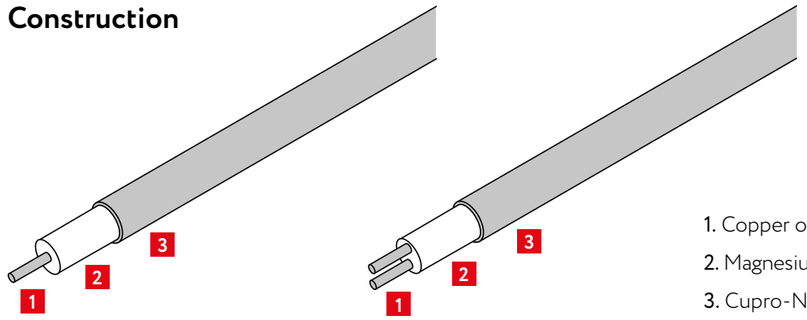
Mineral Insulated Heating Cable MICN

The MICN range of cupronickel sheathed Mineral Insulated (MI) heating cable has been developed to meet the specific need for a cable having a high temperature capability and electrical resistance values needed for long circuit lengths. Cupronickel sheath combined with heating conductors allows to enable an operating temperature of 400 °C with resistance values from 4 Ω/km down to 28000 Ω/km. MI cables have excellent mechanical strength and are resistant to corrosion. They are series resistance heaters, which must be designed to provide the required heat output.

Shipped as cable or ready-made heating units. Heating unit consists of a heating cable, couplings, cold cable inserts, cable glands and flexible installation wires.

Construction



Single-conductor cable

Dual-conductor cable

1. Copper or copper alloy Conductor
2. Magnesium Oxide Insulation
3. Cupro-Nickel Sheath

Application

Cupronickel sheathed Mineral Insulated heating cables are widely used within a range of industrial application, from oil and gas, chemicals and petroleum, power plant, gas storage and many other industrial application.

Specification

Heating Units Ordering Code

Example: MI CN-B 16K2390/60/2520/220/E1
Digit: ① ② ③ ④ ⑤ ⑥ ⑦

Digit number	Description	Explication
1	Sheath material	CN
2	Cable configuration	See Table 1
3	Cable reference	See Table 2, 3, 4
4	Cable length	In meter
5	Cable wattage	In Watts
6	Cable voltage	In volt
7	Gland size	See Table 5

Heating Cable Decoding

Example: 1 6 K 2390
Digit: ① ② ③ ④

Digit number	Description	Explication
1	Number of conductors	1 or 2
2	Maximum voltage rating	3=300V, 6=600V
3	Conductor material	K, N
4	Cable resistance × 1000	2390=2.39 Ω/m × 1000

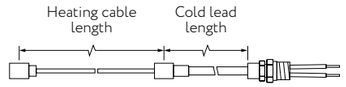
Technical data

Operating voltage	Up to 600 V
Maximum thermal resistance	Up to +400 °C
Ex marking	Ex 60079-30-1 IIC T1 to T6 Gb Ex 60079-30-1 IIIC T450 °C to T85°C Db
Resistance at 20 °C	4-28000 Ω/m
Construction	1 or 2 conductors

Cable Configurations

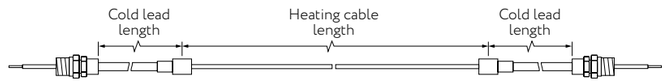
Table 1

Design D



Design D: for dual conductor cables only

Design B



Design B: for single conductor cables only

Cable References

Table 2 Single Conductor 600V

Cable ref	Diameter	Resiet. at 20 °C	Nominal Length	Nominal Weight
	mm	Ω/m	m	kg/km
16C4	5.9	0.004	190	161.0
16C7	5.3	0.007	240	117.8
16C11	4.9	0.011	290	101.7
16C17	4.6	0.017	300	89.9
16C25	3.7	0.025	500	58.2
16C40	3.4	0.04	600	48.4
16C63	3.2	0.063	650	42.0
16K82	5.7	0.082	200	163.2
16K122	5.2	0.122	250	130.1
16K160	4.9	0.16	280	112.5
16K188	4.7	0.188	300	102.3
16K250	4.4	0.25	350	87.9
16K312	4.2	0.312	380	78.6
16K400	4.0	0.4	430	68.8
16K478	3.8	0.478	470	62.8
16K630	3.7	0.63	500	58.6
16K1000	3.4	1.0	600	48.5
16K1600	3.2	1.6	600	42.6
16K2400	3.1	2.4	600	38.9

SST GmbH ▌ +49 934 398 09 100 ▌ info@sst-international.com

PREMIUM

Table 3 Dual Conductor 600V

Cable ref	Diameter	Resiet. at 20 °C	Nominal Length	Nominal Weight
	mm	Ω/m	m	kg/km
26K160	11.2	0.16	55	565.4
26K240	9.9	0.24	70	433.4
26K300	9.3	0.3	80	378.4
26K380	9.0	0.38	85	348.7
26K480	8.6	0.48	90	314.6
26K620	8.0	0.62	105	270.0
26K960	7.5	0.96	120	232.9
26K1480	7.1	1.48	135	205.7
26K1890	6.8	1.89	145	187.6
26K2340	6.4	2.34	165	165.7
26K3100	6.2	3.1	175	154.6
26K4800	5.8	4.8	200	134.4

Table 4 Dual Conductor 300V

Cable ref	Diameter	Resiet. at 20 °C	Nominal Length	Nominal Weight
	mm	Ω/m	m	kg/km
23K160	10.4	0.16	60	497.6
23K240	9.4	0.24	85	366.6
23K300	8.4	0.3	95	315.9
23K380	8.0	0.38	105	281.9
23K480	7.7	0.48	115	257.0
23K620	7.1	0.62	135	216.7
23K960	6.5	0.96	160	178.0
23K1480	6.0	1.48	190	149.2
23K1890	5.7	1.89	210	133.7
23K2340	5.5	2.34	225	123.7
23K3100	5.3	3.1	240	114.0
23K4800	4.9	4.8	285	96.7

Note: For the required voltage 600 V above application, please contact us.

Gland Size

Table 5

	Design A, D, E			Design B		
Max. voltage (V)	Max. current (amps)	Gland size (English)	(Metric)	Max. current (amps)	Gland size (English)	(Metric)
600	15	E1	M1	20	E1	M1
600	20	E1	M1	25	E1	M1
600	30	E2	M2	40	E2	M2
600	50	E2	M2	70	E2	M2
600	70	E2	M2	100	E2	M2

Note 1: E1 stands for 1/2" NPT; E2 stands for 3/4" NPT; M1 stands for gland diameter M20; M2 stands for gland diameter M25. Stands model shall be advised properly while design.

Note 2: 2-meter-long cold lead is supplied with heating cable. For special requirement, please contact us.

Corrosion Resistance

Table 6

Substance	Recommendation
Sulphuric Acid	Not Recommended
Hydrochloric Acid	Check for Specific Data
Hydrofluoric Acid	Check for Specific Data
Phosphoric Acid	Check for Specific Data
Nitric Acid	Check for Specific Data
Organic Acid	Check for Specific Data
Alkalis	Check for Specific Data
Sea Water	Good-Excellent
Chloride	Good-Excellent

Explosion Proof

MICN cable has excellent mechanical strength and high corrosion resistance, can operate in aggressive, hazardous environments, explosive areas included.

Approval

CML 22ATEX3489
IECEx CML 16.0079
Ex 60079-30-1 IIC T1 to T6 Gb
Ex 60079-30-1 IIIC T450oC to T85oC Db

SST GmbH ▌ +49 934 398 09 100 ▌ info@sst-international.com