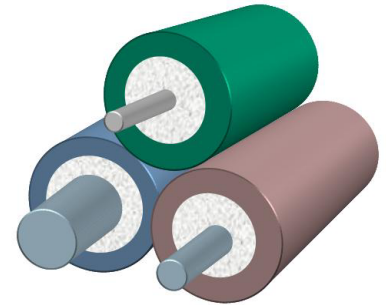


## Mineral insulated signal transmission cables: Single conductor

These cables are used with sensors of all kinds requiring a signal transmission within a severe environment.

The choice of the type and the outer diameter depends not only on the electrical characteristics (current, voltage) of the sensor, but also on the mounting and working conditions (temperature, media).



Material	Type	1 Ac Ac 10 Al	1 Ac Ac 16	1 Ac Ac 31.7 Al	1 Zs Ac 10	1 II 30 Al
Sheath		Stainless steel	Stainless steel	Stainless steel	Stainless steel	Inconel® Alloy 600
Conductor		Stainless steel	Stainless steel	Stainless steel	Zirconium copper coated stainless steel	Inconel® Alloy 600
Insulant		Alumina 99.6 %	Magnesia >94 %	Alumina 99.6 %	Magnesia > 94%	Alumina 99.6 %
<b>Electrical characteristics</b>						
Insulation resistance (500VDC)		$\geq 10^{13}$ ohms.m at room temperature $\geq 10^9$ ohms.m at 300°C for cables 1 Ac Ac 10, 1 Ac Ac 31.7 and 1 II 30 $\geq 10^{10}$ for 1 Ac Ac 16, 1 Zs Ac 10				
Line capacity		≈ 450 pF/m	≈230 pF/m	≈200 pF/m	≈400 pF/m	≈280 pF/m
Line resistance		8 ohms/m	16 ohms/m	3.2 ohms/m	0.23 ohms/m	3 ohms/m
Breakdown voltage (~)		>500 V	>750 V	>1 500 V	>500 V	>1 500 V
<b>Dimensions (mm)</b>						
Outer diameter (mm)		1 ± 0.02	1.6 ± 0.2	3.17 ± 0.05	1 ± 0.02	3 ± 0.03
Sheath thickness (mm)		0.13 ± 0.04	0.3 ± 0.05	0.51 ± 0.07	0.13 ± 0.04	0.5 ± 0.07
Conductor diameter (mm)		0.34 ± 0.05	0.25 ± 0.05	0.58 ± 0.07	0.34 ± 0.05	0.70 ± 0.07
Manufacturing length (m)		From 80 to 200 m	From 40 to 150 m	From 60 to 80 m	From 80 to 200 m	From 60 to 80 m

### Other cables

On request, these cables can be manufactured with other diameters according to your application, from 0.25 up to 3 mm.

The technical characteristics, except the insulation resistance, vary proportionally with the outer diameter.

The sheath and the insulating materials can also be changed.

Please ask for more details.

### The line resistance

Some materials such as nickel-chromium have a constant line resistance vs. temperature. Others such as copper and especially nickel, have a temperature coefficient which is distinctly much more important.

Thus, nickel is used for sensors working in a relatively low temperature atmosphere, but requiring during mounting a welding or brazing operation in which the temperature exceeds 1000°C.

