

## 9744 Multi-Conductor - Audio, Control and Instrumentation Cable



### Description:

22 AWG stranded (7x30) tinned copper conductors, PVC insulation, twisted pairs, PVC jacket.

### Physical Characteristics (Overall)

#### Conductor

##### AWG:

| # Pairs | AWG | Stranding | Conductor Material |
|---------|-----|-----------|--------------------|
| 2       | 22  | 7x30      | TC - Tinned Copper |

#### Insulation

##### Insulation Material:

| Insulation Material      | Wall Thickness (in.) |
|--------------------------|----------------------|
| PVC - Polyvinyl Chloride | .010                 |

#### Outer Shield

##### Outer Shield Material:

| Outer Shield Material |
|-----------------------|
| Unshielded            |

#### Outer Jacket

##### Outer Jacket Material:

| Outer Jacket Material    | Nom. Wall Thickness (in.) |
|--------------------------|---------------------------|
| PVC - Polyvinyl Chloride | .032                      |

### Overall Cabling

Overall Nominal Diameter: 0.233 in.

### Pair

#### Pair Color Code Chart:

| Number | Color         |
|--------|---------------|
| 1      | Black & Red   |
| 2      | Black & White |

### Mechanical Characteristics (Overall)

|  |                          |
|--|--------------------------|
| Operating Temperature Range:           | -20°C To +80°C           |
| Non-UL Temperature Rating:             | 80°C (UL AWM Style 2576) |
| Bulk Cable Weight:                     | 24.100 lbs/1000 ft.      |
| Max. Recommended Pulling Tension:      | 36 lbs.                  |
| Min. Bend Radius (Install)/Minor Axis: | 2.375 in.                |

### Applicable Specifications and Agency Compliance (Overall)

#### Applicable Standards & Environmental Programs

|                                |                            |
|--------------------------------|----------------------------|
| NEC/(UL) Specification:        | CMG                        |
| CEC/C(UL) Specification:       | CMG                        |
| AWM Specification:             | UL Style 2576 (150 V 80°C) |
| EU CE Mark:                    | Yes                        |
| EU Directive 2000/53/EC (ELV): | Yes                        |

## 9744 Multi-Conductor - Audio, Control and Instrumentation Cable

EU Directive 2002/95/EC (RoHS): Yes

EU RoHS Compliance Date (mm/dd/yyyy): 04/01/2005

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 FT4 Loading

C(UL) Flame Test: FT4

### Plenum/Non-Plenum

Plenum (Y/N): No

## Electrical Characteristics (Overall)

### Nom. Capacitance Conductor to Conductor:

Capacitance (pF/ft)

25.5

### Nom. Conductor DC Resistance:

DCR @ 20°C (Ohm/1000 ft)

14.7

### Max. Operating Voltage - UL:

Voltage

150 V (UL AWM Style 2576); 300 V RMS

### Max. Recommended Current:

Current

2.2 Amps per conductor @ 20°C

## Put Ups and Colors:

| Item #        | Putup    | Ship Weight | Color  | Notes | Item Desc        |
|---------------|----------|-------------|--------|-------|------------------|
| 9744 060U1000 | 1,000 FT | 26.000 LB   | CHROME |       | 2 PR #22 PVC PVC |
| 9744 060U500  | 500 FT   | 13.500 LB   | CHROME |       | 2 PR #22 PVC PVC |
| 9744 0601000  | 1,000 FT | 27.000 LB   | CHROME | C     | 2 PR #22 PVC PVC |
| 9744 060500   | 500 FT   | 14.000 LB   | CHROME | C     | 2 PR #22 PVC PVC |

### Notes:

C = CRATE REEL PUT-UP.

## Introduction

Belden® multi-conductor cables are manufactured in a wide variety of gage sizes, dimensions, insulation materials, shielding configurations, and jacketing materials including Plenum and High-Temperature versions. These cables meet the technical requirements of many different types of systems. In fact, Belden offers one of the broadest lines of UL Listed, NEC and CEC multi-conductor cables available from any single source.

Applications for multi-conductor cables include computers, communications, instrumentation, sound, control, audio, and data transmission. Each of these cables is designed to protect signal integrity under critical conditions by reducing hum, noise, and crosstalk.

To assist you in selecting the proper cable for your application, both the suggested working voltages and the maximum temperature ratings are indicated for each applicable product in this section.

Most of our multi-conductor cables are available from stock. Many of these are available off the shelf from distributors. If you have a new or unusual application or you cannot find a multi-conductor cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

### Multi-Conductor Cables Packaging

Belden's unique UnReel® cable dispenser is available for many of the multi-conductor products listed in this section. The letter "U" before the specified put-up length denotes UnReel packaging.

## Selection Guide

### Shielded Multi-Conductor Computer Cables for RS-232 Applications

| Specifications                  |                    | Cable Series* |      |      |      |
|---------------------------------|--------------------|---------------|------|------|------|
|                                 |                    | 9925          | 9608 | 9533 | 9939 |
| <b>Conductor Size:</b><br>(AWG) | 28                 |               |      |      |      |
|                                 | 24                 | ✓             | ✓    | ✓    |      |
|                                 | 22                 |               |      |      | ✓    |
|                                 | 20                 |               |      |      |      |
|                                 | 18                 |               |      |      |      |
| Page No.                        |                    | 4.18          | 4.17 | 4.11 | 4.19 |
| <b>Insulation:</b>              | S-R PVC            |               | ✓    | ✓    | ✓    |
|                                 | Polyethylene       |               |      |      |      |
|                                 | Polypropylene      |               |      |      |      |
|                                 | Datalene®†         | ✓             |      |      |      |
| <b>Shield:</b>                  | Overall Foil       |               |      | ✓    |      |
|                                 | Drain Wire         | ✓             |      | ✓    |      |
|                                 | Overall Foil/Braid | ✓             | ✓    |      | ✓    |
|                                 | Braid Coverage     | 65%           | 65%  |      | 65%  |
| <b>Drain Wire Overall:</b>      |                    | Yes           | No   | Yes  | No   |
| <b>No. of Cond. Available:</b>  | 1                  |               |      |      |      |
|                                 | 2                  |               |      |      |      |
|                                 | 3                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 4                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 5                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 6                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 7                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 8                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 9                  | ✓             | ✓    | ✓    | ✓    |
|                                 | 10                 | ✓             | ✓    | ✓    | ✓    |
|                                 | 11                 |               |      |      |      |
|                                 | 12                 |               |      |      |      |
|                                 | 13                 |               |      |      |      |
|                                 | 15                 | ✓             | ✓    | ✓    | ✓    |
|                                 | 17                 |               |      |      |      |
|                                 | 18                 |               |      |      |      |
|                                 | 19                 |               |      |      |      |
|                                 | 20                 |               |      | ✓    |      |
|                                 | 25                 | ✓             | ✓    | ✓    | ✓    |
|                                 | 27                 |               |      |      |      |
| 30                              |                    |               | ✓    |      |      |
| 31                              |                    |               |      |      |      |
| 37                              | ✓                  | ✓             |      | ✓    |      |
| 40                              |                    |               | ✓    |      |      |
| 50                              |                    | ✓             | ✓    | ✓    |      |
| <b>Capacitance ** (pF/ft.)</b>  |                    | 12.0          | 30.0 | 30.0 | 35.0 |

\*All cables are UL-listed.

\*\*Capacitance may vary on some cables.

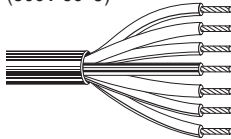
† Foam high density polyethylene.

# Unshielded

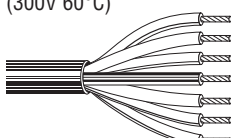
## Audio, Control and Instrumentation Cables Non-Plenum

| Description | Part No. | UL NEC/<br>C(UL) CEC<br>Type | No.<br>of<br>Cond. | Color<br>Code | Standard Lengths |   | Standard<br>Unit Weight |    | Insulation<br>Thickness |    | Jacket<br>Thickness |    | Nominal OD |    |
|-------------|----------|------------------------------|--------------------|---------------|------------------|---|-------------------------|----|-------------------------|----|---------------------|----|------------|----|
|             |          |                              |                    |               | Ft.              | m | Lbs.                    | kg | Inch                    | mm | Inch                | mm | Inch       | mm |

**20 AWG** Stranded (7x28) Tinned Copper Conductors • Conductors Cabled

| PVC Insulation • Chrome PVC Jacket  |             |         |    |   |        |         |       |      |      |     |      |      |      |      |
|---|-------------|---------|----|---|--------|---------|-------|------|------|-----|------|------|------|------|
| UL AWM Style 2464<br>(300V 80°C)<br> | <b>9444</b> | NEC:    | 4  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 4.0   | 1.8  | .013 | .33 | .032 | .81  | .217 | 5.51 |
|   |             | CMG     |    |   | U-500  | U-152.4 | 16.5  | 7.5  |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 500    | 152.4   | 16.5  | 7.5  |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   | U-1000 | U-304.8 | 32.0  | 14.5 |      |     |      |      |      |      |
|   |             |         |    |   | 1000   | 304.8   | 33.0  | 15.0 |      |     |      |      |      |      |
|   | <b>9445</b> | NEC:    | 5  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 4.4   | 2.1  | .013 | .33 | .032 | .81  | .239 | 6.07 |
|   |             | CMG     |    |   | U-500  | U-152.4 | 20.0  | 9.1  |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 500    | 152.4   | 19.5  | 8.9  |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   | U-1000 | U-304.8 | 38.0  | 17.2 |      |     |      |      |      |      |
|   |             |         |    |   | 1000   | 304.8   | 40.0  | 18.2 |      |     |      |      |      |      |
|   | <b>9439</b> | NEC:    | 7  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 5.7   | 2.6  | .013 | .33 | .032 | .81  | .260 | 6.60 |
|   |             | CMG     |    |   | U-500  | U-152.4 | 26.0  | 11.9 |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 500    | 152.4   | 27.0  | 12.3 |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   | U-1000 | U-304.8 | 51.0  | 23.1 |      |     |      |      |      |      |
|   |             |         |    |   | 1000   | 304.8   | 53.0  | 24.1 |      |     |      |      |      |      |
|   | <b>9455</b> | NEC:    | 9  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 7.1   | 3.2  | .013 | .33 | .035 | .89  | .317 | 8.05 |
|   |             | CMG     |    |   | 500    | 152.4   | 35.0  | 15.9 |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 1000   | 304.8   | 67.0  | 30.4 |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   |        |         |       |      |      |     |      |      |      |      |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |      |
|   | <b>9457</b> | NEC:    | 12 | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 9.2   | 4.2  | .013 | .33 | .035 | .89  | .338 | 8.58 |
|   |             | CMG     |    |   | 500    | 152.4   | 45.0  | 20.4 |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 1000   | 304.8   | 88.0  | 40.0 |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   |        |         |       |      |      |     |      |      |      |      |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |      |
|   | <b>9458</b> | NEC:    | 15 | See<br>Chart 2R<br>(Tech Info<br>Section) | 100    | 30.5    | 12.6  | 5.7  | .013 | .33 | .040 | 1.02 | .389 | 9.88 |
|   |             | CMG     |    |   | 500    | 152.4   | 60.5  | 27.5 |      |     |      |      |      |      |
|   |             | CEC:    |    |   | 1000   | 304.8   | 118.0 | 53.6 |      |     |      |      |      |      |
|   |             | CMG FT4 |    |   |        |         |       |      |      |     |      |      |      |      |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |      |

**18 AWG** Stranded (19x30) Tinned Copper Conductors • Conductors Cabled

| PVC Insulation • Chrome PVC Jacket  |             |         |    |   |        |         |       |      |      |     |      |      |      |       |
|---|-------------|---------|----|---|--------|---------|-------|------|------|-----|------|------|------|-------|
| UL AWM Style 2598<br>(300V 60°C)<br> | <b>8489</b> | NEC:    | 4  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 5.1   | 2.3  | .017 | .43 | .032 | .81  | .257 | 6.53  |
|   |             | CMG     |    |   | 250    | 76.2    | 12.0  | 5.4  |      |     |      |      |      |       |
|   |             | CEC:    |    |   | U-500  | U-152.4 | 23.5  | 10.7 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   | 500    | 152.4   | 24.0  | 10.9 |      |     |      |      |      |       |
|   |             |         |    |   | U-1000 | U-304.8 | 46.0  | 20.9 |      |     |      |      |      |       |
| For Plenum versions of 8489, see 88489 or 82489.  |             |         |    |   |        |         |       |      |      |     |      |      |      |       |
|   | <b>8465</b> | NEC:    | 5  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 6.4   | 2.9  | .017 | .43 | .033 | .84  | .282 | 7.16  |
|   |             | CMG     |    |   | U-500  | U-152.4 | 29.5  | 13.5 |      |     |      |      |      |       |
|   |             | CEC:    |    |   | 500    | 152.4   | 30.0  | 13.6 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   | U-1000 | U-304.8 | 58.0  | 26.3 |      |     |      |      |      |       |
|   |             |         |    |   | 1000   | 304.8   | 60.0  | 27.4 |      |     |      |      |      |       |
|   | <b>8467</b> | NEC:    | 7  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 8.3   | 3.8  | .017 | .43 | .037 | .94  | .314 | 7.98  |
|   |             | CMG     |    |   | 250    | 76.2    | 20.0  | 9.1  |      |     |      |      |      |       |
|   |             | CEC:    |    |   | 500    | 152.4   | 40.5  | 18.4 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   | 1000   | 304.8   | 79.0  | 35.9 |      |     |      |      |      |       |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |       |
|   | <b>8469</b> | NEC:    | 9  | See<br>Chart 1<br>(Tech Info<br>Section)  | 100    | 30.5    | 10.5  | 4.8  | .017 | .43 | .037 | .94  | .364 | 9.25  |
|   |             | CMG     |    |   | 250    | 76.2    | 26.0  | 11.8 |      |     |      |      |      |       |
|   |             | CEC:    |    |   | 500    | 152.4   | 51.5  | 23.4 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   | 1000   | 304.8   | 105.0 | 47.7 |      |     |      |      |      |       |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |       |
|   | <b>8466</b> | NEC:    | 12 | See<br>Chart 2R<br>(Tech Info<br>Section) | 100    | 30.5    | 13.2  | 6.0  | .017 | .43 | .040 | 1.02 | .412 | 10.46 |
|   |             | CMG     |    |   | 250    | 76.2    | 32.5  | 14.8 |      |     |      |      |      |       |
|   |             | CEC:    |    |   | 500    | 152.4   | 66.0  | 30.0 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   | 1000   | 304.8   | 131.0 | 59.5 |      |     |      |      |      |       |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |       |
|   | <b>8468</b> | NEC:    | 15 | See<br>Chart 2R<br>(Tech Info<br>Section) | 100    | 30.5    | 17.9  | 8.1  | .017 | .43 | .045 | 1.14 | .500 | 12.70 |
|   |             | CMG     |    |   | 500    | 152.4   | 89.5  | 40.6 |      |     |      |      |      |       |
|   |             | CEC:    |    |   | 1000   | 304.8   | 175.0 | 79.5 |      |     |      |      |      |       |
|   |             | CMG FT4 |    |   |        |         |       |      |      |     |      |      |      |       |
|   |             |         |    |   |        |         |       |      |      |     |      |      |      |       |