0	38.0	29.4	35.5	
22	1 ³ / ₈ -18UNEF				32.2	41.0	31.8	38.5	
24	1 ¹ / ₂ -18UNEF				35.3	44.5	34.9	42.0	
28	1 ³ / ₄ -18UNS	24.05	37.3		41.4	50.8	39.7	3.7	48.0
32	2-18UNS				47.8	57.0	44.5		55.0
36	2 ¹ / ₄ -16UN				54.1	63.5	49.2	4.3	61.5
40	2 ¹ / ₂ -16UN			59.0	69.9	55.5	67.0		

Size of Receptacle

Receptacle ②

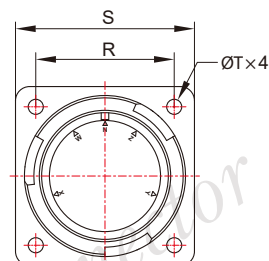
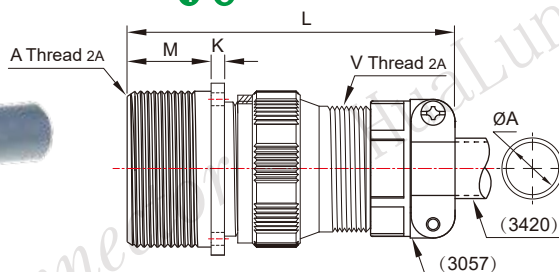
(Protective Enclosure)

(Clamp/Gland)

Front Mounting

TMS3100 Insulator ****A**

4 5

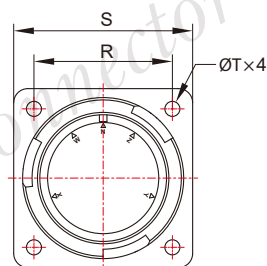
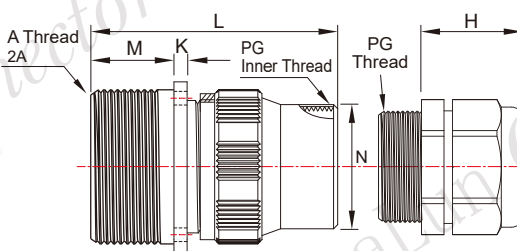


Shell Spec	A Thread 2A	V Thread 2A	Cable Clamp (3057)+(3420)	OD of Cable(mm)	ØA _{max}	L	M _{+0.2} ⁰	K _{±0.2}	S _{±0.3}	R _{±0.1}	ØT _{+0.1} ⁰
14S	7/8-20UNEF	3/4-20UNEF	14A	Ø 5-7	7.92	75~77	14.2	3.2	30.0	23.0	3.2
16S	1-20UNEF	7/8-20UNEF	16A	Ø 8-11	11.1				81~83	32.5	
16						35.0	27.0				
18	1 1/8-18UNEF	1-20UNEF	18A	Ø 11-14	14.3	83~85	38.0		29.4		
20	1 1/4-18UNEF	1 3/16-18UNEF	20A	Ø 14-16	16.2		41.0		31.8		
22	1 3/8-18UNEF					44.5	34.9				
24	1 1/2-18UNEF	1 7/16-18UNEF	24A	Ø 16-19	19.1	86~88	50.8		39.7	3.7	
28	1 3/4-18UNS						28A		57.0		44.5
32	2-18UNS	1 3/4-18UNS	32A	Ø 19-23	23.8	88~91	63.5		49.2	4.3	
36	2 1/4-16UN	2-18UNS	36A	Ø 24-31	31.7	90~92	69.9		55.5		
40	2 1/2-16UN	2 1/4-16UN	40A	Ø 31-34	35.0	103~105					

Front Mounting

TMS3100 Insulator **PG****

4 5



Shell Spec	A Thread 2A	PG Inner Thread	OD of Cable(mm)	ØN _{max}	L ±0.3	M ^{+0.2} ₀	K ±0.2	H	S ±0.3	R ±0.1	ØT ^{+0.1} ₀
14S	7/8-20UNEF	PG9	Ø 4-8	19.2	52.7	14.2	3.2	22.0	30.0	23.0	3.2
16S	1-20UNEF	PG13.5	Ø 6-12	24.6				57.5	27.0	32.5	
16					28.0	35.0			27.0		
18	1 1/8-18UNEF	PG16	Ø 8.5-14	27.6	31.0	38.0		29.4			
20	1 1/4-18UNEF	PG21	Ø 12.5-18	33.6	58.0	20.2		41.0	31.8		
22	1 3/8-18UNEF							44.5	34.9		
24	1 1/2-18UNEF	PG25	Ø 14-20	37.6	33.0	50.8		39.7			
28	1 3/4-18UNS				37.0	57.0		44.5			
32	2-18UNS	PG29	Ø 18-25	42.0	51.2	4.3		48.0	63.5	49.2	
36	2 1/4-16UN	PG36	Ø 24-32	51.2				69.9	55.5		
40	2 1/2-16UN										

Size of Receptacle

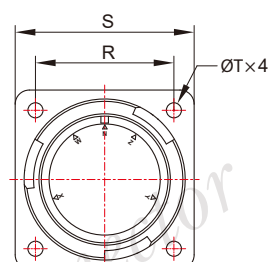
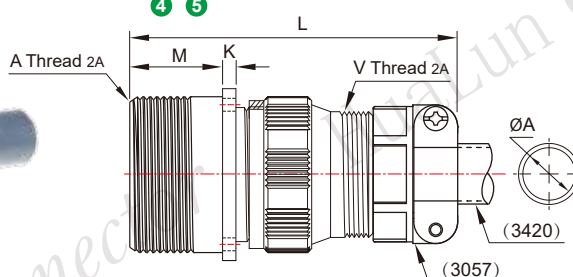
Receptacle ②

(Protective Enclosure)

(Clamp/Gland)

Rear Mounting

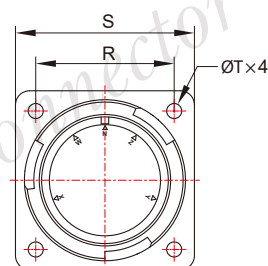
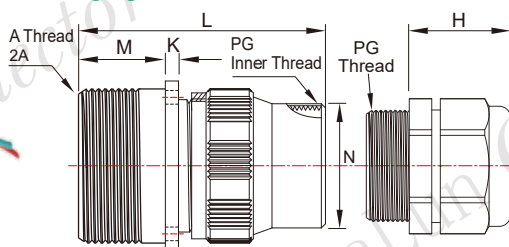
TMS3120 Insulator **A



Shell Spec	A Thread 2A	V Thread 2A	Cable Clamp (3057)+(3420)	OD of Cable(mm)	ØA _{max}	L	M ^{+0.2 0}	K _{±0.2}	S _{±0.3}	R _{±0.1}	ØT _{±0.1 0}
14S	7/8-20UNEF	3/4-20UNEF	14A	Ø 5-7	7.92	75~77	18.2	3.2	30.0	23.0	3.2
16S	1-20UNEF	7/8-20UNEF	16A	Ø 8-11	11.1	81~83	23.05		32.5	24.6	
16						83~85			35.0	27.0	
18	1 1/8-18UNEF	1-20UNEF	18A	Ø 11-14	14.3	83~85			38.0	29.4	
20	1 1/4-18UNEF	1 3/16-18UNEF	20A	Ø 14-16	16.2	86~88			41.0	31.8	
22	1 3/8-18UNEF		22A						44.5	34.9	
24	1 1/2-18UNEF	1 7/16-18UNEF	24A	Ø 16-19	19.1	24.05	50.8		39.7	3.7	
28	1 3/4-18UNS		28A				57.0		44.5		
32	2-18UNS	1 3/4-18UNS	32A	Ø 19-23	23.8		88~91		63.5	49.2	4.3
36	2 1/4-16UN	2-18UNS	36A	Ø 24-31	31.7		90~92		69.9	55.5	
40	2 1/2-16UN	2 1/4-16UN	40A	Ø 31-34	35.0		103~105				

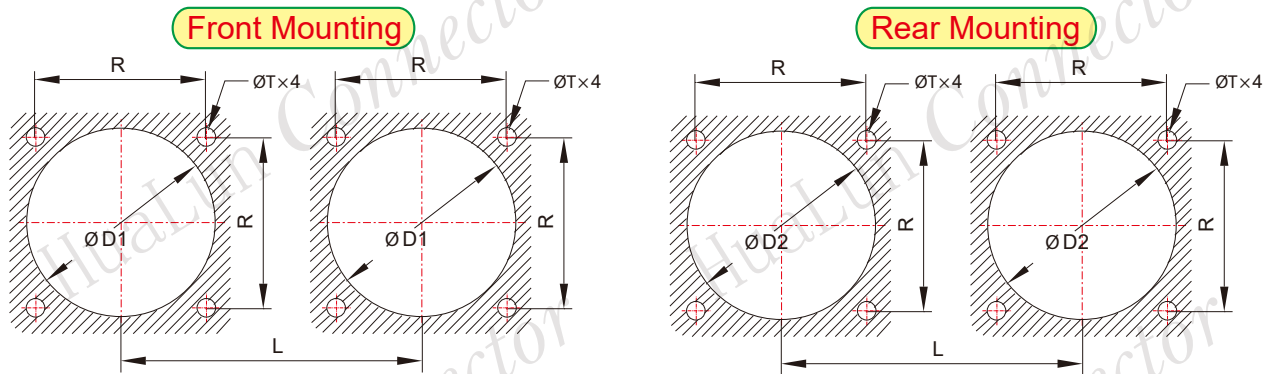
Rear Mounting

TMS3120 Insulator PG**



Shell Spec	A Thread 2A	PG Inner Thread	OD of Cable(mm)	ØN _{max}	L ±0.3	M ^{+0.2} ₀	K ±0.2	H	S ±0.3	R ±0.1	ØT ^{+0.1} ₀
14S	7/8-20UNEF	PG9	Ø 4-8	19.2	52.7	18.2	3.2	22.0	30.0	23.0	3.2
16S	1-20UNEF	PG13.5	Ø 6-12	24.6				57.5	27.0	32.5	
16					28.0	35.0			27.0		
18	1 1/8-18UNEF	PG16	Ø 8.5-14	27.6	23.05	31.0		38.0	29.4		
20	1 1/4-18UNEF	PG21	Ø 12.5-18	33.6		33.0		41.0	31.8		
22	1 3/8-18UNEF							44.5	34.9		
24	1 1/2-18UNEF	PG25	Ø 14-20	37.6	58.0	50.8		39.7	3.7		
28	1 3/4-18UNS										
32	2-18UNS	PG29	Ø 18-25	42.0	24.05	37.0		57.0	44.5	4.3	
36	2 1/4-16UN	PG36	Ø 24-32	51.2		48.0		63.5	49.2		
40	2 1/2-16UN							69.9	55.5		

Receptacle Mounting & Mounting Hole

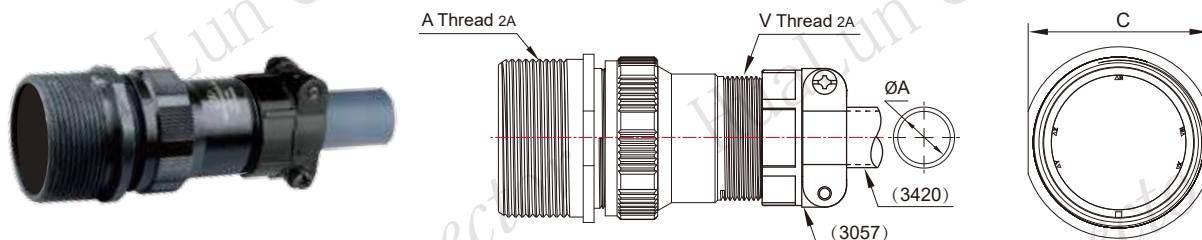


Shell Spec	ØT ^{+0.1} ₀	ØD1 _{±0.2}	ØD2 _{±0.2}	R _{±0.1}	L	Screw Spec
14S	3.2	20.0	26.0	23.0	33.0	M3 × 10
16S		23.2	28.4	24.6	34.4	
16						
18						
20		30.0	35.5	29.4	41.7	
22	3.7	33.2	38.5	31.8	45.2	M4 × 12
24		36.3	42.0	34.9	48.7	
28	4.3	42.4	48.0	39.7	55.5	
32		48.8	55.0	44.5	62.4	
36		55.0	61.5	49.2	69.0	
40		60.0	67.0	55.5	75.0	

Size of Receptacle

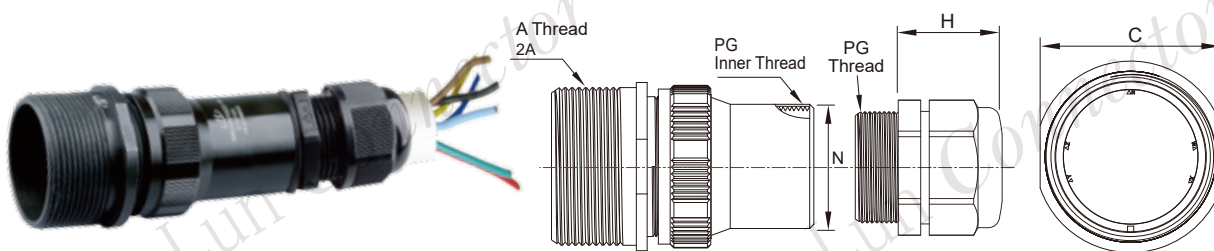
Receptacle ③ (Free)

Free TMS3101 Insulator **A



Shell Spec	A Thread 2A	V Thread 2A	Cable Clamp (3057)+(3420)	OD of Cable(mm)	ØA max	C
14S	7/8-20UNEF	3/4-20UNEF	14A	Ø 5-7	7.92	25.2
16S	1-20UNEF	7/8-20UNEF	16A	Ø 8-11	11.1	28.8
16						
18	1 1/8-18UNEF	1-20UNEF	18A	Ø 11-14	14.3	31.5
20	1 1/4-18UNEF	1 3/16-18UNEF	20A	Ø 14-16	16.2	34.6
22	1 3/8-18UNEF		22A			38.0
24	1 1/2-18UNEF	1 7/16-18UNEF	24A	Ø 16-19	19.1	41.5
28	1 3/4-18UNS		28A			47.0
32	2-18UNS	1 3/4-18UNS	32A	Ø 19-23	23.8	53.7
36	2 1/4-16UN	2-18UNS	36A	Ø 24-31	31.7	60.2
40	2 1/2-16UN	2 1/4-16UN	40A	Ø 31-34	35.0	66.2

Free TMS3101 Insulator PG**



Shell Spec	A Thread 2A	PG Inner Thread	OD of Cable(mm)	ØN max	H	C
14S	7/8-20UNEF	PG9	Ø 4-8	19.2	22.0	25.2
16S	1-20UNEF	PG13.5	Ø 6-12	24.6	27.0	28.8
16						
18	1 1/8-18UNEF	PG16	Ø 8.5-14	27.6	28.0	31.5
20	1 1/4-18UNEF	PG21	Ø 12.5-18	33.6	31.0	34.6
22	1 3/8-18UNEF					38.0
24	1 1/2-18UNEF	PG25	Ø 14-20	37.6	33.0	41.5
28	1 3/4-18UNS					47.0
32	2-18UNS	PG29	Ø 18-25	42.0	37.0	53.7
36	2 1/4-16UN	PG36	Ø 24-32	51.2	48.0	60.2
40	2 1/2-16UN					66.2

Size of Receptacle

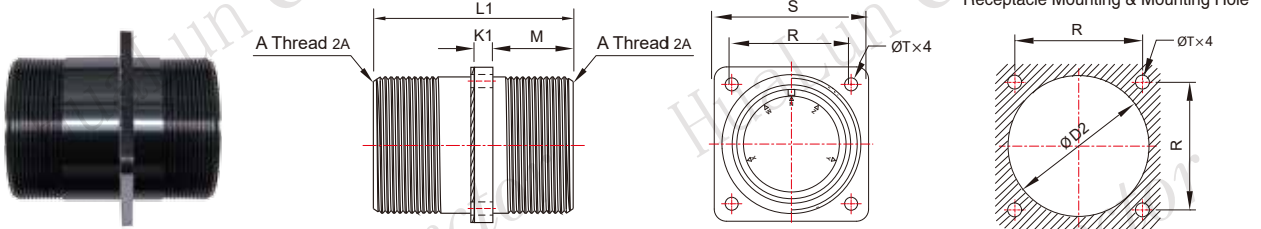
Receptacle ④

(Adapter)

Adapter

TMS31022

(Square flange)

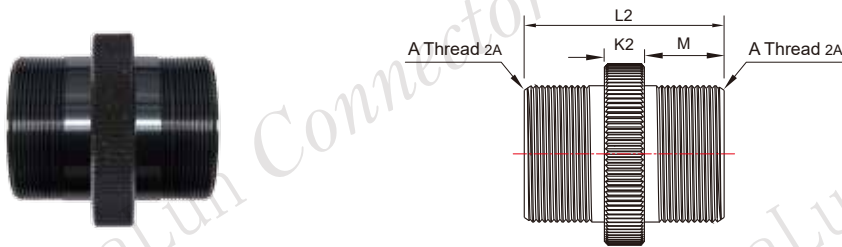


Shell Spec	A Thread 2A	L1 ±0.7	K1 ±0.2	M ^{+0.2} ₀	S ±0.3	R ±0.1	ØT ^{+0.1} ₀	ØD2 ±0.2
14S	7/8-20UNEF	37.5	3.2	14.20	30.0	23.0	3.2	26.0
16S	1-20UNEF				32.5	24.6		28.4
16		19.0	35.0	27.0	32.0			
18			1 1/8-18UNEF	38.0	29.4	35.5		
20	1 1/4-18UNEF		41.0	31.8	38.5			
22	1 3/8-18UNEF	51.4	4.0	20.6	44.5	34.9	3.7	42.0
24	1 1/2-18UNEF				50.8	39.7		48.0
28	1 3/4-18UNS			22.2	57.0	44.5	4.3	55.0
32	2-18UNS				63.5	49.2		61.5
36	2 1/4-16UN				69.9	55.5		67.0
40	2 1/2-16UN							

Adapter

TMS31011

(Round flange)

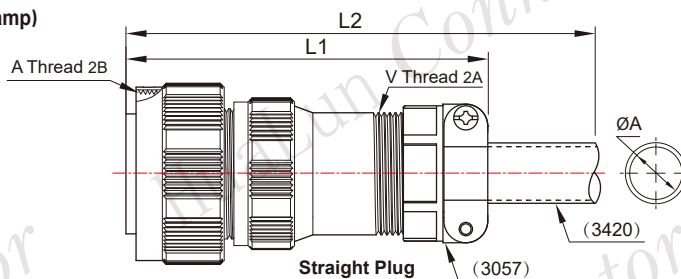


Shell Spec	A Thread 2A	L2 ±0.7	K2 ±0.2	M +0.2 0
14S	7/8-20UNEF	39.4	11.0	14.20
16S	1-20UNEF			
16		49.0		
18	11/8-18UNEF			
20				11/4-18UNEF
22	13/8-18UNEF			
24				11/2-18UNEF
28	13/4-18UNS			
32		2-18UNS		
36	21/4-16UN			
40		21/2-16UN		
			52.2	20.6
		55.4	22.2	

Size of Plug

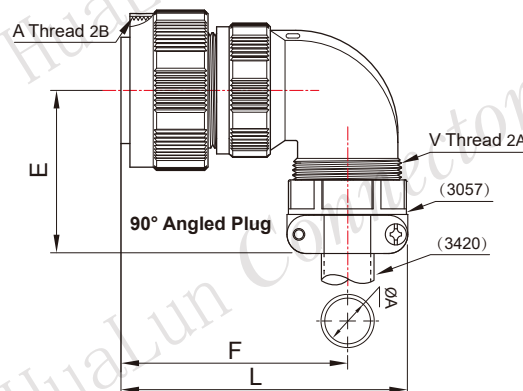
Plug

TMS3106 Insulator **A (Cable Clamp)



Shell Spec	A Thread 2B	V Thread 2A	Cable Clamp (3057) + (3420)	OD of Cable(mm)	ØA max	L1 max	L2 max
14S	7/8-20UNEF	3/4-20UNEF	14A	Ø 5-7	7.92	82	115
16S	1-20UNEF	7/8-20UNEF	16A	Ø 8-11	11.1	87	118
16							
18	1 1/8-18UNEF	1-20UNEF	18A	Ø 11-14	14.3		
20	1 1/4-18UNEF	1 3/16-18UNEF	20A	Ø 14-16	16.2	89	
22	1 3/8-18UNEF		22A			92	121
24	1 1/2-18UNEF	1 7/16-18UNEF	24A	Ø 16-19	19.1	95	124
28	1 3/4-18UNS		28A				
32	2-18UNS	1 3/4-18UNS	32A	Ø 19-23	23.8	96	127
36	2 1/4-16UN	2-18UNS	36A	Ø 24-31	31.7	100	
40	2 1/2-16UN	2 1/4-16UN	40A	Ø 31-34	35.0	112	

TMS3108 Insulator **A (Cable Clamp)



Shell Spec	A Thread 2B	V Thread 2A	Cable Clamp (3057) + (3420)	OD of Cable(mm)	ØA max	E max	F max	L max
14S	7/8-20UNEF	3/4-20UNEF	14A	Ø 5-7	7.92	40.0	47.0	70.0
16S	1-20UNEF	7/8-20UNEF	16A	Ø 8-11	11.1	40.8	59.5	72.5
16								
18	1 1/8-18UNEF	1-20UNEF	18A	Ø 11-14	14.3	41.7	60.4	75.5
20	1 1/4-18UNEF	1 3/16-18UNEF	20A	Ø 14-16	16.2	42.6	61.8	79.0
22	1 3/8-18UNEF		22A			44.0		
24	1 1/2-18UNEF	1 7/16-18UNEF	24A	Ø 16-19	19.1	54.6	68.4	89.5
28	1 3/4-18UNS		28A					
32	2-18UNS	1 3/4-18UNS	32A	Ø 19-23	23.8	58.5	72.9	98.6
36	2 1/4-16UN	2-18UNS	36A	Ø 24-31	31.7	62.0	73.9	102.0
40	2 1/2-16UN	2 1/4-16UN	40A	Ø 31-34	35.0	79.0	76.9	108.7

Size of Plug

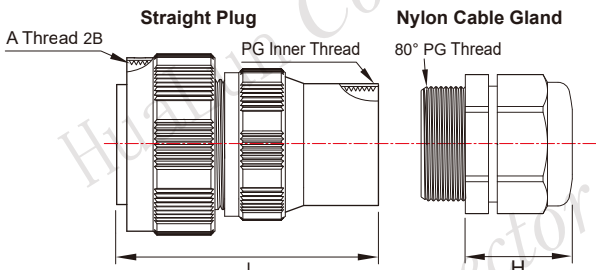
Plug

TMS3106 Insulator PG** (Nylon Cable Gland)

4 5



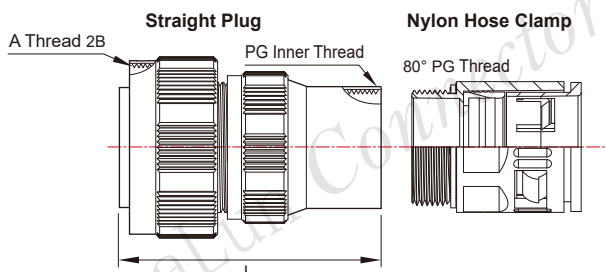
IP67



Shell Spec	A Thread 2B	PG Inner Thread	OD of Cable(mm)	L	H
14S	7/8-20UNEF	PG9	Ø 4-8	50	22.0
16S	1-20UNEF	PG13.5	Ø 6-12	60	27.0
16					28.0
18	1 1/8-18UNEF	PG16	Ø 8.5-14	60	31.0
20	1 1/4-18UNEF	PG21	Ø 12.5-18		33.0
22	1 3/8-18UNEF	PG25	Ø 14-20	65	37.0
24	1 1/2-18UNEF				48.0
28	1 3/4-18UNS	PG29	Ø 18-25	80	33.0
32	2-18UNS				37.0
36	2 1/4-16UN	PG36	Ø 24-32	80	48.0
40	2 1/2-16UN				

TMS3106 Insulator G** (Nylon Hose Clamp)

4 5

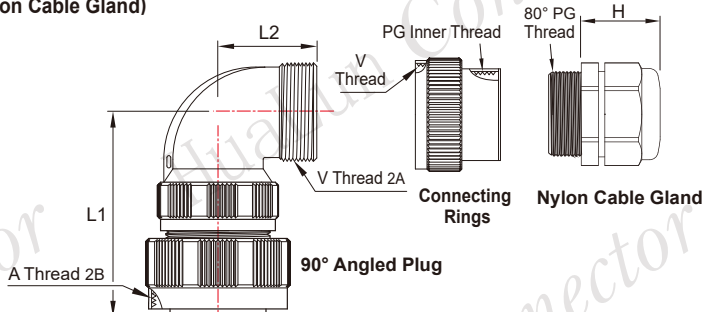


Shell Spec	A Thread 2B	PG Inner Thread	OD of Cable(mm)	L	Nylon Hose Clamp Code
14S	7/8-20UNEF	PG9	Ø 4-8	50	G9
16S	1-20UNEF	PG13.5	Ø 6-12	60	G13.5
16					G16
18	1 1/8-18UNEF	PG16	Ø 8.5-14	60	G21
20	1 1/4-18UNEF	PG21	Ø 12.5-18		G25
22	1 3/8-18UNEF	PG25	Ø 14-20	65	G29
24	1 1/2-18UNEF				G36
28	1 3/4-18UNS	PG29	Ø 18-25	80	
32	2-18UNS				
36	2 1/4-16UN	PG36	Ø 24-32	80	
40	2 1/2-16UN				

Size of Plug

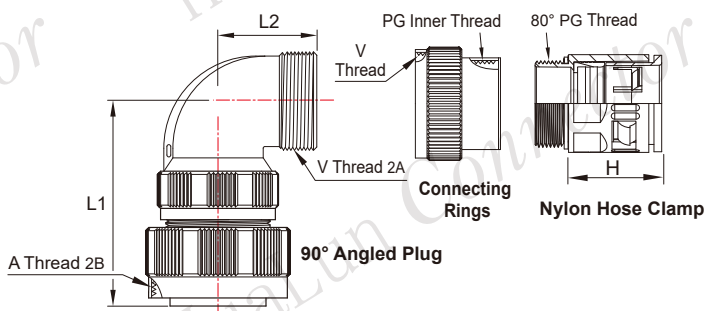
Plug

TMS3108 Insulator **PG**** (Nylon Cable Gland)



Shell Spec	A Thread 2B	L1±0.2	L2±0.2	V Thread 2A	PG Inner Thread	OD of Cable(mm)	H
14S	7/8-20UNEF	47	30	3/4-20UNEF	PG9	Ø 4-8	22.0
16S	1-20UNEF	48		7/8-20UNEF	PG13.5	Ø 6-12	27.0
16		57					
18	1 1/8-18UNEF	58	35	1-20UNEF	PG16	Ø 8.5-14	28.0
20	1 1/4-18UNEF	61		1 3/16-18UNEF	PG21	Ø 12.5-18	31.0
22	1 3/8-18UNEF						
24	1 1/2-18UNEF	66	40	1 7/16-18UNEF	PG25	Ø 14-20	33.0
28	1 3/4-18UNS						
32	2-18UNS	72	45	1 3/4-18UNS	PG29	Ø 18-25	37.0
36	2 1/4-16UN	75	50	2-18UNS	PG36	Ø 24-32	48.0
40	2 1/2-16UN	78	55	2 1/4-16UN			

TMS3108 Insulator **G**** (Nylon Hose Clamp)



Shell Spec	A Thread 2B	L1 ±0.2	L2 ±0.2	V Thread 2A	PG Inner Thread	OD of Cable(mm)	Nylon Hose Clamp Code
14S	7/8-20UNEF	47	30	3/4-20UNEF	PG9	Ø 4-8	G9
16S	1-20UNEF	48		7/8-20UNEF	PG13.5	Ø 6-12	G13.5
16		57					
18	1 1/8-18UNEF	58	35	1-20UNEF	PG16	Ø 8.5-14	G16
20	1 1/4-18UNEF	61		1 3/16-18UNEF	PG21	Ø 12.5-18	G21
22	1 3/8-18UNEF						
24	1 1/2-18UNEF	66	40	1 7/16-18UNEF	PG25	Ø 14-20	G25
28	1 3/4-18UNS						
32	2-18UNS	72	45	1 3/4-18UNS	PG29	Ø 18-25	G29
36	2 1/4-16UN	75	50	2-18UNS	PG36	Ø 24-32	G36
40	2 1/2-16UN	78	55	2 1/4-16UN			

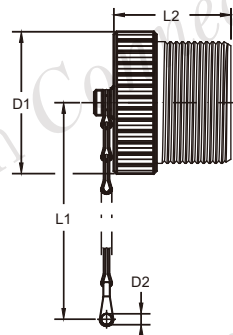
Protection Cap-Parts To Be Ordered Separately

Plug

Protection Cap



Size of Cap



Unit: mm

Dust Cap Code	Application
TMS25042-14	Shell 14 Plug
TMS25042-16	Shell 16 Plug
TMS25042-18	Shell 18 Plug
TMS25042-20	Shell 20 Plug
TMS25042-22	Shell 22 Plug
TMS25042-24	Shell 24 Plug
TMS25042-28	Shell 28 Plug
TMS25042-32	Shell 32 Plug
TMS25042-36	Shell 36 Plug
TMS25042-40	Shell 40 Plug

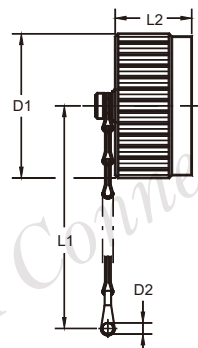
Shell Spec	D1 Max	D2 ^{+0.6} -0	L1 Max	L2 Max
14S	27.5	4.3	100	29
16S	30.0		115	37
16				
18				
20	4.7	130		
22				
24				
28				
32	5.5	190		
36				
40				

Receptacle

Protection Cap



Size of Cap



Unit: mm

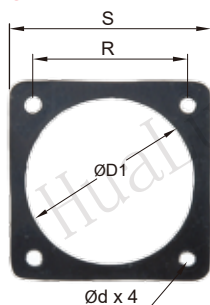
Dust Cap Code	Application
TMS25043-14	Shell 14 Receptacle
TMS25043-16	Shell 16 Receptacle
TMS25043-18	Shell 18 Receptacle
TMS25043-20	Shell 20 Receptacle
TMS25043-22	Shell 22 Receptacle
TMS25043-24	Shell 24 Receptacle
TMS25043-28	Shell 28 Receptacle
TMS25043-32	Shell 32 Receptacle
TMS25043-36	Shell 36 Receptacle
TMS25043-40	Shell 40 Receptacle

Shell Spec	D1 Max	D2 ^{+0.6} -0	L1 Max	L2 Max
14S	30.5	4.3	90	20
16S	33.0		100	25
16				
18	115			
20				
22				
24				
28				
32	5.5	160		
36				
40				

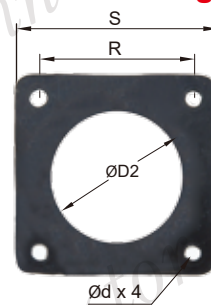
Mounting Plate & Gasket

Rubber Sealing Gasket Size

● Rear Mounting

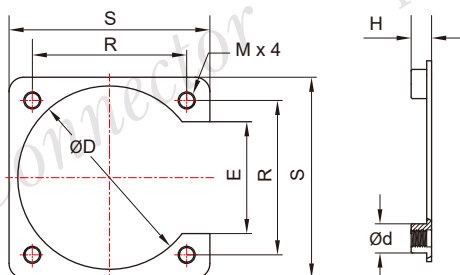
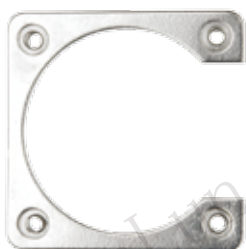


● Front Mounting



Shell Size	Rear Mounting ØD1	$R_{\pm 0.1}$	$S_{\pm 0.3}$	$\phi d_{+0.1/0}$	Front Mounting ØD2
14S	24.9	23.0	28.6	3.5	22.1
16S、16	28.2	24.6	32.5		25.3
18	30.9	27.0	35.0		28.4
20	34.3	29.4	38.0		31.6
22	37.7	31.8	41.3		34.8
24	41.2	34.9	44.5	3.7	38
28	46.8	39.7	50.8		44.3
32	53.4	44.5	57.2	4.5	50.7
36	59.6	49.2	63.5		57
40	65.5	55.5	69.9	5.0	61.9

Mounting Plate(Metal) Order Code, Size



Especially Recommended



Mounting Plate & Gasket

Code	Shell Size	$R_{\pm 0.1}$	$S_{\pm 0.3}$	ϕD	E	H	$\phi d_{+0.1/0}$	Thread M	Screw Spec
SG14	14S	23.0	30.0	24.9	15.8	2.6	6.3	M3	M3 x 10
SG16	16S、16	24.6	32.3	28.2	17.9				
SG18	18	27.0	34.6	30.9	20.2				
SG20	20	29.4	38.5	34.3	22.5				
SG22	22	31.8	40.8	37.7	23.5				
SG24	24	34.9	44.8	41.2	25.9				
SG28	28	39.7	51.2	46.8	29.1	3.0	8.0	M4	M4 x 12
SG32	32	44.5	59.1	53.4	30.7				
SG36	36	49.2	63.9	59.6	35.5				
SG40	40	55.5	74.7	65.5	38.6				



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