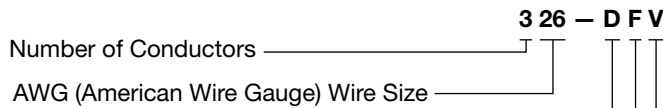


**General Information and Selection**

Different strain gage installation conditions and test specifications often necessitate the use of different types or sizes of leadwires. For accurate, reliable strain measurements, it is important to use an appropriate type of leadwire for each installation. Micro-Measurements stocks a wide variety of wires and cables, cataloged in tabular form on the following pages. All wires and cables listed in the tables have been proven in the field to give excellent sensor performance when properly used in the specified environments. Special gage wiring problems may require the use of wires not listed here. In such cases, our Applications Engineering Department can recommend appropriate wire types and can suggest suppliers.



**WIRE AND CABLE CODING SYSTEM**



**Types of Wire**

- A:** Solid copper
- B:** Stranded copper
- D:** Tinned stranded copper
- F:** Silver-plated stranded
- G:** Nickel-clad solid copper
- H:** Solid Manganin
- J:** Solid Balco®

**Construction**

- F:** Flat cable
- J:** Twisted cable with jacket
- S:** Shielded/twisted with jacket
- T:** Twisted cable without jacket
- W:** Round single wire

**Insulation**

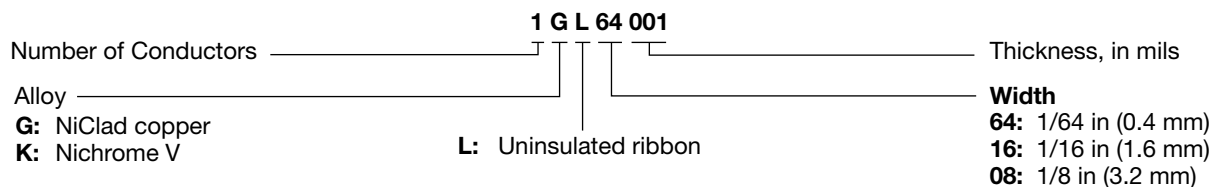
- E:** Etched TFE Teflon®
- F:** Fiberglass braid
- K:** Kapton® (polyimide) wrap
- N:** Nylon/polyurethane enamel
- P:** Polyurethane enamel
- Q:** Polyimide enamel
- T:** TFE Teflon®
- V:** Vinyl (PVC)

AWG	Diameter (nominal)		AWG	Diameter (nominal)	
	in	(mm)		in	(mm)
22	0.0253	0.643	34	0.0063	0.160
26	0.0159	0.404	36	0.0050	0.127
27	0.0142	0.361	37	0.0045	0.114
30	0.0100	0.254	42	0.0025	0.064

Balco is a Registered Trademark of W.B. Driver Company. Teflon and Kapton are Registered Trademarks of DuPont.

\*Solid core wire

**RIBBON WIRE CODING SYSTEM**





The Wire and Cable Coding System shown above gives the unique designation of each wire type for ordering purposes. The leadwire and cabling selection charts presented on the next three pages are organized

according to the number of conductors. All wires and cables are supplied on spools for user convenience. Some styles may not be continuous length.

**References:**

- Application Note: TT-601, Techniques for Bonding Leadwires to Surfaces Experiencing High Centrifugal Forces.
- Application Note: TT-604, Leadwire Attachment Techniques for Obtaining Maximum Fatigue Life of Strain Gages.
- Application Note: TT-608, Techniques for Attaching Leadwires to Unbonded Strain Gages.

## General Information and Selection





SINGLE-CONDUCTOR TYPES: SOLID WIRE			
	Type (See Note 1)	Packaging Foot (Meter)*	Description
	 <p>AWP    AWN</p> <p>AWQ    GWF</p> <p>HWN    JWN</p>	<p><b>134-AWP</b> <b>136-AWP</b></p> <p><b>127-AWN</b> <b>130-AWN</b> <b>134-AWN</b> <b>136-AWN</b></p> <p><b>127-AWQ</b> <b>130-AWQ</b> <b>134-AWQ</b></p> <p><b>126-GWF</b> <b>126-GWF</b></p> <p><b>137-HWN</b></p> <p><b>142-JWN</b></p>	
SINGLE-CONDUCTOR TYPES: STRANDED WIRE			
	Type (See Note 1)	Packaging Foot (Meter)*	Description
	 <p>DWV    FWK    FWT</p>	<p>126-DWV</p> <p>126-FWK</p> <p>130-FWT</p>	

\*Some types may not be continuous length.

**Note 1:** Products shown in bold are RoHS compliant.

Balco is a Registered Trademark of W.B. Driver Company.  
Kapton and Teflon are Registered Trademarks of DuPont.  
TetraEtch is a Registered Trademark of W.L. Gore.

General Information and Selection















<b>THREE-CONDUCTOR CABLE</b>			
	Type (See Note 1)	Packaging Foot (Meter)*	Description
	 <p><b>DJV</b>    <b>DFV</b></p>	<p><b>322-DJV</b></p> <p><b>326-DFV</b> <b>326-DFV</b> <b>330-DFV</b> <b>330-DFV</b></p>	
 <p><b>BSV</b>    <b>DTV</b>    <b>DSV</b></p>	<p><b>326-BSV</b> <b>326-BSV</b></p> <p><b>326-DTV</b> <b>326-DTV</b></p> <p><b>326-DSV</b> <b>326-DSV</b></p>	<p>100 ft (30 m) 1000 ft (300 m)</p> <p>100 ft (30 m) 1000 ft (300 m)</p> <p>100 ft (30 m) 1000 ft (300 m)</p>	<p><b>Stranded copper wire, 3-conductor twisted cable, PVC insulated, braided shield:</b> For use from -60° to 180°F (-50° to +80°C).</p> <p><b>Stranded tinned-copper wire, 3-conductor twisted cable, vinyl insulation:</b> Convenient general-purpose cable for low electrical noise pickup. For use from -60° to +180°F (-50° to +80°C). Color-coded red/white/black.</p> <p><b>Stranded tinned-copper wire, 3-conductor twisted cable, vinyl insulation, braided shield, vinyl jacket:</b> Special-purpose cable to minimize electrical noise interference. Useful from -60° to +180°F (-50° to +80°C). Color-coded red/white/black.</p>
 <p><b>FFE</b></p>	<p><b>330-FFE</b> <b>330-FFE</b></p>	<p>100 ft (30 m) 1000 ft (300 m)</p>	<p><b>Stranded silver-plated copper wire, 3-conductor flat cable, etched Teflon® insulation:</b> For use from -452°F to +500°F (-269°C to +260°C). Color-coded red/white/black. Insulation treated for bonding.</p>
 <p><b>FJT</b>    <b>FTE</b>    <b>GJF</b></p>	<p><b>330-FJT</b> <b>330-FJT</b></p> <p><b>336-FTE</b></p> <p><b>326-FTE</b> <b>326-FTE</b> <b>330-FTE</b> <b>330-FTE</b></p> <p><b>326-GJF</b> <b>326-GJF</b></p>	<p>100 ft (30 m) 1000 ft (300 m)</p> <p>50 ft (15 m)</p> <p>100 ft (30 m) 500 ft (150 m) 100 ft (30 m) 500 ft (150 m)</p> <p>100 ft (30 m) 1000 ft (300 m)</p>	<p><b>Stranded silver-plated copper wire, 3-conductor twisted cable, Teflon insulation, Teflon jacket:</b> Small, flexible. For use from -452° to +500°F (-269° to +260°C). Color-coded red/white/black. When bonding Teflon-insulated wire, insulation must be treated with Tetra-Etch® compound (see "Special-Purpose Materials.")</p> <p><b>Stranded silver-plated copper wire, 3-conductor twisted cable, etched Teflon insulation:</b> Small, flexible cable. For use from -452° to +500°F (-269° to +260°C). Color-coded red/white/black. Insulation treated for bonding.</p> <p><b>Stranded silver-plated copper wire, 3-conductor twisted cable, etched Teflon insulation:</b> For use from -452° to +500°F (-269° to +260°C). Color-coded red/white/black. Insulation treated for bonding.</p> <p><b>Solid nickel-clad copper wire, 3-conductor twisted cable, fiberglass braid insulation and jacket:</b> For use from -452° to +900°F (-269° to +480°C). Recommended for use with WK-Series gages when silver solder is used for lead attachment. Color-coded red/white/black.</p>

\*Some types may not be continuous length.

**Note 1:** Products shown in bold are RoHS compliant.

Teflon is a Registered Trademark of DuPont.  
TetraEtch is a Registered Trademark of W.L. Gore.

## General Information and Selection

		FOUR-CONDUCTOR CABLE		
		Type (See Note 1)	Packaging Foot (Meter)*	Description
 DFV	 DSV	<b>426-DFV</b>	100 ft (30 m)	<b>Stranded tinned-copper wire, 4-conductor flat cable, vinyl insulation:</b> For use from -60° to +180°F (-50° to +80°C). Conductors easily separated for stripping and wiring. Color-coded red/white/black/green.
		<b>426-DFV</b>	1000 ft (300 m)	
<b>430-DFV</b>	100 ft (30 m)			
<b>430-DFV</b>	1000 ft (300 m)			
 BSV	 DTV	422-DSV	100 ft (30 m)	<b>Stranded tinned-copper wire, 4-conductor polypropylene insulated:</b> Twisted shielded pairs (red/black and white/green) with a drain wire, PVC jacket. For use from -60° to +180°F (-30° to +60°C).
		422-DSV	1000 ft (300 m)	
 FST	 FTT	<b>426-BSV</b>	100 ft (30 m)	<b>Stranded copper wire, 4-conductor twisted cable, PVC insulated braided shield:</b> For use from -60° to +180°F (-50°C to +80°C).
		<b>426-BSV</b>	1000 ft (300 m)	
 FFT		426-DTV	100 ft (30 m)	<b>Stranded tinned-copper wire, 4-conductor twisted cable, vinyl insulation:</b> For use from -60° to +180°F (-50° to +80°C). Color-coded red/white/black/green.
		426-DTV	1000 ft (300 m)	
 FST	 FTT	<b>430-FST</b>	100 ft (30 m)	<b>Stranded silver-plated copper wire, 4-conductor twisted cable, Teflon® insulation, braided shield, Teflon jacket:</b> Small, flexible cable. For use from -452° to +500°F (-269° to +260°C). Color-coded red/white/black/green. When bonding Teflon-insulated wire, insulation must be treated with Tetra-Etch® compound (see Special-Purpose Materials, document number 11008).
		<b>430-FST</b>	1000 ft (300 m)	
 FST	 FTT	<b>426-FTE</b>	100 ft (30 m)	<b>Stranded silver-plated copper wire, 4-conductor twisted cable, etched Teflon insulation:</b> For use from -452° to +500°F (-269° to +260°C). Color-coded red/white/black/green. Insulation treated for bonding.
		<b>426-FTE</b>	500 ft (150 m)	
 FFT		<b>436-FTT</b>	100 ft (30 m)	<b>Stranded silver-plated copper wire, 4-conductor twisted cable, Teflon® insulation:</b> Small, flexible cable. For use from -452° to +500°F (-269° to +260°C). Color coded red, white, black, green. When bonding Teflon insulated wire, insulation must be treated with Teflon etchant, such as TEC-1 (see Special- Purpose Materials, document number 11008).
		<b>436-FTT</b>	500 ft (150 m)	
 FFT		426-FFT	100 ft (30 m)	<b>Stranded silver-plated copper wire, 4-conductor flat cable, Teflon® insulation:</b> For use from -452° to +500°F (-269° to +260°C). Color coded red, white, black, green. When bonding Teflon insulated wire, insulation must be treated with a Teflon etchant, such as TEC-1 (see Special-Purpose Materials, document number 11008).
		426-FFT	500 ft (150 m)	
		FLAT RIBBON LEAD (UNINSULATED)		
		Type	Packaging Foot (Meter)*	Description
		<b>1-GL-64-001</b>	50 ft (15 m)	<b>Uninsulated flat ni-clad copper ribbon:</b> 1/64 in wide x 0.001in thick (0.4 x 0.025 mm). For use from -452 to 900°F (-269 to +480°C). Can be easily soldered or spot welded.
		<b>1-KL-16-002</b>	50 ft (15 m)	<b>Uninsulated Nichrome V:</b> 1/16 in wide x 0.002 in thick (1.6 x 0.05 mm). For use from -452 to + 2000°F (-269 to +1100°C).
		<b>1-KL-08-003</b>	50 ft (15 m)	<b>Uninsulated Nichrome V:</b> 1/8 in wide x 0.003 in thick (3.2 x 0.08 mm). For use from -452 to +2000°F (-269 to +1100°C).
		<b>1-KL-08-005</b>	50 ft (15 m)	<b>Uninsulated Nichrome V:</b> 1/8 in wide x 0.005 in thick (3.2 x 0.127 mm). For use from -452 to +2000°F (-269 to +1100°C).

\*Some types may not be continuous length.

**Note 1:** Products shown in bold are RoHS compliant.

Teflon is a Registered Trademark of DuPont.

TetraEtch is a Registered Trademark of W.L. Gore.

General Information and Selection

**HST-1 HEAT-SHRINKABLE WIRE SPLICE SEALANT**



Fast, easy-to-use method for protecting wire splice connections. Constructed of irradiated polyolefin plastic tubing with a heat-flowable inner liner sealant. Forms an immediate and tight seal to splice connection at a shrink temperature of +275°F (+135°C). Inside diameter before heating is 0.125 in (3.2 mm); after heating, 0.023 in (0.6 mm). Large range of shrinkage allows use with leadwire insulation diameters from 0.03 to 0.11 in (0.75 to 2.8 mm). The operating temperature range is -65° to +230°F (-55° to +110°C). Package of eight 6-in (150-mm) lengths.

**THERMAL WIRE STRIPPER**



The ease and simplicity of operation of the Thermal Wire Stripper make it ideal for most strain gage leadwire stripping. The variable heat control allows stripping of all thermoplastic insulations, including Teflon®, in sizes No. 18 to No. 36 AWG (1 to 0.1 mm diameter). The foot switch and tweezers hand-piece give excellent operator control over the stripping operation. Includes power unit and foot switch, both with 3-wire NEMA plugs, and tweezers handpiece.

**WTS-1:** 110Vac

**WTS-2:** 220Vac

**WTS-A Replacement Elements:** Set of two.

Teflon is a Registered Trademark of DuPont.



## Disclaimer

ALL PRODUCTS, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Vishay Precision Group, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "VPG"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

The product specifications do not expand or otherwise modify VPG's terms and conditions of purchase, including but not limited to, the warranty expressed therein.

VPG makes no warranty, representation or guarantee other than as set forth in the terms and conditions of purchase. **To the maximum extent permitted by applicable law, VPG disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.**

Information provided in datasheets and/or specifications may vary from actual results in different applications and performance may vary over time. Statements regarding the suitability of products for certain types of applications are based on VPG's knowledge of typical requirements that are often placed on VPG products. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. You should ensure you have the current version of the relevant information by contacting VPG prior to performing installation or use of the product, such as on our website at [vpgsensors.com](http://vpgsensors.com).

No license, express, implied, or otherwise, to any intellectual property rights is granted by this document, or by any conduct of VPG.

The products shown herein are not designed for use in life-saving or life-sustaining applications unless otherwise expressly indicated. Customers using or selling VPG products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify VPG for any damages arising or resulting from such use or sale. Please contact authorized VPG personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.

Copyright Vishay Precision Group, Inc., 2014. All rights reserved.