

DC-DIYsig DIY Signal Wires

Dual Connect DC-DIYsig DIY Signal Wires are precious-metal-conductor signal wires that combine solid gold wires in a dual configuration ("Dual Connect") within a thin tubing of PTFE (Teflon®) insulation to optimize linearity for audio frequency signals.

This design provides superior sonic performance and preserves the valuable quality unchanged for years due to very high resistance to moisture, heat, UV-light, air pollution and aggressive chemicals.

The capacitance between adjacent wires is very low.

These unique features make Dual Connect DIY Signal Wires an excellent choice for the most demanding applications for domestic and professional balanced and unbalanced audio signal distribution.

Dual Connect DIY Signal Wires are supplied in fixed lengths as follows

- 3-way wire in balanced stereo pairs: 0.5m (DC-DIYsig3x50) and 1.0m (DC-DIYsig3x100)
 - 2-way wire in unbalanced stereo pairs: 0.5m (DC-DIYsig2x50) and 1.0m (DC-DIYsig2x100)
 - 1-way single wire: Available in fixed lengths of 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0m
- All Dual Connect DIY Signal Wires are delivered with gold plated pin terminals.

The 3-way signal wires are also available as completed interconnect cables with XLR connectors, part numbers DC-150/XLR (length 0.5m) and DC-1100/XLR (length 1.0m).

The 2-way signal wires are also available as completed interconnect cables with RCA connectors, part numbers DC-150/RCA (length 0.5m) and DC-1100/RCA (length 1.0m).

Features

- ★ "Dual-Connect" design with solid gold conductors in dual configuration
- ★ Flexible and transparent 1-way/2-way/3-way signal wire
- ★ Very low wire capacitance with only 15pF/meter
- ★ Materials selected to ensure very high durability
- ★ All nonmagnetic materials with very linear performance
- ★ Terminated by gold plates connector pins
- ★ PTFE insulation with low dissipation factor of 0.0002
- ★ Supplied as stereo pairs (2-way and 3-way wires) or as a single 1-way wire

Typical applications

- ★ Upgrading of internal wiring in audio amplifiers and other audio equipment
- ★ High-end DIY constructions
- ★ Superior-sonic-performance signal wire
- ★ Very low capacitance wire
- ★ Very high quality professional sound systems
- ★ Demanding automotive and marine applications
- ★ Wires resistant to heat, UV-light and chemicals
- ★ Reference signal wire with very high durability

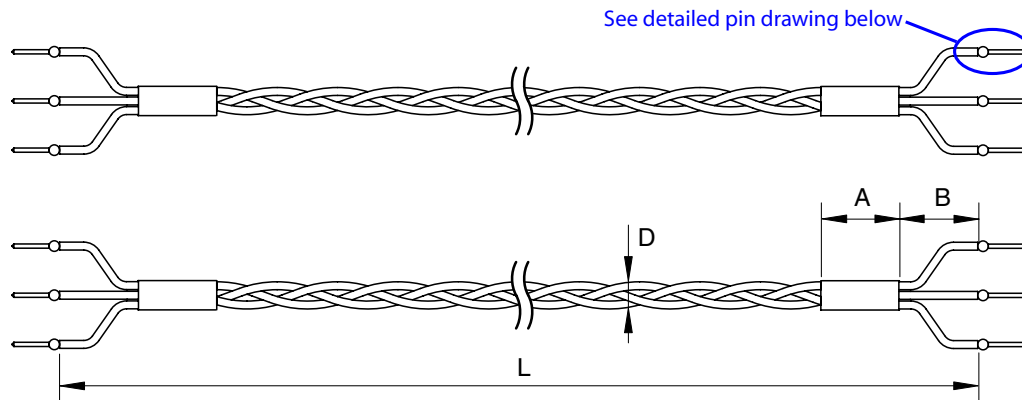


Fig. 1. Outline drawing and dimensions for DC-DIYsig3x50 and DC-DIYsig3x100, 3-way DIY signal wire.
See table below for dimensions.

WARNING: Do not attempt to shorten any DC-DIY signal wires or to remove the pin terminals as soldering the gold conductors require extensive skills and experience. Always purchase Dual Connect DIY signal wires in the required length.

Legal notice: Teflon® is a registered trade mark of DuPont Dow Elastomers

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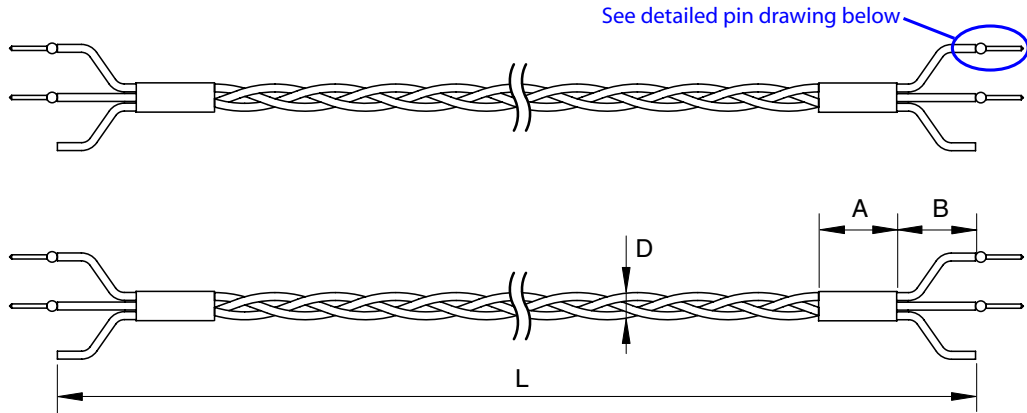


Fig. 2. Outline drawing and dimensions for DC-DIYsig2x50 and DC-DIYsig2x100, 2-way DIY signal wire. See table below for dimensions.

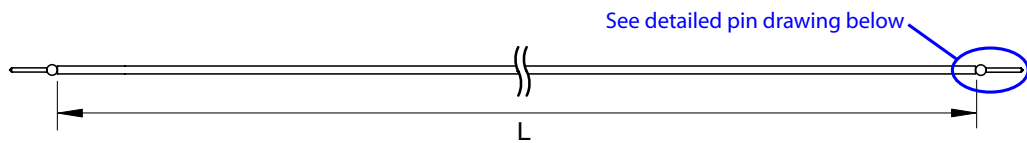


Fig. 3. Outline drawing and dimensions for DC-DIYsig1, 1-way DIY signal wire. See table below for dimensions.

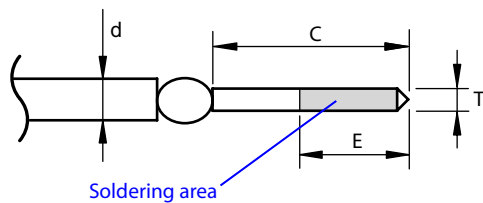


Fig. 4. Outline drawing and dimensions for pin terminal used on all DIY signal wires.

| Dimension | Value, mm | Value, inch. |
|-----------|---|---|
| A | nom. 10mm | nom. 0.4" |
| B | nom. 10mm | nom. 0.4" |
| C | 5mm +/-1mm | 0.2" +/-0.04" |
| d | Ø1.1mm | Ø 0.043" |
| D | 3.3mm | 0.13" |
| E | 3mm | 0.12" |
| T | square 0.64mm | square 0.025" |
| L | 0.5m (DC-DIYsig3x50) 1.0m (DC-DIYsig3x100) 0.5m (DC-DIYsig2x50) 1.0m (DC-DIYsig2x100) 0.1m (DC-DIYsig1x10) 0.2m (DC-DIYsig1x20) 0.3m (DC-DIYsig1x30) 0.4m (DC-DIYsig1x40) 0.5m (DC-DIYsig1x50) 0.6m (DC-DIYsig1x60) 0.7m (DC-DIYsig1x70) 0.8m (DC-DIYsig1x80) 0.9m (DC-DIYsig1x90) 1.0m (DC-DIYsig1x100) | 1.6 ft. (DC-DIYsig3x50) 3.3 ft. (DC-DIYsig3x100) 1.6 ft. (DC-DIYsig2x50) 3.3 ft. (DC-DIYsig2x100) 0.33 ft. (DC-DIYsig1x10) 0.65 ft. (DC-DIYsig1x20) 1 ft. (DC-DIYsig1x30) 1.3 ft. (DC-DIYsig1x40) 1.6 ft. (DC-DIYsig1x50) 2 ft. (DC-DIYsig1x60) 2.3 ft. (DC-DIYsig1x70) 2.6 ft. (DC-DIYsig1x80) 3 ft. (DC-DIYsig1x90) 3.3 ft. (DC-DIYsig1x100) |

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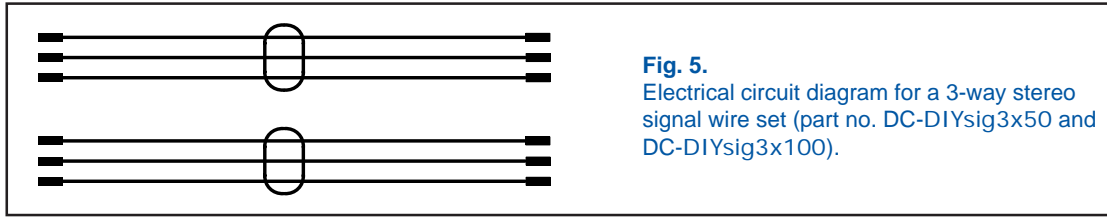


Fig. 5.
Electrical circuit diagram for a 3-way stereo signal wire set (part no. DC-DIYsig3x50 and DC-DIYsig3x100).

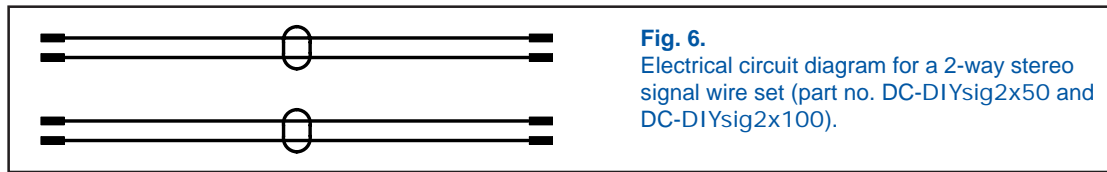


Fig. 6.
Electrical circuit diagram for a 2-way stereo signal wire set (part no. DC-DIYsig2x50 and DC-DIYsig2x100).

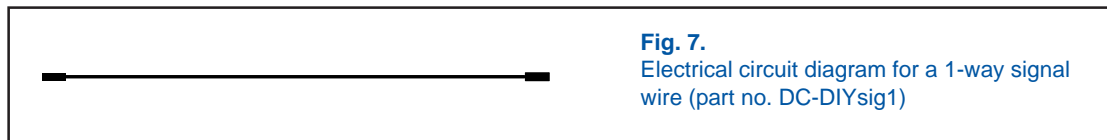


Fig. 7.
Electrical circuit diagram for a 1-way signal wire (part no. DC-DIYsig1)

MAXIMUM RATINGS

| Notes | Symbol | Parameter | Comment | Value | Unit |
|-------|--------|---------------------------|-----------------------|----------------------------|-------------|
| 1, 2 | V | Voltage | AC peak voltage or DC | 150 | V |
| 1, 2 | I | Current | AC RMS or DC | 0.35 | A |
| 1, 2 | P_L | Power transfer capacity | $R_L = 400$ ohms | 50 | W |
| 1 | T_A | Ambient temperature range | | -55 to +100 -67 to +257 | Deg. C F |

ELECTRICAL DATA

| Notes | Symbol | Parameter | Comment | Value | Unit |
|-------|--------|---------------------|------------------------------|---------|-------|
| | R | Resistance | Conductor, DC | 1.5 | ohm/m |
| 3 | C_w | Capacitance | Between adjacent wires | 15 | pF/m |
| | L | Inductance | Single straight wire | 1.9 | uH/m |
| 4 | A | Attenuation | $R_L = 1$ kohm, DC to 100kHz | 0.03 | dB/m |
| | tan(d) | Dissipation factor | Insulation, $f = 1$ MHz | 0.0002 | - |
| | E | Dielectric constant | Insulation, DC to 1MHz | 2.1 | - |
| | E_d | Dielectric strength | Insulation, $f = 50$ Hz | Min. 20 | kV/mm |

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MECHANICAL DATA

| Notes | Symbol | Parameter | Comment | Value | Unit |
|-------|----------------|-------------------------|--|---------------------|-------------|
| | m | Weight | DC-DIYsig3x50, DC-DIYsig3x100, DC-DIYsig2x50, DC-DIYsig2x100, both wires | 12 | g/m |
| | | | DC-DIYsign1x, all lengths | 2 | g/m |
| 5 | r _a | Bending radius | | Min. 17 Min. 2/3 | mm inch. |
| 6 | F _p | Pin terminal pull force | Max. 60 seconds | Max. 2 | N |

Notes

- | | |
|--|---|
| 1 Operating ratings indicate conditions for which other specifications may not apply | 2 Values for AC must be derated in order to compensate for cable power loss as a function of frequency, temperature, etc. |
| 3 Measuring instrument: Capacitance meter Model 938, Data Precision | 4 Measuring instrument: Audio Analyzer VP-7722P, Panasonic |
| 5 Avoid sharp bending as this may affect cable reliability | 6 For longer periods of time the pull force should not exceed 0.5 N. |

MATERIAL DATA

| Part | Material | Comment | Properties | Value | Unit |
|--|-------------------------------------|------------------|------------------------------------|--------------|------------------------|
| Conductor | Gold, Au | Dual solid wire | Purity Au | 99.99 | % |
| | | | Conductor area (wire gauge) | 0.016 35 | mm ² AWG |
| | | | Gold mass, 1 wire (1-way) | 0.30 | g/m |
| | | | 2 wires (2-way) 3 wires (3-way) | 0.61 0.91 | g/m g/m |
| Insulation | PTFE (Teflon [®]) | Clear tube | Purity PFTE | 100 | % |
| | | | Nominal wall thickness | 0.25 0.01 | mm inch. |
| | | | Melting point | +327 | Deg. C |
| | | | | +620 | F |
| <i>Legal notice: Teflon[®] is a registered trade mark of DuPont DowElastomers</i> | | | | | |
| Terminal | CuSn4 | Pin | Percentage Cu/Zn | 56/4 | % |
| | Gold, Au | Plating | Plating thickness | 0.13 | um |
| Solder | Tin/Silver, Sn/Ag ("Silver solder") | Lead free | Percentage Sn/Ag/Cu | 95.8/3.5/0.7 | % |
| | | | Melting point | +217 +423 | Deg. C F |
| Marking | Polyolefine | Red/black tubing | Max. operating temp. | +135 +275 | Deg. C F |

IMPORTANT

Dual Connect Signal Wires can easily be soft soldered at temperatures below 450 deg.C. Most types of solder will work well if normal procedures are followed.

- When soldering on the pin terminal, the solder joint for the gold wire conductor may not be heated to or above the solder melting point of +217 deg. C as this may affect wire reliability. Solder may only be applied within the soldering area specified as a maximum of 3mm from the pin terminal tip. See fig. 4.
- The solder must contain a non-corrosive weakly active flux, so existing oxide layers can be removed to improve the solderability.
- The solder gauge and solder melting point must be chosen, so all the solder applied becomes fully liquid during a relatively short soldering time.
- Do not expose the solder joint to vibrations when the solder is liquid. This may cause a brittle joint of low strength and poor electrical conductivity.
- After soldering, the flux must be removed to prevent corrosion. Consult the flux manufacturer for information about cleaning and safety precautions.

WARNING: Solder fumes and gases are toxic and must therefore be extracted in an effective manner to avoid health risks.

CAUTION

As a safety precaution against electrical shock, no Dual Connect cables or wires may be connected to the mains or other dangerous voltage sources. Avoid sharp bending of Dual Connect cables and wires as this may deteriorate the reliability and performance.

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