



Innovative Solutions for I/O Communications

TE Connectivity (TE) is your communication I/O solutions provider for electronic interconnect. Whether you are designing a new system or retrofitting an existing system, this solutions guide will help you select the required I/O components with easy access to additional online information through te.com. TE's broad portfolio of I/O interconnect, from high speed data transfer to rugged industrial communications, satisfies the needs of diverse markets and will help you solve size and data rate challenges with your next I/O design.

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Design Navigator

Get more information on te.com  by clicking on the product names below.

	Pitch (mm)	Number of Contacts	Max Data Rate per Lane (Gbps) ²	Max Current Rating per Contact (A) ²	High Vibration Performance	Environmental Protection	Power & Signal Corrosion	Durable in Harsh Environments	Quickconnect / Disconnect	Standards
1 DATA COMMUNICATIONS / TELECOMMUNICATIONS¹										
AMPLIMITE D-Subminiature Connectors	1.27 x 2.54 - 2.74 x 2.84	9 - 120	N/A	7.5	●		●	●	●	SCSI 2 & 3, RS-232, ISO-11569, IPI-2, HIPPI, IEE 802.3 MII, VESA, RS-232
CeeLok FAS-T I/O Connectors	N/A	8	10	1.0	●	●		●		MIL-DTL-38999, Ethernet, USB, SATA/eSATA
CFP Compliant Connectors / CXP Connectors & Cage Assemblies	0.8	84 - 148	12.5	0.5				●		Ethernet, Infiniband
CHAMP Board-to-Board & Wire-to-Board Connectors	0.8/1.27/ 2.16	14 - 100	1.0	3.5	●					UL, CSA, SCSI, VHDCI
Circular Plastic Connectors (CPC)	N/A	3 - 63	N/A	60	●		●	●	●	UL, CSA, VDE (select parts)
DEUTSCH DMC-M Single Module Connectors	2.54	1 - 20	10	90	●	●	●	●	●	EN4165 - ARINC 809 - BACC65 - UL
DEUTSCH Wildcat High Density Connectors	1.73	3 - 64	N/A	5.0	●	●	●	●	●	N/A
Heavy Duty Connectors (HDC)	N/A	1 - 150	N/A	420	●	●	●	●	●	UL, CSA, VDE
Mini Serial Attached SCSI High Density (Mini SAS HD) Connectors	0.75	36	12.0	0.5				●	●	SAS 2.1, PCIe
PARALIGHT™ Active Optical Cable Assemblies	N/A	N/A	14.5	350	●	●		●	●	N/A
QSFP+ Fiber Optic Transceivers	N/A	N/A	10.0	N/A				●	●	SFF-8436, 40GBase-SR4 Ethernet and InfiniBand
Quad Small Form-Factor Plus (QSFP+) Connectors	0.8	38	16.0	0.5				●	●	Ethernet, Infiniband
Quadrax High Speed I/O Connectors & Contacts	N/A	1 - 12	2.0	1.0	●	●		●		MIL-DTL-38999, ARINC 404, ARINC 600
RJ point five Connector Systems	1.27	8	1.0	0.5					●	Ethernet
RJ45 Modular Jacks	1.27	8	1.0	1.5	●	●			●	TIA, IEC, FCC, Ethernet
Small Form-Factor (SFP & SFP+) I/O Products	0.8	20	16.0	0.5					●	Fibre Channel, Ethernet
USB Connectors	2.0	9	5.0	0.9	●					N/A
X2 Rails & Connectors	0.8	70	3.125	N/A					●	Ethernet
XFP Cages, Connectors & Module Systems	0.8	30	10.0	N/A					●	Ethernet, CTN
2 INDUSTRIAL COMMUNICATION / AUTOMATION & CONTROL¹										
AMP Power Series Wire-Applied Connectors	N/A	4, 6	N/A	20						UL, CSA
AMPLIMITE D-Subminiature Connectors	1.27 x 2.54 - 2.74 x 2.84	9 - 120	N/A	7.5	●		●	●	●	SCSI 2 & 3, RS-232, ISO-11569, IPI-2, HIPPI, IEE 802.3 MII, VESA, RS-232
AMPLIMITE Hybrid Connectors (Power Coax Mixed)	0.109	3 - 36	N/A	32	●	●	●	●		MIL*
AMPSEAL Sealed Connector Series	2.0 x 4.0	8 - 35	N/A	17	●	●		●	●	UL, ISO/IEC
CHAMP Board-to-Board & Wire-to-Board Connectors	0.8/1.27/ 2.16	14 - 100	1.0	3.5	●					UL, CSA, SCSI, VHDCI
Circular Plastic Connectors (CPC)	N/A	3 - 63	N/A	60			●	●	●	UL, CSA, VDE (select parts)
Command Series Switches	N/A	4, 8, 12	N/A	5.0				●	●	UL, CSA, NEMA1, 12 & 13
DEUTSCH DMC-M Single Module Connectors	2.54	1 - 2	10	90	●	●	●	●	●	EN4165, ARINC 809, BACC65, UL
DEUTSCH DTS-RJ45 Ruggedized Shielded Connectors	1.27	4, 8	1.0	N/A	●	●		●	●	Cat5e
DEUTSCH Wildcat High Density Connectors	1.73	3 - 64	N/A	5.0	●	●		●	●	N/A
Heavy Duty Connectors (HDC)	N/A	1 - 150	N/A	420	●	●	●	●	●	UL, CSA, VDE
Industrial Mini I/O Connector System	N/A	8	1.0	0.5	●	●		●	●	Cat5e
Industrial RJ45 / Industrial Ethernet Connectors	1.27	4, 8	10	0.5	●	●		●	●	UL, CSA, Cat5e, Cat6
Industrial Switches	N/A	N/A	N/A	25						RU, CSA, VDE, UL
Industrial USB Connectors	2.0	4	0.12	0.5	●	●		●	●	UL, CSA, USB 2.0
Keylock Switches	N/A	2, 3	N/A	5.0					●	N/A
M8/M12 Connector Systems	N/A	3 - 4	1.0	5.0	●	●		●	●	UL, CSA
Micro-MaTch Board-to-Board & Wire-to-Board Connectors	1.27	4 - 24	N/A	0.5	●			●	●	N/A
Motorman Hybrid Connectors	N/A	13	1.0	20	●		●	●	●	UL, CSA, VDE, ISO/IEC, Cat5e
Quad Small Form-Factor Plus (QSFP+) Connectors	0.8	38	16.0	0.5				●	●	Ethernet, Infiniband
Quadrax High Speed I/O Connectors & Contacts	N/A	1 - 12	2.0	1.0	●	●		●		MIL-DTL-38999, ARINC 404, ARINC 600
RJ45 Modular Jacks	1.27	8	1.0	1.5	●	●			●	TIA, IEC, FCC, Ethernet
Small Form-Factor (SFP & SFP+) I/O Products	0.8	20	16	0.5				●	●	Fibre Channel, Ethernet
XFP Cages, Connectors & Module Systems	0.8	30	10.0	N/A					●	Ethernet
3 PERSONAL COMPUTER / HANDHELD DEVICES¹										
AMPLIMITE D-Subminiature Connectors	1.27 x 2.54 - 2.74 x 2.84	9 - 120	N/A	7.5	●		●	●	●	SCSI 2 & 3, RS-232, ISO-11569, IPI-2, HIPPI, IEE 802.3 MII, VESA, RS-232
CHAMP Board-to-Board & Wire-to-Board Connectors	0.8/1.27/ 2.16	14 - 100	1.0	3.5	●					N/A
Connectors for HDMI Standards	N/A	19	10.2	0.5					●	N/A
Digital Visual Interface (DVI) Receptacles & Cable Assemblies	N/A	24 - 29	3.96	1.5	●				●	N/A
D-Subminiature Connectors for VGA Standard	N/A	9, 15	N/A		●				●	N/A
RJ point five Connector Systems	1.27	8	1.0	1.5					●	N/A
RJ45 Modular Jacks	1.27	8	1.0	1.5	●	●			●	TIA, IEC, FCC, Ethernet
USB Connectors	2.0	9	5.0	0.9			●		●	USB
4 INSTRUMENTATION¹										
AMPLIMITE D-Subminiature Connectors	1.27 x 2.54 - 2.74 x 2.84	9 - 120	N/A	7.5	●		●	●	●	SCSI 2 & 3, RS-232, ISO-11569, IPI-2, HIPPI, IEE 802.3 MII, VESA, RS-232
AMPLIMITE Hybrid Connectors (Power Coax Mixed)	0.109	3 - 36	N/A	32	●	●	●	●		MIL*
CeeLok FAS-T I/O Connectors	N/A	8	10	1.0	●	●		●		MIL-DTL-38999, 10/100/1000 Ethernet, USB 2.0/3.0, SATA/eSATA
CHAMP Board-to-Board & Wire-to-Board Connectors	0.8/1.27/ 2.16	14 - 100	1.0	3.5	●					UL, CSA, SCSI, VHDCI
Circular Plastic Connectors (CPC)	N/A	3 - 64	N/A	5.0	●	●		●	●	UL, CSA, VDE (select parts)
Corcom Power Entry Modules					Refer to the Featured Product section for more product details.					UL, CSA, VDE
DEUTSCH DMC-M Single Module Connectors	2.54	1 - 20	10	90	●	●	●	●	●	EN4165, ARINC 809, BACC65, UL
DEUTSCH Wildcat High Density Connectors	1.73	3 - 64	N/A	5.0	●	●		●	●	N/A
Industrial RJ45 / Industrial Ethernet Connectors	1.27	4, 8	10	0.5	●	●		●	●	UL, CSA, Cat5e
Industrial USB Connectors	2.0	4	0.12	0.5	●	●		●	●	UL, CSA, USB 2.0
M8/M12 Connector Systems	N/A	3 - 4	1.0	5.0	●	●		●	●	UL, CSA
Micro- MaTch Board-to-Board & Wire-to-Board Connectors	1.27	2 - 24	N/A	0.5	●			●	●	N/A
Quadrax High Speed I/O Connectors & Contacts	N/A	1 - 12	2.0	1.0	●	●		●		MIL-DTL-38999, ARINC 404, ARINC 600
RJ point five Connector Systems	1.27	8	1.0	0.5					●	Ethernet
RJ45 Modular Jacks	1.27	8	1.0	1.5	●	●			●	FCC

¹ For cable assemblies using specified interconnect, visit the [TE Cable Assembly website](#).

² May vary based on application and product selection

UL - Underwriters Laboratories Listed
 RU - Recognized Under
 CSA - Canadian Standards Association
 * See product page on te.com for Mil specs

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Data Communications / Telecommunications



Featured Products



1 AMPLIMITE D-Subminiature Connectors

- 2 ■ Ideal for industrial applications due to intermateability and rugged design
- 3 ■ Realize proven performance at competitive prices
- 4 ■ Support a broad range of design needs with extensive product offerings

[Website](#)
[Catalog](#)
[Virtual Sample Kit](#)



1 RJ45 Modular Jacks

- 2 ■ Reduce electrical noise and gain up to Cat5e performance
- 3 ■ Gain additional PCB space with low profile and narrow housing design
- 4 ■ Suitable for a broad range of applications with diverse product configurations

[Website](#)
[Catalog I](#)
[Catalog II](#)
[Quick Reference Guide](#)



1 QSFP+ Fiber Optic Transceivers

- Achieve increased data transfer rates with high speed capability
- Efficiently utilize application space with high density configuration
- Provide improved cable management with small design

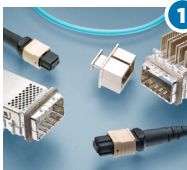
[Website](#)



1 SFP+ I/O Products

- 2 ■ Support high density design with belly-to-belly and stacked configuration
- Maximize system thermal management with heat sink options
- Achieve high speed and high density with standardized products

[Website](#)
[Catalog](#)
[Quick Reference Guide](#)
[Product Presentation](#)



1 CXP Connectors & Cage Assemblies

- Provide up to 120Gbps of total bandwidth in one-piece press-fit assembly
- Allow maximum system thermal management with heat-sink options
- Enable high reliability mating and unmating with robust EMI spring design

[Website](#)
[Catalog](#)
[Product Presentation](#)



1 Quad Small Form-Factor Pluggable Plus (QSFP+) Connectors

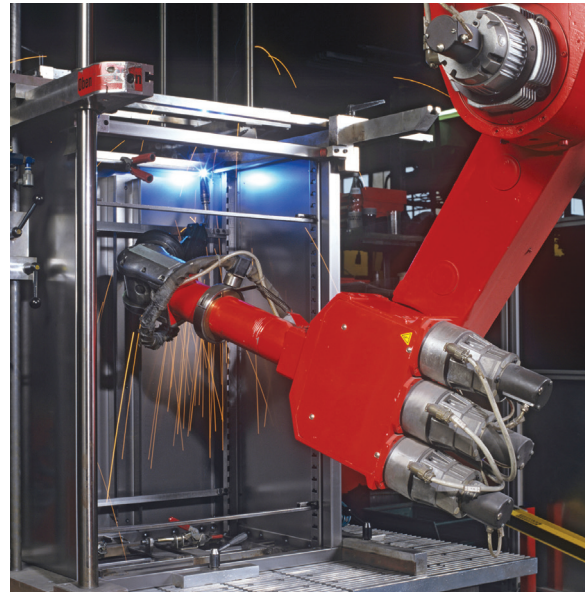
- 2 ■ Support a range of high speed requirements with multiple channels
- Achieve proven EMI containment with through-bezel or behind-bezel cage options
- Reduce cable clutter with direct attach copper cables for short reach applications

[Website](#)
[Catalog](#)
[Quick Reference Guide](#)
[Product Presentation](#)

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Industrial Communication / Automation & Control



Featured Products



[Website](#)
[Product Presentation](#)

- 1 **CHAMP Board-to-Board & Wire-to-Board Connectors**
 - 2
 - 3
 - 4
- Satisfy board-to-board connection needs with stacking, coplanar and backplane configurations
 - Offer versatility with plug and receptacle in both vertical and right angle mounting options
 - Achieve durable connections with fully shrouded housings



[Website](#)
[Catalog](#)

- 1 **DEUTSCH Wildcat High Density Connectors**
 - 2
 - 4
- Enable quick and positive coupling with robust mayonet mechanism
 - Provide for cable braid and boot termination with rear accessory feature
 - Gain space and reduce weight with a small, lightweight design



[Website](#)
[Catalog I](#)
[Catalog II](#)
[Product Presentation](#)

- 1 **Circular Plastic Connectors (CPC)**
 - 2
 - 4
- Mixed power and signal available in a single interconnect
 - Ideal for harsh environments where mechanical shock, moisture and debris are prevalent
 - Achieve efficient field repair with removable contacts and replaceable coupling ring



[Website](#)
[Catalog](#)

- 1 **Heavy Duty Connectors (HDC)**
 - 2
- Lower applied cost with quick and easy assembly options
 - Gain machine configuration flexibility by combining power, signal and data circuits
 - Withstand severe environmental conditions with IP68 configuration options



[Website](#)

- 2 **M8 / M12 Connector Systems**
 - 4
- Enable equipment interoperability through use of standard industrial interfaces
 - Industrial Ethernet solutions ranging from 100Mb through 10Gb speeds
 - Improve field termination time using factory made overmolded cable assemblies



[Website](#)
[Catalog](#)

- 2 **Industrial Mini I/O Connector System**
- Avoid mis-mating with polarized housing options
 - Increase reliability in high vibration environments with two points of contact
 - Prevent unintentional plug pull-out with unique latching system

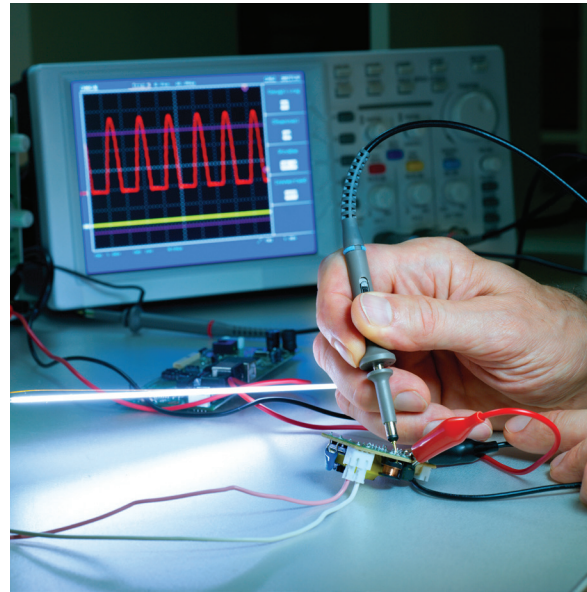
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Personal Computer / Handheld Devices



Instrumentation



Featured Products

1 **RJ point five Connector Systems**

- Save board space with double density design and 7mm centerline spacing
- Increase installation and service efficiency with field terminable cable assemblies
- Ethernet solutions for applications ranging up to 10Gb speeds

[Website](#)
[Quick Reference Guide](#)
[Product Presentation](#)
[Video](#)

1 **USB Connectors**

- Support data transfer rates of standard USB 2.0 or the 10 times faster USB 3.0
- Optimize power efficiencies with improved device interaction and charging time
- Standard and customized styles and orientations available

[Website](#)
[Quick Reference Guide](#)
[Product Presentation](#)

3 **Connectors for HDMI Standards**

- Support standard, enhanced or high-definition video and multi-channel audio in one cable
- Provide secure electrical contact and smooth cable insertion/extraction with easy-to-use friction lock connector design
- Gain ESD protection with fully shielded housing

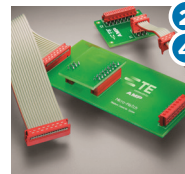
[Website](#)
[Data Sheet](#)
[Quick Reference Guide](#)

Featured Products

1 **CeeLok FAS-T I/O Connectors**

- Provide EMI protection in a low profile, light-weight strain relief with a backshell integrated plug
- Achieve easy termination and field repairability with crimp-snap, 39029-style contacts
- Minimize cross talk with patented, noise-cancelling contact arrangement

[Website I](#)
[Website II](#)
[Data Sheet](#)
[Presentation](#)
[Video](#)

2 **Micro-MaTch Board-to-Board & Wire-to-Board Connectors**

- Prevent fretting corrosion and allow for longer-lasting connection with contact spring design
- Eliminate unnecessary movement in high-vibration applications with high force contact system
- Support wide variety of design options with extensive product offering

[Website](#)
[Catalog](#)
[Quick Reference Guide](#)

4 **Corcom Power Entry Modules**

Series	Type	Rated Current / Voltage (max)	Agency Approvals
CU Series	Compact 1U height switched power entry module	1 - 15A / 250 VAC	UL, CSA, VDE
Medium P Series	Versatile power entry module with reduced size	3 - 10A / 250 VAC	UL, CSA, VDE

For a complete list of TE's Corcom EMI/RFI filters, visit: www.corcom.com

[Website](#)
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