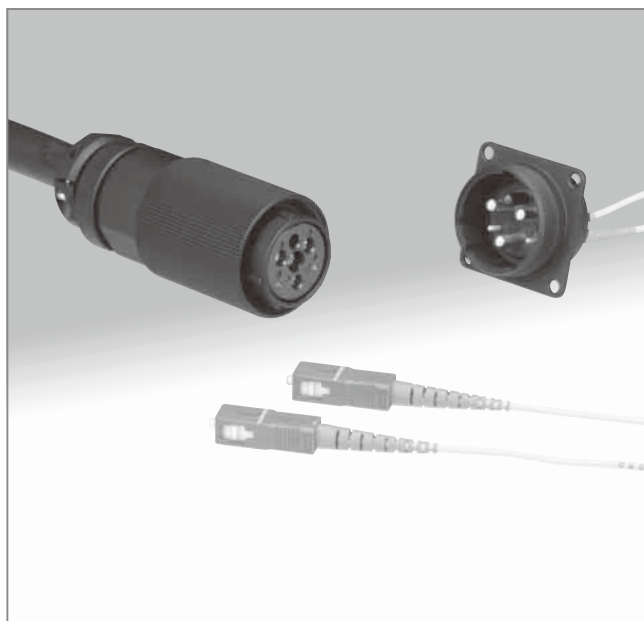


# Waterproof Connectors Combining Optical and Electrical Connections

## MF25 Series



### ■Features

#### 1. Fiber optic and electric hybrid connection

3 electrical contacts rated at 30A max. current  
2 fiber optic connections (single or multi-mode fibers)

#### 2. Used in harsh outdoor environments

Construction, materials and components assure consistent performance when used outdoor. Tested 500 hours in salt fog without any affect on its performance. Rated IP67 - complete protection against dust, no water penetration when submerged in water at depth of 1.8m for 48 hours.

#### 3. Variety of cables

Up to 18 mm outside diameter cable can be used (electrical and optical combined).  
Solder termination of electrical conductors having cross sectional area of 6mm<sup>2</sup> (equivalent of AWG#10) may be used.

#### 4. Low insertion loss

Ferrule can be tuned to guarantee insertion loss of less than 0.4dB.

### ■Applications

Outdoor optical transmission systems: Surveillance cameras and monitors, base stations, railway, transportation, survey, geological and exploration equipment.

### ■Product Specifications

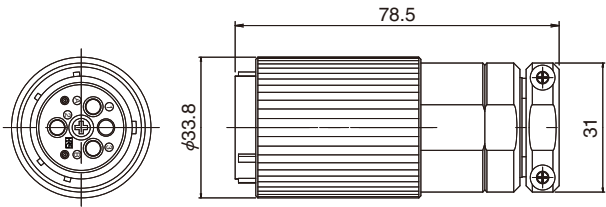
Ratings		Operating temperature range:-40°C to +75°C		Storage temperate range:-40°C to +85°C	
		Current rating: 30A		Voltage rating: 300V AC, 420V DC	
Optical/electrical Characteristics	Item		Test Method (IEC 61300)	Specifications	
	Insertion Loss	SM	Wavelength 1310±30nm (LD)	0.4dB max.	
		MM(GI)	Wavelength 1310±30nm (LED)	0.3dB max. (Note)	
	Return Loss	SM	Wavelength 1310±30nm (LD)	40dB min.	
		MM(GI)		22dB min.	
Mechanical Characteristics	Insulation resistance		500V DC	1000 M ohms min.	
	Withstanding voltage		1000V AC / one minute	No flashover or insulation breakdown	
	Durability (cycles, mating/un-mating)		500 times	Insertion loss after test: 0.4dB max. (SM) Insertion loss after test: 0.3dB max. (MM:GI) Return loss after test: 40dB min. (SM) No visible damage or dislocation of any component or cable.	
	Vibration		Frequency: 10 to 500MHz, single amplitude of 0.75mm, 3 hours in each of the 3 axis.		
Environmental Characteristics	Shock		Acceleration of 490m/s <sup>2</sup> , 11ms duration, sin half-wave waveform, ration, half sine shock pulse, 3 cycles in each of the 3 axis.	Insertion loss after test: 0.4dB max. (SM) Insertion loss after test: 0.3dB max. (MM:GI) Return loss after test: 40dB min. (SM) No visible damage, dislocation of clamp or cable.	
	Humidity		-71±2°C, humidity: 95±5%, 336 hours		
	Temperature cycle		-40°C to +75°C 42 cycles	No visible damage, dislocation of clamp or cable.	
	Dry heat		240 hours at 85°C		
	Cold		240 hours at -40°C	No visible damage, dislocation of clamp or cable.	
	Salt spray		5% salt solutions for 500 hours		
Environmental Characteristics	Air tight		Air pressure: 4.9 kPa, Submerged for one minute	No corrosion	
				No air foam leakage	

Note: Measured with a 1.5 dB Mode scrambler.

Materials

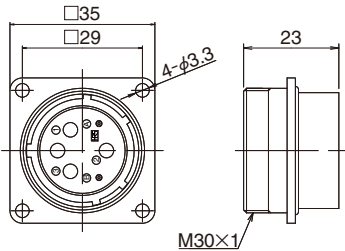
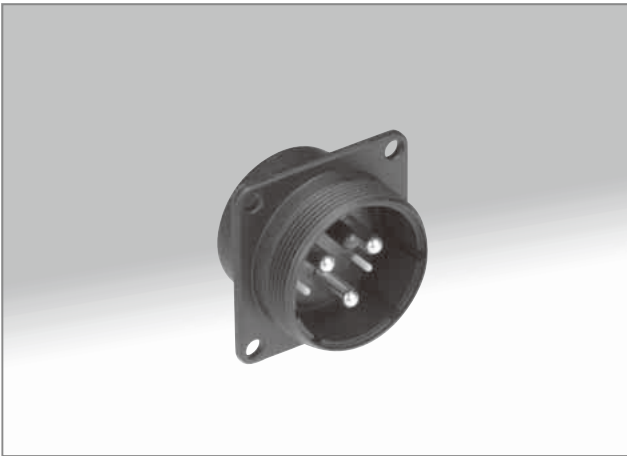
Part	Material	Finish	Remarks
Housing	Aluminum die-casting	Chrome plated (Black)	_____
	Brass	Chrome plated (Black)	_____
Electrical contacts	Brass	Silver plated	_____
Insulator, Retainer plate	Synthetic resin	_____	UL94V-0
O-ring, gasket, bushing	Synthetic rubber	_____	_____
Screw	Stainless steel	_____	_____
Screws	Iron	Nickel plated	_____
Spring	Steel	Zinc plated	_____
Split sleeve	Zirconia	_____	_____

Plug housing



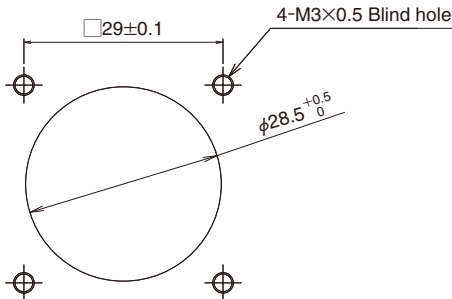
Part Number	CL No.	Number of positions
MF25S-WP14S02-0203	709-0209-9-00	3 pos. (Electrical), 2 pos. (Optical)

Receptacle housing



Part Number	CL No.	Number of positions
MF25S-WRF02-0203	709-0208-6-00	3 pos. (Electrical), 2 pos. (Optical)

Recommended panel cut-out dimensions



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