TURCE EtherNet[™] Physical Media Connectivity

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System Description

Ethernet is the most popular protocol used to connect office computers and peripherals today. It is increasingly finding its way into other applications, and is rapidly becoming the network of choice for higher level industrial control applications. Ethernet is primarily used to connect PLCs, computers, HMI displays and other high level components.

The term "Ethernet" actually refers to the lower level communication structure. Various different versions, or implementations, of Ethernet are available, such as Ethernet/IP™ and Modbus-TCP. It is important to note that while all of these different specifications use the same physical communication method and can operate on the same cable simultaneously, they cannot necessarily communicate with each other. For example, Modbus-TCP devices cannot communicate with Ethernet/IP devices. This is because the messages and communication protocol have been defined differently for these systems, even though the physical electrical structure is the same. Think of it as two people who speak different languages; they speak by moving air with their mouths, but the rules of the languages are different.

TURCK's BL67 Ethernet gateways provide a convenient way to connect industrial I/O devices directly to the Ethernet system, expediting monitoring and troubleshooting for the overall control scheme.

Typical System Configuration

Basic Parts List

A typical Ethernet system consists of the following parts:

- A Controller
 C Ethernet I/O modules
 E Power supply
- B Switches D Ethernet cable

Ethernet I/O modules act as clients on a network. A server device is needed to retrieve data from and post data to the client. This is analogous to an office network, where the client PC on a user's desk may actively connect with multiple servers to access information in different areas of the enterprise. **TURCK** Ethernet stations are designed to be fully compatible with established Ethernet standards for industrial use.

Cordsets

TURCK offers a complete line of molded Ethernet cordsets to facilitate network installation, resulting in a faster start-up and fewer wiring errors. Cables are available with stranded or solid-core conductors, with or without shielding.

Most **TURCK** Ethernet equipment uses the 4 or 8-pin (M12) *eurofast* [®] connector specifications. These connectors provide a tough, rugged seal, and are IP 67 rated. In some cases (mainly in the control cabinet) a traditional RJ45 Ethernet connector needs to be used. **TURCK** provides RJ45 cordsets, as well as a variety of devices made to convert between RJ45 and *eurofast* connectors.

TURCK cordsets for the Ethernet system are available in standard lengths. Please contact your local sales representative to order custom lengths.

Addressing

Industrial Ethernet stations use the IP addressing scheme. An address defined by this scheme consists of four byte values usually displayed in decimal form, for example, 192.168.1.254. Different classifications of networks require different portions of this address to be constant for all devices on the network (referred to as a "subnet"). This means that the number of stations allowed on a particular network varies depending on what class of subnet is being used. If the first three bytes of the IP address are constant (which is common), then the remaining byte may be addressed between 2 and 254, resulting in 253 possible addresses.

Maximum Ratings

Ethernet allows different maximum cable lengths depending on the type of cable being used. Normally an Ethernet segment may be as long as 100 m, where 90 m must be solid core cable and the remaining 10 m can be stranded patch cords.

FURCE EtherNet™ Physical Media Connectivity TURCK **RJ Network Cordsets Part Number Key** Industrial W | RJ45 | E | S M F IP67 44x *M **Connector Configuration Length in Meters** (blank) = Straight Connector W= Right Angle Connector Network **Connection Style** = Ethernet (4-pin) RJ45 = RJ45 Connector, 8 pins - 8 Connections = Ethernet (8-pin) RJ11 = RJ11 Connector, 6 pins - 4 Connections RJ25 = RJ25 Connector, 6 pins - 6 Connections Housing **Right Angle Connection Style** (Blank) = IP20 RJ45 E = standards for external tab. Tab is on the IP67 = IP67 RJ45 outside away from the cable I = Stands for Internal tab. The tab is to the inside. Towards the cable. (Blank) = Male = Female Shielding Material (blank) = Unshielded (blank) = Plastic (IP67) S = Shielded M = Metal (IP67) eurofast Cordset Part Number Key Part Number Keys are to assist in IDENTIFICATION ONLY. Consult factory for catalog items not identified. R S C D ٧ 44x M12x1 (eurofast) Length in Meters (*) Consult factory for other lengths. R = StraightW = Right Angle Cable Type (x) 44 = Ethernet (4-pin) Gender 84 = Ethernet (8-pin)K = Female Connector, Female Threads S = Male Connector, Male Threads **Coupling Nut Material Plug Body** (Blank) = Nickel Plated Brass K = NylonC = Large Plug Body U = PVDFG = Robust Large Plug Body V = Stainless Steel S = Shielded to Coupling Nut T = Small Plug Body **Keying Options** (Blank) = Standard Key D = D-coding Key W = Reverse Key eurofast Receptacle Part Number Key F S F ۷ 44x *M M12x1 (eurofast) Length in Meters (*) Consult factory for other lengths. Cable Type (x) Gender 44 = Ethernet (4-pin) K = Female Connector, Female Threads 84 = Ethernet (8-pin) S = Male Connector, Male Threads **Keying Options Housing Style** (Blank) = Standard Key (Blank) = Front Mount D = D-coding Key F = StandardW = Reverse KeyFD = Standard Back Panel Mount S = Shielded to Receptacle Housing **Coupling Nut Material** SDE = Shielded Back Panel Mount, Large Body (Blank) = Nickel Plated Brass

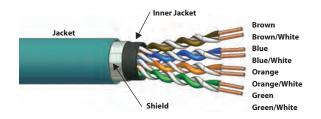
V = Stainless Steel

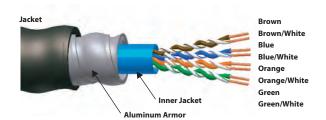
Notes:

Ethernet, Cable Specifications, 8-wire



- Cable that Meets the Requirements of TIA/EIA568-C Category 5e Cable for 10 and 100 Base-T Ethernet
- Cable is UL Rated for Sunlight and Oil Resistant





Maximum 100 meters of cable of which:

- 90 meters Horizontal Cable (SOLID 842 or 843)
- 2 x 5 meters Patch Cables (STRANDED 840 or 841)
- Direct Connect 30 M STRANDED

		Da	ta Pair	Outer Jacket	Shields	Bulk Cable
Туре	Approvals	AWG Color Code	DCR (/1000 feet) Insulation	Material Color Nominal O.D.	Туре	Part Number / Weight/300 M
840 75°C 300 Volts	NEC CMR (ETL) CEC C (ETL)	8/24 AWG Stranded	28.6 Ohms PE	PVC Teal 6.6 mm (.256 in)	None	RB51460-*M 39 lbs. flexlife *††
841 75°C 300 Volts	NEC CMR (ETL) CEC C (ETL)	8/24 AWG Stranded	28.6 Ohms PE	PVC Teal 7.5 mm (.286 in)	Foil/Braid	RB51461-*M 50 lbs. flexlife ††
842 75°C 100 Volts	NEC CMR (ETL) CEC C (ETL)	8/24 AWG Solid	28.6 Ohms PE	PVC Teal 6.2 mm (.231 in)	None	RB51462-*M 39 lbs.
843 75°C 300 Volts	NEC CMR (ETL) CEC C (ETL)	8/24 AWG Solid	28.6 Ohms PE	PVC Teal 7.3 mm (.286 in)	Foil/Braid	RB51463-*M 50 lbs.
845 50°C 125 Volts	TSB-36 ISO/IEC 11801	8/26 AWG Stranded	37.3 Ohms PE	TPU Teal 6.3 mm (.248 in)	Foil/Braid	RB51305-*M 54 lbs. flexlife ⁺⁺⁺ Halogen Free
849A AWM 444 80°C 300 Volts	NEC CMG CEC HL CMG	8/24 AWG Solid	28.6 Ohms PO	PVC Black 14.1 mm (.530 in)	Foil/Braid Armor	RB51100-*M 159 lbs. armorfast [*]
8460 80°C 300 Volts	RoHS	8/24 AWG Standard	24.0 Ohms PE	TPE Teal 7.9 mm (.310 in)	None	RB51772-*M flexlife ^{†††}

- * Indicates length in meters.
 - Standard spool lengths are 30, 75, 100, 150, 200, 225, 300 meters. Consult factory for other lengths.
- 1 million cycles at 1.5" bend radius.
- +++ 2 million cycles at 2.5" bend radius.

Ethernet, (M12x1) eurofast°, RJ45, Cable/Cordset Selection Matrix - Unshielded

	eurofast			
L	Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
	1	2 RKC	3	4
	RSC	KKU	FSFD	FKFD
	RSC 84x-*M	RKC 84x-*M	FSFD 84x-*M	FKFD 84x-*M
Bare				
Pin (Male)	RSC RSC 84x-*M	RSC RKC 84x-*M	RSC FSFD 84x-*M	RSC FKFD 84x-*M
Socket (Female)		RKC RKC 84x-*M	RKC FSFD 84x-*M	RKC FKFD 84x-*M
R145 Plug			RJ45 FSFD 84x-*M	RJ45 FKFD 84x-*M
1,043				
WRJ45E			WRJ45E FSFD 84x-*M	WRJ45E FKFD 84x-*M
8 RJ45MIP67 Plug			RJ45MIP67 FSFD 84x-*M	RJ45MIP67 FKFD 84x-*M
RJ45 IP67 Plug			RJ45IP67 FSFD 84x-*M	RJ45IP67 FKFD 84x-*M
RJ451P67				

See pages K10 - K11 for dimensional drawings.

eurofast	Pinouts	eurofast
Male 7 6 7 6 7 8 2 3	1. White/Blue 2. White/Brown 3. Brown 4. Orange 5. White/Green 6. White/Orange 7. Blue 8. Green	Female 5 6 7 7 8 1 1 2 8 1

Standard Pinout	RJ45 Plug	(CR) Pinout
1. White/Orange 2. Orange 3. White/Green 4. Blue 5. White/Blue 6. Green 7. White/Brown 8. Brown	Male 12345678	1. White/Green 2. Green 3. White/Orange 4. Blue 5. White/Blue 6. Orange 7. White/Brown 8. Brown

Ethernet, (M12x1) eurofast*, RJ45, Cable/Cordset Selection Matrix - Unshielded



				eurofast		
	Continued		RJ45 Plug	WRJ45 Plug	RJ45MIP67 Plug	RJ45IP67 Plug
			7	8	9	10
			RJ45	WRJ45E	RJ45MIP67	RJ45IP67
		Bare	RJ45 84x-*M	WRJ45E 84x-*M	RJ45MIP67 84x	RJ45IP67 84x
	Pin (Male)	1 RSC	RSC RJ45 84x-*M	RSC WRJ45E 84x-*M	RSC RJ45MIP67 84x	RSC RJ451P67 84x
	Socket (Female)	2 RKC	RKC RJ45 84x-*M	RKC WRJ45E 84x-*M	RKC RJ45MIP67 84x	RKC RJ451P67 84x
eurofast	RJ45 Plug	7 RJ45	RJ45 RJ45 84x-*M		RJ45 RJ45MIP67 84x	RJ45 RJ45IP67 84x
	WRJ45 Plug	8 WRJ45E	WRJ45E RJ45 84x-*M	WRJ45E WRJ4ES 84x-*M	WRJ45 RJ45MIP67 84x	WRJ45E RJ45IP67 84x
	RJ45M IP67 Plug	9 RJ45MIP67			RJ45MIP67 RJ45MIP67 84x-*M	RJ45MIP67 RJ45IP67 84x
	RJ45 IP67 Plug	10 - RJ45IP67			RJ45IP67 RJ45MIP67 84x-*M	RJ451P67 RJ451P67 84x

See pages K10 - K11 for dimensional drawings.

- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For stainless steel coupling nuts change part number RSC ... to RSCV, FKFD ... to FKFDV.

For cross-over cable, add "CR" to part number RJ45 RJ45 CR 84x-*M.

Ethernet, (M12x1) eurofast*, RJ45, Cable/Cordset Selection Matrix - Shielded

			eurofast			
			Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
			1	2	5	6
			RSS	RKS	FSSDE	FKSDE
		Bare	RSS 84x-*M	RKS 84x-*M	FSSDE 84x-*M	FKSDE 84x-*M
	Pin (Male)	1 RSS	RSS RSS 84x-*M	RSS RKS 84x-*M	RSS FSSDE 84x-*M	RSS FKSDE 84x-*M
	Socket (Female)	2 RKS		RKS RKS 84x-*M	RKSS FSSDE 84x-*M	RKS FKSDE 84-*M
eurofast	RJ45 Plug	7 RJ45S			RJ45S FSSDE 84x-*M	RJ45S FKSDE 84x-*M
	WRJ45 Plug	8 WRJ45ES			WRJ45 FSSDE 84x-*M	WRJ45 FKSDE 84x-*M
	RJ45M IP67 Plug	9 RJ45SMIP67			RJ45SMIP67 FSSDE 84x-*M	RJ45SMIP67 FKSDE 84x-*M

See pages K10 - K11 for dimensional drawings.

eurofast	Pinouts	eurofast
Male 7 6 7 6 7 8 2 4	1. White/Blue 2. White/Brown 3. Brown 4. Orange 5. White/Green 6. White/Orange 7. Blue 8. Green	Female 5

Standard Pinout	RJ45 Plug	(CR) Pinout
1. White/Orange 2. Orange 3. White/Green 4. Blue 5. White/Blue 6. Green 7. White/Brown 8. Brown	Male 12345678	1. White/Green 2. Green 3. White/Orange 4. Blue 5. White/Blue 6. Orange 7. White/Brown 8. Brown

Ethernet, (M12x1) eurofast*, RJ45, Cable/Cordset Selection Matrix - Shielded



			RJ45 Plug	WRJ45 Plug	RJ45M IP67 Plug
			7	8	9
			RJ45S	WRJ45ES	RJ45SMIP67
		Bare	RJ45S 84x-*M	WRJ45ES 84x-*M	RJ45SMIP67 84x
	Pin (Male)	1 RSS	RSS RJ45S 84x-*M	RSS WRJ45ES 84x-*M	RJ45SMIP67 84x
	Socket (Female)	2 RKS	RKS RJ45S 84x-*M	RKS WRJ45ES 84x-*M	RJ45SMIP67 84x
eurofast	RJ45 Plug	7 RJ45S	RJ45S RJ45S 84x-*M		RJ45SS RJ45SMIP67 84x
	WRJ45 Plug	8 WRJ45ES	WRJ45ES RJ45S 84x-*M	WRJ45ES WRJ45ES 84x-*M	WRJ45ES RJ45SMIP67 84x
	RJ45M IP67 Plug	9 RJ45SMIP67			RJ45SMIP67 RJ45SMIP67 84x

See pages K10 - K11 for dimensional drawings.

- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For stainless steel coupling nuts change part number RSS ... to RSSV, FKSDE ... to FKSDEV.

For cross-over cable, add "CR" to part number RJ45S RJ45S CR 84x-*M.

Ethernet, eurofast Cordset Connector Dimensions / Configuration

Specifications

Overmold: TPU

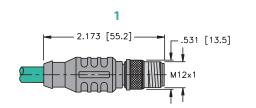
Coupling Nut: Nickel Plated CuZn or Stainless Steel

Contact Carrier: TPU or POM (Nylon)
Contacts: Gold Plated CuZn

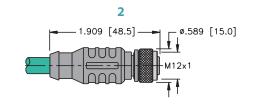
Protection: NEMA 1, 3, 4, 6P and IEC IP 68

Rated Voltage: 60 V **Rated Current:** 2 A

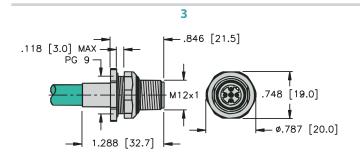
Ambient Temperature: -40° to $+75^{\circ}$ C (32° to $+167^{\circ}$ F)



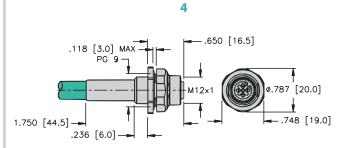
RSC/RSS .. Pages K6



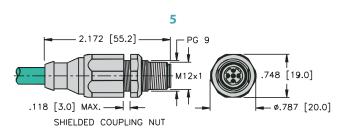
RKC/RKS .. Pages K6



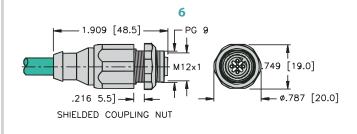
FSFD .. Pages K6



FKFD .. Pages K6



FSSDE .. Pages K8



FKSDE.. Pages K8

Ethernet, Armored M12 and RJ45 Connector Dimensions / Configuration



Specifications

Overmold: TPU

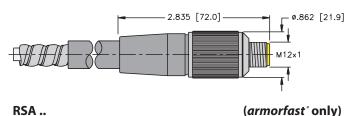
Coupling Nut: Nickel Plated CuZn or Stainless Steel

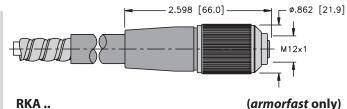
Contact Carrier: TPU or POM (Nylon) **Contacts:** Gold Plated CuZn

Protection: NEMA 1, 3, 4, 6P and IEC IP 68

Rated Voltage: 60 V **Rated Current:** 2 A

Ambient Temperature: -40° to $+75^{\circ}$ C (-22° to $+167^{\circ}$ F)



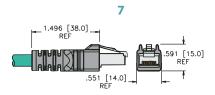


Specifications

Overmold: TPU

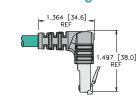
Plug Material: Polycarbonate
Protection: NEMA 1 and IEC IP 20

Rated Voltage: 42 V **Rated Current:** 1.5 A



RJ45/RJ45S ..

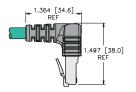
Page K6



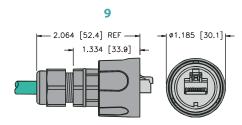
WRJ45E/WRJ45ES .. External tab

Page K6

8 - Internal tab version

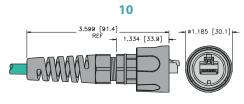


WRJ45I/WRJ45IS.. Internal tab version Page K6



RJ45MIP67/RJ45SMIP67..

Page K6



RJ45IP67 ..

Page K6

Ethernet, Economy RJ45 to RJ45 Cordsets

- For "In the Panel" Applications Where Industrial Cordsets are not Needed
- Available in Yellow, 3 FT and 7 FT Lengths Only



Housing	Part Number	Application	Pinout
1.343 [34.1] 	RJ45 RJ45 840-3FT/ECON	 Ethernet patch cordsets for panel 	Male
	RJ45 RJ45 840-7FT/ECON	connections • Economy, non industrial	12345678

RJ45 Plug	Pinout
Male 12345678	1. White/Orange 2. Orange 3. White/Green 4. Blue 5. White/Blue 6. Green 7. White/Brown 8. Brown

TURCK

Industri<mark>al</mark> Au<mark>tomation</mark>

FURCE EtherNet™ Physical Media Connectivity

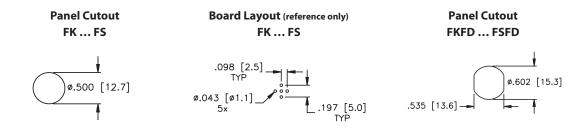
Ethernet, Circuit Board Connectors and OEM Receptacles, 8-wire

• Provides (M12x1) eurofast 8-Pin Connection to Field Devices



Housing	Female Part Number	Male Part Number	Features	Pinouts
FK 84 PCB KIT	FK 84-PCB KIT	FS 84-PCB KIT	Nickel plated CuZn or stainless steel, 250 V, 4 A, -40° to +75°C, eurofast with mounting kit	Female 5 6 7 4 3 2
9.809 [20.5] 9.894 [22.7] 1.120 [28.4] 9.809 [20.5] 9.809				1. WH/BU 2. WH/BN 3. BN 4. OG 5. WH/GN 6. WH/OG 7. BU 8. GN
FK 84 PCB .768 [19.5] .079 [2.0] .197 [5.0] FS 84 PCB	FK 84-PCB	FS 84-PCB	Nickel plated CuZn or stainless steel, 250 V, 4 A, -40° to +75°C, eurofast	Male 7 6 7 6 9 1 8 2 3
0.039 [1.0] 0.709 [18.0] 0.709				

Standard housing material is nickel plated brass "FSV .."; "FKV .." indicates 316 stainless steel.



Ethernet, Circuit Board Connectors and OEM Receptacles, 8-wire

 Provides (M12x1) eurofast[®] 8-Pin Connection to Field Devices

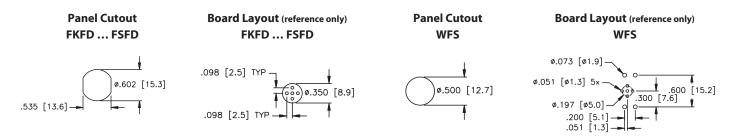






Housing	Female Part Number	Male Part Number	Features	Pinouts
FKFD .118 [3.0] MX .709 [18.0] .709 [18	FKFD 84-PCB	FSFD 84-PCB	Nickel plated CuZn or stainless steel 250 V, 4 A, -40° to +75°C, eurofast PCB pins	Male 6 7 6 5
FKFDL .118 [3.0] MAX PC 9 0-RING .748 [19.0] FKFDL .197 [5.0] .748 [19.0] .748 [19.0]	FKFDL 84	FSFDL 84	Nickel plated CuZn or stainless steel 250 V, 4 A, -40° to +75°C, male eurofast solder cups	1. WH/BU 2. WH/BN 3. BN 4. OG 5. WH/GN 6. WH/OG 7. BU 8. GN
.118 [3.0] MAX PC 9 M12x1 0.787 [20.0] .177 [4.5] .181 [3.0] MAX M12x1 .171 [4.5] .172 [4.5] .173 [1.8] .174 [19.0] WFS .175 [4.5] .176 [1.8] .177 [4.5] .178 [19.0] .177 [4.5] .178 [19.0] .178 [19.0] .178 [19.0] .178 [19.0] .179 [3.1] .179 [3.1] .170 [2.8] .170 [2.8]		WFS 84-PCB	Nickel plated CuZn or stainless steel 250 V, 4 A, -40° to +75°C, male eurofast right angle PCB pins	Female 5 6 7 4 3 2

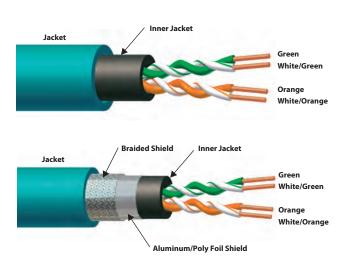
Standard housing material is nickel plated brass "FKFD."; "FKFDV.." indicates 316 stainless steel.



Ethernet, Cable Specifications, 4-wire



- Cable that Meets the Requirements of TIA/EIA568-C Category 5e
 Performance Requirements Cable for 10 and 100 Base-T Ethernet
- Compliant with Ethernet/IP Standards
- Cable is UL Rated for Sunlight and Oil Resistant



Maximum 100 meters of cable of which:

- 90 meters Horizontal Cable (SOLID 442 or 443)
- 2 x 5 meters Patch Cables (STRANDED 440 or 441)

		Da	ta Pair	Outer Jacket	Shields	Bulk Cable
Туре	Approvals	AWG Color Code	DCR (/1000 feet) Insulation	Material Color Nominal O.D.	Туре	Part Number / Weight/300 M
440 75°C 300 Volts	NEC CMR CEC C(UL) CMR	4/24 AWG Stranded	28.6 Ohms PO	PVC Teal 6.9 mm (.270 in)	None	RB51210-*M 29 lbs.
441 75°C 300 Volts	NEC CMR CEC C(UL) CMR	4/24 AWG Stranded	28.6 Ohms PO	PVC Teal 7.2 mm (.285 in)	Foil/Braid	RB51211-*M 44 lbs.
442 75°C 300 Volts	NEC CMR CEC C(UL) CMR	4/24 AWG Solid	28.6 Ohms PO	PVC Teal 6.4 mm (.250 in)	None	RB51212-*M 27 lbs.
443 75°C 300 Volts	NEC CMR CEC C(UL) CMR	4/24 AWG Solid	28.6 Ohms PO	PVC Teal Foil/l	Foil/Braid	RB51213-*M 49 lbs.
4410 50°C 124 Volts	TSB-36 ISO/IEC 11801	4/26 AWG Stranded	37.3 Ohms PE	TPU Teal 6.1 mm (.240 in)	Foil/Braid	RB51306-*M 48 lbs. <i>flexlife</i> *† Halogen Free
4460 80°C 124 Volts	RoHS	4/24 AWG Stranded	24.0 Ohms PE	TPE Teal 6.7 mm (.265 in)	None	RB51721 26 lbs. flexlife *††

- Indicates length in meters.
 - Standard spool lengths are 30, 75, 100, 150, 200, 225, 300 meters. Consult factory for other lengths.
- † 2.5 million flex motions at 12.5x cable diameter bend radius.
- †† 2 million cycles @ 1.5 in minimum bend radius.

Ethernet, (M12x1) eurofast°, RJ45 Cables and Extensions - Unshielded D-coded

			eurofast			
			Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
			11 RSCD	12 RKCD	13 FSFDD	14 FKFDD
		Bare	RSCD 44x-*M	RKCD 44x-*M	FSFDD 44x-*M	FKFDD 44x-*M
	Pin (Male)	11 RSCD	RSCD RSCD 44x-*M	RSCD RKCD 44x-*M	RSCD FSFDD 44x-*M	RSCD FKFDD 44x-*M
	Socket (Female)	12 RKCD		RKCD RKCD 44x-*M	RKCD FSFDD 44x-*M	RKCD FKFDD 44x-*M
eurofast	RJ45 Plug	17			RJ45 FSFDD 44x-*M	RJ45 FKFDD 44x-*M
	WRJ45 Plug	18 WRJ45E			WRJ45E FSFDD 44x-*M	WRJ45E FKFDD 44x-*M
	RJ45M IP67 Plug	19 RJ45MIP67			RJ45MIP67 FSFDD 44x-*M	RJ45MIP67 FKFDD 44x-*M
	RJ45 IP67 Plug	20 - MW RJ451P67			RJ45IP67 FSFDD 44x-*M	RJ45IP67 FKFDD 44x-*M

- See pages K20 K21 for dimensional drawings.
- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For stainless steel coupling nuts change part number RSCD ... RSCDV, FSFD ... FSFDV.

eurofast	Pinouts	eurofast
Male 1	1. White/Orange (+ tx) 2. White/Blue (+rx) 3. Orange (-tx) 4. Blue (-rx)	Female 3 2

RJ45 Pinout	RJ45 Plug	RJ45 (CR) Pinout
1. White/Orange 2. Orange 3. White/Blue 4. N/C 5. N/C 6. Blue 7. N/C 8. N/C	Male 12345678	1. White/Blue 2. Blue 3. White/Orange 4. N/C 5. N/C 6. Orange 7. N/C 8. N/C

Ethernet, (M12x1) eurofast*, RJ45, Cables and Extensions - Unshielded D-coded



				eurofast			
				Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
				17	18	19	20 = 1000
				RJ45	₩RJ45E	RJ45MIP67	RJ45IP67
			Bare	RJ45 44x-*M	WRJ45E 44x-*M	RJ45MIP67 44x-*M	RJ45IP67 44x-*M
	Pin (Male)	11	RSCD	RSCD RJ45 44x-*M	RSCD WRJ45E 44x-*M	RSCD RJ45MIP67 44x-*M	RSCD RJ45IP67 44x-*M
	Socket (Female)	12	RKCD	RKCD RJ45 44x-*M	RKCD WRJ45E 44x-*M	RKCD RJ45MIP67 44x-*M	RKCD RJ45IP67 44x-*M
eurofast	RJ45 Plug	17	RJ45	RJ45 RJ45 44x-*M		RJ45 RJ45MIP67 44x-*M	RJ45 RJ45IP67 44x-*M
	WRJ45 Plug	18	WRJ45E	WRJ45E RJ45 44x-*M	WRJ45E WRJ45E 44x-*M	WRJ45E RJ45MIP67 44x-*M	WRJ45E RJ45IP67 44x-*M
	RJ45M IP67 Plug	19	RJ45MIP67			RJ45MIP67 RJ45MIP67 44x-*M	
	RJ45 IP67 Plug	20	RJ451P67			RJ45IP67 RJ45MIP67 44x-*M	RJ45IP67 RJ45IP67 44x-*M

- See pages K20 K21 for dimensional drawings.
- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For right angle RJ45, select WRJ45I for internal tab or WRJ45E for external tab.

Ethernet, (M12x1) eurofast*, RJ45, Cables and Extensions - Shielded Cable D-coded

			eurofast			
			Pin (Male)	Socket (Female)	Pin (Male)	Socket (Female)
			11	12	15	16
			RSSD	RKSD	FSSDED	FKSDED
		Bare	RSSD 44x-*M	RKSD 44x-*M	FSSDED 44x-*M	FKSDED 44x-*M
	Pin (Male)	11 RSSD	RSSD RSSD 44x-*M	RSSD RKSD 44x-*M	RSSD FSSDED 44x-*M	RSSD FKSDED 44x-*M
	Socket (Female)	12 RKSD		RKSD RKSD 44x-*M	RKSD FSSDED 44x-*M	RKSD FKSDED 44x-*M
eurofast	RJ45 Plug	17 RJ45S			RJ45S FSSDED 44x-*M	RJ45S FKSDED 44x-*M
	WRJ45 Plug	18 WRJ45ES			WRJ45ES FSSDED 44x-*M	WRJ45ES FKSDED 44x-*M
	RJ45M IP67 Plug	19 - 19 RJ45SMIP67			RJ45SMIP67 FSFD 84x-*M	RJ45SMIP67 FKFD 84x-*M

See pages K20 - K21 for dimensional drawings.

- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 5, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For stainless steel coupling nuts change part number RSSD ... RSSDV, FSSDED ... FSSDEDV.

eurofast	Pinouts	eurofast
Male 1	1. White/Orange (+ tx) 2. White/Green (+rx) 3. Orange (-tx) 4. Green (-rx)	Female 3 2

RJ45 Pinout	RJ45 Plug	RJ45 (CR) Pinout
1. White/Orange 2. Orange 3. White/Green 4. N/C 5. N/C 6. Green 7. N/C 8. N/C	Male 12345678	1. White/Green 2. Green 3. White/Orange 4. N/C 5. N/C 6. Orange 7. N/C 8. N/C

Ethernet, (M12x1) eurofast*, RJ45, Cables and Extensions - Shielded Cable D-coded



				eurofast	
			RJ45 Plug	WRJ45 Plug	RJ45 Plug
			17	18	19
			RJ45S	₩RJ45ES	RJ45SMIP67
		Bare	RJ45S 44x-*M	WRJ45ES 44x-*M	RJ45SMIP67 44x-*M
	Pin (Male)	11 RSSD	RSSD RJ45S 44x-*M	RSSD WRJ45ES 44x-*M	RSSD RJ45SMIP67 44x-*M
	Socket (Female)	12 RKSD	RKSD RJ45S 44x-*M	RKSD WRJ45ES 44x-*M	RKSD RJ45SMIP67 44x-*M
eurofast	RJ45 Plug	17 RJ45S	RJ45S RJ45S 44x-*M		RJ45S RJ45SMIP67 44x-*M
	WRJ45 Plug	18 WRJ45ES	WRJ45ES RJ45S 44x-*M	WRJ45ES WRJ45ES 44x-*M	WRJ45ES RJ45SMIP67 44x-*M
	RJ45M IP67 Plug	19 RJ45SMIP67			RJ45SMIP67 RJ45SMIP67 44x-*M

See pages K20 - K21 for dimensional drawings.

- * Indicates length in meters.
- x Indicates cable type.

Standard cable lengths are 1, 2, 4, 5, 6, 8, 10, 15, and in +5 meter increments from there. Consult factory for other lengths. For stainless steel coupling nuts change part number RSSD ... RSSDV, FSSDED ... FSSDEDV.

Ethernet, eurofast Cordset Connector Dimensions / Configuration

Specifications

Overmold: TPU

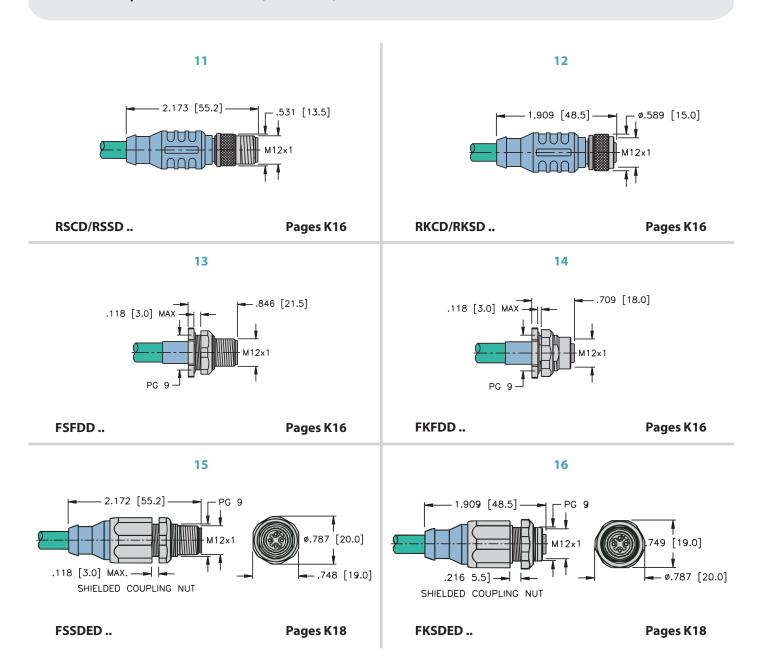
Coupling Nut: Nickel Plated CuZn or Stainless Steel

Contact Carrier: TPU or POM (Nylon) **Contacts:** Gold Plated CuZn

Protection: NEMA 1, 3, 4, 6P and IEC IP 68

Rated Voltage: 250 V **Rated Current:** 4 A

Ambient Temperature: -40° to $+75^{\circ}$ C (32° to $+167^{\circ}$ F)



Ethernet, RJ45 Connector Dimensions / Configuration



Specifications

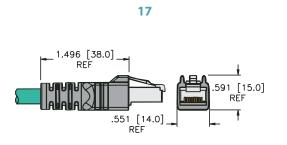
Overmold: TPU

Plug Material: Polycarbonate

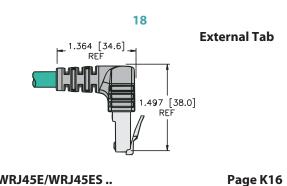
Protection: NEMA 1, 3, 4, 6P and IEC IP 20

Rated Voltage: 42 V **Rated Current:** 1.5 A

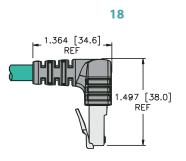
Ambient Temperature: -25° to +75°C (-22° to +176°F)



RJ45/RJ45S.. Page K16

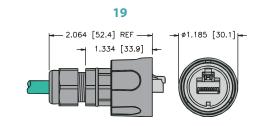


WRJ45E/WRJ45ES..



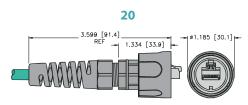
WRJ45I/WRJ45IS ..

Internal tab version



RJ45MIP67/RJ45SMIP67..

Page K16



RJ45IP67..

Page K16



Ethernet, Receptacle

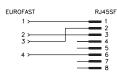
 Transitions from a RJ45 Connector to a 4-wire eurofast[®] Connector



Housing Style	Part Number	Features
.850 [21.6] M12x1	FKSDD RJ45SF 44	Polyurethane, TPU Overmold, 42 V, 1.5 A, -40° to +75°C

Panel mounting clearance hole 19/32" (15 mm). Panel thickness: .060-.120" (1.5-3 mm)

Wiring Diagram



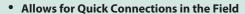
RJ45 Receptacle	Pinouts	eurofast Female
Female 12345 678	1. White/Orange (+TX) 2. Orange (-TX) 3. White/Green (+RX) 4. N/C 5. N/C 6. Green (-RX) 7. N/C 8. N/C	Female 3 2

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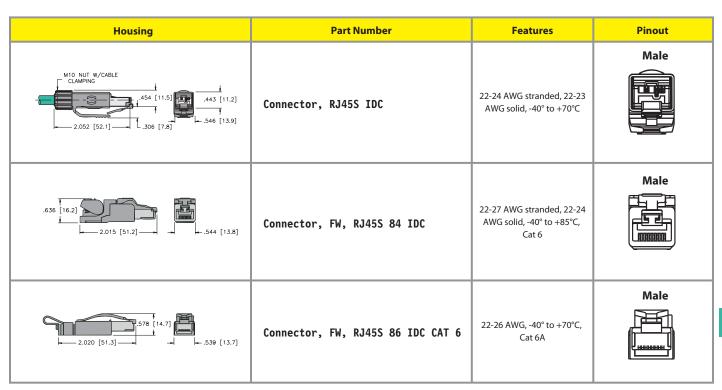
TURCE EtherNet/IP™ Physical Media Connectivity

Ethernet, RJ45 Field Wireable



- Fully Shielded
- Includes Assembly Instructions





RJ45 Plug	Pinout	
Male	1. White/Orange (+TX) 2. Orange (-TX) 3. White/Green (+RX) 4. N/C 5. N/C 6. Green (-RX) 7. N/C 8. N/C	

Ethernet, 4-Pin D-coded Field Wireables

- Allows for Quick Connections when Pre-Molded Cables are not Available
- Available in Male, Straight and Right Angle Connector Configurations



Housing Style	Female Part Number	Male Part Number	Features	Pinouts
CMBD 81 2.260 [57.4]				Female
2.440 [62.0] APPROX. — Ø.768 [19.5] — M12x1	CMBD 8141-0/PG9	CMBSD 8141-0/PG9		3
2.126 [54.0] APPROX 1.413 [35.9] APPROX Ø.770 [19.6]			4 A, 250 V, -40 to +85°C, mates with female 4-pin D-coded eurofast * cordsets and receptacles	
2.126 [54.0] APPROX. 1.646 [41.8] APPROX	CMBD 8241-0/PG9	CMBSD 8241-0/PG9		Male 1

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TURCK EtherNet/IP™ Physical Media Connectivity

Ethernet[®], RJ11 Cordsets

- Double Ended
- Available in 1, 2, 5 Meter Extended Lengths





Part Number	Features	Pinouts	
RJ11S RJ11S 4412-*M	PVC, 1.5 A, 42 V, -40° to +75°C, industrial phone connection RJ11 connector	1. N/C 2. White/Orange (+TX) 3. Orange (-TX) 4. White/Green (+RX) 5. Green (-RX) 6. N/C	123456