

SHS-12G-M/F

TWELVE-CHANNEL EXPANDED-BEAM FIBER OPTIC CONNECTOR

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Company	Suzhou SHS Technology Co., Ltd.	Date	2026-07-30

			SHS-12G-M PLUG	
			SHS-12G-F RECEPTACLE	
12 OPTICAL CHANNELS	PLUG / RECEPTACLE	79.00 mm ILLUSTRATED PLUG LENGTH	29 x 29 mm RECEPTACLE FLANGE	Ø21 / 4xØ3.40 mm PANEL CUTOUT

PRODUCT HIGHLIGHTS

01 12-CHANNEL FIBER INTERFACE One circular interface integrates 12 expanded-beam optical channels.	02 EXPANDED-BEAM PATH Non-contact expanded beam reduces direct end-face contact.
03 PUSH-PULL LOCKING Keyed circular design with rear strain relief.	04 CUSTOM ASSEMBLIES 12-fiber assemblies and custom interconnect solutions available.

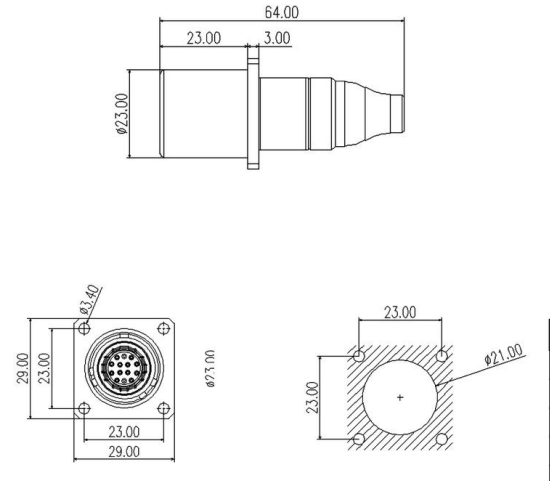
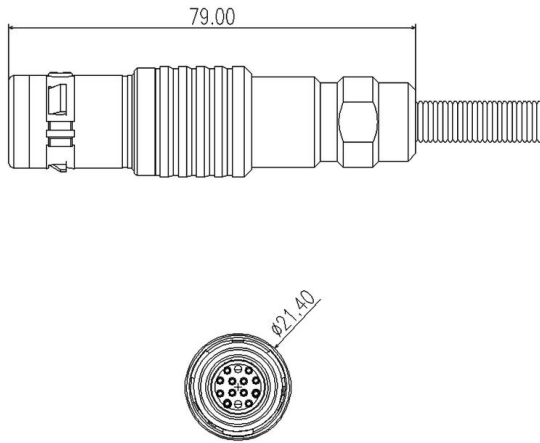
TECHNICAL DATA

Dedicated 12-channel optical, material, and environmental ratings remain subject to controlled drawings and validation; current values reference the established expanded-beam family.

OPTICAL CONFIGURATION	
Model	SHS-12G-M/F
Product type	Twelve-channel expanded-beam fiber-optic connector
Optical channels	12
Fiber type	Multimode OM1 / OM2 / OM3
Operating wavelength	850 nm; family reference, pending 12-channel validation
Insertion loss	≤0.75 dB; family reference, pending 12-channel validation
Return loss	≥35.0 dB; family reference, pending 12-channel validation
End-face type	Non-contact expanded-beam lens
MECHANICAL	
Mating type	Plug and receptacle
Interface numbering	Official plug/receptacle front views; channels 1-12 correspond one-to-one
Illustrated plug dimensions	Overall length 79.00 mm; outside diameter Ø21.40 mm
Receptacle & panel cutout	Receptacle L64.00 mm; flange 29.00 x 29.00 mm; body Ø23.00 mm; panel opening Ø21.00 mm with 4xØ3.40 mm holes on a 23.00 x 23.00 mm square pattern
Locking system	Push-pull self-locking
Mating endurance	Family reference ≥10,000 cycles
MATERIALS & ENVIRONMENT	
Shell material	316L stainless steel
Surface finish	316L stainless-steel surface condition; final finish per controlled drawing
Insulator material	PPS
IP rating	Family reference IP67
Operating temperature	Family reference -40°C to +150°C; maximum temperature for short-term use only
Vibration & shock	Family reference: vibration 15 g (10 Hz-2,000 Hz); shock 100 g (6 ms)
CABLE & TERMINATION	
Cable outside diameter	Family reference 6-10 mm; final value per 12-channel cable design
Fiber termination	Adhesive-bonded fiber coupled to a collimating lens
Cable termination protection	Illustrated strain-relief structure

INTERFACE & DIMENSIONS

PLUG, RECEPTACLE & PANEL CUTOUT DIMENSIONS



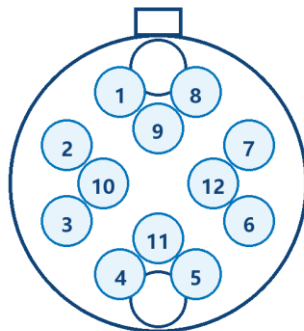
PLUG

L 79.00 mm • OD Ø21.40 mm

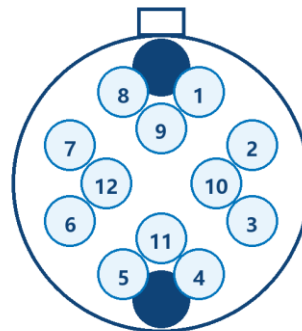
RECEPTACLE & PANEL CUTOUT

RECEPTACLE L64.00 mm • FLANGE 29x29 mm • BODY Ø23.00 mm
CUTOUT Ø21.00 mm • 4xØ3.40 mm • 23x23 mm HOLE SPACING

12-CHANNEL PLUG & RECEPTACLE FRONT VIEWS



PLUG FRONT VIEW



RECEPTACLE FRONT VIEW

01	Units: mm; dimensions and channel positions follow the supplier specification drawing.
02	Plug and receptacle front views are mirrored; channels 1-12 correspond one-to-one as shown.
03	Panel cutout: Ø21.00 center opening; 4xØ3.40 mounting holes on a 23.00 x 23.00 square pattern.

EXPANDED-BEAM DESIGN

Expanded beam reduces the impact of localized contamination and end-face wear |
Collimating lens | Non-contact gap

EXPANDED-BEAM ADVANTAGES

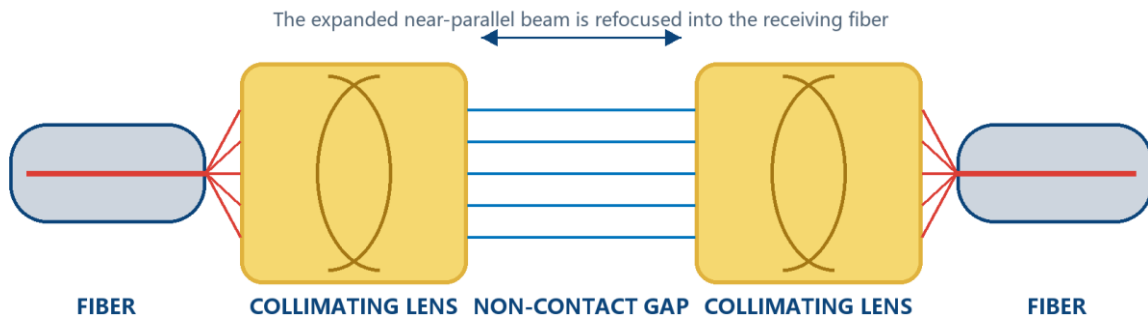
01 CONTAMINATION RESISTANCE After expansion by the collimating lens, the beam spot area approaches 100 times its original area, reducing the relative effect of localized dust.	02 NON-CONTACT TRANSMISSION Optical end faces remain non-contact after mating, reducing wear caused by vibration and repeated mating.
03 EASY MAINTENANCE The collimating lens protects the fiber end face, and contamination can be cleaned from the lens surface.	04 HIGH-DENSITY 12 CHANNELS Twelve expanded-beam optical channels are integrated in one circular interface; official performance remains subject to 12-channel sample validation.

TWELVE-CHANNEL CONCEPT

Interface	Twelve expanded-beam optical channels; plug and receptacle positions mirror each other per the official front views.
Mechanical	Keyed circular interface, push-pull self-locking, and rear strain-relief design.

EXPANDED-BEAM LENS PRINCIPLE & ADVANTAGES

A collimating lens expands the light emitted by the fiber into a near-parallel beam. After crossing the non-contact gap, the opposing lens refocuses the light into the receiving fiber.



FOUR ADVANTAGES OF THE COLLIMATING LENS

01 NEAR-100x BEAM AREA

Lens expansion increases the beam area to nearly 100 times the original area, so the same contaminant blocks a much smaller proportion of the transmitted light.

02 NON-CONTACT, LOW WEAR

Fiber end faces do not touch after mating, reducing wear caused by vibration and repeated mating while protecting the precision fiber interface.

03 GAP TOLERANCE & RELIABILITY

In principle, optical signal transmission can be maintained at an approximately 5 mm lens-face gap; actual gap and loss remain subject to 12-channel sample validation.

04 SIMPLE CLEANING

Contamination is exposed on the outer lens surface and can be removed by gentle wiping without directly handling the fiber end face.

A larger beam spot reduces the blocked-area ratio for the same contaminant (schematic, not to scale)

