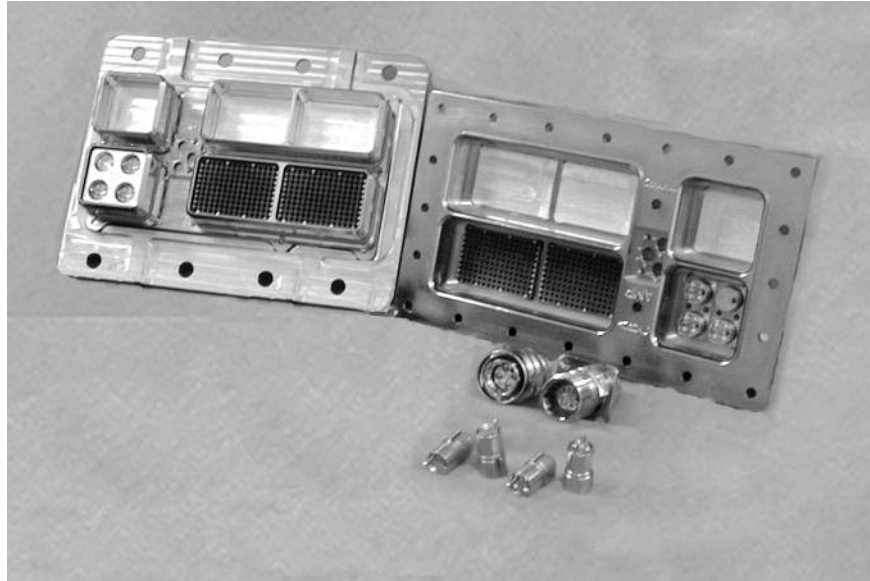


**ARINC 600 and 404**

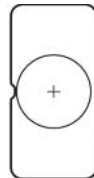
**Product Facts**

- For Mini Expanded Beam Inserts
- For use in 100 base-FX Ethernet LAN applications per ARINC 664 and ARINC 763
- Insert holders designed to ARINC 600, Supplement 13 or to specific customer needs for Mini Expanded Beam inserts
- Drop-In Insert Holders utilize Standard ARINC 600 Retainers
  - Hard Stop on Plug Side
  - Spring-Loaded Stop on Receptacle Side
  - Captive Hardware
- Facial Sealing — Optional
  - Bonded to Receptacle Block Mating Face
  - Raised Collar Seal around Optics Insert compresses against Chamfer on Plug Block Mating Face

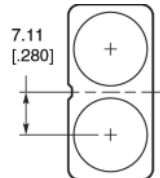


**ARINC 600 Insert Holders for Mini-Expanded Beam Contacts**

**Size 1 Power Cavities**

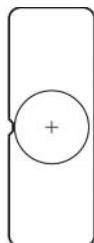


ARINC 600, 1 Position 1MP

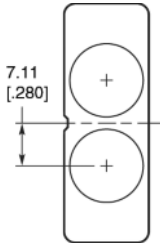


ARINC 600, 2 Position 2MP

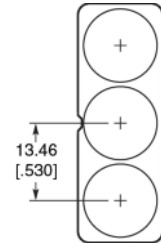
**Size 1 Signal Cavities**



ARINC 600, 1 Position 1MS



ARINC 600, 2 Position 2MS



ARINC 600, 3 Position 3MS

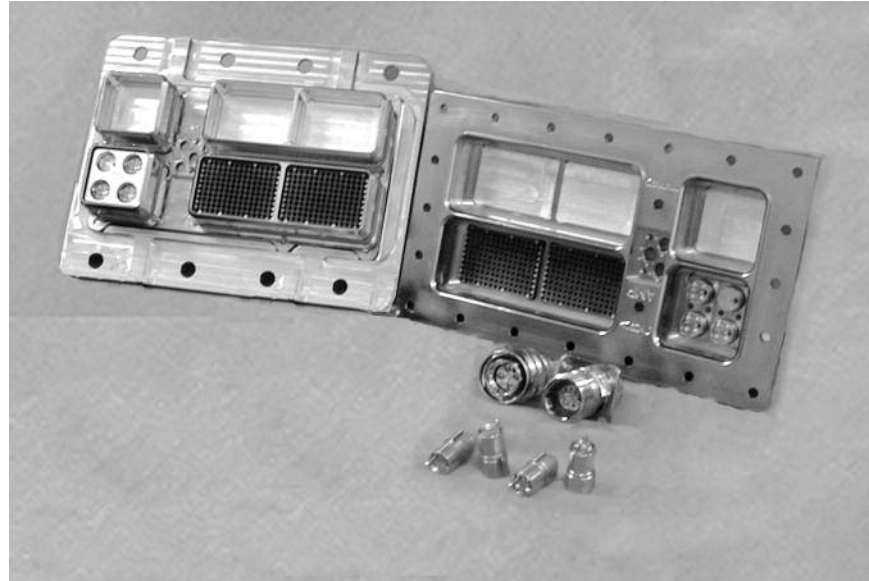
**ASSEMBLY CAPABILITIES**  
 TE Connectivity has extensive Rugged Optic Harness capabilities. Please consult your local TE Sales representative for assistance.

See next page for Size 2 / 3 Power and Signal Cavities

**ARINC 600 and 404**

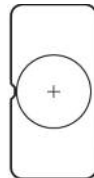
**Product Facts**

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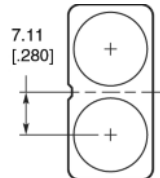


**ARINC 600 Insert Holders for Mini-Expanded Beam Contacts**

**Size 1 Power Cavities**

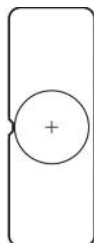


ARINC 600, 1 Position  
1MP

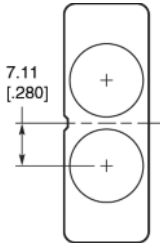


ARINC 600, 2 Position  
2MP

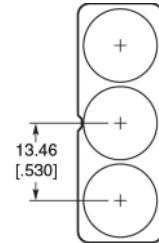
**Size 1 Signal Cavities**



ARINC 600, 1 Position  
1MS



ARINC 600, 2 Position  
2MS



ARINC 600, 3 Position  
3MS

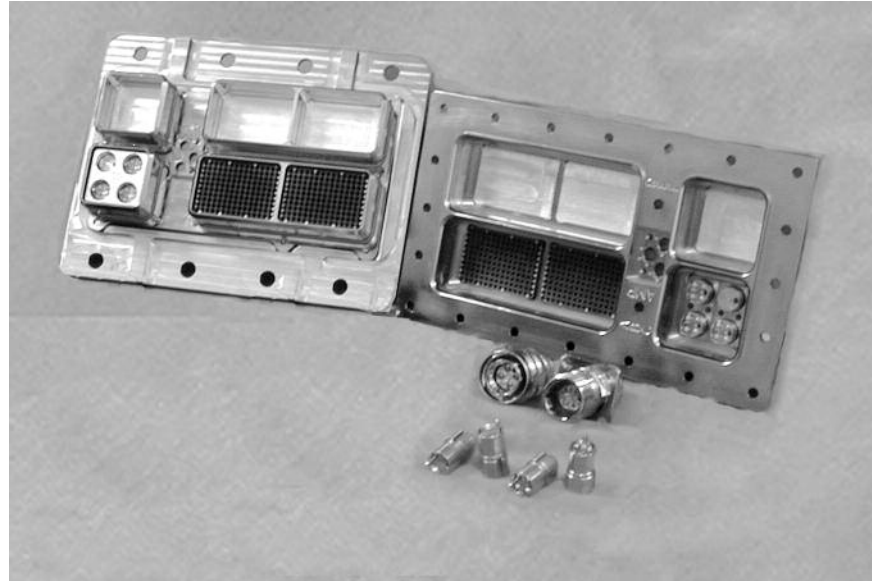
**ASSEMBLY CAPABILITIES**  
TE Connectivity has extensive Rugged Optic Harness capabilities. Please consult your local TE Sales representative for assistance.

See next page for Size 2 / 3 Power and Signal Cavities

**ARINC 600 and 404**

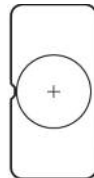
**Product Facts**

- For Mini Expanded Beam Inserts
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- Insert holders designed to ARINC 600, Supplement 13 or to specific customer needs for Mini Expanded Beam inserts
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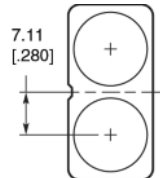


**ARINC 600 Insert Holders for Mini-Expanded Beam Contacts**

**Size 1 Power Cavities**

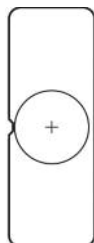


ARINC 600, 1 Position 1MP

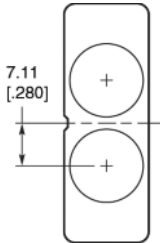


ARINC 600, 2 Position 2MP

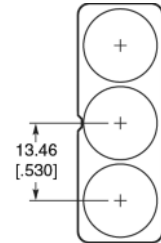
**Size 1 Signal Cavities**



ARINC 600, 1 Position 1MS



ARINC 600, 2 Position 2MS



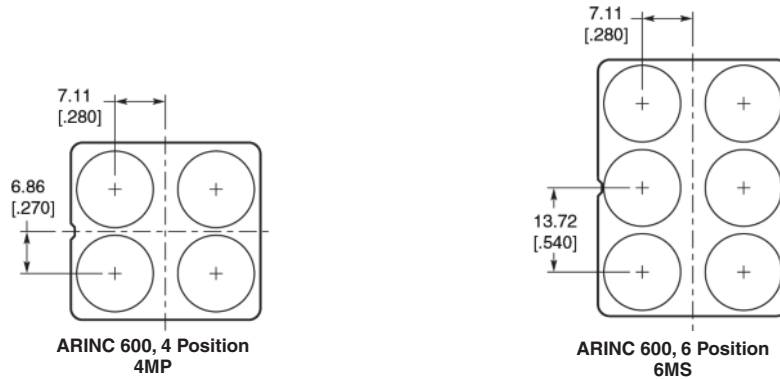
ARINC 600, 3 Position 3MS

**ASSEMBLY CAPABILITIES**  
TE Connectivity has extensive Rugged Optic Harness capabilities. Please consult your local TE Sales representative for assistance.

See next page for Size 2 / 3 Power and Signal Cavities

ARINC 600 and 404 (Continued)

Size 2 / 3  
Power and Signal Cavities



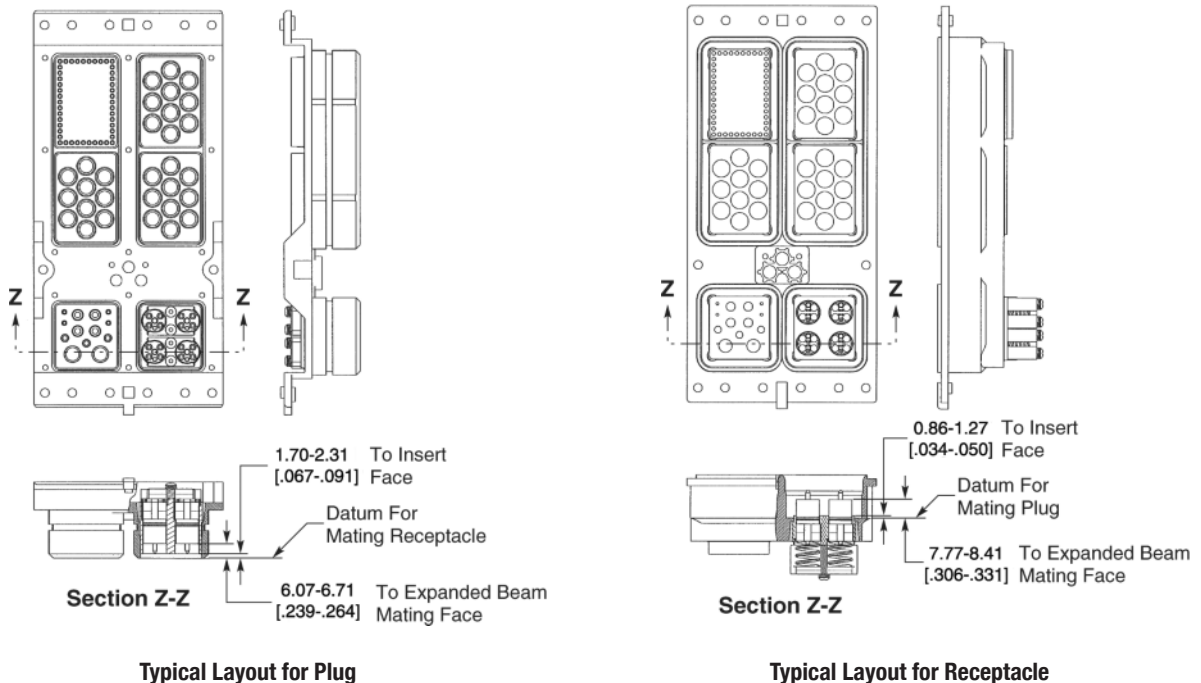
Rack and Panel Mini Insert Kits

Description	Part Number
2 x 850 / 1300 nm Dual Multimode	1374759-3
2 x 1310 nm Singlemode	1588839-3
2 x 1550 nm Singlemode	1754622-3
4 x 850 / 1300 nm Dual Multimode	1374759-1
4 x 1310 nm Singlemode	1588839-1
4 x 1550 nm Singlemode	1754622-4

Ferrule Kits

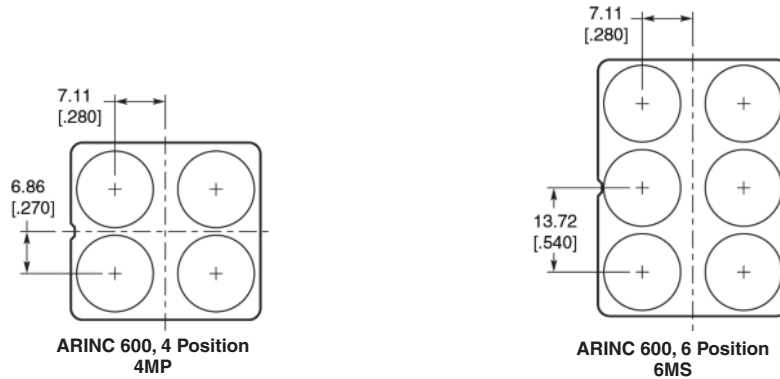
Fiber Hole Size	Mode	PRO BEAM Connector	Part Number
125 μm	SM	Mini	1754700-1
126 μm	SM	Mini	1754700-2
126 μm	MM	Mini	1754699-1

ARINC 600 Insert Holders  
for Mini-Expanded Beam  
Contacts



ARINC 600 and 404 (Continued)

Size 2 / 3  
Power and Signal Cavities



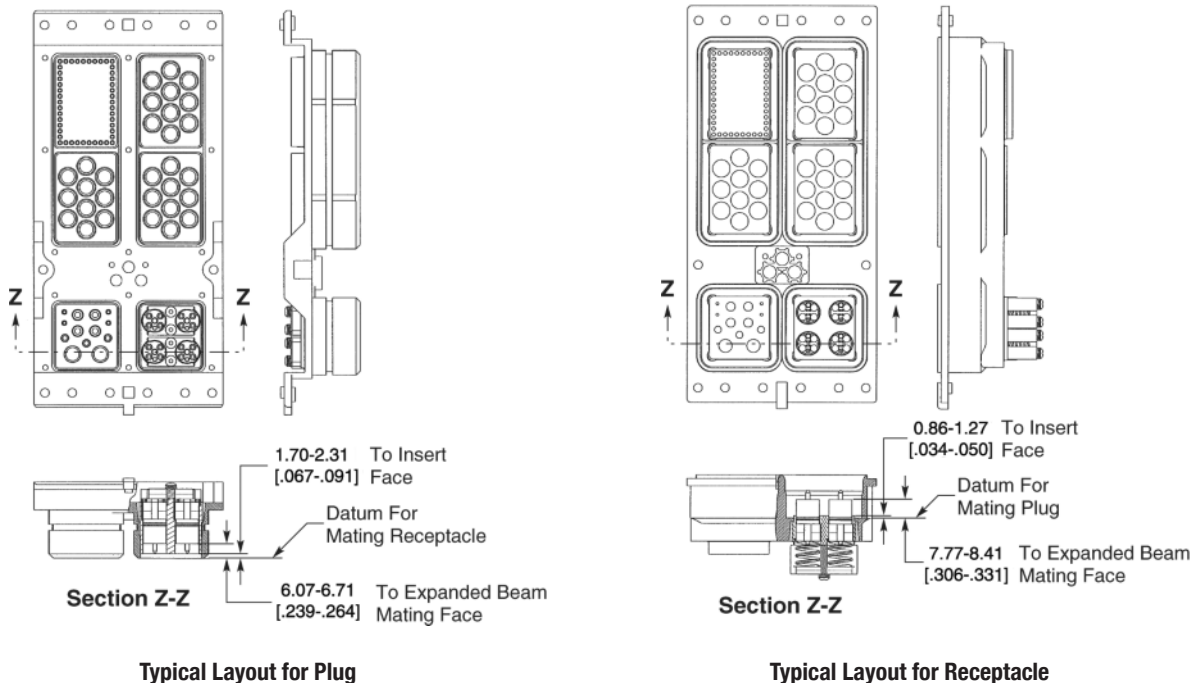
Rack and Panel Mini Insert Kits

Description	Part Number
2 x 850 / 1300 nm Dual Multimode	1374759-3
2 x 1310 nm Singlemode	1588839-3
2 x 1550 nm Singlemode	1754622-3
4 x 850 / 1300 nm Dual Multimode	1374759-1
4 x 1310 nm Singlemode	1588839-1
4 x 1550 nm Singlemode	1754622-4

Ferrule Kits

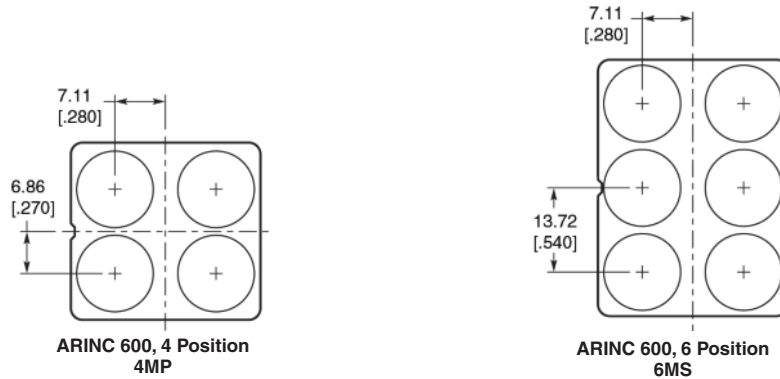
Fiber Hole Size	Mode	PRO BEAM Connector	Part Number
125 $\mu\text{m}$	SM	Mini	1754700-1
126 $\mu\text{m}$	SM	Mini	1754700-2
126 $\mu\text{m}$	MM	Mini	1754699-1

ARINC 600 Insert Holders  
for Mini-Expanded Beam  
Contacts



ARINC 600 and 404 (Continued)

Size 2 / 3  
Power and Signal Cavities



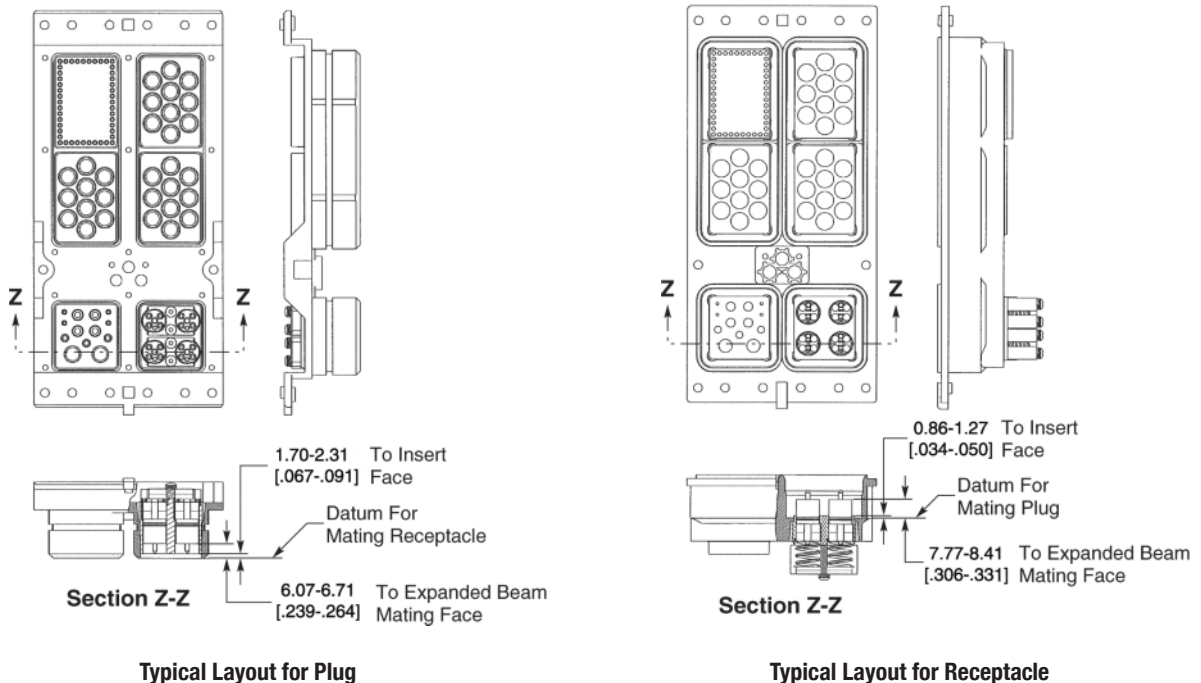
Rack and Panel Mini Insert Kits

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4 x 1310 nm Singlemode	1588839-1
4 x 1550 nm Singlemode	1754622-4

Ferrule Kits

Fiber Hole Size	Mode	PRO BEAM Connector	Part Number
125 $\mu\text{m}$	SM	Mini	1754700-1
126 $\mu\text{m}$	SM	Mini	1754700-2
126 $\mu\text{m}$	MM	Mini	1754699-1

ARINC 600 Insert Holders  
for Mini-Expanded Beam  
Contacts

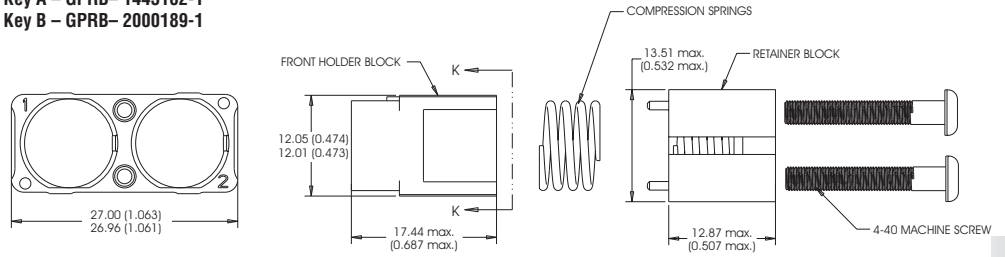




ARINC 600 and 404 (Continued)

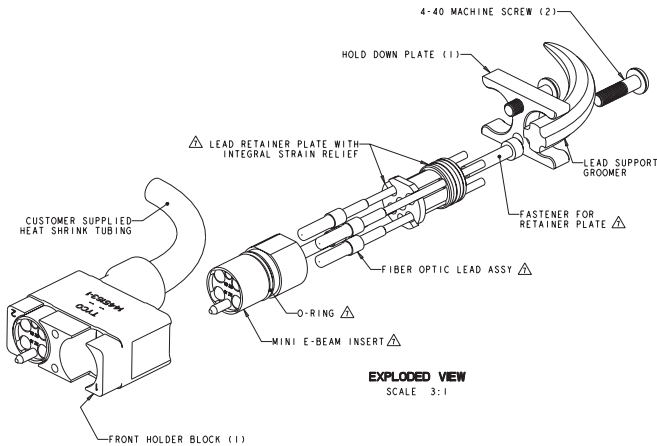
M2 Mini-Expanded Beam  
Insert Holders for GPRB

Holder Kit, Pin (Spring-Loaded), Mini-Expanded Beam  
Key A – GPRB-1445162-1  
Key B – GPRB-2000189-1



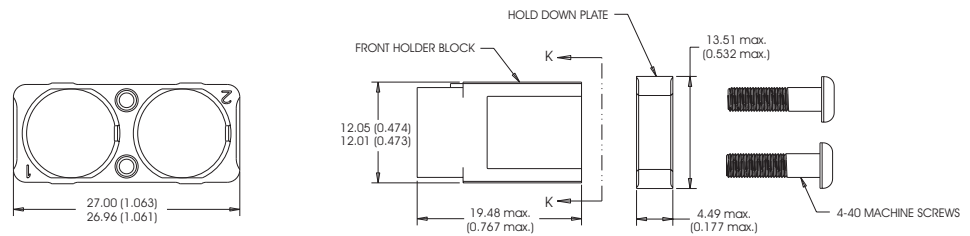
SECTION K - K

MINI-E BEAM HOLDER KIT



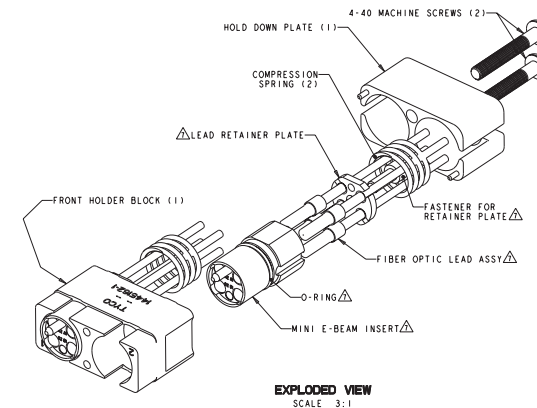
EXPLODED VIEW  
SCALE 3:1

Holder Kit, Socket (Fixed), Mini-Expanded Beam,  
Key A – GPRB-1445163-1  
Key B – GPRB-2000190-1



SECTION K - K

MINI-E BEAM HOLDER KIT



EXPLODED VIEW  
SCALE 3:1

**ARINC 600 and 404** (Continued)

**Insert Kits for GPRB Holders**

**Rack and Panel Mini Insert Kits**

Description	Part Number
2 x 850 / 1300 nm Dual Multimode	1374759-3
2 x 1310 nm Singlemode	1588839-3
2 x 1550 nm Singlemode	1754622-3
4 x 850 / 1300 nm Dual Multimode	1374759-1
4 x 1310 nm Singlemode	1588839-1
4 x 1550 nm Singlemode	1754622-4

**Ferrule Kits**

Fiber Hole Size	Mode	PRO BEAM Connector	Part Number
125 $\mu\text{m}$	SM	Mini	1754700-1
126 $\mu\text{m}$	SM	Mini	1754700-2
126 $\mu\text{m}$	MM	Mini	1754699-1

**Comparative on Expanded Beam Inserts**

**Comparative on Expanded Beam Inserts' weight and Insertion Forces when applied to an ARINC housing**

- ARINC 600 connector mated pair size 2 = 440 grams (without copper contacts)
- ARINC style Mini and Junior size Expanded Beam inserts = 5 pounds insertion force each when applied to the Rack and Panel ARINC Connector inserts
- Signal Cavity Optical Holder insert (i.e.: holds up to six mini inserts with four fiber ball lenses each or up to 24 fibers each insert set) = @ 30 grams
- Power Cavity Optical Holder insert (i.e.: holds up to four mini inserts with four fiber ball lenses each or up to 16 fibers each insert set) = @ 20 grams
- Insert mated pair PRO BEAM Jr. Connector insert set = @ 41.79 grams
- Insert mated pair Connector insert set = @ 16.17 grams
- Fiber = single fiber  $\leq 4$  kg / km
- Fiber = four fiber jacketed with a support member  $\leq 24$  kg / km
- Static spring force per mated Expanded Beam insert pair = 5 lbs.



Physical Contact & Technology

ARINC 801 Optical Termini

Product Facts

- Optical termini for use with GPR, ARINC 600, circular MIL-DTL-38999 connectors.
- Industry Standard 1.25 mm ceramic ferrule
- Compatible with 1.5-2.2 mm Tight jacket and loose tube cable construction:
  - MT - Tight jacket cable
  - ML - Loose tube cable
- SM / MM versions

Materials

- Housings** — Nickel Plated Copper
- Ferrule** — Zirconia
- Spring** — Stainless Steel
- Crimp Sleeve** — Nickel Plated Copper
- Protective Cover** — Silicone

Optical Performance

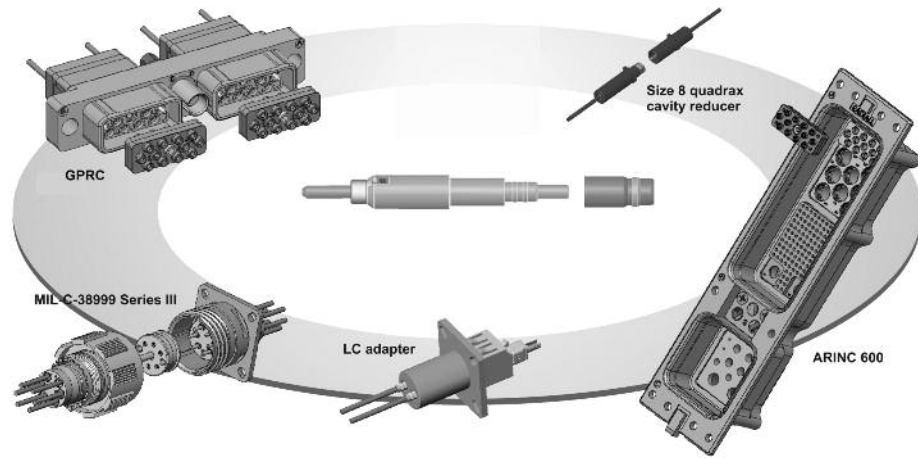
Singlemode, 1310 nm/1550 nm (UPC):

- Attenuation, Mean — 0.15dB
- Return Loss — > 50dB

Multimode, 850 nm/1310 nm:

- Attenuation, Mean — 0.10dB
- Return Loss — > 20dB

ARINC 801 Optical Termini  
one common terminus for all types of connectors



Mechanical / Environmental Performance

Test Description	Standard	ARINC 801 Optical Termini in GPR A & B Connector	ARINC 801 Optical Termini in 38999 Connector	ARINC 801 Optical Termini in ARINC 600 Connector
Thermal Shock	SAE-AS-13441 met 1003.1	-55C /+100C	-55C /+100C	-55C /+100C
Temperature Life	TIA/EIA 455-20A	500h @ +100C	500h @ +100C	500h @ +100C
Vibration	TIA/EIA 455-11	8h/axis 3.8g <sup>2</sup> /Hz 43 G rms	8h/axis 3.8g <sup>2</sup> /Hz 43 G rms	8h/axis 0.2g <sup>2</sup> /Hz 16.4 G rms
Shock	TIA/EIA 455-14A	300 G - 3ms	300 G - 3ms	50G - 11ms
Mate/Unmate (GPR/ARINC 600)	SAE-AS-13441 met 2016	100 Cycles	N/A	100 Cycles
Mate/Unmate (38999)	TIA/EIA 455-21A	N/A	500 Cycles	N/A
Maint. Aging	SAE-AS-13441 met 2002-1	10 Cycles	10 Cycles	10 Cycles
Salt Spray	SAE-AS-13441 met 1001.1 cond C	96 hr	500 hr	48 hr
Cable Ret. (1.8 mm)	SAE-AS-13441 met 2009-1	68N	68N	68N
Humidity (GPR/38999)	TIA/EIA 455-5 met B7A	10 cycles / 24h 90% RH -25C/+65C	10 cycles / 24h 90% RH -25C/+65C	N/A
Humidity (ARINC 600)	TIA/EIA 455-5 met B	N/A	N/A	10 cycles / 24h 90% RH -25C/+65C
Altitude Imm.	TIA/EIA 455-15	10,000 ft (69.6kPa)	10,000 ft (69.6kPa)	10,000 ft (69.6kPa)



**Physical Contact & Technology** (Continued)

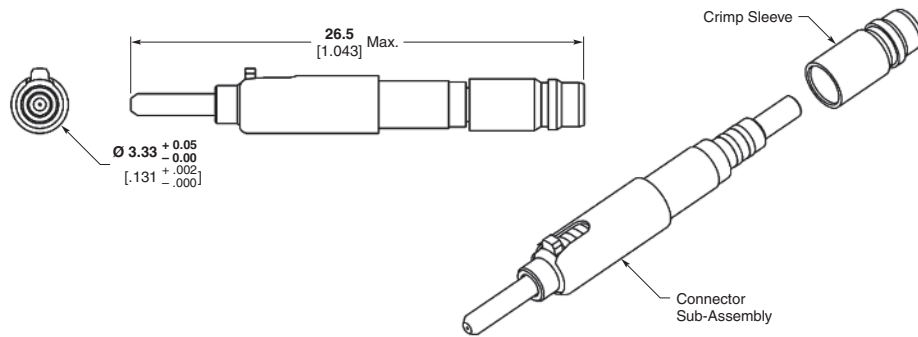
**ARINC 801 Optical Termini**  
(Continued)

There are three types of ARINC 801 Optical Termini available dependent upon cable structure.

TE Connectivity has multiple connector types/families available for the ARINC 801 Optical Termini System.

These are:

- **General Purpose Rectangular Connectors**
  - F5 & F12 Inserts
- **MIL-DTL-38999 connectors**
  - 13-04, 15-06, 21-16
- **ARINC 600**
  - F12 combinations and F36
- **Quadrax Cavity Reducers**
- **Motherboard & Daughtercard Solutions**



**ARINC 801 Optical Termini Part Numbers**

Cable Dia.	Cable Structure ML (loose & tight) MT (ultra tight)	S/M Fiber 125.3 µm PC/UPC	S/M Fiber 125.3 µm APC	M/M Fiber 128 µm PC
0.9mm Buffer	—	*	*	*
1.5 - 2.2 mm	ML	1918614-1	1918616-1	1828199-1
1.5 - 2.2 mm	MT	1918615-1	1918617-1	1828200-1

Consult your local TE Sales Representative for additional options.

\* Contact TE for availability.

Accessories	Part Number
Dust Cap	1985335-1
100 Pc Bulk Pack	1985335-2

**ARINC 801 Cavity Reducers**

Size 8 Quadrax	Part Number	ARINC 801 Cavity Reducer
Pin Quadrax adapter for ARINC 801 Optical Termini in Quadrax FR type cavity	1757727-1	Quadrax cavity reducer (FR/FR) for receptacle shell
Pin Quadrax adapter for ARINC 801 Optical Termini in Quadrax RR type cavity	1757710-1	Quadrax cavity reducer (RR/RR) for receptacle shell
Socket Quadrax adapter for ARINC 801 Optical Termini in Quadrax RR type cavity	1757711-1	Quadrax cavity reducer (RR/RR) for plug shell

**Connector Options:**  
For part numbers, details, and / or additional connector types and arrangements, contact your local TE Sales Representative.

**ASSEMBLY CAPABILITIES**  
TE Connectivity has extensive Rugged Optic Harness capabilities. Please consult your local TE Sales representative for assistance.

**Cable Structure**

	Loose Structure	Tight Structure	Ultra Tight Structure
Movement between fiber & 900 µm buffer	Yes	No	No
Movement between 900 µm & cable jacket	Yes	Yes	No

**Adapters**

Type	Version	Alignment Sleeve	Part Number	Dim. (page 3-32)
ARINC 801 Optical Termini to ARINC 801 Optical Termini	Simplex Bulkhead Feedthrough Type	Ceramic Zirconia	1828996-1	Fig. 1
ARINC 801 Optical Termini to ARINC 801 Optical Termini	Simplex Straight	Ceramic Zirconia	1828997-1	Fig. 2
ARINC 801 Optical Termini to LC	Simplex LC Panel Cutout	Ceramic Zirconia	1828979-1	Fig. 3
ARINC 801 Optical Termini to LC	Duplex LC Panel Cutout	Ceramic Zirconia	1828980-1	Fig. 4
ARINC 801 Optical Termini to LC	Duplex MIL-DTL-38999 Panel Cutout	Ceramic Zirconia	1828995-1	Fig. 5

**Tools**

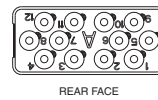
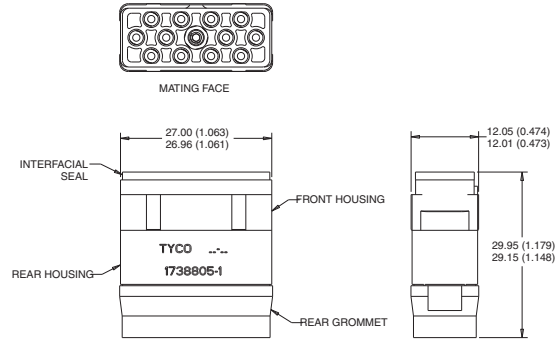
Description/Function	Part Number
Metal Extraction Tool (M81 969/1-03)	91066-3
Plastic Extraction Tool (M81 969/1403)	M81969/14-03
Daniels Right Angle Insertion Tool	DAK83-16*
Daniels Right Angle Removal Tool	DRK83-16*

\* Contact Daniels Manufacturing Corporation

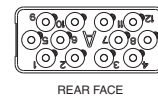
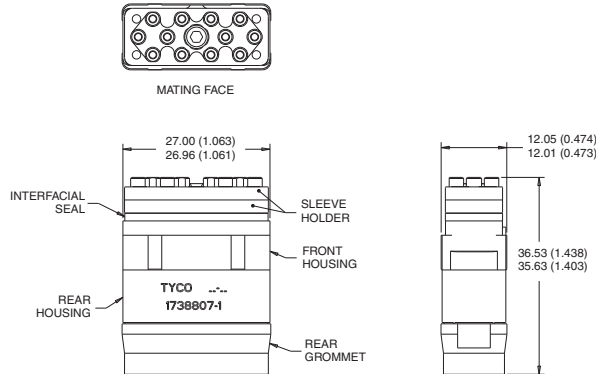
**Note:** All part numbers are RoHS compliant.

Physical Contact & Technology (Continued)

**F12 ARINC 801  
Insert Assemblies**



Insert Assembly, without Sleeve Holder,  
Environmental, F12  
Key A 1738805-1  
Key B 1738806-1



Insert Assembly, with Sleeve Holder,  
Environmental, F12, Key A  
GPRB  
Key A 1738807-1  
Key B 1738808-1

**Product Facts**

- ARINC 801 approved
- Optical termini for use with GPR, ARINC 600, circular MIL-DTL-38999 connectors
- Industry Standard 1.25 mm ceramic ferrule
- Compatible with 1.5-2.2 mm tight jacket and loose tube cable construction:
  - MT - Tight jacket cable
  - ML - Loose tube cable
- Singlemode (SM) and Multimode (MM) versions
- ARINC 801 Optical Termini part numbers:
  - 1828199-1 MM/ML Version
  - 1828200-1 MM/MT Version
  - 1918614-1 SM/ML Version
  - 1918616-1 SM/ML Version-APC
  - 1918615-1 SM/MT Version
  - 1918617-1 SM/MT Version-APC

**Materials:**

- Housings** – Nickel Plated Copper
- Ferrule** – Zirconia
- Spring** – Stainless Steel
- Crimp Sleeve** – Nickel Plated Copper
- Protective Cover** – Silicone

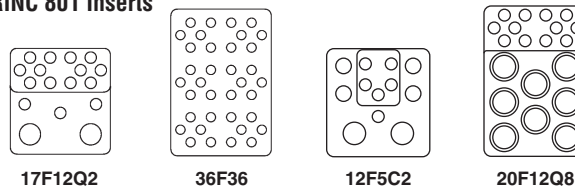
**Optical Performance**

- Singlemode**, 1310 nm/1550 nm (UPC)
  - Attenuation, Mean** – 0.15dB
  - Return Loss** - >50dB
- Multimode**, 850 nm, 1310 nm
  - Attenuation, Mean** – 0.10dB
  - Return Loss** - >20dB

**Assembly Capabilities**

TE Connectivity has extensive Rugged Optic Harness capabilities. Please consult your local TE Sales Representative for assistance.

**ARINC 801 Inserts**

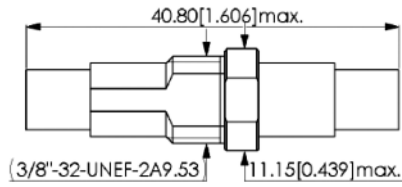


ARINC 801 Inserts and Cavity Reducers accept ARINC 801 Optical Termini.

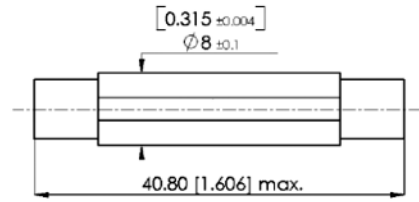
**Note:** All part numbers are RoHS compliant.

Physical Contact & Technology (Continued)

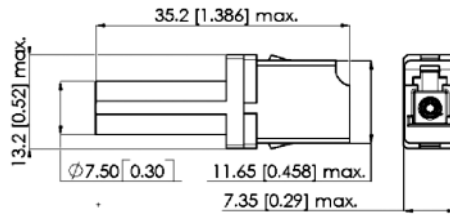
ARINC 801 Optical Termini Adapter Dimensions



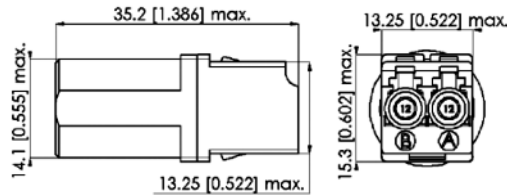
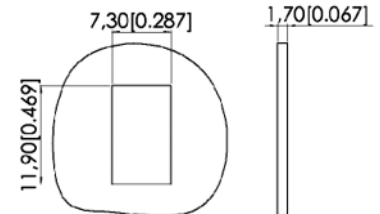
Terminus to Terminus Bulkhead Feedthrough  
Figure 1



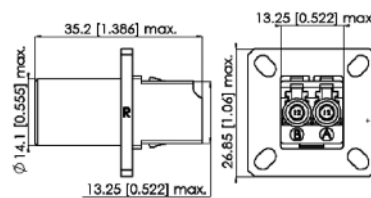
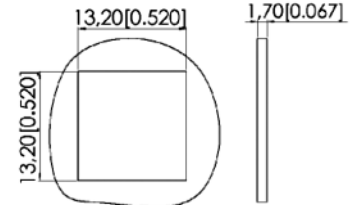
Terminus to Terminus Straight  
Figure 2



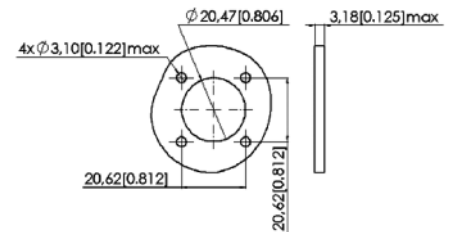
Terminus to LC Simplex  
Figure 3



Terminus to LC Duplex, LC Panel  
Figure 4



Terminus to LC Duplex, MIL-DTL-38999 Panel Cutout  
Figure 5



**Physical Contact & Technology** (Continued)

Most of the tools included in the Termination Kit are commonly used in the fiberoptic industry (strippers, cutting pliers and all accessories for fiber and cable preparation). The items in the table below are specially made for the ARINC 801 Optical Termini System. Their use is highly recommended to achieve mechanical and optical performances.

**ARINC 801 Optical Termini Termination Kit**  
Part Number 1828644-X



Qty -2	Qty -1	Description	Part Number	Item #
1	1	Label, Termination Kit	1918887-1	28
1	1	Insertion and Extraction Tool	91066-3	27
2	2	1.25 mm Swab	1828355-1	26
1	1	LC Polishing Bushing	1754074-1	25
1	1	Polishing Plate	501197-1	24
1	1	Polishing Pad	501523-1	23
10	10	0.3 µm Polishing Film	228433-5	22
5	5	Fine Diamond Polishing Film	503887-1	21
10	10	5 µm Polishing Film	228433-8	20
15	15	9 µm Polishing Film	1374484-1	19
1	1	Cleave Tool	504064-1	18
1	—	Curing Oven Block	1918510-1	17
1	—	Curing oven	502130-1	16
1	1	Resin injector tips	1918509-2	15
1	1	Resin injector	1918509-1	14
5	5	Epoxy, 353ND	504035-1	13
10	10	Alcohol Fiber Wipe	501857-2	12
1	1	Inner Ferrule Shaping Tool	1918511-1	11
1	1	Hexagonal key	19840-5	10
1	1	Fiber Stripping tool (125 µm)	1754708-1	9
1	1	Handtool	58532-1	8
1	1	Die-set, ARINC 801 Optical Termini	1828889-1	7
1	1	KEVLAR Shears	1278637-1	6
1	1	Cable Jacket Strip Tool	1278531-1	5
1	—	1.25 mm Microscope Adapter	1754765-1	4
1	—	200x Microscope	1754767-1	3
1	—	Carrying case, Weekender	1918881-1	2
—	1	Carrying case, Attache	1918834-1	1

The following tools are necessary for product termination but are not included in the kit: Alcohol, canned air, and clean cloth. Other accessories available include ruler, tweezers, cleaning tip, roller adhesive tape, moss cable support and permanent ink markers.

**ARINC 801 Optical Termini Service Tool Kit (Inspection, testing & cleaning)**  
Part Number 1828335-1

**ARINC 801 Optical Termini Service Tool Kit (Cleaning only)**  
Part Number 1828335-2

**ARINC 801 Optical Termini Service Tool Kit (Testing only)**  
Part Number 1828335-3

**ARINC 801 Optical Termini Service Tool Kit (Hand Held Digital Probe Kit)**  
Part Number 1828335-4

**Tool Kit Contents**

Item #	Comp Part Number	Description	-1	-2	-3	-4
1	1278540-1	Soft Carry Bag	1	—	—	—
2	1754767-1	200x Microscope	1	—	—	—
3	1754765-1	LC Microscope adapter	1	—	—	—
4	6374613-5	LC - SC 50/125 cable assembly	2	—	—	—
5	6374615-5	LC - SC 62.5/125 cable assembly	2	—	—	—
6	1918808-1	1.25 mm swab	2	2	—	—
7	1918810-1	OPTIPOP C Card Cleaner	2	5	—	—
8	1828349-1	Optical Loss Test Set	1	—	1	—
9	1828350-1	OLTS 1.25 mm detector cap	1	—	1	—
10	1828352-1	Visual Fault Locator	1	—	1	—
11	1828353-1	VFL 1.25 mm Adapter	1	—	1	—
12	1828465-1	Label, Service Kit	1	—	1	—
13	1918222-1	Inspection, Hand Held Digital Probe Kit	—	—	—	1
14	1918223-1	1.25 mm Adapter, Digital Probe	—	—	—	1

-1 inspection, cleaning & testing  
-2 cleaning  
-3 testing  
-4 Hand Held Digital Probe Kit

**Note:** All part numbers are RoHS compliant.

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OPTIPOP is a trademark of NTT Advanced Technology Corporation.