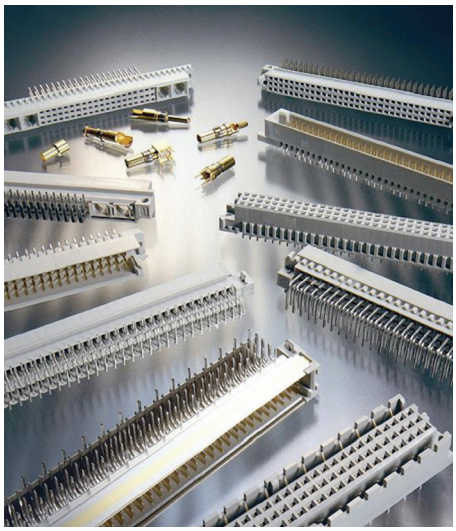
EUROCARD CONNECTORS PER DIN 41612 AND IEC 60603-2

Quick Reference Guide

TE Connectivity's (TE) Eurocard two piece connectors offer a reliable, cost effective solution enabling communication across protocols in industrial automation and data applications. By meeting DIN 41612 and IEC 60603-2 specifications, our Eurocard connectors are proven to provide reliable signal integrity (SI) and electrical performance in demanding applications. With a broad portfolio, it is easy to find the right connector type and style to fit your application. Common Bus Systems include STE Bus, CIMBUS, FUTUREBUS, VMEBus, MULTIBUS (II), NUBUS, VXi Bus and VME 64X.

Eurocard Connectors

The Eurocard line is available in board-to-board, wire-to-board, ribbon cable-to-board and high current connectors.



APPLICATIONS

- Data centers
- Storage
- Servers
- Base stations
- Telecommunications equipment
- Backplane and motherboard assemblies
- Switching systems
- Modular rack systems
- Power automation
- Distributed control systems in industrial control
- Programmable logic controllers (PLC)
- Robotics
- Test and lab equipment
- Energy distribution
- Monitoring equipment

STANDARD BUSSES

- CIMBUS Type B, 64 Position
- FUTUREBUS Type C, 96 Position
- MULTIBUS (II) Type C, 96 Position
- NUBUS Type C, 96 Position
- STE Bus Type B, 64 Position
- VME 64X Type C, 96 Position
- VMEbus Type C, 96 Position
- VXI Bus Type C, 96 Position

PRODUCT SPECIFICATIONS

- **DIN 41612** Two-Part Connectors for Printed Circuit Boards
- **IEC 60603-2** Connectors for Frequencies below 3 MHz for Printed Circuit Boards

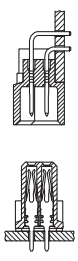
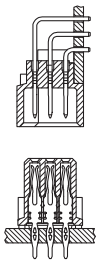
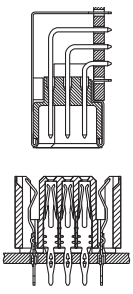
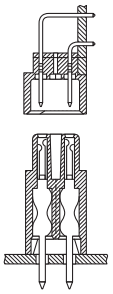
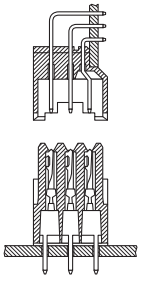
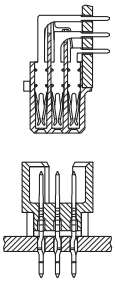
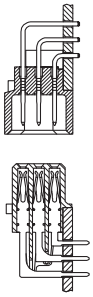
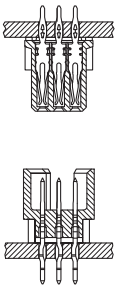
APPLICATION SPECIFICATIONS

- **114-9014** Eurocard Connector Types B, C, M and R (Board-to-Board Application)
- **114-19004** Eurocard Connector, Type F Receptacle
- **114-12026** Type M Coax Contacts
- **114-10014** Size VIII Power Contacts

KEY FEATURES

- Meets DIN 41612 and IEC 60603-2
- Two-piece reliability
- Polarized housings
- Flame retardant
- Types B, C, D, F, M, Q and R
- Standard DIN sizes as well as half, third, and expanded sizes
- Various solder post lengths and ACTION PIN and eye-of-needle contact tails
- Selective contact loading

STANDARD CONFIGURATION TYPES

Type B	Type C & M	Enhanced Type C	Type D	Type F	Type R	Type C	Type C
							
Type B	**Type C & M**	**Enhanced Type C**	**Type D**	**Type F**	**Type R**	**Type C**	**Type C**

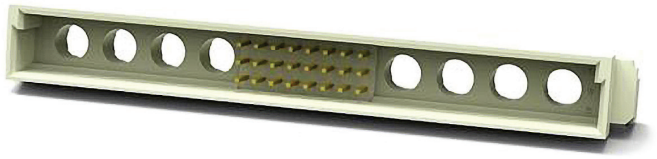
DIN 41612 STANDARD PART NUMBER TABLE

Positions / Loaded	Rows Loaded	Termination	Post Length	Board Locks	High Temp Housing	Part Number
TYPE C						
Plugs, Right Angle						
150 / 150	A, B, C	Posted	.104	—	—	5650907-5
120 / 120	A, B, C	Posted	.104	—	—	5650906-5
				✓	—	5650914-5
96 / 96	A, B, C	Posted	.104	—	—	5650473-5
				—	✓	5536010-5
				✓	—	5650913-5
				✓	✓	5536416-5
			.130	—	—	5536146-5*
				✓	—	5536149-5*
		ACTION PIN	—	—	—	215605-4
96 / 64	A, C	Posted	.104	—	—	5650945-5
				—	✓	5536742-5
				✓	—	5536356-5
48 / 48	A, B, C	Posted	.104	—	—	5650478-5
				✓	—	5650916-5
				✓	✓	5148020-5
		ACTION PIN	—	—	—	216398-4
48 / 32	A, C	Posted	.104	—	—	5650946-5
				✓	—	5650978-5
		ACTION PIN	—	—	—	106276-4
30 / 30	A, B, C	Posted	.118	—	—	6-1393644-9
				✓	—	7-1393644-1
Receptacles, Vertical						
160 / 160	A, B, C	ACTION PIN	—	—	—	148452-5**
150 / 150	A, B, C	Posted	.130	—	—	5650405-5
120 / 120	A, B, C	Posted	.130	—	—	5535098-5
				✓	—	5536494-5
96 / 96	A, B, C	Posted	.130	—	—	5535090-5
				✓	—	5650963-5
		Posted	.180	—	—	5536153-5*
				✓	—	5536155-5*
		ACTION PIN	—	—	—	5535032-5
		ACTION PIN	—	—	—	650992-5*
96 / 64	A, C	Posted	.130	—	—	5650956-5
				✓	—	5650983-5
		ACTION PIN	—	—	—	5535059-5
48 / 48	A, B, C	Posted	.130	—	—	5535070-5
				✓	—	5536484-5
		ACTION PIN	—	—	—	5535034-5
48 / 32	A, C	Posted	.098	—	—	5650459-5
TYPE D						
Plugs, Right Angle						
48 / 32	A, C	Posted	.118	—	—	1551603-1
Receptacles, Vertical						
48 / 32	A, C	Posted	.177	—	—	4-6437082-9
32 / 32	A, B	Posted	.104	—	—	5536053-5

DIN 41612 STANDARD PART NUMBER TABLE, *continued*

Positions / Loaded	Rows Loaded	Termination	Post Length	Board Locks	High Temp Housing	Part Number
TYPE F						
Plugs, Right Angle						
48 / 48	Z, B, D	Posted	.110	—	—	2-164045-4
48 / 32	Z, D	Posted	.110	—	—	2-164306-4
Receptacles, Vertical						
48 / 48	Z, B, D	Posted	.157	—	—	166733-4
		ACTION PIN	—	—	—	166648-4
48 / 32	Z, D	Posted	.157	—	—	166951-4
TYPE R						
Receptacles, Right Angle						
150 / 150	A, B, C	Posted	.110	—	—	5650875-5
				✓	—	5650959-5
		Eye of Needle	—	—	—	5148295-5
120 / 120	A, B, C	Posted	.110	—	—	5650874-5
		Eye of Needle	—	—	—	5148360-5
96 / 96	A, B, C	Posted	.110	—	—	5650461-5
				✓	—	5650895-5
				✓	✓	5148242-5
		Eye of Needle	—	—	—	5148292-5
96 / 64	A, C	Posted	.110	—	—	5650870-5
				✓	—	5650897-5
		Eye of Needle	—	—	—	5148296-1
48 / 48	A, B, C	Posted	.110	—	—	5650868-5
				✓	—	5650893-5
48 / 32	A, C	Posted	.118	—	—	2-1393656-8
30 / 30	A, B, C	Posted	.118	✓	—	2-1393656-2
TYPE B						
Plugs, Right Angle						
64 / 64	A, B	Posted	.104	—	—	5536052-5
				✓	—	5536385-5
32 / 32	A, B	Posted	.104	—	—	5536053-5
				✓	—	5536386-5
20 / 20	A, B	Posted	.118	—	—	5-1393644-6
Receptacles, Vertical						
64 / 64	A, B	Posted	.130	✓	—	5650860-5
		ACTION PIN	—	—	—	5650865-5
32 / 32	A, B	Posted	.130	—	—	5536446-5
		ACTION PIN	—	—	—	5650864-5
20 / 20	A, B	Posted	.114	—	—	7-1393640-2

DIN 41612 TYPE M: POWER AND COAX



Housing Assemblies

Signal Contacts / Loaded	Power or Coax Contacts / Loaded	Termination	Post Length	Part Number
24 / 24	8 / 0	Posted	.104	5148414-5*
78 / 78	2 / 0	Posted	.118	1-1393645-7
60 / 60	4 / 0	Posted	.104	148412-5
42 / 42	6 / 0	Solder	.104	148413-5
24 / 24	8 / 7	ACTION PIN	.236	148497-5*
78 / 78	2 / 0	ACTION PIN	.190	5148417-5
60 / 60	4 / 0	ACTION PIN	.190	5148420-5
42 / 42	6 / 0	ACTION PIN	.146	5-1393637-7

*Connectors for CompactPCI applications

Power Contacts

Current	Applies To	Wire Size (AWG)	Type	Premate	Part Number
10 A	PCB	—	Vert Plug	Yes	3-1393589-5
				No	3-1393589-1
	Wire	16–18	Cable Recpt	No	1-1393589-1
20 A	Wire	12–14	Cable Plug	No	1393589-3
			Cable Recpt	No	1393589-9
25 A	PCB	—	R/A Plug	No	1-1393589-8
				Yes	1-1393589-7
			R/A Recpt	No	2-1393589-9
				Yes	2-1393589-7
40 A	PCB	—	Vert Recpt	No	148375-1
	Wire	8	Cable Plug	No	1393589-1
			Cable Recept	No	1393589-7

Coaxial Contacts

Applies To	Type	Part Number
PCB	R/A Plug	1-1393662-4
	Vert Recpt	1-1393662-0
RG-179 Cable	Cable Plug	3-1393668-4
	Cable Plug	3-1393668-0
RG-316 Cable	Cable Plug	1392020-1
	Cable Recpt	1392019-1
	R/A Cable Recpt	1393668-4

DIN 41612 ACCESSORIES

Type C Receptacle EUROLATCH Ribbon Cable Connectors

Positions / Loaded	Rows Loaded	Termination	Part Number			
			Connector	Hand Tool Kit	Pneumatic Tool	Manual Tool
96 / 64	A, C	IDC	746603-1	768340-1	91112-3	91085-2

Two-Piece Cable Clamp Assemblies

Connector Type	Part Number
C, D	826196-1
F	826198-1

Dust Covers

Connector Type	Part Number	
	Receptacle	Plug
C and R	174376-1	174375-1

Guide Brackets

Connector Type	Part Number
C	2-826199-8
D	7-826199-0
F	8-826199-0

Keying Systems

Type	Part Number
C, D, R Plug	926495-4
B, C, D, F, R Receptacle	926495-2

Application Tooling for Eurocard Connectors with ACTION PIN Contacts

Connector Type	Post Size	Part Number	
		Standard Tool	Economy Tool
C	.025 x .025	432583-1	535072-1
	.012 x .012	Flat Rock	Flat Rock
C (Half Size)	.025 x .025	432582-1	—
	.012 x .012	Flat Rock	Flat Rock
C (128 position)	.025 x .025	432584-1	—
C (160 position)	.025 x .025	432585-1	—
F	.025 x .025	Flat Rock	Flat Rock
	.039 x .039	Flat Rock	Flat Rock
M	.025 x .025	—	148454-1
M Crimp Power Contacts	—	Daniels crimping tool M 300-BT	—

DIN 41612 PERFORMANCE LEVELS

Industry	Military	Commercial / Industrial	Rarely Mate / Unmate
Level	**Level 1**	**Level 2**	**Level 3**
Test Batch P			
Dimensional Check	Yes	Yes	Yes
Contact Resistance	20 milliohms	20 milliohms	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	1 E 11 ohms
Dielectric Strength	1000 V	1000 V	1000 V
Test Batch AP			
Withdrawal Force (Single Pin)	0.15 N (.54 oz) Min.	0.15 N (.54 oz) Min.	0.15 N (.54 oz) Min.
Mating / Unmating Force (96 pos)	90.7 N (20.4 lb) Max.	90.7 N (20.4 lb) Max.	90.7 N (20.4 lb) Max.
Solderability	Yes	Yes	Yes
Dielectric Strength	1000 V	1000 V	—
Vibration	10-2000 Hz, 20G	10-500 Hz, 6G	—
Shock	490 m/s^2 (50G)	—	—
Acceleration	980 m/s^2	—	—
Rapid Temperature Change	-55°C, +125°C	-55°C, +125°C	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	—
Dielectric Strength	1000 V	1000 V	—
Visual Examination	Yes	Yes	Yes

DIN 41612 PERFORMANCE LEVELS, *continued*

Industry	Military	Commercial / Industrial	Rarely Mate / Unmate
Level	**Level 1**	**Level 2**	**Level 3**
Test Batch AP, *continued*			
Climatic Sequence	5 cycles	5 cycles	—
Dry Heat	+125 °C, 16 hours	+125 °C, 16 hours	+125 °C, 16 hours
Insulation Resistance During Dry Heat	1 E 11 ohms	1 E 11 ohms	1 E 10 ohms
Humid Heat	+55°C	+40°C	—
Cold	-55°C	-55°C	-55°C
Partial Vacuum	300 Mbar	300 Mbar	—
Dielectric Strength	300 V	300 V	—
Humid Heat	+55°C	+40°C	—
Insulation Resistance	1 E 10 ohms	1 E 10 ohms	1 E 9 ohms
Contact Resistance	20 milliohms	20 milliohms	20 milliohms
Dielectric Strength	1000 V	1000 V	—
Mating and Unmating	90.7 N (20.4 lb)	90.7 N (20.4 lb)	90.7 N (20.4 lb)
Visual Examination	Yes	Yes	Yes
Test Batch BP			
Withdrawal Force	0.15 N (.54 oz)	0.15 N (.54 oz)	0.15 N (.54 oz)
Durability	250 cycles	200 cycles	50 cycles
Industrial Atmosphere	21 days S02	4 days S02	—
Contact Resistance	20 milliohms	20 milliohms	—
Durability	250 cycles	200 cycles	—
Insulation Resistance	1 E 12 ohms	1 E 12 ohms	—
Dielectric Strength	1000 V	1000 V	—
Withdrawal Force	0.15 N (.54 oz)	0.15 N (.54 oz)	0.15 N (.54 oz)
Visual Examination	Yes	Yes	Yes
Static Axial Force	90 N (20.25 lb)	—	—
Test Batch CP			
Humid Heat	56 days	56 days	—
Insulation Resistance	1 E 10 ohms	1 E 10 ohms	—
Contact Resistance	20 milliohms	20 milliohms	—
Dielectric Strength	1000 V	1000 V	—
Visual Examination	Yes	Yes	—
Test Batch DP			
Durability	250 cycles	200 cycles	—
Electric Load at High Temperature	1 ampere at 70°C	1 ampere at 70°C	—
Contact Resistance	20 milliohms	20 milliohms	—
Dielectric Strength	1000 V	1000 V	—
Discharge Voltage	1000 V	1000 V	—
Visual Examination	Yes	Yes	—
Test Batch EP			
Mechanical Strength of Terminals	20 N (4.5 lb)	20 N (4.5 lb)	20 N (4.5 lb)
Contact Mount in Use	10 N (2.25 lb)	10 N (2.25 lb)	10 N (2.25 lb)
Growth of Mold	Yes	—	—
Visual Examination	Yes	—	—
Combustibility	10 sec burning	—	—

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