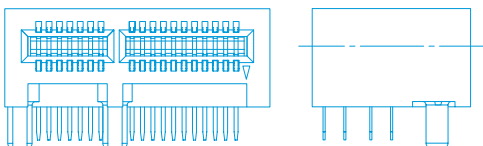
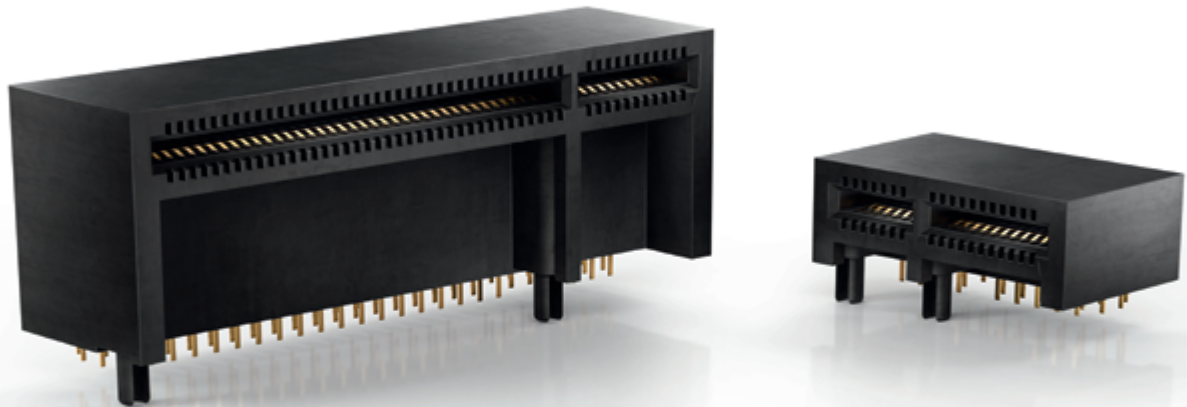


PCI Express

Right Angle Connectors



Original Size PCI Express Right Angle Connector

PCI Express - Right Angle Connectors

DESCRIPTION

GENERAL



Right Angle Connectors

These card edge connectors are designed to meet the requirements of PCI Express architectures that call for a high performance point-to-point, full duplex I/O Bus connector. While most PCI Express connectors available in the market are vertical, the ERNI PCIe connectors are right-angled, designed for solving space constrained applications where low clearance above the PCB prohibits the use of vertical configurations.

Right-angled PCIe connectors are compatible with 1.6 mm to 2.4 mm thick motherboards and 1.6 mm thick daughter cards. These robust PCIe connectors are available in 3 stack heights, and are equipped with molded polarization keys to prevent improper insertion of the daughter cards. The connectors provide solder termination. The layout is arranged in a

4-row format with 1 mm pitch and the provision of 2 holes for locator pegs. This enables the connector to be securely assembled and easy soldered through a lead-free wave soldering process. The ERNI PCIe connectors are available in 85 Ohm and 100 Ohm versions.

PCI Express - Right Angle Connectors

DESCRIPTION —



TECHNICAL DETAILS

Pitch	1.0 mm
No of Pins	X1=36, X4=64, X8=98, X16=164, X24=230
Termination	Solder
Terminal Length	2.54 mm, 3.18 mm
Impedance	85 Ohm, 100 Ohm
Packaging	Tray packaging for automatic assembly
Variants	Right Angle Connectors 3 different stack heights
Standard	Meets all PCIe Local Bus Standards Rev. 2.0



Stack Heights:
 5.84 mm
 11.18 mm
 16.69 mm

PCI Express - Right Angle Connectors

ELECTRICAL AND MECHANICAL CHARACTERISTICS

TECHNICAL DATA

Description	Standard	Right Angle Edge Card Connectors
Number of Pins		X1=36, X4=64, X8=98, X16=164, X24=230
Temperature range		-40 to +105 °C
Current rating per contact		1.1 A continuous
Voltage rating		max. 300 V
Dielectric strength		>500 VAC at 60 Hz
Conductor resistance		< 40 mΩ
Insulation resistance		>1 x 10 ⁹ MΩ at 500 VDC
Capacitance at 1 kHz		As advertised
Inductance at 10 kHz		As advertised
Impedance		85 Ω or 100 Ω
Crosstalk		Next >30 dB at 2.0 GHz
Propagation delay		As advertised
Insertion loss (for stack height 5.84 mm)		<1 dB at 1.0 GHz <3 dB at 2.5 GHz
Return loss (for stack height 5.84 mm)		>12 dB at 1.25 GHz >7 dB at 1.5 GHz >4 dB at 2.0 GHz
Processing Conditions		
Dip soldering temperature max.	IEC 68-2-20	10 s at 260 °C
Reflow soldering temperature max.	JEDEC J-STD-020	20 - 90 s at 260 °C

PCI Express - Right Angle Connectors

ELECTRICAL AND MECHANICAL CHARACTERISTICS

Description	Standard	Right Angle Edge Card Connectors
Housing Material		
Plastic material		LCP 30% glass-filled
UL flame rating		UL 94 V-0
Contact Material		
Base material		Cu alloy
Mating area		gold plating
Termination area		gold plating
Environment Compatibility		
Recycling		no flame-retardent additives, no toxic additives allow easy recycling

PCI Express - Right Angle Connectors

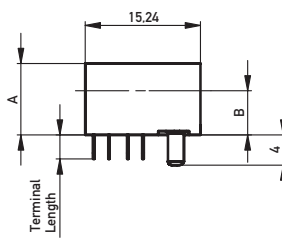
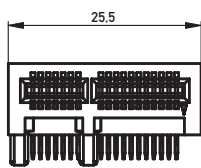
X1 LINK WIDTH, 36 PIN

PRODUCT SPECIFICATION



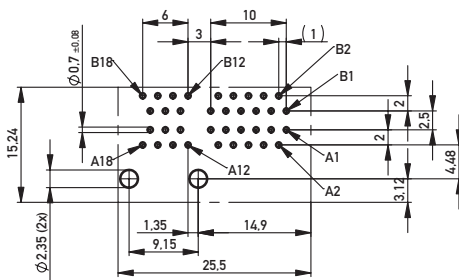
- Solder termination
- 85 Ohm and 100 Ohm versions
- The layout is arranged in a 4-row format with 1 mm staggered pitch
- Plastic cover protects connector from dust and debris
- Two locator pegs with interference fit to pcb for reliable processing
- Tray packaging for automatic assembly

DIMENSIONAL DRAWINGS



16.69	20.30
11.18	14.70
5.84	9.40
Assembly Stack Height	A

Recommended Layout



PCI Express - Right Angle Connectors

X1 LINK WIDTH, 36 PIN

ORDERING INFORMATION

Assembly Stack Height (mm)	Terminal Length (mm)	Impedance (Ω)	Contact Plating	Part Number
5.84	2.54	100	min. 0.127 μ m Au	009000
5.84	3.18	100	min. 0.127 μ m Au	009020
5.84	2.54	100	min. 0.8 μ m Au	009040
5.84	3.18	100	min. 0.8 μ m Au	009060
5.84	2.54	85	min. 0.127 μ m Au	009101
5.84	3.18	85	min. 0.127 μ m Au	009301
5.84	2.54	85	min. 0.8 μ m Au	009201
5.84	3.18	85	min. 0.8 μ m Au	009401
11.18	2.54	100	min. 0.127 μ m Au	009001
11.18	3.18	100	min. 0.127 μ m Au	009021
11.18	2.54	100	min. 0.8 μ m Au	009041
11.18	3.18	100	min. 0.8 μ m Au	009061
11.18	2.54	85	min. 0.127 μ m Au	009501
11.18	3.18	85	min. 0.127 μ m Au	009701
11.18	2.54	85	min. 0.8 μ m Au	009601
11.18	3.18	85	min. 0.8 μ m Au	009801
16.69	2.54	100	min. 0.127 μ m Au	009002
16.69	3.18	100	min. 0.127 μ m Au	009022
16.69	2.54	100	min. 0.8 μ m Au	009042
16.69	3.18	100	min. 0.8 μ m Au	009062

PCI Express - Right Angle Connectors

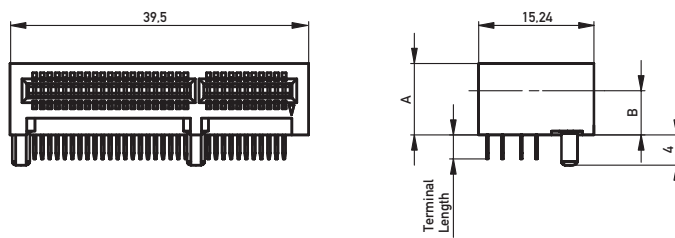
X4 LINK WIDTH, 64 PIN

PRODUCT SPECIFICATION



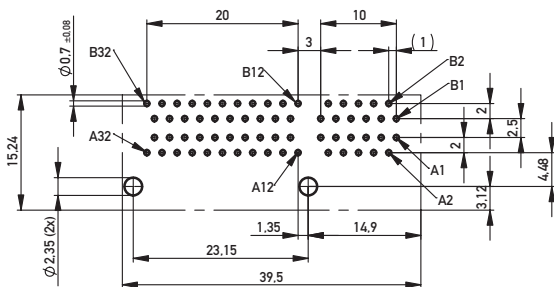
- Solder termination
- 85 Ohm and 100 Ohm versions
- The layout is arranged in a 4-row format with 1 mm staggered pitch
- Plastic cover protects connector from dust and debris
- Two locater pegs with interference fit to pcb for reliable processing
- Tray packaging for automatic assembly

DIMENSIONAL DRAWINGS



16.69	20.30
11.18	14.70
5.84	9.40
Assembly Stack Height	A

Recommended Layout



PCI Express - Right Angle Connectors

X4 LINK WIDTH, 64 PIN —

ORDERING INFORMATION

Assembly Stack Height (mm)	Terminal Length (mm)	Impedance (Ω)	Contact Plating	Part Number
5.84	2.54	100	min. 0.127 μ m Au	009003
5.84	3.18	100	min. 0.127 μ m Au	009023
5.84	2.54	100	min. 0.8 μ m Au	009043
5.84	3.18	100	min. 0.8 μ m Au	009063
5.84	2.54	85	min. 0.127 μ m Au	009104
5.84	3.18	85	min. 0.127 μ m Au	009304
5.84	2.54	85	min. 0.8 μ m Au	009204
5.84	3.18	85	min. 0.8 μ m Au	009404
11.18	2.54	100	min. 0.127 μ m Au	009004
11.18	3.18	100	min. 0.127 μ m Au	009024
11.18	2.54	100	min. 0.8 μ m Au	009044
11.18	3.18	100	min. 0.8 μ m Au	009064
11.18	2.54	85	min. 0.127 μ m Au	009504
11.18	3.18	85	min. 0.127 μ m Au	009704
11.18	2.54	85	min. 0.8 μ m Au	009604
11.18	3.18	85	min. 0.8 μ m Au	009804
16.69	2.54	100	min. 0.127 μ m Au	009005
16.69	3.18	100	min. 0.127 μ m Au	009025
16.69	2.54	100	min. 0.8 μ m Au	009045
16.69	3.18	100	min. 0.8 μ m Au	009065

PCI Express - Right Angle Connectors

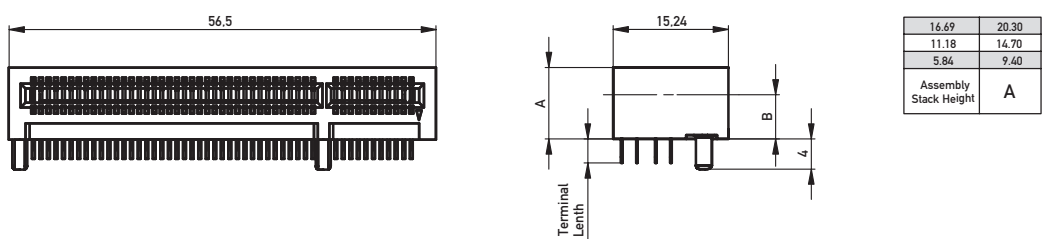
X8 LINK WIDTH, 98 PIN

PRODUCT SPECIFICATION

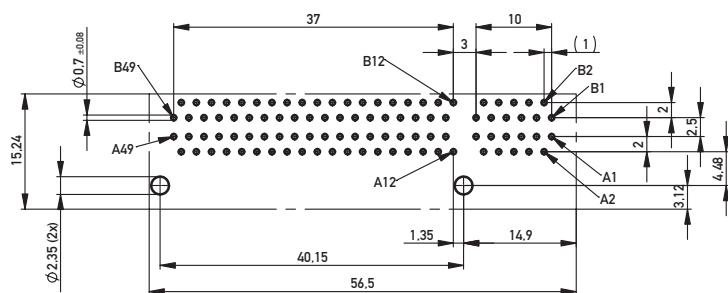


- Solder termination
- 85 Ohm and 100 Ohm versions
- The layout is arranged in a 4-row format with 1 mm staggered pitch
- Plastic cover protects connector from dust and debris
- Two locator pegs with interference fit to pcb for reliable processing
- Tray packaging for automatic assembly

DIMENSIONAL DRAWINGS



Recommended Layout



PCI Express - Right Angle Connectors

X8 LINK WIDTH, 94 PIN —

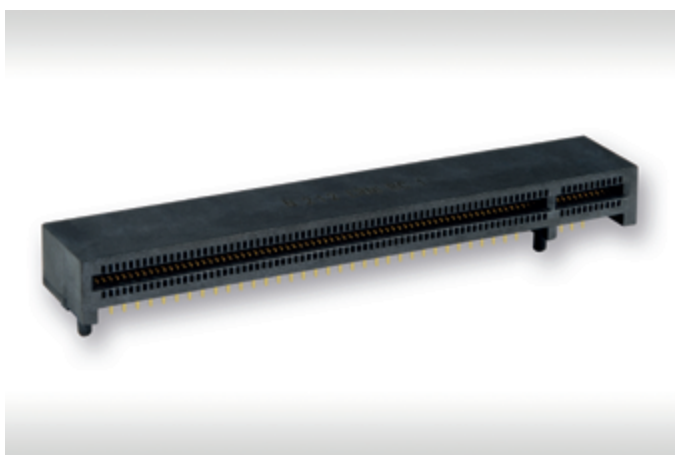
ORDERING INFORMATION

Assembly Stack Height (mm)	Terminal Length (mm)	Impedance (Ω)	Contact Plating	Part Number
5.84	2.54	100	min. 0.127 μ m Au	009006
5.84	3.18	100	min. 0.127 μ m Au	009026
5.84	2.54	100	min. 0.8 μ m Au	009046
5.84	3.18	100	min. 0.8 μ m Au	009066
5.84	2.54	85	min. 0.127 μ m Au	009108
5.84	3.18	85	min. 0.127 μ m Au	009308
5.84	2.54	85	min. 0.8 μ m Au	009208
5.84	3.18	85	min. 0.8 μ m Au	009408
11.18	2.54	100	min. 0.127 μ m Au	009007
11.18	3.18	100	min. 0.127 μ m Au	009027
11.18	2.54	100	min. 0.8 μ m Au	009047
11.18	3.18	100	min. 0.8 μ m Au	009067
11.18	2.54	85	min. 0.127 μ m Au	009508
11.18	3.18	85	min. 0.127 μ m Au	009708
11.18	2.54	85	min. 0.8 μ m Au	009608
11.18	3.18	85	min. 0.8 μ m Au	009808
16.69	2.54	100	min. 0.127 μ m Au	009008
16.69	3.18	100	min. 0.127 μ m Au	009028
16.69	2.54	100	min. 0.8 μ m Au	009048
16.69	3.18	100	min. 0.8 μ m Au	009068

PCI Express - Right Angle Connectors

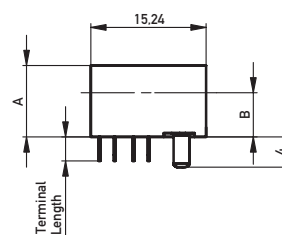
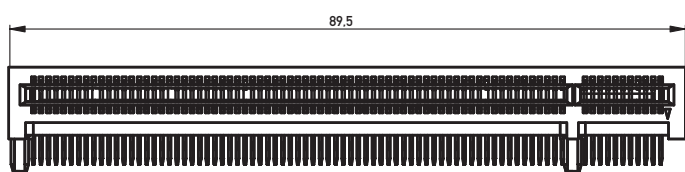
X16 LINK WIDTH, 164 PIN

PRODUCT SPECIFICATION



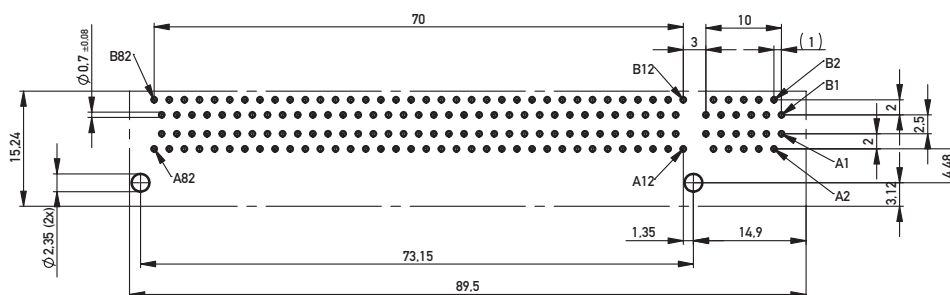
- Solder termination
- 85 Ohm and 100 Ohm versions
- The layout is arranged in a 4-row format with 1 mm staggered pitch
- Plastic cover protects connector from dust and debris
- Two locator pegs with interference fit to pcb for reliable processing
- Tray packaging for automatic assembly

DIMENSIONAL DRAWINGS



16.69	20.30
11.18	14.70
5.84	9.40
Assembly Stack Height	A

Recommended Layout



PCI Express - Right Angle Connectors

X16 LINK WIDTH, 164 PIN

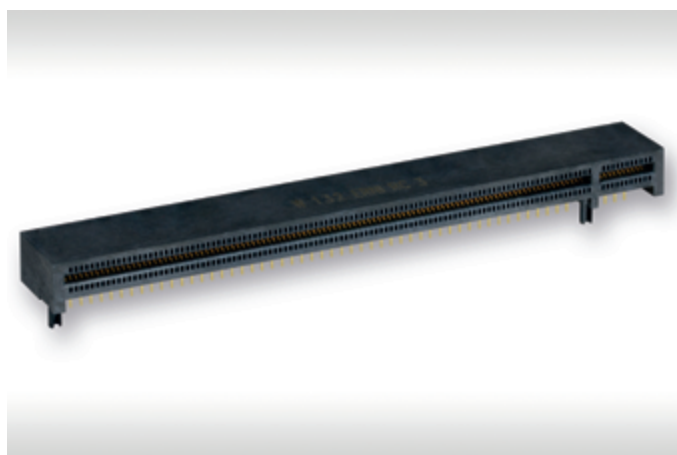
ORDERING INFORMATION

Assembly Stack Height (mm)	Terminal Length (mm)	Impedance (Ω)	Contact Plating	Part Number
5.84	2.54	100	min. 0.127 μ m Au	009009
5.84	3.18	100	min. 0.127 μ m Au	009029
5.84	2.54	100	min. 0.8 μ m Au	009049
5.84	3.18	100	min. 0.8 μ m Au	009069
5.84	2.54	85	min. 0.127 μ m Au	009116
5.84	3.18	85	min. 0.127 μ m Au	009316
5.84	2.54	85	min. 0.8 μ m Au	009216
5.84	3.18	85	min. 0.8 μ m Au	009416
11.18	2.54	100	min. 0.127 μ m Au	009010
11.18	3.18	100	min. 0.127 μ m Au	009030
11.18	2.54	100	min. 0.8 μ m Au	009012
11.18	3.18	100	min. 0.8 μ m Au	009070
11.18	2.54	85	min. 0.127 μ m Au	009516
11.18	3.18	85	min. 0.127 μ m Au	009716
11.18	2.54	85	min. 0.8 μ m Au	009616
11.18	3.18	85	min. 0.8 μ m Au	009816
16.69	2.54	100	min. 0.127 μ m Au	009011
16.69	3.18	100	min. 0.127 μ m Au	009031
16.69	2.54	100	min. 0.8 μ m Au	009051
16.69	3.18	100	min. 0.8 μ m Au	009071

PCI Express - Right Angle Connectors

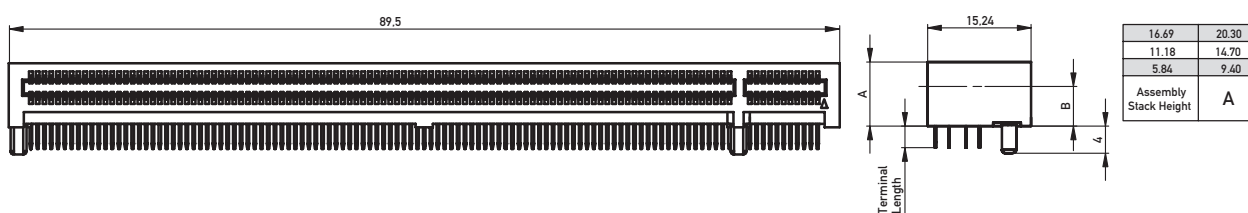
X24 LINK WIDTH, 230 PIN

PRODUCT SPECIFICATION

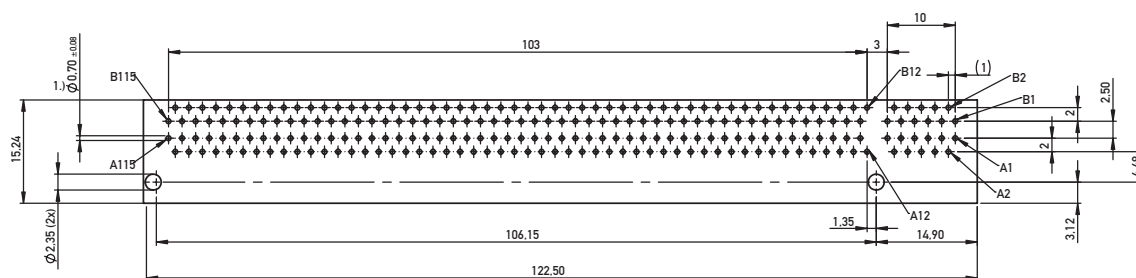


- Solder termination
- 85 Ohm versions
- The layout is arranged in a 4-row format with 1 mm staggered pitch
- Plastic cover protects connector from dust and debris
- Two locator pegs with interference fit to pcb for reliable processing
- Tray packaging for automatic assembly

DIMENSIONAL DRAWINGS



Recommended Layout



PCI Express - Right Angle Connectors

X24 LINK WIDTH, 230 PIN

ORDERING INFORMATION

Assembly Stack Height (mm)	Terminal Length (mm)	Impedance (Ω)	Contact Plating	Part Number
5.84	2.54	85	min. 0.127 μ m Au	009124
5.84	3.18	85	min. 0.127 μ m Au	009324
5.84	2.54	85	min. 0.8 μ m Au	009224
5.84	3.18	85	min. 0.8 μ m Au	009424
11.18	2.54	85	min. 0.127 μ m Au	009524
11.18	3.18	85	min. 0.127 μ m Au	009724
11.18	2.54	85	min. 0.8 μ m Au	009624
11.18	3.18	85	min. 0.8 μ m Au	009824



PCI Express - Right Angle Connectors

PART NUMBER INDEX —

Part Number	Page
009000	7
009001	7
009002	7
009003	9
009004	9
009005	9
009006	11
009007	11
009008	11
009009	13
009010	13
009011	13
009012	13
009020	7
009021	7
009022	7
009023	9
009024	9
009025	9
009026	11
009027	11
009028	11
009029	13
009030	13
009031	13
009040	7

Part Number	Page
009041	7
009042	7
009043	9
009044	9
009045	9
009046	11
009047	11
009048	11
009049	13
009051	13
009060	7
009061	7
009062	7
009063	9
009064	9
009065	9
009066	11
009067	11
009068	11
009069	13
009070	13
009071	13
009101	7
009104	9
009108	11
009116	13



PCI Express - Right Angle Connectors

PART NUMBER INDEX —

Part Number	Page
009124	15
009201	7
009204	9
009208	11
009216	13
009224	15
009301	7
009304	9
009308	11
009316	13
009324	15
009401	7
009404	9
009408	11
009416	13
009424	15
009501	7
009504	9

Part Number	Page
009508	11
009516	13
009524	15
009601	7
009604	9
009608	11
009616	13
009624	15
009701	7
009704	9
009708	11
009716	13
009724	15
009801	7
009804	9
009808	11
009816	13
009824	15

PCI Express - Right Angle Connectors

THE ERNI-GROUP



OUR MANUFACTURING LOCATIONS



ERNI Electronics GmbH & Co. KG

Seestrasse 9
73099 Adelberg
Germany
Tel +49 7166 50-0
Fax +49 7166 50-282
info@erni.com
www.erni.com

Europe South America Africa Japan

ERNI Electronics Inc.

2201 Westwood Ave
Richmond, VA 23230/USA
Tel +1 804 228-4100
Fax +1 804 228-4099
info@erni.us

North America Canada Mexico

ERNI Asia Holding Pte Ltd

23A Serangoon North Avenue 5
#04-11
Singapore 554369
Tel +65 6 555 5885
Fax +65 6 555 5995
info.sg@erni.com

Asia Australia New Zealand

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

ERNI Electronics:

[009724](#) [009608](#) [009604](#) [009504](#) [009308](#) [009224](#) [009208](#) [009067](#) [009064](#) [009062](#) [009048](#) [009044](#) [009042](#)
[009012](#) [009043](#) [009047](#) [009068](#) [009101](#) [009201](#) [009304](#) [009424](#) [009524](#) [009624](#) [009716](#) [009804](#) [009816](#)
[009041](#) [009065](#) [009116](#) [009404](#) [009416](#) [009501](#) [009508](#) [009616](#) [009704](#) [009045](#) [009046](#) [009060](#) [009061](#)
[009070](#) [009104](#) [009108](#) [009204](#) [009301](#) [009316](#) [009324](#) [009401](#) [009408](#) [009801](#) [009808](#) [009063](#) [009066](#)
[009216](#) [009516](#) [009601](#) [009708](#) [009824](#) [009003](#) [009006](#) [009002](#) [009005](#) [009010](#) [009009](#) [009000](#) [009004](#)
[009007](#) [009008](#) [009011](#) [009069](#)