R-JACK™ SOLUTION

Overview

In today's world of high-speed communications, Ethernet has become the platform for all voice, video and data services. R-JACK™ Ethernet Interconnect Solution, OCC's ruggedized family of RJ-45 receptacles, plugs, backshells and accessories, empowers customers to extend Ethernet platforms into harsh military and industrial operating environments.

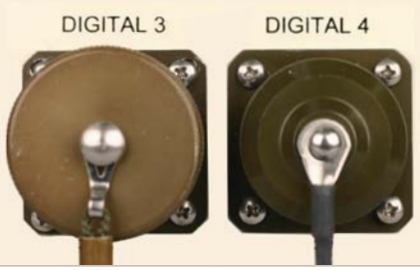
The R-JACK™ Ethernet Interconnect Solution provides an efficient, comprehensive and affordable solution to Ethernet connectivity in harsh and environmentally challenged applications. R-JACK™ Ethernet components feature a smaller mechanical footprint (receptacles, dust caps, backshells), occupying less panel space, allowing higher density. R-JACK™ Ethernet receptacles feature 100% transversely sealed (IP-68) configurations as a standard product design, preventing dust, water or moisture penetration, with or without dust cap or plug engagement. R-JACK™ Ethernet receptacles offer comprehensive shielding and grounding effectiveness capable of sustaining higher data transmission rates as well as Electro-Magnetic Conductance (EMC) for military applications. Lastly, R-JACK™ Ethernet components feature multiple pre-kitted solutions including gaskets, O-rings, mounting brackets, and hardware, making it easier for customers to procure, install and integrate these components.

Applications

- DATA, VOIP, IPTV in Harsh Environments
- Railways
- Radar Systems
- Industrial Process Control
- Data Acquisition and Control
- Shelters
- Battlefield Communication Systems
- 10/100/1000 BASE-T

R-JACK™ SOLUTION

Features and Benefits

FEATURES		BENEFITS
Conforms to MIL-DTL-83723 and MIL-DTL-38999 mechanical specifications		Smaller profile affords tighter panel density with ample space to remove dust cap, unlike other MIL-DTL-38999 style products (OCC configuration shown on right).
MIL-DTL-38999 form-fits receptacles available		Both MIL-DTL-38999 equivalent jam-nut and flange receptacle versions are available and feature smaller dust cap profiles.
Transversely sealed: standard feature for jam-nut, flange-mount and in-line receptacles		Meets/exceeds IP-68 rating with or without dust covers engaged or when plug is engaged with receptacle.
Common cable strain relief can accommodate both small and large cable diameters, complete with compressive fittings for shielded cable		• Designed to integrate with jam-nut, flange-mount, in-line receptacles and plugs. • Compression nut establishes 10lb. cable strain relief. • Internal conductive compression developed to interoperate with cable braid to form 360° ground plane.
Pre-provisioned mounting hardware, conductive O-rings, gasket options		Mounting hardware options for flange-mount units include: • Screws with “pressed in” pem nuts • Screws with nylon “locking” nuts • Screws with mounting bracket • Self-sealing screws for “sealed” flange-mount options • Nitrile or conductive O-ring, gaskets supplied as standard provision

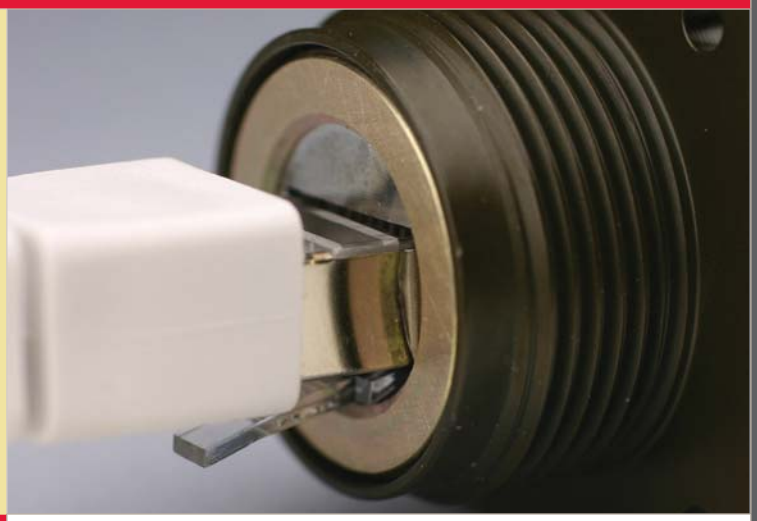
R-JACK™ SOLUTION

EMC Capability – Built for Speed, Performance

Higher data rates require proper grounding and shielding. R-JACK™ plugs, receptacles, and back shells are designed to establish sufficient grounding between shielded cord sets as well as between cord set and chassis ground.

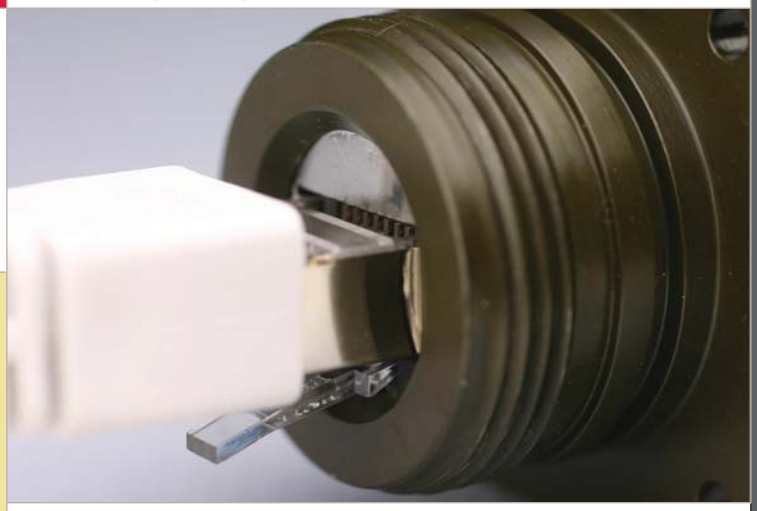
R-JACK™ shielding capabilities also provide EMC/EMI shielding for applications where immunity to electromagnetic interference is critical.

Available in Zinc Nickel, E-Nickel, or stainless steel plated options only.



EMC Shroud (rear view) – conductive surface with shielded cable

FEATURES	BENEFITS
>0.033Ω – Shielded Cable to Cable >0.033Ω – Shielded Cable to Chasis Ground	Ensures grounding between cord sets with shielding on both jacks Ensures chassis ground between receptacle, shielded RJ-45 cord sets
Conductive O-Ring (jam-nut) and gasket (flange-mount) options for receptacles Zinc Nickel or E-Nickel Plating Option	Tested IAW MIL-STD-461F, RS103



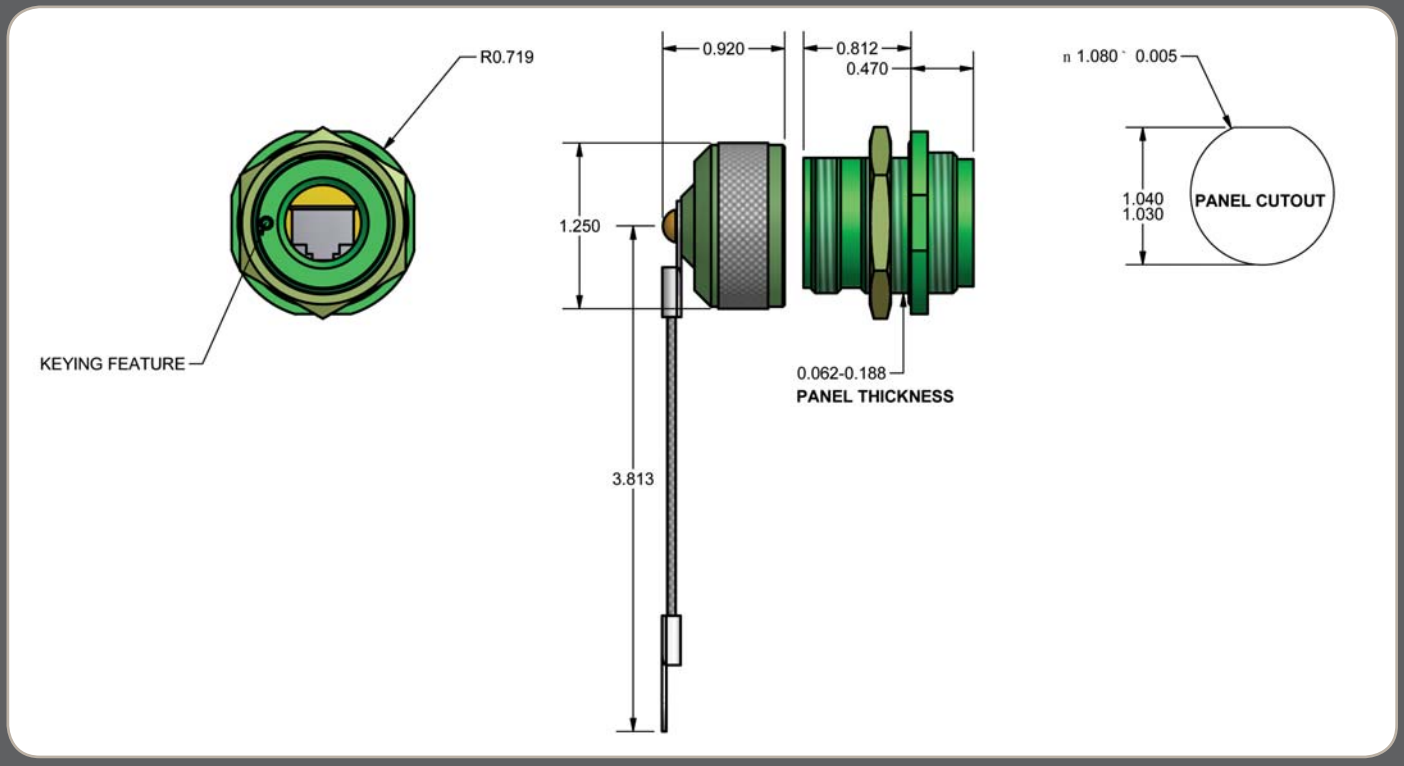
EMC Shroud (front view) – conductive surface with shielded cable and receptacle ground (chassis ground)

R-JACK™ SOLUTION

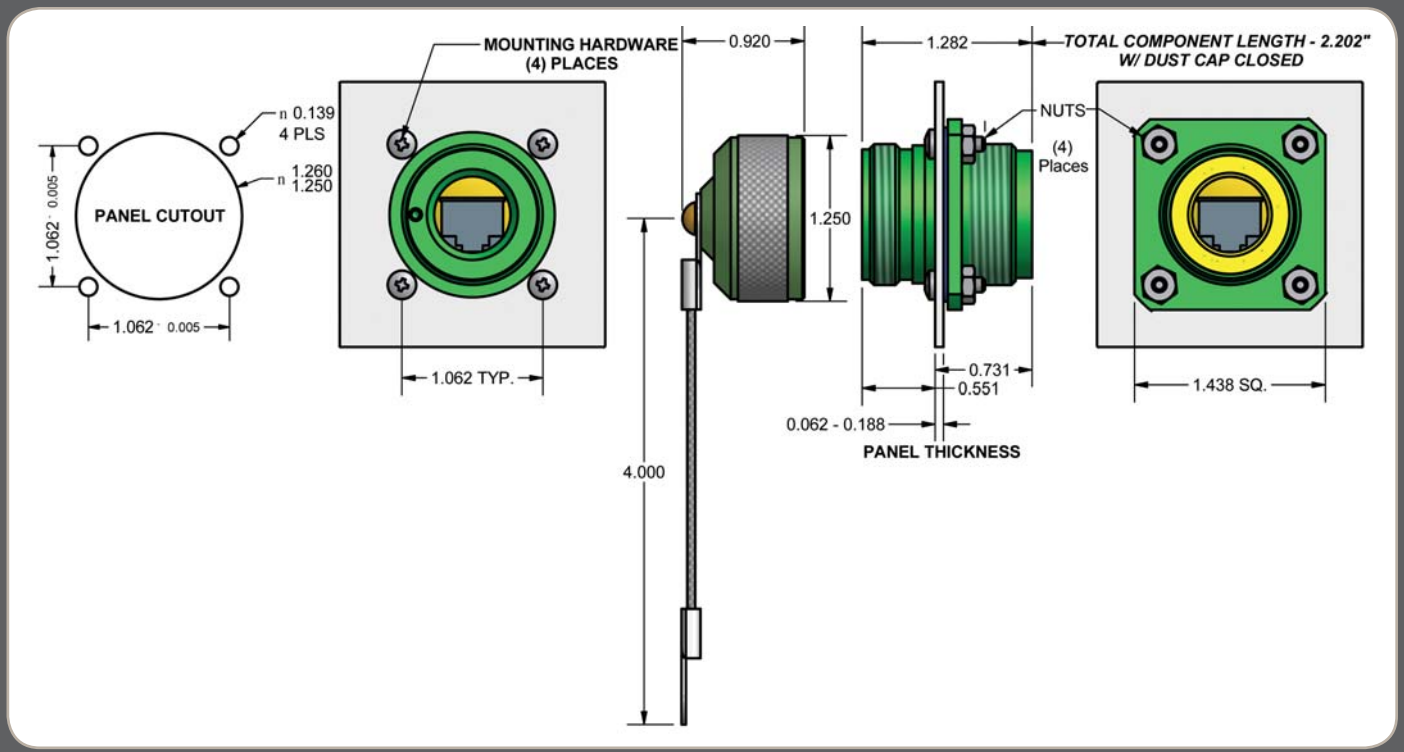
Performance Specifications

SPECIFICATION	PARAMETER	RANGE
Insertion Loss	IEEE 802.3, LX	1000 BASE-T, NXT, FXT
Temperature Cycling	EIA-364-32, 25 Cycles	-45°C to +100°C
Temperature Shock	EIA-364-32, 5 Cycles	-40°C to +100°C
Humidity Resistance	EIA-364-31, 21 Days	43°C, 98% Humidity
Water Submersion	IP-68, IEC-60529	1M Depth, 48 Hours
Dust Test	IP-68, IEC-60529	20mBARS Air Pressure, 8 Hours
Mechanical Shock	EIA-364-27B	100G, 6ms, Half Sine, 6 directions
Vibration	EIA-364-28	Test Condition IV, 4 Hours Per Axis, 12 Hours Total
Matting Durability	EIA-364-09	500 Mate / Demate Cycles
Flammability	Per UL94	Compliant to V0, V1, 10 sec. each
Salt Spray	EIA-364-26	500 Hours
Shell-To-Shell Conductivity (ZiNi Plating Only)	EIA-364-83	1V @ 1.5VDC, 100 Hours
Electromagnetic Shielding Effectiveness	IEEE-STD-299	20kHz, 150kHz, 14MHz, 400MHz, 600MHz, 1GHz, 2GHz, 8GHz, 10GHz, VERT. & HORZ., <-60dB
Hi-Pot High Voltage Test	EN61010-1	600VAC-60Hz, 900uA, Ramp=10sec., (8 channels)

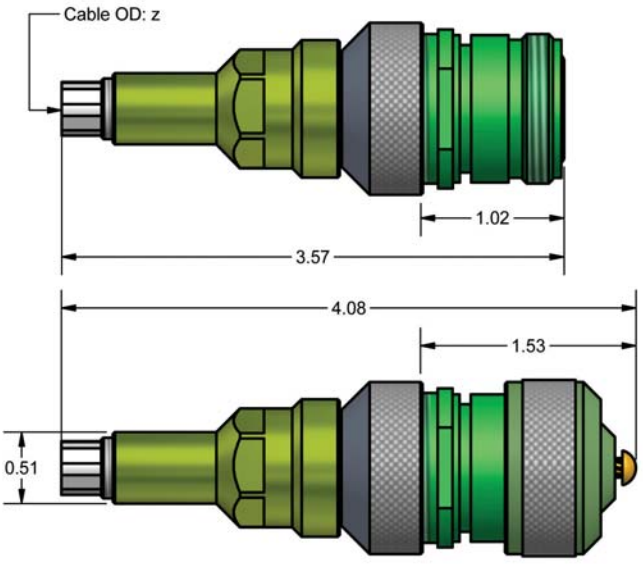
Jam-Nut Receptacle

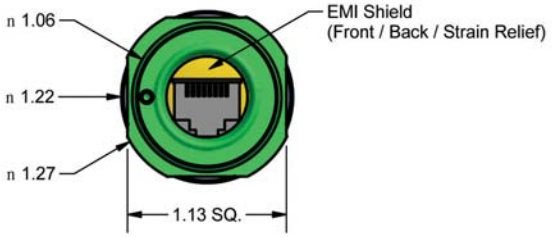


Flange-Mount Receptacle



In-Line Receptacle





ECR P w 1 x y U A z

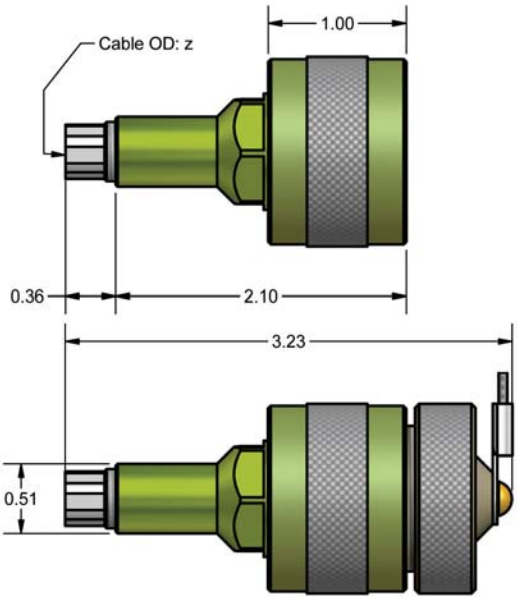
Dust Cap — w

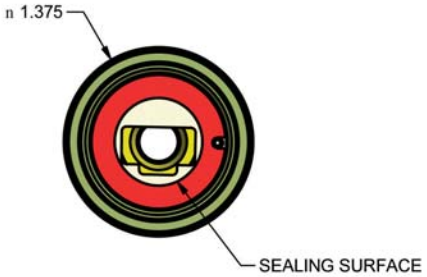
Plating — x

Sealed — y

Cable OD — z

Plug





ECR A w 2 x y U A z

Dust Cap — w

Material / Plating — x

Sealed — y

Cable OD — z

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Ordering Information

Part Numbering	ECR	A	0	1	0	2	U	A	A	

CONFIGURATION TYPE
A – Plug (compatible with D, F, G, J, K, H, P, & S style receptacles)
B – Receptacle, Jam-Nut, MIL-DTL-38999 Style, Rear Mnt.
C – Receptacle, Flange-Mnt., MIL-DTL-38999 Style Front/Rear Mnt.
D – Receptacle, Flange-Mnt., Front/Rear Mnt., No Mnt. Hardware
F – Receptacle, Flange-Mnt., Front Mnt., w/Pem Nuts & HDW
G – Receptacle, Flange-Mnt., Front/Rear Mnt., w/Mnt. Screws/L. Nuts
H – Receptacle, Flange-Mnt., Mnt. Bracket & Screws
J – Receptacle, Jam-Nut, FITS D38999/24 CUT-OUT, M83723/60
K – Receptacle, Jam-Nut, Small Profile, Rear Mnt.
P – Receptacle, In-line
S – Receptacle, Jam-Nut, Special Mnt.
U – Accessories (Backshell, Dust Caps)

DUST CAP
0 – None
1 – Female, Metal, Collar & Lanyard ECRJ Jam-Nut Recpt. only
2 – Female, Metal, Collar & Lanyard for Jam-Nut Recpt.
3 – Female, Metal, Eyelet & Lanyard for Flange-Mnt. Recpt.
4 – Male, Metal, Crimp Sleeve & Lanyard for Plug
5 – Female, Metal, Crimp Sleeve & Lanyard for In-Line Recpt.
6 – Female, Metal, Eyelet & Lanyard for MIL-DTL-38999 Flange-Mnt. Recpt.
7 – Female, Metal, Collar & Lanyard for MIL-DTL-38999 Jam-Nut Recept.

EMC SHIELDING
0 – Not Applicable (use for Dust Cover, Backshell or Plug)
1 – EMC Shielded (includes Conductive Gasketing)[a]
2 – No EMC Shielding

INSERT SEALING
0 – Sealed Transversely (IP68 Uncapped/Receptacle Mated to Plug)
1 – Not sealed Transversely[b] (IP68 Dust Caps Mated to Plugs/Receptacle Only)

NOT USED

STRAIN RELIEF (CABLE O.D.)
0 – Not Applicable
A – Straight Backshell, 0.190"–0.270" O.D.
B – Straight Backshell, 0.271"–0.330" O.D.
C – 90° Backshell, 0.190"–0.315" O.D.
D – 45° Backshell, 0.190"–0.315" O.D.
E – Strain Relief Clamp 0.190"–0.286" O.D.

CORDSET LENGTH
(Receptacle termination only)
0 – None (female receptacle)
A – 1 ft.
B – 2 ft.
C – 3 ft.
D – 5 ft.

FINISH
1 – Anodized[1]
2 – E-Nickel[2]
3 – Zinc Nickel[2]
4 – 303 Stainless[2]
5 – 316 stainless[2]
6 – Brass
7 – CAD[2]

[1] *RoHS compliant. Check with OCC Inside Sales Representative for details.*

[2] *Use this type of plating/material for EMI/EMC applications*

NOTE:

[a] EMC configurations include: ECRA, ECRD, ECRE, ECRG, ECRH, ECRJ, ECRK; Dust Caps, Backshells plated with Zinc Nickel

[b] Use 1 for A or U Configuration types

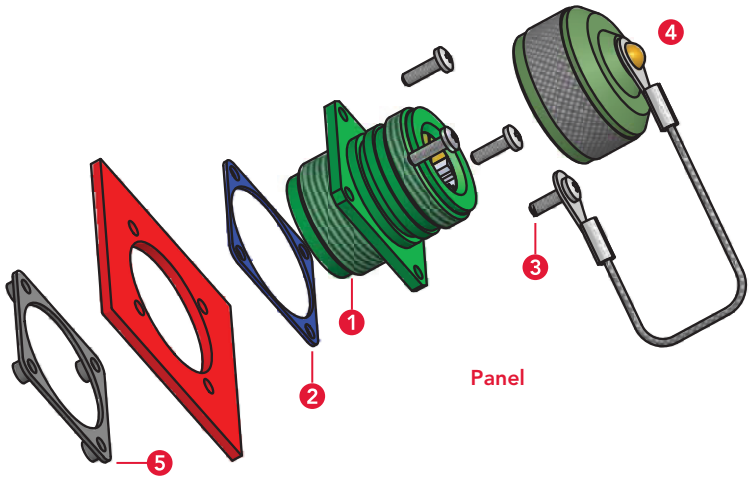
Ordering Information

Offering Fully Kitted Solutions

No longer do you have to order multiple parts to install your RJ-45 solution.

Notes:

- Kit example includes receptacle, dust cover, back plate, hardware and gasket.
- For receptacle configurations, hardware standard screws provided are 4-40 x 3/8".
- Sealed Version – self-sealing screws are provided.
- Non-Sealed Version – regular screws are provided.



1. Flange-Mount Receptacle
2. EMI GASKET
3. 4-40 x 3/8" Long Pan Head Screws, Stainless
4. Dust Cap
5. Mounting Flange With Self-Locking Nuts

Example: Flange-mount receptacle with dust cap, EMI, non-sealed

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