

# GOES WHERE OTHER CABLES FEAR TO GO



## Harsh Environment Cable

Rugged. Reliable. Trusted to Eliminate Downtime.

Call Interstate Wire Co., Inc. - (800) 527-0010



**When you choose Quabbin® Wire and Cable** you are not only selecting a premier cable, you are also investing in productivity and peace of mind. Quabbin® is dedicated to producing best of breed cables for the industrial market. We achieve this through constant innovation, in-line monitoring and rigorous testing ensuring our cables meet your requirements and expectations. We know the importance of mitigating downtime, and our top priority is to deliver a cable you can depend on in your environment. For complete test reports visit the Quality Assurance section of our website or contact a Quabbin® sales representative.

PROUDLY  
MADE IN THE  
U.S.A.



**[www.quabbin.com](http://www.quabbin.com) • (800) 368-3311**

Call Interstate Wire Co., Inc. - (800) 527-0010

# CABLES ENGINEERED FOR YOUR HARSH ENVIRONMENTS

**Many industrial applications** expose a cable to elements not present in Commercial Data cabling situations. A cable suited for a commercial application may initially work in a harsh environment application but is not recommended. Continuous flexing and exposure to solvents can cause degradation, leading to electrical failures and safety hazards. Specifying a cable that is intended for your industrial application can result in saving thousands of hours in production downtime in the future.

We have a wide selection of cables that are designed specifically for use in harsh environments.

- **DataMax® Extreme branded Industrial Ethernet**
- **Ethernet IP; Profinet® Type B & C; CC-Link**
- **PLTC/ITC, CM/CMX Outdoor, Oil Resistant, UV Resistant**
- **Superior Flex Life (10 million+ cycles)**
- **Reduced Diameter 600 Volt**

## CONTENTS



PLTC/ITC	2
600 Volt AWM	5
Industrial Ethernet	8
Cable Testing	19

# PLTC/ITC Multiconductor Cables

**Quabbin® Wire & Cable** offers a variety of shielded and unshielded Power Limited Tray/Instrumentation Tray Cables (PLTC/ITC) ideal for use in applications such as:

- **Process System Interconnect**
- **Instrumentation & Control**
- **Class 3 Circuits**

# PLTC Multiconductor Cables

## Unshielded / 12-22 AWG

- » Available in 12-22 AWG Stranded
- » 2 or 3 Conductor Constructions
- » Sunlight Resistant PVC Jacket
- » RoHS Compliant
- » PLTC/ITC
- » UL AWM Style 2464
- » CSA AWM I/II A/B, CSA FAS
- » Temp. Max 80, 90 & 105°C
- » Temp. Min. -20°C
- » Voltage Rating Max 300
- » Chrome Gray Jacket—other colors available upon request
- » Popular stocked parts listed below—see quabbin.com for additional parts and spec information

Part Number	Conductor Count	Belden Equal	Carol/General Equal	AWG	Stranded Tinned Copper	Nominal O.D.
0130	2	9407		22	7/30	.200"/5.08mm
0140	2	9409	C0435	18	16/30	.230"/5.84mm
0190	3			22	7/30	.209"/5.31mm
0195	3	9492	C0434	20	10/30	.224"/5.69mm
0200	3	9493	C0436	18	16/30	.242"/6.15mm



PLTC/ITC

*Representative picture, may not match exact configuration of product.*



**LEARN MORE**

quabbin.com/harsh-pltc  
(800) 368-3311

Call Interstate Wire Co., Inc. - (800) 527-0010

# PLTC Multiconductor Cables

## Shielded / 12-22 AWG

- » Available in 12-22 AWG Stranded
- » 2 or 3 Conductor Constructions
- » Sunlight Resistant PVC Jacket
- » RoHS Compliant
- » PLTC/ITC
- » UL AWM Style 2464
- » CSA AWM I/II A/B, CSA FAS
- » Temp. Max 80, 90 & 105°C
- » Temp. Min. -20°C
- » Voltage Rating Max 300
- » Drain Wire
- » Chrome Gray Jacket—other colors available upon request
- » Popular stocked parts listed below—see quabbin.com for additional parts and spec information

Part Number	Conductor Count	Belden Equal	Carol/General Equal	AWG	Stranded Tinned Copper	Nominal O.D.
0160	2	9322	C0450	22	7/30	.203"/5.16mm
0165	2	9320	C0452	20	10/30	.215"/5.46mm
0170	2	9318	C0454	18	16/30	.233"/5.91mm
0175	2	9316		16	19/.0117"	.257"/6.53mm
0220	3	9364	C0453	20	10/30	.227"/5.76mm
0225	3	9365	C0455	18	16/30	.245"/6.22mm

Shielded PLTC cables are also available in a Multipair construction

Representative picture, may not match exact configuration of product.



**LEARN MORE**  
quabbin.com/harsh-pltc  
(800) 368-3311

# 600 V-Trol® — 600 Volt Control Cables

**Quabbin® Wire & Cable's reduced diameter 600 V-Trol® control cables** offer designers and engineers a smaller cable to meet cost and application goals for many industrial applications.

## **Benefits Of Quabbin Reduced Diameter Cables:**

- A design that is 60+% smaller than the competition
- Greater flexibility
- Lighter weight construction
- Fits smaller connectors
- Easier to install
- Smaller bend diameter
- Improved conduit & duct fill
- Simpler junction box and panel layout

## **Applications:**

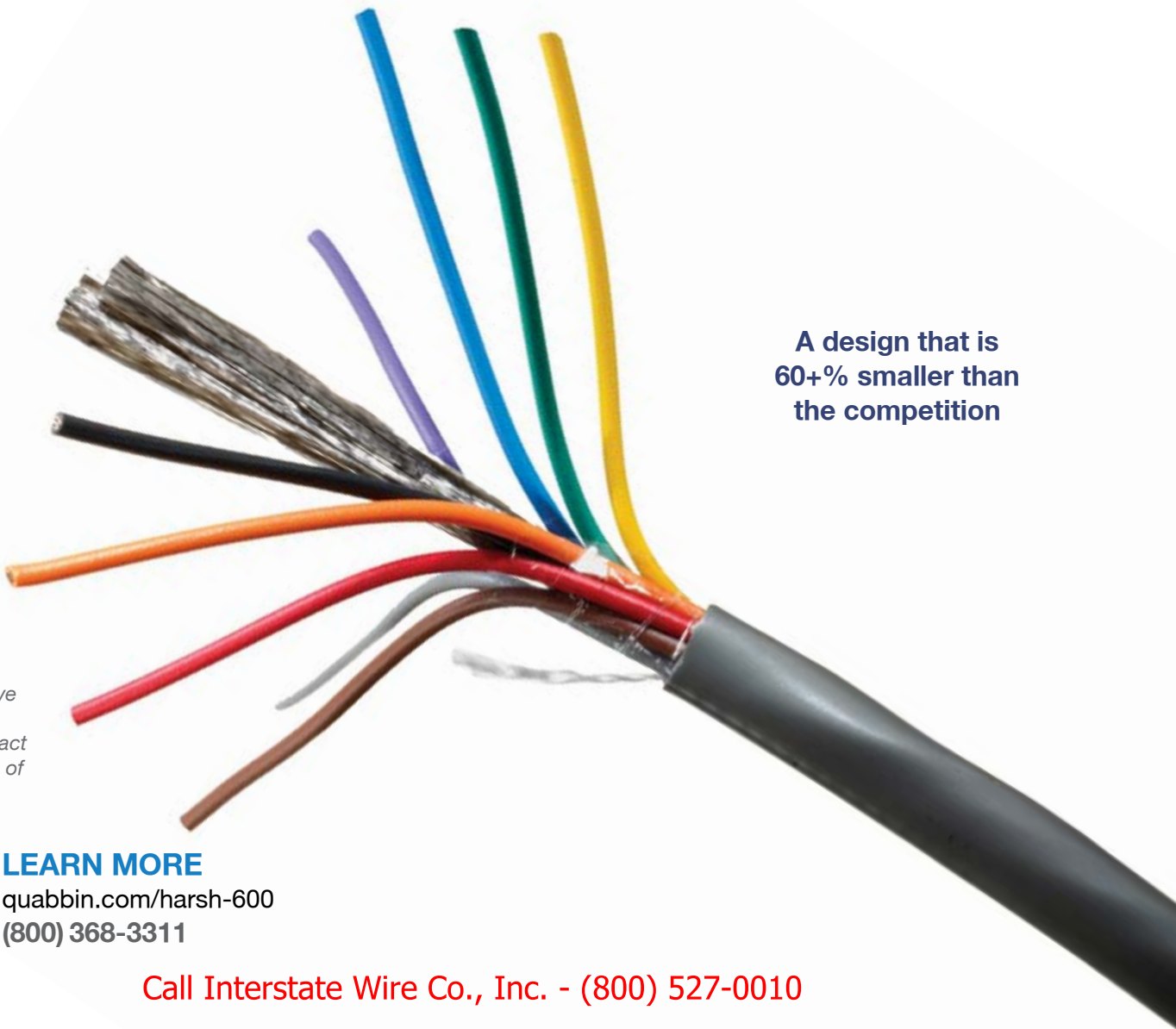
- Air handling
- Auxiliary power generation
- Dust controls
- Factory automation
- Factory controls
- Heating curtains
- HVAC
- Lighting controls
- Oil & gas boilers/furnaces
- Remote monitoring
- Ventilation system

# 600 Volt Multiconductor Cables

## Unshielded / 14-22 AWG

- » Available in 14-22 AWG Stranded
- » 2-25 Conductor Constructions
- » Sunlight Resistant PVC Jacket
- » RoHS Compliant
- » 600 Volt or 600 V-Trol®
- » UL AWM Style 2586 VW-1
- » CSA AWM I/II A/B 600V FT4
- » Temp. Max 105°C
- » Temp. Min. -20°C
- » Voltage Rating Max 600
- » Ripcord
- » Chrome Gray Jacket—other colors available upon request
- » Unique thinner construction on all 600 V-Trol® (600 Volt) cables
- » Popular stocked parts listed below—see quabbin.com for additional parts and spec information

Part Number	Conductor Count	Belden Equal	Carol/General Equal	AWG	Stranded Tinned Copper	Nominal O.D.
0721	2	N/A	N/A	18	16/30	.221"/5.61mm
0722	3	N/A	N/A	18	16/30	.233"/5.92mm
0724	5	N/A	N/A	18	16/30	.275"/6.99mm
0725	7	N/A	N/A	18	16/30	.298"/7.57mm
0726	9	N/A	N/A	18	16/30	.348"/8.84mm



A design that is  
60+% smaller than  
the competition

Representative  
picture, may  
not match exact  
configuration of  
product.



LEARN MORE

quabbin.com/harsh-600  
(800) 368-3311

# 600 Volt Multiconductor Cables

## Shielded / 14-22 AWG

- » Available in 14-22 AWG Stranded
- » 2-25 Conductor Constructions
- » Sunlight Resistant PVC Jacket
- » RoHS Compliant
- » 600 Volt or 600 V-Trol®
- » UL AWM Style 2586 VW-1
- » CSA AWM I/II A/B 600V FT4
- » Temp. Max 105°C
- » Temp. Min. -20°C
- » Voltage Rating Max 600
- » Ripcord
- » Chrome Gray Jacket—other colors available upon request
- » Unique thinner construction on all 600 V-Trol® (600 Volt) cables
- » Popular stocked parts listed below—see quabbin.com for additional parts and spec information

Part Number	Conductor Count	Belden Equal	Carol/General Equal	AWG	Stranded Tinned Copper	Nominal O.D.
0801	2	N/A	N/A	22	7/30	.194"/4.93mm
0811	2	N/A	N/A	20	7/28	.210"/5.33mm
0813	4	N/A	N/A	20	7/28	.247"/6.27mm
0821	2	N/A	N/A	18	16/30	.224"/5.69mm
0831	2	N/A	N/A	16	19/.0117	.248"/6.30mm
0833	4	N/A	N/A	16	19/.0117	.304"/7.72mm
0835	7	N/A	N/A	16	19/.0117	.362"/9.19mm



A design that is  
60+% smaller than  
the competition

Representative picture, may not  
match exact configuration of product.



**LEARN MORE**  
quabbin.com/harsh-600  
(800) 368-3311

Call Interstate Wire Co., Inc. - (800) 527-0010

600 Volt AWM

# DataMax® Extreme Industrial Ethernet

**Superior construction and design** ensures DataMax® Extreme Industrial Ethernet cables possess all of the characteristics necessary to withstand harsh environments while performing above industry standards for signal transmission. The result is a family of cable products that fully comply with TIA 568-C.2 commercial, TIA 1005, and ODVA industrial communication specifications, while reducing downtime and increasing productivity.

## APPLICATIONS

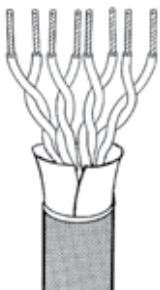
- Factory Automation
- Robotic Control
- Machine Vision
- Food and Beverage
- Oil & Gas
- Military COTS
- Energy
- Transportation
- Harsh Environments
- Profinet (*see page 11*)

## LISTINGS/RATINGS

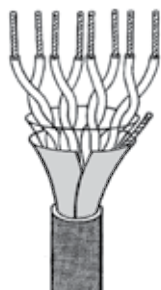
- UL 1685
- VW-1
- CM
- CMR
- CMX
- CMX Outdoor
- 600V AWM
- PLTC
- MSHA
- AWM 2463

## DESIGN OPTIONS

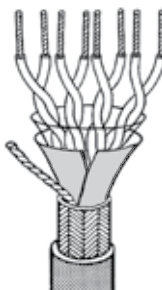
- 22, 24, & 26 AWG tinned copper
- 2 or 4 pair (similar diameter allows shared assembly tooling)
- Unshielded, foil shield w/drain, and foil shield w/braid
- PVC, FR-TPE, PUR, or ZHFR-PUR jacket
- Flexible or continuous flex
- Weld spatter resistant
- Chemical/oil resistant
- RoHS compliant
- UV resistant



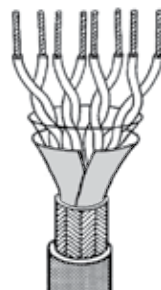
Hi-flex Unshielded  
with Separator Tape



Overall Foil Shield  
with Drain Wire



Double Shield: Foil,  
Drain Wire, Braid



Hi-flex Double Shield:  
Foil, Braid

**Depicted at left are the various 4 pair cable constructions.** Each design is also available in a similar 2 pair configuration. For guidance on selecting the perfect cable to fit your needs, please contact Quabbin Sales at 800.368.3311 or [sales@quabbin.com](mailto:sales@quabbin.com).

# DataMax® Extreme Quick Reference Guide

A side by side sampling of our most popular Industrial Ethernet constructions

Cat.	AWG	Pair Count	Foil Shield	Foil Shield w/ Braid	Jacket	CM	CMX Out-door	CMX	CMR	MSHA	UL	PLTC /ITC	Hi Flex	Nominal OD	Page
5e	22	2			PUR								X	.245"	10
5e	22	2			FR-TPE	X	X			X	2463	X	X	.270"	10
5e	22	4			PUR								X	.245"	10
5e	22	4			FR-TPE	X	X			X	2463	X	X	.290"	10
5e	22	2		X	FR-TPE						2463	X	X	.317"	11
5e	22	4		X	FR-TPE						2463	X	X	.345"	11
5e Profinet®	22	2		X	FR-TPE					X	2463	X	X	.310"	11
5e	24	2			PUR								X	.220"	12
5e	24	2			FR-TPE	X	X				2463		X	.240"	12
5e	24	2			PVC				X					.220"	12
5e	24	4			PUR								X	.240"	12
5e	24	4			FR-TPE	X	X				2463		X	.248"	12
5e	24	4			PVC				X					.227"	12
5e	24	4	X		FR-TPE	X	X							.263"	13
5e	24	2		X	FR-TPE	X	X				2463		X	.265"	13
5e	24	4		X	FR-TPE	X	X				2463		X	.290"	13
5e	26	2	X		PVC				X					.209"	14
5e	26	2	X		PUR									.229"	14
5e	26	2	X		FR-TPE	X	X							.209"	14
5e	26	4	X		PVC				X					.220"	14
5e	26	4	X		PUR									.220"	14
5e	26	4	X		FR-TPE	X	X							.237"	14
5e	26	2		X	ZHFR-PUR			X					X	.225"	15
5e	26	2		X	PUR								X	.225"	15
5e	26	2		X	PVC					X				.224"	15
5e	26	2		X	FR-TPE	X	X							.225"	15
5e	26	4		X	ZHFR-PUR			X					X	.244"	15
5e	26	4		X	PUR									.220"	15
5e	26	4		X	PVC									.228"	15
5e	26	4		X	FR-TPE	X	X							.245"	15
5e	26	4		X	FR-TPE	X	X						X	.244"	15
5e	26	2			PUR									.224"	15
6/6a	24	4		X	FR-TPE	X	X				2463		X	.325"	16
6/6a	26	4		X	PUR								X	.239"	17
6/6a	26	4		X	FR-TPE	X							X	.275"	17

# DataMax® Extreme Industrial Ethernet

## Cat 5e / 22 AWG

Constructions below illustrate most popular—all are available in black, blue, teal, and red jacket colors (minimum quantity may apply). Variations of these constructions are available. Please contact Quabbin Sales or visit [quabbin.com](http://quabbin.com) for more information and complete specifications.

- » Made in USA
- » RoHS Compliant
- » Stranded 22 AWG 19/.0058 Tinned Copper
- » Temp. Max 75°C

### Unshielded

Cat 5e / 22 AWG

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	MSHA	CMX Outdoor	UL AWM Style	PLTC	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE	UL Oil Resistance
5020	5022	2	PUR						.245"/6.22mm	X	83m	
5900	5902	2	FR-TPE	X	X	X	2463**	X	.270"/6.86mm	X	100m	X
5120	5122	4	PUR						.245"/6.22mm	X	83m	
5800	5802	4	FR-TPE	X	X	X	2463**	X	.290"/7.37mm	X	100m	X

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test

\*\* 80° 600V rating



Representative picture, may not match exact configuration of product.



**LEARN MORE**  
[quabbin.com/harsh-5e](http://quabbin.com/harsh-5e)  
 (800) 368-3311

Call Interstate Wire Co., Inc. - (800) 527-0010

## Foil Shield & Braid

Cat 5e / 22 AWG

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	UL AWM Style	PLTC/ITC	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE	UL Oil Resistance
	5920	2	FR-TPE	2463	X	.317"/8.05mm	X	100m	X
	5921	4	FR-TPE	2463	X	.345"/8.76mm	X	100m	X

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

quabbin.com/harsh-5e  
(800) 368-3311

## Profinet® Type B & C Foil Shield & Braid

Cat 5e / 22 AWG

Part Number	Pair Count	Jacket	MSHA	UL AWM Style	PLTC/ITC	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE	UL Oil Resistance
5924	2	FR-TPE	X	2463	X	.310"/7.87mm	X	100m	X

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

quabbin.com/harsh-profinet  
(800) 368-3311

# DataMax® Extreme Industrial Ethernet

## Cat 5e / 24 AWG

Constructions below illustrate most popular—all are available in black, blue, teal, and red jacket colors (minimum quantity may apply). Variations of these constructions are available. Please contact Quabbin Sales or visit [quabbin.com](http://quabbin.com) for more information and complete specifications.

### Unshielded

Cat 5e / 24 AWG

- » Made in USA
- » RoHS Compliant
- » Stranded 24 AWG 7/32 Tinned Copper

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	CMR	UL AWM Style	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5000	5016	2	PUR					.220"/5.59mm	X	70m
5770	5772	2	FR-TPE	X	X		2463	.240"/6.10mm	X	85m
5780	5782	2	PVC			X		.220"/5.59mm		85m
5700	5716	4	PUR					.240"/6.10mm	X	70m
5750	5752	4	FR-TPE	X	X		2463	.248"/6.30mm	X	85m
5915	5916	4	PVC			X		.227"/5.77mm		85m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**  
[quabbin.com/harsh-5e](http://quabbin.com/harsh-5e)  
 (800) 368-3311

Call Interstate Wire Co., Inc. - (800) 527-0010

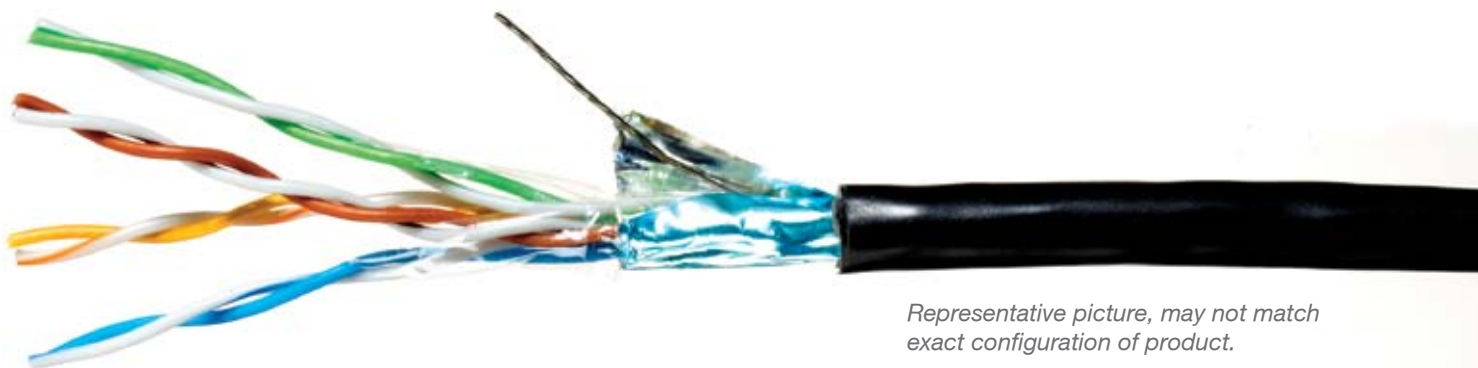
## Foil Shield

Cat 5e / 24 AWG

- » Made in USA
- » RoHS Compliant
- » Stranded 24 AWG 7/32 Tinned Copper

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	CMR	UL AWM Style	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5928	5929	4	FR-TPE	X	X			.263"/6.68mm		90m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

quabbin.com/harsh-5e  
(800) 368-3311

## Foil Shield & Braid

Cat 5e / 24 AWG

- » Made in USA
- » RoHS Compliant
- » Stranded 24 AWG 7/32 Tinned Copper

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	CMR	UL AWM Style	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5023	5025	2	FR-TPE	X	X		2463	.265"/6.73mm	X	90m
5089	5090	4	FR-TPE	X	X		2463	.290"/7.37mm	X	90m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

quabbin.com/harsh-5e  
(800) 368-3311

# DataMax® Extreme Industrial Ethernet

## Cat 5e / 26 AWG

Constructions below illustrate most popular—all are available in black, blue, teal, and red jacket colors (minimum quantity may apply). Variations of these constructions are available. Please contact Quabbin Sales or visit [quabbin.com](http://quabbin.com) for more information and complete specifications.

- » Made in USA
- » RoHS Compliant
- » Stranded 26 AWG 7/36 Tinned Copper

### Foil Shield

Cat 5e / 26 AWG

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	CMR	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5030	5032	2	PVC			X	.209"/5.31mm		67m
5040	5042	2	PUR				.229"/5.82mm		67m
5035	5037	2	FR-TPE	X	X		.209"/5.31mm		67m
5725		4	PVC			X	.220"/5.56mm		67m
5710	5712	4	PUR				.220"/5.56mm		67m
5760	5762	4	FR-TPE	X	X		.237"/6.02mm		67m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

[quabbin.com/harsh-5e](http://quabbin.com/harsh-5e)  
(800) 368-3311

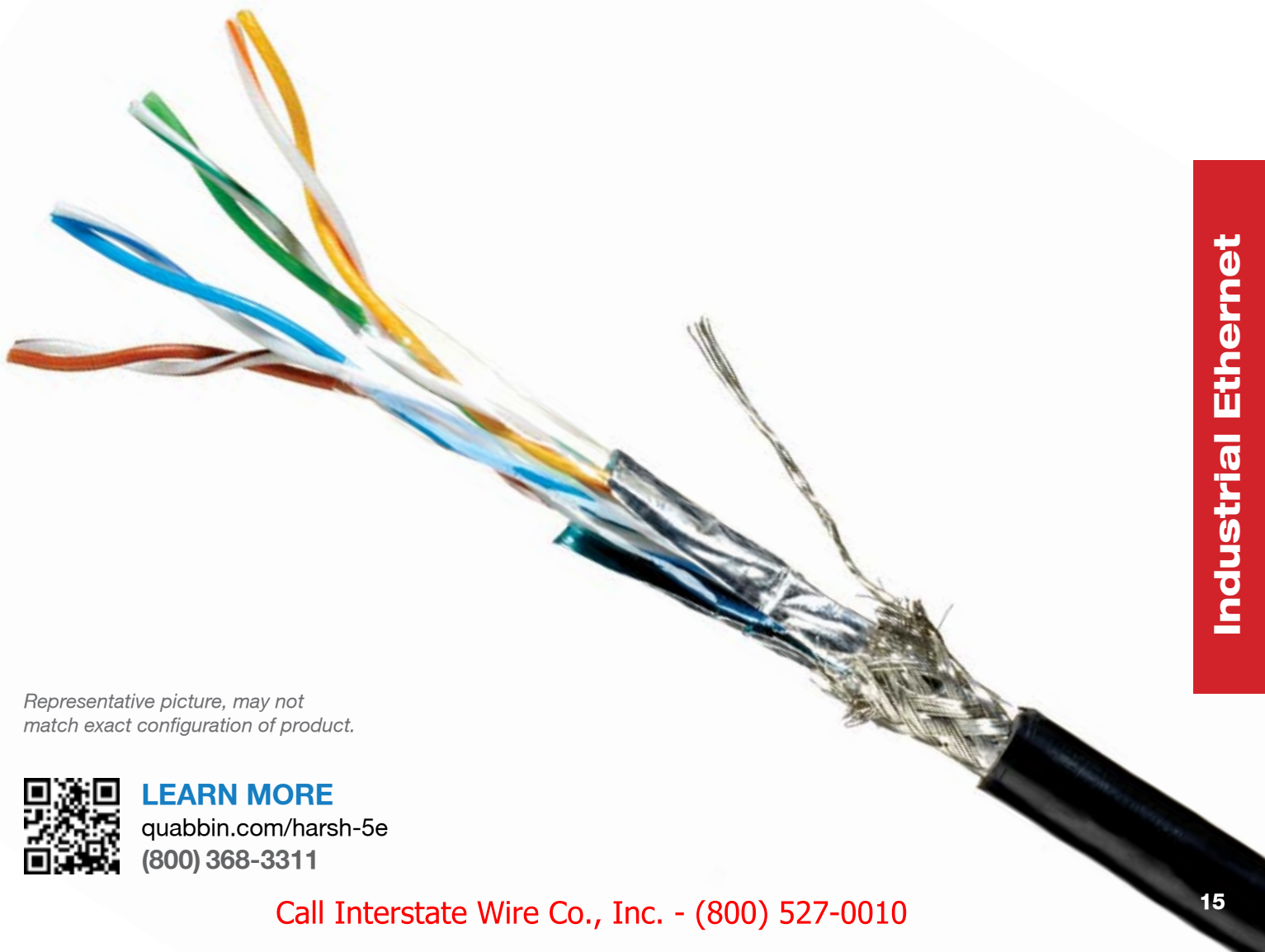
Call Interstate Wire Co., Inc. - (800) 527-0010

## Foil Shield & Braid

Cat 5e / 26 AWG

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX	CMX Outdoor	CMR	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5080	5082	2	ZHFR PUR		X			.225"/5.71mm	X	67m
5055	5057	2	PUR					.225"/5.71mm	X	67m
	5062	2	PVC				X	.224"/5.69mm		67m
5085	5087	2	FR-TPE	X		X		.225"/5.71mm	X	67m
5075	5077	4	ZHFR PUR		X			.244"/6.20mm	X	67m
5730	5732	4	PUR					.220"/5.59mm		67m
5739	5741	4	PVC				X	.228"/5.79mm		67m
5734	5736	4	FR-TPE	X		X		.245"/6.22mm		67m
5083	5088	4	FR-TPE	X		X		.244"/6.20mm	X	67m
5931		2	PUR					.224"/5.69mm		67m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

quabbbin.com/harsh-5e  
(800) 368-3311

Industrial Ethernet

Call Interstate Wire Co., Inc. - (800) 527-0010

# DataMax® Extreme Industrial Ethernet

## Cat 6/6a / 24 AWG

Constructions below illustrate most popular—all are available in black, blue, teal, and red jacket colors (minimum quantity may apply). Variations of these constructions are available. Please contact Quabbin Sales or visit [quabbin.com](http://quabbin.com) for more information and complete specifications.

### Shield & Braid

- » Made in USA
- » RoHS Compliant
- » Spline
- » Temp. Max 75°C

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	UL AWM Style	Copper Strand	Nominal OD	Hi Flex*	Max Plug to Plug Transmission Distance and POE
5925	5922	4	FR-TPE	X	X	2463**	7/32	.325"/8.25mm	X	83m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test

\*\* 80°C 600V Rating



*Representative picture, may not match exact configuration of product.*



**LEARN MORE**

[quabbin.com/harsh-6-6a](http://quabbin.com/harsh-6-6a)  
(800) 368-3311

Call Interstate Wire Co., Inc. - (800) 527-0010

# DataMax® Extreme Industrial Ethernet

## Cat 6a / 26 AWG

Constructions below illustrate most popular—all are available in black, blue, teal, and red jacket colors (minimum quantity may apply). Variations of these constructions are available. Please contact Quabbin Sales or visit [quabbin.com](http://quabbin.com) for more information and complete specifications.

### Shield & Braid

- » Made in USA
- » RoHS Compliant

Black Jacket Part Number	Teal Jacket Part Number	Pair Count	Jacket	CM	CMX Outdoor	UL AWM Style	Copper Strand	Nominal OD	Hi Flex*	Max Plug To Plug Transmission Distance and POE
5919		4	PUR				7/34	.239"/6.07mm	X	70m
	5026	4	FR-TPE	X	X		7/34	.275"/6.98mm	X	70m

\* Hi flex: 1 million cycle test (10x cable O.D., minimum radius); 10 million cycle test (20x cable O.D., minimum radius); 3 million cycle torsion test



Representative picture, may not match exact configuration of product.



**LEARN MORE**

[quabbin.com/harsh-6a](http://quabbin.com/harsh-6a)  
(800) 368-3311

## INDUSTRIAL ETHERNET (IE) APPLICATION

Quabbin's family of Industrial Ethernet cables were developed to reliably survive industrial hazards and may be terminated using encapsulated RJ-45 modular plugs or industrial M12 connectors which have been adapted for Ethernet transmission. These connectors use O-rings, overmolding, and/or sealing gaskets to bond



Encapsulated RJ-45

to the cable jackets, providing a mated connection that resists fluids, dust, vibration, and other hazards, yet often may be field assembled. Assembly ratings of IP67 and IP69 are achievable when properly terminated using sealed connectors, assuring resistance to both fluid and dust particle penetration.



Industrial M12

## CABLE CONSTRUCTION OPTIONS

DataMax® Extreme cables are available in a variety of constructions. All four cable jacket options can be applied to 2-pair or 4-pair unshielded designs with 24 AWG or 22 AWG stranded conductors. Shielded designs are also offered in 2 or 4-pair with four available jackets using 22, 24 or 26 AWG stranded conductors.

For applications calling for a solid conductor cable, DataMax® Extreme 22 AWG stranded conductor cables are an ideal selection. The low insertion loss of 22 AWG allows

runs up to 100 meters, matching the performance of solid conductor cables without sacrificing flexibility or flex life.

Operational environment usually determines if shielded cable must be considered; however, Quabbin's unshielded cable pairs have exceptional "balance" that provides a high degree of isolation from EMI and other emissions. The outstanding balance means, no matter your choice, shielded or unshielded, you can be sure you are getting the best cable for your application.

## PRESSURE EXTRUDED JACKETS

Quabbin DataMax® Extreme jackets were developed to survive many of the industrial hazards that commercial jackets will not. DataMax® Extreme jackets are pressure extruded over the cable core, effectively locking the pairs

in place. This provides very stable electrical performance, even when the cable is impacted, bent, or repeatedly flexed. Pressure extrusion also provides a very smooth, round jacket that aids termination and sealing.

## DATAMAX® EXTREME JACKET COMPARISON INFORMATION

Performance Criteria	Industrial PVC	FR-TPE	PUR	ZHFR-PUR
Low Cost Construction	Excellent	Good	Fair	Fair
RoHS Compliant and Lead Free	Yes	Yes	Yes	Yes
Dielectric Strength and Electrical Performance	Good	Good	Fair	Fair
Low Temperature Flexibility and Brittle Point	Fair	Excellent	Excellent	Excellent
Tear Resistance	Fair	Good	Excellent	Excellent
Abrasion and Scuff Resistance	Good	Good	Excellent	Excellent
Flexibility and Flex-Life	Fair	Excellent	Excellent	Excellent
Tensile Strength and Toughness	Good	Good	Excellent	Excellent
Resistance to Ozone	Excellent	Good	Good	Good
Ultraviolet and Weather Resistance	Fair	Excellent	Good	Good
Resistance to Acids	Fair	Good	Fair	Fair
Resistance to Bases	Good	Good	Good	Good
Resistance to Moisture	Good	Excellent	Excellent	Excellent
Resistance to Petrochemicals	Good	Good/Excellent	Fair	Fair
Flame and Fire Resistance	Excellent	Good/Excellent	Fair	Excellent

Jackets include industrial-grade PVC, flame retardant thermoplastic elastomer (FR-TPE), polyurethane (PUR), and halogen-free polyurethane (ZHFR-PUR). You can see that no single jacket compound is optimum in all characteristics. Since there is no single "best" jacket for all applications, contact Quabbin's Sales Department at 1-800-368-3311 or [sales@quabbin.com](mailto:sales@quabbin.com) to help determine the proper compound that provides the optimum balance of electrical, mechanical, and cost considerations for your project.

# Cable Testing

**What advances DataMax® to the next level earning the name “DataMax® Extreme?”** This section outlines the stringent testing, not required by any formal standard, yet routinely performed as part of Quabbin’s quality commitment. When you need a cable to be dependable in a harsh environment, we can provide you with confidence, peace of mind and data that our cable is the best choice for the application.



**Chemical tests** (affectionately nicknamed the “bean sprout tests”) being conducted to validate the resistance of the TPE (thermoplastic elastomer) cable jacket to chemicals commonly found in a heavy manufacturing environment such as cutting fluid, oil and robotic grease.

## CHEMICAL TESTING

Quabbin’s harsh environment cables find their way into many interesting applications such as military, wastewater treatment and energy exploration, just to name a few.

Historically, the most popular application for Industrial Ethernet has been on the factory floor—an environment also regarded as ‘harsh’ not only due to mechanical abuse but also because of chemical exposure. This knowledge has guided us to test cable capabilities beyond electrical and mechanical stress and evaluate performance and longevity when faced with chemicals and solvents.

To the left is a picture illustrating the chemical testing performed on our Industrial Ethernet cables. The tests include prolonged exposure to a battery of chemicals and the resultant effect on tensile, elongation, diameter and wall thickness as well as overall characteristic changes.



**Torsion tests** are performed on Quabbin 2 pair UTP industrial Ethernet cable and Quabbin 4 pair double shielded cable. This 34” test sample is subjected to a 360 degree twist per cycle (180° in each direction). Three Million cycles are completed on each design with no apparent physical degradation and the cable continues to exceed electrical performance specifications.

**Rolling bend flex tester**, below, showing a 4 pair, double shielded (foil & braid), DataMax® Extreme with ZHFR-PUR jacket being tested to 10 million cycles. Results were a cable with no physical damage that continued to surpass category 5e test parameters.



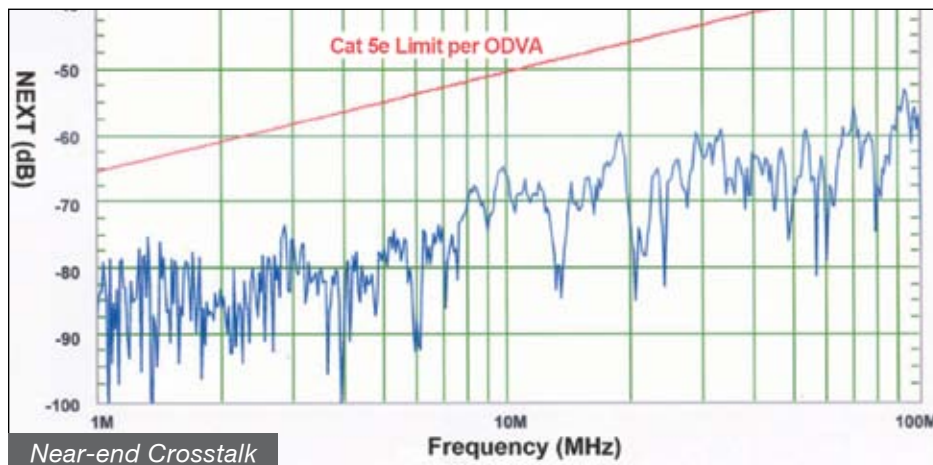
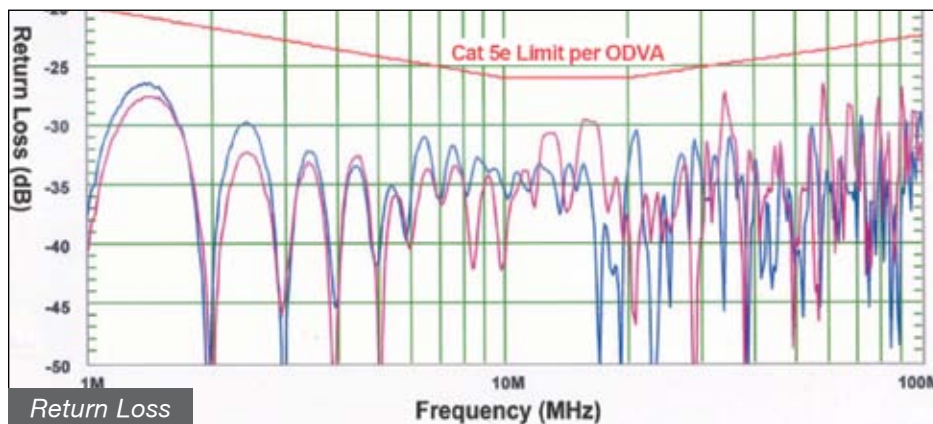
## MECHANICAL TESTING

The purpose behind mechanical testing is to manipulate and work the cable in a manner that duplicates real world scenarios and determine if it will continue to perform at the required standards. If a cable is being used in a continuous movement application, it’s important that it be able to bend and flex repeatedly without compromising the integrity of the design.

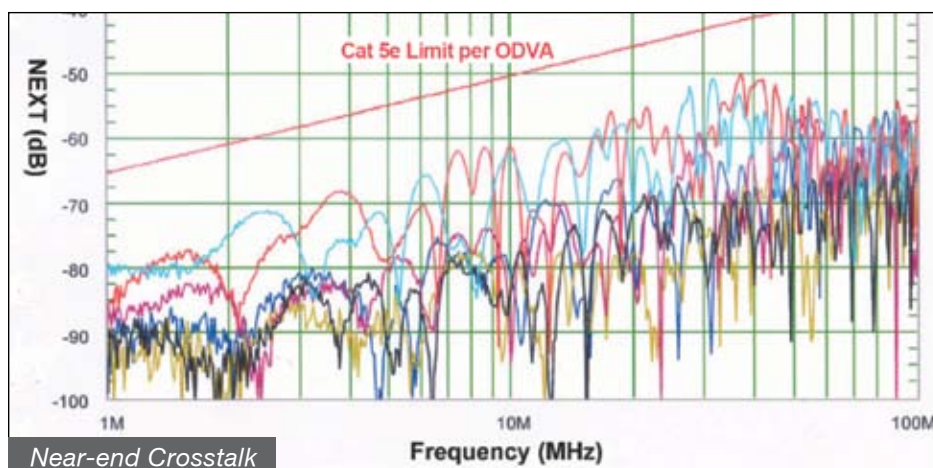
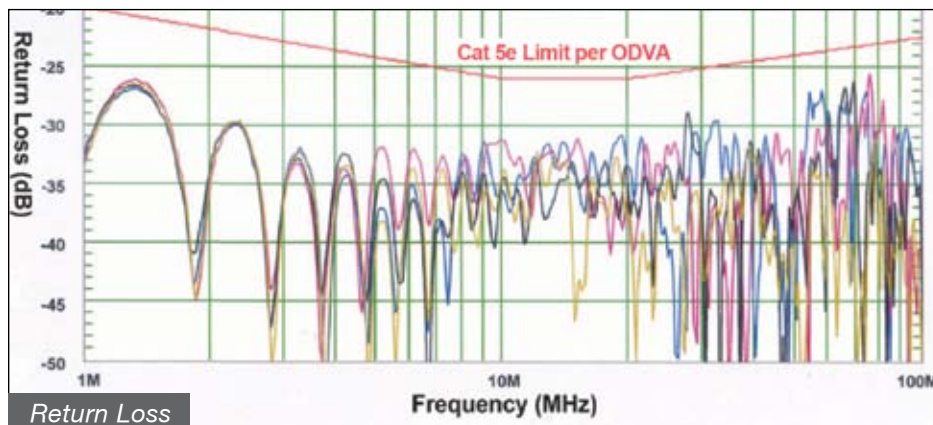
Quabbin’s in-house testing facilities can replicate these movements and evaluate each cable to provide realistic information and data to extrapolate performance expectations in the field.

To the left are two images, the first is showing a ‘torsion tester’ which simulates a rotational stress comparable to what a cable would experience while controlling end of arm tooling. The second photo shows a rolling bend ‘flex tester’ which simulates an unsupported bending motion—typical of what you would see on a robotic arm.

## 2-PAIR FR-TPE CABLE



## 4-PAIR FR-TPE CABLE



## ELECTRICAL TESTING

Transmitting 10Base-T, 100Base-T, or Gigabit Ethernet signals over distances in an industrial application presents two challenges. Building a cable or cord assembly is only half of the battle. The other challenge is, "How good is it electrically?".

The charts at left illustrate typical Return Loss and Near-end Crosstalk performance for DataMax® Extreme 2-pair and 4-pair, 24 AWG FR-TPE jacketed cables. Note the huge performance headroom compared to Category 5e requirements. Industrial Grade PVC or Polyurethane jacketed DataMax® Extreme cables also exceed Category 5e limits.

Use DataMax® Extreme cables to ensure that your Industrial Ethernet cords comply with applicable requirements of the TIA 568-C.2 commercial, TIA 1005, and ODVA industrial communication specifications.



### Proudly Made in the USA

- Eliminates overseas shipping times and costly delays
- Locations from coast to coast (MA, IL, FL, TX, CA)

### Easy Ordering & Shipping

- Sales representatives located throughout North America
- Inside sales specialists available to answer questions and take your orders
- Orders for in-stock items qualify for same day shipping (Orders must be placed by 2pm EST for same day shipping)



### NETWORKS AND CONNECTIONS THAT GO BEYOND OUR CABLES

**It is our practice to go above and beyond.** For more than 40 years we have been instrumental in helping to shape the future of communication cable. Not only are we members of respected groups and associations of the wire and cable world, but we have had the privilege to participate in standards committees and task groups where we can actively engage in the development of forthcoming cable specifications and products.

**Can't find what you are looking for?**  
Contact Quabbin's Sales Service Department  
at 1-800-368-3311 or [Sales@quabbin.com](mailto:Sales@quabbin.com)



*In process of requalifying for newest ISO 9001:2015 Standard*



**Quabbin Wire and Cable Co., Inc., 10 Maple Street, Ware, MA 01082**  
800.368.3311 • 413.967.6281 • fax 413.967.7564 • [www.quabbin.com](http://www.quabbin.com)

**Call Interstate Wire Co., Inc. - (800) 527-0010**