tyco Electronics

Introducing...

Sealed Circular LC ODVA Compliant Fiber Optic Connectors

DESCRIPTION

- Rugged optical connector to address affordable durability
- IP67 rated to provide protection from dust and water immersion
- Plug kit capable of terminating Distribution or Break Out cable with diameter range of 4.0 mm to 7.8 mm

APPLICATIONS

- Harsh environments where chemicals, corrosive gases and liquids are commonplace
- Inside and outside industrial plant and equipment that interface with industrial ethernet networks
- Remote interface applications such as towers and antennae as well as FTTX in PON and at the home applications
- Mobile routers and internet hardware

KEY FEATURES

- LC connector qualified to Telcordia GR-326 and TIA/EIA 568B.3
- Bayonet style mechanical lock
- Dual mounting bulkhead design
- Singlemode or multimode fiber
- Flame retardant materials per UL 94V-0
- LC to LC internal to the box jumpers
- ODVA compliant plug to X interface on tactical with break out
- ODVA compliant plug to plug on tactical cable
- Build to customer need

Sealed Circular LC ODVA Compliant Fiber Optic Connectors

MATERIALS

- Plug:
  - Outer Shell – PBT
  - Ferrule – Zirconia
  - Housing – Thermoplastic
  - Spring – Stainless Steel
  - Epoxy Tube – PTFE
  - Rear Body – Anodized Aluminum
  - Crimp Sleeve – Tin Plated Brass
  - Interfacial Seal – Silicone
  - Strain Relief – Nylon /TPE

Receptacle:

- Outer Housing – PBT
- Panel Nut – Nickel Plated Brass
- Panel Gasket – Silicone
- Adapter Sleeve – PC
- Adapter Housing – PEI
- Alignment Sleeve – Zirconia
- Dust Cover - TPE

Protective Cover:

- Cover – PBT
- Seal – Silicone
- Lanyard – PP

PERFORMANCE RATINGS

Performance	Value		Units
	Multimode	Singlemode	
Attenuation, Typical	0.20	0.10	dB
Return Loss, Typical	45	58	dB
Storage Temperature	-40 to +85		°C
Durability	500		Cycles

PRODUCT OFFERING & DIMENSIONS

Plug Part Numbers:
1828618-1 (Multimode)
1828618-2 (Singlemode)

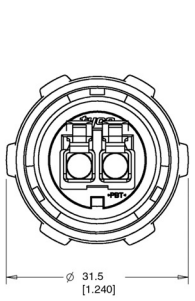
Receptacle Part Numbers:
1828619-1 (Multimode)
1828619-2 (Singlemode)

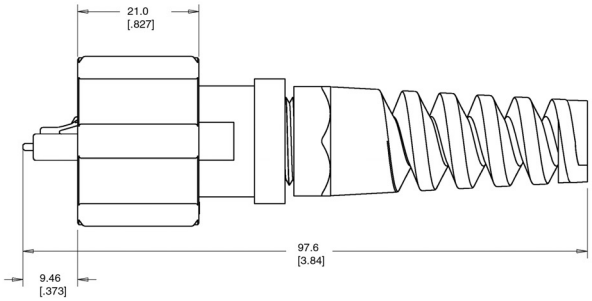
Featured Assembly Base Part Numbers:

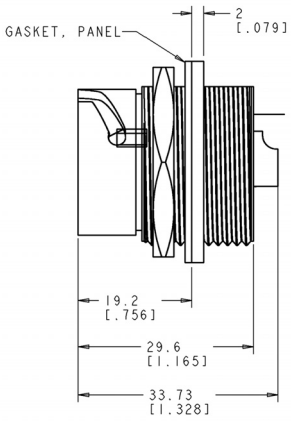
1828708l	1828709l
1828710l	1878711l

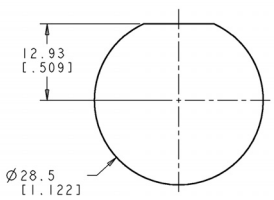
Plug & Receptacle Cap Part Numbers:

Plug Cap	1828740-1
Receptacle Cap	1918177-1

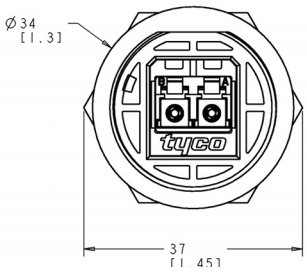








RECOMMENDED PANEL CUT-OUT
MAX PANEL THICKNESS 3.2mm



Note: Part Numbers are RoHS compliant except: ♦ Indicates non-RoHS compliant.

MECHANICAL/ENVIRONMENTAL REQUIREMENTS

Test Description	Requirement	Procedure
Visual and mechanical inspection	Meets requirements of product drawing, including end face geometry. LC connector complies with dimensional requirements of IEC 61754 20.	IEC 61300-3-1 or TIA/EIA-455-13A. Visual, dimensional and functional per applicable quality inspection plan. Measure dimensions D, H1, H2, K and O as defined in the Fiber Optic Connector Interfaces 61754 - Part 20.
Attenuation (insertion loss)	Maximum attenuation for any single specimen is 0.75 dB.	IEC 61300-3-4 or TIA/EIA-455-171A, Method D1 (multimode) TIA/EIA-455-171A, Method D3 (single mode), except launch and receive are both part of the pair under test and are not reference quality. Precondition by cleaning plug and adapter per manufacturer's instructions. Test at 850 ± 30 nm and 1300 ± 30 nm for multimode and at 1310 ± 30 nm and 1550 ± 30 nm for singlemode. For multimode measurements, source shall be a Category 1 light source. Apply mandrels as directed by FOTP-171 for the appropriate fiber size. For singlemode, only the fundamental mode shall propagate at the connector interface ann at the detector.
Return Loss	Minimum return loss for any single specimen is 20 dB for multimode or 55 dB for singlemode.	IEC61300-3-6, EIA/TIA-455-107-A or TIA/EIA-455-8, branching device or OTDR method. Test at 850 ± 30 nm and 1300 ± 30 nm for multimode, and at 1310 ± 30 nm and 1550 ± 30 nm for singlemode.
Dry Heat	Maximum attenuation for any single specimen is 0.75 dB before and after test. Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	IEC 61300-2-18 or TIA/EIA-455-4C. Maintain specimens undisturbed in the chamber at room ambient (23˚C±5˚C and 20 to 70% RH) for 2 hours prior to recording initial attenuation and return loss. Subject specimens to 85˚C±2˚C 96 hours (4 days). At the completion of testing, measure final attenuation and return loss within 1 to 2 hours of the chamber's return to ambient conditions, with specimens undisturbed in the test chamber.

MECHANICAL/ENVIRONMENTAL REQUIREMENTS (Continued)

Test Description	Requirement	Procedure
Cold	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-17 or EIA/TIA-455-188.
	Maximum change in attenuation for any single specimen is 0.3 dB during and after test.	Maintain specimens undisturbed in the chamber at room ambient (23˚C±5˚C and 20 to 70% RH) for 2 hours prior to recording initial attenuation and return loss.
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	Subject specimens to -40˚C±2˚C for 96 hours (4 days). Attenuation shall be measured before test, at a maximum interval of 1 hour during test and after test. Maintain specimens undisturbed for least 1 hour after the chamber's return to ambient conditions, before measuring final attenuation and return loss.
Damp Heat	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-19 or TIA/EIA-455-5C Method A.
	Maximum change in attenuation for any single specimen is 0.3 dB during and after test.	Maintain specimens undisturbed in the chamber at 50˚C±5˚C and <33% RH for 24 hours, then stabilize at ambient or at least 1 hour before recording initial optical measurements. Subject mated specimens to -40˚C±2˚C with 90-95% RH for 96 hours (4 days). Attenuation shall be measured before test and at a maximum interval of 1 hour during test. At the completion of testing, measure final attenuation and return loss within 1 to 2 hours of the chamber's return to ambient conditions, with specimens undisturbed in the test chamber.
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	
Vibration	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-1 or TIA/EIA-455-11C.
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	Subject mated specimens to sinusoidal vibration, 10-500-10 Hz, traversed logarithmically at a rate of 1 octave/ minute for 2 hours in each of the three mutually perpendicular directions (6 hours total). The amplitude shall be 0.3 mm peak-to-peak, or 5 g's , whichever is less.

MECHANICAL/ENVIRONMENTAL REQUIREMENTS (Continued)

Test Description	Requirement	Procedure
Change of Temperature	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-22, Test Nb or TIA/EIA-455-3A.
	Maximum change in attenuation for any single specimen is 0.3 dB during and after test.	Maintain specimens undisturbed in the chamber at room ambient (23˚C ± 5˚C and 20 to 70% RH) for 2 hours prior to recording initial attenuation and return loss.
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	Using a ramp rate of 1˚C/minute, subject specimens to 12 cycles between -40˚C ± 2˚C and 85˚C ± 2˚C with 1 hour dwells at each extreme. Attenuation shall be measured before test, at a maximum interval of 10 minutes throughout the exposure, and after test. Maintain specimens undisturbed for at least 1 hour after the chamber's return to ambient conditions, before measuring final attenuation and return loss.
Shock	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-9 or EIA/TIA-455-14A Test Conditions J, A and C.
	Optical discontinuities shall not exceed 0.5 dB for 50 ms or more during test.	Subject mated specimens to 30g half-sine pulse for a duration of 18 ms in each of the six axes. Three shocks per direction (18 total impacts).
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	Repeat procedure using a 50g, 11 ms pulse, and a 100g, 6 ms pulse.
Mating Durability	Maximum attenuation for any single specimen is 0.75 dB before and after test.	IEC 61300-2-2 or EIA-455-21A.
	Minimum return loss for any single specimen is 20 dB for multimode or 50 dB for singlemode after test.	Engage and separate plug and adapter 500 times, at a maximum rate of 300 cycles per hour. Measure attenuation and return loss before and after test. Clean plug and adapter per manufacturer's instructions as necessary during test. At the completion of testing, record final optical measurements after the specimens have been inspected and cleaned.

MECHANICAL/ENVIRONMENTAL REQUIREMENTS (Continued)

Test Description	Requirement	Procedure
Dust Protection	No observable deposit of dust inside the enclosure upon test completion.	IEC 60529, Code IP6X, or TIA/EIA-455-35A. Part 1 - Unmated Receptacle Tighten the receptacle panel nut to a torque of 2.26 N-m (20 lbf-in) and apply the protective cover to the receptacle. Support the test enclosure within the dust chamber and, with a vacuum pump, create an atmospheric depression not to exceed 2 kPa (0.29 psi). Based on an air extraction rate of 40 to 80 volumes per hour, circulate2 kb/m3 (0.125 lbf/ft3) of talcum powder, in a suspension, for a 2-hour duration. Part 2 - Mated Receptacle Remove the protective cap. Mate and lock the plug cable assembly and repeat the test for mated condition.
Temporary Immersion	No accumulated ingress of water within the enclosure, which could reach live parts.	IEC 60529, Code IPX7 Part 1 - Unmated Receptacle Tighten the receptacle panel nut to a torque of 2.26 N-m {20 lb-in) and apply the protective cover to the receptacle. Immerse the enclosure , such that the lowest point is located at a 1000 mm water depth, for a 30-minute duration. Part 2 - Mated Receptacle Remove the protective cap. Mate and lock the plug cable assembly and repeat the test for mated condition.

FOR MORE INFORMATION

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