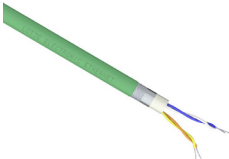
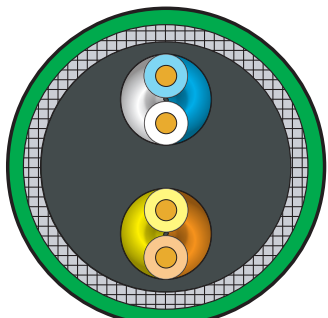


# Cat5e Industrial Ethernet Cable



SYSTEMATIC TECHNOLOGY

| A104301-1 Cable Specifications  |               |   |   |                          |   |                |
|---|---------------|---|---|--------------------------|---|----------------|
|  | Part Number   | Wire/Cable Type   | Flexibility   | Minimum Cut Length (ft)* | Approximate Weight (lb/ft)  | Price per foot |
|   | A104301-1     | Cat5e industrial Ethernet   | Flexible  | 20                       | 0.04  | \$1.37         |
| Physical Properties   |               |   |   |                          |   |                |
| <b>Conductor Gauge</b>  |               | 22 AWG  | <b>Conductor Stranding</b>  |                          | solid bare copper   |                |
| <b>Conductor Material</b>   |               | Bare Copper   | <b>Conductor Insulation Wall Thickness</b>                        |                          | 0.015 in; nominal   |                |
| <b>Conductor Assembly</b>   |               | 2 twisted pairs   | <b>Bare Conductor Diameter</b>                                    |                          | 0.029 in; nominal   |                |
| <b>Color Code</b>   | <b>Pair 1</b> | White, Blue   | <b>Insulated Conductor Diameter</b>                               |                          | 0.057 in; nominal   |                |
|   | <b>Pair 2</b> | Yellow, Orange  | <b>Twisted Conductor Diameter</b>                                 |                          | 0.114 in; nominal   |                |
|   | <b>Pair 3</b> | N/A   | <b>Overall Cable Diameter</b>                                     |                          | 0.256 in; nominal   |                |
|   | <b>Pair 4</b> | N/A   | <b>Jacket Color</b>   |                          | Green   |                |
| <b>Voltage Rating</b>   |               | 600V  | <b>Jacket Thickness</b>   |                          | 0.037 in; nominal   |                |
| <b>Temperature Rating</b>   |               | -40 to 80 °C (-40 to 176 °F)  | <b>Jacket Material</b>  |                          | PVC   |                |
| <b>Plenum</b>   |               | No  | <b>Sunlight Resistant</b>   |                          | Yes   |                |
| <b>Shield</b>   |               | Shielded  | <b>Oil Resistance</b>   |                          | Yes   |                |
| <b>Drain</b>  |               | No  | <b>Flame Retardant</b>  |                          | Yes   |                |
| <b>Conductor Insulation Material</b>  |               | Special Polyolefin  | <b>Sample Print Legend</b>  |                          | <LUTZE logo> ELECTRONIC ETHERNET (C) PVC 104301 (2x2xAWG22/1) PROFINET TYPE A Cat 5e E336436 (UL) TYPE PLTC FT4 or c(UL) us TYPE CMG 75°C or <logo cURus> AWM STYLE 20201 60°C 600V /III A/B FT1 RoHS <date YYWW> UKCA CE-44 <metermarking> |                |
| <b>Minimum Bend Radius</b>  |               | 1.54in  |   |                          |   |                |
| <b>Cabled Core Diameter</b>   |               | 0.181 in  |   |                          |   |                |
| Electrical Characteristics (for 100 meters of cable)                              |               |   |   |                          |   |                |
| <b>Impedance (1-100 MHz)</b>  |               | 100 Ω 1 – 100 MHz   | <b>UL Classification</b>  |                          | (cULus) TYPE CMG/PLTC or AWM Style 20201; (cURus) Class I and II, Div. 2; Class 1 Div. 2  |                |
| <b>Capacitance</b>  |               | 15.85 pF/ft @ 1MHz; Nominal   | <b>Approvals**</b>  |                          | cULus, uURus, CE, RoHS  |                |
| <b>Resistance, Max.</b>   |               | 32.7 Ω DC per 1000ft  | <b>Attenuation Crosstalk Ratio, Far End (ACRF)</b>                |                          | 1 ≤ f ≤ 100 MHz: 23.8 - 20 LOG(f/100) dB MIN  |                |
| <b>Dielectric Withstanding, Min.</b>  |               | 1500V RMS   | <b>Insertion Loss</b>   |                          | 1 ≤ f ≤ 100 MHz: 1.967 √f + 0.023(f) + 0.050/√f dB MAX  |                |
| <b>Return Loss</b>  |               | 1 ≤ f < 10 MHz: 20 + 5 LOG(f) dB MIN<br>10 ≤ f < 20 MHz: 25 dB MIN<br>20 ≤ f ≤ 100 MHz: 25 - 7.0 LOG(f/20) dB MIN | <b>Power Sum Attenuation to Crosstalk Ratio, Far End (PSACRF)</b> |                          | 1 ≤ f ≤ 100 MHz: 20.8 - 20 LOG(f/100) dB MIN  |                |
| <b>Near End Crosstalk (NEXT)</b>  |               | 1 ≤ f ≤ 100 MHz: 35.3 - 15 LOG(f/100) dB MIN  | <b>Cross Section</b>  |                          |    |                |
| <b>Power Sum Near End Crosstalk (PSNEXT)</b>                                      |               | 1 ≤ f ≤ 100 MHz: 32.3 - 15 LOG(f/100) dB MIN  |   |                          |   |                |
| <b>TCL</b>  |               | 1 ≤ f ≤ 100 MHz: 30 - 10 LOG(f/100) dB MIN  |   |                          |   |                |
| <b>ELTCTL</b>   |               | 1 ≤ f ≤ 30 MHz: 35 - 20 LOG(f) dB MIN   |   |                          |   |                |
| <b>Velocity Of Propagation</b>  |               | 0.62%   |   |                          |   |                |
| <b>Delay</b>  |               | 4 ≤ f ≤ 100 MHz: 534 + 36/√f ns MAX   |   |                          |   |                |
| <b>Delay Skew</b>   |               | 1 ≤ f ≤ 100 MHz: <20ns/100m   |   |                          |   |                |

\* See web store [www.AutomationDirect.com](http://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](http://www.AutomationDirect.com)



Please Note: Our prices on Continuous Flexing IE 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.



# LUTZE Industrial Ethernet Cables

## LUTZE Industrial Ethernet Cables



Many industrial applications expose cables to hazards that are 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 application. While commercial grade cables may have a low initial product cost, downtime due to premature failure can be avoided by using a cable that has been designed and tested for the industrial environment. LUTZE's Industrial Ethernet cables were developed to survive the many industrial hazards that commercial cables will not, such as oils, harsh chemicals and cleaning agents often associated with the factory floor.

There are more than just physical hazards to overcome in an industrial application; electrical threats pose an issue for Ethernet cables as well. The presence of EMF/EMI can create a real issue for communication networks and where you can use a shielded commercial product. In most cases, the shielding provided is a single layer of foil which is adequate for installation away from the factory floor. However, when dealing with electrical noise generated by motors and switching equipment, commercial cables struggle to meet the demands of a typical industrial environment. The Industrial Ethernet cables from LUTZE are made with both a foil layer and a tinned copper braid to provide superior noise rejection compared to the commercial counterparts.

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 applications requiring constant motion. This results in early mechanical or electrical failure of the cable. LUTZE continuous flexing Industrial Ethernet cable have a jacket that is 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.

### Features

- Available in Category 5e, 6 and 6a
- In compliance with TIA 568-C.2 and TIA 1005
- Designed for use in EtherNet/IP systems \*
- 26-22 AWG stranded or 22 AWG solid
- 2 or 4 twisted pairs
- Shielded constructions
- Rugged TPE and PVC jacket options
- 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

\* EtherNet/IP is a trademark of ODVA, Inc.

### Description

AutomationDirect offers Lutze 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. Agency approvals include UL Type CMX OUTDOOR, UL Type CMG/PLTC, UL AWM Style 2570, and UL AWM Style 20201.

Click on the thumbnail to the right or go to <https://www.automationdirect.com/VID-WD-0016> for a short introduction on our cut to length cable

