ANKNOR

FIBER OPTIC CONNECTOR

Shenzhen Anknor Technology Co., Ltd. (ANKNOR) is a wholly-owned subsidiary of MOFLON, a global manufacturer of high-end precision rotary connectors. ANKNOR focuses on the research, development, production, and sales of high-precision connector products, committed to providing customized and highly reliable connection solutions for global customers.

MOFLON, with its factory located in Shajing, Shenzhen, employs over 500 people and has an annual sales revenue exceeding 300 million RMB. With a 20,000 square meter high-tech factory, MOFLON is dedicated to high-end manufacturing, driving industry development with high-quality products. Its products are widely exported to developed countries in Europe, America, and Japan, and have entered the European and American aerospace and military industries. MOFLON has established long-term and friendly cooperative relationships with many internationally renowned brands. Over 60% of its products are customized, widely used in robotics, CCTV camera systems, packaging machinery, medical instruments, and automation systems. The company has also obtained ISO 9001, UL, CE, and other relevant certifications.

Leveraging the strong resources of its parent company, ANKNOR can undertake highly demanding and complex special customization needs, continuing the parent company's advantage of over 60% customized product sales. Its products include standard and customized high-precision conductive slip rings and standard and customized industrial connectors, possessing characteristics such as high precision, high stability, and strong adaptability, with performance comparable to international advanced levels.

ANKNOR's products are applied in various high-end fields, including aerospace, marine, military, robotics, automotive, medical instruments, intelligent manufacturing, automation systems, weaponry, railways, oil exploration, wind power generation, and agricultural informatization.

In the future, ANKNOR will use its parent company's technological expertise as a solid foundation, with innovation as its core driving force, to build a benchmark brand in its niche market, creating more valuable connection solutions for global customers and jointly exploring new opportunities in the industry

Office environment

PRECISE

Precise Production Control, High Quality and Efficiency

QUALITY

Rigorous testing ensures product quality


Connector vibration testing

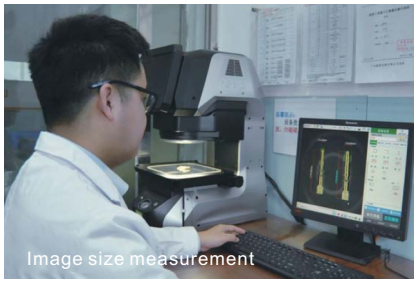
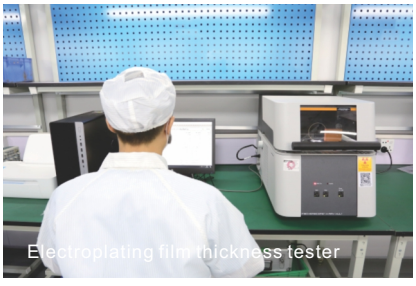
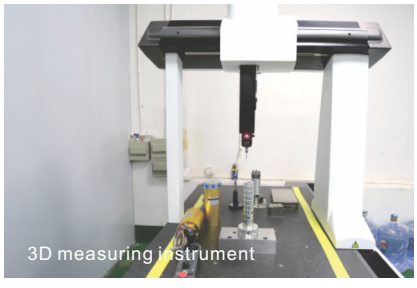


Image size measurement


2D measuring instrument


Salt spray testing


Electroplating film thickness tester

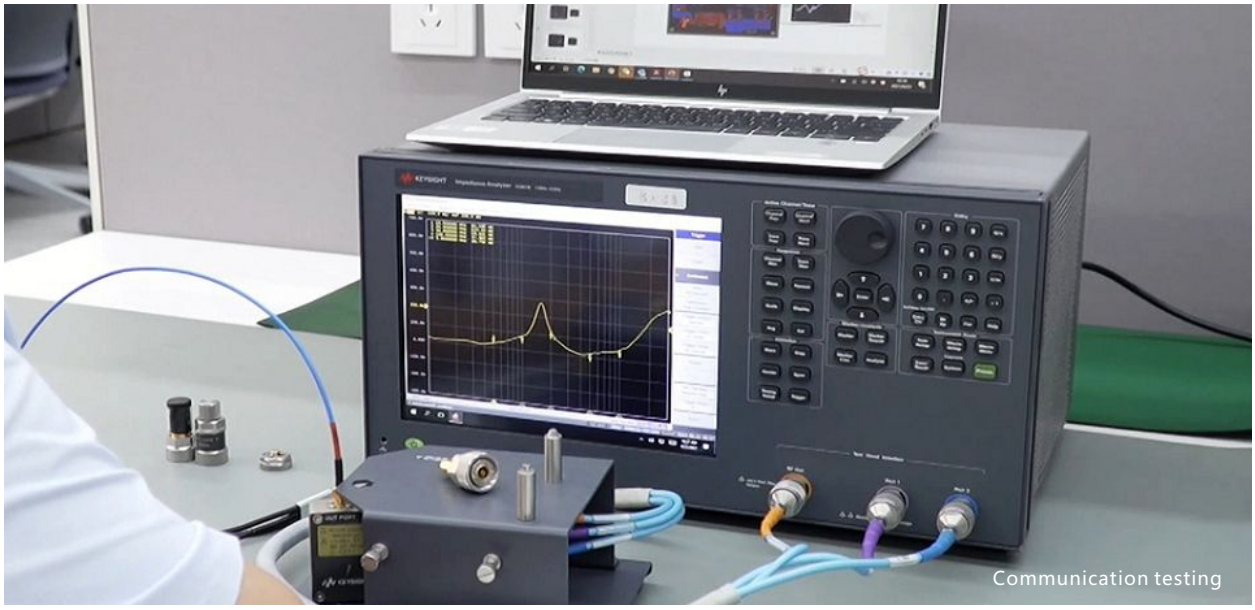

3D measuring instrument


Hardness tester


High and low temperature test chamber

Dustproof testing

Waterproof testing



HONOR

Honors and Qualifications

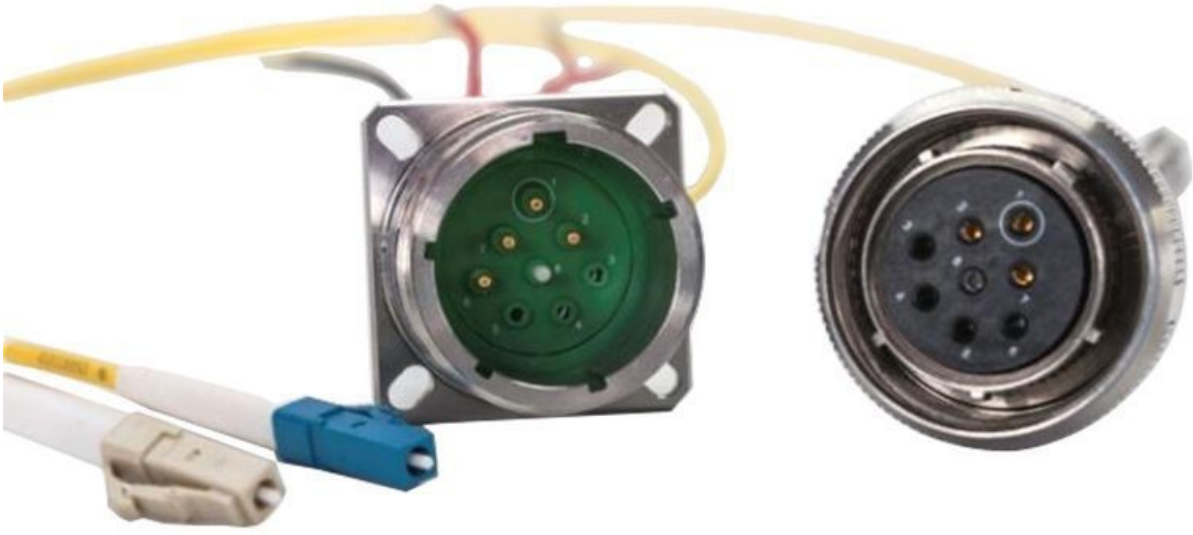
CONTENT

J599Ⅲ Series

optoelectronic hybrid connector

Features

- Compliant with GJB599B (MIL-DTL-38999) Series III interface
- The outer shell can be made of different materials and plated with different layers to adapt to different environmental requirements
- Five-key positioning, featuring blind insertion and error-proof insertion functions
- Three-head threaded quick connection, equipped with an anti-loosening mechanism
- Ceramic pins and sleeves are used to achieve precise mating
- There are various tail attachment options to choose from
- It can transmit both optical and electrical signals simultaneously
- It has electromagnetic shielding function



The pictures are for reference only

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Part# Explanation

J599/ 26 W A 1G2 S N 51 H

- Connector series main name
- Connector type:
  26-Shielded plug 20-way socket
  24-nut fastening socket
- Material and surface treatment:
  K-Stainless steel passivation
  F-Electroless nickel plating W-Cadmium plating
  MW-Cadmium plating (resistant to marine environment)
- Shell number

09	11	13	15	17	19	21	23	25
A	B	C	D	E	F	G	H	J

- Contact number:
  See "Contact Arrangement Table"
  The number before "G" indicates the quantity of optical contacts,
  The number following "G" indicates the number of electrical contacts
- Contact form:
  P-pin, crimp and solder type
  S-jack, crimp and solder type
- Key positions:
  N, B, C, D, E
  Where N represents the normal key position
- Design serial number:
  Omitted if there are no attachments or special requirements
- Contact termination marking
  (Applicable only to soldered connectors)
  H-welding contact

Example of model marking

J599/26WA1G2SN-H: J599 series shielded plug, with a cadmium plating material, A-type housing, 1G2-type contact, and one optical jack and two electrical jacks as contact elements. The electrical contact elements are terminated by soldering, with N key positions.

Main technical indicators

Mechanical properties

Mechanical lifespan	500 cycles of insertion and extraction
Impact/Shock	3ms half sine wave, acceleration 2940m/s²
Vibration	10Hz~2000Hz, acceleration 196m/s²

Environmental performance

Salt spray test	Category K	Category F	Category W	Category MW
	500h	48h	500h	192h
Temperature range	−55℃ to +85℃ (based on the temperature of the optical cable)			

Optical performance

Insertion loss	≤1dB

Electrical performance

Shell conductivity	Type W: 2.5mΩ/Type F: 1mΩ
Shielding efficiency	Reaching 65dB(F)/50dB(W) at 10GHz; reaching 85dB(F and W) at 1GHz

Differential contact No. 8 / 100 ohm contact specification

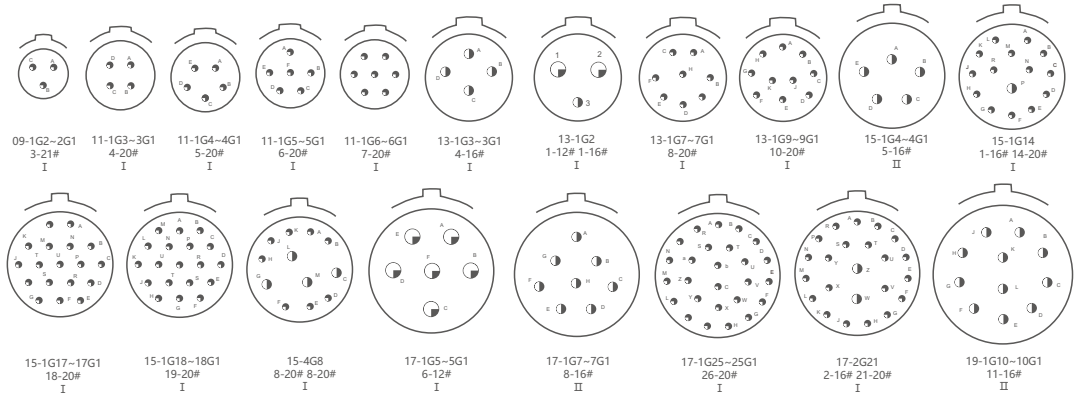
Node arrangement	2-core or 4-core
Characteristic impedance	100 Ω
Transmission rate	0~1.65Gbps
Transmission protoco	compatible with Gigabit Ethernet, AFDX, DVI, LVDS, and other differential signal transmissions
Voltage resistance (Vrms)	500V from the center conductor to the outer conductor under normal conditions AC, 500VAC between center conductors
Contact resistance	≤15mΩ (only for the central conductor)
Insulation resistance	≥5000MΩ (500Vdc)
Rated current	central conductor 1A

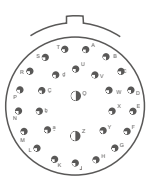
110Ω Contact specification

Node arrangement	4-Core
Characteristic impedance	110Ω
Transmission rate	0~800Mbps
Transmission protocol	compliant with AS5643 and AS5706 requirements, meeting the transmission of differential signals such as IEEE1394b-2002
Voltage resistance (Vrms)	Under normal conditions, the voltage from the center conductor to the outer conductor is 500V AC, 500VAC between center conductors
Contact resistance	≤15m (only for the central conductor)
Insulation resistance	≥5000MΩ (500Vdc)
Rated current	1A for the central conductor

Contact arrangement (view of the mating surface of the pin insulator)

20# 16# 12#

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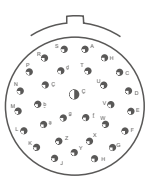
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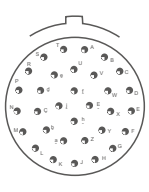
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32-20#
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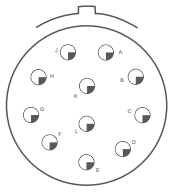
21-1G10~10G1
11-12#
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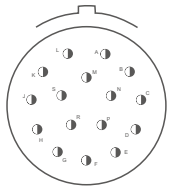
21-1G15~15G1
16-16#
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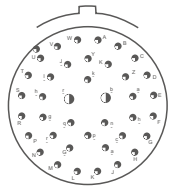
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2-16# 37-20#
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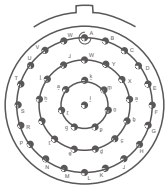
21-1G40~40G1
41-20#
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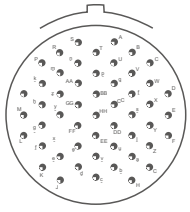
23-1G52~51G1
53-20#
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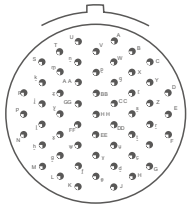
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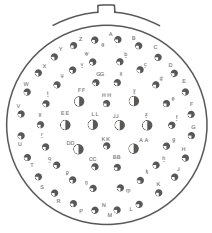
25-8G48
8-16# 48-20#
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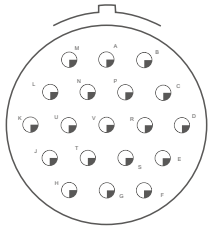
25-1G18~18G1
19-12#
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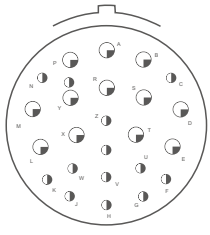
25-12G12
12-12# 12-16#
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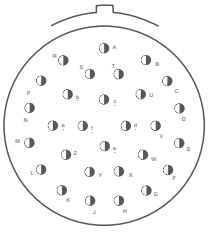
25-1G28~28G1
29-16#
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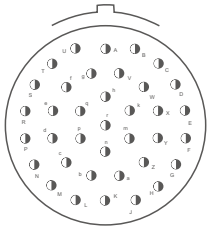
25-1G26~36G1
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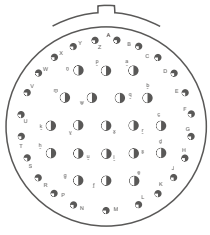
25-20G23
20-16# 23-20#
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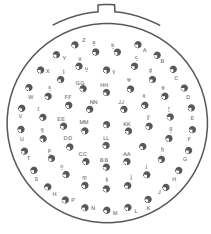
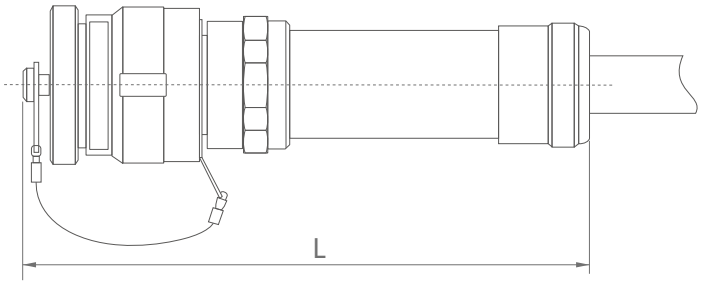

25-1G60~60G1
61-20#
I

Outline dimensions of connectors with tail accessories

The external dimensions of connectors without tail accessories are the same as those of the J599III series connectors. The external dimensions of connectors with tail accessories are as follows.

• Type I tail attachment

(connector dimensions with tail attachment, design number 51)

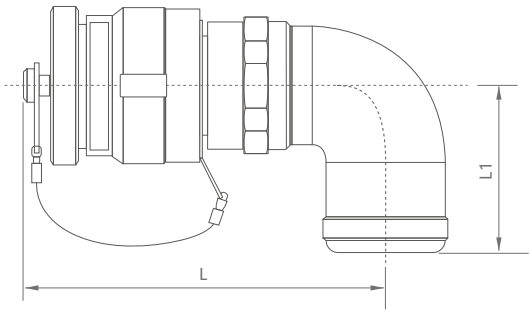


Shell number	09	11	13	15	17	19	21	23	25
MS shell number	A	B	C	D	E	F	G	H	J
Lmax	90	90	105	110	115	140	160	160	160

Note: With a straight-type tail attachment, it can secure hybrid cables. The built-in pressure plate clamps the hybrid cables and shielding mesh to achieve shielding.

• Type Ⅱ tail attachment

(connector dimensions with tail attachment, design number 33)

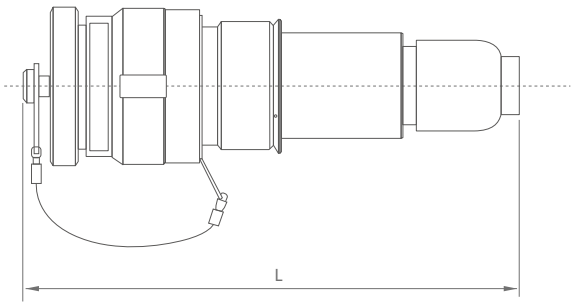


Shell number	09	11	13	15	17	19	21	23	25
MS shell number	A	B	C	D	E	F	G	H	J
L max	70	73	78	80	82	85	87	90	96
L1 max	26	26	29	29	33	33	39	39	44

Note: The bent tail attachment can secure the hybrid cable, with a built-in pressure plate for clamping the hybrid cable and shielding mesh to achieve shielding.

• Type Ⅲ tail attachment

(connector dimensions with tail attachment, design number 08)



Shell number	09	11	13	15	17	19	21	23	25
MS shell number	A	B	C	D	E	F	G	H	J
Lmax	90	100	110	110	125	140	160	160	160

Note: The shielding mesh is fixed using a Ti-Ni alloy memory ring to achieve true 360° electromagnetic shielding. This accessory cannot be used in environments with high tensile forces.

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J599E6 Series

Beam expanding fiber optic connector

Features

- Suitable for aviation, electronics, naval vessels, weapons, and other systems where installation space is limited, it features a rotating quick lock mechanism to enable multi-channel optical communication
- The outer shell can be made of different materials and plated with different coatings to adapt to different environmental requirements
- Five-key positioning, featuring blind insertion and error-proof insertion functions
- Bayonet structure, quick connection
- The contact piece adopts a collimating lens, featuring non-contact connection, making the end face less prone to damage, high mechanical lifespan, large emission spot, and strong resistance to dust and environmental conditions

Part# Explanation

J599E6/ 20 F C 04 N 41

Connector series main name

Connector type:
26-Plug 20-Socket

Material and surface treatment:
K-Stainless steel passivation
F-Electroless nickel plating W-Cadmium plating
MW-Cadmium plating (resistant to marine environment)

Shell number

11	13	15	17	19	21	23	25
B	C	D	E	F	G	H	J

Contact number: see "Contact List"

Key positions:
N, A, B, C, D, E, where N is the normal key position

Design Serial Number
Unmarked - basic type, without appendage;

01 - Compatible with single-core cables, with straight tail accessories connected to corrugated pipes;

04 - compatible with single-core cables, with variable-angle attachments connected to nylon sleeves;
Horizontal outlet (04A: right angle, 04B: facing the accessory end teeth, optical cable)On the left side, the cable exits at a 45° angle, 04C, facing the accessory end teeth, and the right side of the cable exits at a 45° angle;

41 - Plug and socket for connecting multi-core armored optical cable with compatible tail accessories.

Note: 1. This series of connectors does not include contact elements; 2. The contact elements compatible with this series are the same as those of the J599E8 series;

Main technical indicators

Mechanical properties

Mechanical lifespan	2000 cycles of insertion and extraction
Impact	peak acceleration of 2940m/s², duration of 3ms, and speed change rate of 5.61m/s
Vibration	10Hz~2000Hz, power spectral density 0.2G2/Hz, root mean square value of acceleration 16.4G
Tensile strength	≥68N (2mm contact jumper)

Air tightness (applicable to airtight adapter sockets):

Gas leakage rate	$\leq 1\times10^{-9}$ Pa·m³/s,
Internal and external pressure difference	1 atmosphere

Optical performance

Insertion los	≤0.6dB @850nm； ≤1.2dB @1310nm
Sreturn loss	≥20dB @850nm ； ≥45dB @1310nm

Environmental performance

Salt spray test	Category K	Category F	Category W	Category MW
	500h	48h	500h	192h
Temperature range	−55℃ ~ +125℃ (based on the temperature of the optical cable)			

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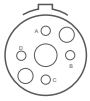
Contact arrangement (Taking the mating surface of a plug as an example)


11-02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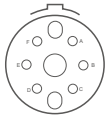
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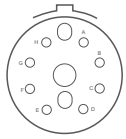
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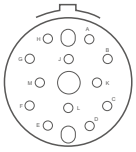
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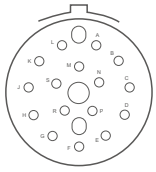
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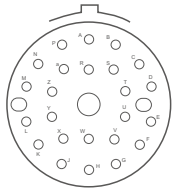
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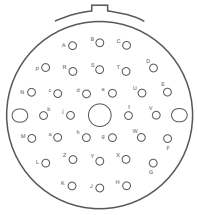
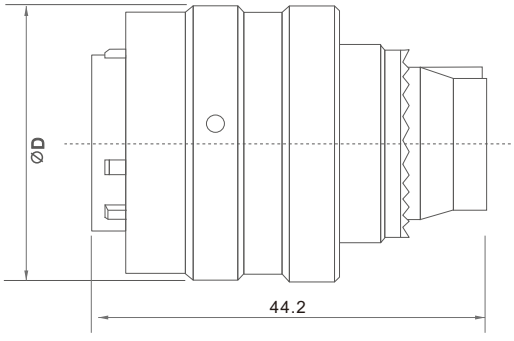

25-32

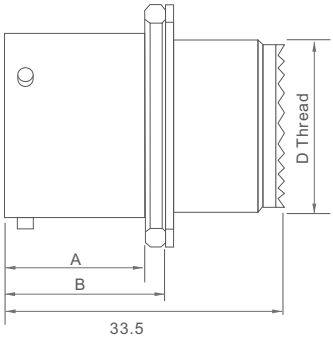
Overall dimensions

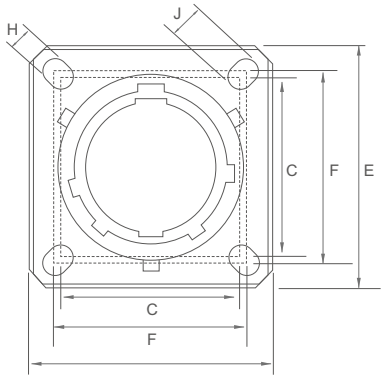
Plug dimensions (without tail attachment)



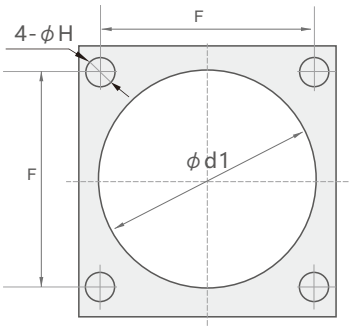
Shell number	11	13	15	17	19	21	23	25
MS shell number	B	C	D	E	F	G	H	J
D	23.0	27.2	30.5	33.5	37.0	39.5	43.0	46.0

Outline dimensions of square plate socket (without tail attachment)



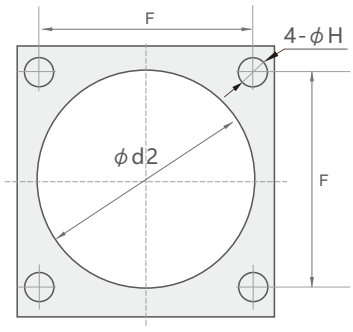


Rear-loading



Maximum thickness of panel：2.5mm

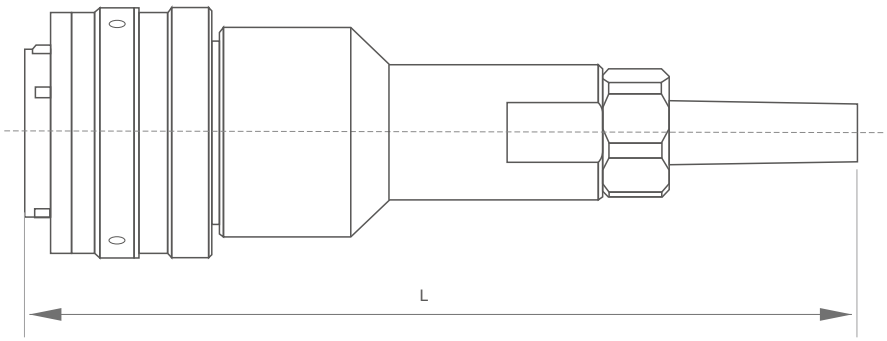
Pre-installation



Maximum thickness of panel：3.2mm

Shell number	MS Shell number	A	B	D Thread	E	F	G	H	J	d1 min	d2 min
11	B	18.0	20.5	M15×1.0	26.2	20.62	18.26	3.25	4.93	18.5	16.5
13	C	18.0	20.5	M18×1.0	28.6	23.01	20.62	3.25	4.93	23.42	19.05
15	D	18.0	20.5	M22×1.0	31.0	24.61	23.01	3.25	4.39	26.59	23.01
17	E	18.0	20.5	M24×1.0	33.3	26.97	24.61	3.25	4.93	30.96	25.81
19	F	18.0	21.0	M27×1.0	36.5	29.36	26.97	3.25	4.93	32.94	28.98
21	G	18.0	21.0	M30×1.0	39.7	31.75	29.36	3.25	4.93	36.12	32.16
23	H	18.0	21.0	M33×1.0	42.9	34.93	31.75	3.91	6.15	39.29	34.93
25	J	18.0	21.0	M36×1.0	46.0	38.10	34.93	3.91	6.15	42.47	37.69

Outline dimensions of plugs and sockets (including 41-pin attachment)



Shell number	11	13	15	17	19	21	23	25
MS shell number	B	C	D	E	F	G	H	J
L	90	90	90	90	95	95	95	95

J599E8 Series

Expansion fiber optic connector

Features

- Enhance dirt resistance through beam expansion
- Non-contact connection of optical paths can improve vibration performance and mechanical lifespan
- It is particularly suitable for harsh environments with strong vibration, frequent plugging and unplugging, as well as sand and dust, such as airborne, vehicular, and shipborne applications
- Three-head threaded quick connection, equipped with an anti-loosening mechanism
- In-situ replacement of J599A8 series fiber optic connectors
- The interface dimensions comply with GJB599A (MIL-DTL-38999) Type III, and the performance meets the ARINC801 standard

Part# Explanation

J599E8/ 26 W C 04 N F2

Connector series main name

Connector type:
26-Plug 20-Socket

Material and surface treatment:
W-aluminum alloy cadmium plating, military greenElectroless nickel plating on
F-aluminum alloy
K-Passivation of stainless steel shell surface

Shell number

11	13	15	17	19	21	23	25
B	C	D	E	F	G	H	J

Contact arrangement
Please refer to the "Contact Arrangement Diagram" for details

key binding
N-normal key position; A. B, C, D, E - change key positions

Design Serial Number

Default no tail attachment

F2 One to Multi core Field Fiber Optic Cable or Field Armored Fiber Optic Cable Compatible with Tail Accessories

F4- Compatible with single core cable, straight tail accessory connected to corrugated tube

F5- Compatible with single core cable, FJB tail accessory cable jacket wrapped in nylon wire bundle

F6 Compatible with single core cable, ultra short tail accessory cable jacket wrapped in nylon wire bundle

04- Compatible with single core cable, adjustable angle accessory with nylon thread sleeve, horizontal outlet

(04A: Right angle; 04B: Facing the accessory end teeth, the left side of the optical cable is 45 ° outgoing; 04C: Facing the accessory end teeth, the cable is led out at a 45 ° angle on the right side. This type of attachment is only applicable to aluminum alloy coated products

Main technical indicators

Insertion loss	multimode ≤ 0.6dB, single-mode ≤ 1.5dB
Return loss	≥ 30 dB (single-mode)
Working temperature	-55 ℃~+125 ℃ (based on cable temperature)
Vibration	10Hz~2000Hz, power spectral density 0.4G2/Hz, root mean square acceleration 23.1
Impact	peak acceleration 2940m/s2, duration 3ms, velocity change 5.61m/s
Mechanical lifespan	2000 cycles

Environmental performance(GJB1217)

≥ 500h	≥ 200h	≥ 48h
(Made of stainless steel material);	(aluminum alloy cadmium plating);	(nickel plating on aluminum alloy)

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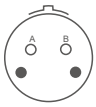
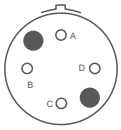
Contact arrangement (view of the mating surface of the pin insulator)



11-02



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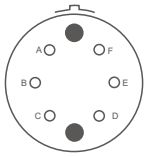
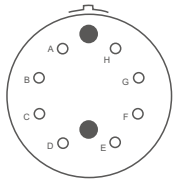


15-06



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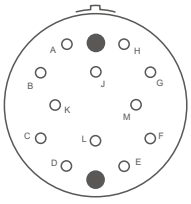
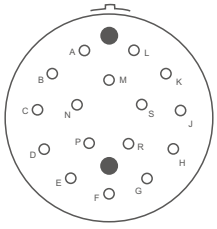
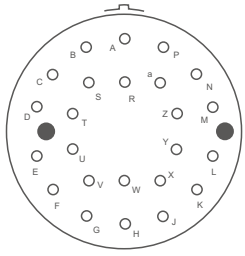


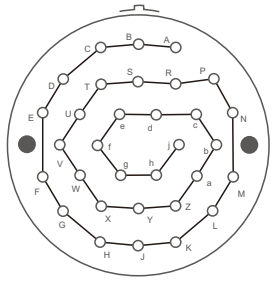
19-12



21-16



23-24

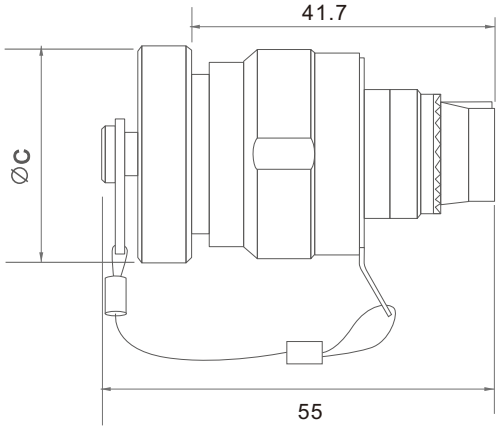


25-32

○ Representative contact position ● Representing the position of the guide pin hole

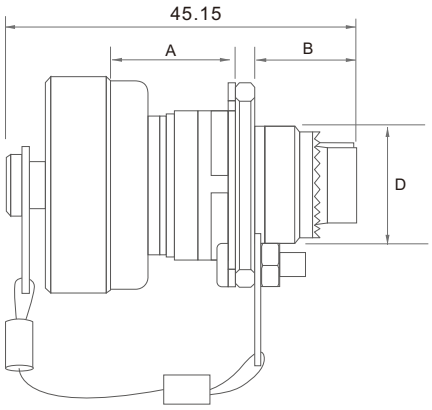
Overall dimensions

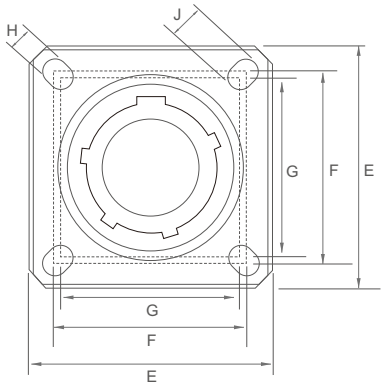
plug assembly



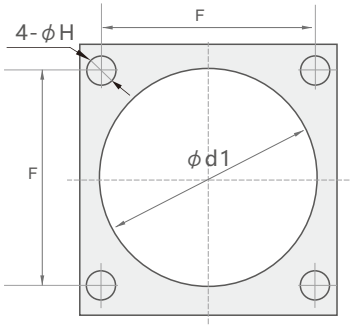
Shell number	11	13	15	17	19	21	23	25
MS shell number	B	C	D	E	F	G	H	J
C	25.00	29.40	32.50	35.70	38.50	41.70	44.90	48.00

Square socket component



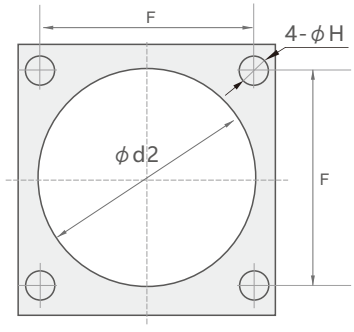


Rear-loading



Maximum thickness of panel：2.5mm

Pre-installation



Maximum thickness of panel：3.2mm

Note: When the socket is compatible with accessories, it should be installed in a rear mounted manner

Shell number	MS Shell number	A	B	C	D Thread	E	F	G	H	J	d1 min	d2 min
11	B	20.70	13.15	2.50	M15x1-6g	26.20	20.62	18.26	3.25	4.93	20.22	15.88
13	C	20.70	13.15	2.50	M18x1-6g	28.60	23.01	20.62	3.25	4.93	23.42	19.05
15	D	20.70	13.15	2.50	M22x1-6g	31.00	24.61	23.01	3.25	4.93	26.59	23.01
17	E	20.70	13.15	2.50	M25 x 1-6g	33.30	26.97	24.61	3.25	4.93	30.96	25.81
19	F	20.70	13.15	2.50	M28 x 1-6g	36.50	29.36	26.97	3.25	4.93	32.94	28.98
21	G	19.90	13.25	3.20	M31X1-6g	39.70	31.75	29.36	3.25	4.93	36.12	32.16
23	H	19.90	13.25	3.20	M34X1-6g	42.90	34.93	31.75	3.91	6.15	39.29	34.93
25	J	19.90	13.25	3.20	M37x1-6g	46.00	38.10	34.93	3.91	6.15	42.47	37.69

Note: The dimension A in the figure represents the distance from the installation surface to the socket port.

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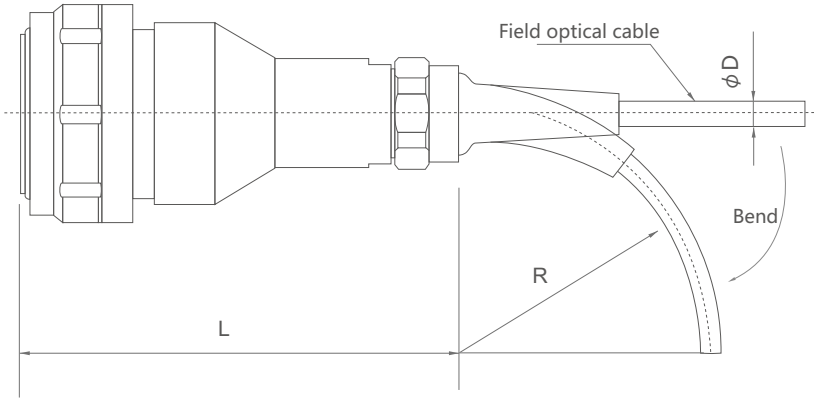
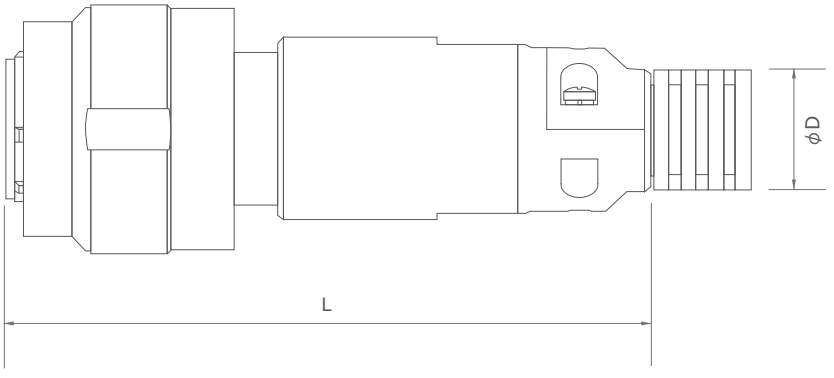
F2 Tail Attachment Connector Size



Note: R=10D (D is the diameter of the optical cable)

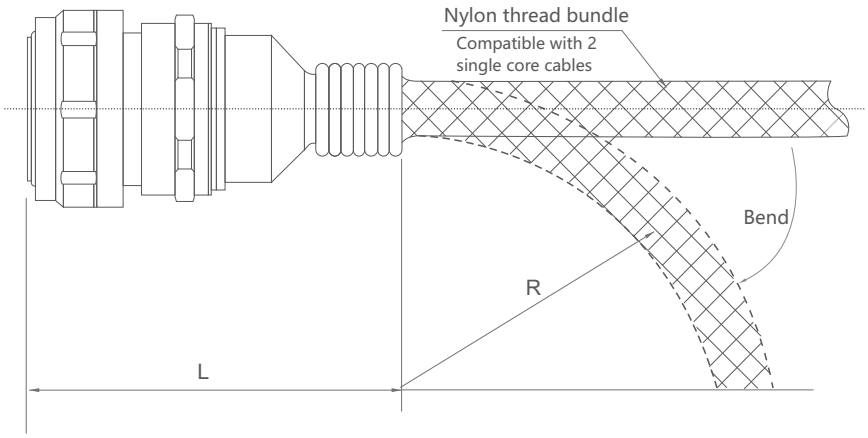
Shell number	MS shell number	L(head/seat)	Non-armored optical cable	Armored optical cable
11	B	70/67.5	5.00	5.00
13	C			
15	D	75/72.5		
17	E			
19	F	80/77.5	7.00	7.00
21	G			
23	H	85/82.5		
25	J	85/82.5	8.00	8.00

F4 Tail Attachment Connector Size



Shell number	MS shell number	L(head/seat)	Adapt to corrugated pipe D	Bending radius of corrugated pipe
11	B	64/61.5	10	30
13	C	68/65.5	13.5	55
15	D	72/69.5	16.1	60
17	E	76/73.5	16.1	60
19	F	80/77.5	18.7	75
21	G	84/81.5	18.7	75
23	H	88/85.5	21.5	90
25	J	92/89.5	25.7	105

F5 Tail Attachment Connector Size



Shell number	MS shell number	L(head/seat)	R
11	B	69/66.5	20
13	C	71/68.5	50
15	D	73/70.5	65
17	E	75/72.5	70
19	F	77/74.5	85
21	G	79/76.5	100
23	H	81/78.5	120
25	J	83/80.5	145

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J599MT Series
Fiber optic connector

Features

This series of products is a high-density circular fiber optic connector developed based on the GJB599III series, utilizing 12-pin and 24-pin MT contacts, featuring environmental resistance. It adopts a three-level guiding and positioning system, and possesses characteristics such as five-key identification, anti-misconnection, anti-oblique insertion, and blind insertion prevention. The housing can be made of different materials and plated with various coatings to meet varying environmental requirements.

Part# Explanation

J599MT/ 26 W B 1 M12 N 41 M

Connector series main name

Connector type:
26-Plug 20-Socket

Material and surface treatment:
K-Stainless steel passivation
F-Electroless nickel plating W-Cadmium plating
MW-Cadmium plating (resistant to marine environment)

Shell number
09/A 11/B 13/C 21/G

Number of cavities:
1-1 cavity Applicable to shells A, B, and C
2-2 cavities Applicable to C shell
4-4 cavities Applicable to G shell

Type of contact
12-12 core contact
24-24 core contact

Key positions
N, B, C, D, E
Where N represents the normal key position

Modification code
Unmarked - basic type, without appendage
41-Vertical tail attachment

Supporting contact
Unmarked - without contact elements
M-Includes multimode contacts
ML - Includes multimode low-loss contacts
S-with single-mode contact
SL-with single-mode low-loss contact

Main technical indicators

Mechanical properties

Mechanical lifespan	500 cycles of insertion and extraction
Impact	Acceleration of 490m/s², with a duration of 11ms
Vibration	10Hz~2000Hz, power spectral density 0.06g²/Hz

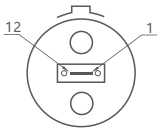
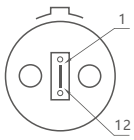
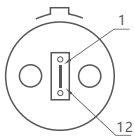
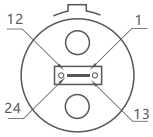
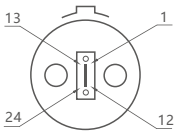
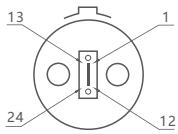
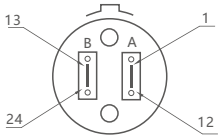
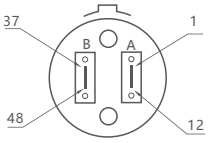
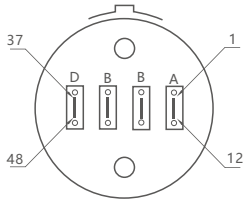
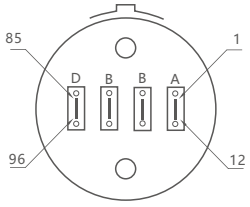
Optical performance

Insertion los	≤0.6dB

Environmental performance

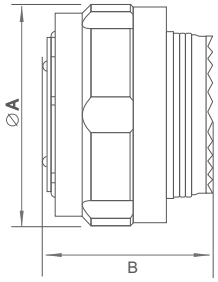
Salt spray test	Category K	Category F	Category W	Category MW
	500h	48h	500h	192h
Temperature range	−40℃ ~ +85℃			

Contact arrangement (Taking the mating surface of a plug as an example)

	09	11	13	21
1M12				
1M24				
2M12				
2M24				
4M12				
4M24				

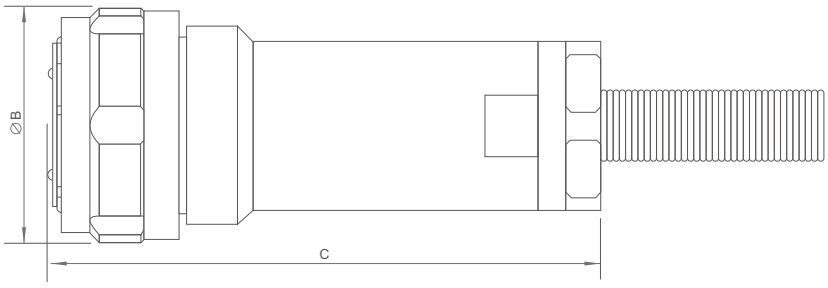
Overall dimensions

Plug dimensions (without tail attachment)



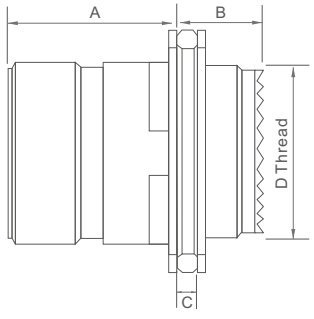
Shell number	A	B
09	21.8	31.0
11	24.9	33.3
13	29.2	31.8
21	41.7	31.8

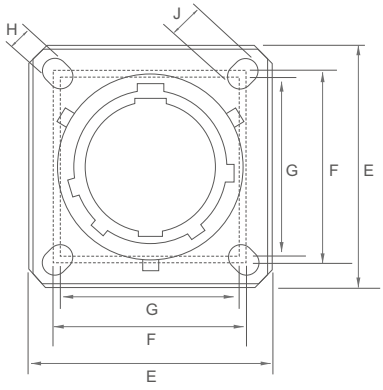
Plug dimensions (including the tail attachment)



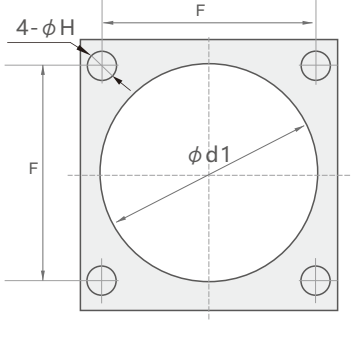
Shell number	B	C
09	21.8	80
11	24.9	75
13	29.2	81
21	41.7	99.5

Outline dimensions of socket (without tail attachment)



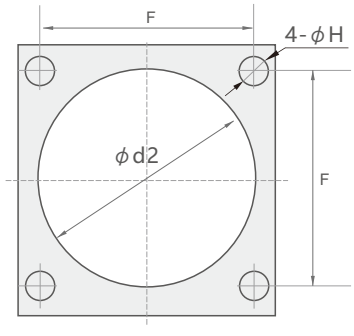


Rear-loading



Maximum thickness of panel：2.5mm

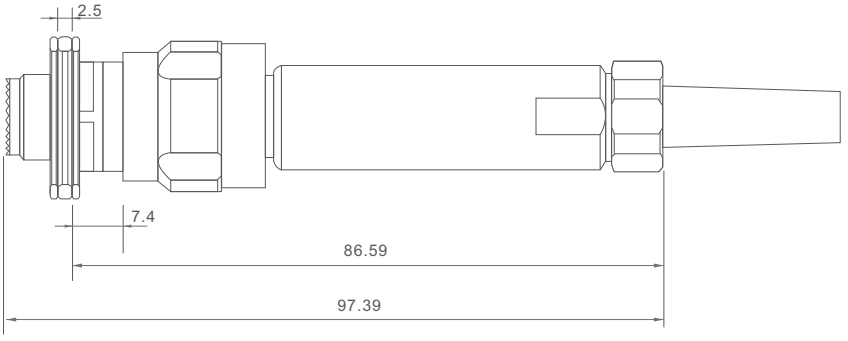
Pre-installation



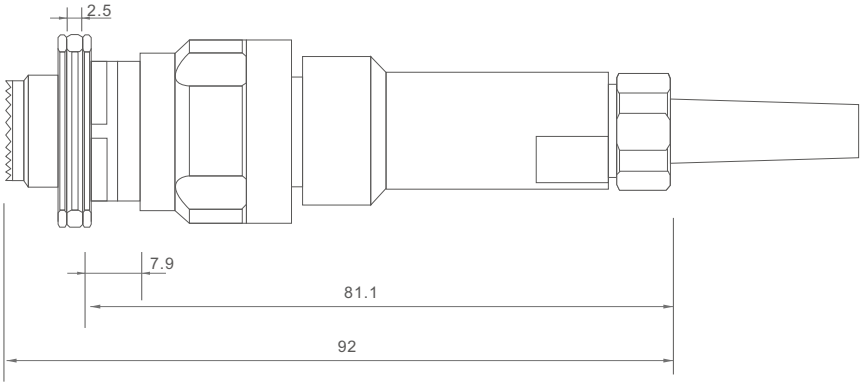
Maximum thickness of panel：3.2mm

Shell number	MS Shell number	A	B	C	D Thread	E	F	G	H	J	d1 min	d2 min
09	A	20.7	10.8	2.5	M12×1.0	23.8	18.2	15.09	3.25	5.49	16.66	13.11
11	B	20.7	10.8	2.5	M15×1.0	26.2	20.62	18.62	3.25	4.93	20.22	15.88
13	C	20.7	10.8	2.5	M18×1.0	28.6	23.01	20.62	3.25	4.39	23.42	19.05
21	G	19.9	11.6	3.2	M31×1.0	39.7	31.75	29.36	3.25	4.93	36.12	32.16

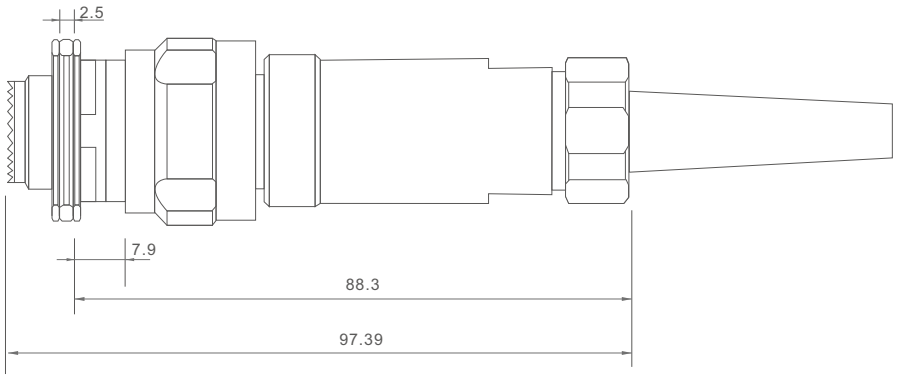
Overall dimensions of the plug and socket after mating



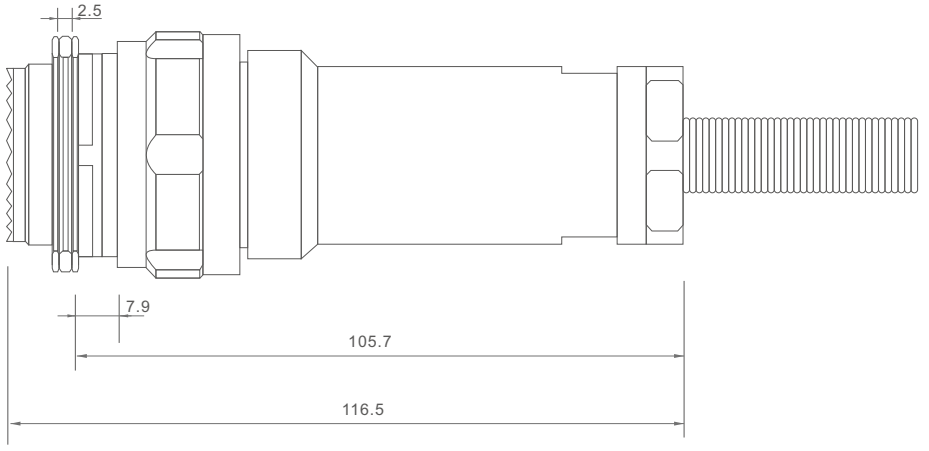
Overall dimensions after insertion of 09#



Outline dimensions after insertion and mating of 11#



Overall dimensions after insertion of 13#



Overall dimensions after insertion of 21#

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