

Quick Multipin Series



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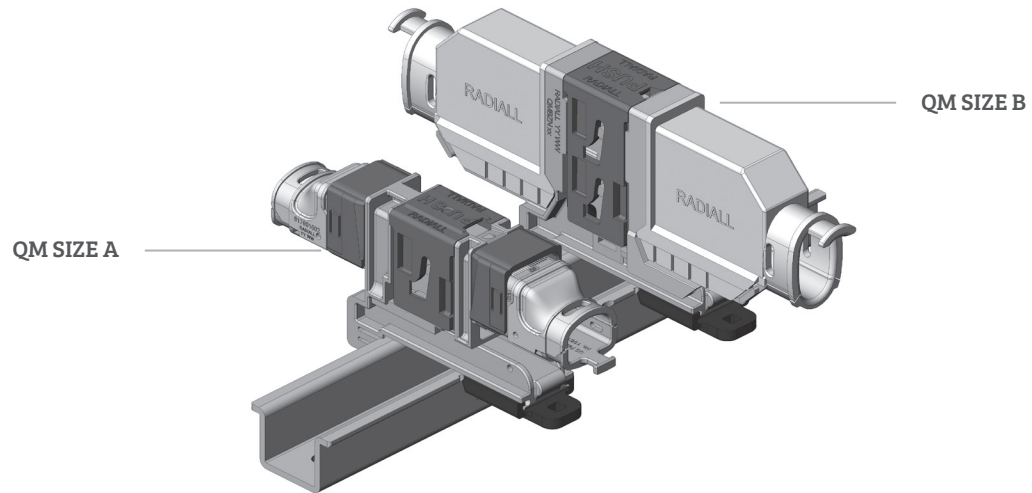
Introduction

A MODULAR AND TOOL LESS CONNECTOR

Radiall QM series connectors are designed for use with in-line disconnect applications on commercial airplanes. QM series offer outstanding electrical performances and are designed with environmental and mechanical characteristics that provide long lasting durability needed for the most severe aerospace applications.

Two connector sizes are available in QM series to optimize disconnect connection in terms of weight and density in an aircraft wiring system:

- QM size A
- QM size B



QM series is developed to provide the following benefits:

- Save time during wiring with a tool less connector
- Save weight with a composite connector
- simplify the wiring design as no panel cut outs are needed

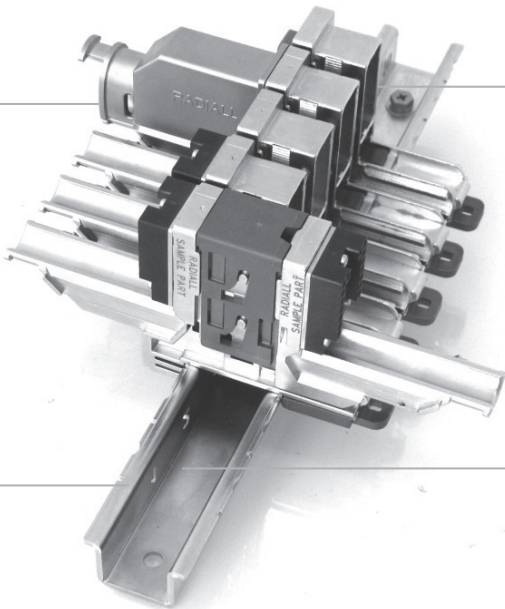
QM size A and size B are mounted on the same range of rails. QM size A will save weight and space when a smaller insert with less contacts can be utilized in the wiring design compared to the QM size B. QM series offer a wide range of inserts that cover all contact technology. It is manufactured under US patent App, No 11/614.642. QM series is available worldwide.

Applications

Interconnect solution for aerospace and harsh environment applications



Features & Benefits



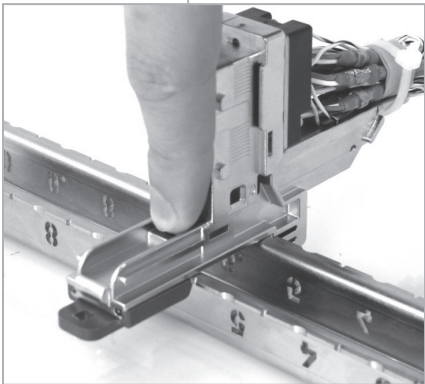
Lightweight

High conductive rails

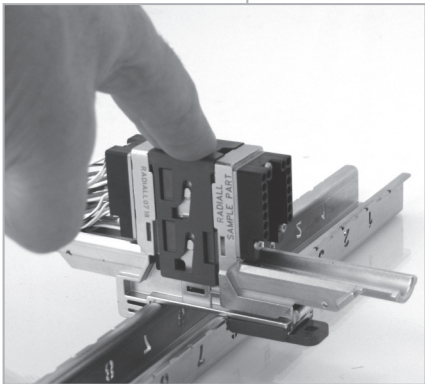
Simple, clean and efficient

Exceptional quality

User friendly - no tools needed



Click to install



Push to lock

Electrical Characteristics

Contacts are per EN3155-76 and EN3155-77. Electrical characteristics conform to SAE AS 39029 (MIL-C-39029 type A).

GROUND BLOCK CONTACT

| | Contact with wire size | Max Current Amps |
|-----------------------------|------------------------|------------------|
| Contact to contact | Contact + AWG20 | 7.5 |
| Contact to mounting surface | Contact + AWG20 | 7.5 |

CONTACTS

| Contact size | Wire size | Max Current Amps |
|--------------|-----------|------------------|
| 22 | AWG22 | 5 |
| | AWG24 | 3 |
| | AWG26 | 2 |
| 20 | AWG20 | 7.5 |
| | AWG22 | 5 |
| | AWG24 | 3 |
| 16 | AWG16 | 13 |
| | AWG18 | 10 |
| | AWG20 | 7.5 |
| 12 | AWG12 | 23 |
| | AWG14 | 17 |
| | AWG16 | 13 |
| 8 | AWG8 | 46 |
| | AWG10 | 33 |
| 5 | AWG8 | 46 — See note 1 |
| | AWG10 | 33 |

Note 1: Size 5 contacts are not part of SAE AS 39029 (MIL-C-39029 type A). They are qualified by Radiall to 46 Amps

EMI SHIELDING EFFECTIVENESS

| Frequency (MHz) | Leakage attenuation (dB) |
|-----------------|--------------------------|
| 100 | 65 |
| 200 | 63 |
| 300 | 61 |
| 400 | 59 |
| 500 | 58 |

DIELECTRIC WITHSTANDING VOLTAGE

EIA 364-20 (MIL-STD-1344 / Method 3001.1) with leakage current < 1m Ω

| Level | Environmental inserts Voltage (VRMS) | Non-environmental voltage (VRMS) |
|-------------|--------------------------------------|----------------------------------|
| Sea level | 1500 | 1500 |
| 50 000 feet | 800 | 600 |
| 70 000 feet | 800 | 300 |

INSULATION RESISTANCE

EIA 364-21 (MIL-STD-1344 / Method 3003.1)

| Temperature | Insulation resistance |
|---------------------|-----------------------|
| Ambient temperature | > 5000 M Ω |
| 155°C (+347°F) | >200 M Ω |

OTHER CHARACTERISTICS

- Shell to shell conductivity < 2.5 m Ω, operating voltage: 400 Vrms or 500 Vdc at sea level
- Voltage stability (ground block): Maximum variation 4mV SAE AS 81714 (MIL-T-81714)
- Magnetic permeability < 2 μ and comparative tracking index = 250 V
- Lightning strike: 3.6kA according to EIA-364, Test procedure 75, Type B Test level 1

Mechanical and Environmental Characteristics

MECHANICAL CHARACTERISTICS

Vibration and Shock

| Shell type | Material | Vibration | Shock |
|------------|-----------|--|--|
| | | for 5 hours in each of the 3 axis/interruption < 1µs EIA 364-28 (MIL-STD-1344 /Method 2005.1) | three shocks in each axis EIA 364-27 (MIL-STD-1344 /Method 2004.1) condition A |
| QM Series | Composite | 4 positions rail = Acceleration 13,8 Grms 0,2G ² /Hz from 10 to 400HZ and 0,03G ² /hz from 400 to 2000Hz | 4 positions rail = Shock amplitude 50G / duration 11ms |
| | | 22 positions rails = Acceleration 6,2 Grms 0.04 g ² /Hz from 10 to 400 Hz 0.006 g ² /Hz at 2000 Hz | 22 positions rail = Shock amplitude 15G / duration 11ms |

Interruption shall not exceed 1µs, they are measured on electrical contacts, between shells and between shell and rail.

Mating/unmating

| Shell type | Material | Mating/unmating | Mating force |
|------------|-------------------------|-----------------|--------------|
| QM size B | Nickel plated composite | 50 cycles | 250N max |
| QM size A | | | 125N max |

RETENTION CHARACTERISTICS

Contact retention EIA 364-29 (MIL-STD-1344 / Method 2007.1) on terminated connectors

| Contact size | Retention force | Max displacement |
|--------------|-----------------|-------------------|
| Ground block | 88N (20lbs) | 0.30mm (.012 in.) |
| 22 | 53.4N (12lbs) | 0.38mm (.015 in.) |
| 20 | 89N (20 lbs) | 0.38mm (.015 in.) |
| 16 | 111.2N (25lbs) | 0.38mm (.015 in.) |
| 12 | 133.45N (30lbs) | 0.38mm (.015 in.) |
| 8 | 133.45N (30lbs) | 0.38mm (.015 in.) |
| 5 | 133.45N (30lbs) | 0.38mm (.015 in.) |

- Insert retention: 400N (90lbs) (EIA 364-35 = MIL-STD-1344 /Method 2010.1)
- Max displacement: 0.30mm (.012 in.)

ENVIRONMENTAL CHARACTERISTICS

Temperature

- Temperature range: -65°C / +155°C
- Temperature life: 1000H at 155°C

OTHER CHARACTERISTICS

- Salt spray: 96 hours (Nickel plating) EIA 364-26 (MIL-STD-1344 / Method 1001.1) test condition A
- Humidity: 10 days with temperature variation from -10°C to +65°C EIA 364-31 Method 4, test condition B (MIL-STD-1344 /Method 1002.2, type II test condition)
- Altitude immersion: 3 cycles at 50 000 feet EIA 364-03 (MIL-STD-1344 /Method 1004.1)
- For more detail please refer to QM product specification

Inserts Selection Table

QM size B connectors will use EPXB inserts range when QM size A connectors will use EPXA inserts.

Only signal and power contacts with an asterisk (*) can be delivered with inserts. All other contacts must be ordered separately (coax, twinax, quadrax and fiber optic contacts).

| Series | Insert name | Insert code | Contact Size & Type | | | | | | | | | | | Total contacts | |
|--------|-------------|-------------|---------------------|-------|---------------|---------------------|-----------------------------|---------------|-------|-------------------|-----|---------------|-------|----------------|----|
| | | | 22* | 20* | 15 or 16* | 16 | 16 | 12* | 8 | 8 | 8 | 5 | 5 | | |
| | | | Signal | Power | Power or coax | LuxCis® fiber optic | Power in fiber optic cavity | Power or coax | Power | Quadrax or twinax | BMA | Coax or triax | Power | | |
| EPXA | 00 | 0 | | | | | | | | | | | | | 0 |
| | 1C1 | A | | | | | | | | | | | 1 | | 1 |
| | 1P1 | B | | | | | | | | | | | | 1 | 1 |
| | 04 | C | | | 2 | | | | 2 | | | | | | 4 |
| | 09 | D | | 3 | 6 | | | | | | | | | | 9 |
| | 14 | E | | 14 | | | | | | | | | | | 14 |
| | 14M | F | 8 | 3 | 3 | | | | | | | | | | 14 |
| | 17 | G | 12 | 5 | | | | | | | | | | | 17 |
| | 20 | H | 20 | | | | | | | | | | | | 20 |
| | F6 | J | | | | 6 | | | | | | | | | 6 |
| EPXB | 00 | 0 | | | | | | | | | | | | | 0 |
| | C3 | A | | | | | | | | | | | 3 | | 3 |
| | P3 | B | | | | | | | | | | | | 3 | 3 |
| | 3Q3 | C | | | | | | | | | 3 | | | | 3 |
| | 06 | D | | | | | | | 6 | | | | | | 6 |
| | 10Q2 | E | | 8 | | | | | | | 2 | | | | 10 |
| | 12F6 | F | | | | 6 | 6 | | | | | | | | 12 |
| | F12C | G | | | | 12 | | | | | | | | | 12 |
| | 13C1 | H | | 6 | 4 | | | | 2 | | | | 1 | | 13 |
| | 13P1 | J | | 6 | 4 | | | | 2 | | | | | 1 | 13 |
| | 14 | K | | | 14 | | | | | | | | | | 14 |
| | 17 | L | | 14 | | | | | 3 | | | | | | 17 |
| | 20C1 | M | | 19 | | | | | | | | | 1 | | 20 |
| | 20P1 | N | | 19 | | | | | | | | | | 1 | 20 |
| | 22 | P | | 16 | 6 | | | | | | | | | | 22 |
| | 22V | Q | | 16 | 6 | | | | | | | | | | 22 |
| | 25P1 | R | 24 | | | | | | | 1 | | | | | 25 |
| | 25Q1 | S | 24 | | | | | | | | 1 | | | | 25 |
| | 28 | T | 22 | | 6 | | | | | | | | | | 28 |
| | 30 | U | | 30 | | | | | | | | | | | 30 |
| 34 | W | 18 | 16 | | | | | | | | | | | 34 | |
| 40 | X | 40 | | | | | | | | | | | | 40 | |
| 48 | Y | 48 | | | | | | | | | | | | 48 | |
| 3T3 | Z | | | | | | | | | | | 3 | | 3 | |

How to Order EPX Insert

| | | | | | | | |
|--|-----|---|---|----|---|---|---|
| | EPX | B | E | 40 | P | A | S |
|--|-----|---|---|----|---|---|---|

Series _____

Insert size _____
A: insert for QM size A
B: insert for QM size B

Class _____
E: Environmental

Insert name _____
 Refer to table on page 2-10 for inserts arrangement

Insert type _____
P: Pin
S: Socket

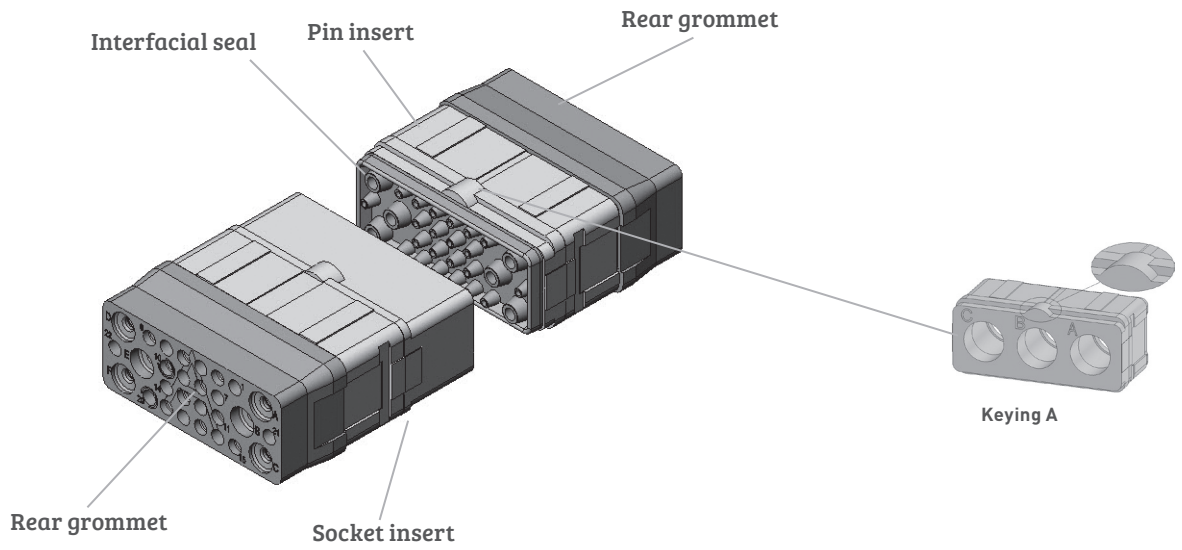
Insert keying _____
A: insert with keying A

Contact _____
Without code: insert delivered without contact
S: Signal and power crimp contacts are delivered with insert but uninstalled (refer to page 2-8)
 Inserts 00, 1C1, 1P1, F6, C3, P3, 3Q3, 12F6, F12C and 3T3 are not available in S contact version

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES


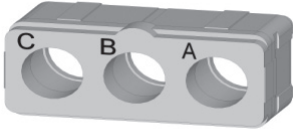
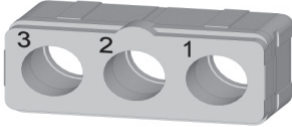
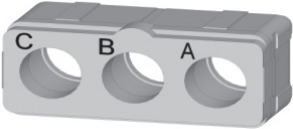
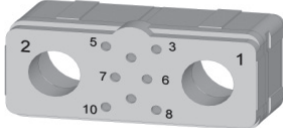

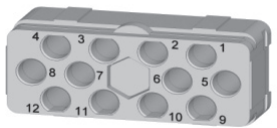
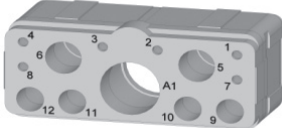
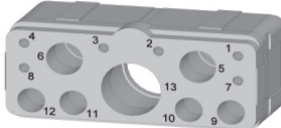
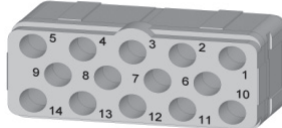
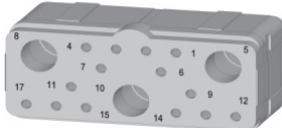
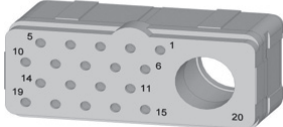
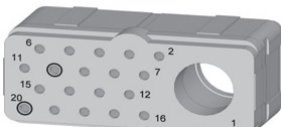
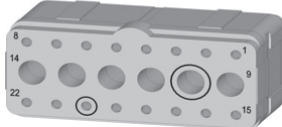
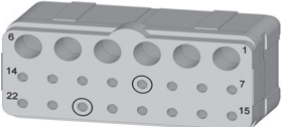


EPXA Inserts Arrangements

| | | | |
|--|--|--|--|
| | | | |
| <p>Insert name 00 Blank insert (1)</p> | <p>Insert name 1C1 1 x size 5 coax contact</p> | <p>Insert name 1P1 1 x size 5 power contact</p> | <p>Insert name 04 2 x size 15 or 16 contacts 2 x size 12 contacts</p> |
| | | | |
| <p>Insert name 09 3 x size 20 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 14 14 x size 20 contacts</p> | <p>Insert name 14M 8 x size 22 contacts 3 x size 20 contacts 3 x size 15 or 16 contacts</p> | <p>Insert name 17 12 x size 22 contacts 5 x size 20 contacts</p> |
| | | | |
| <p>Insert name 20 20 x size 22 contacts</p> | <p>Insert name F6 6 x size 16 optical LuxCis® termini</p> | | |

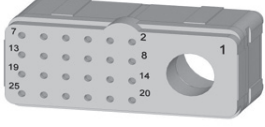
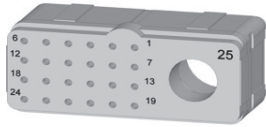
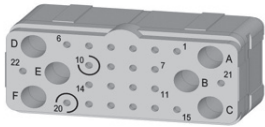
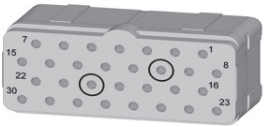
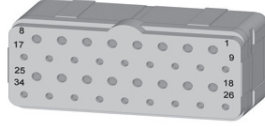
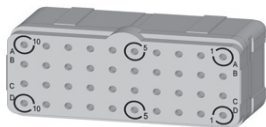
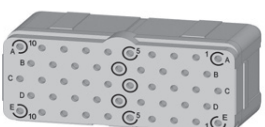
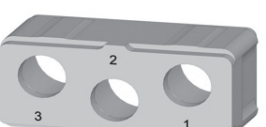
EPXB Inserts Arrangements

Full size inserts arrangements are compliant with EN4644.

| | | | |
|---|---|---|---|
|  |  |  |  |
| Insert name 00 Dummy insert | Insert name C3 3 x size 5 contacts | Insert name P3 3 x size 5 power contacts | Insert name 3Q3 3 x size 8 quadax contacts |
|  |  |  |  |
| Insert name 06 6 x size 12 contacts | Insert name 10Q2 8 x size 20 contacts 2 x size 8 quadax contacts | Insert name 12F6 6 x size 16 Optical LuxCis® termini 6 x size 16 special electrical contacts | Insert name F12C 12 x size 16 Optical LuxCis® termini |
|  |  |  |  |
| Insert name 13C1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 contact | Insert name 13P1 6 x size 20 contacts 4 x size 15 or 16 contacts 2 x size 12 contacts 1 x size 5 power contact | Insert name 14 14 x size 15 or 16 contacts | Insert name 17 14 x size 20 contacts 3 x size 12 contacts |
|  |  |  |  |
| Insert name 20C1 19 x size 20 contacts 1 x size 5 contact | Insert name 20P1 19 x size 20 contacts 1 x size 5 power contact | Insert name 22 16 x size 20 contacts 6 x size 15 or 16 contacts | Insert name 22V 16 x size 20 contacts 6 x size 16 contacts |

EPXB Inserts Arrangements

Full size inserts arrangements are compliant with EN4644.

| | | | |
|---|---|---|---|
|  |  |  |  |
| <p>Insert name 25P1 24 x size 22 contacts 1 x size 8 power contact</p> | <p>Insert name 25Q1 24 x size 22 contacts 1 x size 8 quadrax contact</p> | <p>Insert name 28 22 x size 22 contacts 6 x size 15 or 16 contacts</p> | <p>Insert name 30 30 x size 20 contacts</p> |
|  |  |  |  |
| <p>Insert name 34 18 x size 22 contacts 16 x size 20 contacts</p> | <p>Insert name 40 40 x size 22 contacts</p> | <p>Insert name 48 48 x size 22 contacts</p> | <p>Insert name 3T3 3 x size 8 BMA contact⁽¹⁾</p> |

NOTE:

(1) 3T3 pin insert only is available. It is mateable with 3Q3 socket insert

Signal & Power Crimp Contacts

QM series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. This range covers any technology in aerospace application using either cable or printed circuit boards' solutions:

- Signal and power contacts
- High frequency with coax, twinax and triax contacts
- Ethernet links with Quadrax contacts
- Optical links with LuxCis® contacts

Discover our brand new range of signal & power contacts with gold selective plating

Features and benefits :

- Significant reduction of cost of ownership
- Reduced dependence to gold rate fluctuation
- No change in the contact integration process

Specifications:

- Same contact design as full plated version
- Contact interface gold plated with 1.27µm
- For crimp version, no consequence on crimping process
- For PC tail version, use of selective plated contacts has no impact on PCB design
- Product qualification is available upon request

| Contact size | Wire size | Type | Part number full plated | Part number selectively plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool | |
|--------------|-------------------------------|--------|--------------------------------|--------------------------------|---|------------------------|--------------------------|-----------------------------|--------------------------|-----------|
| 22 | 22 | Pin | 617200 | 617200100 | 282281 M22520/2-01 | 282970 M22520/2-23 | 4 | 282522 (M81969/14-01) | Plastic | |
| | 24 | | | | | | 3 | | | |
| | 26 | Socket | 617300 | 617300100 | | | 3 | | | |
| 20 | 20 | Pin | 617221 | 617221100 | 282281 M22520/2-01 | 282971 M22520/2-08 | 7 | 282522001 (M81969/39-01) | Plastic | |
| | 22 | | | | | | 6 | | | |
| | 24 | Socket | 617320 | 617320100 | | | 5 | | | |
| 16 | 16 | Pin | 617240 | 617240100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | 282515 (M81969/14-03) | Plastic | |
| | | 18 | Socket | 617340 | | | 617340100 | | | 5 |
| | 20 | 4 | | | | | | | | |
| | Ground block | 20 | Pin | 617221050 | n/a | 282281 M225520/2-01 | 282581015 M22520/2-11 | 7 | 282886 | Metal |
| | | | Socket | N/A | n/a | | | | | |
| | for optical electrical insert | 16 | Pin | 617235003 ⁽¹⁾ | n/a | 282291 M22520/1-01 | 282581013 | 6 | 282515 (M81969/14-03) | Plastic |
| 18 | | 5 | | | | | | | | |
| 20 | | 4 | | | | | | | | |
| 12 | 12 | Pin | 617250 | 617250100 | 282291 M22520/1-01 | 282972 M22520/1-02 | 8 | 282549004 (M81969/14-04) | Plastic | |
| | 14 | Socket | 617350 | 617350100 | | | 7 | | | |
| | 16 | | | | | | 6 | | | |
| 8 | 8 | Pin | 617291002 ^(2&3) | n/a | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282588 | n/a | 282549001 | Metal | |
| | 10 | Socket | 617391002 ^(2&3) | n/a | | | | | | |
| 5 | 8 | Pin | 617280 ^(2&4) | n/a | R282600000 M22520/23-01 + Die set R282650000 M22520/23-02 | 282557020 | n/a | 282946 (M81969/28-01) | Metal | |
| | | 10 | Socket | 617390 ^(2&4) | | n/a | | | | 282557021 |
| | 12 | Pin | 617260001 ^(2&4) | n/a | 282613 | 282586003 | 6 | | | |
| | | 16 | Socket | 617370001 ^(2&4) | | n/a | | 282586005 | | |

Notes

- (1) Electrical contacts for optical inserts are always pin contacts (hermaphrodite)
 (2) In order to make these contacts environmental, it is necessary to add a sealing boot. Please, contact us for additional information
 (3) These power contacts can be used in power inserts only (25P1 EPXB insert)
 (4) These power contacts can be used in power inserts only (P3, 13P1 and 20P1 EPXB inserts)

Signal & Power Crimp Contacts

| Contact size | | Wire size | Type | Part number fully plated | Crimping tool | Positioner | Selector | Ins / ext tool | Type of tool |
|--------------|--|-----------|--------|--------------------------|-----------------------|-----------------------|----------|-----------------------------|--------------|
| 22 | reduced crimp barrel | 28 | Pin | 617201(1) | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | 282522 (M81969/14-01) | Plastic |
| | | 30 | Socket | 617301(1) | | | 4 | | |
| | oversize crimp barrel | 20 | Pin | 617200200 | 282281 M22520/2-01 | 282970 M22520/2-23 | 5 | | |
| | | 22 | Socket | 617300200 | | | 4 | | |
| | | 24 | | | | | 3 | | |
| | | | | | | | | | |
| 20 | reduced crimp barrel | 22 | Pin | 617224001(1) | 282281 M22520/2-01 | 282971 M22520/2-08 | 4 | 282522001 (M81969/39-01) | Plastic |
| | | 24 | Socket | 617324001(1) | | | 3 | | |
| | | 26 | | | | | 3 | | |
| | oversize crimp barrel | 18 | Pin | 617221200 | 282281 M22520/2-01 | 282971 M22520/2-08 | 5 | | |
| | | 20 | Socket | 617320200 | | | 5 | | |
| | | 22 | | | | | 4 | | |
| | | | | | | | | | |
| | | | | | | | | | |
| 16 | reduced crimp barrel | 20 | Pin | 617241(1) | 282291 M22520/1-01 | 282972 M22520/1-02 | 5 | 282515 (M81969/14-03) | Plastic |
| | | 22 | Socket | 617341(1) | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | reduced crimp barrel for optical electrical insert | 20 | Pin | 617235002(1&2) | 282291 M22520/1-01 | 282581013 | 5 | | |
| | | 22 | | | | | 5 | | |
| | | 24 | | | | | 4 | | |
| | oversize crimp barrel | 14 | Pin | 617240200 | 282291 M22520/1-01 | 282972 M22520/1-02 | 6 | | |
| | | 16 | Socket | 617340200 | | | 5 | | |
| | | 18 | | | | | 5 | | |

NOTES:

- (1) When smaller wire sizes are used on contacts with reduced crimp barrel, the wire will not provide sealing to the grommet. If sealing is required, please contact Radiall
- (2) Electrical contacts for optical insertss are always pin contacts (hermaphrodite)

Coaxial Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool |
|--------------|---|-----------|---------------------------|-------------------------------|--------------------------|--------------|
| 15-16 | RG174-RG179 RG316 | Pin | 617130 | | 282512 | Metal |
| | | Socket | 617030 | | | |
| | RG178 | Pin | 617131 | | | |
| | | Socket | 617031 | | | |
| | GORE/AXON P812817 FILECA F1703-134 FILOTEX SP132868 | Pin | 617132 | | | |
| | | Socket | 617032 | | | |
| | RG178 DT | Pin | 617133 | | | |
| | | Socket | 617033 | | | |
| UT .047 | Pin | 617135 | | | | |
| | Socket | 617035 | | | | |
| 12 | UT.085-RG405 | Pin | 617160 | | 282549004 (M81969/14-04) | Plastic |
| | | Socket | 617060 | | | |
| 5 | RG58-RG141 | Pin | 617101001 | 617101 | 282946 (M81969/28-01) | Metal |
| | | Socket | 617001001 | 617001 | | |
| | RG142 - RG400 | Pin | 617102001 | 617102 | | |
| | | Socket | 617002001 | 617002 | | |
| | RG174-RG316 RG188 | Pin | 617103001 | 617103 | | |
| | | Socket | 617003001 | 617003 | | |
| | RG178-RG196 | Pin | 617104001 | 617104 | | |
| | | Socket | 617004001 | 617004 | | |
| RG180 | Pin | 617105001 | 617105 | | | |
| | Socket | 617005001 | 617005 | | | |

Twinax and Triax Crimp Contacts

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Ins/ext tool | Type of tool |
|--------------|-------------------------------------|--------|---------------------------|-------------------------------|-----------------------------|--------------|
| 12 Triax | ECS0700 | Pin | 617190010 | | 282549004 (M81969/14-04) | Plastic |
| | | Socket | 617090010 | | | |
| | M17/176-00002 | Pin | 617190012 | | | |
| | | Socket | 617090012 | | | |
| 8 Triax | TENSOLITE | Pin | 617165021 | 617165020 | 282549001 (M81969/28-03) | Metal |
| | 24473/03159X-2 | Socket | 617065021 | 617065020 | | |
| | WHITMOR W26751575 | Pin | 617165 | 617165001 | | |
| | | Socket | 617065 | 617065001 | | |
| 8 Twinax | ABS0386WF24 & TYCO 1726A1424A | Pin | 617165011 | 620165010 | | |
| | | Socket | 617065011 | 620065010 | | |
| 5 Triax | M17/176-0002 | Pin | 617150001 | 617150 | 282946 (M81969/28-01) | Metal |
| | | Socket | 617050001 | 617050 | | |
| | PAN6421 | Pin | 617152001 | 617152 | | |
| | | Socket | 617052001 | 617052 | | |

Quadrax & BMA Crimp Contacts



QUADRAX CONTACTS

| Contact size | Cable type | Type | Environmental part number | Non-environmental part number | Extraction tool in metal |
|--------------|----------------------------|--------|---------------------------|-------------------------------|--------------------------|
| 8 | Ethernet cable | Pin | 617175011 | 617175012 | 282549001 |
| | ABS0972 & ABS1503 | Socket | 617075011 | 620075010 | |
| | TENSOLITE | Pin | 617175051 | 617175052 | |
| | NF24Q100 | Socket | 617075051 | 620075050 | |
| | Tensolite NF26Q100 JSF Y18 | Pin | 617175053 | 617175054 | |
| | | Socket | 617075053 | 620075021 | |



BMA CONTACTS

| Contact size | Cable type | Connector Type | Environmental part number | Non-environmental part number | Frequency range | Max VSWR | Insertion loss |
|--------------|---|--------------------|---------------------------|-------------------------------|-----------------|----------|-------------------------------------|
| 8 | SHF5 - SHF5M ⁽¹⁾ | Pin ⁽²⁾ | 617171011 | 617171010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Pin ⁽²⁾ | 617171021 | 617171020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF2.4M (1) / UT.085 Harbour SS405 Times Tflex405 | Pin ⁽²⁾ | 617171031 | 617171030 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | SHF5 - SHF5M ⁽¹⁾ | Socket | 617071011 | 617071010 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |
| | RG142 | Socket | 617071021 | 617071020 | DC-12.4 GHz | 1.35 | 0.11 dB at max frequency (12.4 GHz) |
| | SHF3 ⁽¹⁾ | Socket | 617071041 | 617071040 | DC-18 GHz | 1.35 | 0.13 dB at max frequency (18 GHz) |

Extraction tool 282549001 is used for size 8 BMA contacts.
 Environmental BMA contacts are all provided with sealing boots.

NOTES:

- (1) The BMA contacts which can accommodate SHF cables requires a wiring done by Radiall .Please contact Radiall for information
- (2) Pin BMA can only be installed in modified EPXB Quadrax insert such as 3T3P. Ex: EPXBE3T3PA

LuxCis® Fiber Optic Contacts

LUXCIS® CONTACTS

The LuxCis® product range is a proven, flexible and always expanding fiber optic interconnect solution offering high speed communication in aerospace and other harsh environments.

OPTICAL PERFORMANCES

| | MultiMode (PC) 850 / 1300 nm | SingleMode (UPC) 1310 / 1550 nm |
|--|---------------------------------|------------------------------------|
| Insertion Loss (IL) Mean (IEC 61300-3-4 Method B) | 0.1 dB | 0.15 dB |
| Return Loss (RL) (IEC 61300-3-6) | > 20 dB | > 50 dB |

MECHANICAL AND ENVIRONMENTAL CHARACTERISTICS

| | Standard | Performances |
|--|----------------------------|---|
| Thermal cycling | SAE AS 13441 method 1003.1 | -55°C/+125°C (cable dependant) |
| Temperature Endurance | TIA/EIA 455-4 | 1000 h @ 125°C (cable dependant) |
| Vibration | TIA/EIA 455-11 | 27 Grms |
| Shocks | TIA/EIA 455-14 | 50 G, 11 ms |
| Durability | TIA / EIA 364-09 | 500 cycles |
| Maintenance ageing | SAE AS 13441 method 2002.1 | 10 cycles |
| Cable retention Cable retention 1.8 mm diameter 900 µm diameter | SAE AS 13441 method 2009.1 | 68 N 7 N |
| Humidity | TIA EIA 455-5 | 10 cycles / 24 h 90% RH -25°C / +65°C |

LUXCIS® CONTACT PART NUMBERING SYSTEM



F725 : LuxCis® series

Ferrule type

- 00**: PC ferrule for SingleMode fiber
- 03**: PC ferrule for 50/125 or 62,5/125 um MultiMode fiber
- 04**: PC ferrule for 100/40 um MultiMode fiber
- 05**: PC ferrule for 200/230 um MultiMode fiber
- 50**: APC ferrule for SingleMode fiber

Cable type and diameter

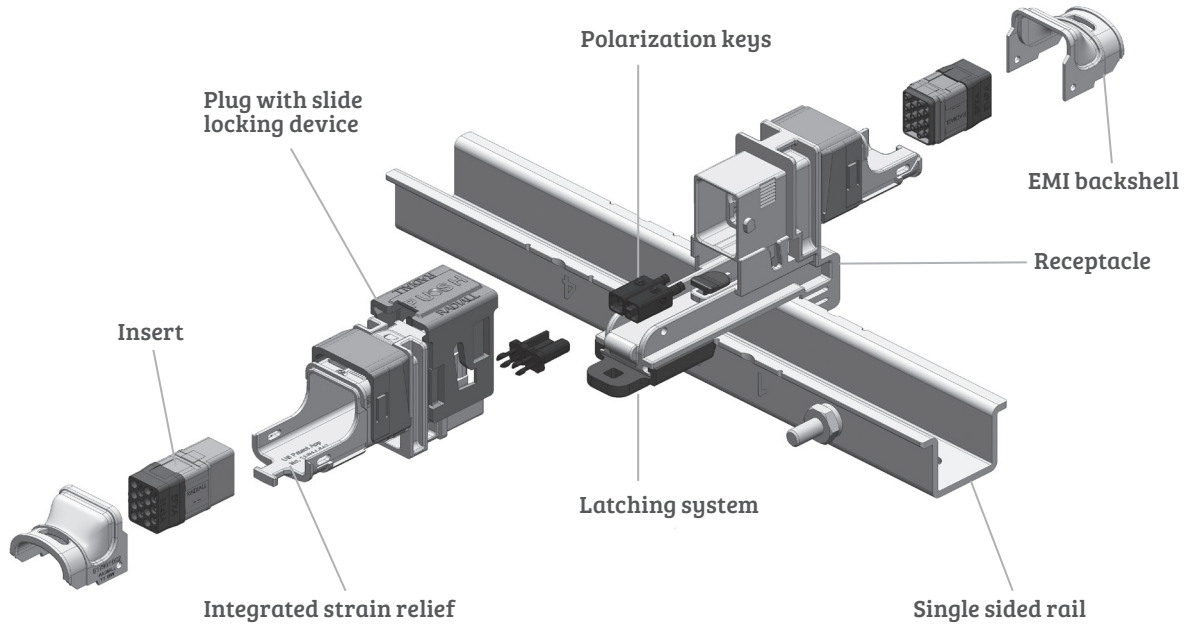
- 118**: 900 µm cable
- 318**: 1.2 mm cable with strengthening members, tight structure
- 419**: 1.6 to 2.2 mm cable, loose structure
- 519**: 1.6 to 2.2 mm cable, tight structure

NOTE:

Radiall can support you with your cable and harness assemblies
Please contact your sales representative

QM SERIES

QM Size A Product Overview

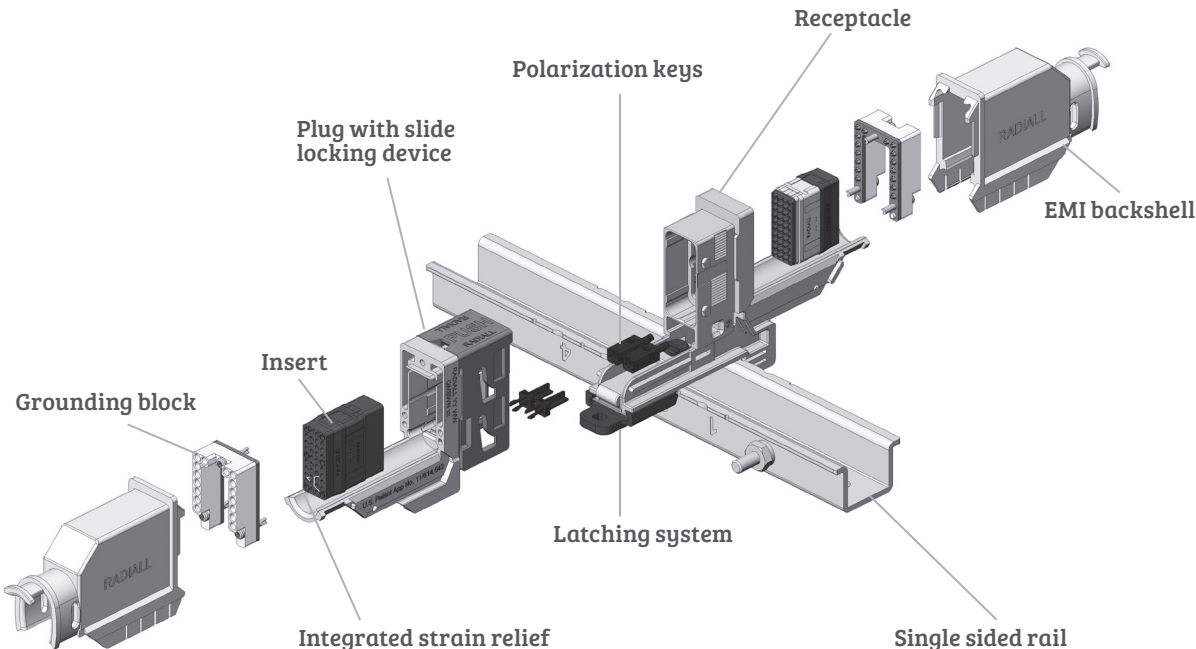


INSERTS

CONTACTS

CONNECTORS & ACCESSORIES

QM Size B Product Overview



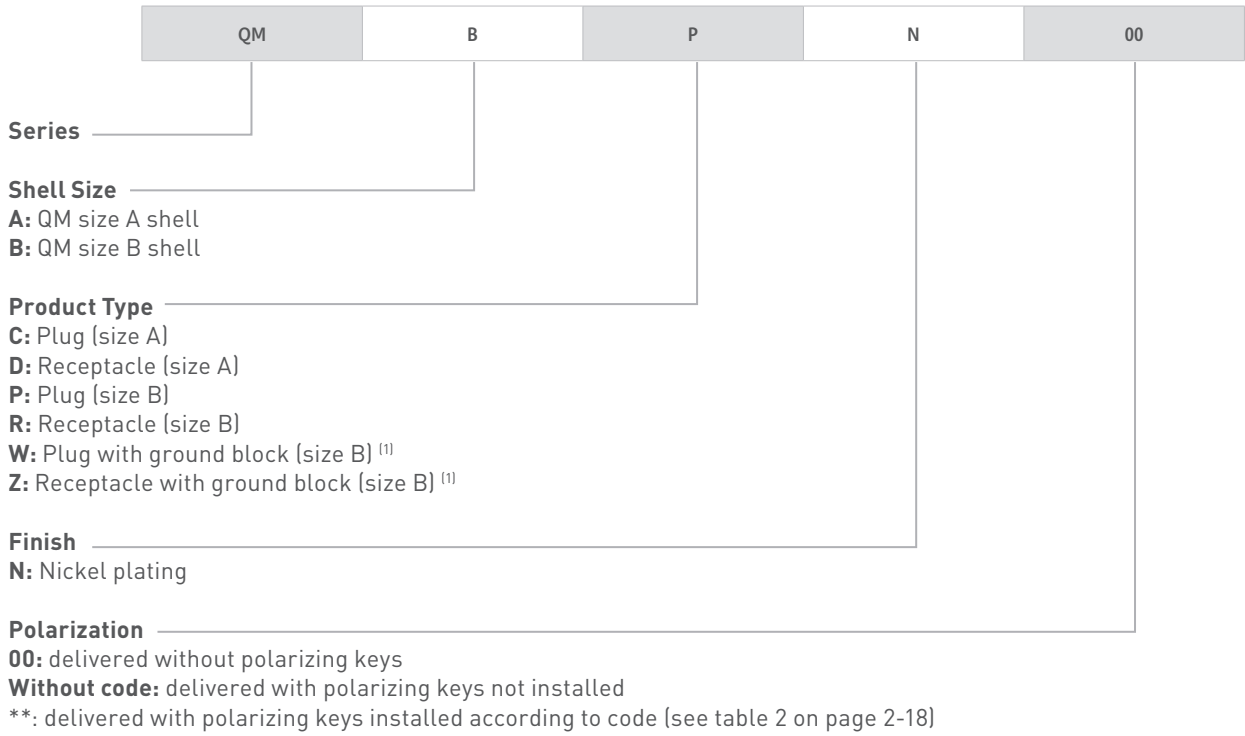
QM SERIES

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES



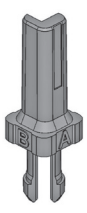
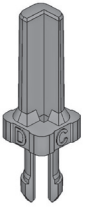
How to Order QM Shell



NOTE:
(1) Shells with ground block are not compatible with EMI backshell

Polarization Code

QM receptacle shell will be delivered with 2 polarization keys and QM plug with 2 polarization posts.

| Polarization keys | | Polarization posts | |
|---|---|---|---|
|  |  |  |  |
| View shows A & D | View shows C & B | View shows A & B | View shows C & D |

16 possible codings are available

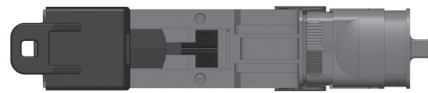
| | | | | | | | | | | | | | | | | |
|--------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Key position | A | A | A | A | B | B | B | B | C | C | C | C | D | D | D | D |
| Key position | A | B | C | D | A | B | C | D | A | B | C | D | A | B | C | D |

QM SIZE A CONNECTOR

Tips to read polarization code: polarization code can be read when connector is unmated, underneath the plug and receptacle.



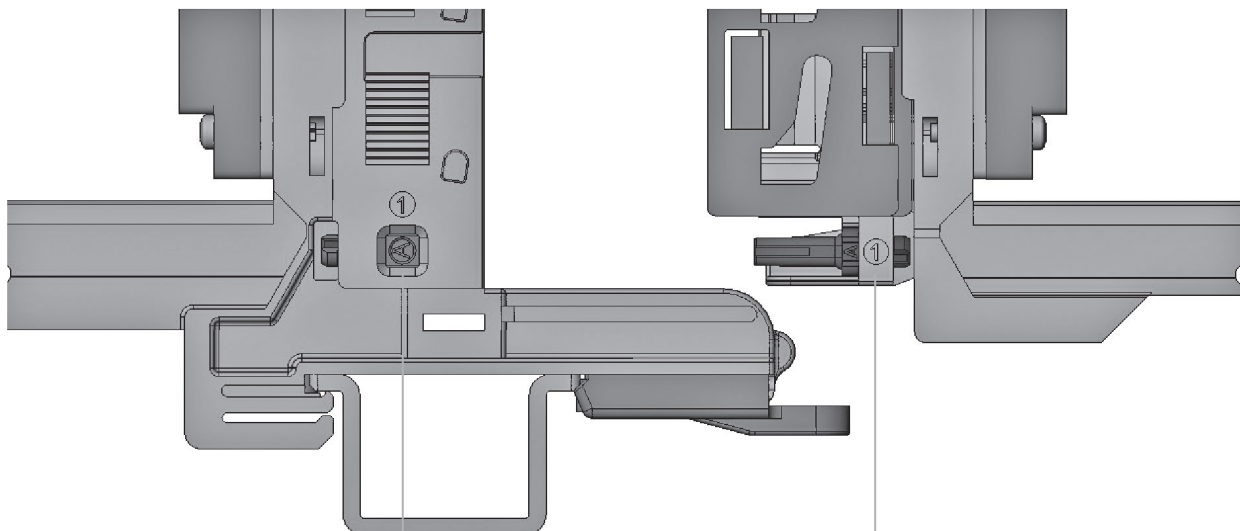
Polarization posts under QM size A plug



Polarization keys under QM size A receptacle

QM SIZE B CONNECTOR

Tips to read polarization code: to be able to read properly the polarization code, you shall be able to read at the same time the part number marked on the connector.

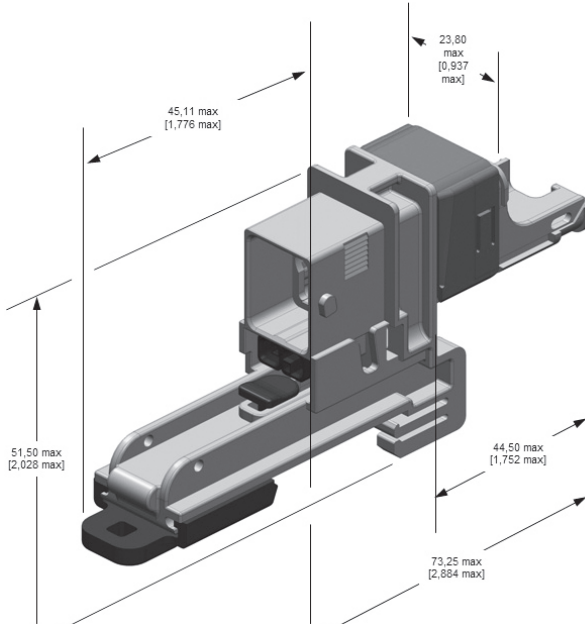


Code on polarization keys

Code on polarization posts

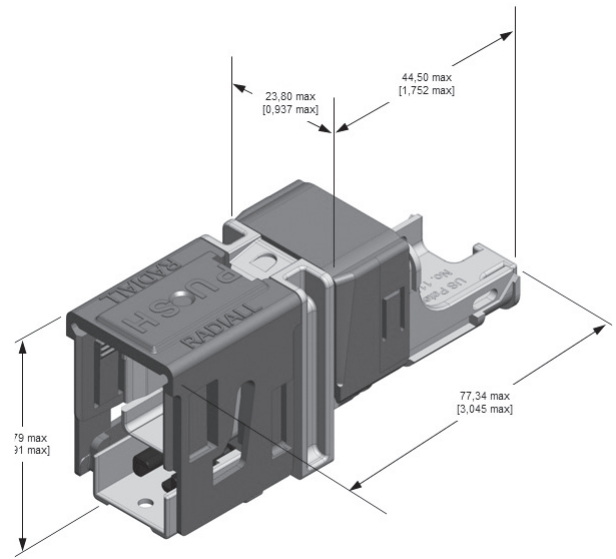
QM Size A Shell Dimensions

Receptacle



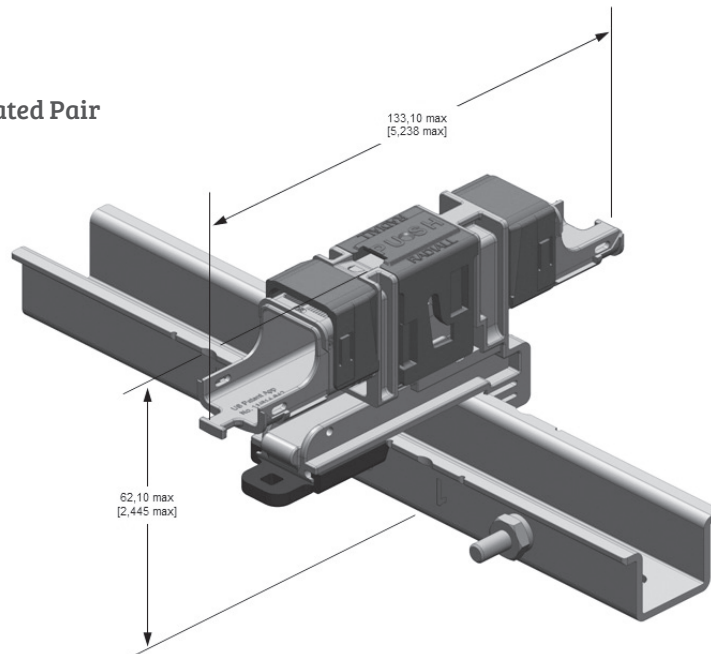
QMADN : 39g

Plug



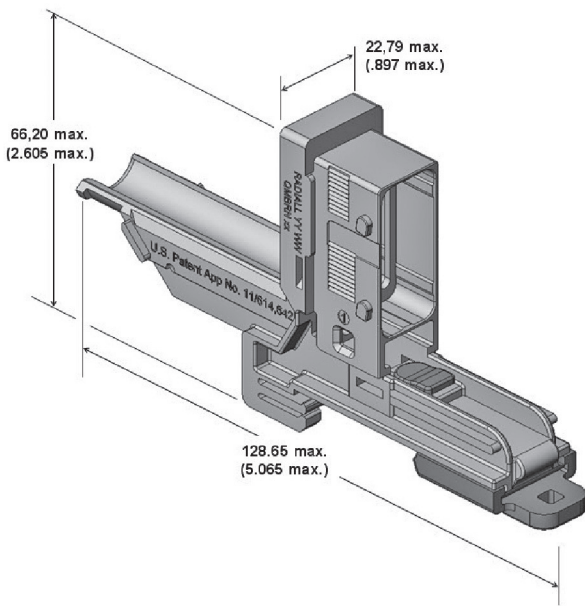
QMACN : 24g

Mated Pair



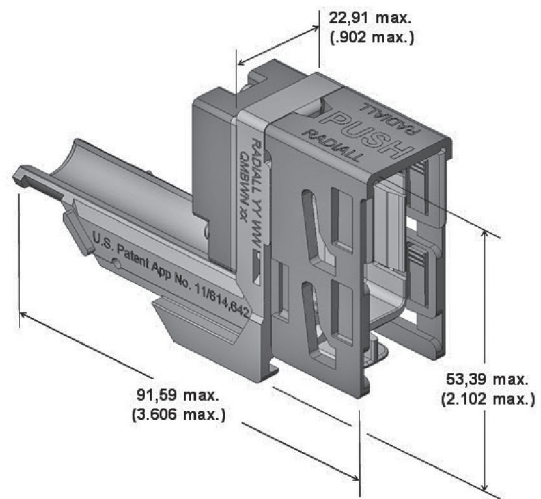
QM size B shell dimensions

Receptacle



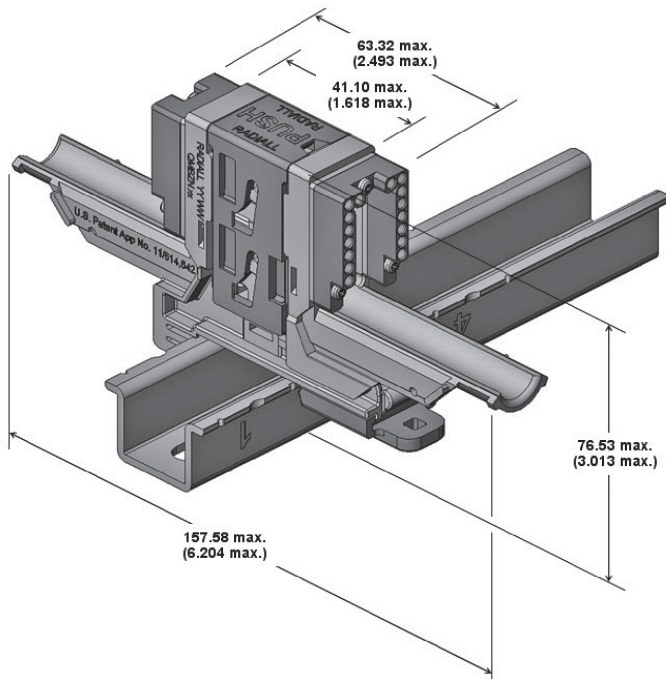
QMBRN: 41g
QMBZN: 48g

Plug



QMBPN: 31g
QMBWN: 38g

Mated Pair



How to Order QM Mounting Device

| | | | | | |
|--|----|---|-----|---|---|
| | QM | U | 04S | A | N |
|--|----|---|-----|---|---|

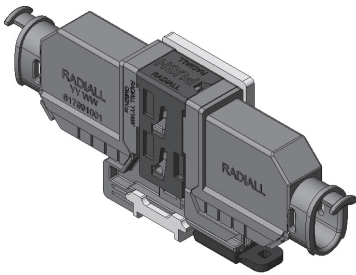
Series _____

Mounting Device _____
L: L-Bracket
U: Single sided rail
H: Double sided rail

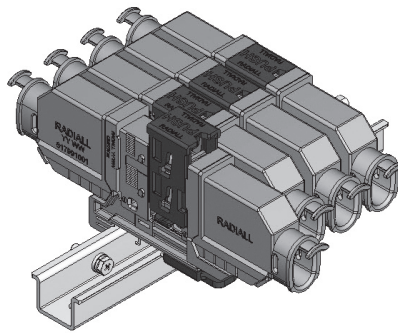
Number of connector position _____
 Refer to tables on pages 2-26 to 2-30 for number of connector position

Mounting device material _____
A: Aluminium

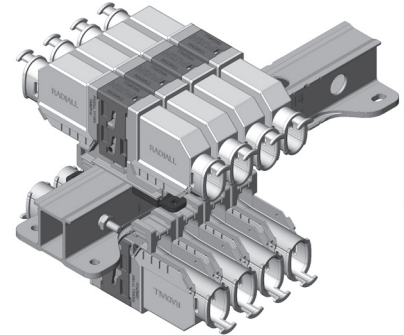
Finish _____
N: Nickel



L-Bracket



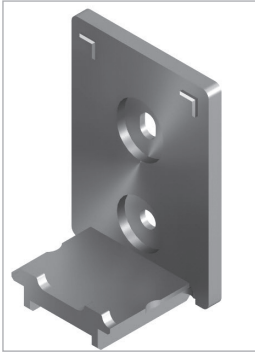
Single sided rail



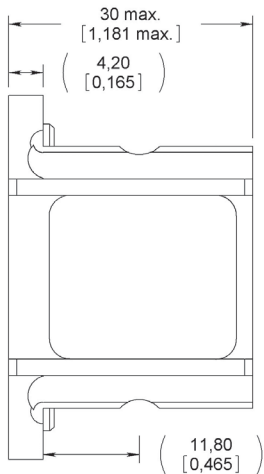
Double sided rail

L-Bracket Dimensions

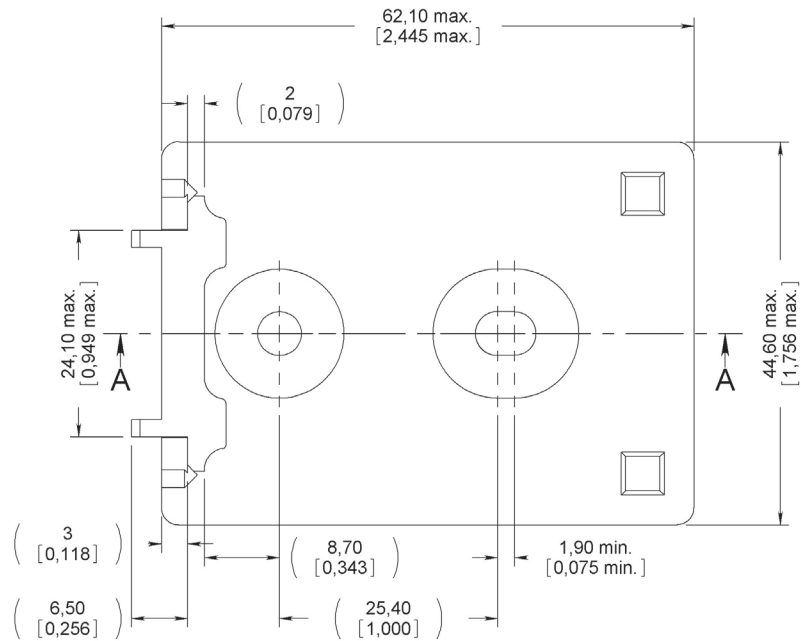
| Number of connector position | Length mm (inch) | Weight g (oz) |
|------------------------------|------------------|---------------|
| 01 | 65.60 (2.45) | 30 (1.05) |



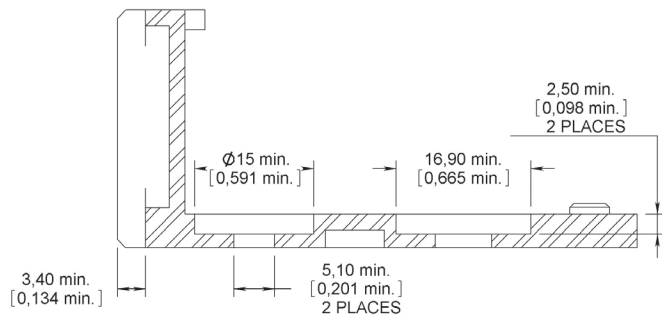
Side view



Top view



Cross section



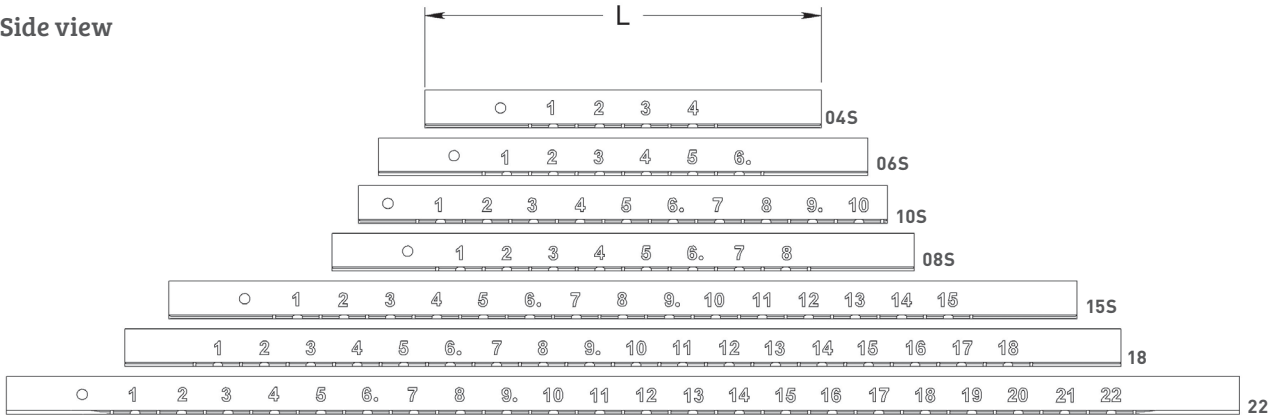
INSERTS

CONTACTS

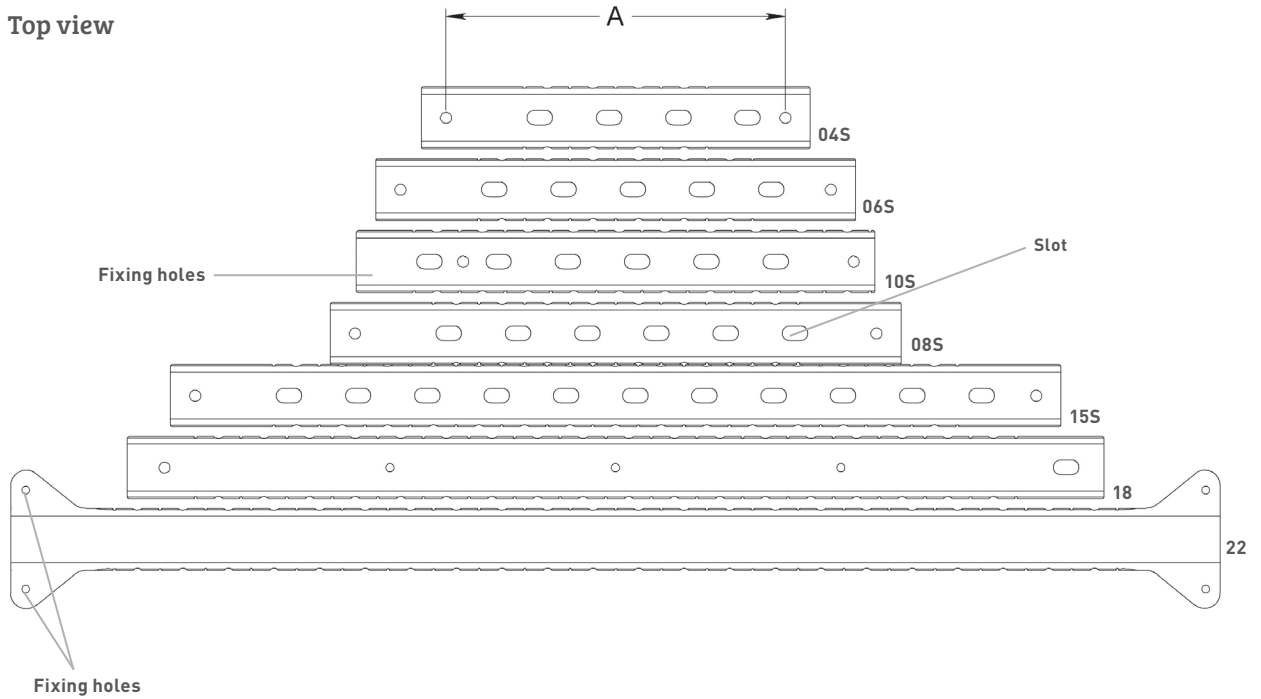
CONNECTORS & ACCESSORIES

Single Sided Rails Range

Side view



Top view



Single Sided Rails Dimensions

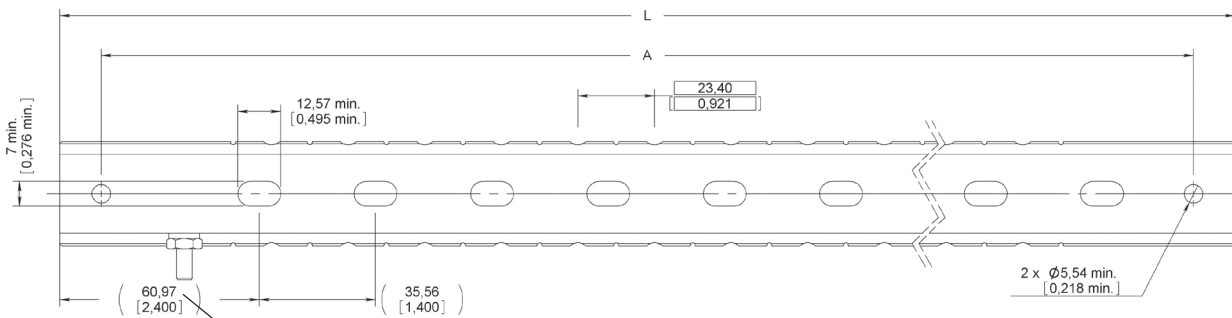
04S, 06S, 08S, 10S & 15S SINGLE SIDED RAIL

These single sided rails are always delivered with slot and ground stud.

SINGLE SIDED RAIL

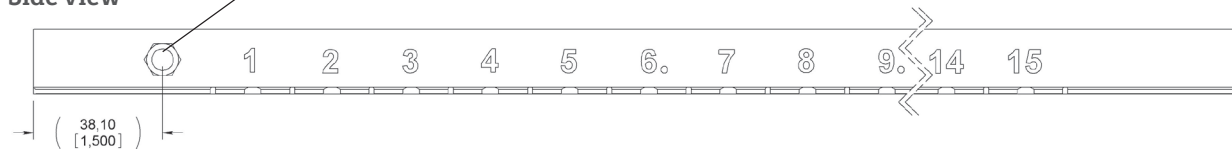
| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|-----------------|------------------------|---------------|
| 04S | 199.60 [7.86] | 175 [6.86] | 4 | 1 | 85 [3] |
| 06S | 246.40 [9.70] | 221 [8.70] | 5 | 1 | 90 [3.20] |
| 08S | 293.10 [11.54] | 268 [10.54] | 6 | 1 | 100 [3.53] |
| 10S | 266.19 [10.48] | 200 [7.895] | 6 | 1 | 100 [3.53] |
| 15S | 457.20 [18] | 432 [17] | 11 | 1 | 220 [7.76] |

Top view

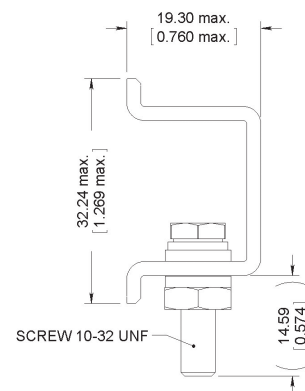


Ground stud

Side view



Cross section

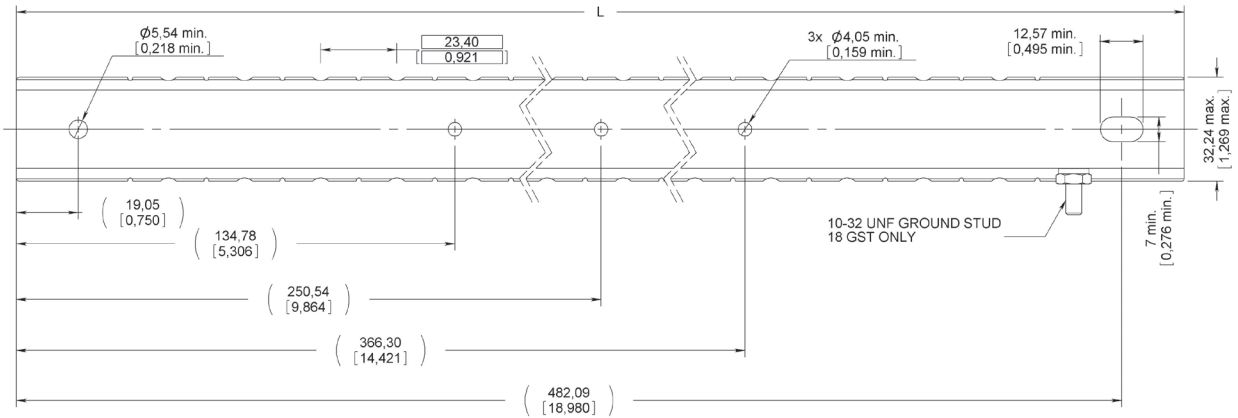


Single Sided Rails Dimensions

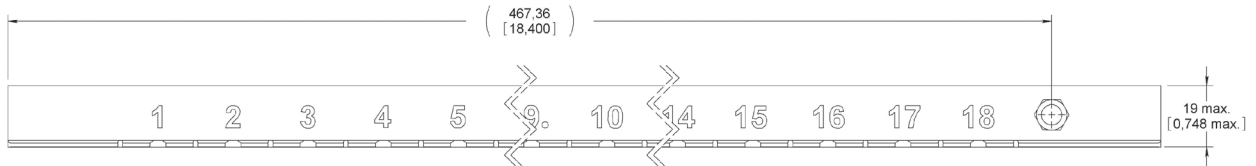
18 SINGLE SIDED RAIL

| Number of connector position | Length mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|-----------------|------------------------|---------------|
| 18 | 501.40 (19.74) | None | 1 | 170 (6) |

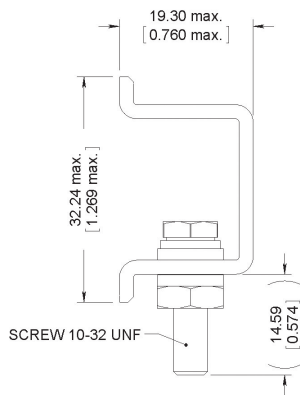
Top view 18



Side view 18



Cross section

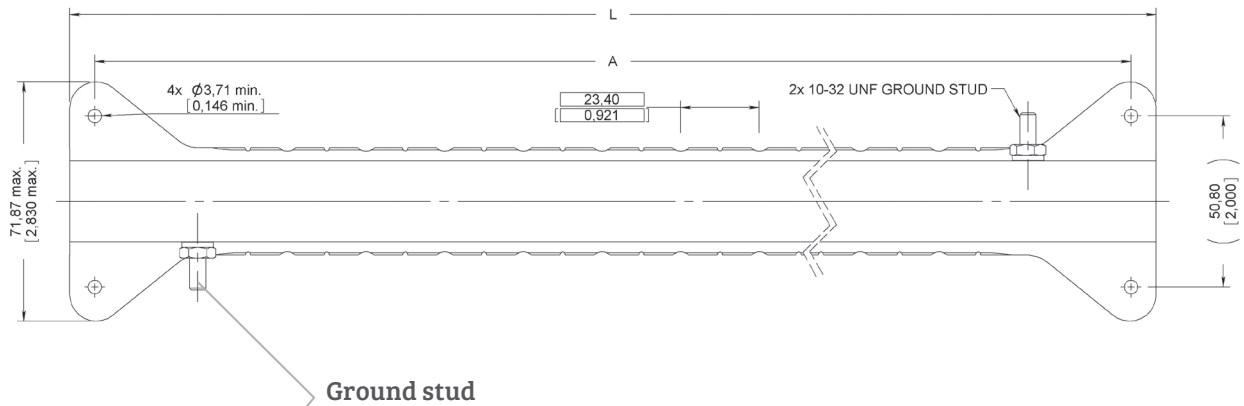


Single Sided Rails Dimensions

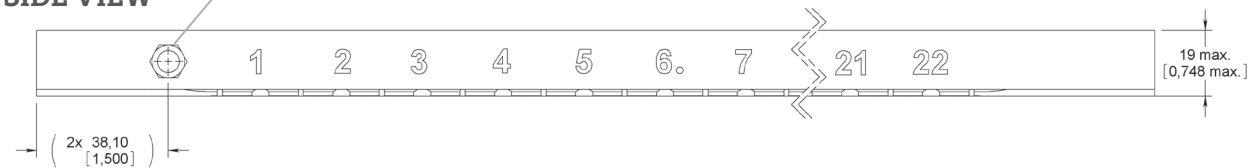
22 SINGLE SIDED RAIL

| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of slots | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|-----------------|------------------------|---------------|
| 22 | 620.80 [24.44] | 606 [23.85] | none | 2 | 230 [8.11] |

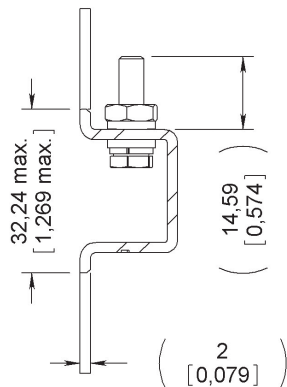
TOP VIEW



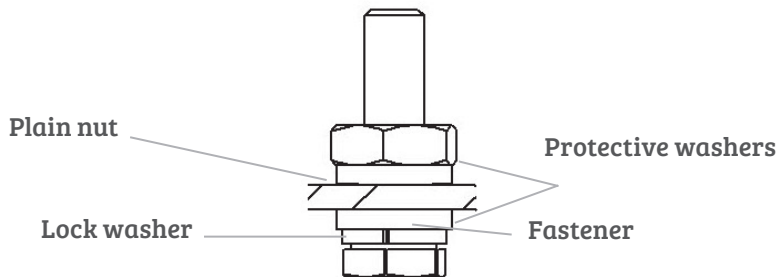
SIDE VIEW



CROSS SECTION



GROUND STUD STACK-UP DETAIL



QM SERIES

INSERTS

CONTACTS

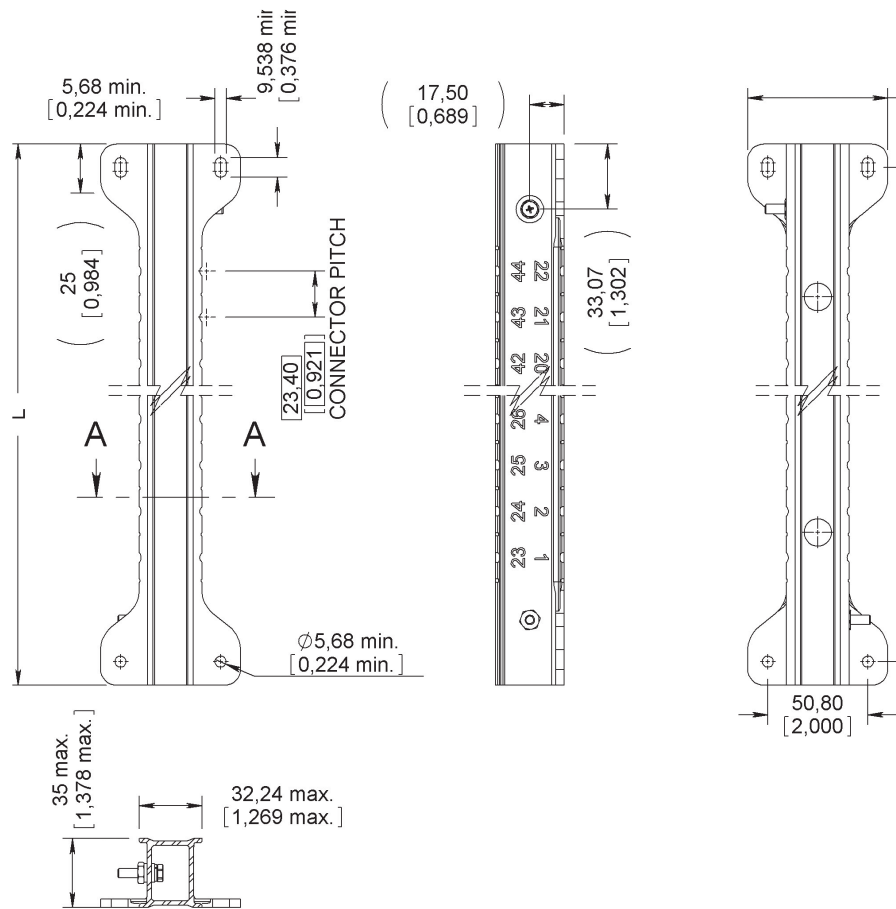
CONNECTORS & ACCESSORIES

Double Sided Rails Dimensions

DOUBLE SIDED RAILS

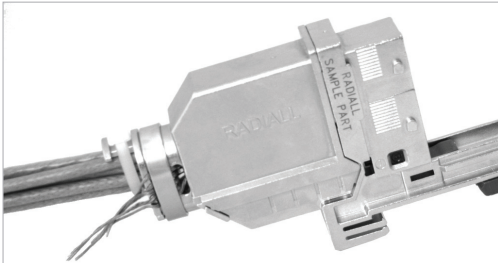
Connector pitch is 23.40 mm on every double sided rail models.

| Number of connector position | Length mm (inch) | A distance between fixing holes mm (inch) | Number of ground studs | Weight g (oz) |
|------------------------------|------------------|---|------------------------|---------------|
| 14 | 270 (10.63) | 246 (9.69) | 2 | 263 (9.27) |
| 16 | 293 (11.55) | 269 (10.61) | 2 | 279 (9.84) |
| 18 | 317 (12.47) | 292 (11.53) | 2 | 298 (10.51) |
| 20 | 340 (13.39) | 316 (12.45) | 2 | 313 (11.04) |
| 22 | 363 (14.31) | 340 (13.37) | 2 | 332 (11.71) |
| 24 | 387 (15.23) | 363 (14.29) | 2 | 351 (12.38) |
| 26 | 410 (16.15) | 386 (15.21) | 2 | 370 (13.05) |
| 28 | 434 (17.07) | 410 (16.13) | 2 | 388 (13.68) |
| 30 | 457 (18) | 433 (17.06) | 2 | 405 (14.28) |
| 32 | 480 (18.92) | 457 (17.98) | 2 | 424 (14.95) |
| 34 | 504 (19.84) | 480 (18.90) | 2 | 443 (15.62) |
| 36 | 527 (20.76) | 503 (19.82) | 2 | 462 (16.29) |
| 38 | 551 (21.68) | 527 (20.74) | 2 | 481 (16.96) |
| 40 | 574 (22.60) | 550 (21.66) | 2 | 499 (17.60) |
| 42 | 597 (23.52) | 574 (22.58) | 2 | 519 (18.30) |
| 44 | 620 (24.44) | 597 (23.21) | 2 | 540 (19.04) |



Accessories

QM connectors can be equipped with backshells to provide complete shielding. Backshells are compatible with plug and receptacle side. They provide EMI-RFI shielding specially needed in aircrafts with a composite architecture. Made of composite and easy to install as they require no specific tools, they help in combining cost saving and high performances.



| Backshell | Part number | Description |
|-----------|-------------|-------------------------|
| | 617 991 001 | QM size B EMI backshell |
| | 617 924 015 | QM size A EMI backshell |

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES





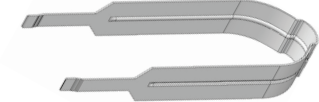

QM SERIES

INSERTS

CONTACTS

CONNECTORS & ACCESSORIES

Spare Parts and Tools

| | Part number | Description |
|---|--------------|--|
|  | 617 954 041 | Dust cap for QM size B plug |
| | 617 954 042 | Dust cap for QM size B receptacle |
|  | 617 954 055 | Dust cap for QM size A plug and receptacle |
|  | 617 980 024 | Polarization key pin |
|  | 617 980 025 | Polarization key socket |
|  | 282 668 001 | Pliers for polarizing post and key |
|  | 282 521 004 | Right angle insert extraction tool |
|  | F780 855 000 | Hexagonal key 5/64 inch(2mm)/flats for sleeve holder removal |
|  | 282 521 005 | Insert extraction tool for EPXA insert |
|  | 282 521 002 | Insert extraction tool for EPXB insert |
|  | 617 954 020 | Plastic box to protect wired inserts during handling |
|  | 282 515 | Plastic insert extraction tool for LuxCis® termini (MIL M81 969/14-03) |