

SW20 Series

Waterproof Optical Connector with Built-in SC/LC



Fiber Optics



Waterproof



Multiple Position

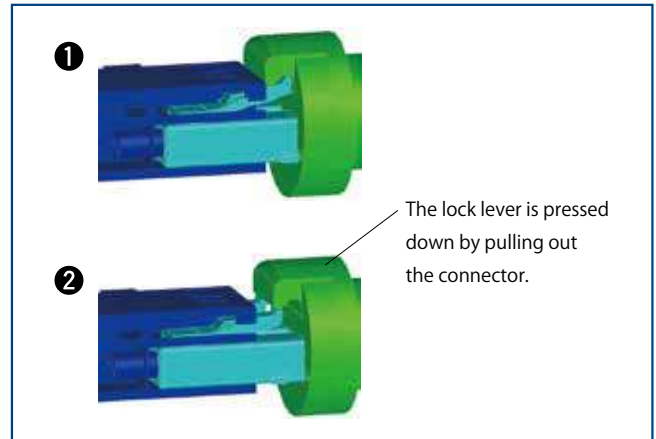


Dec.1.2023 Copyright 2023 HIROSE ELECTRIC CO., LTD. All Rights Reserved.

Features

1. Waterproof Bayonet Lock Connector with Built-in SC/LC Connectors

This connector combines a standard optical connector (SC/LC) and optical adaptor (SC/LC), and is covered with a waterproof shell. The bayonet locking design provides a single-action mating/unmating between the receptacle mounted on the chassis and the plug.



Waterproof Design Utilizing Lock Design of Standard Connector (Patented)

2. Designed for Harsh Outdoor Environments

This connector is designed to use on harsh outdoor conditions. Connector has passed a 1,000 hour salt spray test as well as the IP67 waterproof test when mated or with protective caps in place.

3. Common Housing for SW20-SC and SW20-LC

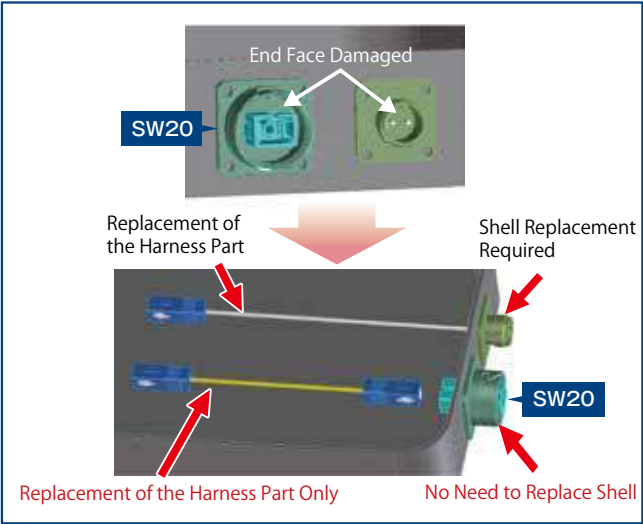
The housing which has waterproof design around standard optical connector (SC/LC) and standard optical adapter (SC/LC) is common for both SW20-SC and SW20-LC. Therefore, the receptacle mounting hole dimensions and the connection/disconnection operation method are the same for both SW20-SC and SW20-LC.

4. Housing assembly and inspection are available by standard wired connector.

When waterproof is not required, such as during installation of the enclosure or operation checks, standard optical connector cables can be used without preparing a specially shaped master code.

5. Easy On-site Maintenance

In the event of damage, the end face can be repaired by replacing the internal standard patch cord. This eliminates the need for replacement of the entire receptacle.



When maintenance and repair, only the harness parts are replaced.

Product Specifications

Operating Temperature	-40 to +85°C	Storage Temperature	-25 to +75°C
-----------------------	--------------	---------------------	--------------

	Item	Test Method	Specifications
Optical Characteristics	Insertion Loss	Wavelength 1310nm ± 20nm (LD) Wavelength 1550nm ± 20nm (LD)	1310nm : 0.4dB Max. 1550nm : 0.5dB Max.
	Return Loss	Wavelength 1310nm ± 30nm (LD)	40dB Min. (SM), 22dB Min. (GI)
Mechanical Characteristics	Tensile Strength (Axial)	A tensile force to between SW20 connector and cord for 1 min. at 200N.	Insertion Loss Fluctuation after Test : 0.3dB Max. No visible damage at Clamping part and Cord.
	Mating Durability	200 times	Insertion Loss Fluctuation after Test : 0.3dB Max. No damage, cracks or parts dislocation.
	Vibration Resistance	Frequency : 10 to 55Hz, Single Amplitude of 0.75mm, Acceleration of 98.1m/s ² , 2 hours in each of the 3 axis.	
	Shock Resistance	Acceleration of 981m/s ² , Duration: 6ms, Half-sine wave in 3 directions, 10 cycles for each.	
Environmental Characteristics	Temperature/Humidity-Cycles	-10 to +65°C, Humidity : 90% to 100% 12H/Cycle × 14 Cycle (Telcordia GR3120-CORE)	Insertion Loss Fluctuation after Test : 0.3dB Max. No damage, cracks or parts dislocation.
	Temperature Cycle	-40 to +75°C, 42 Cycles, 8H/Cycle × 42 Cycle (Telcordia GR326-CORE)	
	Heat Resistance	240 hours at +85°C (JIS C 5961)	
	Cold Resistance	240 hours at -40°C (JIS C 5961)	
	Humidity Resistance	168 hours at 75°C / Humidity : 95% (GR3120-CORE)	
	Saltwater Spray	Put the SW20 connector at 35°C and 5% concentration salt spray for 1000 hours.	No heavy corrosion ruin the function.
	Waterproof	Put the SW20 connector under water for 1 min., with air pressure 4.9kPa.	No Air Leakage

Materials / Finish

Part	Plug		Receptacle	
	Material	Finish/Remarks	Material	Finish/Remarks
Housing	Zinc Alloy	Chrome Plating	Zinc Alloy	Chrome Plating
	Synthetic Resin	—		
O-ring / Gasket	Silicone Rubber	—	Silicone Rubber	—
SC / LC	Depends on each connector (Synthetic Resin, Zirconia or Spring)	—	Depends on each adapter (Synthetic Resin or Zirconia)	—
Spring	Steel Wire	—	—	—
Others (Internal Part)	Phosphor Bronze	Nickel Plating	—	—
	Zinc Alloy	Nickel Plating	—	—
	Stainless Steel	—	—	—

Product Number Structure

Please utilize the below part number chart when selecting.

■ Plug

SW20 - SC P T75 - 2(22)

① ② ③ ④ ⑤

① Series Name	SW20	④ Cable Type	T75 :Cable Diameter ϕ 7
② Connector Type	SC : SW20-SC LC : SW20-LC	⑤ Identification No.	
③ Plug	P		

■ Receptacle

SW20 - SC R - 1(01)

① ② ③ ④

① Series Name	SW20	③ Receptacle	R
② Connector Type	SC : SW20-SC LC : SW20-LC	④ Identification No.	

■ Receptacle Cap

Plug cap is standard equipment of plug.

SW20 - RC 1

① ② ③

① Series Name	SW20	③ Identification No.	1 : Waterproof Cap 3 : Dustproof Cap
② Connector Type	RC : Receptacle Cap		

■ Adapter

SW20 - LC A - 1

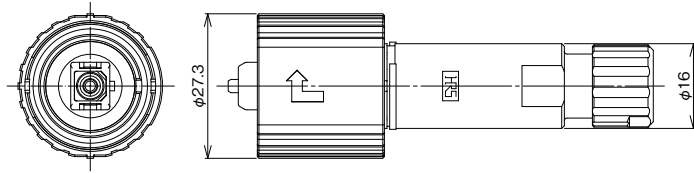
① ② ③ ④

① Series Name	SW20	④ Identification No.	
② Connector Type	SW20-LC		
③ Adapter	A		

Plug

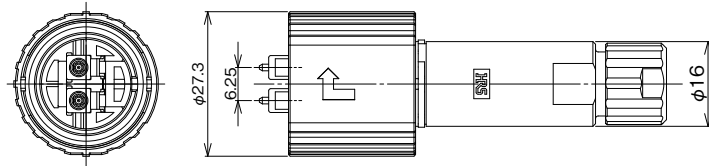
Please contact us for recommended cables.

● SC Type



Part No.	HRS No.	Gasket Inner Diameter	Ferrule Hole Diameter	Purchase Unit
SW20-SCPT75-2(22)	CL0717-5019-5-22	φ 6.6	φ 0.1255(SM)	1pc per bag
SW20-SCPT75-2(23)	CL0717-5019-5-23	φ 7.1	φ 0.126(GI)	

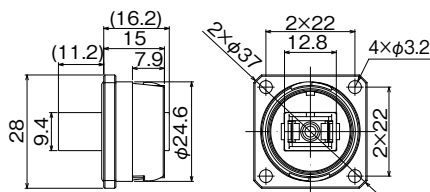
● LC Type



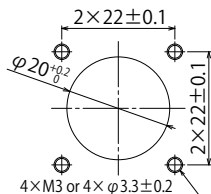
Part No.	HRS No.	Gasket Inner Diameter	Ferrule Hole Diameter	Purchase Unit
SW20-LCPT75-3	CL0717-5508-1-00	φ 6.6	φ 0.1255(SM)	1pc per bag
SW20-LCPT75-3(21)	CL0717-5508-1-21	φ 7.1	φ 0.126(GI)	

Receptacle

● SC Type

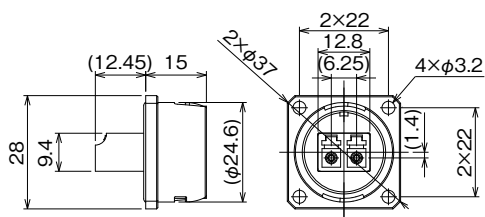


■ Panel Cut-Out Dimensions

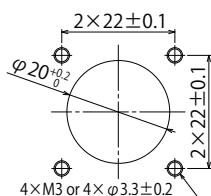


Part No.	HRS No.
SW20-SCR-1(01)	CL0717-5002-2-01

● LC Type



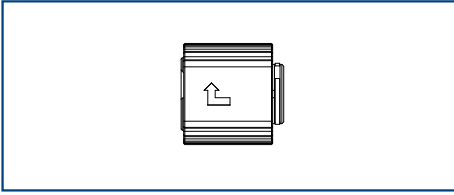
■ Panel Cut-Out Dimensions



Part No.	HRS No.
SW20-LCR-1	CL0717-5004-8-00

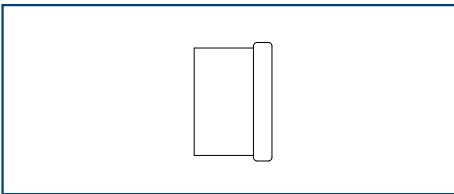
Receptacle Cap

● Waterproof Type



Part No.	HRS No.	Purchase Unit
SW20-RC1(01)	CL0717-5501-2-01	10pcs per bag

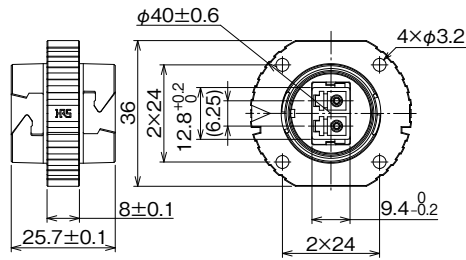
● Dustproof Type



Part No.	HRS No.	Purchase Unit
SW20-RC3	CL0717-5504-0-00	50pcs per bag

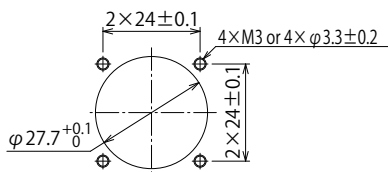
Adapter

● LC Type



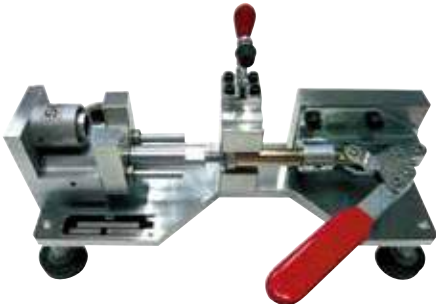
Part No.	HRS No.
SW20-LCA-1	CL0717-5028-6-00

■ Panel Cut-Out Dimensions



Tool

● Hood Insertion Tool (Common Use for SW20-SC, SW20-LC (Note))



Part No.	HRS No.
SW20-SCLC-T1/CV-MD	CL0902-6065-5-00

Note : When you change SW20-SC and SW20-LC, please exchange tip attachment before assembling.

● Fastener Insertion Tool (Common Use for SW20-SC, SW20-LC (Note))



Part No.	HRS No.
SW20-LCPT75-1/CVMD3	CL0902-3227-9-00

Note : When you change SW20-SC and SW20-LC, please exchange tip attachment before assembling.

● Spring Washer Insertion Tool (Common Use for SW20-SC, SW20-LC)



Part No.	HRS No.
SW20-LCPT75-1/CVMD4	CL0902-6074-0-00

● LC Housing Insertion Tool (Only for SW20-LC)



Part No.	HRS No.
SW20-LCPT75-1/CVMD1	CL0902-3225-3-00

While Taking into Consideration

Specifications mentioned in this catalog are reference values.
 When considering to order or use this product, please confirm the Drawing and Product Specifications sheets.
 Use an appropriate cable when using the connector in combination with cables.
 If considering usage of a non-specified cable, please contact your sales representative.
 If assembly process is done by jigs & tools which are not identified by Hirose, assurance will not be given.
 If considering usage for below mentioned applications, please contact your sales representative.
 In cases where the application will demand a high level of reliability, such as automotive, medical instruments, public infrastructure, aerospace/ defense etc. Hirose must review before assurance of reliability can be given.