Coax cable for low temperature applications

Type 1: Brass central conductor

Number and type of conductors:
This cable with no outer insulation is available with:
- one single central conductor, varnish insulated
- one central conductor, two strands, uninsulated
- one central conductor, two strands, uninsulated, low noise PE sleeve
- two central conductors, varnish insulated, in twisted pair
- two central conductors, varnish insulated, each in a Teflon sleeve, in twisted pair

Single wire, single strand GVLZ036
Dimensions:
outer diameter: ϕ0.65mm
Typical composition:
central wire: brass Ms63, ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 8.1Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (single wire): 63 pF/m
Bandwidth: [±3dB, 50Ω Termination]: 0 - 300MHz

Single wire, double strand GVLZ034
Dimensions:
outer diameter: ϕ0.8mm
Typical composition:
central wire: brass Ms63, 2x ϕ0.1mm, uninsulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 4Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (single wire): 70 pF/m
Bandwidth: [±3dB, 50Ω Termination]: 0 – 300MHz
Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

GVL Cryoengineering
Dr George V. Lecomte GmbH
Aachener Str.89, D-52223 Stolberg (Rheinl.)
Tel. +49(0)2402 24566
Fax +49(0)2402 26739
www.GVL-Cryoengineering.com
E-mail: GVL-CRYO@T-online.de

Single wire, double strand, low noise GVLZ189

Dimensions:

outer diameter: ϕ0.8mm

Typical composition:

central wire: brass Ms63, 2x ϕ0.1mm, uninsulated
core insulation: Polyethylene (PE)
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none

Electrical properties at room temperature:

Central wire resistance: 4Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (single wire): 84 pF/m
Bandwidth: [±3dB, 50Ω Termination]: 0 – 300MHz

Double wire - twisted pair GVLZ033

Dimensions:

outer diameter: ϕ0.8mm

Typical composition:

central wires: brass Ms63, 2x ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none

Electrical properties at room temperature:

Central wire resistance: 8.1Ω/m
Shielding resistance: 5.5 Ω/m (some batches present 4.4 Ω/m)
Capacity between central wire and shielding (double wire): 70 pF/m
Capacity between both central wires (double wire): 145 pF/m

Double wire - twisted pair with individual insulation GVLZ141

Dimensions:

outer diameter: ϕ0.8mm

Typical composition:

central wires: brass Ms63, 2x ϕ0.1mm, varnish insulated
core insulation for each wire separately: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none

Electrical properties at room temperature:

Central wire resistance: 8.1Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (double wire): 62 pF/m
Capacity between both central wires (double wire): 36 pF/m

Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

GVL Cryoengineering
Dr George V. Lecomte GmbH www.GVL-cryoengineering.com
Aachener Str.89, D-52223 Stolberg (Rheinl.) Tel. +49(0)2402 24566 Fax +49(0)2402 26739 E-mail: GVL-CRYO@T-online.de

Type 2: Superconducting central conductor

Number and type of conductors:
This cable with no outer insulation is available with:
- one single central conductor, varnish insulated
- one single central conductor, uninsulated
- two central conductors in twisted pair, varnish insulated
- three central conductors, twisted together, varnish insulated

Single wire GVLZ032

Dimensions:
outer diameter: ϕ0.65mm
Typical composition:
central wire: superconducting NbTi in CuNi matrix (90% Cu, 10% Ni),
ratio NbTi/CuNi : 1/1.5, ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 39 Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (single wire): 61 pF/m

Single wire GVLZ137

Dimensions:
outer diameter: ϕ0.65mm
Typical composition:
central wire: superconducting NbTi in CuNi matrix (90% Cu, 10% Ni),
ratio NbTi/CuNi : 1/1.5, ϕ0.1mm, uninsulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 40 Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (single wire): 61 pF/m

Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

GVL Cryoengineering
Dr George V. Lecomte GmbH
Aachener Str.89, D-52223 Stolberg (Rheinl.)
Tel. +49(0)2402 24566
Fax +49(0)2402 26739
www.GVL-Cryoengineering.com
E-mail: GVL-CRYO@T-online.de

Double wire - twisted pair GVLZ031

Dimensions:

outer diameter: ϕ0.8mm

Typical composition:

central wire: superconducting NbTi in CuNi matrix (90% Cu, 10% Ni),
ratio NbTi/CuNi : 1/1.5, 2x ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none

Electrical properties at room temperature:

Central wire resistance: 41 Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (double wire): 60 pF/m
Capacity between both central wires (double wire): 90 pF/m

Triple wire - twisted triplet GVLZ030

Dimensions:

outer diameter: ϕ0.85mm

Typical composition:

central wire: superconducting NbTi in CuNi matrix (90% Cu, 10% Ni),
ratio NbTi/CuNi : 1/1.5, 3x ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: none

Electrical properties at room temperature:

Central wire resistance: 67 Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (triple wire): 60 pF/m
Capacity between two central wires (triple wire): 90 pF/m

Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

GVL Cryoengineering
Dr George V. Lecomte GmbH
www.GVL-cryoengineering.com
Aachener Str.89, D-52223 Stolberg (Rheinl.) Tel. +49(0)2402 24566 Fax +49(0)2402 26739 E-mail: GVL-CRYO@T-online.de

Type 3: Copper central conductor

Number and type of conductors:
This cable with outer insulation is available with:
- two central conductors in twisted pair, varnish insulated

Double wire - twisted pair GVLZ081

Dimensions:
outer diameter: ϕ1.2mm
Typical composition:
central wires: Copper, 2x ϕ0.15mm, varnish insulated
core insulation: Teflon
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn)
outer insulation: Teflon
Electrical properties at room temperature:
Central wire resistance: 1.1Ω/m
Shielding resistance: 5.5 Ω/m
Capacity between central wire and shielding (double wire): 70 pF/m
Capacity between both central wires (double wire): 130 pF/m

Type 4: Non-magnetic, brass central conductor

Number and type of conductors:
This cable with no outer insulation is available with:
- two central conductors in twisted pair, varnish insulated

Double wire - twisted pair GVLZ169

Dimensions:
outer diameter: ϕ0.8mm
Typical composition:
central wires: brass Ms63, 2x ϕ0.1mm, varnish insulated
core insulation: Teflon
outer shielding: brass Ms63
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 8.1Ω/m
Shielding resistance: 0.56 Ω/m
Capacity between central wire and shielding (double wire): 70 pF/m
Capacity between both central wires (double wire): 145 pF/m

Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

GVL Cryoengineering
Dr George V. Lecomte GmbH
Aachener Str.89, D-52223 Stolberg (Rheinl.)
Tel. +49(0)2402 24566
Fax +49(0)2402 26739
www.GVL-Cryoengineering.com
E-mail: GVL-CRYO@T-online.de

Type 5: Low-noise, CuNi central conductor

Number and type of conductors:
This cable with no outer insulation is available with:
- one central conductor

Single wire, single strand GVLZ185

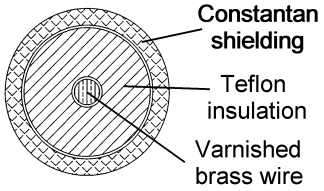
Dimensions:
outer diameter: ϕ0.60mm
Typical composition:
central wire: CuNi (70% Cu, 30% Ni) ϕ0.07mm
core insulation: Graphite loaded
outer shielding: CuNi (55% Cu, 44% Ni, 1% Mn) high coverage
outer insulation: none
Electrical properties at room temperature:
Central wire resistance: 92Ω/m
Shielding resistance: 2.8 Ω/m
Capacity between central wire and shielding (single wire): 90 pF/m

Note: *All values above are typical. They can vary from batch to batch depending on the manufacturing details.*

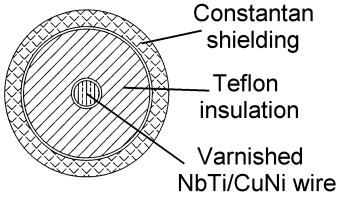
GVL Cryoengineering
Dr George V. Lecomte GmbH www.GVL-cryoengineering.com
Aachener Str.89, D-52223 Stolberg (Rheinl.) Tel. +49(0)2402 24566 Fax +49(0)2402 26739 E-mail: GVL-CRYO@T-online.de

Coax cable for low temperature - Summary

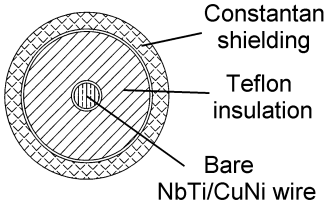
GVLZ036



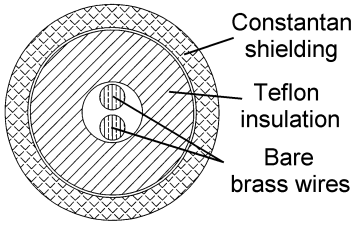
GVLZ032



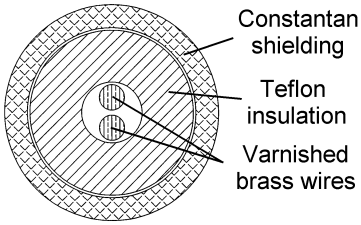
GVLZ137



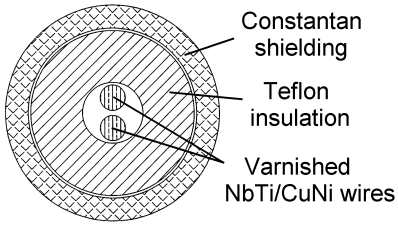
GVLZ034



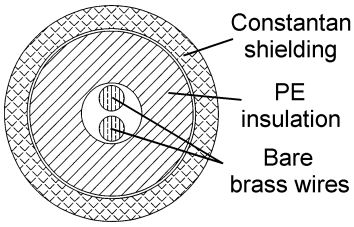
GVLZ033



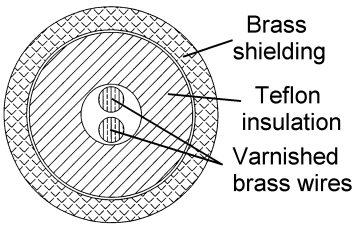
GVLZ031



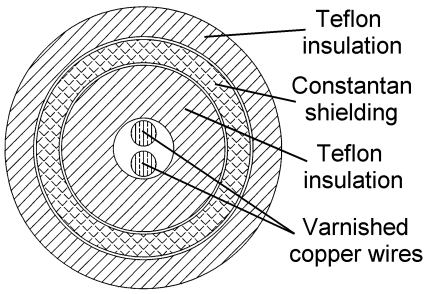
GVLZ189



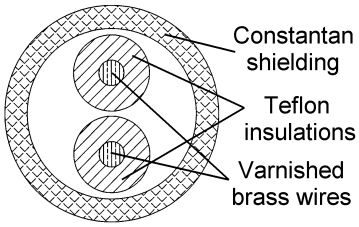
GVLZ169



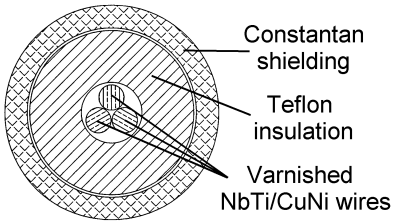
GVLZ081



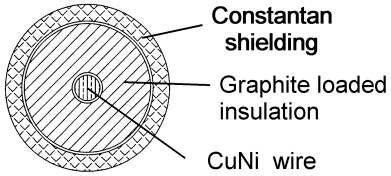
GVLZ141



GVLZ030



GVLZ185



REV6.1 - 5Mar15

GVL Cryoengineering
Dr George V. Lecomte GmbH
Aachener Str.89, D-52223 Stolberg (Rheinl.)

Tel. +49(0)2402 24566
Fax +49(0)2402 26739

www.GVL-Cryoengineering.com
E-mail: GVL-CRYO@T-online.de