

## 3077F Multi-Conductor - DataBus® ISA/SP-50 FOUNDATION Fieldbus Cable



For more Information  
please call

1-800-Belden1



### General Description:

22 AWG stranded (7x30) tinned copper conductors, polyolefin insulation, Beldfoil® shield (100% coverage), tinned copper drain wire, PVC jacket.

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

| # Pairs | AWG | Stranding | Conductor Material | Dia. (mm) |
|---------|-----|-----------|--------------------|-----------|
| 1       | 22  | 7x30      | TC - Tinned Copper | 0.762     |

Total Number of Conductors: 2

#### Insulation

##### Insulation Material:

| Insulation Material |
|---------------------|
| PO - Polyolefin     |

#### Outer Shield

##### Outer Shield Material:

| Outer Shield Trade Name | Type | Outer Shield Material        | Coverage (%) |
|-------------------------|------|------------------------------|--------------|
| Beldfoil®               | Tape | Aluminum Foil-Polyester Tape | 100          |

##### Outer Shield Drain Wire AWG:

| AWG | Stranding | Drain Wire Conductor Material |
|-----|-----------|-------------------------------|
| 20  | 7x28      | TC - Tinned Copper            |

#### Outer Jacket

##### Outer Jacket Material:

| Outer Jacket Material    |
|--------------------------|
| PVC - Polyvinyl Chloride |

#### Overall Cable

Overall Nominal Diameter: 4.978 mm

#### Pair

##### Pair Color Code Chart:

| Number | Color         |
|--------|---------------|
| 1      | Blue & Orange |

##### Pair Lay Length & Direction:

| Lay Length (mm) |
|-----------------|
| 38.1            |

### Mechanical Characteristics (Overall)

|                                   |                 |
|-----------------------------------|-----------------|
| Operating Temperature Range:      | -30°C To +105°C |
| UL Temperature Rating:            | 105°C           |
| Bulk Cable Weight:                | 26.788 Kg/Km    |
| Max. Recommended Pulling Tension: | 120.101 N       |
| Min. Bend Radius/Minor Axis:      | 55.880 mm       |

## Applicable Specifications and Agency Compliance (Overall)

### Applicable Standards & Environmental Programs

|                                       |               |
|---------------------------------------|---------------|
| NEC/(UL) Specification:               | CM, ITC, PLTC |
| NEC Articles:                         | 725, 727, 800 |
| CEC/C(UL) Specification:              | CM            |
| EU Directive 2011/65/EU (ROHS II):    | Yes           |
| EU CE Mark:                           | Yes           |
| EU Directive 2000/53/EC (ELV):        | Yes           |
| EU Directive 2002/95/EC (RoHS):       | Yes           |
| EU RoHS Compliance Date (mm/dd/yyyy): | 01/01/2004    |
| EU Directive 2002/96/EC (WEEE):       | Yes           |
| EU Directive 2003/11/EC (BFR):        | Yes           |
| CA Prop 65 (CJ for Wire & Cable):     | Yes           |
| MII Order #39 (China RoHS):           | Yes           |

### Flame Test

|                |                   |
|----------------|-------------------|
| UL Flame Test: | UL1685 UL Loading |
|----------------|-------------------|

### Plenum/Non-Plenum

|               |    |
|---------------|----|
| Plenum (Y/N): | No |
|---------------|----|

## Surface Printing (Overall)

|                   |  |
|-------------------|--|
| Surface Printing: | BELDEN 3077F DATABUS(R) 31.25 KB/S E34972 2C22 SHIELDED (UL) 105C PLTC OR ITC SUN RES OR CM OR C(UL) CM (2 FT, 7 DIGIT SEQUENTIAL NUMBER) FEET |
|-------------------|--|

## Electrical Characteristics (Overall)

### Unaveraged Impedance:

| Description | Freq. (MHz) | Start Freq. (MHz) | Stop Freq. (MHz) | Impedance (Ohm) |
|-------------|-------------|-------------------|------------------|-----------------|
|             | .03125      |                   |                  | 100             |

### Nom. Inductance:

|                   |        |
|-------------------|--------|
| Inductance (µH/m) | 0.6562 |
|-------------------|--------|

### Nom. Capacitance Conductor to Shield:

|                    |         |
|--------------------|---------|
| Capacitance (pF/m) | 144.364 |
|--------------------|---------|

### Nom. Mutual Capacitance:

|                    |         |
|--------------------|---------|
| Capacitance (pF/m) | 77.1035 |
|--------------------|---------|

### Maximum Capacitance Unbalance:

|                    |        |
|--------------------|--------|
| Capacitance (pF/m) | 3.9372 |
|--------------------|--------|

### Nominal Velocity of Propagation:

|        |    |
|--------|----|
| VP (%) | 66 |
|--------|----|

### Nom. Conductor DC Resistance:

|                     |         |
|---------------------|---------|
| DCR @ 20°C (Ohm/km) | 56.1051 |
|---------------------|---------|

|   |               |
|---|---------------|
| Ind. Pair Nominal Shield DC Resistance @ 20 Deg. C: | 37.403 Ohm/km |
|---|---------------|

### Nom. Attenuation:

METRIC MEASUREMENT VERSION

## 3077F Multi-Conductor - DataBus® ISA/SP-50 FOUNDATION Fieldbus Cable

| Description | Freq. (MHz) | Start Freq. (MHz) | Stop Freq. (MHz) | Attenuation (dB/100m) |
|-------------|-------------|-------------------|------------------|-----------------------|
|             | .039        |                   |                  | 0.45934               |

**Max. Attenuation:**

| ()       | Freq. (MHz) | Attenuation (dB/100m) |
|----------|-------------|-----------------------|
| 0.498712 | 0.039       | 0.499                 |

**Max. Operating Voltage - UL:**

| Voltage   |
|-----------|
| 300 V RMS |

**Max. Recommended Current:**

| Description   | Current  |
|---------------|----------|
| Per Conductor | 2.5 Amps |

**Other Electrical Characteristic 2:** 31.25 KBits/sec

### Notes (Overall)

**Notes:** Tape around pair has shorting fold. CPE & LSOH Jacket optional.

### Put Ups and Colors:

| Item #        | Putup    | Ship Weight | Color  | Notes | Item Desc          |
|---------------|----------|-------------|--------|-------|--------------------|
| 3077F 0031000 | 1,000 FT | 23.000 LB   | ORANGE | C N   | TWPR #22 PP FS PVC |
| 3077F 003500  | 500 FT   | 11.000 LB   | ORANGE | C N   | TWPR #22 PP FS PVC |

**Notes:**

C = CRATE REEL PUT-UP.

N = FINAL PUT-UP LENGTH MAY VARY -0% TO +10% FROM LENGTH SHOWN.

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