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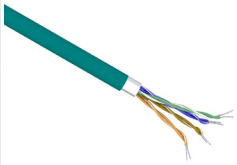
Cat5e Industrial Ethernet Continuous Flexing

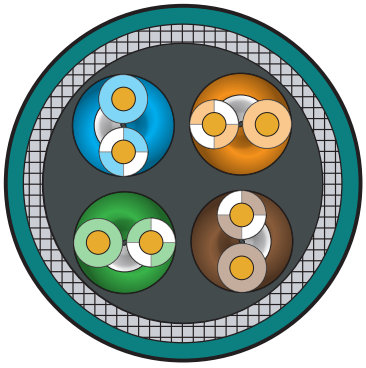
QUABBIN® WIRE & CABLE CO., INC.
www.quabbin.com

Q5077-1 Cable Specifications



Part Number	Wire/Cable Type	Flexibility	Minimum Cut Length (ft)*	Approximate Weight (lb/ft)	Price per foot
Q5077-1	Cat5e industrial Ethernet	Continuous Flexing	20	0.03	$;5v!e:

Physical Properties				
Conductor Gauge	26 AWG	**Conductor Stranding**	7-Stranded Tinned Copper	
Conductor Material	Tinned Copper	**Conductor Insulation Wall Thickness**	0.009 in, nominal	
Conductor Assembly	4 twisted pairs	**Bare Conductor Diameter**	0.019 in, nominal	
Color Code	**Pair 1**	Blue, White/Blue	**Insulated Conductor Diameter**	0.037 in, nominal
	Pair 2	Orange, White/Orange	**Twisted Conductor Diameter**	0.143 in, nominal
	Pair 3	Green, White/Green	**Overall Cable Diameter**	0.245 in, nominal
	Pair 4	Brown, White/Brown	**Jacket Color**	Teal
Voltage Rating	300V	**Jacket Thickness**	0.035 in, nominal	
Temperature Rating	-40 to 75 °C (-40 to 167 °F)	**Jacket Material**	Zero Halogen Flame Retardant (ZHFR)	
Plenum	No	**Sunlight Resistant**	No	
Shield	Shielded	**Oil Resistance**	Yes	
Drain	No	**Flame Retardant**	Yes	
Conductor Insulation Material	High-density Polyethylene (HDPE)	**Sample Print Legend**	QUABBIN DATAMAX EXTREME HIGH FLEX ZERO HALOGEN INDUSTRIAL ETHERNET/IP PATCH CORD CAT 5e SF/UTP P/N -- C(ETL)US TYPE CMX OIL RES I 26 AWG 75C -- RoHS -- (LOT DESIGNATOR) (SEQUENTIAL FOOTAGE)	
Minimum Bend Radius	1.00in			
Cabled Core Diameter	0.143 in			

Electrical Characteristics (for 100 meters of cable)			
Impedance	100 ± 15 Ω 1 – 100 MHz	**UL Classification**	NEC (ETL) Type CMX, CEC C(ETL) Type CMX
Capacitance	13.5 pF/ft @ 1MHz; Nominal	**Approvals****	cETLus, CE, RoHS
Resistance, Max.	42.6 Ω DC per 1000ft	**Attenuation Crosstalk Ratio, Far End (ACRF)**	$1 \le f \le 100$ MHz: 23.8 – 20 LOG(f/100) dB MIN
Dielectric Withstanding, Min.	1500V RMS	**Insertion Loss**	$1 \le f \le 100$ MHz: 1.5[1.967 $\sqrt{f}$ + 0.023(f) + 0.050/$\sqrt{f}$] dB MAX
Return Loss	$1 \le f < 10$ MHz: 20 + 6 LOG(f) dB MIN* $10 \le f < 20$ MHz: 26 dB MIN* $20 \le f \le 100$ MHz: 26 – 5 LOG(f/20) dB MIN*	**Power Sum Attenuation to Crosstalk Ratio, Far End (PSACRF)**	$1 \le f \le 100$ MHz: 20.8 – 20 LOG(f/100) dB MIN
Near End Crosstalk (NEXT)	$1 \le f \le 100$ MHz: 35.3 – 15 LOG(f/100) dB MIN	**Cross Section**	
Power Sum Near End Crosstalk (PSNEXT)	$1 \le f \le 100$ MHz: 32.3 – 15 LOG(f/100) dB MIN		
TCL	N/A		
ELTCTL	N/A		
Velocity of Propagation	0.68		
Delay	$1 \le f \le 100$ MHz: 534 + 36/$\sqrt{f}$ ns MAX		
Delay Skew	$1 \le f \le 100$ MHz: <25 ns		

*** See web store www.AutomationDirect.com for maximum cut lengths**
**** To obtain the most current agency approval information, see the Agency Approval Checklist section on the part number's web page at www.AutomationDirect.com**

Please Note: Our prices on Ethernet Cable are closely tied to the market price for copper. This allows us to offer the best savings possible if conditions are favorable; however, it also means that our prices may increase if market conditions warrant.

Industrial Ethernet Cable

QUABBIN® WIRE & CABLE CO., INC.
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Quabbin DataMax® Extreme Industrial Ethernet Cable *

Many industrial applications expose cables to hazards not present in commercial data cabling installations. Although a cable suited for commercial applications may initially work in a harsh industrial environment, it could quickly fail when used in an industrial applications. While commercial grade cables may have a low initial product cost, downtime due to premature failure can be avoided by using a cable that is specifically designed and tested for industrial applications.

Quabbin DataMax Extreme Industrial Ethernet cable jackets were developed to survive the many industrial hazards that commercial jackets will not.

Furthermore, commercial ethernet cables have a tube jacket surrounding the conductor pairs with room within for the pairs to move around and even untwist in flexing applications resulting in early mechanical or electrical failure of the cable.

DataMax Extreme continuous flexing cable jackets are pressure extruded over the cable core, effectively "locking" the conductor pairs in place. This type of jacket construction provides very stable electrical performance, even when the cable is impacted, bent, or repeatedly flexed. Pressure extrusion also provides a very smooth, round, and firm jacket profile that is crush resistant and ideal for obtaining a reliable termination and seal when installing connectors.

Quabbin has performed extensive testing on their pressure extruded jacketed DataMax Extreme Continuous Flexing Industrial Ethernet cables. Samples are subjected to 10 million cycles in a flex testing device that simulates an unsupported bend, simulating a situation the cable would be exposed to on a robotic arm. The unsupported bend test is much more abusive than a C-Track or Tick-tock test, both of which add protection to the cable by supporting the bend. Quabbin DataMax Extreme Industrial Ethernet cable provides superior design and construction that will withstand the rigors of continuous flexing applications and the harsh environments found in industrial installations. Quabbin DataMax Extreme Continuous Flexing Industrial Ethernet cable performs above industry standards, thereby reducing downtime and increasing productivity.

DataMax Extreme Industrial Ethernet cables fully comply with TIA 568-C.2 and TIA 1005 industrial communication specifications and are designed for use in EtherNet/IP systems.

Features

- Available in Category 5e and 6/6a
- In compliance with TIA 568-C.2 and TIA 1005
- Designed for use in EtherNet/IP systems **
- 26 AWG & 24AWG stranded or 22 AWG solid
- 2 or 4 twisted pairs
- Unshielded or overall braid and foil shields
- Rugged jacket for excellent chemical, moisture, and flame resistance, and exceptional low temperature flexibility
- UL Type CMX OUTDOOR – CM and UL AWM Style 2463 (80°C, 600V)
- Cut to length in 1 foot increments
- Low 20 foot minimum length
- Made in the USA

*** DataMax is a registered trademark of Quabbin Wire and Cable Corporation.**
**** EtherNet/IP is a trademark of ODVA, Inc.**

Description

AutomationDirect offers Quabbin DataMax Extreme Industrial Ethernet cable in 2 and 4 pair, unshielded and shielded constructions. Conductors are color coded high density polyethylene insulation. Shielded constructions include both a tinned copper braid shield and aluminized polyester foil overall shield. All constructions feature a rugged jacket with excellent moisture, chemical, UV and weathering resistance, exceptional low-temperature flexibility, and good flame and fire resistance. Some are specifically designed and constructed for continuous flexing applications. The DataMax Extreme Continuous Flexing cables have been tested for a minimum of 1 million cycles (10x cable O.D. minimum radius), a minimum of 10 million cycles (20x cable O.D. minimum radius), and a minimum of 3 million cycles torsion test. Agency approvals include UL Type CMX OUTDOOR - CM, and UL AWM Style 2463 (80°C, 600V).

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for a short introduction on our cut to length cable