

# 3M™ Round, Shielded/Jacketed, Flat Cable

.050" 28 AWG Stranded, Mass-Term, PVC/PVC

3659 Series



- Round construction permits easier routing
- 28 AWG wire on .050 inch pitch permits mass termination to broad line of IDC connectors
- Continuous split/bond repeat allows for mass termination on 2.4 inch centers (approximate)
- Primary cable is zippable for branching or discrete terminations
- Meets external wiring requirements of National Electrical Code, Article 725 (CL2)
- UL listed for USA and Canadian markets
- Dual shielding provides 35 db average shielding effectiveness
- \*RoHS compliant

Date Modified: May 24, 2004

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## Physical

### Jacket

Material: Polyvinyl Chloride (PVC)

Color: Black

Primary Material: PVC

Color: Gray

### Marking

Standard: (UL) CL2 75C 28 AWG or AWM 20267 3M NU  AWM IIA/B 80C 300V FT1  
EU <50V

**Conductors:** 28 AWG 7 × 36 [ 7 × 0.127 ] Tinned Stranded Copper

**Shielding:** 001 [ 0.03 ] Thick Aluminum/Polyester Film Foil and 90% Coverage Tinned Copper Braid

## Electrical

**Voltage Rating:** USA: N.E.C. 725, CL2 or AWM; 300V

Canada: 300V

EU: <50V

**Insulation Resistance:**  $> 1 \times 10^{10} \Omega/10 \text{ ft. [ 3m ]}$

### Unbalanced

### Balanced

**Characteristic Impedance:** 62Ω

106 Ω

**Capacitance:** 27.7 pF/ft. [ 90.88 pF/m ] 15.2 pF/ft. [ 49.9 pF/m ]

**Inductance:** .13 μH/ft. [ 0.43 μH/m ] .20 μH/ft. [ 0.66 μH/m ]

**Propagation Delay:** 1.72 ns/ft. [ 5.64 ns/m ] 1.62 ns/ft. [ 5.32 ns/m ]

**Velocity of Propagation:** 59%

62%

Note: Unbalanced is measured between ground-signal-ground conductors with shield grounded. Balanced is measured between signal conductors within a pair, with the shield floating.

## Environmental

**Temperature Rating:** USA: CL2; 75°C Max or AWM; -20°C to +80°C Canada: 80°C

**Flammability Rating:** USA: N.E.C. 725, CL2 Canada: FTI

\*RoHS = Directive 2002/95/EC,  
Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment

UL File No.: E118773, Power Limited Circuit Cable: CL2 (or AWM Style 20267)

**3M**

**Interconnect Solutions**

<http://www.3M.com/interconnects/>

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For technical, sales or ordering information call

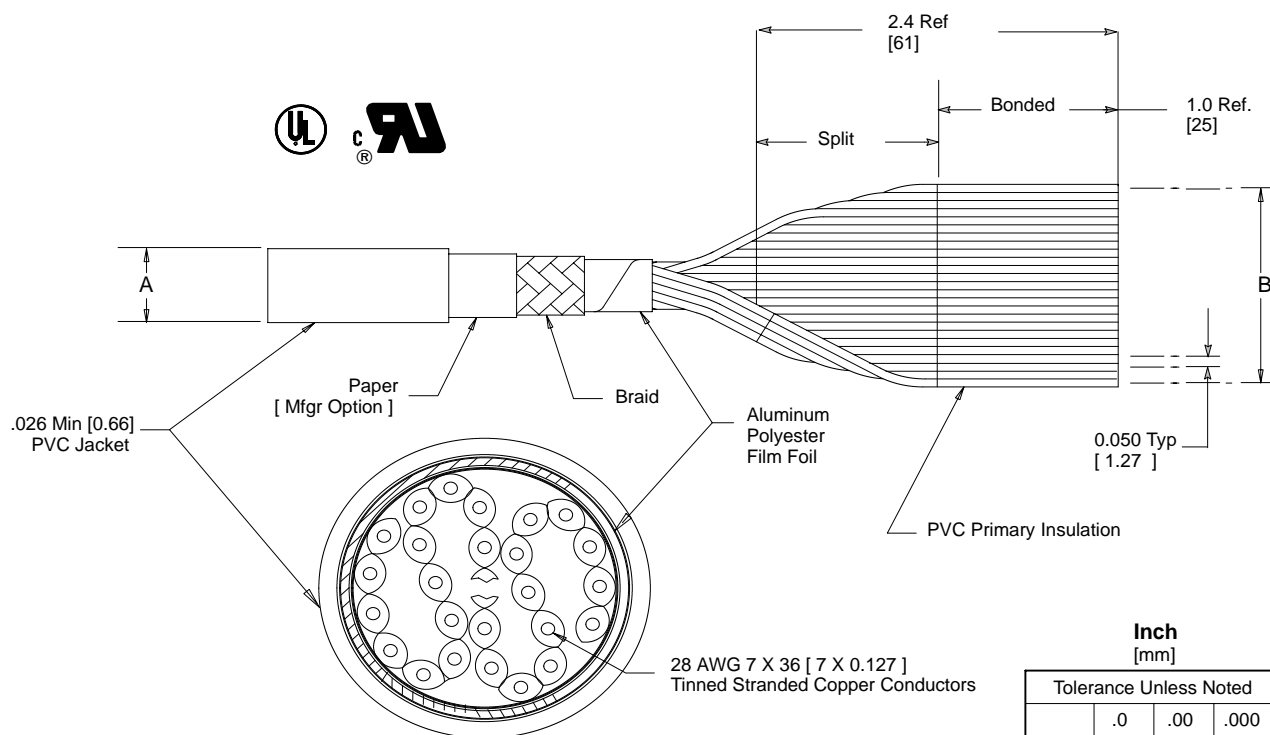
**800-225-5373**

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Number of Conductors	3M Part Number	Dimension A ± .03	Dimension B Ref (See Note 2)
09	3659/09	0.27 [ 6.9 ]	0.40 [ 10.2 ]
10	3659/10	0.27 [ 6.9 ]	0.45 [ 11.4 ]
14	3659/14	0.31 [ 7.9 ]	0.65 [ 16.5 ]
15	3659/15	0.31 [ 7.9 ]	0.70 [ 17.8 ]
16	3659/16	0.31 [ 7.9 ]	0.75 [ 19.1 ]
20	3659/20	0.34 [ 8.6 ]	0.95 [ 24.1 ]
24	3659/24	0.37 [ 9.4 ]	1.15 [ 29.2 ]
25	3659/25	0.37 [ 9.4 ]	1.20 [ 30.5 ]
26	3659/26	0.37 [ 9.4 ]	1.25 [ 31.8 ]
34	3659/34	0.41 [ 10.4 ]	1.65 [ 41.9 ]
36	3659/36	0.43 [ 10.9 ]	1.75 [ 44.5 ]
37	3659/37	0.43 [ 10.9 ]	1.80 [ 45.7 ]
40	3659/40	0.43 [ 10.9 ]	1.95 [ 49.5 ]
50	3659/50	0.48 [ 12.2 ]	2.45 [ 62.2 ]
60	3659/60	0.51 [ 13.0 ]	2.95 [ 74.9 ]
64	3659/64	0.54 [ 13.7 ]	3.15 [ 80.0 ]



### Notes:

1. Red marking on one edge of primary cable designates wire #1.
2. Dimension B pertains to bonded area only.

Inch [mm]			
Tolerance Unless Noted			
	.0	.00	.000
Inch	±.1	±.05	±.010

[ ] Dimensions for Reference only

## Ordering Information

3659/XX

Number of Conductors  
(See Table)

Note: Available in standard length of 100 or 300 ft/roll, please specify when ordering.

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#### **Electronic Solutions Division**

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