



## QM SERIES

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## Section 2 Table of Contents

### INTRODUCTION

Introduction .....	2-2
Application.....	2-2
Features & Benefits .....	2-3
Electrical Characteristics .....	2-4 to 2-5
Mechanical Characteristics.....	2-6
Environmental Characteristics.....	2-6

### INSERTS

Insert Selection Table.....	2-7
How to Order QM Insert .....	2-8
EPXA Inserts Arrangements .....	2-9
EPXB Inserts Arrangements .....	2-10 to 2-11

### CONTACTS

Signal & Power Crimp Contacts .....	2-12 to 2-13
Oversized & Reduced Crimp Barrel Contacts.....	2-13
Coaxial Contacts .....	2-14
Twinax & Triax Crimp Contacts .....	2-14
Quadrax & BMA Crimp Contacts .....	2-15
Luxcis® Fiber Optic Contacts .....	2-16
Filler Plugs .....	2-17
Sealing Plugs.....	2-17

### CONNECTORS

QM Size A Compact Product Overview .....	2-18
QM Size A Grounding Block Product Overview.....	2-19
QM Size B Product Overview.....	2-20
How to Order QM Shell .....	2-21
Polarization Code .....	2-22
QM Size A Compact Shell Dimensions.....	2-23
QM Size A Shell Dimensions .....	2-24
QM Size B Shell Dimensions .....	2-25

### ACCESSORIES

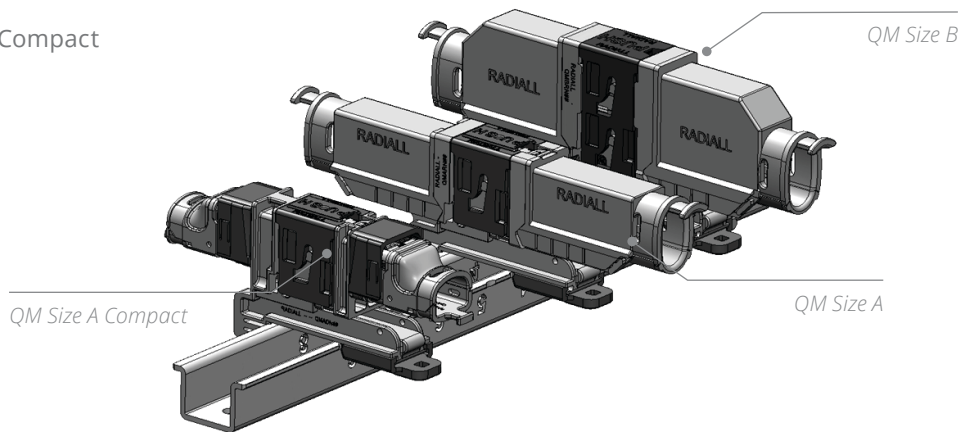
How to Order QM Mounting Device .....	2-26 to 2-27
Dimensions of Mounting Devices .....	2-28
Strain Reliefs & Backshells.....	2-29
Spare Parts & Tools .....	2-30

*Introduction***INTRODUCTION****A MODULAR & TOOL-LESS CONNECTOR**

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

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

- QM Size B
- QM Size A
- QM Size A Compact



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 offers 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.

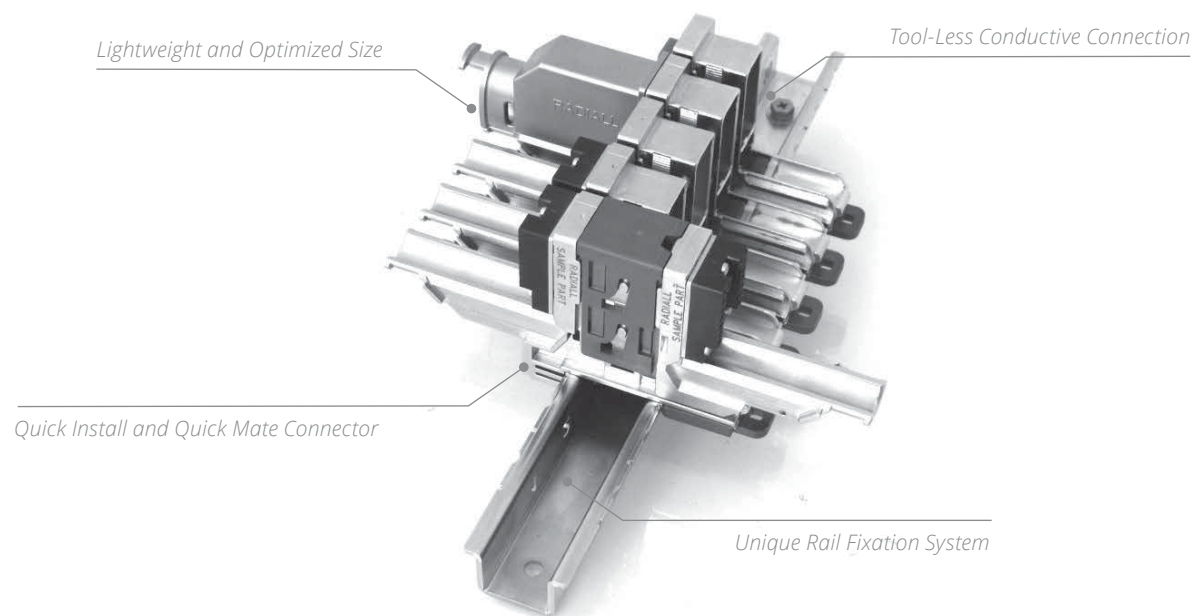
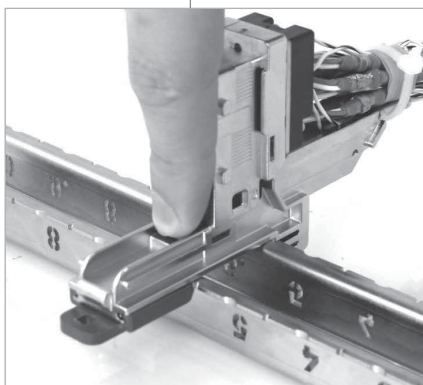
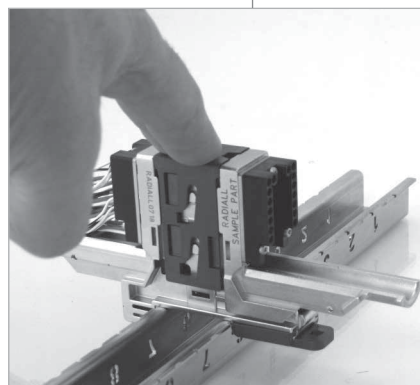
**APPLICATION**

Interconnect solution for aerospace and harsh environment applications.





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*Introduction***FEATURES & BENEFITS****USER FRIENDLY - NO TOOLS NEEDED***Click to Install**Push to Lock*

## Introduction

## 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
5	AWG8	46 <sup>(1)</sup>
	AWG10	33
	AWG12	23

## EMI SHIELDING EFFECTIVENESS

FREQUENCY (MHZ)	LEAKAGE ATTENUATION (DB)
100	65
200	63
300	61
400	59
500	58

## Notes

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

## Introduction

### DIELECTRIC WITHSTANDING VOLTAGE

EIA 364-20 (EIA364 Standard) with Leakage Current < 1mA

LEVEL	ENVIRONMENTAL INSERTS VOLTAGE (VRMS)	NON-ENVIRONMENTAL VOLTAGE (VRMS)
Sea Level	1,500	1,500
50,000 ft	800	600
70,000 ft	800	300

### INSULATION RESISTANCE

EIA 364-21 (EIA364 Standard)

TEMPERATURE	INSULATION RESISTANCE
Ambient Temperature	> 5,000 mΩ
155 °C (+347 °F)	> 200 mΩ

### ENVIRONMENTAL CHARACTERISTICS

- **Shell-to-Shell Conductivity:** < 2.5 mΩ, operating voltage: 400 Vrms or 500 Vdc at sea level
- **Voltage Stability (Ground Block):** Maximum variation 4 mV SAE AS 81714 (MIL-T-81714)
- **Magnetic Permeability:** < 2 μ
- **Lightning Strike:** 3.6 kA according to EIA-364, Test procedure 75, Type B Test level 1
- **Comparative Tracking Index (CTI), Including Inserts:** 250 V

## Introduction

## MECHANICAL CHARACTERISTICS

## VIBRATION &amp; SHOCK

SHELL TYPE	MATERIAL	VIBRATION	SHOCK
		FOR 5 HOURS IN EACH OF THE 3 AXIS/INTERRUPTION < 1MS EIA 364-28 (EIA364 STANDARD)	THREE SHOCKS IN EACH AXIS EIA 364-27 (EIA364 STANDARD) CONDITION A
QM Series	Composite	4 Rail Positions = Acceleration 13.8 Grms 0.2G <sup>2</sup> /Hz from 10 to 400 Hz and 0.03 G <sup>2</sup> /hz from 400 to 2,000 Hz	4 Rail Positions = Shock Amplitude 50 G/duration 11 ms
		22 Rail Positions = Acceleration 6.2 Grms 0.04 g <sup>2</sup> /Hz from 10 to 400 Hz 0.006 g <sup>2</sup> /Hz at 2,000 Hz	22 Rail Positions = Shock Amplitude 15 G/duration 11 ms

Interruption shall not exceed 1 $\mu$ s, 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	100 Cycles	250 N max
QM Size A			125 N max

## RETENTION CHARACTERISTICS

Contact retention EIA 364-29 (EIA364 standard) on terminated connectors.

CONTACT SIZE	RETENTION FORCE	MAX DISPLACEMENT
Ground Block	88 N (20 lb)	0.30 mm (0.012 in.)
22	53.4 N (12 lb)	0.38 mm (0.015 in.)
20	89 N (20 lb)	0.38 mm (0.015 in.)
16	111.2 N (25 lb)	0.38 mm (0.015 in.)
12	133.45 N (30 lb)	0.38 mm (0.015 in.)
8	133.45 N (30 lb)	0.38 mm (0.015 in.)
5	133.45 N (30 lb)	0.38 mm (0.015 in.)

- Insert Retention: 400 N (90 lb) (EIA 364-35 = EIA364 standard)
- Max Displacement: 0.30 mm (0.012 in.)

## ENVIRONMENTAL CHARACTERISTICS

- Temperature Range: -65 °C/+155 °C (EIA 364-32 - test condition 4)
- Temperature Life: 1,000 H at 155 °C (EIA 364-17 - method A)
- Salt Spray: 96 hours (nickel-plating) EIA 364-26 (EIA364 standard) test condition A
- Humidity: 10 days with temperature variation from -10 °C to +65 °C EIA 364-31 Method 4, test condition B (EIA364 standard).
- Altitude Immersion: 3 cycles at 50,000 ft EIA 364-03 (EIA364 standard).

For more details, please refer to QM product specification.

## Inserts

## INSERT SELECTION TABLE

QM size B connectors will use EPXB inserts.

QM size A connectors will use EPXA inserts.

SERIES	INSERT NAME	INSERT CODE	CONTACT SIZE & TYPE <sup>[1]</sup>										TOTAL CONTACTS
			22*	20*	15 OR 16*	16	16	12*	8	8	5	5	
			SIGNAL	POWER	POWER OR COAX	LUXCIS® FIBER OPTIC	POWER IN FIBER OPTIC CAVITY	POWER OR COAX	POWER	QUADRAX OR TWINAX	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
	6	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

## Notes

1. 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).

## Inserts

## HOW TO ORDER QM INSERT

EPX

SERIES PREFIX \_\_\_\_\_

INSERT SIZE <sup>[1]</sup> \_\_\_\_\_**A:** Insert for QM size A**B:** Insert for QM size BCLASS <sup>[2]</sup> \_\_\_\_\_**E:** Environmental

INSERT NAME \_\_\_\_\_

Refer to table on page 2-7 for inserts arrangement.

INSERT TYPE \_\_\_\_\_

**P:** Pin**S:** Socket

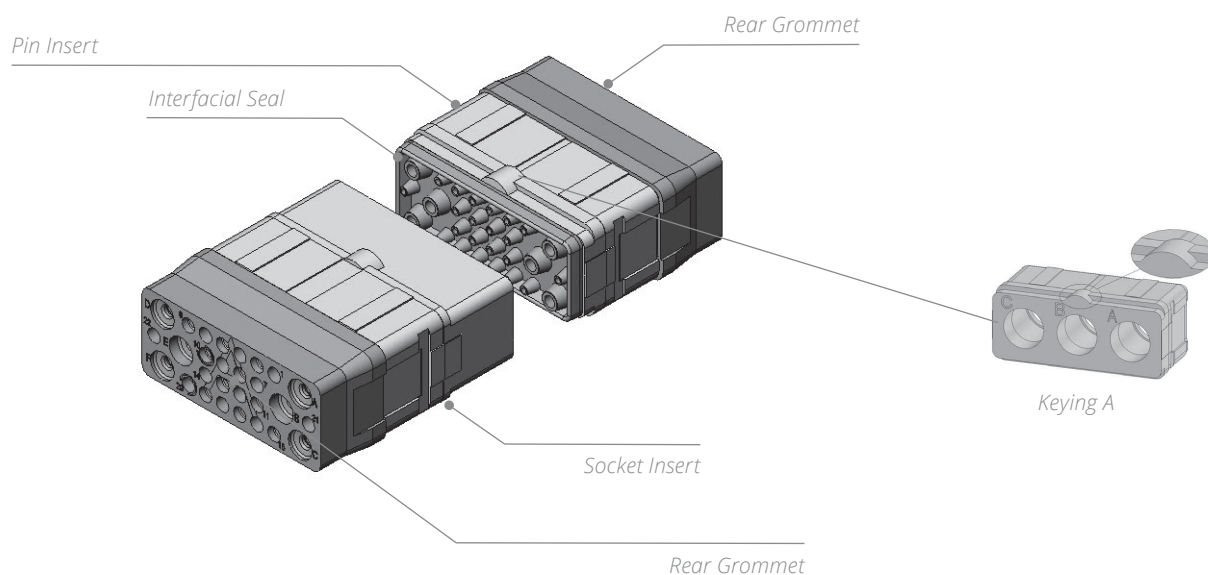
INSERT KEYING \_\_\_\_\_

**A:** Insert with keying A

CONTACT WITHOUT CODE \_\_\_\_\_

**S:** Signal and power crimp contacts are delivered with insert but uninstalled (refer to page 2-4)

Inserts 00, 1C1, 1P1, F6, C3, P3, 3Q3, 12F6, F12C and 3T3 are not available in S contact version.



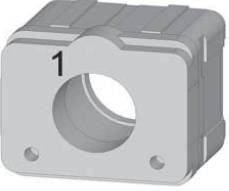
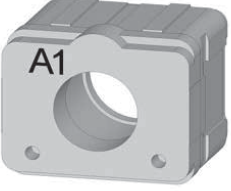
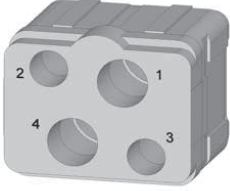
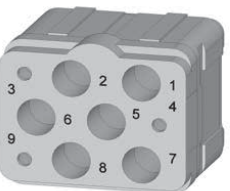
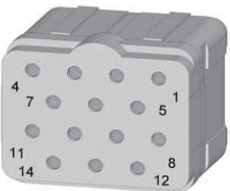
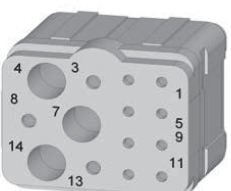
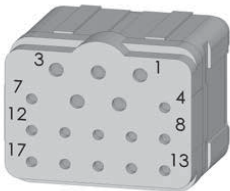
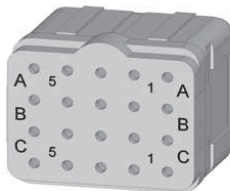
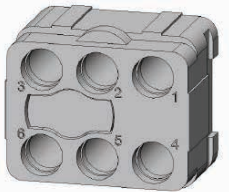
## Notes

1. Inserts are designed for rear release and rear removable contacts

2. Pin and socket inserts can be installed in either plug or receptacle shell

## Inserts

## EPXA INSERTS ARRANGEMENTS

			
<b>Insert Name 1C1</b> Insert Name A 1 × Size 5 Coax Contacts	<b>Insert Name 1P1</b> Insert Code B 1 × Size 5 Power Contacts	<b>Insert Name 04</b> Insert Code C 2 × Size 15 or 16 Contacts 2 × Size 12 Contacts	<b>Insert Name 09</b> Insert Code D 3 × Size 20 Contacts 6 × Size 15 or 16 Contacts
			
<b>Insert Name 14</b> Insert Code E 14 × Size 20 Contacts	<b>Insert Name 14M</b> Insert Code F 8 × Size 22 Contacts 3 × Size 20 Contacts 3 × Size 15 or 16 Contacts	<b>Insert Name 17</b> Insert Code G 12 × Size 22 Contacts 5 × Size 20 Contacts	<b>Insert Name 20</b> Insert Code H 20 × Size 22 Contacts
			
<b>Insert Name F6</b> Insert Code J 6 × Size 16 Optical LuxCis® Termini			

## WEIGHTS

Average weight per class and type for EPXA inserts without contacts.

INSERT CLASS FOR EPXA	INSERT TYPE	
	PIN	SOCKET
E	4.10 g (0.14 oz)	5.30 g (0.19 oz)



## Inserts

## EPXB INSERTS ARRANGEMENTS

Full size inserts arrangements are compliant with EN4644.

<b>Insert Name C3</b> Insert Code A 3 × Size 5 Coax Contacts	<b>Insert Name P3</b> Insert Code B 3 × Size 5 Power Contacts	<b>Insert Name 3Q3</b> Insert Code C 3 × Size 8 Quadrax Contacts	<b>Insert Name 06</b> Insert Code D 6 × Size 12 Medium Power Contacts
<b>Insert Name 10Q2</b> Insert Code E 8 × Size 20 Contacts 2 × Size 8 Quadrax Contacts	<b>Insert Name 12F6</b> Insert Code F 6 × Size 16 Optical LuxCis® Termini 6 × Size 16 Special Electrical Contacts	<b>Insert Name F12C</b> Insert Code G 12 × Size 16 Optical LuxCis® Termini	<b>Insert Name 13C1</b> Insert Code H 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts 1 × Size 5 Contact
<b>Insert Name 13P1</b> Insert Code J 6 × Size 20 Contacts 4 × Size 15 or 16 Contacts 2 × Size 12 Contacts	<b>Insert Name 14</b> Insert Code K 14 × Size 15 or 16 Contacts	<b>Insert Name 17</b> Insert Code L 14 × Size 20 Contacts 3 × Size 12 Contacts	<b>Insert Name 20C1</b> Insert Code M 19 × Size 20 Contacts 1 × Size 5 Contact
<b>Insert Name 20P1</b> Insert Code N 19 × Size 20 Contacts 1 × Size 5 Power Contact	<b>Insert Name 22</b> Insert Code P 16 × Size 20 Contacts 6 × Size 15 or 16 Contacts	<b>Insert Name 22V</b> Insert Code Q 16 × Size 20 Contacts 6 × Size 16 Contacts	<b>Insert Name 25P1</b> Insert Code R 24 × Size 22 Contacts 1 × Size 8 Power Contact

## Inserts

Full size inserts arrangements are compliant with EN4644.

			
<b>Insert Name 25Q1</b> Insert Code S 24 x Size 22 Contacts 1 x Size 8 Quadrax Contact	<b>Insert Name 28</b> Insert Code T 22 x Size 22 Contacts 6 x Size 15 or 16 Contacts	<b>Insert Name 30</b> Insert Code U 30 x Size 20 Contacts	<b>Insert Name 34</b> Insert Code W 18 x Size 22 Contacts 16 x Size 20 Contacts
			
<b>Insert Name 40</b> Insert Code X 40 x Size 22 Contacts	<b>Insert Name 48</b> Insert Code Y 48 x Size 22 Contacts		

## WEIGHTS

Average weight per class and type for EPXB inserts without contacts.

INSERT CLASS FOR EPXB	INSERT TYPE	
	PIN	SOCKET
E	7.90 g (0.28 oz)	10.00 g (0.35 oz)

## Contacts

## SIGNAL &amp; POWER CRIMP CONTACTS

QM series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. The available contacts cover aerospace applications for terminating cables.

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

## FEATURES &amp; BENEFITS

- Significantly reduced cost of ownership
- Reduced dependence on gold rate fluctuation
- No change in the contact crimping or soldering process

## SPECIFICATIONS

- Same contact design as full plated version
- Contact interface gold plated with 1.27 µm
- For crimp version, no changes are required for the crimping process
- Product qualification is available upon request

## CONTACT SELECTION TABLE

CONTACT SIZE		WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL
22		22	Pin	617200	282281 M22520/2-01	282970 M22520/2-23	4	282522 (M81969/14-01)	Plastic
		24					3		
		26	Socket	617300					
20		20	Pin	617221	282281 M22520/2-01	282971 M22520/2-08	7	282522001 (M81969/39-01)	Plastic
		22					6		
		24	Socket	617320			5		
16		16	Pin	617240	282291 M22520/1-01	282972 M22520/1-02	6	282515 (M81969/14-03)	Plastic
		18	Socket	617340			5		
		20					4		
	For Ground Block	20	Pin	617221050	282281 M225520/2-01	282581015 M22520/2-11	7	282886 M81969/1-02	Metal
			Socket	N/A					
	For Optical/ Electrical Cavity	16	Pin	617235003 <sup>[1]</sup>	282291 M22520/1-01	282581013	6	282515 (M81969/14-03)	Plastic
		18					5		
		20					4		

## Notes

1. Electrical contacts for optical inserts are always pin contacts (hermaphrodite).

## Contacts

## CONTACT SELECTION TABLE

CONTACT SIZE	WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL
12	12	Pin	617250	282291 M22520/ 1-01	282972 M22520/1-02	8	282549004 (M81969/14-04)	Plastic
	14	Socket	617350			7		
	16					6		
8	8	Pin	617291002 <sup>[2] [3]</sup>	R282600000 M22520/ 23-01 + Die set R282650000 M22520/23-02	282588	N/A	282549001	Metal
		Socket	617391002 <sup>[2] [3]</sup>					
5	8	Pin	617280 <sup>[2] [4]</sup>	R282600000 M22520/ 23-01 + Die set R282650000 M22520/23-02	282557020	N/A	282946 (M81969/28-01)	Metal
		Socket	617390 <sup>[2] [4]</sup>		282557021			
	12	Pin	617260001 <sup>[2] [4]</sup>	282613	282586003	6		
	16	Socket	617370001 <sup>[2] [4]</sup>		282586005	4		

## OVERSIZED &amp; REDUCED CRIMP BARREL CONTACTS

CONTACT SIZE		WIRE SIZE	TYPE	PART NUMBER FULL PLATED	CRIMPING TOOL	POSITIONER	SELECTOR	INS/EXT TOOL	MATERIAL OF TOOL
22	Reduced Crimp Barrel	28	Pin	617201	282281 M22520/2-01	282970 M22520/2-23	5	282522 (M81969/14-01)	Plastic
		30	Socket	617301			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	282281 M22520/2-01	282971 M22520/2-08	4	282522001 (M81969/39-01)	Plastic
		24	Socket	617324001			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		
22	Socket			617341	5				
24					4				
Reduced Crimp Barrel for Optical Electrical Cavity	20		Pin	617235002 <sup>[1]</sup>	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. 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).

## Contacts

## COAXIAL CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
15-16	RG188 FILECAF1709/6 F1709/8 RG174-RG179-RG316 ASNE0639XY 75 Ohms	Pin	617130		282512 (M81969/14-03)	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- RG178DS NEXAN 10036442 75 Ohms	Pin	617103001	617103		
		Socket	617003001	617003		
	RG178-RG196	Pin	617104001	617104		
		Socket	617004001	617004		
	RG180 PAN6422XZ ANSE063WGH 96 Ohms	Pin	617105001	617105		
Socket		617005001	617005			

## TWINAX &amp; TRIAX CRIMP CONTACTS

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	INS/EXT TOOL	MATERIAL OF TOOL
12 Triax	ECS0700	Pin	617190010		282549004 (M81969/14-04)	Plastic
		Socket	617090010			
	M17/176-00002	Pin	617190012			
		Socket	617090012			
8 Triax	TENSOLITE 24463/9PO25X-2 100 Ohms	Pin	617165021	617165020	282549001	Metal
		Socket	617065021	617065020		
	WHITMOR W2675-1575	Pin	617165	617165001		
		Socket	617065	617065001		
8 Twinax	ABS0386WF24 & TYCO 1726A1424A	Pin	617165011	620165010	282549001	Metal
		Socket	617065011	620065010		
5 Triax	PAN6421ZA002 77 Ohms M17/176-00002 EN3375-003 Raychem 106113 77 Ohms	Pin	617150001	617150	282946 (M81969/28-01)	Metal
		Socket	617050001	617050		
	TENSOLITE 24473/03159X 124 Ohms	Pin	617152001	617152		
		Socket	617052001	617052		

## Contacts

## QUADRAX &amp; BMA CRIMP CONTACTS

## QUADRAX CONTACTS



The Quadrax contact offer is compliant with Arinc 600 and EN3155-072 and EN3155-073 standards.

## ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	ENVIRONMENTAL PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 & ABS1503	Pin	617175011	282549001
		Socket	617075011	
	TENSOLITE NF24Q100	Pin	617175051	
		Socket	617075051	
	TENSOLITE NF26Q100/JSF Y18	Pin	617175053	
		Socket	617075053	
	TENSOLITE NF22Q100	Pin	617175041	
		Socket	617075041	

## NON-ENVIRONMENTAL QUADRAX

CONTACT SIZE	CABLE TYPE	TYPE	NON-ENVIRONMENTAL PART NUMBER	COMPATIBLE SEALING BOOT PART NUMBER	EXTRACTION TOOL IN METAL
8	Ethernet Cable ABS0972 & ABS1503	Pin	617175012	617939003	282549001
		Socket	620075010		
	TENSOLITE NF24Q100	Pin	617175052		
		Socket	620075050		
	TENSOLITE NF26Q100/JSF Y18	Pin	617175054	617939005	
		Socket	620075021		
	TENSOLITE NF22Q100	Pin	617175040	617939003	
		Socket	620075040		

## BMA CONTACTS



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

CONTACT SIZE	CABLE TYPE	CONNECTOR TYPE	ENVIRONMENTAL PART NUMBER	NON-ENVIRONMENTAL PART NUMBER	FREQUENCY RANGE	MAX VSWR	INSERTION LOSS
8	SHF5 - SHF5M <sup>[1]</sup>	Pin	617171011	617171010	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	RG142	Pin	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	617171031	617171030	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)
	SHF5 - SHF5M <sup>[1]</sup>	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 <sup>[1]</sup>	Socket	617071041	617071040	DC-18 GHz	1.35	0.13 dB at Max Frequency (18 GHz)

## Notes

1. The BMA contacts, which can accommodate SHF cables, require a termination by Radiall.

## Contacts

## LUXCIS® FIBER OPTIC CONTACTS

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

## OPTICAL PERFORMANCE

	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 &amp; ENVIRONMENTAL CHARACTERISTICS

	STANDARD	PERFORMANCE
Thermal Cycling	SAE AS 13441 Method 1003.1	-55 °C/+125 °C (Cable Dependent)
Temperature Endurance	TIA/EIA 455-4	1000 h at 125 °C (Cable Dependent)
Vibration	TIA/EIA 455-11	27 Grms
Shock	TIA/EIA 455-14	50 G, 11 ms
Durability	TIA / EIA 364-09	500 Cycles <sup>(1)</sup>
Maintenance	SAE AS 13441 Method 2002.1	10 Cycles
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

F7250

## LUXCIS® SERIES

## FERRULE TYPE

- 00:** PC ferrule for single-mode fiber
- 03:** PC ferrule for 50/125 or 62.5/125 µm multi-mode fiber
- 04:** PC ferrule for 100/40 µm multi-mode fiber
- 05:** PC ferrule for 200/230 µm multi-mode 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

The sealing plug F718 211 200 is specifically designed to fill the unused LuxCis® Arinc 801 cavities.



## Notes





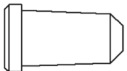


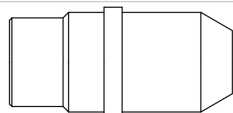
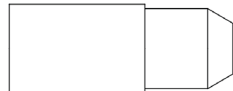
1. Mating cycles are dependent on connector series. Radiall can support you with your cable and harness assemblies. Please contact your sales representative.



## Contacts

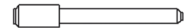
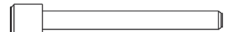

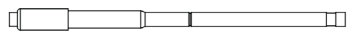
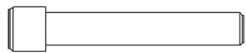
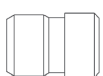
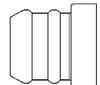
### FILLER PLUGS

Filler plugs are dedicated to non-environmental insert cavities.

SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Rear/Rear	Black	620920	← 
20			White	610941	← 
16 For Electrical Cavity			Blue	620922	← 
16 For Optical Cavity			Green	F718211200	← 
12			Yellow	620923	← 
8	Pin		Nickel	619953	← 
	Socket			619950	← 
5	Pin		White	617930	← 
	Socket			617931	← 

### SEALING PLUGS

Sealing plugs are dedicated to environmental insert cavities.

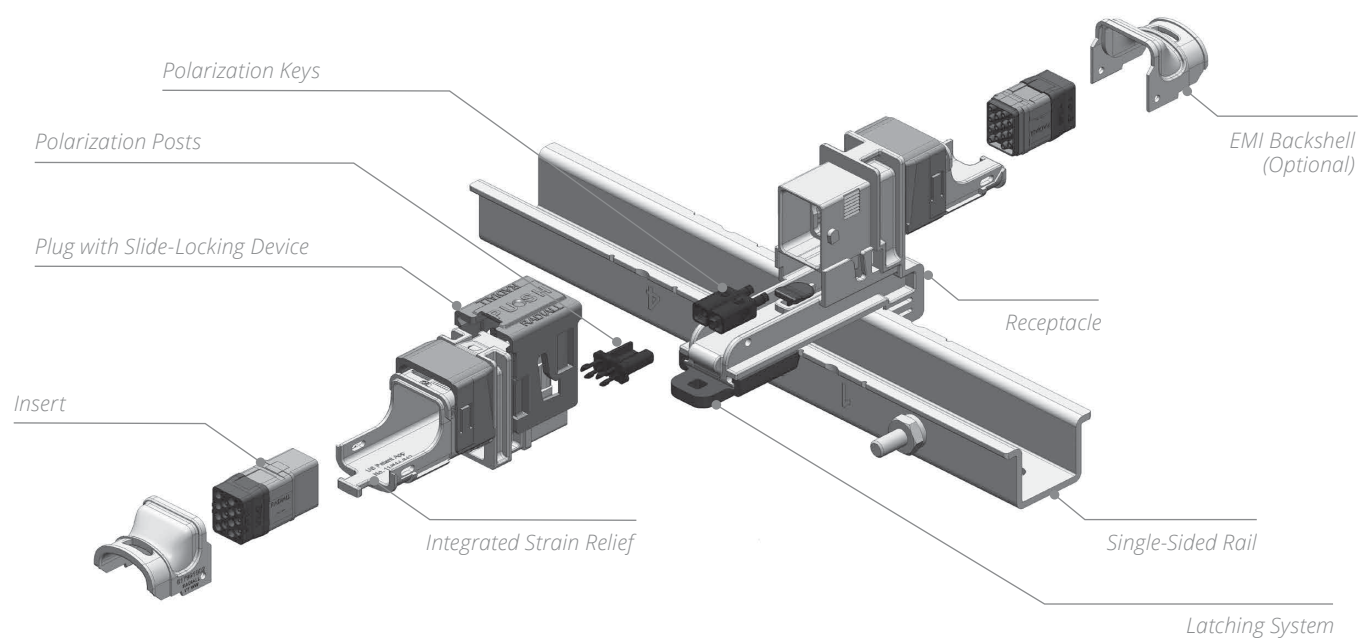
SIZE	CONTACT CAVITY VERSION	INS/EXT	COLOR	PART NUMBER	DRAWING
22	For Pin & Socket	Rear/Rear	Black	616910	← 
20			Red	616911	← 
16 For Electrical Cavity			Green	616912	← 
16 For Optical Insert				F718211200	← 
12			Orange	616913	← 
8			Red	618915	← 
5				616914013	← 

#### Notes

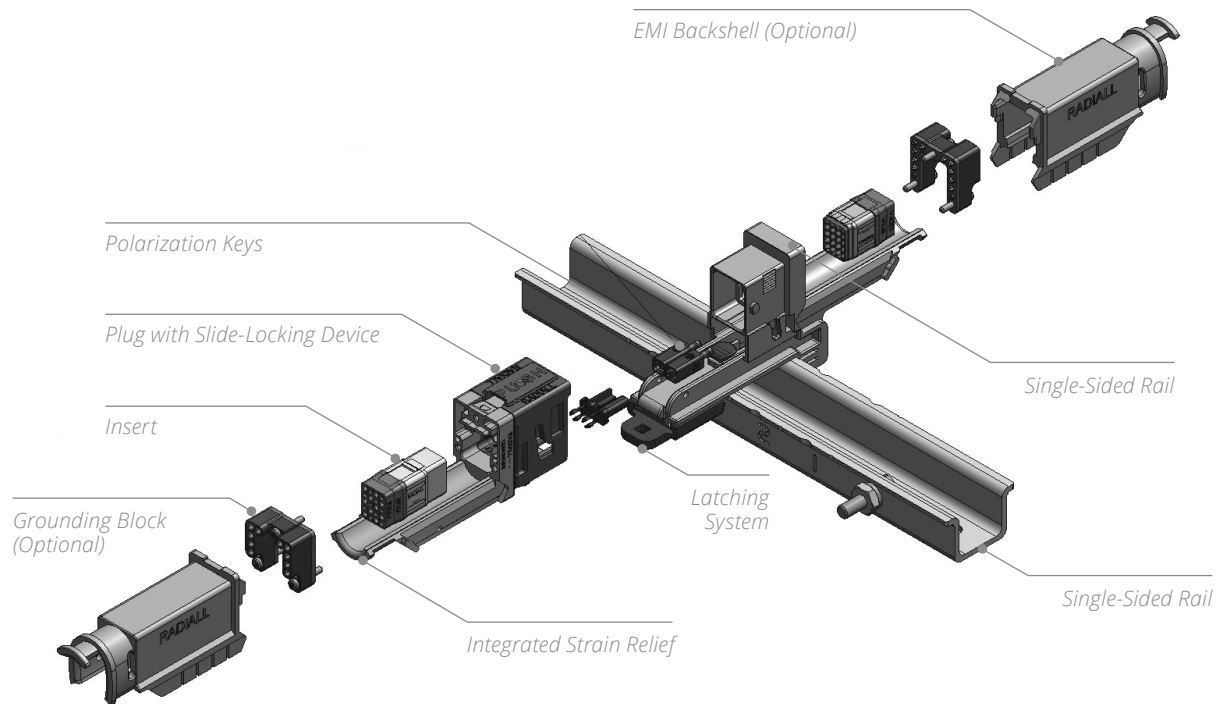
The arrows show the direction which you have to insert the plug.

Connectors

## QM SIZE A COMPACT PRODUCT OVERVIEW

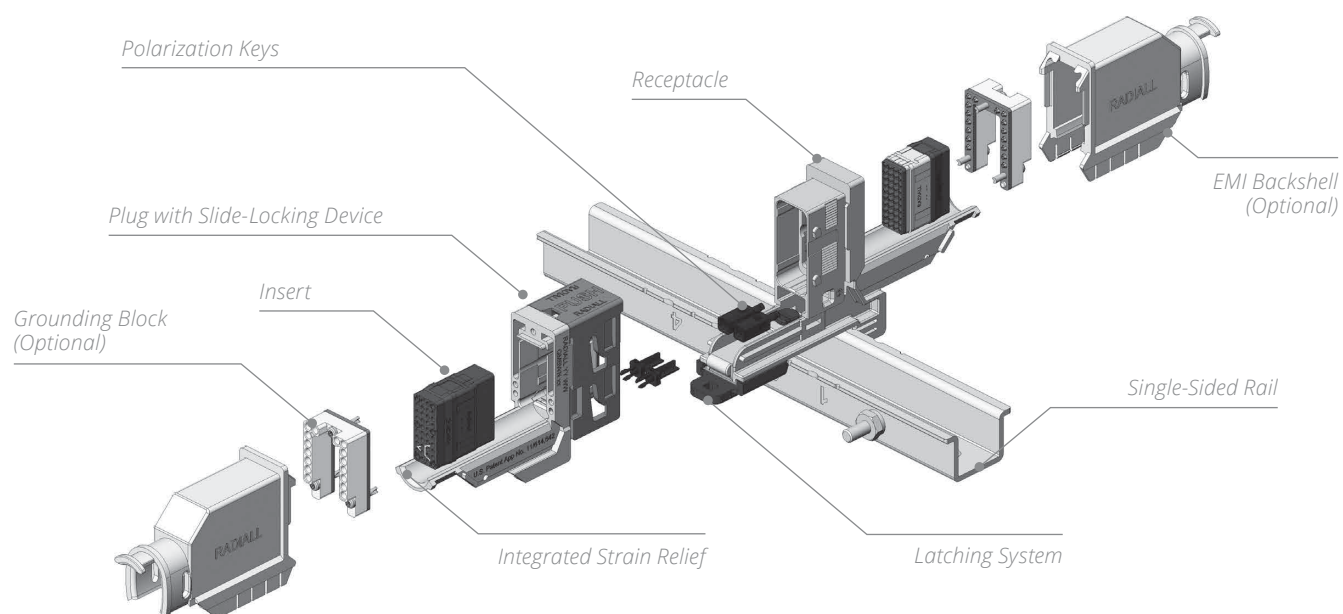


## QM SIZE A GROUNDING BLOCK PRODUCT OVERVIEW



Connectors

## QM SIZE B PRODUCT OVERVIEW



## HOW TO ORDER QM SHELL

QM

## SERIES PREFIX \_\_\_\_\_

## SHELL SIZE \_\_\_\_\_

**A:** QM size A shell**B:** QM size B shell

## PRODUCT TYPE \_\_\_\_\_

**C:** Plug for QM size A Compact only**D:** Receptacle for QM size A Compact only**P:** Plug <sup>[2]</sup>**R:** Receptacle <sup>[2]</sup>**W:** Plug with ground block <sup>[1] [2]</sup>**Z:** Receptacle with ground block <sup>[1] [2]</sup>

## FINISH \_\_\_\_\_

**N:** Nickel-plating

## POLARIZATION \_\_\_\_\_

**00:** Delivered without polarizing keys**WITHOUT CODE:** Delivered with polarizing keys not installed**\*\*:** Delivered with polarizing keys installed according to code (see table 2 on page 2-22).

## Notes



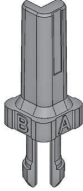
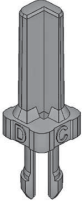
1. Shells with ground block are not compatible with EMI backshell.

2. Available with QM size A and QM size B.

Connectors

**POLARIZATION CODE**

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

POLARIZATION KEYS FOR RECEPTACLE		POLARIZATION POSTS FOR PLUG	
			
View Shows A and D	View Shows C and B	View Shows A and B	View Shows C and D

There are 16 possible codings:

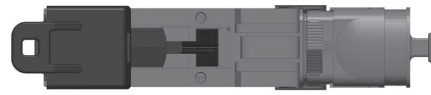
KEY POSITION 1	A	A	A	A	B	B	B	B	C	C	C	C	D	D	D	D
KEY POSITION 2	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D

**QM SIZE A COMPACT CONNECTOR**

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



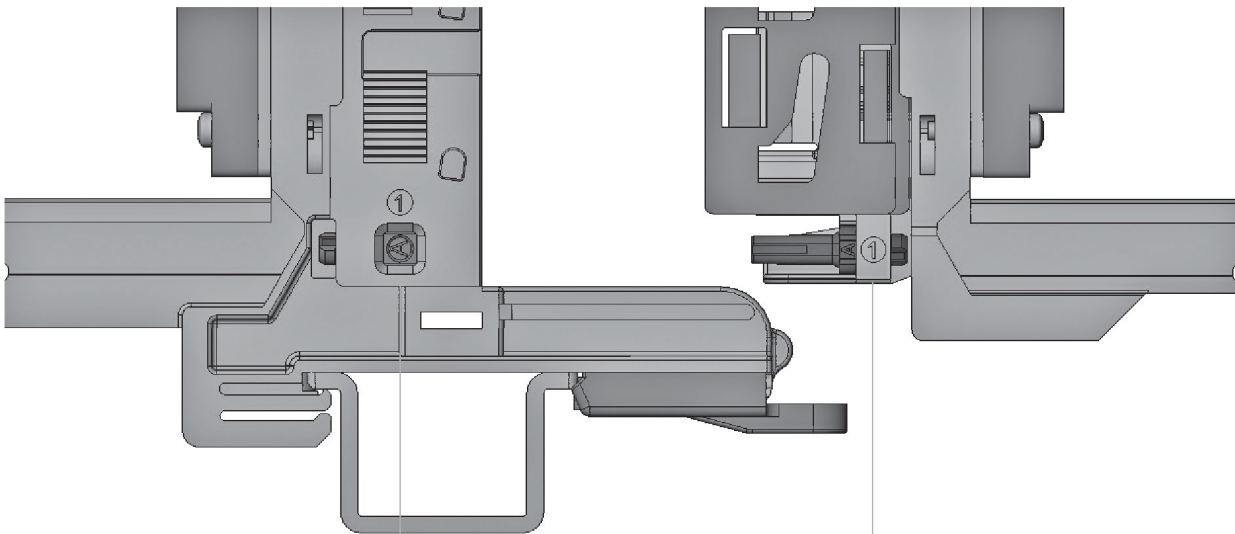
Polarization Posts Under QMACN



Polarization Keys Under QMADN

**QM SIZE A & B CONNECTOR**

**Tips to Read Polarization Code:** In order to properly read the polarization code, you can read the part number marked on the connector at the same time.



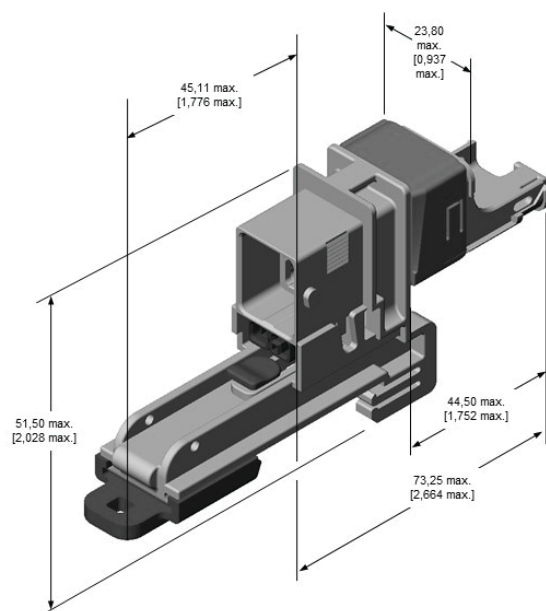
Code on Polarization Keys

Code on Polarization Posts

## Connectors

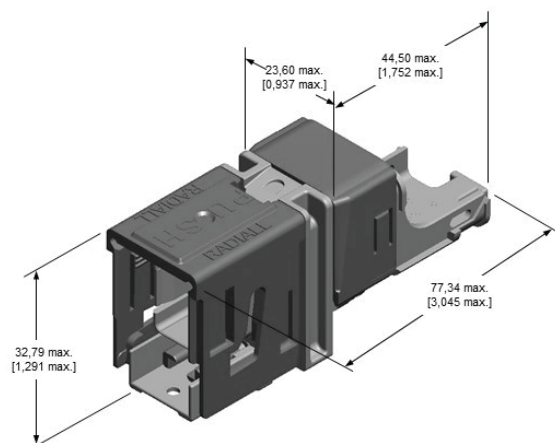
## QM SIZE A COMPACT SHELL DIMENSIONS

## RECEPTACLE



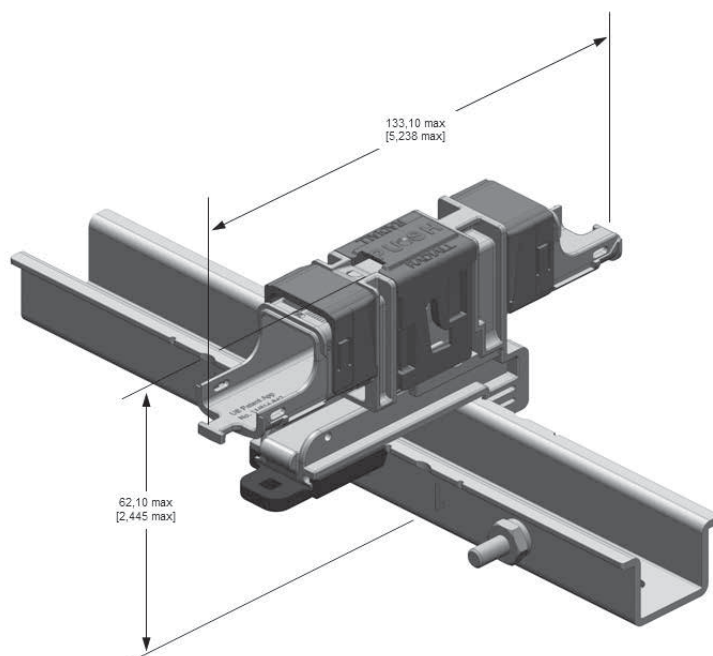
QMADN: 39 G

## PLUG



QMACN: 24 G

## MATED PAIR

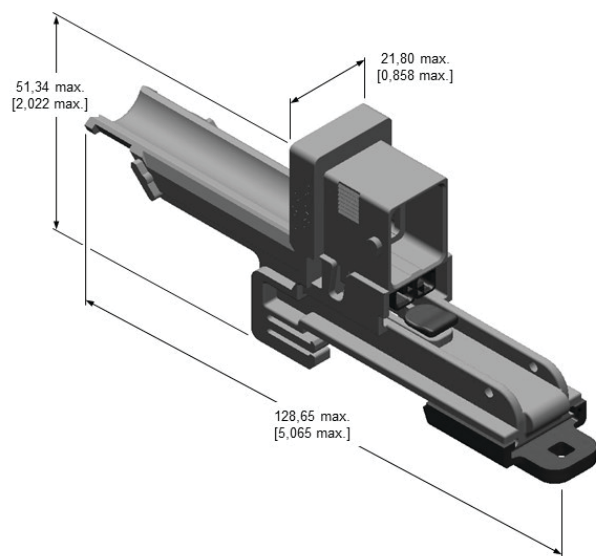




## Connectors

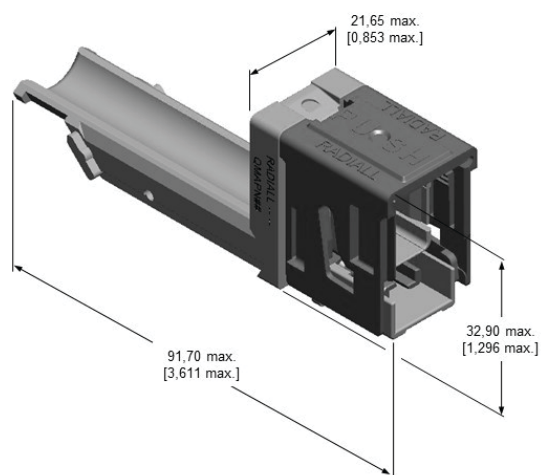
## QM SIZE A SHELL DIMENSIONS

## RECEPTACLE



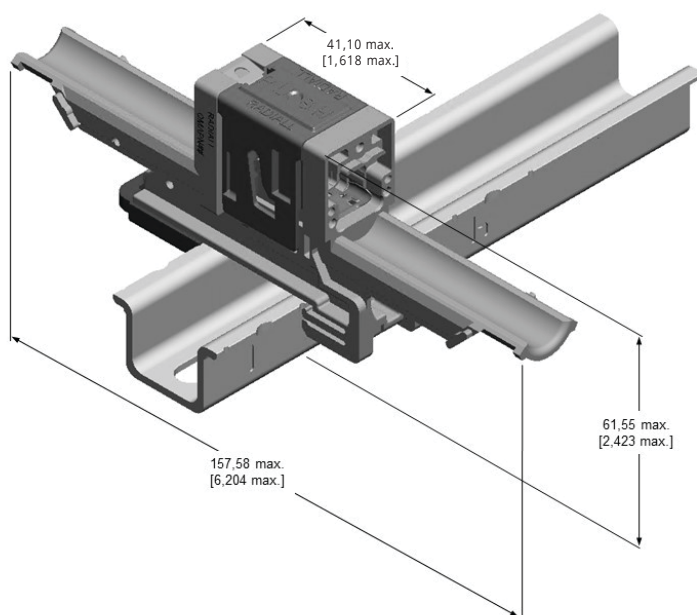
QMARN: 39 G  
QMAZN: 45 G

## PLUG



QMAPN: 24 G  
QMAWN: 30 G

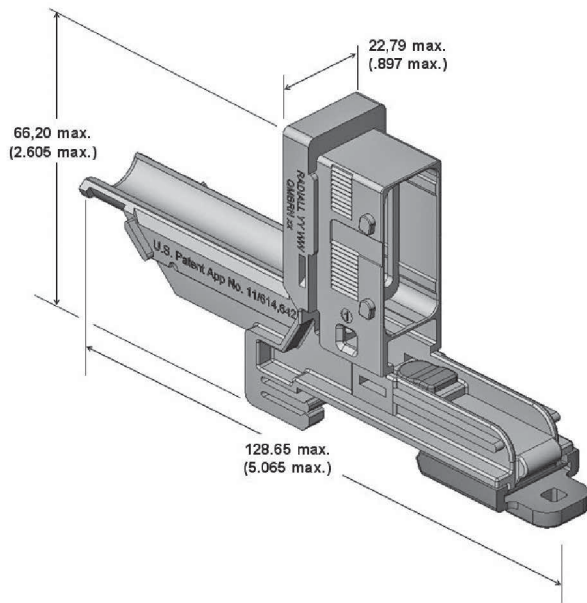
## MATED PAIR



## Connectors

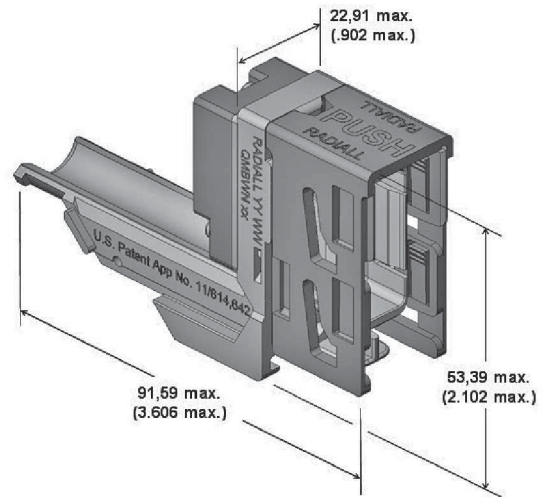
# QM SIZE B SHELL DIMENSIONS

## RECEPTACLE



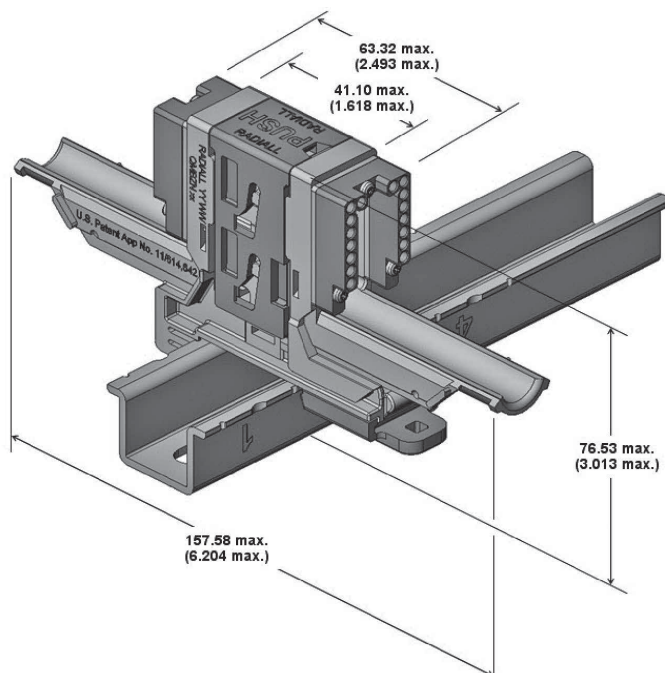
QMBRN: 42 G  
QMBZN: 50 G

## PLUG



QMBPN: 31 G  
QMBWN: 38 G

## MATED PAIR



## Accessories

## HOW TO ORDER QM MOUNTING DEVICE

QM

SERIES PREFIX \_\_\_\_\_

MOUNTING DEVICE \_\_\_\_\_

L: L-Bracket

U: Single-sided rail

H: Double-sided rail

RAIL NAME \_\_\_\_\_

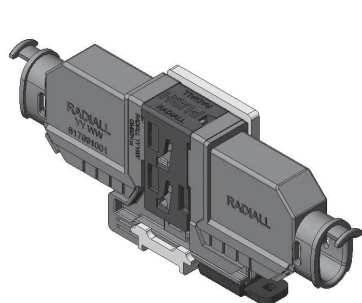
Refer to tables on page 2-28 for rail name.

MOUNTING DEVICE MATERIAL \_\_\_\_\_

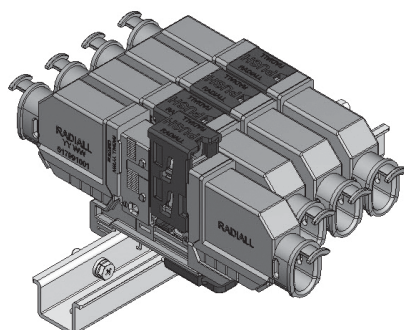
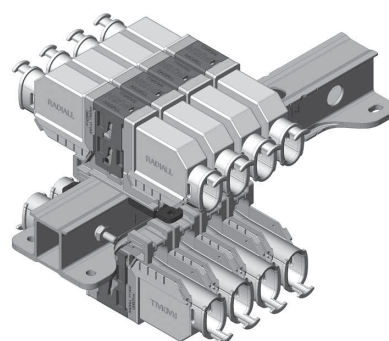
A: Aluminium

FINISH \_\_\_\_\_

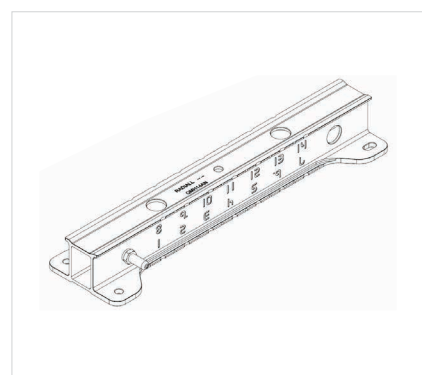
N: Nickel



L-Bracket

Single-Sided Rail <sup>[1]</sup>

Double-Sided Rail

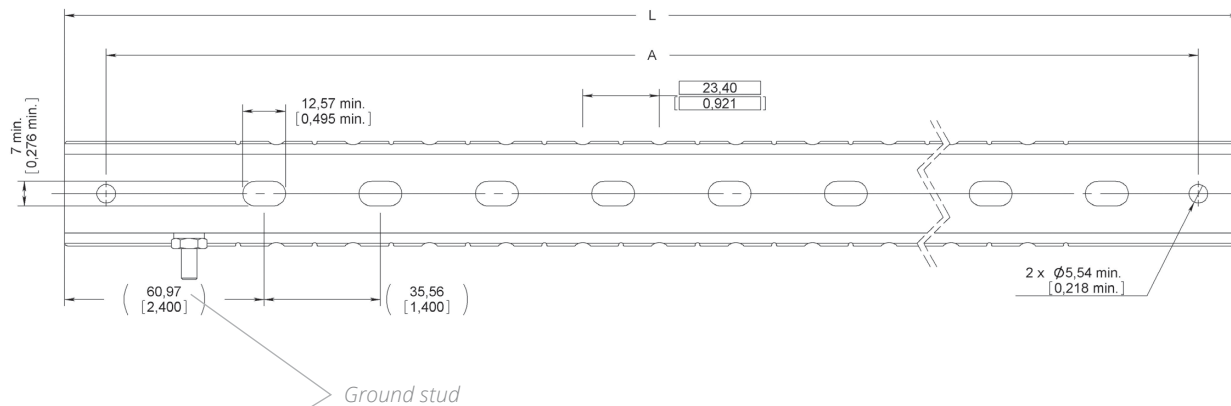


## Notes

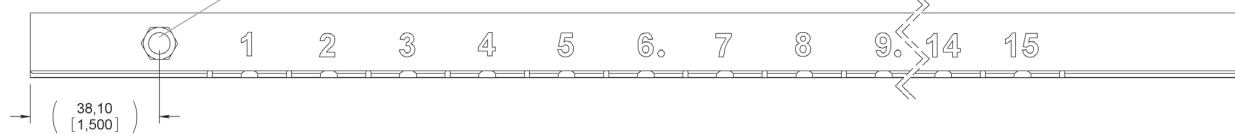
1. Single-sided rails are delivered with slot and ground stud.

## Accessories

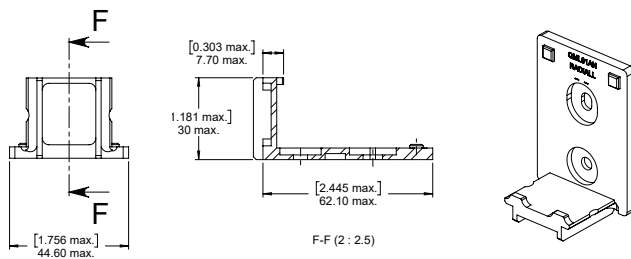
## TOP VIEW



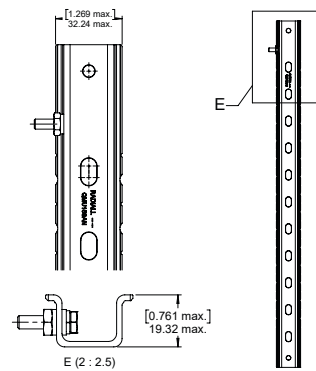
## SIDE VIEW



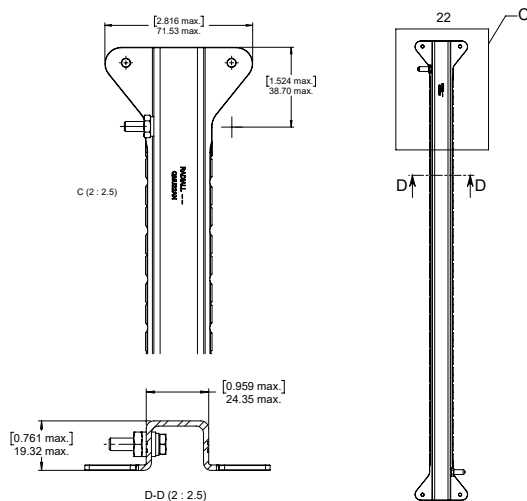
## RAIL QM L-BRACKET



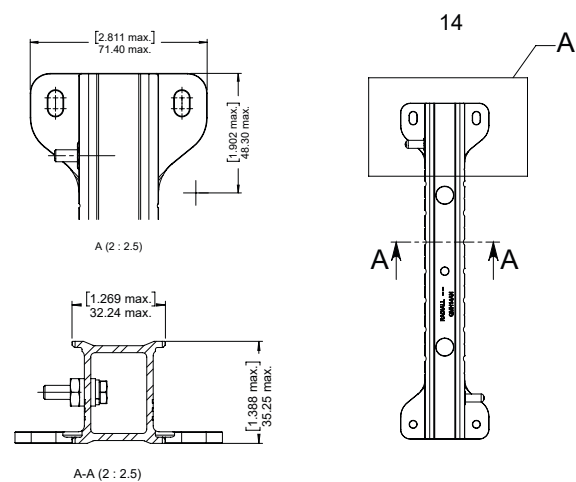
## SINGLE-SIDED RAIL QM GENERAL



## SINGLE-SIDED RAIL QM #22



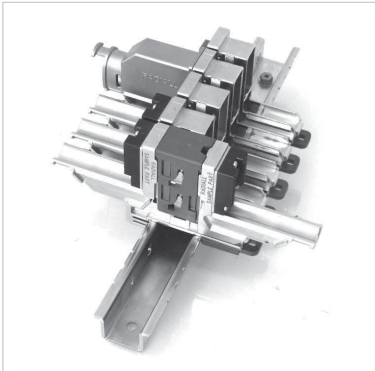
## DOUBLE-SIDED RAIL QM



## DIMENSIONS OF MOUNTING DEVICES

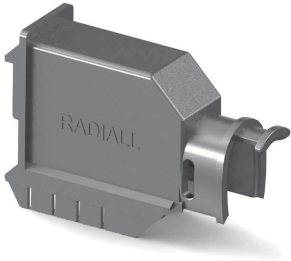

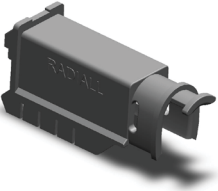
RAIL NAME	NUMBER OF CONNECTOR POSITIONS	TYPE OF MOUNTING DEVICE	LENGTH MM MAX (INCH)	NUMBER OF GROUND STUDS	WEIGHT G (OZ)
01	1	L-Bracket	30 (1.181)	-	27 (0.95)
04M	4	Single	127 (5.000)	1	52 (1.83)
06M	6	Single	173.74 (6.840)	1	69 (2.43)
08M	8	Single	220.50 (8.681)	1	86 (3.03)
10M	10	Single	266.19 (10.48)	1	100 (2.53)
12M	12	Single	313.95 (12.360)	1	120 (4.23)
14M	14	Single	360.95 (14.211)	1	137 (4.83)
14	14	Double	270.76 (10.66)	2	263 (9.28)
16M	16	Single	407.67 (16.050)	1	156 (5.50)
16	16	Double	294.3 (11.58)	2	279 (9.84)
18M	18	Single	454.40 (17.890)	1	171 (6.03)
18	18	Double	317.5 (12.5)	2	298 (10.51)
20	20	Double	340.86 (13.42)	2	313 (11.04)
22	22	Single	621.54 (24.470)	2	261 (9.21)
22	22	Double	364.23 (14.34)	2	332 (11.71)
24	24	Double	387.6 (15.26)	2	351 (12.38)
26	26	Double	410.97 (16.18)	2	370 (13.05)
28	28	Double	434.34 (17.1)	2	370 (13.05)
30	30	Double	457.71 (18.02)	2	405 (14.29)
32	32	Double	481.33 (18.95)	2	424 (14.96)
34	34	Double	504.69 (19.87)	2	443 (15.63)
36	36	Double	528.06 (20.79)	2	462 (16.30)
38	38	Double	551.43 (21.71)	2	481 (16.97)
40	40	Double	574.8 (22.63)	2	499 (17.60)
42	42	Double	598.17 (23.55)	2	519 (18.31)
44	44	Double	621.54 (24.47)	2	540 (19.05)

STRAIN RELIEFS & BACKSHELLS








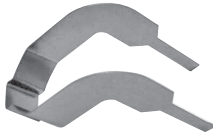


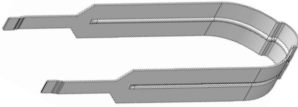


QM connectors can be equipped with backshells to provide complete shielding.

Backshells are compatible with plug and receptacle side. They provide EMI-RFI shielding specially needed in aircraft with a composite architecture. They are easy to install as they require no specific tools, and the backshells combine cost savings and high performances.

	PART NUMBER	DESCRIPTION
	617 991 001	QM Size B EMI Backshell
	617 991 002	QM Size A Compact EMI Backshell
	617 991 010	QM Size A EMI Backshell

## Accessories

## SPARE PARTS &amp; 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
	617 980 030	Polarization Post
	617 980 031	Polarization Key
	282 668 001	Tweezers for Polarizing Post and Key
	282 521 004	Right Angle Insert Extraction Tool
	F780 855 000	Hexagonal Key 5/64 in. (2 mm)/ 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)