

# **MRJR Series Rugged RJ45 Connectors**

### RUGGED RJ45 CONNECTORS FOR HARSH ENVIRONMENT APPLICATION, GENERATION 2

Amphenol's MRJR series RJ45 Connectors serve many markets and applications across the globe including Automotive, Communications, Industrial, Medical and Military.

MRJR series is a line of Generation 2 ruggedized RJ45 connectors with die cast housings and IP67 sealing, designed for Harsh Environment applications. MRJR provides a standard RJ45 interface. Protection is provided for IP67 applications per IEC 60529 specification. Data rates conform to 10BaseT or 100BaseT Ethernet.

- Cat6A Harsh RJ45 available, both in Right Angle and Vertical
- IP67 environmental sealing protects against water and dust
- Die cast metal housings protect against mechanical damage
- Wide variety of mounting and termination options
- Operating temperature range from -40°C to +105°C for extreme conditions
- RoHS compliant to meet environmental standards



#### **FEATURES**

- Internal and external seals made with flexible silicone rubber
- Die cast metal housings
- Standard RJ interface where Ethernet/IP Protocol is used
- Mates with existing standard connectors
- Similar in size compared to standard equivalents
- Wide variety of mounting and termination options
- RoHS compliant

#### **BENEFITS**

- Excellent sealing to IP67 and higher protection over wide temperature range
- Protects equipment from water and dust incursion
- Mechanically rugged and stable to protect against shock, vibration and impact
- Prevents distortion
- Can be used in wide variety of applications where standard RJs would be used
- Suitable for a wide variety of mating connectors which are readily available
- Able to replace existing standard parts with little to no changes
- Replace virtually any existing standard connector using standard footprints and mounting hardware
- Meets environmental, health and safety requirements

### **TECHNICAL INFORMATION**

#### **MATERIAL**

- External Shell: Die Cast Zinc, Nickel Plated
- Front Insert: Clear Polucarbonate, UL94V-0
- Rear Inserts: High Temperature Resistant Nylon, Glass Reinforced, UL94V-0, Black
- Contacts: Phosphor Bronze, Plated with 1.27um (50u") min Gold over 1.27um (50u") min Nickel on the Mating Area and 2.54um (100u") min Matte Tin over Nickel on the Contact Tails
- Mating Area Ground Tab: Nickel Plated Copper Alloy
- Panel Gasket: Conductive Silicone Rubber, Black
- LED's: Epoxy Lens, Tin Plated Steel Tails
- Rear Screws: Nickel Plated Steel
- Internal O-ring: Silicone Rubber, Beige
- Printed Circuit Board: FR4 Fibreglass, Lead Free
- Additional Connector: UL Recognized Component
- Ferrite: Nickel Zinc Soft Ferrite Ceramic

#### **ELECTRICAL PERFORMANCE**

- Current Rating: 1.5A max per Contact (delta T ≤ 30°C)
- Contact Resistance: 20mΩ max
- Insulation Resistance: 500mΩ min
- Dielectric Withstanding Voltage: 1000 VAC rms (between adjacent contacts), 1500 VAC rms (contacts to ground)
- LED Characteristics: Forward DC Current 25mA max, Forward Voltage 2.5V max @2mA

#### **MECHANICAL PERFORMANCE**

- UL Recognition: Level DUXR2, File Number E135615
- Water & Dust Protection Level: Code IP67 per IEC 60529
- Operating Temperature Range: -40°C to +105°C
- Durability: Per EIA 364-09, 2500 Mating Cycles
- Vibration: Per EIA 364-28 Random Condition II (10g, 10-500Hz, 6 Hours), No Discontinuity > 1μs
- Shock: Per EIA 364–27 Test Condition A (11 ms, 50g, 1/2 Sine), No Discontinuity > 1μs
- Insertion & Withdrawal Force: Per EIA-364-13, 20N (4.5lbf) max (Latch Disengaged)

#### **SPECIFICATION**

 Amphenol Product Specification: TIA-1096-A, IEC 60603-7, IEC 60529

#### **APPROVALS AND CERTIFICATIONS**

RoHS

#### **PACKAGING**

Tray

#### **ENVIRONMENTAL**

- Temperature Life w/ Load: Per EIA-364-17, 1.5 A, 70°C, 500 Hours
- Temperature Life w/o Load: Per EIA-364-17, 105°C, 1000 Hours
- Thermal Shock: Per EIA-364-32, -55°C to +105°C, 25 Cycles
- Humidity: Per EIA 364-31, 21 Cycles, 504 Hrs, 25°C to 65°C, 90-95%RH, with −10°C Cold Shock
- Humidity: Per EIA-364-31, Steady State, 21 Days, 50°C, 90-95%RH
- Mixed Flowing Gas: Per EIA 364-65 Class IIA (Cl2, NO2, H2S & SO2), 14 Day Exposure
- Salt Spray: Per EIA 364-26, 250 Hours, 5% Salt, 35°C
- Solvent Resistance: Isopropyl Alcohol & 5% Sodium Hydroxide Solution, 24 Hrs Each
- LED Luminous Intensity: 0.5mCd min at 2mA Forward Current
- Solderability: Per EIA-364-52, 95% Coverage after Category 2 Steam Aging

#### TARGET MARKETS/APPLICATIONS



Transportation



Datacom Telecom



Energy Industrial



Medical



Military

## **PART NUMBER SELECTOR**

MRJ	IR —	Х	Х	Х	Х	Х		X	-	-	Х				Unique Special Co	de				
													No	Digit	Part defined by pr	evious 10 digits				
													11	ю 9	Unique special fea	ture				
													Other Featur	es						
							rt (vertical has throu; t angle has threaded													
													F	1 port, vertical connector, threaded lug mounting						
														Tail Length & Thread	Options					
													0		64mm [.100"] Tail Len read	gth, #4-40 UNC				
													В		31mm [.150"] Tail Leng read	th, #4-40 UNC				
													М		54mm [.100"] Tail Len read	gth, M3 x 0.5				
													Р	3.8	31mm [.150"] Tail Leng	th, M3 x 0.5 Thr				
															LED options					
													0	No L	.EDs	eft, Yellow right left, Green right				
													1	Gree	en left, Yellow right					
													4	Yello	ow left, Green right					
													5	Gree	en left, Green right					
													Α	Bi-c	olour Green/Yellow L	eft & Right				
													N	umbe	r of Contacts					
										4	4 cc	ontacts								
													6	6 co	ontacts					
													8	8 co	ontacts					
													А	10 c	ontacts					
										Ţ	erminatio	n Style	2							
						3	R	Right Angle												
	Modular Jack Type							4	٧	Vertical										
	N	RJ11, 6 Position						5	R	Right Angle on PCB with Right Angle Cable Header										
3	1	ition	Position with EMI Ferrite Filtering						R	Right Angle on PCB with Right Angle RJ45 Modular Jack										
3	RJ11, 6 Pos		ith EN	<b>ИI F</b> eri	rite Filt	ering			I 5	Right Angle on PCB with Vertical RJ45 Modular Jack										
	RJ11, 6 Pos	ition w		Al Feri	rite Filt	ering	+ :	8	К	U				Right Angle on PCB with Terminal Blocks						
4	RJ11, 6 Pos RJ11, 6 Pos RJ45, 8 or RJ45, 8 or	ition w 10 Posi	tion					9	R	Right										
4 5	RJ11, 6 Pos RJ11, 6 Pos RJ45, 8 or RJ45, 8 or Filtering	ition w 10 Posi 10 Posi	tion tion v	vith EI	MI Ferr	ite		9 A	R	Right Right	Angl	e on PC	B with Ho	les for	Wiring (Style 5 PCB)					
4 5	RJ11, 6 Pos RJ11, 6 Pos RJ45, 8 or RJ45, 8 or	ition w 10 Posi 10 Posi 10 Posi	tion tion v tion v	vith EI	MI Ferr	ite		9	R R	Right Right Right	: Angl	e on PC e on PC	B with Ho B with Ve	les for tical (						