



EPX<sup>®</sup> Series EN4644

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#### Introduction

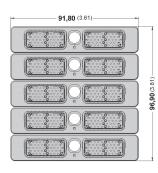
Radiall is recognized in the Aerospace and Defense industries for offering one of the broadest innovative product portfolios for connector interconnect solutions. The benefit of our experience with ARINC connectors permits Radiall to provide customers with a strong and global solution.

The EPX® series offers a wide range of solutions based on two insert sizes with a large variety of shells and contacts. This product range provides an excellent trade-off between the number of available contacts and the space used. The EPX® series is completely modular and expandable.

The EPX® series connectors are standardized by the EN4644 European standard.

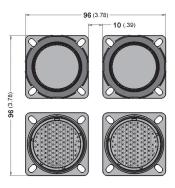
#### A **high density solution** compared to circular connectors:

- Slim shell design with high contact density
- Stackable shells do not require additional space for locking and unlocking the connectors



EPXB: 5 shells #2 with 2\*48 Cts

- --> Total Cts: 480
- --> Total surface: 96.90 \* 91.80 = 8895.42 mm<sup>2</sup> Gives 18.53 mm<sup>2</sup>/contact



38999 :

4 shells #23 with 100 Cts

- --> Total Cts: 400
- --> Total surface: 96.00 \* 96.00 = 9216 mm² Gives 23.04 mm²/contact

#### A cost saving and user-friendly solution:

- Inserts can be wired in the workshop and later installed in the shells
- A common panel cut-out simplifies the connector installation
- Inserts can be easily installed and removed from the shell
- Inserts and shells are keyed to prevent mis-mating
- Standard Mil spec tools for contact crimping and contact insertion/extraction
- Field replaceable sub-assemblies
- Vibration resistant self-locking threads

#### A **modular concept** with a large variety of options:

- Shell can accommodate a wide variety of inserts for signal, power, coax, data bus, fiber optic and high frequency BMA contacts
- Optional ground blocks (to meet the FAA HIRF requirements)

- Pin and socket inserts can be installed in either plug or receptacle shells (pin contacts are always fitted in the pin insert)

#### EPX® a **versatile solution** available in two different versions:

- Aluminium
- Composite



PCB-cable

#### Disconnect Application

Cable-cable

EPX® connectors (EPXA, EPXB1 and EPXB2) are specially designed to be used in cable-cable disconnect applications and PCB-cable disconnect applications.

The principle of EPX® disconnect connectors is that the locking system is located on the connector itself.

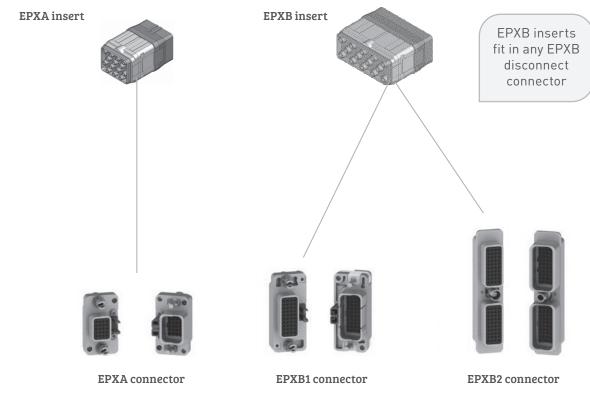
EPX® connectors for disconnect applications address three main needs:

- Compactness: the design of the locking system allows an access from the back of the shell so that connectors can be stacked. Space can be easily saved

- Modularity: connectors use similar tools and accessories so that spare parts are reduced

- Ease of assembly: when on a panel, the connector is easy to mate with the use of a standard Allen wrench tool (available at Radiall or anywhere)

The modularity of this series allows you to configure a connector with higher performances (environmental, grounding blocks, shell mountings, etc). Several accessories offer you the possibility to create harnesses, like the 38999 series.





#### Rack and Panel Application

In response to the need of system miniaturization and new equipment design, Radiall introduces its new rack and panel connectors dedicated to Line Replaceable Module (LRM) applications.

The EPX® rack and panel connectors are intended for blind mate applications. The plug connector is designed to be used in a Line Replaceable Module (LRM) while the receptacle is installed on the aircraft rack. There is no locking mechanism on these blind mate connectors, that feature is part of the equipment interface to the aircraft.

Radiall rack and panel modules offer:

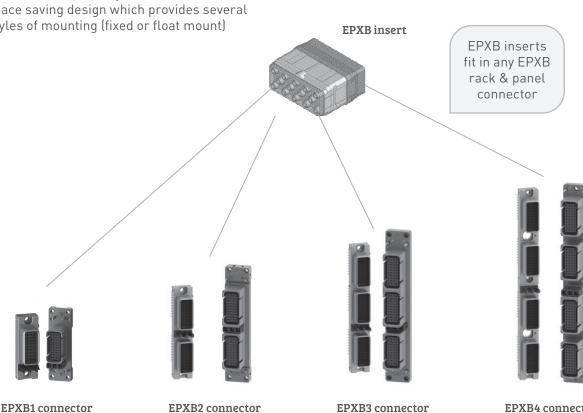
- A wide range of connectors from size 1 to 4 based on the same design. They all use the same accessories, polarization and mounting style in order to standardize the EPX® series

- Reliable system: the polarization device prevents any mounting mistakes between the panel and the receptacle shell, and also between the plug and the receptacle shells

- Modularity in mounting EPX® connectors: EPX® rack and panel receptacles feature Arinc 600 functionality combined with a space saving design which provides several styles of mounting (fixed or float mount)

Equipment side

Aircraft side





#### Technical Characteristics for Disconnect Connectors

#### **ELECTRICAL CHARACTERISTICS** EMI shielding effectiveness EN2591-213

Frequency (MHz)	Leakage attenuation (dB)
100	65
200 & 300	63
400	62
500 & 600	60

# **OTHER CHARACTERISTICS**

- Shell to shell conductivity < 2.5 m  $\Omega$ , operating voltage: 400 Vrms or 500 Vdc at sea level, according to EN2591-205
- Voltage stability (ground block): Maximum variation 4mV according to SAE AS 81714 (MIL-T-81714)
- Lightning stike: 5kA 1600V for EPX® connectors in aluminium version
   3kA 1600V for EPX® connectors in composite version

#### MECHANICAL CHARACTERISTICS

#### Mating/unmating

Shell type	Material	Mating/Unmating
EPXA	Aluminium	100 cycles
EPXB1	Aluminium	100 cycles
EPXB1	Composite	100 cycles
EPXB2	Composite	100 cycles <sup>(1)</sup>
EPXB2	Aluminium	100 cycles <sup>(1)</sup>

#### **VIBRATION & SHOCK**

		Vibration	Shock
Shell type	Material	For 8 hrs on each of the 3 axis/ interruption <1µs EN2591-403 EIA 364-28	3 shocks on each axis EN2591-402 EIA 364-27
EPXA	Aluminium		
EPXB1	Aluminium	Acceleration 27.8g (test condition 6 letter G)	Shock amplitude 50g /duration
EPXB1	Composite		11ms
EPXB2	Composite		
EPXB2	Aluminium		Shock amplitude 300g /duration 3ms
Disconnect EPX® with Quadrax contacts	/	Acceleration 16.9g (test condition 5 letter E)	Shock amplitude 50g /duration 11ms

NOTE: (1) 500 mating cycles possible when using lubricant (as per the standard Mil-spec DOD G 24508) on locking device



**EPX® SERIES** 

# Technical Characteristics for Rack & Panel Connectors

#### **ELECTRICAL CHARACTERISTICS** EMI shielding effectiveness en2591-213

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- Lightning stike: 5kA 1600V for EPX® connectors in aluminium version
   3kA 1600V for EPX® connectors in composite version

# MECHANICAL CHARACTERISTICS

#### Mating/unmating

Shell type	Material	Mating/Unmating
EPXB1	Aluminium	500 cycles
EPXB2		500 cycles
EPXB3		500 cycles
EPXB4		500 cycles

The minimum mating forces are described in the EN4644 standard and depends on the connector size and insert arrangement. Consult Radiall for more information.

# **VIBRATION & SHOCK**

		Vibration	Shock
Shell type	Material	For 8 hrs on each of the 3 axis/ interruption <1µs EN2591-403 EIA 364-28	3 shocks on each axis EN2591-402 EIA 364-27
EPXB1			
EPXB2	A1 * *	Acceleration 16.9g	Shock amplitude 50g /duration
EPXB3	Aluminium	(test condition 5 letter E)	11ms
EPXB4			



# Technical Characteristics for Inserts & Contacts

# ELECTRICAL CHARACTERISTICS

Electrical characteristics conform to SAE AS 39029 (MIL-C-39029 type A) Contacts conform to EN3155-076 and EN3155-077

#### CONTACTS

Contact size	Wire size	Max current Amps
	AWG22	5
22	AWG24	3
	AWG26	2
	AWG20	7.5
20	AWG22	5
	AWG24	3
	AWG16	13
16	AWG18	10
	AWG20	7.5
	AWG12	23
12	AWG14	17
	AWG16	13
0	AWG8	46
8	AWG10	33
5	AWG8	80 m
5	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 80 Amps

#### **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

#### DIELECTRIC WITHSTANDING VOLTAGE EN2591-207 EIA 364-20 with leakage current < $1m\Omega$

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 EN2591-206 EIA 364-21

Temperature	Insulation resistance		
Ambient temperature	> 5000 MΩ		
175°C (+347°F)	> 200 MΩ		



**EPX® SERIE** 

# Mechanical Characteristics

# **RETENTION CHARACTERISTICS**

Contact retention EN2591-409 EIA 364-29 in terminated connectors.

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

- Insert retention: 400N (90 lbs) EN2591-410 EIA 364-35

- Maximum insert displacement in the shell cavity: 0.30mm (.012 in.)

#### **ENVIRONMENTAL CHARACTERISTICS**

Temperature

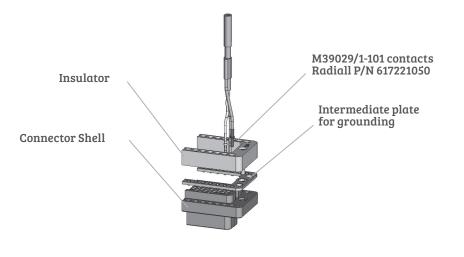
- Temperature range: -65°C/+175°C (-85°F/+347°F) according to EIA364-32 and EN2591-305
- **Temperature range:** -65°C/+125°C (-85°F/+257°F) for EPXB2 composite shell and for Rack & Panel EPXB
- Temperature life: 1000 hours at maximum temperature

#### **OTHER CHARACTERISTICS**

- **Salt spray:** 96 hours (nickel-plated aluminium and composite) EN2591-307 EIA 364-26 test condition A
- **Humidity:** 10 days with temperature variation from -10°C to +65°C EIA 364-31 Method 4, test condition B
- Altitude immersion: 3 cycles at 50,000 feet EN2591-314 EIA 364-03

#### **GROUND BLOCK**

Radiall provides a unique patented feature by integrating a ground block directly on the shell **This option permits very short ground terminations** 





1-11

#### Insert Selection Table

# Insert name should be used when ordering EPX® insert Insert code should be used when ordering kit assembly

							Contact	Size & Type	e <sup>(1)</sup>					
			22*	20*	15 or 16*	16	16	12*	8	8	8	5	5	
Series	Insert name		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	Total contacts
	00	0												0
	1C1	А										1		1
	1P1	В											1	1
-	04	С			2			2						4
EPXA	09	D		3	6									9
_	14	Е		14										14
	14M	F	8	3	3									14
	17	G	12	5										17
	20	Н	20											20
	00	0												0
	C3	Α										3		3
	P3	В											3	3
	3Q3	С								3				3
	06	D						6						6
	10Q2	E		8						2				10
	12F6	F				6	6							12
	F12C	G				12								12
	13C1	н		6	4			2				1		13
	13P1	J		6	4			2					1	13
	14	К			14									14
EPXB	17	L		14				3						17
EP	20C1	М		19								1		20
	20P1	Ν		19									1	20
	22	Р		16	6									22
	22V	Q		16	6									22
	25P1	R	24						1					25
	25Q1	S	24							1				25
	28	Т	22		6									28
	30	u		30										30
	34	W	18	16										34
	40	Х	40											40
	48	Y	48											48
	3T3	Z									3			3

#### NOTE:

(1) Only contacts marked with an asterisk (\*) are included with  ${\sf EPX} \circledast$  inserts

All other contacts must be ordered separately (coax, twinax, quadrax and fiber optic contacts)

**EPX® SERIES** 

INSERTS

CONTACTS

**DX®** SERIES

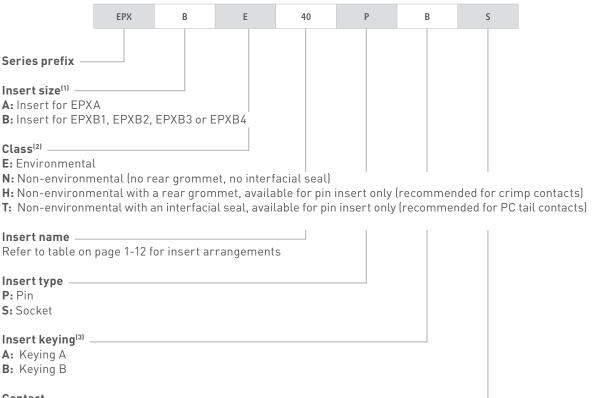
CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

# How to order EPX® inserts

Only crimp contacts can be delivered with insert

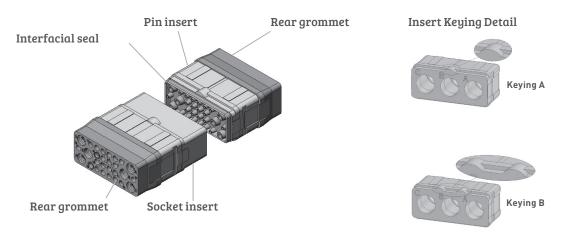


#### Contact -

Without code: insert delivered without contacts

5: Signal and power contacts are delivered with inserts but are uninstalled (refer to page 1-12) Inserts 00, 1C1, 1P1, C3, P3, 3Q3, 12F6, F12C and 3T3 are not available in S contact version

#### **ENVIRONMENTAL INSERT**



#### NOTES:

(1) Inserts are designed for rear release & rear removable contacts

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

F6, F12C and 12F6 are only available in E class. "Insert 00 is only available in N class (3) For EPXA, EPXB1, EPXB3 and EPXB4 shells, use only insert keyed A

For EPXB2 shells, use one insert keyed A and one insert keyed B



EPXA Insert Arrangement	5		
		Al	
Insert name 00 Insert code 0 Blank insert <sup>(1)</sup>	<b>Insert name 1C1</b> <b>Insert code A</b> 1 x size 5 coax contacts	Insert name 1P1 Insert code B 1 x size 5 power contacts	Insert name 04 Insert code C 2 x size 15 or 16 contacts 2 x size 12 contacts
3 2 1 9 6 5 4 9 8 7	4 7 0 0 5 <sup>1</sup> 11 0 0 8 14 12	4 3 1 8 7 5 9 14 13 11	3 1 7 4 12 8 17 13
Insert name 09 Insert code D 3 x size 20 contacts 6 x size 15 or 16 contacts	<b>Insert name 14</b> <b>Insert code E</b> 14 x size 20 contacts	Insert name 14M Insert code F 8 x size 22 contacts 3 x size 20 contacts 3 x size 15 or 16 contacts	Insert name 17 Insert code G 12 x size 22 contacts 5 x size 20 contacts
A 5 1 A B B C 5 1 C			
Insert name 20 Insert code H 20 x size 22 contacts			

**EPX® SERIES** 

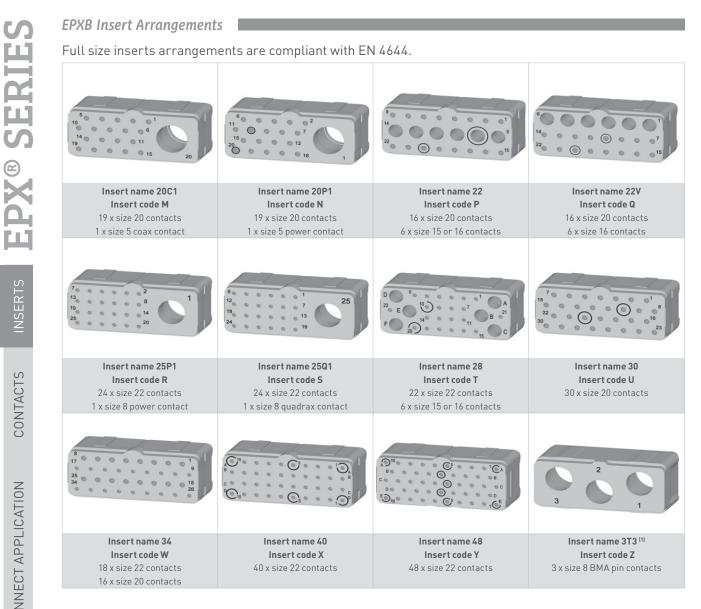




#### **EPXB** Insert Arrangements Full size inserts arrangements are compliant with EN4644 Insert name 00 Insert name P3 Insert name 3Q3 Insert name C3 Insert code 0 Insert code A Insert code B Insert code C Blank insert [1] 3x size 5 coax contacts 3 x size 5 power contacts 3 x size 8 quadrax contacts Insert name 12F6 Insert name 10Q2 Insert name F12C Insert name 06 Insert code F Insert code E Insert code G Insert code D 6 x size 16 Optical LuxCis ® termini 8 x size 20 contacts 12 x size 16 Optical 6 x size 12 medium power contacts 6 x size 16 special 2 x size 8 quadrax contacts LuxCis® termini electrical contacts 9 8 Insert name 13C1 Insert name 13P1 Insert code H Insert code J Insert name 17 Insert name 14 6 x size 20 contacts 6 x size 20 contacts Insert code L Insert code K 4 x size 15 or 16 contacts 4 x size 15 or 16 contacts 14 x size 20 contacts 14 x size 15 or 16 contacts 2 x size 12 contacts 2 x size 12 contacts 3 x size 12 contacts 1 x size 5 coax contact 1 x size 5 power contact

**NOTE:** (1) P/N for blank insert is EPXBN00









#### Our Most Important Connection is with You.™

#### Signal & Power Crimp Contacts

EPX series offers a wide range of contacts compliant with EN3155 and SAE AS 39029. The available contacts cover aerospace applications for terminating to both cables and printed circuit boards.

- 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 selective gold plating Features and benefits :

- Significant reduction of 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 1.27µm
- For crimp version, no changes are required for the crimping process
- For PC tail version, use of selective plated contacts has no impact on PCB design
- Product qualification is available upon request

Co	ontact size	Wire size	Туре	Part number full plated	Part number selectively plated	Crimping tool	Positioner	Selec- tor	Ins / ext tool	Type of tool
			Pin	617200	617200100	202201	000070	4	282522	
22		24		017200	617200100 282281 M22520/2-01		282970 M22520/2-23	3	(M81969/14-01)	Plastic
		26	Socket	617300	617300100			3		
		20	Pin	617221	617221100	202201	282971	7	202522201	
20		22		017221	017221100	282281 M22520/2-01	Z82971 M22520/2-08	6	282522001 (M81969/39-01)	Plastic
		24	Socket	617320	617320100			5		
		16	Pin	617240	617240100	000001	000070	6	000545	
		18	Socket	617340	617340100	282291 M22520/1-01	282972 M22520/1-02	5	282515 (M81969/14-03)	Plastic
		20	JUCKEL	017340	017340100		1122020,1 02	4		
16	Ground	20	Pin	617221050	N/A	282281	282581015 01 M22520/2-11	7	282886	Metal
10	block	20	Socket	N/A	N/A	M225520/2-01		/		Metat
	for	16				000001		6	282515 (M81969/14-03)	
	optical/ electrical	18	Pin	617235003 <sup>[1]</sup>	N/A	282291 M22520/1-01	282581013	5		Plastic
	insert	20						4		
		12	Pin	617250	617250100			8	282549004 (M81969/14-04)	
12		14 16	Socket	617350	617350100	282291 M22520/1-01	282972 M22520/1-02	7		Plastic
		8	Pin	617291002 <sup>(2&amp;3)</sup>	N/A	R282600000				
8		10	Socket	617391002 <sup>[2&amp;3]</sup>	N/A	M22520/23- 01 + Die set R282650000 M22520/23-02	282588	N/A	282549001	Metal
	5		Pin	617280 (2&4)	N/A	R282600000 M22520/23-01	282557020			
5			Socket	617390 <sup>(2&amp;4)</sup>	N/A	+ Die set R282650000 M22520/23-02	282557021	N/A	282946 (M81969/28-01)	Metal
			Pin	617260001 <sup>[2&amp;4]</sup>	N/A	000/40	282586003	,		
		16	Socket	617370001 <sup>[2&amp;4]</sup>	N/A	282613	282586005	6		

#### 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)

[4] These power contacts can be used in power inserts only (P3, 13P1 and 20P1)



INSERTS EPX® SERIES

# Oversized & Reduced Crimp Barrel Contacts

Co	ontact size	Wire size	Туре	Part number fully plated	Crimping tool	Positioner	Selector	Ins / ext tool	Type of tool
	reduced crimp	28	Pin	617201 [1]	282281	282970	5		
	barrel	30	Socket	617301(1)	M22520/2-01	M22520/2-23	4	]	
22		20	Pin	617200200			5	282522 (M81969/14-01)	Plastic
	oversize crimp barrel	22	Socket	617300200	282281 M22520/2-01	282970 M22520/2-23	4		
	barrot	24	SUCKEL	617300200	617300200 M2232072=01		3		
		22	Pin	617224001 (1)		82281 282971 520/2-01 M22520/2-08	4		
	reduced crimp barrel	24	Socket	617324001 [1]	282281 M22520/2-01		3		Plastic
20	burret	26	SUCKEL	617324001	112202072 01		3	282522001 (M81969/39-01)	
20	oversize crimp	18	Pin	617221200	000004	000074	5		
		20	Socket	617320200	282281 M22520/2-01	282971 M22520/2-08	5		
	burret	22	SUCKEL	617320200	112202072 01	INEEDED/E 00	4		
		20	Pin	617241 (1)			5		
	reduced crimp barrel	22	Socket	617341 [1]	282291 M22520/1-01	282972 M22520/1-02	5		
	barrot	24	SUCKEL	617341 **	1122020,101	1122020,102	4		
	reduced crimp	20					5	]	
16	barrel for optical	22	Pin	617235002 <sup>[&amp;2]</sup>	282291 M22520/1-01	282581013	5	282515 (M81969/14-03)	Plastic
	electrical insert	24			112202071 01		4	(M01707/14-03)	
	oversize crimp barrel	14	Pin	617240200			6		
		16	Socket	617340200	282291 M22520/1-01	282972 M22520/1-02	5		
		18	SUCKET	01/340200	M22020/1-01	1122320/1-02	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	Туре	Environmental part number	Non-environmental part number	Ins/ext tool	Type of tool	
	RG174-RG179 RG316	Pin	617	7130			
	KG1/4-KG1/9 KG316	Socket	617	7030			
	RG178	Pin	615	7131			
	RG178	Socket	617	/031			
	GORE/AXON P812817	Pin	615	7132			
FILOTEX SP13286 RG178 DT	FILECA F1703-134 FILOTEX SP132868	Socket	617	7032	282512	Metal	
	DC179 DT	Pin	615	7133			
	KU176 DI	Socket	617	/033			
	UT.047	Pin	615	7135			
01.047		Socket	617	/035			
12	UT.085-RG405	Pin	617160		282549004	Plastic	
	01.085-R6405	Socket	617	060	(M81969/14-04)	Flastic	
	RG58-RG141	Pin	617101001	617101			
	K030-K0141	Socket	617001001	617001			
	RG142 - RG400	Pin	617102001	617102			
	R0142 - R0400	Socket	617002001	617002			
5	RG174-RG316 RG188	Pin	617103001	617103	282946	Metal	
5	KU1/4-KU310 KU188	Socket	617003001	617003	(M81969/28-01)	Metat	
	RG178-RG196	Pin	617104001	617104			
	K0170-K0170	Socket	617004001	617004			
	RG180	Pin	617105001	617105			
	KGIOU	Socket	617005001	617005			

INSERTS



# Twinax & Triax Crimp Contacts

Contact size	Cable type	Туре	Environmental part number	Non-environmental part number	Ins/ext tool	Type of tool	
	F000700	Pin	61719	617190010			
10 Toise	ECS0700	Socket	61709	90010	282549004	Plastic	
12 Triax	N17/17/ 00000	Pin	61719	70012	(M81969/14-04)		
	M17/176-00002	Socket	61709	90012			
	TENSOLITE	Pin	617165021	617165020		Metal	
	24473/03159X-2	Socket	617065021	617065020			
	WHITMOR W26751575	Pin	617165	617165001			
		Socket	617065	617065001	282549001		
	ABS0386WF24	Pin	617165011	620165010			
8 Twinax	& TYCO 1726A1424A	Socket	617065011	620065010			
	M17/176-0002	Pin	617150001	617150			
5 Triax	IVII//I/0-UUUZ	Socket	617050001	617050	282946	Matal	
STUBX	PAN6421	Pin 617152001		617152	(M81969/28-01)	Metal	
	FAIN0421	Socket	617052001	617052			



# Quadrax & BMA Crimp Contacts

# QUADRAX CONTACTS



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

# **BMA CONTACTS**



Contact size	Cable type	Connector Type	Environmental part number	Non-environmental part number	Frequency range	Max VSWR	Insertion loss
	SHF5 - SHF5M <sup>(1)</sup>	Pin <sup>(2)</sup>	617171011	617171010	DC-18 GHz	1.35	0.13 dB at max frequency (18 GHz)
	RG142	Pin <sup>(2)</sup>	617171021	617171020	DC-12.4 GHz	1.35	0.11 dB at max frequency (12.4 GHz)
8	SHF2.4M <sup>11</sup> /UT.085 Harbour SS405 Times Tflex405	Pin <sup>(2)</sup>	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)

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

(1) The BMA contacts which can accommodate SHF cables requires a termination by Radiall

(2) BMA can only be installed in modified EPXB Quadrax insert such as 3T3P. Ex: EPXBE3T3PA



**RACK & PANEL APPLICATION** 

#### LuxCis<sup>®</sup> Fiber Optic 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.

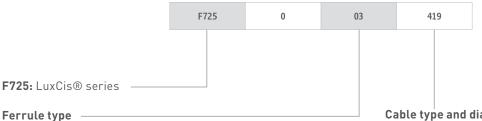
#### **OPTICAL PERFORMANCES**

	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
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



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

#### NOTES:

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



CONTACTS

DISCONNECT APPLICATION

PANEL APPLICATION

RACK &

V.

# Signal PC tail Contacts

Selection table for straight PC tail contacts

Contact termination	Contact type	Size 22	Size 20	Size 16	Size 12	Size 8	Size 5
RA	Pin	617205510	617222514	617242510	617259505	617291501	617289506
RA	Socket	617305500	617322505	617342510	617359505	617391501	617389506
	Pin	617205010	617222014	617242010	617259005	617291001	617289006
YA	Socket	617305	617322005	617342010	617359005	617391001	617389006
7.4	Pin	617205710	617222714	617242710	617259705	617291701	617289706
ZA	Socket	617305700	617322705	617342710	617359705	617391701	617389706
55	Pin	617205501	617222512	617242508	617259506	617291503	617289504
RB	Socket	617305501	617322506	617342511	617359506	617391503	617389504
VD	Pin	617205001	617222012	617242008	617259006	617291003	617289004
YB	Socket	617305001	617322006	617342011	617359006	617391003	617389004
75	Pin	617205701	617222712	617242708	617259706	617291703	617289704
ZB	Socket	617305701	617322706	617342711	617359706	617391703	617389704
	Pin	617205515	617222513	617242517	617259503	617291504	617289503
RC	Socket	617305508	617322507	617342513	617359503	617391504	617389503
	Pin	617205015	617222013	617242017	617259003	617291004	617289003
YC	Socket	617305008	617322007	617342013	617359003	617391004	617389003
70	Pin	617205715	617222713	617242717	617259703	617291704	617289703
ZC	Socket	617305708	617322707	617342713	617359703	617391704	617389703
22	Pin	617205509	617222510	617242509	617259507	617291505	617289507
RD	Socket	617305502	617322509	617342515	617359507	617391505	617389507
VE	Pin	617205009	617222010	617242009	617259007	617291005	617289007
YD	Socket	617305002	617322009	617342015	617359007	617391005	617389007
70	Pin	617205709	617222710	617242709	617259707	617291705	617289707
ZD	Socket	617305702	617322709	617342715	617359707	617391705	617389707
Ins/e	xt. tool	282522 M81969/14-01	282522001 M81969/39-01	282515 M81969/14-03	282549004 M81969/14-04	282549001 M81969/28-03	282946 M81969/28-01



# INSERTS EPX® SERIES

#### QUADRAX SIZE 8 PC tail CONTACTS

#### Selection table for straight PC tail contacts

Contact termination	Contact type	Part number size 8
RA	Pin	617177512
KA	Socket	617077512
ΥA	Pin	617177012
IA	Socket	617077012
ZA	Pin	617177712
ZA	Socket	617077712
RB	Pin	617177501
КD	Socket	617077502
YB	Pin	617177001
	Socket	617077002
70	Pin	617177701
ZB	Socket	617077702
RC	Pin	617177508
RU	Socket	617077508
YC	Pin	617177008
ĨĊ	Socket	617077008
ZC	Pin	617177708
20	Socket	617077708
RD	Pin	617177513
KD	Socket	617077513
YD	Pin	617177013
τU	Socket	617077013
ZD	Pin	617177713
ZU	Socket	617077713
Ext. too	l	282549001







# Filler Plugs & Sealing Plugs

Sealing plugs are dedicated to environmental inserts and filler plugs are dedicated to non-environmental inserts

Contact size	Filler	Filler plug						
Size 22	620	920	616910					
Size 20	610	941	616911					
Size 16	620	620922						
Size 12	620	620923						
Size 8	Socket	619950	618915					
5120 0	Pin	619953	010715					
Size 5	Socket	617931	616914013					
5120 5	Pin	617930	010714013					



# Contacts for GBE Links

Radiall offers gigabit ethernet solutions based on standard components These 2 solutions are perfectly suited for high speed transfers for digital audio and video signals

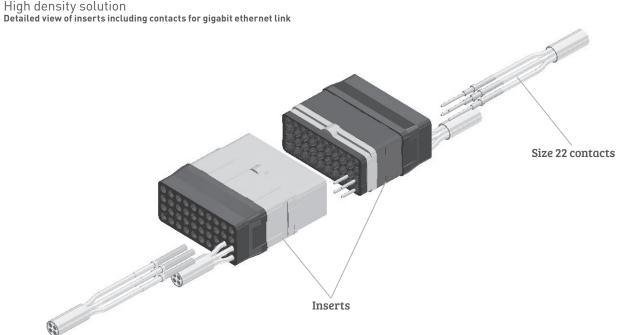
# QUADRAX SOLUTION:

- Available with any EPXB connector
- 2 Quadrax contacts are required for 1 Gigabit link
- Quadrax inserts: 3Q3 or 10Q2
- Up to 2 Gbit/sec

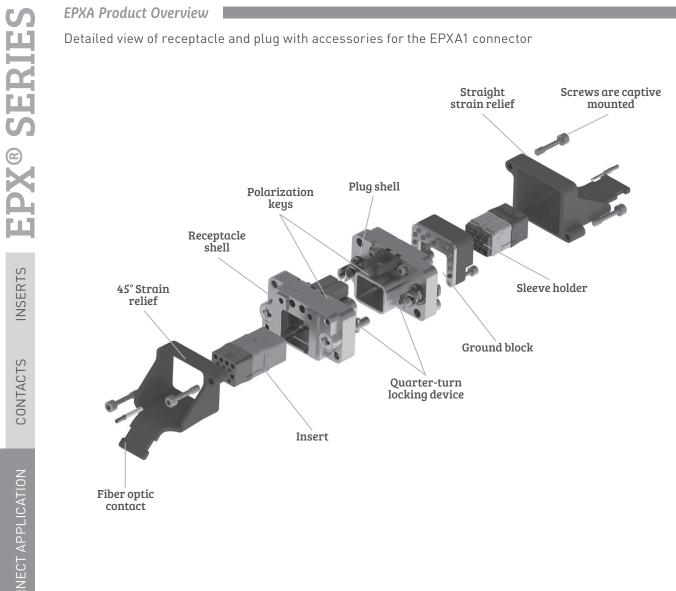
# HIGH DENSITY SOLUTION:

- Available with any EPXB connector
- 4 twisted pairs requires 8 #22 contacts for 1 Gbit link
- Inserts: 40 or 25Q1
- Additional size 22 contacts can be used for ground continuity
- EMI backshell (recommended by Radiall)
- Up to 1 Gbit/sec
- Short strip dimensions are required to get minimum impedance disturbance. Radiall solution combines short strip and easy maintenance availability.

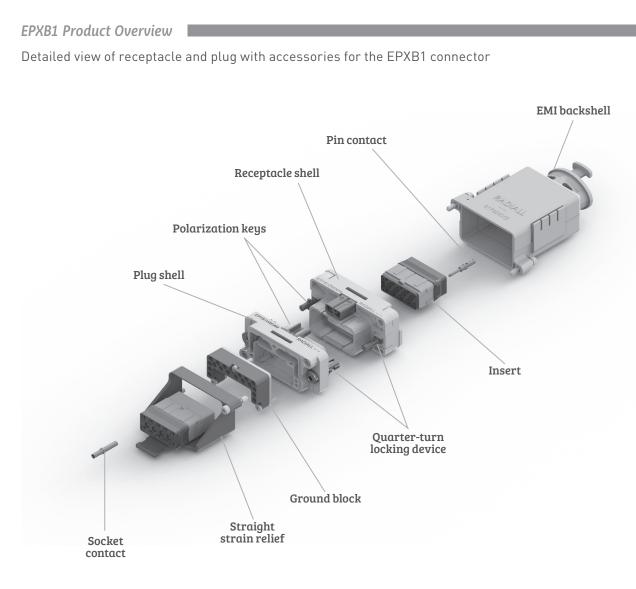
For further information, please contact Radiall













# How to Order EPXA & EPXB1 Shell

	EPX	B1	Р	В	0	4	Μ
Series prefix							
Shell size							
A1: Single small cavity shell							
<b>B1:</b> Single large cavity shell							
Shell style							
P: Plug							
R: Receptacle							
<b>W:</b> Plug with ground block							
<b>Z:</b> Receptacle with ground bloc	ck and ground	d spring fing	lers				
Shell mounting option <sup>(1)</sup>							
B: Plug without mounting hole	S						
M: Receptacle with 2 mounting	g holes 6-32 l	JNC for rear	panel <sup>(2)</sup>				
Locking device							
-							
0: Quarter-turn fastener							
0: Quarter-turn fastener Polarization code <sup>(3)</sup>	ing hardware	unassembl	ed				
0: Quarter-turn fastener			ed				

K: Nickel-plated aluminium for EPXB1 (mateable with version M composite shell)

N: Nickel-plated aluminium for EPXA

#### NOTES:

Recommended locking torque: 1.6Nm (14.16 in-lbs) for metallic shell and 1.1Nm (9.73 in-lbs) max for composite shell
 Self-locking mounting holes are designed for rear panel mounting
 Please see page 1-33 on how to use the polarization device

CONTACTS

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

#### How to Order EPXA & EPXB1 Assembly Kit

Assembly kit is delivered fully assembled including shell with insert mounted, with or without contacts according to the selection.

Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXA & EPXB1 plug or receptacles.
- Crimp contacts can be delivered with a kit, check which contacts would be included on page 1-12.
- If PC tail are selected then all cavities including signal, power and quadrax are populated. Size 5 coax cavities are not populated.

- If PC tail contacts are needed, remember that they are available as pin straight PC tail contacts in receptacles only.

	EPX	B1	R	4	М	E	М	YA
SHELL SELECTION PAR	T							
Series prefix								
Shell size A1: Single small cavity sl B1: Single large cavity sl								
Shell style P: Plug R: Receptacle W: Plug with ground bloc Z: Receptacle with ground		nd ground	fingers					
Polarization code4: Shell delivered with po5: Shell delivered with no				nbled				
Shell plating M: Nickel-plated compos K: Nickel-plated alumini N: Nickel-plated alumini	um for EP	XB1 (mate	eable wit	h versior	n M compo	osite shell	.)	
INSERT SELECTION PAR	RT							
Insert class E: Environmental N: Non-environmental (n H: Non-environmental in T: Non-environmental ins	sert with a	a rear groi	mmet, av	ailable fo				
Insert code Refer to page 1-12 to sele	ect insert c	ode						
Contacts termination — XS: Socket insert without XP: Pin insert without coi SS: Socket insert with cri SP: Pin insert with crimp	ntacts imp contac	cts ] Th	ese conta	acts are c	lelivered (	uninstallee	d	
YA: Gold PC tail contacts ZA: Tin-lead PC tail conta RA: Pure tin (RoHS) PC ta	acts length			r to page	1-30 to se	lect PC ta	il contacts	s for recep

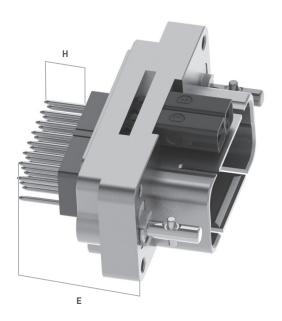
Radiall

INSERTS

# Contacts Termination for EPXB1

**EPXB1 RECEPTACLES** (aluminium and composite shell version)

	Straight PC Tail contact termination									
Min Length E mm (inch)	Min Length H mm (inch)	Gold	Tin-lead	Pure tin (RoHS)						
16.20 (0.637) [1]	/	YA	ZA	RA						
19.40 (0.763) [1]	/	YB	ZB	RB						
21.25 (0.836) [1]	/	YC	ZC	RC						
25.20 (0.992)	5.40 (0.212)	YD	ZD	RD						



NOTE: (1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts



DISCONNECT APPLICATION

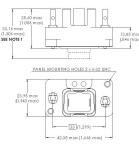
RACK & PANEL APPLICATION

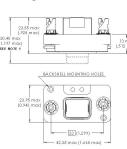
#### **EPXA Shell Dimensions**

#### WITHOUT GROUND BLOCK



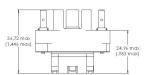
Plug





#### WITH GROUND BLOCK

Receptacle

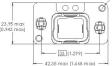


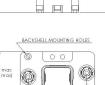


Plug

34,7 (1,36

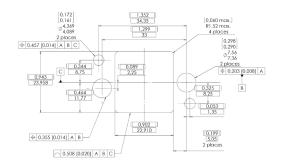




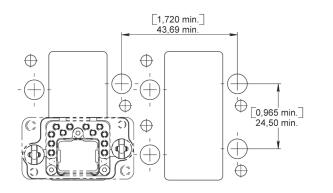




#### SINGLE PANEL CUT OUT (2)



#### **MULTIPLE PANEL CUT OUT**<sup>(2)</sup>



EPX<sup>®</sup> SERIES

(1) Maximum dimension for insert with grommets

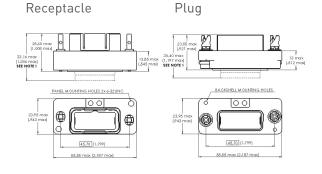
For inserts without grommets maximum dimensions will be for receptacle 25.55mm (1.006in) and for the plug 23.52mm (0.926in) (2) Rear mounting side view with key post oriented to the upper side





# **EPXB1** Shell Dimensions

# WITHOUT GROUND BLOCK

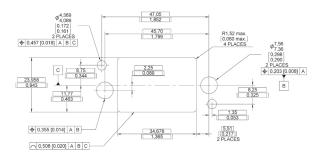


#### WITH GROUND BLOCK

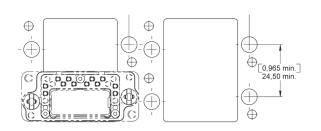
# Receptacle Plug PANEL MOUNTING HOLES 2x 6-32 UN 0 Ø 0 0 0 45.70 (1.79 45,70 (1.) 55,55 max (2.187 m)

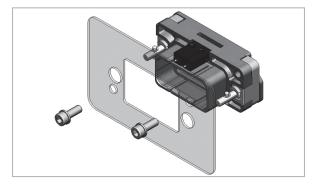
# BACKSHELL MOUNTING HOLES Ø 55,55 max (2.187 max

# SINGLE PANEL CUT OUT (2)



# **MULTIPLE PANEL CUT OUT**<sup>(2)</sup>





#### NOTES:

(1) Maximum dimension for insert with grommets. For inserts without grommets: Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in). For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and the plug is 36.00 mm (1.418 in)

(2) Rear mounting side view with key post oriented to the upper side



CONTACTS

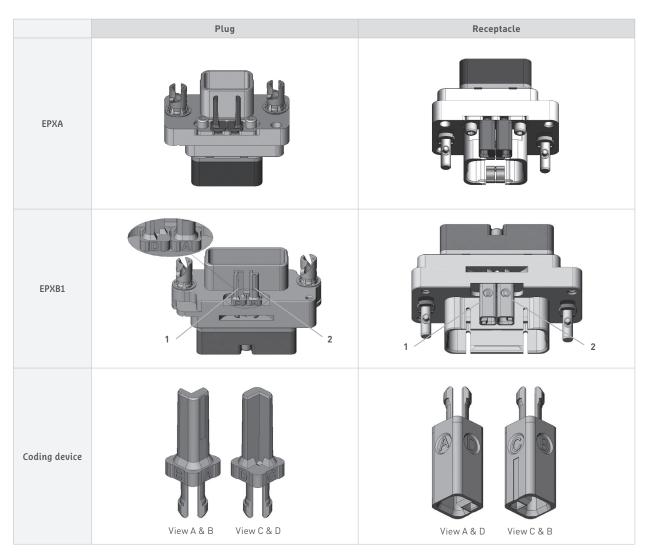
PANEL APPLICATION

RACK &

# Polarization Code

# EASY READING OF POLARIZATION CODE

Caution: Read the polarization code from left to right, the same way the part number marking can be read on the connector



#### There are 16 possible codings:

		0														
Key position 1	А	А	А	А	В	В	В	В	С	С	С	С	D	D	D	D
Key position 2	А	В	С	D	А	В	С	D	А	В	С	D	А	В	С	D



	Part n	umber	Description	Assembly tool	Assembly torq	
	EPXA	EPXB1	Description	hissenibig coor	nissentoty torqu	
	617980032	-	Polarization kit for plug connector	2027///2022	0.8 Nm	
	617980033	-	Polarization kit for receptacle connector	- 282666002	(7 In-Ibs)	
	-	617980030	Polarization post			
	-	617980031	Polarization key	_	N/A	
dia terretaria de la constante	617954006	617954008	Dust cap for plug shell (pink color)	N/A		
	617954007	617954009	Dust cap for receptacle shell (pink color)			
	617954044	617954034	ESD dust cap for plug shell (black color)			
	617954045	617954028	ESD dust cap for receptacle shell (black color)			
	617929033		Sealing inserts for fly away applications: mateable			
		617929023	with pin insert			
	617929032		Sealing inserts for fly away	- N/A		
		617929022	– applications: mateable with socket insert			

RACK & PANEL APPLICATION

1-34





For mounting instructions, please contact Radiall

NOTE:

# **EPXA & EPXB1** Accessories

# STRAIN RELIEF AND EMI BACKSHELLS

	Part number		Description	Assembly	Assembly	
	EPXA	EPXB1	Description	tool	torque	
	617921030	617921029	Straight strain relief (composite)			
	617921032	617921031	45° strain relief (composite)			
	-	617921035	Strain relief for fiber optic (anodized aluminium)	282666002	0.8 Nm (7 In-Ibs)	
an en	-	617924016	Straight EMI backshell (Nickel-plated aluminium)			
CO. P. Contraction	-	617928002	Straight EMI backshell (Nickel-plated composite)			

Radiall

**EPX® SERIES** 

# **EPXB2** Disconnect Connectors

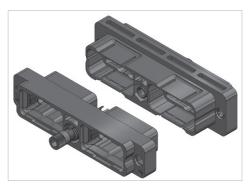
When less is more.

Radiall EPXB2 disconnect connectors have been widely used in aerospace industry for more than 10 years. As a worldwide leader in cable to cable and PCB to cable connections, Radiall is committed to constantly innovating to meet the demands of the industry with the most effective and reliable solutions.

Demand for weight saving connection solution is now growing more and more.

- Radiall is proud to introduce:
- EPXB2 class M (Nickel plated composite)
- EPXB2 class J (Weight optimized aluminium)

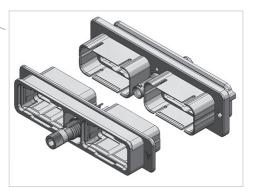
Two proven and available alternatives when you are facing weight issues in cable to cable and PCB to cable connections.





Performances:

- Weight saving compared to class N EPXB2 : -15%
- T° range: -65°C / +125°C

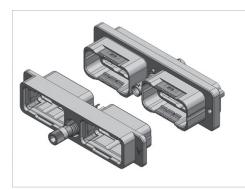


Performances:

- Weight saving compared to class N EPXB2: -15%
- Cost effective solution
- T° range: -65°C / +175°C

DISCONNECT APPLICATION

RACK & PANEL APPLICATION

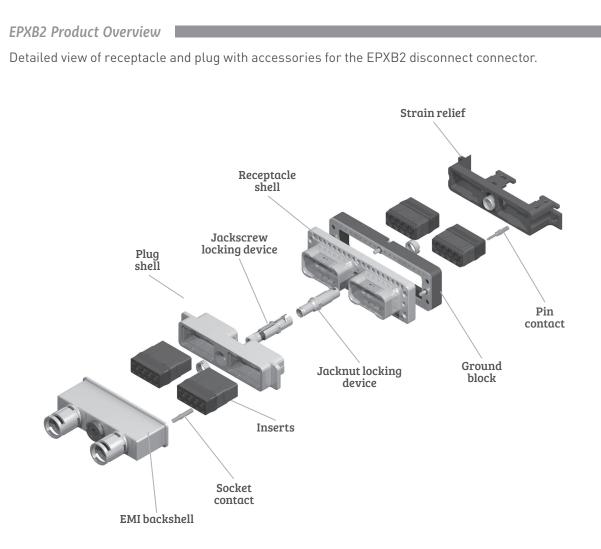


#### EPXB2 class N

Performances : - T° range -65°C / +175°C

1-36 Go online for data sheets & assembly instructions







#### How to Order EPXB2 Shell

	EPX	B2	Н	L	2	2	Ν
Series prefix							
Shell size							
<b>B2:</b> Two cavity shell							
Shell style							
For option compatibility, se	ee the table	e below					
L: Receptacle with flange a		fingers					
H: Receptacle with ground							
Z: Receptacle with ground			gers				
R: Receptacle without grou	und fingers						
P: Plug							
W: Plug with ground block							
Shell mounting							
A: Panel rear mounted cor	nnector wit	h 4 x 6-32 i	mounting h	oles			
<b>B:</b> No mounting holes							
D: Connector with 2 x Ø3.1	0 mm thru	holes					
F: Panel rear mounted cor							
L: Panel rear mounted cor	nector wit	h 2 x 4-40 i	mounting h	oles			
Locking & polarization de							
1: Jackscrew							
2: Jacknut							
<b>3:</b> Without locking device							
4: Pin centering guide for	olug shell f	or LRU <i>(Li</i>	ne Replace	able Unit)	applicatio	n only <sup>(2)</sup>	
5: Socket centering guide i	for recepta	cle shell fo	or LRÚ <i>(Lin</i>	e Replace	able Unit) a	application	only <sup>(2)</sup>
							1
Polarization code (3)							

- 2: Polarizing device A to F delivered unassembled
- 3: Polarizing device N to Z delivered unassembled

#### Shell plating -

- N: Nickel-plated aluminium
- M: Nickel-plated composite
- J: Nickel-plated weight optimized aluminium

#### AVAILABLE SHELL MOUNTING

	Shell style	A (4 x 6.32 UNC)	B (no holes)	D (2 x Ø3.10mm)	F (2 x 6.32 UNC)	L (2 x 4.40 UNC)
	L			$\checkmark$	$\checkmark$	$\checkmark$
	Н		$\checkmark$	$\checkmark$	$\checkmark$	$\checkmark$
Class N (aluminium)	Z	$\checkmark$	$\checkmark$			
class N (aluminium)	R	$\checkmark$				
	Р		$\checkmark$	$\checkmark$		$\checkmark$
	$ \begin{array}{c c c c c c c c c c c c c c c c c c c $					
Class I (weight optimized eluminium)	Н					$\checkmark$
Class J (weight optimized aluminium)	H	$\checkmark$				
	L			$\checkmark$		√
Class M (composite)	Р		$\checkmark$	$\checkmark$		$\checkmark$

#### NOTES:

PANEL APPLICATION

RACK &

(1) Jackscrew/Jacknut can be mounted on either plug or receptacle shell. However, the standard options are:

- Jackscrew for plug shells

- Jacknut for receptacle shells

[2] Pin/Socket centering guides can be mounted on either plug or receptacle shells. However, the standard options are:

- Pin centering guide for plug shells

- Socket centering guide for receptacle shells

(3) Please see page 1-44 for how to use the the polarization coding



**EPX® SERIES** 

#### How to Order EPXB2 Assembly Kit

Assembly kits are delivered fully assembled including shell with inserts mounted, with or without contacts according to the selection. When selecting your insert codes, do not forget to place them in the order you want them assembled. Locking and polarizing devices are delivered uninstalled. Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXB plug or receptacle.
- Crimp contacts can be delivered with a kit, check which contacts will be included on page 1-12.
- PC tail contacts can also delivered with a kit. Remember that only straigh tpin PC tail contacts are available, and in receptacle only.
- If PC tail contacts are selected then all cavities including signal, power and quadrax are populated. Size 5 coax cavities are not populated.

All connector inserts will use the same insert class and the same contact termination.

	EPX	B2	Н	В	2	N	Ν	BC	ZB
SHELL SELECTION PART									
Series prefix									
Shell size									
<b>B2:</b> Two cavity shell									
Shell style									
For option compatibly, see ta		0							
L: Receptacle with flange an	0	fingers							
H: Receptacle with ground fi	0	nound fin m							
Z: Receptacle with ground bl R: Receptacle without groun		round ning	ers						
P: Plug	u migoi o								
W: Plug with ground block									
Shell mounting									
A: Rear panel mounted conn	ector with	n 4x 6-32 m	nounting	holes					
B: No mounting holes		-1							
<b>D:</b> Connector with 2 x Ø3.10 r <b>F:</b> Rear panel mounted conn			oounting	holes					
L: Rear panel mounted conn			0						
Polarization			J						
1: Jackscrew polarizing devi	ce A to F								
2: Jacknut polarizing device	A to F								
3: Without locking device	1 11 6								
4: Pin centering guide for plu 5: Socket centering guide for							co A to E		
6: Jackscrew polarizing devi		le shell io		Jucation o	niy, potai		LEALUI		
7: Jacknut polarizing device									
8: Pin centering guide for plu		r LRU app	lication o	nly, polari	zing devi	ce N to Z			
9: Socket centering guide for	receptac	le shell fo	r LRU app	olication o	nly, polar	izing devi	ce N to Z		
Shell plating									
N: Nickel-plated aluminium M: Nickel-plated composite									
J: Nickel-plated weight optin	nized alun	ninium							
	1								
INSERTS SELECTION PART									
Insert class									
N: Non-environmental									
H: Non-environmental inser	t with a re	ar gromm	et, availa	ble for pir	n insert or	nly (recom	mended	for crimp	contact)
T: Non-environmental insert									
Insert code									
Refer to page 1-12 to select o	ode inser	t							
Contacts termination —	- 4 4 -								
XS: Socket insert without con XP: Pin insert without contact									
<b>AI</b> . I III III Sel C Without contac	.15								
<b>SS:</b> Socket insert with crimp		These	contacts	are delive	ered uning	stalled			
<b>SP:</b> Pin insert with crimp cor		_							
YA: Gold PC tail contacts len	0	Г	5 (						
ZA: Tin-lead PC tail contacts	0	ngth A	Refer to	pages 1- 4	40 to sele	ct PC tail	contacts	tor recept	acle
<b>RA:</b> Pure tin (RoHS) PC tail c	untacts le	angth A 📕							

**Radiall** 

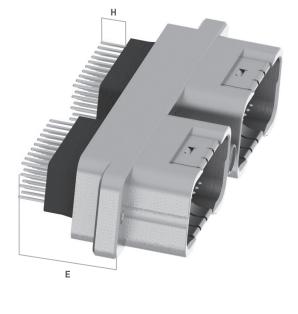
# Contacts Termination for Receptacles EPXB2 COMPOSITE SHELL

Straight PC Tail contact termination									
Min Length E mm (inch)	Min Length H mm (inch)	Gold	Tin-lead	Pure tin (RoHS)					
14.20 (0.559) [1]	/	YA	ZA	RA					
17.35 (0.683) (1)	/	YB	ZB	RB					
19.20 (0.755) [1]	/	YC	ZC	RC					
23.10 (0.909)	5.40 (0.212)	YD	ZD	RD					

#### EPXB2 WEIGHT OPTIMIZED ALUMINIUM AND ALUMINIUM SHELL

Straight PC Tail contact termination								
Min Length E mm (inch)	Min Length H mm (inch)	Gold	Tin-lead	Pure tin (RoHS)				
14.55 (0.572) [1]	/	YA	ZA	RA				
17.75 (0.698) [1]	/	YB	ZB	RB				
19.55 (0.769) [1]	/	YC	ZC	RC				
23.50 (0.925)	5.40 (0.212)	YD	ZD	RD				

CONTACTS



NOTE: (1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts



10,63 min

(.418 min)

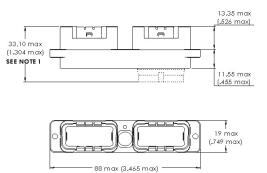
11.25 max

(.443 max)

# EPXB2 Metallic Shell Dimensions

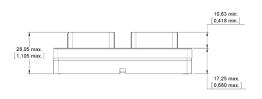
# WITHOUT GROUND BLOCK Class N & J

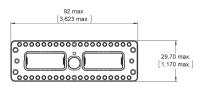
#### Receptacle



# WITH GROUND BLOCK Class N

Receptacle



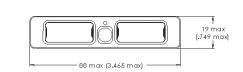


# PANEL CUT OUT Class N & J

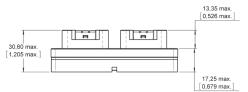
Shell mounting code D, F and L

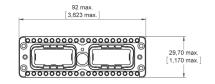


# Plug



Plug





Shell mounting code A



#### NOTES:

For inserts with grommets : maximum dimension is shown in the diagram

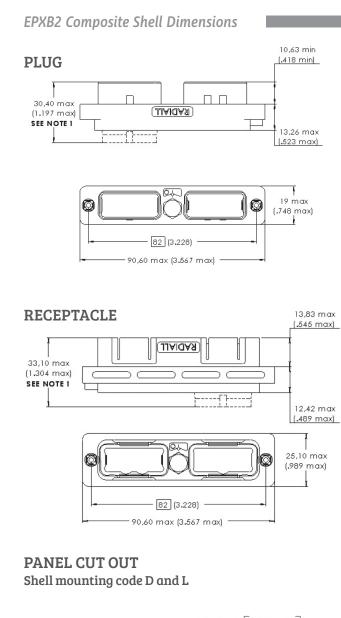
(1) For inserts without grommets: Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in)

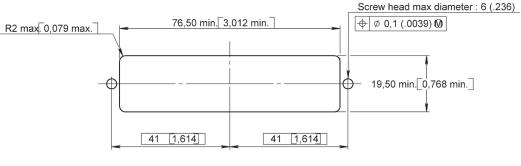
For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and for the plug is 36.00 mm (1.418 in)



**EPX® SERIES** 

INSERTS





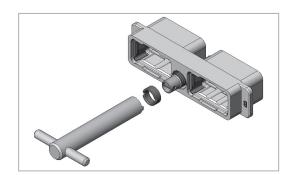
#### NOTE:

(1) For inserts with grommets (EPXBE and EPXBH) : maximum dimension is shown in the diagram

For inserts without grommets (EPXBN) : Insert is flush to the shell. Maximum dimension for the receptacle is 25.55 mm(1.006 in) and for the plug is 23.52 mm(0.926 in)

For inserts with optical contacts : the maximum dimension for the receptacle is 38.70 mm(1.524 in) and the plug is 36.00 mm (1.418 in)

# **EPXB2** Polarization Code



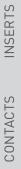
As a standard, jackscrews shall be installed in plugs and jacknuts in receptacle shells.

The polarizing device must be locked by the operator at 1.2 Nm (10.62 Lb-In.) for the metallic shell and 0.8Nm (7.08 Lb-In.) for composite shell. LOCTITE™ 272 resin shall be used to assemble them.

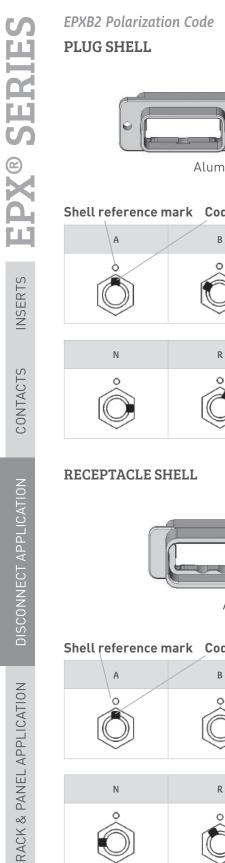
The nut can be fixed with your automatic screwdriver and the tool bit we provide (PN 282 664)

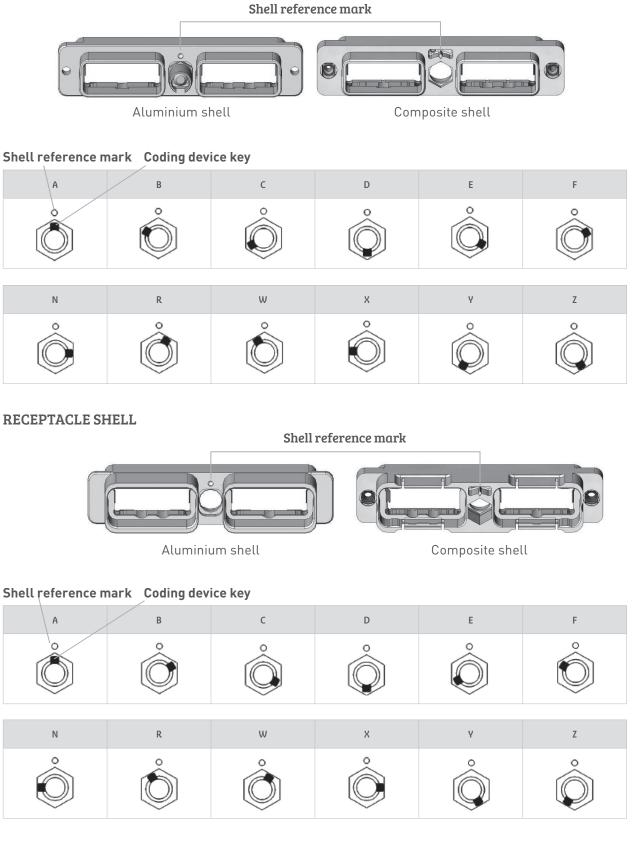
Designation	Polarization code	Coding device key	Part number	
	From A to F	$\bigcirc$	617980012	
Jackscrew	From N to Z 30° offset compared to the key of jackscrew P/N 617980012	30°	617980013	
	Universal	$\bigcirc$	617980023	
	From A to F	$\bigcirc$	617980029	0
Jacknut	From N to Z 30° offset compared to the key of jacknut 617980029	30°	617980028	
	Universal	$\bigcirc$	617980022	

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LUYUJ	Δεερες	Orioc
LFADZ	Access	UILES

	Part number	Description	Assembly tool <sup>(2)</sup>	Assembly torque
	617922007	Straight strain relief (composite)	282664	0.8 Nm (7.08 in-lbs)
27	617922014	Straight strain relief for fiber optic cable (anodized aluminium)	or 282665	
	617928100	Straight EMI backshell (nickel-plated composite)	Allen wrench 1/4 inch	1.2 Nm (10.62 in-lbs)
0.000	617925052	EMI backshell for braid shield termination (nickel-plated aluminium)	282664	
OF OTHER	617925054	EMI backshell for screened twisted pair cables (nickel-plated aluminium)	or 282665	
A CONTRACTOR	617925056	Backshell for large sized wire harnesses (nickel-plated aluminium) <sup>(1)</sup>	282664 or 282665 and Allen wrench	

NOTE:

(1) Not compatible with jackscrew

(2) For more details, refer to page 1-47



# EPXB2 Spare Parts

	Part number	Description
	617954101	Grounding spring (for EPXB2 aluminium only)
	617980029	Jacknut – A/B/C/D/E/F
	617980028	Jacknut – N/R/W/X/Y/Z
	617980022	Universal jacknut
	617980012	Jackscrew – A/B/C/D/E/F
	617980013	Jackscrew – N/R/W/X/Y/Z
	617980023	Universal jackscrew
	617954002	Dust cap for plug shell (pink color)
RADIO	617954003	Dust cap for receptacle shell (pink color)
BX AB	617954004	ESD dust cap plug shell (black color)
	617954005	ESD dust cap receptacle shell [black color]



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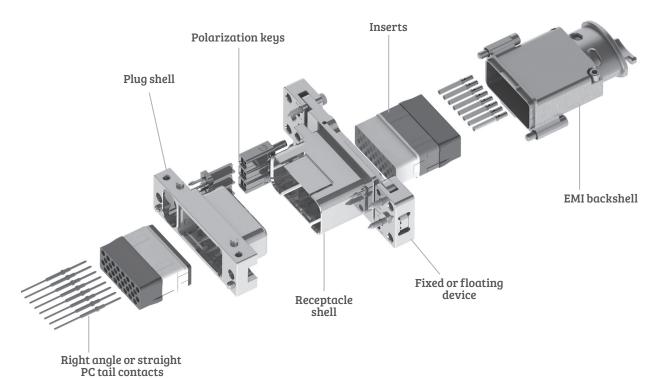
Tools

			. To be used with				
	Part number	Description	EPXA	EPXB1	EPXB2		
Demonstration	282664	1/4 inch hex. screwdriver bit to affix the nut of the jackscrew or the jacknut to the EPXB2 accessories			Х		
	282665	Spigot wrench to affix the nut of the jackscrew or the jacknut to the EPXB2 accessories			Х		
	282666	Allen wrench for 1/4 turn fasterner (3/32 inch)	Х	Х			
	282666002	Allen wrench for rear accessories (5/64 inch)		Х			
	282666001	Allen wrench for jackscrew (9/64 inch)			Х		
	282521002	Insert extraction tool		Х	Х		
	282521004	Right angle insert extraction tool		х	Х		
	282521005	Insert extraction tool	Х				
	617954020	Plastic box to protect wired inserts during handling	Х	Х	Х		
	F780855000	Hexagonal key 2mm (5/64inch) Flats for sleeve holder removal		Х	Х		
and the second se	282668001	Tweezers to change polarizing posts and keys		X			



#### EPXB1 Product Overview

Detailed view of receptacle and plug with accessories for the EPXB1 rack and panel connector.



DISCONNECT APPLICATION

**EPX® SERIES** 

INSERTS

CONTACTS

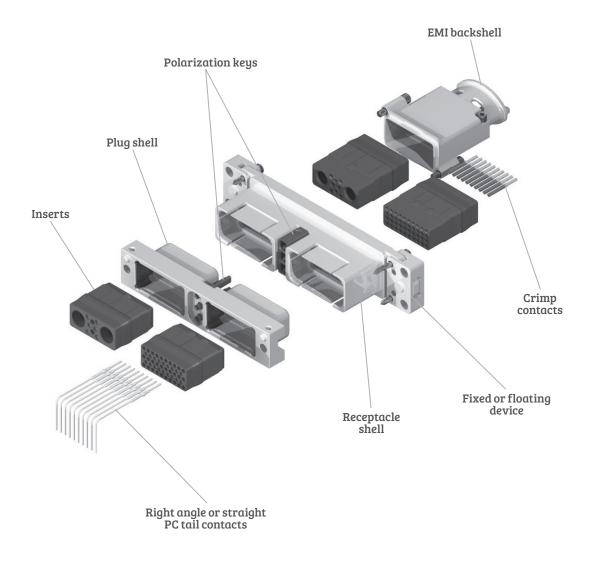
1-48



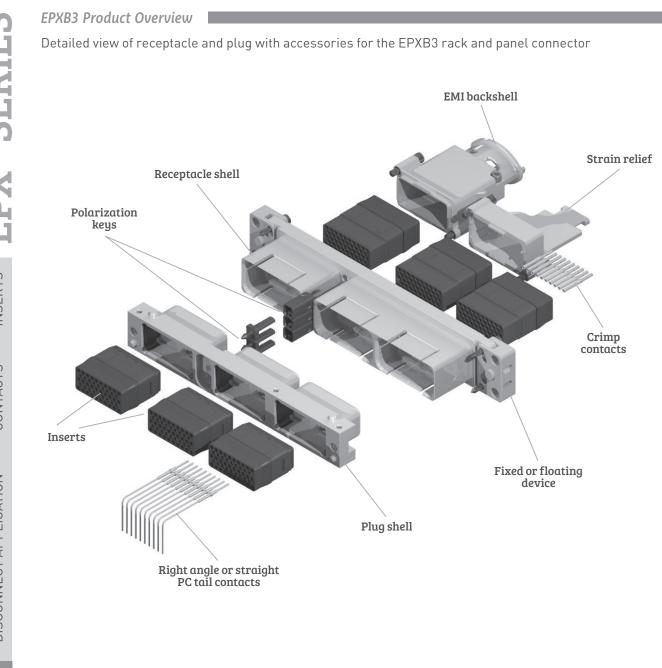


#### **EPXB2** Product Overview

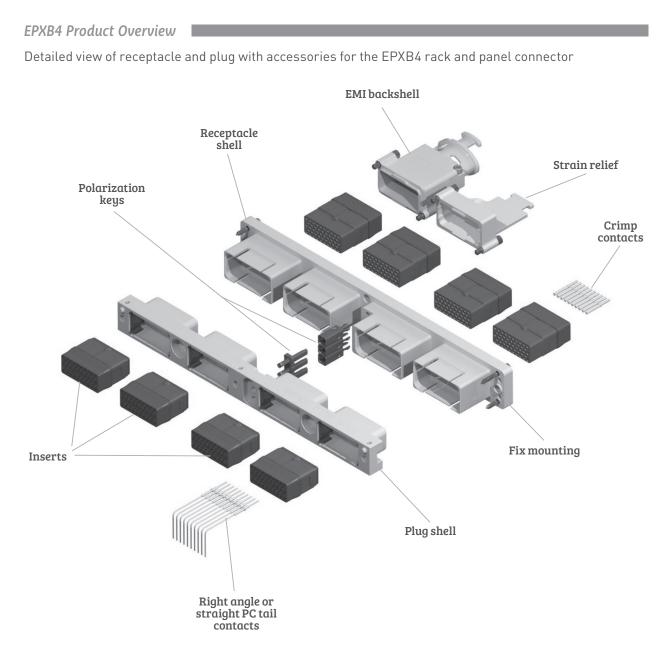
Detailed view of receptacle and plug with accessories for the EPXB2 rack and panel connector.





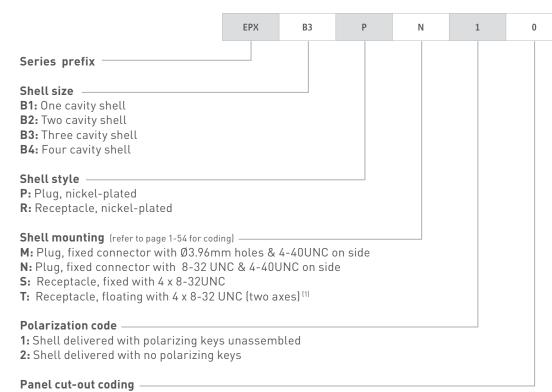








#### How to Order EPXB1, B2, B3 & B4 Shell



A to Z: Receptacle, refer to page 1-59 for the code selection 0 (zero): Plug, no panel cut out coding

NOTE: (1) This floating option is not available in EPXB4 version



#### How to Order EPXB1, EPXB2, B3 & B4 Assembly Kit

Assembly kit is delivered fully assembled including shell with inserts mounted, with or without contacts according to the selection. When selecting your insert codes, do not forget to place them in the order you want them assembled. Polarization keys are always provided unassembled with assembly kits. Tips to help you in your selection:

- You are free to use either pin or socket inserts in EPXB plug or receptacle.

- Crimp contacts can be delivered with a kit, check which contacts will be included on page 1-12.

- If PC tail contacts are selected then all cavities including signal, power and quadrax are populated. Size 5 coax cavities are not populated.

- If PC tail contacts are needed, remember that only straight pin PC tail contacts are available, and in plug only. All connector inserts will use the same insert class and the same contact termination.

	EPX	B4	Р	N	0	E	ABDC	YA
SHELL SELECTION PART Series prefix								
Shell size B1: One cavity shell B2: Two cavity shell B3: Three cavity shell B4: Four cavity shell								
Shell style P: Plug, nickel-plated R: Receptacle, nickel-plat	ed							
Shell mounting (refer to pag M: Plug, fixed connector w N: Plug, fixed connector w S: Receptacle, fixed with 4 T: Receptacle, floating with	vith Ø3.96 vith 8-32 0 4 x 8-32 U	omm hole UNC & 4- NC	40 UNC c	on side	ide			
Panel cut-out coding A to Z: For receptacle, refe 0 (zero): For plug, no pane			the code	selection	1			
INSERT SELECTION PART								
Insert class E: Environmental N: Non-environmental (no H: Non-environmental ins T: Non-environmental inse	ert with a	rear gro	mmet (re	commen				
Insert code Refer to page 1-12 to selec	t insert c	ode						
Contacts termination — XS: Female insert without XP: Male insert without co SS: Female insert with cri SP: Male insert with crimp	ntacts mp conta	cts <b>ח</b> דו	nese cont	acts are (	deliverec	uninstall	led.	
<b>YA:</b> Gold PC tail contacts l <b>ZA:</b> Tin-lead PC tail contac <b>RA:</b> pure tin (RoHS) PC tail	cts length			to page	1- 54 to s	elect PC	tail conta	cts for plug
<b>NOTE:</b> (1) This floating option is not avail	able in EPX	B4 version						

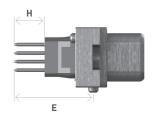
**Radiall** 



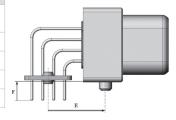
INSERTS

# Contacts Termination for EPXB1, EPXB2, EPXB3 and EPXB4 Plugs

Straight PC Tail contact termination										
Mini Length E mm (inch)	Mini Length H mm (inch)	Gold	Tin-lead	Pure tin (RoHS)						
10.60 (0.417) [1]	/	YA	ZA	RA						
13.80 (0.543) (1)	/	YB	ZB	RB						
15.60 (0.614) [1]	/	YC	ZC	RC						
19.55 (0.769)	5.40 (0.212)	YD	ZD	RD						



Right Angle PC Tail contact termination <sup>(2)</sup>					
Mini length F mm (inch)	Mini length E mm (inch)	Gold	Tin-lead	Pure tin (RoHS)	
2.20 (0.086)	12.85 (0.505) [1]	GA	LA	TA	
3.60 (0.141)	20.10 (0.791)	GB	LB	ТВ	
3.60 (0.141)	12.85 (0.505) [1]	GC	LC	TC	
2.20 (0.141)	20.10 (0.791)	GD	LD	TD	



#### NOTES:

(1) These PC tail lengths are not compatible with EPXBE and EPXBH inserts

(2) Right angle PC tail lengths GA, LA, TA and GD, LD, TD are not available for #5 and #8 power contacts

#### EPXB Shell Mounting

Receptacle side	Code	Plug sides
N/A	М	Fixed connector with Ø 3.96 mm holes & 4-40 UNC front or side mount
N/A	Ν	Connector with 8-32 UNC & 4-40 UNC front or side mount
Fixed with 4 x 8-32 UNC panel rear mount	S	N/A
Floating with 4 x 8-32 UNC panel rear mount	т	N/A



**EPX® SERIES** 

DISCONNECT APPLICATION

© <u>e</u>

4 x 4-40 threaded holes **EPX® SERIES** 

INSERTS

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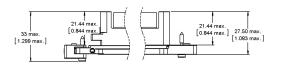
DISCONNECT APPLICATION

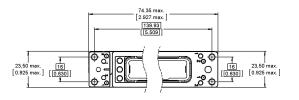
#### **EPXB1** Shell Dimensions & Panel Cut-outs

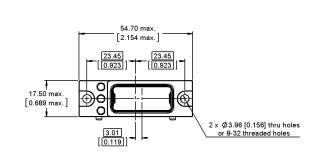
#### RECEPTACLE

**Floating Mount** 

**Fixed Mount** 







PLUG

20.15 max.

[0.794 max.]

10,64 min

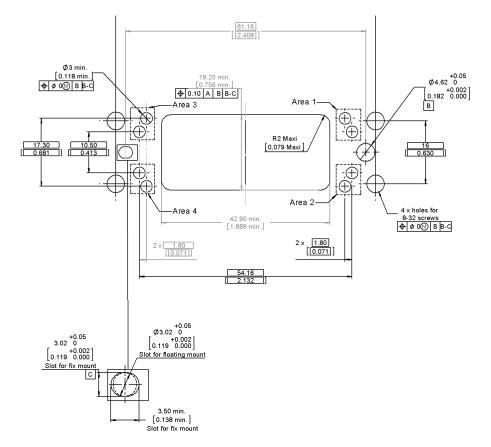
[0.418 min.]

ł

0

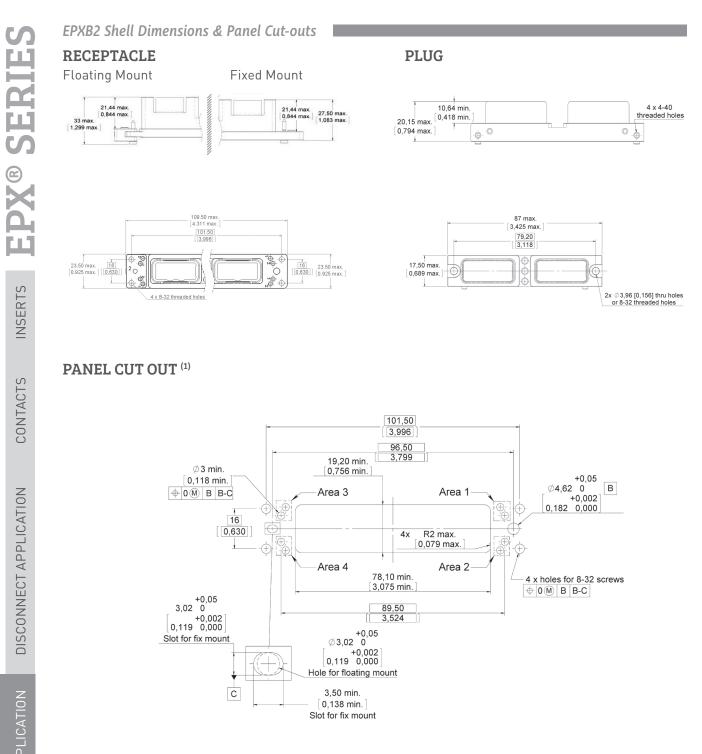
÷.

#### PANEL CUT OUT (1)



NOTE: (1) The panel cut-out is shown from the rear of the panel





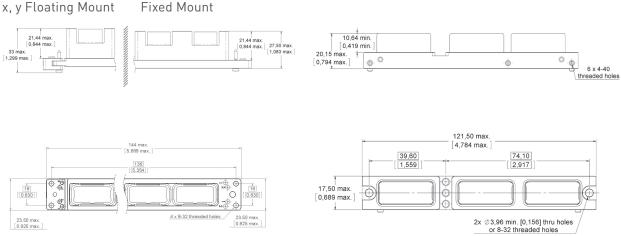
NOTE: (1) The panel cut-out is shown from the rear of the panel



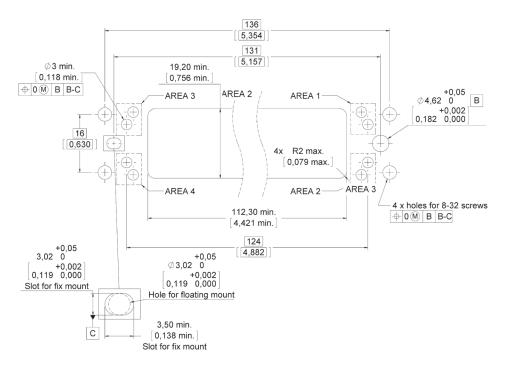
# EPXB3 Shell Dimensions & Panel Cut-outs

# RECEPTACLE

PLUG



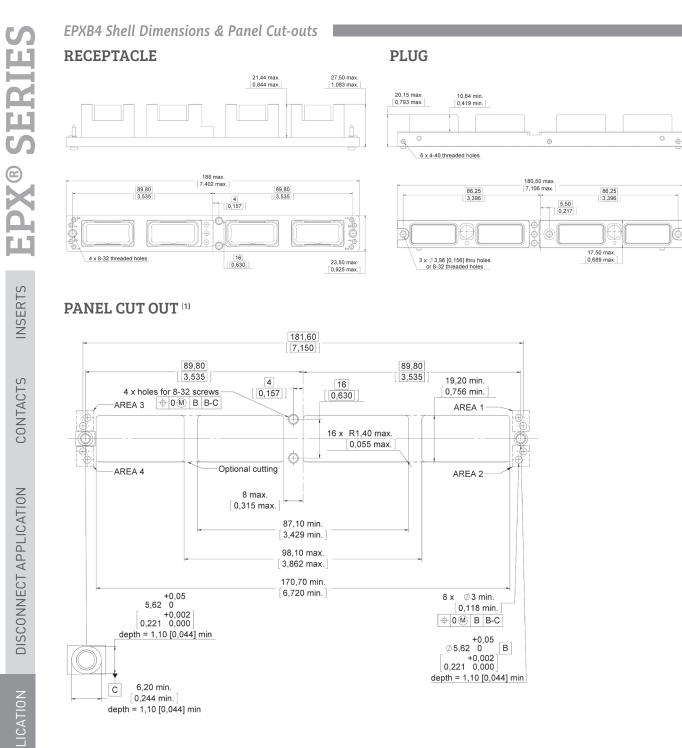
# PANEL CUT OUT (1)



**NOTE:** (1) The panel cut-out is shown from the rear to the panel

Go online for data sheets & assembly instructions





NOTE: (1) The panel cut-out is shown from the rear of the panel



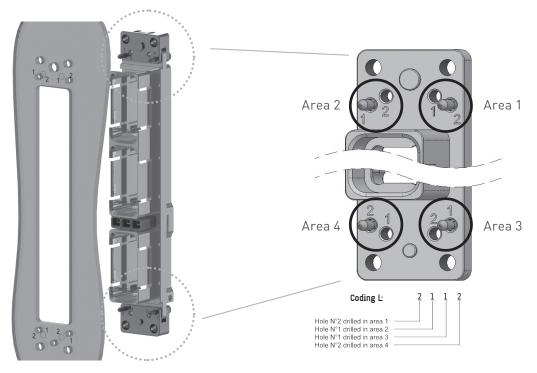
#### **EPXB** Panel Cut-out Coding

When several EPXB connectors are used with the same equipment, a coding is available on the shell to correlate the correct shell with the correct panel cut-out.

On the panel cut-out, four areas are coded, area 1, 2, 3 and 4 (see figure below). For each area, one of the two holes should be drilled (hole n°1 or hole n°2). Each hole on the panel cut-out corresponds to the use of a coding pin on the shell.

Panel cut-out coding	Panel hole number to drill in Area 1	Panel hole number to drill in Area 2	Panel hole number to drill in Area 3	Panel hole number to drill in Area 4
А		Connector delivered with	n coding device uninstalled	
В	1	1	1	1
С	1	1	1	2
D	1	1	2	1
E	1	1	2	2
F	1	2	1	1
G	1	2	1	2
Н	1	2	2	1
J	1	2	2	2
K	2	1	1	1
L	2	1	1	2
М	2	1	2	1
Ν	2	1	2	2
Р	2	2	1	1
R	2	2	1	2
S	2	2	2	1
Т	2	2	2	2
Z	Connector delivered without coding pin <sup>(1)</sup>			

#### CODING PINS ARE FOR RECEPTACLE ONLY



# **NOTE:**(1) Z panel cut out coding is only available with fix mounting

Go online for data sheets & assembly instructions

X<sup>®</sup> SERIES

INSERTS

CONTACTS

# EPXB Polarization Code

**EPX® SERIES** 

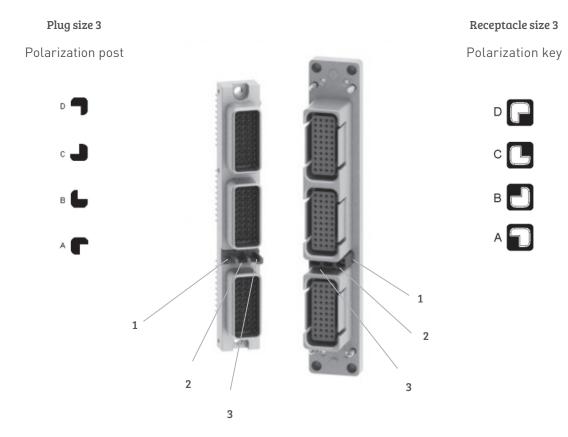
INSERTS

CONTACTS

DISCONNECT APPLICATION

#### EASY READING OF POLARIZATION CODE

Polarization device is included in the part number and could be installed as shown below Each shell has 3 keys which can be in four different position The three polarization keys can have their own position which allow a large range of codification



Connectors are shown front side with cavity A upwards This is how you should read your code for either EPXB2 or EPXB3 or EPXB4



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```
Rack & Panel Accessories
```

	Part number	Description	Assembly torque
	617925073	EMI backshell for receptacle only (aluminium nickel-plated)	0.55±0.05 Nm (4.87±0.44 in-lbs)
E	617922022	Straight strain relief for receptacle only (composite)	0.55±0.05 Nm (4.87±0.44 in-lbs)
	617954002	Dust cap for plug shell (pink color)	N/A
RADIO	617954003	Dust cap for receptacle shell (pink color)	N/A
BXUL	617954004	ESD dust cap plug shell (black color)	N/A
	617954005	ESD dust cap receptacle shell (black color)	N/A
THE ME A	617980052	Coding Pin	0.8 Nm (7 in-lbs)
	617980054	Polarization post	N/A
	617980055	Polarization key	N/A



# Rack & Panel Tools

	Part number	Description	EPXB
	282521002	Insert extraction tool	Х
	282521004	Right angle insert extraction tool	Х
Contraction of the second seco	617954020	Plastic box to protect wired inserts during handling	X
	F780855000	Hexagonal key 2mm (5/64inch) Flats for sleeve holder removal	Х
	282549041	Removal tool for metal coding keys (M81969/30-06)	Х







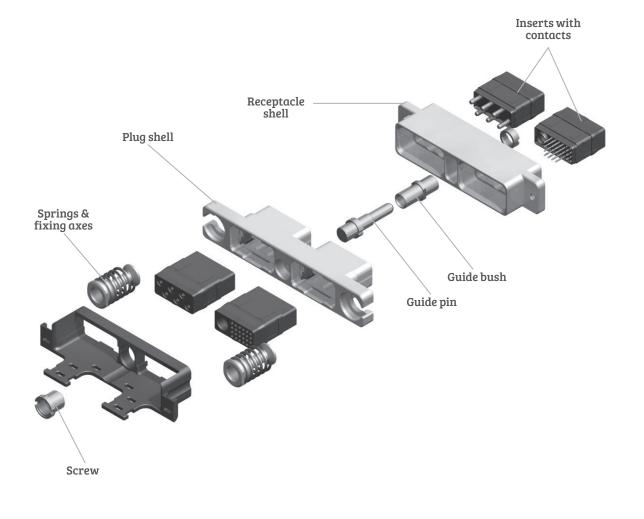
# EPX Galley Product Overview

The new EPXB2 Galley connector was specially designed for the severe conditions required by galley equipment. A floating mechanism was developed to avoid any risk of jamming and to guarantee a fully sealed connection.

The EPXB2 is used on ovens, beverage makers, refrigerators, microwave ovens and other equipment which fit within the new standardized galley layouts.

The EPXB2 connector is modular and provides extra contact density to add new contacts such as the #8 Twinax CAN data bus contact. Backshell accessories are also available.

Detailed view of receptacle and plug with accessories for the EPXB2 galley connector





CONTACTS

DISCONNECT APPLICATION

#### How to Order EPX® Galley Equipment Connector

#### **RECEPTACLE AND PLUG ASSEMBLY KIT**

Part number	Description
617610188 or 617610558	Receptacle assembled kit (*)
617610189	Plug assembled kit (*)

(\*)Part numbers for assembly kits include: plug or receptacle shell, inserts, contacts, sealing plugs and dust caps.

Each item included in the kit is indicated in the table below and can also be ordered separately

### **RECEPTACLE KITS**

#### 617610188

Shell with 2 self-locking threaded holes

Part number	Description	Quantity per kit
617610212	Receptacle shell	1
EPXBE25Q1PA	Insert for cavity A	1
EPXBE06PB	Insert for cavity B	1
617200	Pin crimp contacts/Size 22	15
617250	Pin crimp contacts/Size 12	6
616910	Filler plug	9
617954003	Dust cap	2

# 617610558

#### Shell with 2 thru holes

Part number	Description	Quantity per kit
617610419	Receptacle shell	1
EPXBE25Q1PA	Insert for cavity A	1
EPXBE06PB	Insert for cavity B	1
617200	Pin crimp contacts/Size 22	15
617250	Pin crimp contacts/Size 12	6
616910	Filler plug	9
617954003	Dust cap	2

# PLUG KIT

#### 617610189 contents

Part number	Description	Quantity per kit
617610213	Plug shell	1
EPXBE25Q1SA	Insert for cavity A	1
EPXBE06SB	Insert for cavity B	1
617300	Socket crimp contacts/Size 22	15
617350	Socket crimp contacts/Size 12	6
616910	Filler plug	9
617922007	Strain relief	1
617954002	Dust cap	2

#### CAN DATA BUS CONTACTS

Part number	Description
617165011	Size 8 Twinax pin contact
617065011	Size 8 Twinax pin contact



**PX® SERIES** 

3

INSERTS

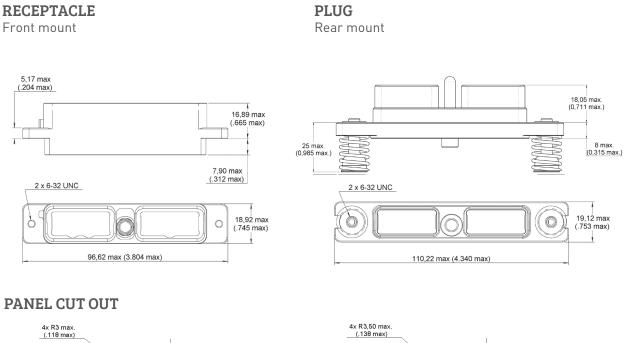
CONTACTS

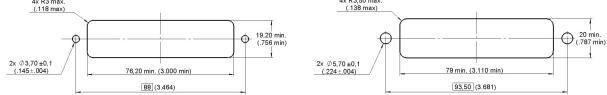
DISCONNECT APPLICATION

#### Dimensions and Panel Cut Out

Go online for data sheets & assembly instructions

# **EPX® GALLEY EQUIPMENT CONNECTOR PER ARINC 800**



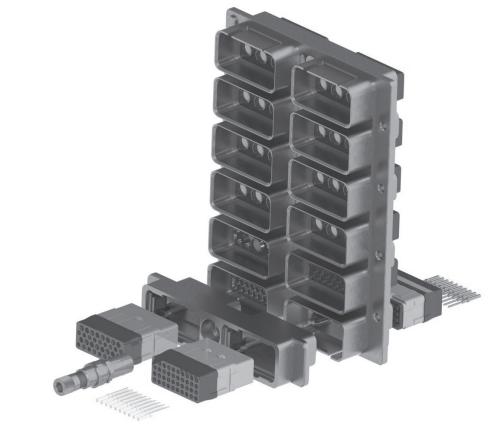




#### Multi-gang EPX® Connectors

A whole range of multigang connectors is available for disconnect and rack and panel applications. Multigang connectors features and benefits:

- Weight saving design
- Make installation easier and quicker
- Utilize EPX modularity and its whole range of inserts
- Take advantage of EPX connectors functionalities and use EPXB2 standard plug shells with a multigang shell



#### Specifications

- Several cavities for EPXB inserts : from 4 to 20 cavities
- Standard EPX strain reliefs and backshells available
- In accordance with EN4644 performances

#### Several options are available:

- Grounding block
- Grounding spring fingers
- Float mounting
- Spring loaded mounting



U.

**EPX® SERIE** 



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