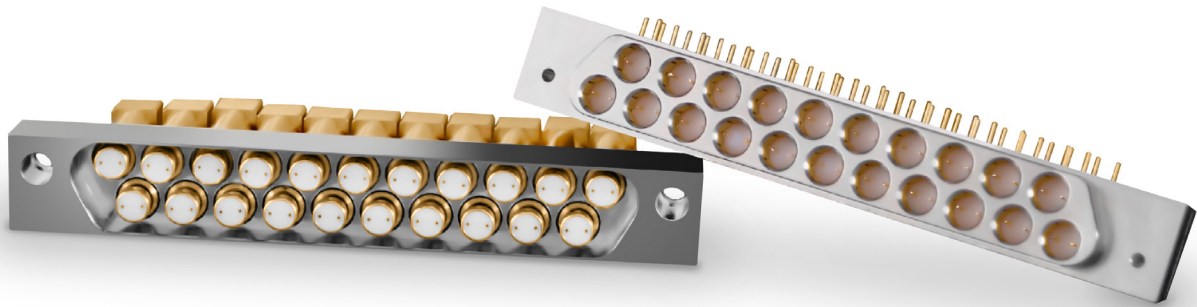


High Speed Backplane Connectors



High Speed Backplane



- Fibre Channel
- Ethernet: 10 Base-T, 100 Base-T, 1000 Base-T
- Firewire: IEEE 1394a and 1394b
- USB, DVII, HDMI and Infiniband

Smiths Interconnect offers a complete line of differential Twinax and Quadrx connectors, contacts and cable assemblies for high speed Ethernet, Firewire, and Fibre Channel applications. Differential pair quadrx and twinax connectors and cable assemblies offer superior performance in high speed matched impedance data-on-demand applications. The signal to signal and signal to shield characteristic impedance is maintained throughout the connector pair. A true twinaxial connector interface ensures signal integrity while minimizing jitter and data rate errors.

Testing Capabilities

Smiths Interconnect Quadrx and Twinax interconnects are characterized for testing eye pattern, jitter, skew, and insertion loss on differential pair 100 Ohm high speed Gigabit Ethernet applications with a wide variety of testing protocols. We utilize the Agilent E5071C 4 port network analyzer to measure the differential pair TDR impedance between Twinax connectors, cable assemblies, and quad cable Ethernet and Fibre Channel interconnect systems ensuring the most accurate acquired signal for high speed communications testing. The E5071C 4 port network analyzer is capable of highly accurate 100 Ohm differential measurements up to 20 GHz and can measure Eye Diagrams up to 16 Gbps.

Technical Characteristics

Specifications

Temperature Rating	-55°C to + 125°C
Corrosion	MIL-STD-202 Method 101, Test Condition B
Shock	MIL-STD-202 Method 213, Test Condition B
Vibration	MIL-STD-202 Method 204, Test Condition B
Thermal Shock	MIL-STD-202 Method 107, Test Condition B
Durability	500 Mate/Unmate cycles/min
Dielectric Withstand Voltage	250 VDC
Insulation Resistance	5.000 megaOhm min
Contact Current Rating	3.0 Amps D.C. max
Bandwidth	Up to 3 GHz
Data Rates	Contacts designed to exceed 6 Gbps; assembly dependent upon type and length of cable used
Differential Pair Cable Impedance	150 Ohm \pm 15 Ohm and 100 Ohm \pm 10 Ohm
Signal to Shield Cable Impedance	75 Ohm \pm 10 Ohm and 50 Ohm \pm 7 Ohm

Material & Finishes

Shells & Inner Contacts	Brass per ASTM-B16, alloy UNS C3600 or BeCu per ASTM-B196, alloy UNS C17200, C17300 or leaded nickel copper, alloy UNS C19500, C19600 Gold plate per MIL-DTL-45204 Type II, Class 1
Insulators	PTFE per ASTM-D1710 or Ultem 1000
Connector Plug/ Receptacle Shells	Aluminum per ASTM-B211/221, 6061-T6 Electroless nickel plate per SAE AMS-C-26074 or Cadmium plate per SAE AMS QQ-P-416
Gasket/Seal	Silicone rubber per A-A-59588

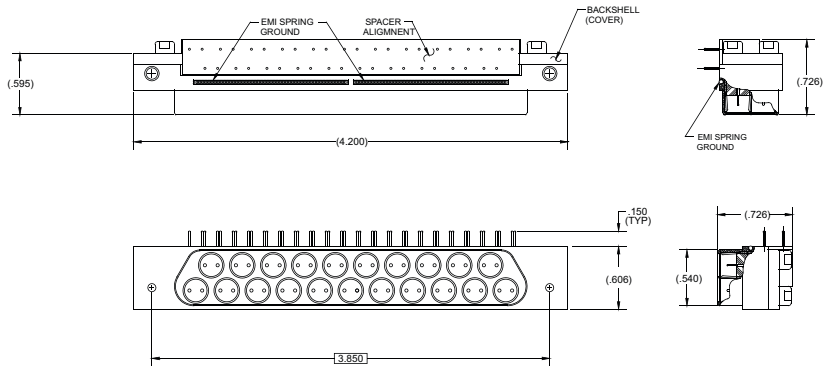
Backplane Connectors

In standard VME cards for low data rate signaling, connectors are widely available to carry non-shielded signaling for the VME bus from the interface via motherboard to daughter card assembly designated as I/O plug-in modules. The industry standard defines these connectors typically as P1 and P3 connectors.

Smiths Interconnect has taken the standard housing configuration of the P1 & P3 mounting dimensions and incorporates true differential pair contacts within the P1 & P3 dimensional constraints. Data sampling rates exceeding 2 Gbps can be driven via matched impedance differential pair interconnections for board-to-board high speed data transfer, as well as blind mate I/O plug in modular applications.

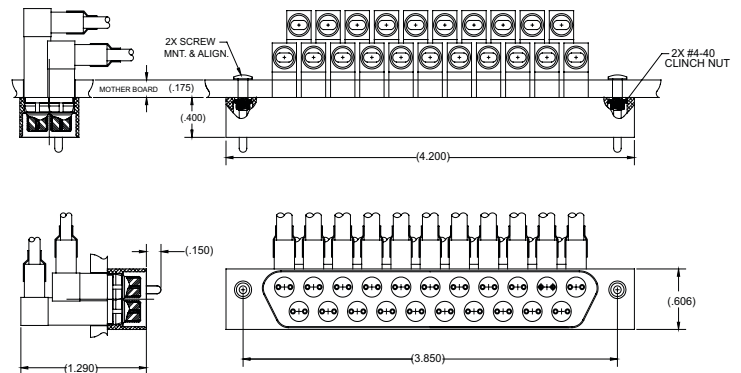
Smiths Interconnect's P1 connector housing contains 21 position true differential pair blind mate contacts allowing board designers to carry high density differential pair signals from the LRU via motherboard to daughter-card plug in modules with a single connector P1 type housing. This allows for the use of standard VME bus architecture cages for high speed fibre channel connection.

Right Angle Twinax Receptacle 21 Position (Blind Mate PCB Interconnects) 150 Ohm



Part Number
029917-1015
Mates with P/N: 029912-1015

Right Angle Twinax Plug Housing 21 Position (Blind Mate PCB Interconnects) 150 Ohm

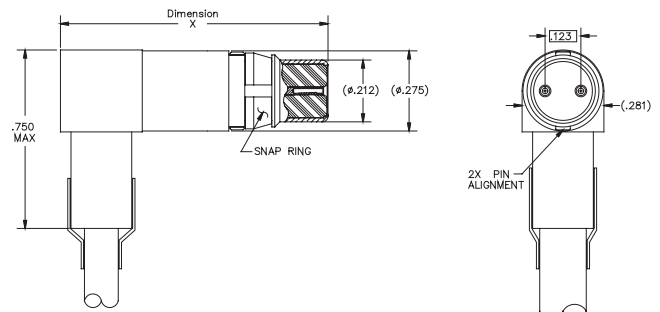


Part Number
029912-1015

Size 5 Right Angle Twinax Cable Pin Contact 150 Ohm

Part Number	Cable Type	Cable	Contacts	Dim X
019912-1103	Differential Twinax	540-1099-000	Near Row	0.905
019912-1305	Differential Twinax	540-1114-000	Near Row	0.905
019912-1102	Differential Twinax	540-1099-000	Far Row	1.230
019912-1304	Differential Twinax	540-1114-000	Far Row	1.230

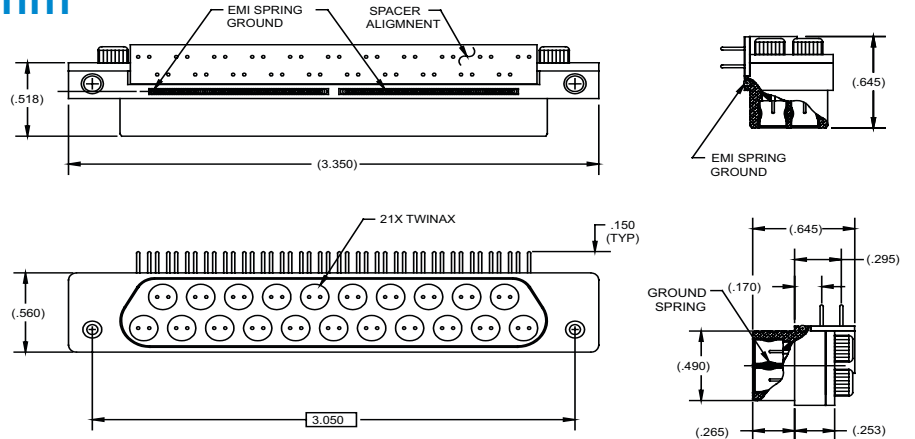
For use in P/N 029912-1015



Backplane Connectors

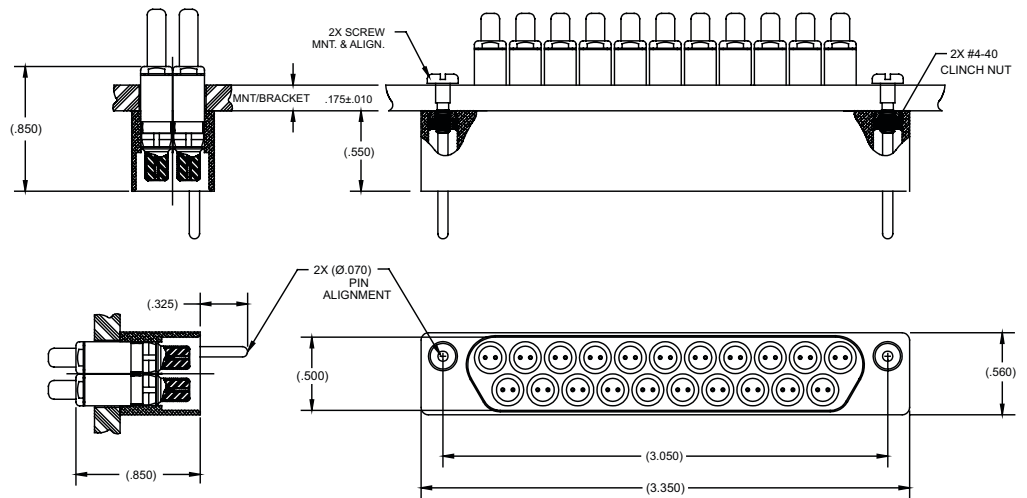
Right Angle Twinax Receptacle 21 Position (Blind Mate PCB Interconnects) 100 Ohm

Part Number
010017-1000



Straight Twinax Plug Housing 21 Position (Blind Mate PCB Interconnects) 100 Ohm

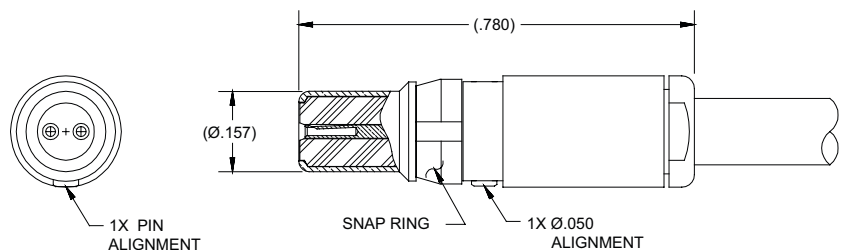
Part Number
010034-0000



Size 10 Twinax Pin Contact 100 Ohm

Part Number	Cable Type	Cable
018834-0000	Differential Twinax	540-1153-000
018834-0001	Flexible Twinax	540-1161-000

For use in P/N 010034-0000



* To remove Size 10 Twinax Contacts use removal tool P/N SIR-017

Cable Assembly

How to Order



1 Connector #1

2 Cable Group #	Flexible Twinax	Differential Twinax	Differential Quadrax
	1 = M17/176-00002 2 = 540-1086-000 3 = 540-1161-000	6 = 540-1099-000 7 = 540-1114-000 8 = 540-1153-000 3 4 = 540-1167-000 3 8 = 540-1210-000 3 9 = 540-1236-000	9 = 540-1138-000 1 0 = 540-1143-000 3 6 = 540-1183-000 3 7 = 540-1235-000 4 2 = 540-1209-000 4 1 = 540-1229-000
3 Connector #2	OL for Open Lead		

4 Cable Length in Inches (XXX)

Flexible Twinax Cables				
Cable Group	Cable Designation	Impedance (Ohms)	Jacket	Conductor (DIA)
1	M17/176-00002	77	0.129"	0.024"
2	540-1086-000	98	0.143"	0.019"
3	540-1161-000	100	0.130"	0.024"
Differential Pair Twinax Cables				
6	540-1099-000	Differential: 150 Sig. to Shield: 75	0.097" x 0.160"	0.014" Stranded
7	540-1114-000	Differential: 150 Sig. to Shield: 75	0.138" x 0.224"	0.020" Solid
8	540-1153-000	Differential: 100 Sig. to Shield: 50	0.085" x 0.130"	0.019" Stranded
34	540-1167-000	Differential: 100 Sig. to Shield: 50	0.117" x 0.160"	0.0233" Stranded
38	540-1210-000	Differential: 100 Sig. to Shield: 50	0.132"	0.019"
39	540-1236-000	Differential: 100 Sig. to Shield: 75	0.191"	0.019"
Differential Quadrax Cables				
9	540-1138-000	Differential: 150 Sig. to Shield: 75	0.290"	0.032"
10	540-1143-000	Differential: 150 Sig. to Shield: 75	0.190"	0.020"
36	540-1183-000	Differential: 100 Sig. to Shield: 50	0.160"	0.024"
37	540-1235-000	Differential: 100 Sig. to Shield: 50	0.108"	0.012"
40	540-1209-000	Differential: 100 Sig. to Shield: 50	0.190"	0.029"
41	540-1229-000	Differential: 100 Sig. to Shield: 50	0.137"	0.019"

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