





FullAXS CONNECTOR SEALING AND CABLE ASSEMBLY

System Solution Guide

NEXT GENERATION X-TTA SOLUTION

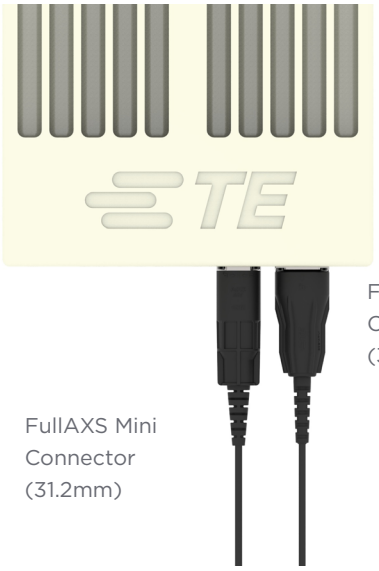
Next generation WiMAX and Long Term Evolution (LTE) Fiber/Power/Signal To The Antenna (x-TTA) connectivity designs require rugged cable assemblies for outdoor use. For direct connection, these cable assemblies need to plug directly into the optical transceivers or other connector types though a bulkhead construction.

For this specific application, the connector design will need to accommodate for a large tolerance in Z-direction. Furthermore, the connector shell must allow for easy one handed mating. TE Connectivity's (TE) FullAXS connector sealing systems were designed to function with a very large Z-axis tolerance, hence accommodating for the broadest range of transceivers on the market. This unique feature allows end users to pick almost any transceiver they wish.

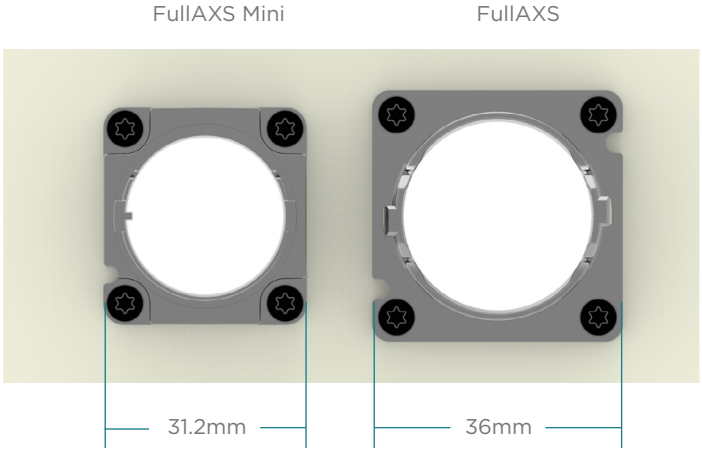
The FullAXS connector sealing system and cable assembly includes FullAXS Mini and FullAXS connector sealing products.

PRODUCT PORTFOLIO

CONNECTOR SEALING



BULKHEADS



FullAXS Mini connector sealing system delivers the small size and scalability to design in power and signal connectivity almost anywhere on the box. Easy-to-install mating features and ruggedized protection allow them to be installed in virtually any environment.

EFFICIENCY IN DESIGN

FullAXS Mini connector sealing system is about 20% smaller than FullAXS products and can be placed almost anywhere on the box thanks to their flexible design. As space in the bottom of the box gets smaller and smaller, FullAXS Mini connector sealing products make it easy to transmit power or signal using connections anywhere. Their modular design make them scalable in form, fit and function.

MATING MADE EASY

FullAXS Mini connector sealing system is one of the only products available that enable one-handed, blind installs from any angle including upside down. With 3-sense locking feedback, floating connection and a twist angle of only 30°, FullAXS Mini products can be installed by field engineers of all levels of experience in virtually any location.

LONG LASTING IN HARSH ENVIRONMENTS

FullAXS Mini connector sealing system delivers a water tight seal up to IP67 and IP65 levels, uses UV material to meet F1 rating, UL 94-V0 and withstands lightning strike requirements per IEC 62305-1 for shielded version, up to 20kA at 10/350 micro sec.





APPLICATIONS

- Wireless outdoor applications
- WiMAX and LTE base stations
- Remote Radio Heads (RRH)
- Industrial outdoor applications
- Robotics
- Aerospace and defense

SPECIFICATIONS

Environmental

- IP65 and IP67 (IEC 60529)
- Operating temperature range: -40°C to 85°C
- Salt spray (EIA 364-26B Condition A)
- UL F1 rated (ISO 4892-3)
- Flammability rating UL94-V0
- RoHS/Reach Product Compliance

Mechanical

- 50 mating cycles (EIA-364-9)
- 50 N side load (IEC 60512-17-1 / EIA-364-38)
- 100 N pull force (IEC 60512-17-1 / EIA-364-38)
- Vibration 10-150-10Hz sweeping (IEC 60512-6-4)

Application Spec

- 114-32138

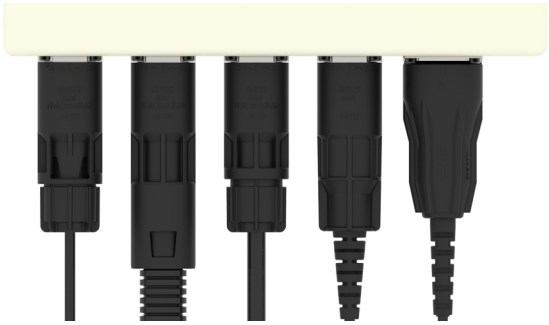
Product Spec

- 108-19486

KEY PRODUCT FEATURES

EFFICIENCY IN DESIGN

- About 20% smaller than FullAXS products
- Flexible sealing system allows connectors to be placed anywhere on the box
- Modular design makes connectors scalable in form, fit and function



MATING MADE EASY

- Twist angle to lock the robust bayonet is only 30°
- Enables one-handed, blind installs from any angle using only thumb and index finger to easily grip the tapered back end of the connector
- 3-sense locking feedback: visual, audio and tangible
- Floating connector solution secures correct mating in Z-direction



LONG LASTING IN HARSH ENVIRONMENTS

- Ingress protection according to IP65 and IP67
- UV material meets F1 rating, UL 94-V0
- Withstand lightning strike requirements per IEC 62305-1 for shielded version, up to 20kA at 10/350 micro sec



FullAXS MINI CABLE ASSEMBLIES

Products

Fiber optic floating cable assembly

FEATURES

- Open bulkhead for easy access to SFP
- Bulkhead cutout allows for removal of transceiver through the bulkhead (no need to open Remote Radio Head (RRH) for transceiver replacement)
- Water proof, dust proof and corrosion resistant
- Plug has tolerance free design, free floating on Z-axis
- No cable buckling during or after installation



SPECIFICATIONS

Mechanical/Electrical

- 100N pull force at cable (IEC 60512-17-1 / EIA-364-38)
- 50 N side load in all directions at cable (IEC 60512-17-1 / EIA-364-38)
- Controlled ferrule compression force (IEC spec 61300-3-22)
- PIM < -140dBc of 38dBm at 1800MHz

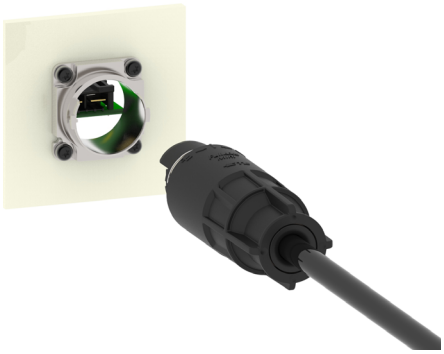
Optical Duplex LC Interconnect

- Insertion loss 0.3dB (SM) and 0,5dB (MM) (IEC 61300-3-4 method B)
- Return loss 50dB (SM) and 30dB (MM) (IEC 61300-3-6 method 1)

Fixed copper cable assembly*

FEATURES

- Cable diameter max. 9.5mm, using the same outer shell as FO version (31.2mm)
- Fully shielded from the braid 360 degrees to the box wall for best performance
- Length to panel (w/o boot) 80mm
- Fixed versions for ET power and RJ45
- ET power connector fixed with body alignment adapters in inner body for easy, one-handed mating with blind mate feature



SPECIFICATIONS

Mechanical

- 50 mating cycles (EIA-364-9)

Electrical

- 20A simultaneously
- Voltage max 60V
- Protection against lightning up to 20 kA at 10/350µs (IEC 62305-1)
- EMI protected 1 GHz at -30dB (IEC 60512-23-1)
- DATA TBD

*Currently designed, but not tooled. Contact your TE representative for more information

FullAXS MINI CABLE ASSEMBLIES

Products

FIELD INSTALLABLE



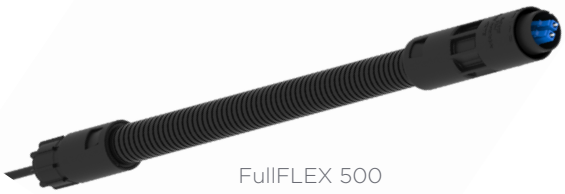
FullPROOF 80 and 140



FullPOWER

FEATURES

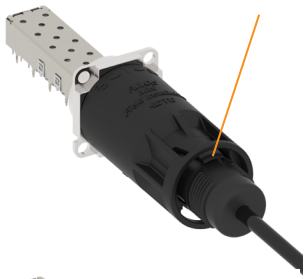
- Fiber DPX “fool proof” design protects the fiber cable during uninstallation by preventing the outer shell being turned before the nut is unscrewed (see diagrams below)
- Long version includes clamp to tube
- Plug diameter 29.8mm

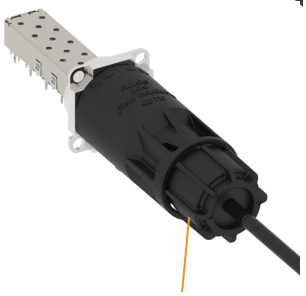


FullFLEX 500

“Fool Proof” Feature

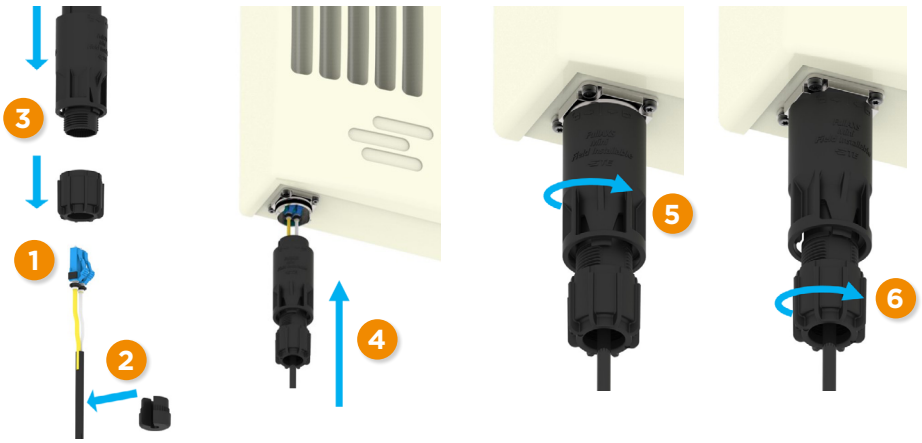
Latch on bayonet shell goes into the groove in the threads



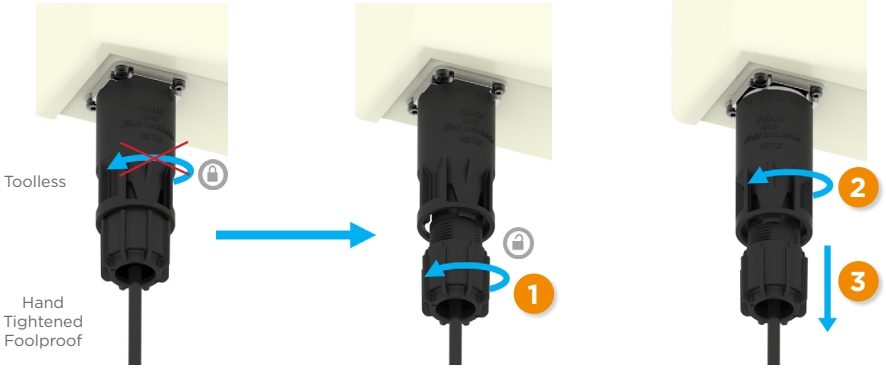


Nut locks the latch in the groove, preventing the bayonet shell from being disconnected first

INSTALLATION OF FULLPROOF



UNINSTALL OF FULLPROOF



FullAXS MINI CONNECTOR SEALING

Products

Bulkhead; die cast bayonet

Standard



EMI Shielded



FEATURES

- Cost effective metal diecast
- 2 bulkhead versions available: standard and EMI shielded
- Transceiver fully protected in the bulkhead
- Cut-out for easy access to SFP module
- Bayonet style of locking
- Ingress protection according to IP65 and IP67 sealing
- Keying
- Same bulkhead for fiber, RJ45, PoE, power and signal applications
- Shielded and unshielded dust caps available
- Rectangular or square footprint

Part Numbers

FullAXS MINI FIBER ASSEMBLIES

Part Number	Description
2061980-X	FOSM GLARO LEAD 4.8 mm FXS Mini

FullAXS MINI FIELD INSTALLABLE KITS

Part Number	Description
2061920-1*	FullPROOF80 Mini Field Install Kit*
2061973-1	FullPROOF140 Mini Field Install Kit
2061926-1	FullFLEX500 Mini Field Install Kit
2061933-1	FullPOWER Mini Field Install Assembly Kit

FullAXS MINI BULKHEAD SUB-ASSEMBLIES

Part Number	Description
2061981-4*	FullAXS MINI Bulkhead, EMI*
2061981-3	FullAXS MINI Bulkhead
2061953-1	FullAXS MINI Bulkhead Cap, EMI Shielded
2061953-2	FullAXS MINI Bulkhead Cap

*Currently designed, but not tooled. Contact your TE representative for more information

FullAXS CONNECTOR SEALING

APPLICATIONS

- WiMAX and LTE Base Stations
- Remote Radio Heads (RRH)
- Industrial outdoor applications
- Robotics
- Aerospace and Defense



MECHANICAL

- Designed to meet 150 N cable retention
- Designed to meet IP67
- LC interface
- Single- and Multimode
- Adapter footprint : 36mm x 36mm
- Bayonet style locking
- Duplex LC interconnect MM or SM
- No tools required
- Operating temperature : -40ºC to +70ºC
- Mating durability min : 100 cycles

SPECIFICATIONS

- Temperature : -40°C to +70°C
- 150 N Pull Force : per IEC61300-2-4
- Protection Class : IP 65 (IP 67 on request)
- 100 Mating Cycles
- Vibration : per IEC 61300-2-1
- Salt mist : per IEC 61300-2-26
- Impact : per IEC 61300-2-12
- Temperature/Humidity : per IEC 61300-2-22

KEY FEATURES

- Open bulkhead for easy access to SFP
- Positive mechanical feedback to operator when fully mated
- One-hand mating
- Duplex LC interface
- Bulkhead cutout allows for removal of transceiver through the bulkhead (no need to open RRH for transceiver replacement)
- Robust bayonet locking for easy, fast, and secure mating
- Multimode and single mode
- Water proof, dust proof and corrosion resistant
- Expansion to RJ45 and Power possible
- Plug has tolerance free design, fully free floating on Z-axis
- No cable buckling during or after installation
- Cost effective metal die cast bulkhead
- Field installable version available



Part Numbers

FullAXS BULKHEAD

Part Number	Description
2061433-1	FOAC FullAXS bulkhead assembly

FullAXS CABLE ASSEMBLY

Part Number	Description	Fiber Size	Available Lengths
2061846	FOSM LEAD 4.8mm FULLAXS LC/DPX - LC/DPX	Single mode	1-999 m
2061506	FOMM50 LEAD 4.8mm FULLAXS LC/DPX - LC/DPX	Multimode (50/125)	1-999 m

MULTI-FIBER CABLE ASSEMBLIES

TE's new multi-fiber cable assemblies can provide high signal data connectivity routing commonly through only one cable connecting multiple units in the field instead of one assembly for each. This can allow for space savings within densely populated applications.

LC DUPLEX-LC DUPLEX PORTFOLIO OVERVIEW

- Allows for aggregation of multiple optical channels each routed through separate CIPRI cable assemblies into a single multi-fiber cable assembly
- Faster and easier installation at site resulting in considerable savings in installer workforce cost
- Reduced installation material costs
- Junctions, fanouts and cables tested for various weather conditions through stringent temperature and humidity cycling tests
- Plug and play design, especially for sites with low downtime or urgency of rollouts
- UV protected, and water ingress protected cables allows for extremely rugged applications both indoors as well as outdoors
- Armored variants allows for high level protection against rodent and animal bites. Available upon request.



Fiber Optic Single Mode (FOSM) 2F LC Duplex - LC Duplex



Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex, 10mtr

Description	Cable Length (Meters)	TE Part Number
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	10	1-2061897-0
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	20	2-2061897-0
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	30	3-2061897-0
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	50	5-2061897-0
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	70	7-2061897-0
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	100	9-2061897-9
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	150	9-2061897-8
Fiber Optic Single Mode (FOSM) LC Duplex - LC Duplex	250	9-2061897-6
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	10	1-2835695-0
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	20	2-2835695-0
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	30	3-2835695-0
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	50	5-2835695-0
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	70	7-2835695-0
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	100	9-2835695-9
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	150	9-2835695-8
Fiber Optic Single Mode (FOSM) 6F LC Duplex - LC Duplex	250	9-2835695-6
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	10	1-2835696-0
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	20	2-2835696-0
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	30	3-2835696-0
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	50	5-2835696-0
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	70	7-2835696-0
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	100	9-2835696-9
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	150	9-2835696-8
Fiber Optic Single Mode (FOSM) 12F LC Duplex - LC Duplex	250	9-2835696-6

FULLAXS LC-LC DUPLEX PORTFOLIO OVERVIEW

- External sealing provided by FullAXS sealing system with millions deployed throughout field over the past decade
- Easy fool-proof installation - Positive feedback to operator when fully mated
- Allows for aggregation of multiple optical channels each routed through separate CIPRI cable assemblies into a single multi fiber cable assembly
- Faster and easier installation at site resulting in considerable savings in installer workforce cost
- Reduced installation material costs
- Junctions, fanouts and cables tested for various weather conditions through stringent temperature and humidity cycling tests
- Plug and play design, especially for sites with low downtime or urgency of rollout
- UV protected, and water ingress protected cables allows for extremely rugged applications both indoors and outdoors
- Armored variants allows for high level protection against rodent and animal bites. Available upon request.



Fiber Optic Single Mode (FOSM) 2F FullAXS LC - LC Duplex



Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex

Description	Cable Length (Meters)	TE Part Number
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	10	1-2061846-0
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	20	2-2061846-0
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	30	3-2061846-0
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	50	5-2061846-0
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	70	7-2061846-0
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	100	9-2061846-9
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	150	9-2061846-8
Fiber Optic Single Mode (FOSM) 2F FULLAXS LC - LC Duplex	250	9-2061846-6
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	10	1-2835697-0
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	20	2-2835697-0
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	30	3-2835697-0
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	50	5-2835697-0
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	70	7-2835697-0
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	100	9-2835697-9
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	150	9-2835697-8
Fiber Optic Single Mode (FOSM) 6F FULLAXS LC - LC Duplex	250	9-2835697-6
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	10	1-2835698-0
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC- LC Duplex	20	2-2835698-0
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	30	3-2835698-0
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	50	5-2835698-0
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	70	7-2835698-0
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	100	9-2835698-9
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	150	9-2835698-8
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - LC Duplex	250	9-2835698-6
Fiber Optic Single Mode (FOSM) 12F FULLAXS LC - Pigtail	10	1-2835699-0

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