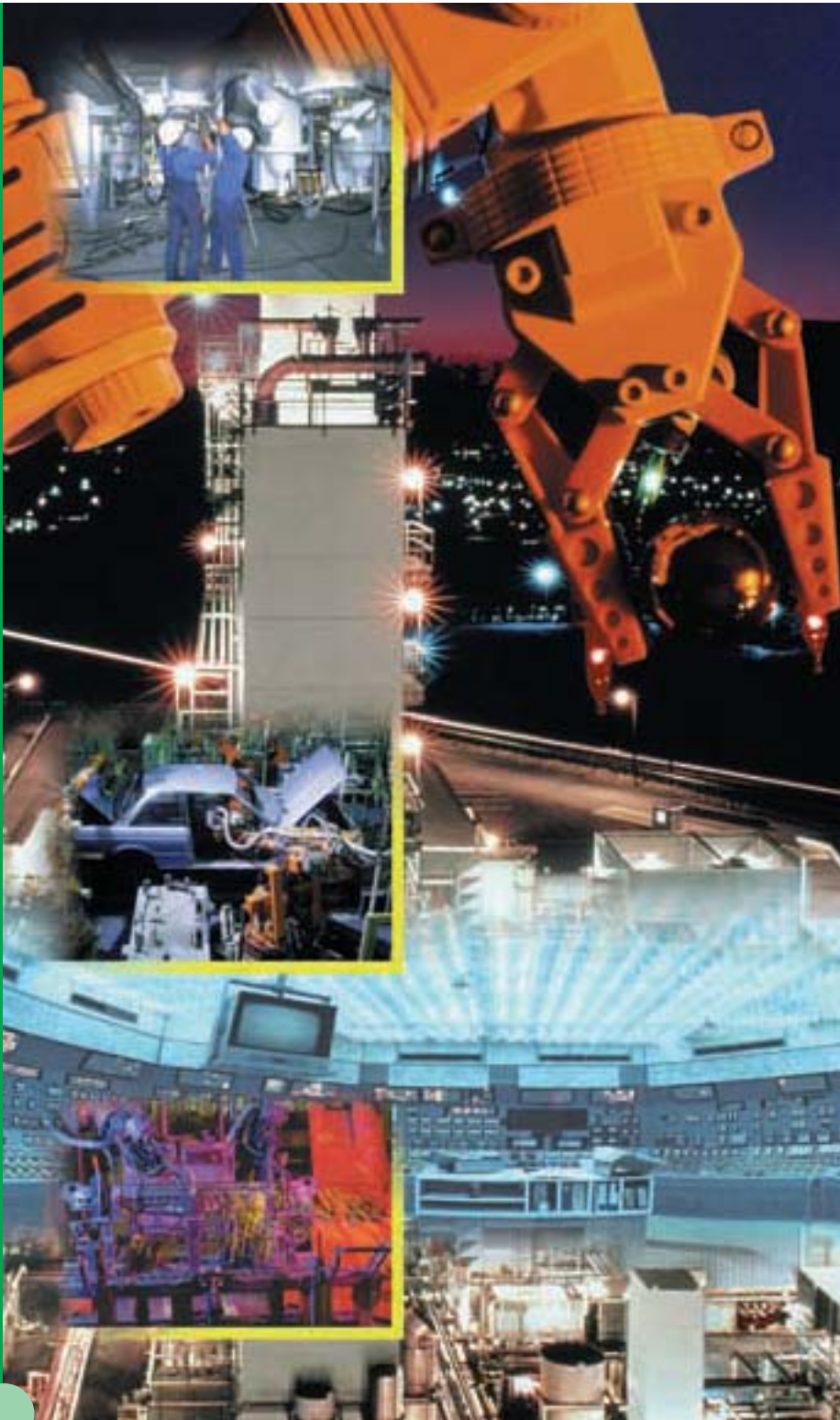


**Belden**  
Wire & Cable

# Belden



**Industrial Data Solutions®**

# Industrial Data Solutions®

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## Belden Worldwide



### *Belden makes a contribution to the advancing technology.*

Since the foundation in 1902 Belden has concentrated on manufacturing high quality cable and wire products for ever changing applications in constantly changing markets. Throughout the world we are dedicated to finding appropriate solutions that comply with the demands of the markets we serve.

Belden has been for years the leading company for proprietary systems. Hundreds of instrumentation companies have specified Belden Wire & Cable part numbers for use in their systems all over the world. Belden has worldwide production facilities, worldwide

technical- and sales support-offices and a worldwide distribution network making it to the global partner you can rely on.

Belden is proud on the reputation that we hold with leading companies and we intend to carry this excellent reputation into the ever increasing markets of Industrial Data Solutions® and/or Open Fieldbus Applications.

Belden does not only offer you the cables for the systems on the market today but we are also ready to serve you with the cabling solutions for the future.

This brochure holds a selection of Belden "INDUSTRIAL DATA SOLUTIONS® cables".

If you need more information request our "Belden Master Catalog", contact your local sales office or visit us at:

<http://www.belden.com>

### *Belden Production*

All Belden products are built on a philosophical foundation of quality. To us this means meeting your requirements 100 % of the time. What this means to the industrial cable user is really quite simple: every Belden industrial cable product receives the same committed attention.



USA



Germany



The Netherlands



*Belden Cables – outstanding reliability:*

*M e t e r     b y     m e t e r*

### **1.** *Manufacturer-Warranty*

With all Belden products you are buying quality from the market-leader. Customers worldwide value the reliability of Belden cables. This is a result of a complete quality assurance program.

### **2.** *Real Belden Quality*

Belden guarantees that all supplied products worldwide are comprehensively tested and only faultless products go out from Belden. The use of statistical process analysis ensures that the fixed specification is maintained. The stability of individual electrical and mechanical values is guaranteed using the most up-to-date process controls.

All Belden development plants, production plants and sales offices are certified according to ISO 9001 and ISO 9002.

### **3.** *Distribution*

If you order Belden products, you'll get impartial advice from our strong partners. Plus expertise, service and support you can rely on. They'll make sure your order is quickly dispatched to reach you as soon as possible. Backed by in-depth stockholding of standard products.

**This makes Belden products worldwide available from stock.**

### **4.** *Product Variety*

Belden offers the widest choice of standard cables from stock. Belden is the specialist in data cables application. In this brochure you will find a selection as needed for the "Industrial Data Solutions®". With its local presence in Europe Belden is also able to tailor make customer solutions.

If you need more information request our "Belden Master Catalog", contact your local sales office or visit us at: <http://www.belden.com>

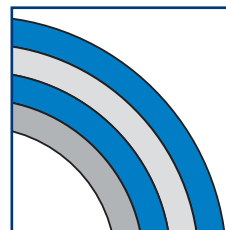
## Belden Features

### *Datalene®*

An insulation material for data-transmission cables. Datalene® is crush resistant, lightweight and offers outstanding performance characteristics over a wide range of temperatures.

### *DuoBond®*

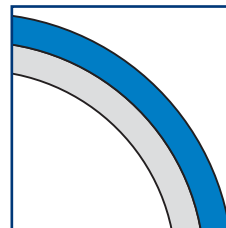
A smart combination of shielding techniques providing you with the type of shielding necessary for your application.



■ Foil  
■ Film  
■ Adhesive

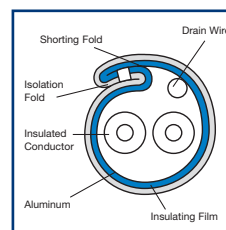
### *Beldfoil®*

The first aluminum/polyester foil developed for use as a cable shield. Provides 100% shield coverage for optimum protection.



### *Z-Fold®*

A shorting fold provides metal to metal contact and an isolation fold prevent adjacent shields from shorting to one another.



### *LSNH (Low Smoke Non Halogen)*

All cables that carry the extension **NH** use a grade of non halogen jacketing material that allows most cables to carry the **IEC 332-3C**\* specifications (the toughest IEC flame retardant rating). \*Depending on cable construction verify with data-sheet.

### *SWA (Steel Wire Armor)*

All cables that carry the extension **LS** are equipped with a steel wire serve armor in accordance with the BS specifications, are fully halogen-free and have a LSNH outer jacket. All cables are in accordance with the **IEC 332-3C**.

## IEC 61158-2 (SP50) Fieldbus Foundation / WorldFip / Profibus PA

### TYPE A

**18 AWG one pair Polyolefin insulated cable with Z-Fold® Beldfoil® screen and orange PVC jacket. The cables are intended for Fieldbus Foundation/WorldFip/Profibus PA.**

| Description                                                                                                                             | Trade No.              | Standard Length |       | Weight |     | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|-----------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|-----|--------------|-----|-----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                                                                         |                        | ft.             | m     | Lbs.   | kg  | Inch         | mm  |           |                    |                       | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>3076F</b><br>1 pair | 250             | 76.2  | 9      | 4   | 0.253        | 6.4 | 100       | 66%                | NEC PLTC CM<br>CEC CM | 10k         | 0.06       | 0.2      |
|                                                                                                                                         |                        | 500             | 152.4 | 18     | 8   |              |     |           |                    |                       | 39k         | 0.08       | 0.3      |
|                                                                                                                                         |                        | 1000            | 304.8 | 36     | 16  |              |     |           |                    |                       | 100k        | 0.2        | 0.6      |
|                                                                                                                                         |                        | 2500            | 762   | 84     | 38  |              |     |           |                    |                       | 500k        | 0.8        | 2.5      |
|                                                                                                                                         |                        | 5000            | 1524  | 168    | 76  |              |     |           |                    |                       | 1M          | 1.1        | 3.4      |
|                                                                                                                                         |                        | 10000           | 3048  | 348    | 157 |              |     |           |                    |                       |             |            |          |

Color code: White & Black

|              |                                                                 |
|--------------|-----------------------------------------------------------------|
| Conductor    | 18 (7 x 26) AWG tinned copper // DCR: 6.92 ohm/Mft. = 22 ohm/km |
| Insulation   | Polyolefin                                                      |
| Construction | Paired // Capacitance conductors: 24 pF/ft. = 78 pF/m           |
| Shield       | Z-Fold® Beldfoil® // DCR: 7.5 ohm/Mft. = 24.6 ohm/km            |
| Jacket       | Orange PVC                                                      |

### TYPE B

**22 AWG one pair Polyolefin insulated cable with Z-Fold® Beldfoil® screen and orange PVC jacket. The cables are intended for Fieldbus Foundation/WorldFip/Profibus PA.**

| Description                                                                                                                               | Trade No.              | Standard Length |       | Weight |    | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|----|--------------|-----|-----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                                                                           |                        | ft.             | m     | Lbs.   | kg | Inch         | mm  |           |                    |                       | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>3077F</b><br>1 pair | 250             | 76.2  | 5      | 2  | 0.196        | 4.9 | 100       | 66%                | NEC PLTC CM<br>CEC CM | 10k         | 0.1        | 0.4      |
|                                                                                                                                           |                        | 500             | 152.4 | 10     | 4  |              |     |           |                    |                       | 39k         | 0.1        | 0.5      |
|                                                                                                                                           |                        | 1000            | 304.8 | 20     | 9  |              |     |           |                    |                       | 100k        | 0.2        | 0.7      |
|                                                                                                                                           |                        | 2500            | 762   | 51     | 23 |              |     |           |                    |                       | 500k        | 0.9        | 3.0      |
|                                                                                                                                           |                        | 5000            | 1524  | 99     | 45 |              |     |           |                    |                       | 1M          | 1.4        | 4.5      |
|                                                                                                                                           |                        | 10000           | 3048  | 197    | 89 |              |     |           |                    |                       |             |            |          |

Color code: White & Black

|              |                                                                 |
|--------------|-----------------------------------------------------------------|
| Conductor    | 22 (7 x 30) AWG tinned copper // DCR: 17.1 ohm/Mft. = 56 ohm/km |
| Insulation   | Polyolefin                                                      |
| Construction | Paired // Capacitance conductors: 23.5 pF/ft. = 77 pF/m         |
| Shield       | Z-Fold® Beldfoil® // DCR: 11.4 ohm/Mft. = 37.4 ohm/km           |
| Jacket       | Orange PVC                                                      |

### HIGH SPEED

**22 AWG one pair Cellular Polyolefin insulated cable with Z-Fold® Beldfoil® screen and orange PVC jacket. The cables are intended for Fieldbus Foundation/WorldFip/Profibus PA.**

| Description                                                                                                                               | Trade No.              | Standard Length |       | Weight |    | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|----|--------------|-----|-----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                                                                           |                        | ft.             | m     | Lbs.   | kg | Inch         | mm  |           |                    |                       | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>3078F</b><br>1 pair | 250             | 76.2  | 13     | 5  | 0.373        | 9.4 | 150       | 78%                | NEC PLTC CM<br>CEC CM | 250k        | 0.2        | 0.6      |
|                                                                                                                                           |                        | 500             | 152.4 | 25     | 11 |              |     |           |                    |                       | 625k        | 0.3        | 0.9      |
|                                                                                                                                           |                        | 1000            | 304.8 | 48     | 21 |              |     |           |                    |                       | 3M125       | 0.3        | 1.1      |
|                                                                                                                                           |                        | 2500            | 762   | 116    | 52 |              |     |           |                    |                       | 5M          | 0.6        | 1.8      |
|                                                                                                                                           |                        |                 |       |        |    |              |     |           |                    |                       | 10M         | 0.7        | 2.2      |
|                                                                                                                                           |                        |                 |       |        |    |              |     |           |                    |                       |             | 0.9        | 3.1      |

Color code: White & Black

|              |                                                                 |
|--------------|-----------------------------------------------------------------|
| Conductor    | 22 (7 x 30) AWG tinned copper // DCR: 17.1 ohm/Mft. = 56 ohm/km |
| Insulation   | Cellular Polyolefin                                             |
| Construction | Paired // Capacitance conductors: 8.5 pF/ft. = 27 pF/m          |
| Shield       | Z-Fold® Beldfoil® // DCR: 11.1 ohm/Mft. = 36.4 ohm/km           |
| Jacket       | Orange PVC                                                      |

# Profibus DP Siemens SINEC L2

## STANDARD

**22 AWG one pair Cellular Polyethylene insulated with a Z-Fold® Beldfoil® and 65% tinned copper braid, PVC gray jacket.**

| Description                                                                                                                              | Trade No.              | Standard Length |       | Weight |    | Nominal O.D. |    | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|----|--------------|----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                                                          |                        | ft.             | m     | Lbs.   | kg | Inch         | mm |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>3079A</b><br>1 pair | 1000            | 304.8 | 57     | 25 | 0.315        | 8  | 150      | 78%                | NEC PLTC       | 300k        | 0.2        | 0.7      |
|                                                                                                                                          |                        | 2000            | 609.6 | 114    | 51 |              |    |          |                    | CMG CL2        | 1M          | 0.4        | 1.3      |
|                                                                                                                                          |                        | 3600            | 1097  | 205    | 92 |              |    |          |                    | CEC CMG        | 10M         | 1.1        | 3.6      |
|                                                                                                                                          |                        |                 |       |        |    |              |    |          |                    |                | 20M         | 3.5        | 11.0     |
|                                                                                                                                          |                        |                 |       |        |    |              |    |          |                    |                | 100M        | 3.8        | 12.0     |

Color code: Red & Green

|              |                                                                                |
|--------------|--------------------------------------------------------------------------------|
| Conductor    | 22 (solid) AWG bare copper // DCR: 16 ohm/Mft. = 52 ohm/km                     |
| Insulation   | Cellular Polyethylene                                                          |
| Construction | Paired // Capacitance conductors: 9 pF/ft. = 29 pF/m                           |
| Shield       | Z-Fold® Beldfoil® & 65% tinned copper braid // DCR: 3.9 ohm/Mft. = 12.7 ohm/km |
| Jacket       | Chrome PVC                                                                     |

## STRANDED

**22 (7 x 30) one pair Cellular Polyethylene insulated with polyester and aluminum foil and 65% tinned copper braid cabled together with two strength members under a purple PVC jacket. The European choice for connecting Profibus DP installations due to the stranding the cable is capable of a small bending radius and has less re-fit of broken conductors at termination points.**

| Description                                                                         | Trade No.              | Standard Length |      | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|-------------------------------------------------------------------------------------|------------------------|-----------------|------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                     |                        | ft.             | m    | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3079E</b><br>1 pair | 1640            | 500  | 42     | 19 | 0.32         | 8.1 | 150      | 78%                | —              | 300k        | 0.2        | 0.6      |
|                                                                                     |                        | 3280            | 1000 | 84     | 38 |              |     |          |                    |                | 1M          | 0.4        | 1.2      |
|                                                                                     |                        |                 |      |        |    |              |     |          |                    |                | 10M         | 1.1        | 3.5      |
|                                                                                     |                        |                 |      |        |    |              |     |          |                    |                | 20M         | 1.5        | 4.8      |
|                                                                                     |                        |                 |      |        |    |              |     |          |                    |                |             |            |          |

Color code: Red & Green

|              |                                                                                                                                         |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 22 (7 x 30) AWG stranded bare copper // DCR: 15.5 ohm/Mft. = 50 ohm/km                                                                  |
| Insulation   | Cellular Polyethylene                                                                                                                   |
| Construction | Paired // Capacitance conductors: 7.1 pF/ft. = 23 pF/m                                                                                  |
| Shield       | Polyester + aluminum foil & 65% tinned copper braid // Capacitance to conductor: 15 pF/ft. = 49 pF/m // DCR: 3.9 ohm/Mft. = 12.7 ohm/km |
| Jacket       | Purple PVC                                                                                                                              |

## InterBus-S

### POWER + DATA PAIRS

Cables for standard InterBus-S protocol. As designed for Phoenix contact.

| Description                                                                                                  | Trade No. | Standard Length |                | Weight   |          | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|--------------------------------------------------------------------------------------------------------------|-----------|-----------------|----------------|----------|----------|--------------|-----|----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                                              |           | ft.             | m              | Lbs      | kg       | Inch         | mm  |          |                    |                       | Hz          | dB/100 ft. | dB/100 m |
|  <b>3119A</b><br>3 pair + 3C |           | 500<br>1000     | 152.4<br>304.8 | 35<br>62 | 15<br>28 | 0.305        | 7.7 | 100      | 66%                | UL AWM<br>STYLE 20233 | –           | –          | –        |

Color code: Power = Red & Blue & Green / Yellow // Data = White & Brown // Pink & Gray // Yellow & Green

|              |                                                                                                                                                            |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 18 (7 x 24) AWG tinned copper // DCR: 3.7 ohm/Mft. = 12 ohm/km<br><b>Data:</b> 24 (7 x 32) AWG tinned copper // DCR: 24 ohm/Mft. = 78 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC<br><b>Data:</b> Polyethylene                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | 3 pair + 3 single // Capacitance conductors: 15.4 pF/ft. = 50 pF/m                                                                                         |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Overall aluminum polyester + 90% tinned copper braid // DCR: 2.7 ohm/Mft. = 8.8 ohm/km                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Green PUR                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |

### DATA PAIRS

Cables for standard InterBus-S protocol. As designed for Phoenix contact.

| Description                                                                                               | Trade No. | Standard Length |                | Weight   |          | Nominal O.D. |       | Nom Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|-----------------------------------------------------------------------------------------------------------|-----------|-----------------|----------------|----------|----------|--------------|-------|----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                                           |           | ft.             | m              | Lbs.     | kg       | Inch         | mm    |          |                    |                       | Hz          | dB/100 ft. | dB/100 m |
|  <b>3120A</b><br>3 pair |           | 500<br>1000     | 152.4<br>304.8 | 30<br>54 | 13<br>24 | 7.7          | 195.5 | 100      | 66%                | UL AWM<br>STYLE 20233 | –           | –          | –        |

Color code: pr1 = White & Brown // pr2 = Pink & Gray // pr3 = Yellow & Green

|              |                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|----------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 24 (7 x 32) AWG tinned copper // DCR: 24 ohm/Mft. = 78 ohm/km                          |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Polyethylene                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 15.4 pF/ft. = 50 pF/m                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Overall aluminum polyester + 90% tinned copper braid // DCR: 2.7 ohm/Mft. = 8.8 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray PUR                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |



# WorldFip

## THIN CABLES

These cables are designed to be used in automation projects for WorldFip applications where there is limited space and limited transmission length. The cables are 26 AWG have individual shielded pairs and an overall braid shielded for excellent noise immunity.

| Description                                                                        | Trade No.       | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |             |           |
|------------------------------------------------------------------------------------|-----------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|-------------|-----------|
|                                                                                    |                 | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/ 100 ft. | dB/ 100 m |
|   | 7724A<br>1 pair | 1000            | 304.8 | 19     | 9  | 0.264        | 6.7 | 150      | 75%                | IEC 332        | 1M          | 0.6         | 1.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 2M          | 0.7         | 2.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 3M          | 0.9         | 2.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 4M          | 1.0         | 3.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 5M          | 1.1         | 3.5       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 10M         | 1.5         | 4.8       |
|   | 7725A<br>2 pair | 1000            | 304.8 | 37     | 17 | 0.29         | 7.3 | 150      | 75%                | IEC 332        | 1M          | 0.6         | 1.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 2M          | 0.7         | 2.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 3M          | 0.9         | 2.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 4M          | 1.0         | 3.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 5M          | 1.1         | 3.5       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 10M         | 1.5         | 4.8       |
|  | 7726A<br>4 pair | 1000            | 304.8 | 53     | 24 | 0.36         | 9.1 | 150      | 75%                | IEC 332        | 1M          | 0.6         | 1.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 2M          | 0.7         | 2.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 3M          | 0.9         | 2.8       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 4M          | 1.0         | 3.2       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 5M          | 1.1         | 3.5       |
|                                                                                    |                 |                 |       |        |    |              |     |          |                    |                | 10M         | 1.5         | 4.8       |

Color code: pr1 = Black & White // pr2 = Red & Green // pr3 = Brown & Blue // pr4 = Orange & Yellow

|              |                                                                                                                                   |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 26 (7 x 34) AWG tinned copper // DCR: 44.4 ohm/Mft. = 145 ohm/km                                                                  |
| Insulation   | Foam Polyethylene                                                                                                                 |
| Construction | Paired // Capacitance conductors: 9.1 pF/ft = 29 pF/m                                                                             |
| Shield       | Individual Beldfoil® with 26 (7 x 34) AWG common drain wire and 90% overall tinned copper braid // DCR: 3.65 ohm/Mft. = 12 ohm/km |
| Jacket       | Orange PVC                                                                                                                        |

## THIN CABLE OUTSIDE

This cable is designed for outside use in WorldFip projects it can be exposed to all kinds of weather or can be used as cable that will be in water filled ducts or in constant deluge. The cable is suitable for direct burial provided the ground is free of harsh materials.

| Description                                                                         | Trade No.       | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |             |           |
|-------------------------------------------------------------------------------------|-----------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|-------------|-----------|
|                                                                                     |                 | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/ 100 ft. | dB/ 100 m |
|  | 7723A<br>1 pair | 1000            | 304.8 | 22     | 11 | 0.326        | 8.2 | 150      | 75%                | –              | 1M          | 0.6         | 1.8       |
|                                                                                     |                 |                 |       |        |    |              |     |          |                    |                | 2M          | 0.7         | 2.2       |
|                                                                                     |                 |                 |       |        |    |              |     |          |                    |                | 3M          | 0.9         | 2.8       |
|                                                                                     |                 |                 |       |        |    |              |     |          |                    |                | 4M          | 1.0         | 3.2       |
|                                                                                     |                 |                 |       |        |    |              |     |          |                    |                | 5M          | 1.1         | 3.5       |
|                                                                                     |                 |                 |       |        |    |              |     |          |                    |                | 10M         | 1.5         | 4.8       |

Color code: White & Black

|              |                                                                                                                            |
|--------------|----------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 26 (7 x 34) AWG tinned copper // DCR: 44.4 ohm/Mft. = 145 ohm/km                                                           |
| Insulation   | Foam Polyethylene                                                                                                          |
| Construction | Paired // Capacitance conductors: 9.1 pF/ft = 29 pF/m                                                                      |
| Shield       | Individual Beldfoil® with 26 (7 x 34) AWG drain wire and 90% overall tinned copper braid // DCR: 3.65 ohm/Mft. = 12 ohm/km |
| Jacket       | Black Polyethylene                                                                                                         |

## IEEE 802.4 (MAP) & IEEE 802.7 (Mini-MAP)

### RG-6/U TYPE

Sweep tested broadband RG-6/U coax cables with Quad shield.

| Description                                                                      | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications                   | Attenuation |            |          |
|----------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------------------------|-------------|------------|----------|
|                                                                                  |            | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                                  | Hz          | dB/100 ft. | dB/100 m |
|  | 3131A coax | 500             | 152.4 | 30     | 13 | 0.298        | 7.5 | 75       | 82%                | RG-6/U<br>NEC CL2 CMR<br>CEC CMR | 1M          | 0.5        | 1.6      |
|                                                                                  |            | 1000            | 304.8 | 53     | 24 |              |     |          |                    |                                  | 10M         | 0.9        | 3.0      |
|                                                                                  |            | 2000            | 609.6 | 116    | 52 |              |     |          |                    |                                  | 50M         | 1.5        | 4.9      |
|                                                                                  |            |                 |       |        |    |              |     |          |                    |                                  | 100M        | 2.0        | 6.6      |

|              |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 18 (solid) AWG bare copper covered steel // DCR: 28 ohm/Mft. = 91 ohm/km                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed Polyethylene                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capacitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 7.2 ohm/Mft. = 23.6 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray PVC                                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |

### TEFLON®\* RG-6/U TYPE

Plenum Sweep tested broadband coax RG-6/U cables with Quad shield for use in plenum space, outdoor and direct burial.

| Description                                                                        | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications          | Attenuation |            |          |
|------------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|-------------------------|-------------|------------|----------|
|                                                                                    |            | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                         | Hz          | dB/100 ft. | dB/100 m |
|  | 3132A coax | 500             | 152.4 | 30     | 13 | 0.273        | 6.9 | 75       | 82%                | NEC CMP PLTC<br>CEC CMP | 1M          | 0.3        | 1.0      |
|                                                                                    |            | 1000            | 304.8 | 53     | 24 |              |     |          |                    |                         | 10M         | 0.7        | 2.2      |
|                                                                                    |            |                 |       |        |    |              |     |          |                    |                         | 50M         | 1.5        | 4.9      |
|                                                                                    |            |                 |       |        |    |              |     |          |                    |                         | 100M        | 2.1        | 6.9      |

|              |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 18 (solid) AWG bare copper covered steel // DCR: 28 ohm/Mft. = 91 ohm/km                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed FEP Teflon®*                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capacitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 7.2 ohm/Mft. = 23.6 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray Fluorocopolymer                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |

\* Teflon® is a trademark of DuPont Company

# IEEE 802.4 (MAP) & IEEE 802.7 (Mini-MAP)

## RG-11/U TYPE

Sweep tested broadband RG-11/U coax cables with Quad shield.

| Description                                                                       | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |      | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |             |           |
|-----------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|------|----------|--------------------|----------------|-------------|-------------|-----------|
|                                                                                   |            | ft.             | m     | Lbs.   | kg | Inch         | mm   |          |                    |                | Hz          | dB/ 100 ft. | dB/ 100 m |
|  | 3094A coax | 500             | 152.4 | 52     | 23 | 0.407        | 10.3 | 75       | 82%                | NEC CL2R CMR   | 1M          | 0.3         | 1.0       |
|                                                                                   |            | 1000            | 304.8 | 100    | 45 |              |      |          |                    | CEC CMR        | 10M         | 0.6         | 2.0       |
|                                                                                   |            | 2000            | 609.6 | 220    | 99 |              |      |          |                    |                | 50M         | 0.9         | 3.0       |
|                                                                                   |            |                 |       |        |    |              |      |          |                    |                | 100M        | 1.2         | 3.9       |

|              |                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 14 (solid) AWG bare copper covered steel // DCR: 8.7 ohm/Mft. = 28 ohm/km                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed Polyethylene                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capacitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 1.8 ohm/Mft. = 5.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray PVC with 2.6 meter ring-band PVC                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |

## TEFLON®\* RG-11/U TYPE

Plenum Sweep tested broadband coax RG-11/U cables with Quad shield for use in plenum space, outdoor and direct burial.

| Description                                                                         | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |             |           |
|-------------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|-------------|-----------|
|                                                                                     |            | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/ 100 ft. | dB/ 100 m |
|  | 3095A coax | 500             | 152.4 | 52     | 23 | 0.387        | 9.8 | 75       | 82%                | NEC CMP PLTC   | 1M          | 0.2         | 0.7       |
|                                                                                     |            | 1000            | 304.8 | 100    | 45 |              |     |          |                    | CEC CMP        | 10M         | 0.4         | 1.3       |
|                                                                                     |            |                 |       |        |    |              |     |          |                    |                | 50M         | 1.2         | 3.9       |
|                                                                                     |            |                 |       |        |    |              |     |          |                    |                | 100M        | 1.7         | 5.6       |

|              |                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 14 (solid) AWG bare copper covered steel // DCR: 8.7 ohm/Mft. = 28 ohm/km                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed FEP Teflon®*                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capacitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 1.8 ohm/Mft. = 5.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray Fluorocopolymer with ring-band every 2.6 meters                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |

\* Teflon® is a trademark of DuPont Company

## ControlNet

These coaxes are the base cables for the ControlNet systems they are available in standard PVC, a flexible version and a Teflon®\* (plenum version). A CPE jacket or a blue PVC jacket are optional. (Allen-Bradley ControlNet cables)

### PVC VERSION

| Description                                                                      | Trade No.            | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|----------------------------------------------------------------------------------|----------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                  |                      | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3092A</b><br>coax | 500             | 152.4 | 30     | 13 | 0.298        | 7.5 | 75       | 82%                | NEC CL2R CMR   | 1M          | 0.4        | 1.2      |
|                                                                                  |                      | 1000            | 304.8 | 53     | 24 |              |     |          |                    | CEC CMR        | 2M          | 0.4        | 1.2      |
|                                                                                  |                      | 2000            | 609.2 | 116    | 35 |              |     |          |                    |                | 5M          | 0.5        | 1.5      |
|                                                                                  |                      |                 |       |        |    |              |     |          |                    |                | 10M         | 0.6        | 1.9      |
|                                                                                  |                      |                 |       |        |    |              |     |          |                    |                | 20M         | 0.9        | 2.8      |
|                                                                                  |                      |                 |       |        |    |              |     |          |                    |                | 50          | 1.4        | 4.5      |

|              |                                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 18 (solid) AWG bare copper covered steel // DCR: 28 ohm/Mft. = 91 ohm/km                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed Polyethylene                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 7.2 ohm/Mft. = 23.6 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Gray (Black and Blue optional) PVC                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |

### FLEXIBLE VERSION

| Description                                                                        | Trade No.            | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|----------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |                      | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3092F</b><br>coax | 500             | 152.4 | 30     | 13 | 0.295        | 7.4 | 75       | 82%                | UL 1581        | 5M          | 0.2        | 0.6      |
|                                                                                    |                      | 1000            | 1524  | 53     | 24 |              |     |          |                    | Vertical Tray  | 10          | 0.6        | 2.0      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    | CL2 or CM      | 20          | 0.9        | 2.9      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                | 50          | 1.6        | 5.2      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                |             |            |          |

|              |                                                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 20 (42 x 36) AWG tinned copper // DCR: 9.9 ohm/Mft. = 32 ohm/km                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed Polyethylene                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                       |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + 40% aluminum braid<br>Capitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 7.2 ohm/Mft. = 23.6 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Black PVC                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |

### TEFLON®\* VERSION

| Description                                                                        | Trade No.            | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|----------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |                      | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3093A</b><br>coax | 500             | 152.4 | 30     | 13 | 0.273        | 6.9 | 75       | 82%                | NEC CMP PLTC   | 1M          | 0.4        | 1.2      |
|                                                                                    |                      | 1000            | 304.8 | 53     | 24 |              |     |          |                    | CEC CMP        | 2M          | 0.4        | 1.2      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    | RG-6/U         | 5M          | 0.5        | 1.6      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                | 10M         | 0.7        | 2.1      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                | 20M         | 1.0        | 3.1      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                | 50M         | 1.5        | 4.9      |
|                                                                                    |                      |                 |       |        |    |              |     |          |                    |                |             |            |          |

|              |                                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 18 (solid) AWG bare copper covered steel // DCR: 28 ohm/Mft. = 91 ohm/km                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foamed FEP Teflon®*                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 16.5 pF/ft. = 54 pF/m                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® IV Quad Shield: foil + 60% aluminum braid + foil + 40% aluminum braid<br>Capitance to conductor: 16.5 pF/ft. = 54 pF/m // DCR: 7.2 ohm/Mft. = 23.6 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Black (Blue optional) Fluorocopolymer                                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |  |

\* Teflon® is a trademark of DuPont Company

# DeviceNet

## TRUNK-CABLES

This group of cables is intended for Open DeviceNet as promoted by ODVA. The cables consist of a 15 AWG power pair and a 18 AWG data pair.

| Description                                                                       | Trade No.              | Standard Length |       | Weight |     | Nominal O.D. |      | Nom Imp. | Nom. Vel. of Prop. | Specifications                 | Attenuation |            |          |
|-----------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|-----|--------------|------|----------|--------------------|--------------------------------|-------------|------------|----------|
|                                                                                   |                        | ft.             | m     | Lbs.   | kg  | Inch         | mm   |          |                    |                                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3082A</b><br>2 pair | 500             | 152.4 | 59     | 26  | 0.48         | 12.1 | 120      | 75%                | CMG PLTC                       | 125k        | 0.1        | 0.4      |
|                                                                                   |                        | 1000            | 304.8 | 119    | 53  |              |      |          |                    | UL AWM                         | 500k        | 0.3        | 0.8      |
|                                                                                   |                        | 2000            | 609.6 | 238    | 107 |              |      |          |                    | 20201 600V<br>CSA AWM I/II A/B | 1M          | 0.4        | 1.2      |

Color code: Power = Black & Red // Data = Blue & White

|              |                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 15 (19 x 27) AWG tinned copper // DCR: 3.6 ohm/Mft. = 11.8 ohm/km<br><b>Data:</b> 18 (19 x 30) AWG tinned copper // DCR: 6.9 ohm/Mft. = 22.7 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC/Nylon<br><b>Data:</b> Cellular PE                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 12 pF/ft. = 39 pF/m                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Each pair Beldfoil® + overall 18 AWG (19 x 30) tinned copper drain wire + 65% tinned copper braid // DCR: 1.8 ohm/Mft. = 5.9 ohm/km                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Light Gray PVC                                                                                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |

| Description                                                                         | Trade No.              | Standard Length |       | Weight |     | Nominal O.D. |      | Nom Imp. | Nom. Vel. of Prop. | Specifications   | Attenuation |            |          |
|-------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|-----|--------------|------|----------|--------------------|------------------|-------------|------------|----------|
|                                                                                     |                        | ft.             | m     | Lbs.   | kg  | Inch         | mm   |          |                    |                  | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3083A</b><br>2 pair | 500             | 152.4 | 59     | 26  | 0.48         | 12.1 | 120      | 75%                | CSA AWM I/II A/B | 125k        | 0.1        | 0.4      |
|                                                                                     |                        | 1000            | 304.8 | 119    | 53  |              |      |          |                    |                  | 500k        | 0.3        | 0.8      |
|                                                                                     |                        | 2000            | 609.6 | 238    | 107 |              |      |          |                    |                  | 1M          | 0.4        | 1.2      |

Color code: Power = Black & Red // Data = Blue & White

|              |                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 15 (19 x 27) AWG tinned copper // DCR: 3.6 ohm/Mft. = 11.8 ohm/km<br><b>Data:</b> 18 (19 x 30) AWG tinned copper // DCR: 6.9 ohm/Mft. = 22.7 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC/Nylon<br><b>Data:</b> Cellular PE                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 12 pF/ft. = 39 pF/m                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Each pair Beldfoil® + overall 18 AWG (19 x 30) tinned copper drain wire + 65% tinned copper braid // DCR: 1.8 ohm/Mft. = 5.9 ohm/km                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Yellow CPE                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |



### DROP CABLES

This group of cables is intended for Open DeviceNet as promoted by ODVA. The cables are meant as drop cables. They are also extremely suitable for all RS-485 application such as CAN that need power and data through the same cable.

| Description                                                                      | Trade No.              | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications                                                 | Attenuation |            |          |
|----------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------------------------------------------------------|-------------|------------|----------|
|                                                                                  |                        | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                                                                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3084A</b><br>2 pair | 500             | 152.4 | 23     | 10 | 0.275        | 6.9 | 120      | 75%                | CMG CL2<br>150V 80°C<br>UL AWM<br>20201 600V<br>CSA AWM I/II B | 125k        | 0.3        | 1.0      |
|                                                                                  |                        | 1000            | 304.8 | 46     | 21 |              |     |          |                    |                                                                | 500k        | 0.5        | 1.6      |
|                                                                                  |                        | 2000            | 609.6 | 93     | 42 |              |     |          |                    |                                                                | 1M          | 0.7        | 2.3      |

Color code: Power = Black & Red // Data = Blue & White

|              |                                                                                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 22 (19 x 34) AWG tinned copper // DCR: 17.5 ohm/Mft. = 57.4 ohm/km<br><b>Data:</b> 24 (19 x 36) AWG tinned copper // DCR: 27.7 ohm/Mft. = 90.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC/Nylon<br><b>Data:</b> Cellular PE                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 12 pF/ft. = 39 pF/m                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Each pair Beldfoil® + overall 22 AWG (19 x 34) tinned copper drain wire + 65% tinned copper braid // DCR: 1.8 ohm/Mft. = 5.9 ohm/km                                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Light Gray PVC                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |

| Description                                                                        | Trade No.                   | Standard Length |       | Weight |    | Nominal O.D. |    | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|-----------------------------|-----------------|-------|--------|----|--------------|----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |                             | ft.             | m     | Lbs.   | kg | Inch         | mm |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3084F</b><br>2 pair flex | 500             | 152.4 | 23     | 10 | 0            | 0  | 120      | 75%                | –              | 125k        | 0.3        | 1.0      |
|                                                                                    |                             | 1000            | 304.8 | 46     | 20 |              |    |          |                    |                | 500k        | 0.5        | 1.6      |
|                                                                                    |                             | 2000            | 609.6 | 92     | 41 |              |    |          |                    |                | 1M          | 0.7        | 2.3      |

Color code: Power = Black & Red // Data = Blue & White

|              |                                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 22 (154 x 44) AWG tinned copper // DCR: 17.5 ohm/Mft. = 57.4 ohm/km<br><b>Data:</b> 24 (19 x 36) AWG tinned copper // DCR: 27.7 ohm/Mft. = 90.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC/Nylon<br><b>Data:</b> Cellular PE                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 12 pF/ft. = 39 pF/m                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Each pair Beldfoil® + overall 65% tinned copper braid // DCR: 1.8 ohm/Mft. = 5.9 ohm/km                                                                              |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Light Gray PVC                                                                                                                                                       |  |  |  |  |  |  |  |  |  |  |  |  |

| Description                                                                        | Trade No.              | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications              | Attenuation |            |          |
|------------------------------------------------------------------------------------|------------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|-----------------------------|-------------|------------|----------|
|                                                                                    |                        | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                             | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3085A</b><br>2 pair | 1000            | 304.8 | 46     | 21 | 0.275        | 6.9 | 120      | 75%                | 150V 80°C<br>CSA AWM I/II B | 125k        | 0.3        | 1.0      |
|                                                                                    |                        |                 |       |        |    |              |     |          |                    |                             | 500k        | 0.5        | 1.6      |
|                                                                                    |                        |                 |       |        |    |              |     |          |                    |                             | 1M          | 0.7        | 2.3      |

Color code: Power = Black & Red // Data = Blue & White

|              |                                                                                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power</b> 22 (19 x 34) AWG tinned copper // DCR: 17.5 ohm/Mft. = 57.4 ohm/km<br><b>Data</b> 24 (19 x 36) AWG tinned copper // DCR: 27.7 ohm/Mft. = 90.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power:</b> PVC/Nylon<br><b>Data:</b> Cellular PE                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Paired // Capacitance conductors: 12 pF/ft. = 39 pF/m                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Each pair Beldfoil® + overall 65% tinned copper braid // DCR: 1.8 ohm/Mft. = 5.9 ohm/km                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Yellow CPE                                                                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |

# LonWorks

## STANDARD

Unshielded cable for Echelon LonWorks.

| Description                                                                                                                              | Trade No.      | Standard Length |         | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications                | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------|-----------------|---------|--------|----|--------------|-----|----------|--------------------|-------------------------------|-------------|------------|----------|
|                                                                                                                                          |                | ft.             | m       | Lbs.   | kg | Inch         | mm  |          |                    |                               | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | 8471<br>1 pair | 500             | 152.4   | 28     | 12 | 0.274        | 6.9 | 100      | –                  | UL 2598<br>NEC CMG<br>CEC CMG | –           | –          | –        |
|                                                                                                                                          |                | U-500           | U-152.4 | 29     | 13 |              |     |          |                    |                               |             |            |          |
|                                                                                                                                          |                | 1000            | 304.8   | 59     | 27 |              |     |          |                    |                               |             |            |          |

Color code: Black & White

|              |                                                                  |
|--------------|------------------------------------------------------------------|
| Conductor    | 16 (19 x 29) AWG tinned copper // DCR: 4.35 ohm/Mft. = 14 ohm/km |
| Insulation   | PVC                                                              |
| Construction | Paired // Capacitance conductors: 33 pF/ft. = 108 pF/m           |
| Jacket       | Chrome PVC                                                       |
| Shield       | Unshielded                                                       |

## UNSHIELDED

Unshielded cables for use in Echelon LonWork systems. The cables are standard halogen-free and are therefore suitable for use indoor and outdoor.

| Description                                                                                                      | Trade No.        | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                                  |                  | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
| <br>Available as LSNH version | 7701NH<br>1 pair | 1000            | 304.8 | 10     | 4  | 0.138        | 3.5 | 100      | 68%                | IEC 332-1      | 772k        | 0.6        | 1.9      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 1M          | 0.7        | 2.1      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 4M          | 1.3        | 4.2      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 10M         | 2.2        | 7.2      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 16M         | 2.7        | 8.8      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 20M         | 3.1        | 10.0     |
| <br>Available as LSNH version | 7702NH<br>2 pair | 1000            | 304.8 | 19     | 8  | 0.205        | 5.2 | 100      | 68%                | IEC 332-1      | 772k        | 0.6        | 1.9      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 1M          | 0.7        | 2.1      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 4M          | 1.3        | 4.2      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 10M         | 2.2        | 7.2      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 16M         | 2.7        | 8.8      |
|                                                                                                                  |                  |                 |       |        |    |              |     |          |                    |                | 20M         | 3.1        | 10.0     |

Color code: pr1 = White/Blue & Blue/White // pr2 = White/Orange & Orange/White

|              |                                                              |
|--------------|--------------------------------------------------------------|
| Conductor    | 22 (solid) AWG bare copper // DCR: 17.5 ohm/Mft. = 57 ohm/km |
| Insulation   | Foamed PE                                                    |
| Construction | Paired // Capacitance conductors: 14 pF/ft. = 45 pF/m        |
| Jacket       | White LSNH                                                   |
| Shield       | Unshielded                                                   |

## LonWorks

### SHIELDED

Shielded cables for use in Echelon LonWork systems. The cables are standard halogen-free and are therefore suitable for use indoor and outdoor.

| Description                                                                                                   | Trade No.        | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|---------------------------------------------------------------------------------------------------------------|------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                               |                  | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
| <br>Available as LSNH version | 7703NH<br>1 pair | 1000            | 304.8 | 15     | 7  | 0.177        | 4.4 | 100      | 68%                | IEC 332-3C     | 772k        | 0.6        | 1.9      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 1M          | 0.7        | 2.1      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 4M          | 1.1        | 3.5      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 10M         | 1.7        | 5.6      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 20M         | 2.4        | 7.9      |
| <br>Available as LSNH version | 7704NH<br>2 pair | 1000            | 304.8 | 26     | 11 | 0.256        | 6.5 | 100      | 68%                | IEC 332-3C     | 772k        | 0.6        | 1.9      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 1M          | 0.7        | 2.1      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 4M          | 1.1        | 3.5      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 10M         | 1.7        | 5.6      |
|                                                                                                               |                  |                 |       |        |    |              |     |          |                    |                | 20M         | 2.4        | 7.9      |

Color code: pr1 = White/Blue & Blue/White // pr2 = White/Orange & Orange/White

|              |                                                                                                                    |
|--------------|--------------------------------------------------------------------------------------------------------------------|
| Conductor    | 22 (solid) AWG bare copper // DCR: 17.5 ohm/Mft. = 57 ohm/km                                                       |
| Insulation   | Foamed PE                                                                                                          |
| Construction | Paired // Capacitance conductors: 14 pF/ft. = 45 pF/m                                                              |
| Shield       | Beldfoil® (aluminum Polyester) // Capacitance to conductor: 24.4 pF/ft. = 80 pF/m // DCR: 5.2 ohm/Mft. = 17 ohm/km |
| Jacket       | White LSNH                                                                                                         |

## ASI-bus

### FLAT RIBBON

ASI two wire geometrically coded flat ribbon cable with a yellow TPE oil-resistant jacket.

| Description                                                                        | Trade No.     | Standard Length |       | Weight |    | Nominal O.D. |         | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|---------------|-----------------|-------|--------|----|--------------|---------|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |               | ft.             | m     | Lbs.   | kg | Inch         | mm      |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | 3999A<br>flat | 1640            | 499.9 | 63     | 28 | 0.157        | 4       | -        | -                  | -              | -           | -          | -        |
|                                                                                    |               | 328             | 99.97 | 127    | 57 | x<br>0.393   | x<br>10 |          |                    |                |             |            |          |

Color code: Blue & Brown

|              |                                                                        |
|--------------|------------------------------------------------------------------------|
| Conductor    | 1.5 mm (84 x 0.15) AWG tinned copper // DCR: 4.05 ohm/Mft. = 13 ohm/km |
| Insulation   | PVC                                                                    |
| Construction | Flat // Polarized Ribbon cable                                         |
| Shield       | Unshielded                                                             |
| Jacket       | Yellow TPE-O                                                           |

# Seriplex

Cables as intended for Seriplex. Combination cables with power and data pairs and control singles under an orange PVC jacket.

## STANDARD POWER + DATA

| Description                                                                                                | Trade No. | Standard Length |                | Weight   |          | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------|-----------|-----------------|----------------|----------|----------|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                            |           | ft.             | m              | Lbs.     | kg       | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  <b>3124A</b> conductored |           | 500<br>1000     | 152.4<br>304.8 | 26<br>47 | 11<br>21 | 0.3          | 7.6 | 150      | 78%                | UL Subj 13 CL2 | –           | –          | –        |

Color code: Power = Red & Black // Data = White & Green

|              |                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 18 (16 x 30) AWG tinned copper // DCR: 6.8 ohm/Mft. = 21 ohm/km<br><b>Data:</b> 22 (7 x 30) AWG tinned copper // DCR: 18.1 ohm/Mft. = 59.4 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power and Data</b> foamed HDPE                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Conductors // Capacitance conductors: 9 pF/ft. = 29 pF/m                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Overall aluminum foil + 22 AWG drain wire // Capacitance to conductor: 9 pF/ft. = 29 pF/m // DCR: 10.7 ohm/Mft. = 35.1 ohm/km                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Orange PVC                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |

## EXTENDED POWER + DATA

| Description                                                                                                  | Trade No. | Standard Length |                | Weight   |          | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|--------------------------------------------------------------------------------------------------------------|-----------|-----------------|----------------|----------|----------|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                              |           | ft.             | m              | Lbs.     | kg       | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  <b>3125A</b> conductored |           | 500<br>1000     | 152.4<br>304.8 | 31<br>55 | 14<br>24 | 0.36         | 9.1 | 150      | 78%                | UL Subj 13 CL2 | –           | –          | –        |

Color code: Power = Red & Black // Data = White & Green

|              |                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power:</b> 16 (26 x 30) AWG tinned copper // DCR: 4.5 ohm/Mft. = 15 ohm/km<br><b>Data:</b> 22 (7 x 30) AWG tinned copper // DCR: 18.1 ohm/Mft. = 59.4 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power and Data</b> foamed HDPE                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Conductors // Capacitance conductors: 9 pF/ft. = 29 pF/m                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Overall aluminum foil + 22 AWG drain wire // Capacitance to conductor: 9 pF/ft. = 29 pF/m // DCR: 10.7 ohm/Mft. = 35.1 ohm/km                                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Orange PVC                                                                                                                                                      |  |  |  |  |  |  |  |  |  |  |  |  |

## POWER + DATA + CONTROL

| Description                                                                                                  | Trade No. | Standard Length |                | Weight   |          | Nominal O.D.      |                   | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|--------------------------------------------------------------------------------------------------------------|-----------|-----------------|----------------|----------|----------|-------------------|-------------------|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                              |           | ft.             | m              | Lbs.     | kg       | Inch              | mm                |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  <b>3126A</b> conductored |           | 500<br>1000     | 152.4<br>304.8 | 37<br>65 | 16<br>29 | 0.48<br>x<br>0.35 | 12.1<br>x<br>8.92 | 150      | 78%                | UL Subj 13 CL2 | –           | –          | –        |

Color code: Power Control = Red & Black // Data = White & Green // Power = Red/White & Black/White

|              |                                                                                                                                                                                                                                                           |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | <b>Power Control:</b> 16 (26 x 30) AWG tinned copper // DCR: 4.5 ohm/Mft. = 15 ohm/km<br><b>Data:</b> 22 (7 x 30) AWG tinned copper // DCR: 18.1 ohm/Mft. = 59.4 ohm/km<br><b>Power:</b> 12 (65 x 30) AWG tinned copper // DCR: 1.8 ohm/Mft. = 5.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | <b>Power and Data</b> foamed HDPE                                                                                                                                                                                                                         |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Conductors // Capacitance conductors: 9 pF/ft. = 29 pF/m                                                                                                                                                                                                  |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Overall aluminum foil + 22 AWG drain wire // Capacitance to conductor: 9 pF/ft. = 29 pF/m // DCR: 10.7 ohm/Mft. = 35.1 ohm/km                                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Orange PVC                                                                                                                                                                                                                                                |  |  |  |  |  |  |  |  |  |  |  |  |

## Modbus

**9841+**

**Modbus+ this special version of the 9841 is specially designed to guarantee a tight fit in the Modbus+ connectors.**

| Description                                                                                                                             | Trade No.                | Standard Length |       | Weight |      | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications   | Attenuation |            |          |
|-----------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----------------|-------|--------|------|--------------|-----|-----------|--------------------|------------------|-------------|------------|----------|
|                                                                                                                                         |                          | ft.             | m     | Lbs.   | kg   | Inch         | mm  |           |                    |                  | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>YM29560</b><br>1 pair | 500             | 152.4 | 21     | 9.5  | 0.265        | 6.7 | 120       | 66%                | NEC CM<br>CEC CM | 1M          | 0.6        | 2        |
|                                                                                                                                         |                          | 1000            | 304.8 | 42     | 19.0 |              |     |           |                    |                  |             |            |          |
|                                                                                                                                         |                          | 1500            | 457.2 | 63     | 28.5 |              |     |           |                    |                  |             |            |          |

Color code: White/Blue & Blue/White

|              |                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 24 (7 x 32) AWG tinned copper // DCR: 24 ohm/Mft. = 78 ohm/km                                                          |
| Insulation   | PE                                                                                                                     |
| Construction | Paired // Capacitance conductors: 12.8 pF/ft. = 41 pF/m                                                                |
| Shield       | Z-Fold® + 90% tinned copper braid // Capacitance to conductor: 23 pF/ft. = 75 pF/m // DCR: 3.35 ohm/Mft. = 10.9 ohm/km |
| Jacket       | Gray PVC                                                                                                               |

## EIA RS-485 (HART)

**HART**

**The approved cable for HART automated systems. 22 AWG paired cables with Datalene® insulation and an overall Z-Fold® Beldfoil® and a black sunlight resistant PVC jacket.**

| Description                                                                        | Trade No.                | Standard Length |       | Weight |     | Nominal O.D. |      | Nom. Imp. | Nom. Vel. of Prop. | Specifications               | Attenuation |            |          |
|------------------------------------------------------------------------------------|--------------------------|-----------------|-------|--------|-----|--------------|------|-----------|--------------------|------------------------------|-------------|------------|----------|
|                                                                                    |                          | ft.             | m     | Lbs.   | kg  | Inch         | mm   |           |                    |                              | Hz          | dB/100 ft. | dB/100 m |
|  | <b>3105A</b><br>1 pair   | 1000            | 304.8 | 44     | 19  | 0.286        | 7.2  | 120       | 78%                | NEC CM<br>NEC PLTC<br>CEC CM | 1M          | 0.5        | 1.6      |
|                                                                                    |                          | 5000            | 1524  | 220    | 99  |              |      |           |                    |                              |             |            |          |
|  | <b>3106A</b><br>1.5 pair | 1000            | 304.8 | 48     | 21  | 0.302        | 7.6  | 120       | 78%                | NEC CM<br>NEC PLTC<br>CEC CM | 1M          | 0.5        | 1.6      |
|                                                                                    |                          | 5000            | 1524  | 240    | 108 |              |      |           |                    |                              |             |            |          |
|  | <b>3107A</b><br>2 pair   | 1000            | 304.8 | 73     | 33  | 0.36         | 9.1  | 120       | 78%                | NEC CM<br>NEC PLTC<br>CEC CM | 1M          | 0.5        | 1.6      |
|                                                                                    |                          | 4000            | 1219  | 292    | 132 |              |      |           |                    |                              |             |            |          |
|  | <b>3108A</b><br>3 pair   | 1000            | 304.8 | 85     | 38  | 0.424        | 10.7 | 120       | 78%                | NEC CM<br>NEC PLTC<br>CEC CM | 1M          | 0.5        | 1.6      |
|                                                                                    |                          | 2000            | 609.6 | 170    | 77  |              |      |           |                    |                              |             |            |          |
|  | <b>3109A</b><br>4 pair   | 1000            | 304.8 | 97     | 43  | 0.458        | 11.6 | 120       | 78%                | NEC CM<br>NEC PLTC<br>CEC CM | 1M          | 0.5        | 1.6      |
|                                                                                    |                          | 2000            | 609.6 | 194    | 87  |              |      |           |                    |                              |             |            |          |

Color code: pr1 = White/Blue & Blue/White // pr2 = White/Orange & Orange/White // pr3 = White/Green & Green/White // pr4 = White/Brown & Brown/White

|              |                                                                                                                                                                                            |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 22 (7 x 30) AWG tinned copper // DCR: 48.2 ohm/Mft. = 158 ohm/km                                                                                                                           |
| Insulation   | Datalene®                                                                                                                                                                                  |
| Construction | Paired // Capacitance conductors: 11 pF/ft. = 36 pF/m                                                                                                                                      |
| Shield       | Overall Z-Fold® Beldfoil® + 22 (7 x 30) AWG stranded tinned copper drain wire + 90% tinned copper braid<br>Capacitance to conductor: 20 pF/ft. = 65 pF/m // DCR: 1.1 ohm/Mft. = 3.6 ohm/km |
| Jacket       | Black PVC                                                                                                                                                                                  |



# EIA RS-485

## CAN

**Tinned copper, polyethylene insulated, twisted pairs. Overall Beldfoil® aluminum-polyester shield with Z-Fold®. 24 AWG stranded tinned copper drain wire. Overall tinned copper braid shield (90% coverage). Chrome PVC Jacket.**

| Description                                                                                                                              | Trade No.             | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications   | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|------------------|-------------|------------|----------|
|                                                                                                                                          |                       | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                  | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | <b>9841</b><br>1 pair | 100             | 30.48 | 3      | 1  | 0.232        | 5.8 | 120      | 66%                | NEC CM<br>CEC CM | 1M          | 0.6        | 2        |
|                                                                                                                                          |                       | 500             | 152.4 | 19     | 8  |              |     |          |                    |                  |             |            |          |
|                                                                                                                                          |                       | 1000            | 304.8 | 36     | 16 |              |     |          |                    |                  |             |            |          |
| <br>Available in LSNH and LSNH steel wire serve version | <b>9842</b><br>2 pair | 100             | 30.48 | 5      | 2  | 0.34         | 8.6 | 120      | 66%                | NEC CM<br>CEC CM | 1M          | 0.6        | 2        |
|                                                                                                                                          |                       | 500             | 152.4 | 28     | 13 |              |     |          |                    |                  |             |            |          |
|                                                                                                                                          |                       | 1000            | 304.8 | 53     | 24 |              |     |          |                    |                  |             |            |          |
| <br>Available in LSNH and LSNH steel wire serve version | <b>9843</b><br>3 pair | 100             | 30.48 | 7      | 3  | 0.36         | 9.1 | 120      | 66%                | NEC CM<br>CEC CM | 1M          | 0.6        | 2        |
|                                                                                                                                          |                       | 500             | 152.4 | 37     | 16 |              |     |          |                    |                  |             |            |          |
|                                                                                                                                          |                       | 1000            | 304.8 | 72     | 32 |              |     |          |                    |                  |             |            |          |

Color code: pr1 = White/Blue & Blue/White // pr2 = White/Orange & Orange/White // pr3 = White/Green & Green/White

|              |                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------|
| Conductor    | 24 (7 x 32) AWG tinned copper // DCR: 24 ohm/Mft. = 78 ohm/km                                                         |
| Insulation   | PE                                                                                                                    |
| Construction | Paired // Capacitance conductors: 12.8 pF/ft. = 41 pF/m                                                               |
| Shield       | Z-Fold® + 90% tinned copper braid // Capacitance to conductor: 23 pF/ft. = 75 pF/m // DCR: 2.34 ohm/Mft. = 7.6 ohm/km |
| Jacket       | Gray PVC                                                                                                              |

## TEFLON®\* CABLE

**A 24 AWG cable with Teflon®\* conductors and a Solef jacket. This cable is suitable in extreme conditions it is resistant to all types of chemicals it will withstand temperatures up to 150°C and can be used for direct burial.**

| Description                                                                         | Trade No.                | Standard Length |       | Weight |      | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|-------------------------------------------------------------------------------------|--------------------------|-----------------|-------|--------|------|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                     |                          | ft.             | m     | Lbs.   | kg   | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | <b>YQ29258</b><br>1 pair | 500             | 152.4 | 17     | 7.7  | 0.224        | 5.6 | 120      | 69%                | NEC CMP        | —           | —          | —        |
|                                                                                     |                          | 1000            | 304.8 | 34     | 15.5 |              |     |          |                    |                |             |            |          |
|                                                                                     |                          | 1640            | 499.9 | 56     | 25.3 |              |     |          |                    |                |             |            |          |

Color code: White & Blue

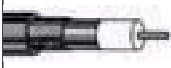
|              |                                                                                                                       |
|--------------|-----------------------------------------------------------------------------------------------------------------------|
| Conductor    | 24 (7 x 32) AWG tinned copper // DCR: 24 ohm/Mft. = 78 ohm/km                                                         |
| Insulation   | FEP Teflon®*                                                                                                          |
| Construction | Paired // Capacitance conductors: 11.7 pF/ft. = 38 pF/m                                                               |
| Shield       | Z-Fold® + 90% tinned copper braid // Capacitance to conductor: 23 pF/ft = 75 pF/m // DCR: 3.35 ohm/Mft. = 10.9 ohm/km |
| Jacket       | Black SOLEF                                                                                                           |

\* Teflon® is a trademark of DuPont Company

## Industrial Ethernet

### 10BASE2 COAX

Coax cables for industrial applications for traditional 10base2 (cheapnet) applications. Due to its extreme tight tolerance on impedance ( $\pm 3\%$ ) the maximum described length for 10base2 can be reached. (DEC approved)

| Description                                                                                                       | Trade No. | Standard Length |         | Weight |    | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications                                     | Attenuation |            |          |
|-------------------------------------------------------------------------------------------------------------------|-----------|-----------------|---------|--------|----|--------------|-----|-----------|--------------------|----------------------------------------------------|-------------|------------|----------|
|                                                                                                                   |           | ft.             | m       | Lbs.   | kg | Inch         | mm  |           |                    |                                                    | Hz          | dB/100 ft. | dB/100 m |
| <br><br>Available as LSNH version | 9907 coax | 500             | 152.4   | 11     | 5  | 0.185        | 4.6 | 50        | 80%                | NEC CL2 CM<br>CEC CM<br>UL 1354<br>DEC 17-01248-00 | 1M          | 0.4        | 1.4      |
|                                                                                                                   |           | U-1000          | U-304.8 | 23     | 10 |              |     |           |                    |                                                    | 10M         | 1.3        | 4.3      |
|                                                                                                                   |           | 1000            | 304.8   | 23     | 10 |              |     |           |                    |                                                    | 50M         | 2.9        | 9.5      |
|                                                                                                                   |           | 1640            | 499.9   | 38     | 17 |              |     |           |                    |                                                    | 100M        | 4.2        | 14.0     |
|                                                                                                                   |           | U-2500          | U-762.0 | 58     | 26 |              |     |           |                    |                                                    | 1000M       | 14.8       | 48.6     |
|                                                                                                                   |           | 2500            | 762.0   | 62     | 28 |              |     |           |                    |                                                    |             |            |          |
|                                                                                                                   |           | 3280            | 999.7   | 79     | 36 |              |     |           |                    |                                                    |             |            |          |

|              |                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 20 (19 x 32) AWG tinned copper // DCR: 8.8 ohm/Mft. = 28 ohm/km                                                           |
| Insulation   | Foam Polyethylene                                                                                                         |
| Construction | Coax // Capacitance conductors: 25.4 pF/ft. = 83 pF/m                                                                     |
| Shield       | Duobond® II + 93% tinned copper braid // Capacitance to conductor: 25.4 pF/ft. = 83 pF/m // DCR: 5.8 ohm/Mft. = 19 ohm/km |
| Jacket       | Gray PVC                                                                                                                  |

### TEFLON®\* 10BASE2 COAX

Teflon®\* insulated Coax cables for industrial applications. For outside use and direct burial and plenum spaces. (DEC approved)

| Description                                                                        | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications                             | Attenuation |            |          |
|------------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|-----|-----------|--------------------|--------------------------------------------|-------------|------------|----------|
|                                                                                    |            | ft.             | m     | Lbs.   | kg | Inch         | mm  |           |                    |                                            | Hz          | dB/100 ft. | dB/100 m |
|  | 89907 coax | 500             | 152.4 | 15     | 6  | 0.16         | 4.0 | 50        | 80%                | NEC CL2P CMP<br>CEC CMP<br>DEC 17-01246-00 | 1M          | 0.4        | 1.4      |
|                                                                                    |            | 1000            | 304.8 | 25     | 11 |              |     |           |                    |                                            | 10M         | 1.3        | 4.3      |
|                                                                                    |            | 2500            | 762.0 | 63     | 28 |              |     |           |                    |                                            | 50M         | 2.9        | 9.5      |
|                                                                                    |            |                 |       |        |    |              |     |           |                    |                                            | 100M        | 4.2        | 14.0     |
|                                                                                    |            |                 |       |        |    |              |     |           |                    |                                            | 1000M       | 14.8       | 48.6     |

|              |                                                                                                                           |
|--------------|---------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 20 (19 x 32) AWG tinned copper // DCR: 8.8 ohm/Mft. = 28 ohm/km                                                           |
| Insulation   | Foam FEP Teflon®*                                                                                                         |
| Construction | Coax // Capacitance conductors: 25.4 pF/ft. = 83 pF/m                                                                     |
| Shield       | Duobond® II + 93% tinned copper braid // Capacitance to conductor: 25.4 pF/ft. = 83 pF/m // DCR: 5.8 ohm/Mft. = 19 ohm/km |
| Jacket       | Gray Fluorocopolymer                                                                                                      |

### 10BASE2 TRIAX

An alternative for 10base2 cables for an electrical noisy environment where the outerbraid is used for shielding purposes.

| Description                                                                        | Trade No.  | Standard Length |         | Weight |    | Nominal O.D. |     | Nom. Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|------------|-----------------|---------|--------|----|--------------|-----|-----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |            | ft.             | m       | Lbs.   | kg | Inch         | mm  |           |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | 9222 triax | 100             | 30.48   | 4      | 2  | 0.24         | 6.0 | 50        | 66%                | -              | 1M          | 0.5        | 1.6      |
|                                                                                    |            | U-500           | U-152.4 | 19     | 8  |              |     |           |                    |                | 10M         | 1.5        | 4.9      |
|                                                                                    |            | 500             | 152.4   | 20     | 9  |              |     |           |                    |                | 100M        | 4.9        | 16.0     |
|                                                                                    |            |                 |         |        |    |              |     |           |                    |                | 1G          | 24.0       | 79.0     |

|              |                                                                                                                                      |
|--------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 20 (7 x 28) AWG tinned copper // DCR: 9.5 ohm/Mft. = 31.0 ohm/m                                                                      |
| Insulation   | Polyethylene                                                                                                                         |
| Construction | Triax coax // Capacitance conductors: 30.8 pF/ft. = 101 pF/m                                                                         |
| Shield       | Inner 95% tinned copper braid // DCR: 4.7 ohm/Mft. = 15.5 ohm/km // Outer 95% tinned copper braid // DCR: 4.3 ohm/Mft. = 14.1 ohm/km |
| Jacket       | Yellow PVC                                                                                                                           |

\* Teflon® is a trademark of DuPont Company

# Industrial Ethernet

## 10BASE5 COAX

The traditional thick yellow Ethernet cables for 10base5 applications. (DEC approved)

| Description                                                                                                    | Trade No. | Standard Length |       | Weight |    | Nominal O.D. |       | Nom Imp. | Nom. Vel. of Prop. | Specifications  | Attenuation |            |          |
|----------------------------------------------------------------------------------------------------------------|-----------|-----------------|-------|--------|----|--------------|-------|----------|--------------------|-----------------|-------------|------------|----------|
|                                                                                                                |           | ft.             | m     | Lbs.   | kg | Inch         | mm    |          |                    |                 | Hz          | dB/100 ft. | dB/100 m |
| <br>Available as LSNH version | 9880 coax | 500             | 152.4 | 60     | 27 | 10.29        | 261.3 | 50       | 78%                | NEC CM or CL2   | 1M          | 0.2        | 0.6      |
|                                                                                                                |           | 1000            | 304.8 | 122    | 55 |              |       |          |                    | CEC CM          | 5M          | 0.4        | 1.2      |
|                                                                                                                |           | 1640            | 499.9 | 200    | 91 |              |       |          |                    | UL 1478         | 10M         | 0.5        | 1.7      |
|                                                                                                                |           |                 |       |        |    |              |       |          |                    | DEC 17-00451-00 | 50M         | 1.2        | 3.9      |
|                                                                                                                |           |                 |       |        |    |              |       |          |                    |                 | 100M        | 1.7        | 5.6      |

|              |                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 12 (solid) AWG bare copper // DCR: 1.42 ohm/Mft. = 4 ohm/km                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foam Polyethylene                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 26 pF/ft. = 85 pF/m                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® II + 94% tinned copper braid + Duofoil® + 90% tinned copper braid<br>Capicittance to conductor: 26 pF/ft. = 85 pF/m // DCR: 1.52 ohm/Mft. = 4.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Yellow PVC with ring-band stripes every 2.5 meters                                                                                                              |  |  |  |  |  |  |  |  |  |  |  |  |

## TEFLON®\* 10BASE5

Teflon®\* insulated Coax cables for industrial applications. For outside use and direct burial and plenum spaces. (DEC approved)

| Description                                                                         | Trade No.  | Standard Length |       | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications  | Attenuation |            |          |
|-------------------------------------------------------------------------------------|------------|-----------------|-------|--------|----|--------------|-----|----------|--------------------|-----------------|-------------|------------|----------|
|                                                                                     |            | ft.             | m     | Lbs.   | kg | Inch         | mm  |          |                    |                 | Hz          | dB/100 ft. | dB/100 m |
|  | 89880 coax | 100             | 30.48 | 69     | 31 | 0.375        | 9.5 | 50       | 78%                | NEC CMP CL2P    | 1M          | 0.2        | 0.6      |
|                                                                                     |            | 500             | 152.4 | 134    | 60 |              |     |          |                    | CEC CMP         | 5M          | 0.4        | 1.2      |
|                                                                                     |            | 1000            | 304.8 | 165    | 74 |              |     |          |                    | DEC 17-00324-00 | 10M         | 0.5        | 1.7      |
|                                                                                     |            | 1640            | 499.9 | 219    | 99 |              |     |          |                    |                 | 50M         | 1.2        | 3.9      |
|                                                                                     |            |                 |       |        |    |              |     |          |                    |                 | 100M        | 1.7        | 5.6      |

|              |                                                                                                                                                                 |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Conductor    | 12 (solid) AWG bare copper // DCR: 1.42 ohm/Mft. = 4 ohm/km                                                                                                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Insulation   | Foam Polyethylene                                                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
| Construction | Coax // Capacitance conductors: 26 pF/ft. = 85 pF/m                                                                                                             |  |  |  |  |  |  |  |  |  |  |  |  |
| Shield       | Duobond® II + 94% tinned copper braid + Duofoil® + 90% tinned copper braid<br>Capicittance to conductor: 26 pF/ft. = 85 pF/m // DCR: 1.52 ohm/Mft. = 4.9 ohm/km |  |  |  |  |  |  |  |  |  |  |  |  |
| Jacket       | Orange Fluorocopolymer with ring-band stripes every 2.5 meter                                                                                                   |  |  |  |  |  |  |  |  |  |  |  |  |

\* Teflon® is a trademark of DuPont Company

## PLC and DCS Cables (Belden Standards)

### BELDEN STANDARDS

Belden has been the leading manufacturer of industrial communication cables for years. Below you will find a selection of a choice of Belden cables for general use and proprietary systems. For a full overview see the Belden Master Catalog.

| Description                                                                                                                             | Trade No.   | Standard Length |         | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|---------|--------|----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                                                                         |             | ft.             | m       | Lbs.   | kg | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | 9463 twinax | 100             | 30.48   | 7      | 3  | 0.243        | 6.1 | 78       | 66%                | NEC CM CL2     | 1M          | 0.6        | 2.0      |
|                                                                                                                                         |             | 500             | 152.4   | 19     | 8  |              |     |          |                    | CEC CM         | 10M         | 2.1        | 6.9      |
|                                                                                                                                         |             | U-500           | U-152.4 | 19     | 8  |              |     |          |                    | UL 2464        | 50M         | 5.0        | 16.0     |
|                                                                                                                                         |             | 1000            | 304.8   | 38     | 17 |              |     |          |                    |                | 100M        | 7.5        | 25.0     |
|                                                                                                                                         |             | U-1000          | U-304.8 | 38     | 17 |              |     |          |                    |                |             |            |          |
|                                                                                                                                         |             | 6000            | 1524.0  | 205    | 92 |              |     |          |                    |                |             |            |          |

Color code: Clear & Blue

|              |                                                                                |
|--------------|--------------------------------------------------------------------------------|
| Conductor    | 20 (7 x 28) AWG tinned copper // DCR: 9.5 ohm/Mft. = 31 ohm/km                 |
| Insulation   | Polyethylene                                                                   |
| Construction | Twinax // Capacitance conductors: 19.7 pF/ft. = 64 pF/m                        |
| Shield       | Z-Fold® Beldfoil® + 55% tinned copper braid // DCR: 4.1 ohm/Mft. = 13.4 ohm/km |
| Jacket       | Blue PVC                                                                       |

| Description                                                                        | Trade No.   | Standard Length |         | Weight |     | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|-------------|-----------------|---------|--------|-----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |             | ft.             | m       | Lbs.   | kg  | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | 9182 twinax | 500             | 152.4   | 21     | 9   | 0.35         | 8.8 | 150      | 78%                | NEC CL2X CMX   | 1M          | 0.4        | 1.3      |
|                                                                                    |             | U-500           | U-152.4 | 22     | 10  |              |     |          |                    | CEC CMX        | 10M         | 1.2        | 3.9      |
|                                                                                    |             | 1000            | 304.8   | 46     | 21  |              |     |          |                    | UL 2668        | 50M         | 2.7        | 8.7      |
|                                                                                    |             | 5000            | 1524.0  | 230    | 104 |              |     |          |                    |                | 100M        | 4.3        | 14.0     |
|                                                                                    |             |                 |         |        |     |              |     |          |                    |                |             |            |          |

Color code: Black & Yellow

|              |                                                                                    |
|--------------|------------------------------------------------------------------------------------|
| Conductor    | 22 (19 x 34) AWG tinned copper // DCR: 14 ohm/Mft. = 45 ohm/km                     |
| Insulation   | Datalene®                                                                          |
| Construction | Twinax // Capacitance conductors: 8.8 pF/ft. = 28 pF/m                             |
| Shield       | Duofoil® with stranded tinned copper drain wire // DCR: 6.3 ohm/Mft. = 20.6 ohm/km |
| Jacket       | Black PVC                                                                          |

| Description                                                                        | Trade No.    | Standard Length |       | Weight |     | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications | Attenuation |            |          |
|------------------------------------------------------------------------------------|--------------|-----------------|-------|--------|-----|--------------|-----|----------|--------------------|----------------|-------------|------------|----------|
|                                                                                    |              | ft.             | m     | Lbs.   | kg  | Inch         | mm  |          |                    |                | Hz          | dB/100 ft. | dB/100 m |
|  | 89182 twinax | 100             | 30.48 | 71     | 32  | 0.308        | 7.8 | 150      | 78%                | NEC CMP CL2P   | 1M          | 0.4        | 1.3      |
|                                                                                    |              | 500             | 152.4 | 307    | 139 |              |     |          |                    | CEC CMP        | 10M         | 1.2        | 3.9      |
|                                                                                    |              | 1000            | 304.8 | 577    | 261 |              |     |          |                    |                | 50M         | 2.7        | 8.7      |
|                                                                                    |              |                 |       |        |     |              |     |          |                    |                | 100M        | 4.3        | 14.0     |

Color code: Blue & White

|              |                                                                                    |
|--------------|------------------------------------------------------------------------------------|
| Conductor    | 22 (19 x 34) AWG tinned copper // DCR: 14 ohm/Mft. = 45 ohm/km                     |
| Insulation   | Cellular FEP Teflon®*                                                              |
| Construction | Twinax // Capacitance conductors: 8.8 pF/ft. = 28 pF/m                             |
| Shield       | Duofoil® with stranded tinned copper drain wire // DCR: 6.3 ohm/Mft. = 20.6 ohm/km |
| Jacket       | Black Tint FEP                                                                     |

\* Teflon® is a trademark of DuPont Company

# PLC and DCS Cables (Belden Standards)

## BELDEN STANDARDS

| Description                                                                                                                              | Trade No.   | Standard Length |       | Weight |    | Nominal O.D. |      | Nom Imp. | Nom. Vel. of Prop. | Specifications                 | Attenuation |            |          |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|-------|--------|----|--------------|------|----------|--------------------|--------------------------------|-------------|------------|----------|
|                                                                                                                                          |             | ft.             | m     | Lbs.   | kg | Inch         | mm   |          |                    |                                | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | 9860 twinax | 500             | 152.4 | 54     | 24 | 0.44         | 11.1 | 124      | 78%                | NEC CL2X<br>CEC CMX<br>UL 2448 | 1M          | 0.2        | 0.6      |
|                                                                                                                                          |             | 1000            | 304.8 | 106    | 48 |              |      |          |                    |                                | 10M         | 0.7        | 2.3      |
|                                                                                                                                          |             | 2000            | 609.6 | 213    | 96 |              |      |          |                    |                                | 100M        | 2.9        | 9.5      |
|                                                                                                                                          |             |                 |       |        |    |              |      |          |                    |                                | 400M        | 6.2        | 20.0     |

Color code: Blue & White

|              |                                                                                                                          |
|--------------|--------------------------------------------------------------------------------------------------------------------------|
| Conductor    | 16 (solid) AWG bare copper // DCR: 4.2 ohm/Mft. = 13 ohm/km                                                              |
| Insulation   | Foam Polyethylene                                                                                                        |
| Construction | Twinax // Capacitance conductors: 10.9 pF/ft. = 35 pF/m                                                                  |
| Shield       | Duofoil® + 90% tinned copper braid // Capacitance to conductor: 35.8 pF/ft. = 117 pF/m // DCR: 1.3 ohm/Mft. = 4.2 ohm/km |
| Jacket       | Black PVC                                                                                                                |

| Description                                                                        | Trade No.   | Standard Length |       | Weight |    | Nominal O.D. |      | Nom Imp. | Nom. Vel. of Prop. | Specifications        | Attenuation |            |          |
|------------------------------------------------------------------------------------|-------------|-----------------|-------|--------|----|--------------|------|----------|--------------------|-----------------------|-------------|------------|----------|
|                                                                                    |             | ft.             | m     | Lbs.   | kg | Inch         | mm   |          |                    |                       | Hz          | dB/100 ft. | dB/100 m |
|  | 9250 twinax | 100             | 30.48 | 14     | 6  | 0.42         | 10.6 | 95       | 66%                | RG-22B/U Type<br>VW-1 | 1M          | 0.3        | 1.0      |
|                                                                                    |             | 500             | 152.4 | 66     | 30 |              |      |          |                    |                       | 10M         | 0.9        | 3.0      |
|                                                                                    |             | 1000            | 304.8 | 129    | 58 |              |      |          |                    |                       | 20M         | 1.3        | 4.3      |
|                                                                                    |             |                 |       |        |    |              |      |          |                    |                       | 50M         | 2.1        | 6.9      |
|                                                                                    |             |                 |       |        |    |              |      |          |                    |                       | 100M        | 3.0        | 9.8      |

Color code: Clear (1 conductor has a tinned center strand)

|              |                                                                            |
|--------------|----------------------------------------------------------------------------|
| Conductor    | 18 (7 x 26) AWG bare copper // DCR: 6.6 ohm/Mft. = 21 ohm/km               |
| Insulation   | Polyethylene                                                               |
| Construction | Twinax // Capacitance conductors: 16 pF/ft. = 52 pF/m                      |
| Shield       | 2 tinned copper braids 95% shield coverage // DCR: 0.9 ohm/Mft. = 3 ohm/km |
| Jacket       | Black PVC (non contaminating)                                              |

| Description                                                                                                                                | Trade No.   | Standard Length |         | Weight |     | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications                      | Attenuation |            |          |
|--------------------------------------------------------------------------------------------------------------------------------------------|-------------|-----------------|---------|--------|-----|--------------|-----|----------|--------------------|-------------------------------------|-------------|------------|----------|
|                                                                                                                                            |             | ft.             | m       | Lbs.   | kg  | Inch         | mm  |          |                    |                                     | Hz          | dB/100 ft. | dB/100 m |
| <br>Available in LSNH and LSNH steel wire serve version | 9207 twinax | 100             | 30.48   | 6.6    | 2.9 | 0.33         | 8.3 | 100      | 66%                | NEC CM CL2<br>CEC CM<br>IBM 7362211 | 1M          | 0.3        | 1.0      |
|                                                                                                                                            |             | 500             | 152.4   | 33.0   | 15  |              |     |          |                    |                                     | 10M         | 1.2        | 3.9      |
|                                                                                                                                            |             | U-500           | U-152.4 | 33.0   | 15  |              |     |          |                    |                                     | 50M         | 2.8        | 9.2      |
|                                                                                                                                            |             | 1000            | 304.8   | 69.0   | 31  |              |     |          |                    |                                     | 100M        | 4.1        | 13.0     |
|                                                                                                                                            |             | 1640            | 499.9   | 111.0  | 50  |              |     |          |                    |                                     |             |            |          |
|                                                                                                                                            |             | 2000            | 609.6   | 136.0  | 61  |              |     |          |                    |                                     |             |            |          |
|                                                                                                                                            |             | 3280            | 999.7   | 221.0  | 100 |              |     |          |                    |                                     |             |            |          |
|                                                                                                                                            |             | 5000            | 1524.0  | 349.0  | 158 |              |     |          |                    |                                     |             |            |          |

Color code: Clear (1 bare copper conductor, 1 tinned copper conductor)

|              |                                                                                 |
|--------------|---------------------------------------------------------------------------------|
| Conductor    | 20 (7 x 28) AWG 1 tinned copper, 1 bare copper // DCR: 9.5 ohm/Mft. = 31 ohm/km |
| Insulation   | Polyethylene                                                                    |
| Construction | Twinax // Capacitance conductors: 15.5 pF/ft. = 50 pF/m                         |
| Shield       | Duofoil® + 86% tinned copper braid // DCR: 2.5 ohm/Mft. = 8.2 ohm/km            |
| Jacket       | Black PVC                                                                       |



## PLC and DCS Cables (Belden Standards)

### BELDEN STANDARDS

| Description                                                                      | Trade No.   | Standard Length |         | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications              | Attenuation |            |          |
|----------------------------------------------------------------------------------|-------------|-----------------|---------|--------|----|--------------|-----|----------|--------------------|-----------------------------|-------------|------------|----------|
|                                                                                  |             | ft.             | m       | Lbs.   | kg | Inch         | mm  |          |                    |                             | Hz          | dB/100 ft. | dB/100 m |
|  | 9271 twinax | 100             | 30.48   | 2      | 1  | 0.24         | 6.0 | 124      | 66%                | NEC CM<br>CEC CM<br>UL 2092 | 1M          | 0.6        | 2.0      |
|                                                                                  |             | 500             | 152.4   | 13     | 6  |              |     |          |                    |                             | 10M         | 1.7        | 5.6      |
|                                                                                  |             | U-500           | U-152.4 | 14     | 6  |              |     |          |                    |                             | 100M        | 5.0        | 16.0     |
|                                                                                  |             | 1000            | 304.8   | 27     | 12 |              |     |          |                    |                             | 400M        | 9.6        | 31.0     |
|                                                                                  |             | U-1000          | U-304.8 | 27     | 12 |              |     |          |                    |                             |             |            |          |

Color code: Clear & Blue

|              |                                                                                    |
|--------------|------------------------------------------------------------------------------------|
| Conductor    | 25 (7 x 33) AWG tinned copper // DCR: 31.8 ohm/Mft = 104 ohm/km                    |
| Insulation   | Polyethylene                                                                       |
| Construction | Twinax // Capacitance conductors: 12.2 pF/ft. = 40 pF/m                            |
| Shield       | Beldfoil® with stranded tinned copper drain wire // DCR: 12 ohm/Mft. = 39.3 ohm/km |
| Jacket       | Blue PVC                                                                           |

| Description                                                                       | Trade No.   | Standard Length |         | Weight |    | Nominal O.D. |     | Nom Imp. | Nom. Vel. of Prop. | Specifications              | Attenuation |            |          |
|-----------------------------------------------------------------------------------|-------------|-----------------|---------|--------|----|--------------|-----|----------|--------------------|-----------------------------|-------------|------------|----------|
|                                                                                   |             | ft.             | m       | Lbs.   | kg | Inch         | mm  |          |                    |                             | Hz          | dB/100 ft. | dB/100 m |
|  | 9272 twinax | 100             | 30.48   | 4      | 1  | 0.244        | 6.1 | 78       | 66%                | NEC CM<br>CEC CM<br>UL 2092 | 1M          | 0.6        | 2.0      |
|                                                                                   |             | 500             | 152.4   | 19     | 8  |              |     |          |                    |                             | 10M         | 2.1        | 6.9      |
|                                                                                   |             | U-500           | U-152.4 | 20     | 9  |              |     |          |                    |                             | 50M         | 5.0        | 16.0     |
|                                                                                   |             | 1000            | 304.8   | 40     | 18 |              |     |          |                    |                             | 100M        | 7.5        | 25.0     |
|                                                                                   |             | U-1000          | U-304.8 | 41     | 18 |              |     |          |                    |                             |             |            |          |

Color code: Clear & Blue

|              |                                                               |
|--------------|---------------------------------------------------------------|
| Conductor    | 20 (7 x 28) AWG tinned copper // DCR: 9.5 ohm/Mft = 31 ohm/km |
| Insulation   | Polyethylene                                                  |
| Construction | Twinax // Capacitance conductors: 19.7 pF/ft. = 64 pF/m       |
| Shield       | Tinned copper braid 93% // DCR: 3.8 ohm/Mft. = 12.4 ohm/km    |
| Jacket       | Blue PVC                                                      |

# Belden Technical Information

## COMPARATIVE PROPERTIES OF JACKETING COMPOUNDS

|                                                              | PVC | LSNH | FEP Teflon®* |
|--------------------------------------------------------------|-----|------|--------------|
| Oxidation Resistance                                         | E   | E    | O            |
| Heat Resistance                                              | G   | G-E  | O            |
| Oil Resistance                                               | F   | G    | E            |
| Low Temperature Flexing                                      | F   | F-G  | O            |
| Weather, Sun Resistance                                      | G   | G    | O            |
| Ozone Resistance                                             | E   | E    | E            |
| Abrasion Resistance                                          | F   | F-G  | E            |
| Electrical Properties                                        | F   | G    | E            |
| Flame Resistance                                             | E   | E    | E            |
| Nuclear Radiation Resistance                                 | F   | F    | P            |
| Water Resistance                                             | F   | G    | E            |
| Acid Resistance                                              | G   | P-F  | E            |
| Alkali Resistance                                            | G   | G    | E            |
| Gasoline, Kerosine, etc. (Aliphatic Hydrocarbons) Resistance | P   | F    | E            |
| Benzol, Toluol, etc. (Aromatic Hydrocarbons) Resistance      | P-F | P-F  | E            |
| Degreaser Solvents (Haloganated Hydrocarbons) Resistance     | P   | P    | E            |
| Alcohol Resistance                                           | G   | G    | E            |
| Underground Burial                                           | P   | F    | E            |

P= Poor, F= Fair, G= Good, E= Excellent, O= Outstanding

\* Teflon® is a trademark of DuPont Company

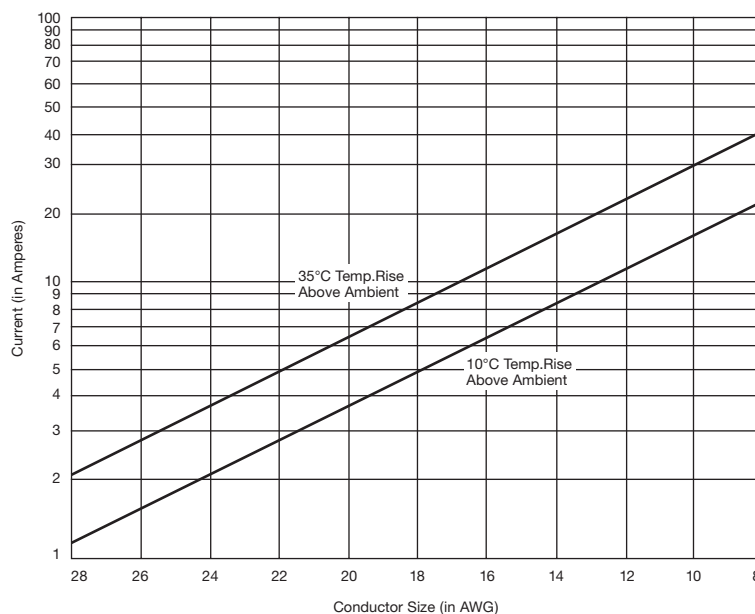
## CURRENT RATINGS FOR BELDEN ELECTRONIC CABLES

The maximum continuous current rating for an electronic cable is limited by conductor size, number of conductors contained within the cable, maximum temperature rating of the cable, and environmental conditions such as ambient temperature and air flow. To use the current capacity chart, first determine conductor size, temperature rating, and number of conductors from the applicable product description for the cable of interest.

Next, find the current value on the chart for the proper temperature rating and conductor size. To calculate the maximum current rating/conductor, multiply the chart value by the appropriate conductor factor. The chart assumes cable is surrounded by still air at an ambient temperature of 25°C. Current values are in RMS Amperes and are valid for copper conductors only. For conditions other than specified, contact the Belden Wire & Cable Customer Service Department.

Phone: +31 77 3878555

**Note:** Current ratings are intended as general guidelines for low power electronic communications and control applications. Current ratings for power applications generally are set by regulatory agencies such as UL, CSA, NEC, and others.



| No. of Conductors* | Factors |
|--------------------|---------|
| 1                  | 1.6     |
| 2 - 3              | 1.0     |
| 4 - 5              | 0.8     |
| 6 - 15             | 0.7     |
| 16 - 30            | 0.5     |

\*Do not count shields unless used as a conductor.

## Belden Technical Information

### EQUIVALENCY CHART FOR AMERICAN WIRE GAUGE (AWG)

| AWG Size | Composition of Conductor | Approx. O.D. mm | Section mm <sup>2</sup> |
|----------|--------------------------|-----------------|-------------------------|
| 40       | Solid                    | 0.079           | 0.005                   |
| 39       | Solid                    | 0.089           | 0.006                   |
| 38       | Solid                    | 0.102           | 0.008                   |
| 37       | Solid                    | 0.114           | 0.010                   |
| 36       | Solid                    | 0.127           | 0.013                   |
|          | 7/44                     | 0.153           | 0.014                   |
| 35       | Solid                    | 0.142           | 0.016                   |
| 34       | Solid                    | 0.160           | 0.020                   |
|          | 7/42                     | 0.191           | 0.022                   |
| 33       | Solid                    | 0.180           | 0.025                   |
| 32       | Solid                    | 0.209           | 0.032                   |
|          | 7/40                     | 0.203           | 0.034                   |
|          | 19/44                    | 0.229           | 0.039                   |
| 31       | Solid                    | 0.226           | 0.040                   |
| 30       | Solid                    | 0.255           | 0.051                   |
|          | 7/38                     | 0.305           | 0.056                   |
|          | 19/42                    | 0.305           | 0.060                   |
| 29       | Solid                    | 0.287           | 0.064                   |
| 28       | Solid                    | 0.320           | 0.080                   |
|          | 7/36                     | 0.381           | 0.071                   |
|          | 19/42                    | 0.406           | 0.093                   |
| 27       | Solid                    | 0.361           | 0.102                   |
|          | 7/35                     | 0.457           | 0.111                   |
| 26       | Solid                    | 0.404           | 0.127                   |
|          | 7/34                     | 0.483           | 0.140                   |
|          | 10/36                    | 0.533           | 0.127                   |
|          | 19/38                    | 0.508           | 0.153                   |
| 25       | Solid                    | 0.455           | 0.163                   |
| 24       | Solid                    | 0.511           | 0.203                   |
|          | 7/32                     | 0.610           | 0.226                   |
|          | 10/34                    | 0.584           | 0.200                   |
|          | 19/36                    | 0.610           | 0.239                   |
|          | 41/40                    | 0.584           | 0.201                   |
| 23       | Solid                    | 0.574           | 0.259                   |
| 22       | Solid                    | 0.643           | 0.322                   |
|          | 7/30                     | 0.762           | 0.352                   |
|          | 19/34                    | 0.787           | 0.380                   |
|          | 26/36                    | 0.762           | 0.327                   |

| AWG Size | Composition of Conductor | Approx. O.D. mm | Section mm <sup>2</sup> |
|----------|--------------------------|-----------------|-------------------------|
| 21       | Solid                    | 0.724           | 0.412                   |
| 20       | Solid                    | 0.813           | 0.514                   |
|          | 10/30                    | 0.890           | 0.504                   |
|          | 19/32                    | 0.940           | 0.612                   |
|          | 26/34                    | 0.914           | 0.520                   |
|          | 41/36                    | 0.914           | 0.533                   |
| 19       | Solid                    | 0.912           | 0.653                   |
| 18       | Solid                    | 1.020           | 0.816                   |
|          | 7/26                     | 1.220           | 0.891                   |
| 18       | 16/30                    | 1.200           | 0.808                   |
|          | 19/30                    | 1.240           | 0.957                   |
|          | 41/34                    | 1.200           | 0.819                   |
|          | 65/34                    | 1.200           | 0.845                   |
| 17       | Solid                    | 1.150           | 1.039                   |
| 16       | Solid                    | 1.290           | 1.300                   |
|          | 7/24                     | 1.520           | 1.420                   |
|          | 19/29                    | 1.470           | 1.216                   |
|          | 26/30                    | 1.500           | 1.310                   |
|          | 65/34                    | 1.500           | 1.300                   |
|          | 105/36                   | 1.500           | 1.365                   |
| 15       | Solid                    | 1.450           | 1.651                   |
| 14       | Solid                    | 1.630           | 2.070                   |
|          | 7/20                     | 1.850           | 2.260                   |
|          | 19/27                    | 1.850           | 1.930                   |
|          | 41/30                    | 1.850           | 2.060                   |
|          | 105/36                   | 1.850           | 2.100                   |
| 13       | Solid                    | 1.830           | 2.630                   |
| 12       | Solid                    | 2.050           | 3.290                   |
|          | 7/20                     | 2.440           | 3.610                   |
|          | 19/25                    | 2.360           | 3.070                   |
|          | 65/30                    | 2.410           | 3.270                   |
|          | 165/34                   | 2.410           | 3.300                   |
| 11       | Solid                    | 2.300           | 4.155                   |
| 10       | Solid                    | 2.600           | 5.230                   |
|          | 37/26                    | 2.920           | 4.710                   |
|          | 65/28                    | 2.950           | 5.230                   |
|          | 105/30                   | 2.950           | 5.355                   |

### CONVERSION TABLE

| To convert   |       |             |
|--------------|-------|-------------|
| From         | To    | Multiply by |
| To           | From  | Divide by   |
| in           | mm    | 25.4        |
| in           | cm    | 2.54        |
| ft.          | m     | 0.3048      |
| mi           | km    | 1.6093      |
| Lbs.         | kg    | 0.4536      |
| Lbs./1000ft. | kg/km | 0.67197     |

| To convert |    |               |
|------------|----|---------------|
| From       | To |               |
| °C         | °F | 1.8 x °C + 32 |
| °F         | °C | (°F - 32)/1.8 |

# Belden Technical Information

## TRADE NUMBER INDEX

| Trade No. | Page No. | Trade No. | Page No. | Trade No. | Page No. | Trade No. | Page No. |
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| 3076F     | 4        | 3105A     | 16       | 7703NH    | 14       | 9842      | 17       |
| 3077F     | 4        | 3106A     | 16       | 7704NH    | 14       | 9843      | 17       |
| 3078F     | 4        | 3107A     | 16       | 7723A     | 7        | 9860      | 21       |
| 3079A     | 5        | 3108A     | 16       | 7724A     | 7        | 9880      | 19       |
| 3079E     | 5        | 3109A     | 16       | 7725A     | 7        | 9907      | 18       |
| 3082A     | 11       | 3119A     | 6        | 7726A     | 7        | 89182     | 20       |
| 3083A     | 11       | 3120A     | 6        | 8471      | 13       | 89880     | 19       |
| 3084A     | 12       | 3124A     | 15       | 9182      | 20       | 89907     | 18       |
| 3084F     | 12       | 3125A     | 15       | 9207      | 21       | YM29560   | 16       |
| 3085A     | 12       | 3126A     | 15       | 9222      | 18       | YQ29258   | 17       |
| 3092A     | 10       | 3131A     | 8        | 9250      | 21       |           |          |
| 3092F     | 10       | 3132A     | 8        | 9271      | 22       |           |          |
| 3093A     | 10       | 3999A     | 14       | 9272      | 22       |           |          |
| 3094A     | 9        | 7701NH    | 13       | 9463      | 20       |           |          |
| 3095A     | 9        | 7702NH    | 13       | 9841      | 17       |           |          |

## Product Information



Optical-Fibre  
Catalog



Audio/Video Cables  
Catalog



Online-  
Product  
Service



Electronic Database



Industrial-  
Cable  
Catalog



Master  
Catalog

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