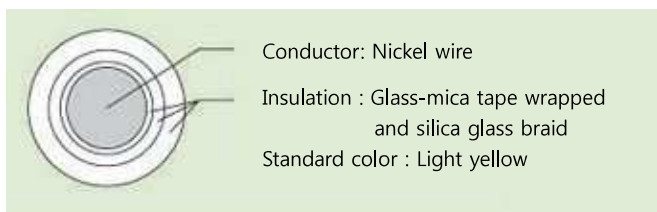


Silica-glass-yarn braided Nickel-conductor Wire : NI-MS500

Maximum operating temperature : 500°C / Rated voltage : 600V

NI-MS500 is a super heat-resistant wire, the conductors of which are heat-resistant and corrosion-resistant nickel-conductor wire wrapped in glass-mica tape coated with silica-glass fiber. High-performance coating, which is light yellow and excels in insulating characteristics, is applied to the insulation of NI-MS500.



Features of nickel-conductor wire

Nickel-conductor wire is strongly resistant to corrosion as well as heat, does not greatly deteriorate with age, and achieves satisfactory machine performance.

Features of NI-MS500 series products

The maximum operating temperature is 500°C, and the rated voltage is 600V!

NI-MS500 series products are superior in insulating characteristics and heat resistance to TM450 series products.

Applications

NI-MS500 series products are used for applications such as the lead wire in an electric heater, which must be highly resistant to heat as well as corrosion, and wire in high-temperature equipment.

Lineup

Nominal cross-sectional area mm ²	Conductor					Conductor resistance (23°C, standard) Ω/km	Insulation resistance (20°C, minimum) MΩ · km	Test voltage (AC, 1 min.) V	Max length m	Estimated weight kg/km
	Composition Pcs/mm	Outside diameter mm	Taping thickness mm	Braid thickness mm	Standard overall diameter mm					
0.75	14/0.26	1.1	0.85	0.4	3.6	132	10	2,000	100m	23
1.25	24/0.26	1.5	0.85	0.4	4.0	76.8	10	2,000	100m	30
2	37/0.26	1.8	0.85	0.4	4.3	49.8	10	2,000	100m	39
3.5	66/0.26	2.4	0.85	0.4	4.9	27.9	10	2,000	100m	60
5.5	35/0.45	3.1	1.0	0.45	6.0	17.6	10	2,000	100m	85
8	50/0.45	3.7	1.2	0.45	7.0	12.3	10	2,000	50m	115
14	88/0.45	4.9	1.2	0.8	8.9	7.00	10	2,000	50m	190
22	7/20/0.45	7.0	1.2	0.8	11.0	4.49	10	2,000	50m	285

*Since NI-MS500 series products have hygroscopicity, their insulating characteristics differ depending on the atmosphere in which each of them is routed. Therefore, avoid using NI-MS500 series products in humid or wet places. Please feel free to contact our Sales Department for custom-made products not listed above.

List of allowable current values

Size	Ambient temperature												
	140℃	160℃	180℃	200℃	220℃	240℃	260℃	280℃	300℃	320℃	340℃	350℃	360℃
0.75SQ	24.3	23.9	23.4	23.0	22.5	21.9	21.3	20.7	19.9	19.2	18.3	17.8	17.3
1.25SQ	25.8	25.4	24.9	24.4	23.9	23.3	22.7	22.0	21.2	20.4	19.5	19.0	18.5
2SQ	33.3	32.8	32.2	31.5	30.9	30.1	29.3	28.4	27.5	26.4	25.2	24.6	23.9
3.5SQ	47.6	46.9	46.0	45.2	44.2	43.1	42.0	40.8	39.4	37.9	36.2	35.3	34.3
5.5SQ	64.4	63.4	62.3	61.1	59.9	58.5	56.9	55.3	53.4	51.4	49.2	47.9	46.6
8SQ	81.3	80.1	78.8	77.3	75.7	73.9	72.0	69.9	67.6	65.1	62.2	60.7	59.0
14SQ	114	112	110	108	106	104	101	98.5	95.3	91.7	87.7	85.4	83.1
22SQ	160	157	155	152	149	146	142	138	133	128	123	119	116
Size	Ambient temperature												
	370℃	380℃	390℃	400℃	410℃	420℃	430℃	440℃	450℃	460℃	470℃	480℃	490℃
0.75SQ	16.8	16.2	15.7	15.0	14.3	13.6	12.8	11.9	10.9	9.8	8.5	7.0	4.9
1.25SQ	17.9	17.3	16.7	16.0	15.3	14.5	13.7	12.7	11.7	10.5	9.1	7.5	5.3
2SQ	23.2	22.4	21.6	20.7	19.8	18.8	17.7	16.5	15.1	13.6	11.8	9.7	6.8
3.5SQ	33.3	32.2	31.0	29.8	28.5	27.0	25.4	23.7	21.7	19.5	17.0	14.0	9.8
5.5SQ	45.2	43.7	42.2	40.5	38.6	36.6	34.5	32.2	29.5	26.6	23.1	18.9	13.5
8SQ	57.2	55.4	53.4	51.2	49.0	46.5	43.8	40.8	37.4	33.6	29.4	24.0	17.1
14SQ	80.6	78.0	75.2	72.2	69.0	65.4	61.6	57.4	52.7	47.5	41.3	34.0	24.0
22SQ	113	109	105	101	96.9	91.9	86.5	80.7	74.1	66.7	58.0	47.6	33.6

*The above allowable current values are the values calculated based on the assumption that the products are used in a normal open atmosphere.
Please use NI-MS500 series products with a safety current that ensures safe operation.

*The above allowable current values of NI-MS500 series products are the reference values calculated based on our demonstration experiments.

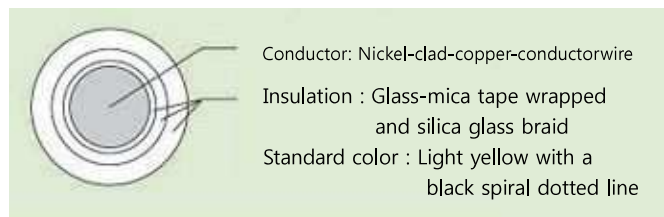
*NI-MS500 series products are manufactured according to the Standards of Ninomiya Electric Wire Co., Ltd.

Silica-glass-yarn braided Nickel-clad-copper-conductor Wire:

NPC-MS500

Maximum operating temperature : 500°C / **Rated voltage : 600V**

NPC-MS500 is a super heat-resistant wire, the conductors of which are heat-resistant and corrosion-resistant as well as flexible nickel-clad-copper-conductor wire wrapped in glass-mica tape coated with silica-glass fiber. High-performance coating, which is light yellow and excels in insulating characteristics, is applied to the insulation of NPC-MS500. NPC-MS500 is manufactured according to the NINOMIYA Standards.



Features of nickel-clad-copper-conductor wire

- The conductor resistance of nickel-clad-copper-conductor wire is about a quarter (1/4) of that of nickel-conductor wire; therefore the former can be thinner in diameter and lighter than the latter while the allowable current value of the former is the same as that of the latter.
- Since nickel-clad-copper-conductor wire is more flexible than nickel-conductor wire, it can be easily processed and routed.
- The nickel plate is 20 to 30 times as thick as conventional nickel plate (1 to 5μm). Note that the area ratio between nickel and copper is about 28:72.
- Since the surface of nickel-clad-copper-conductor wire is nickel, it is more corrosion-resistant than copper wire.
- Its electric conductivity changes over time. However, about 60% of the electric conductivity is maintained even after the nickel-clad-copper-conductor wire is used at a temperature of 400°C for three consecutive years.

Features of NPC-MS500 series products

The maximum operating temperature is 500°C, and the rated voltage is 600V!

NPC-MS500 series products are superior in insulating characteristics and heat resistance to TM430 series products.

Applications

NPC-MS500 series products are used for applications such as the lead wire in an electric heater, which must be highly resistant to heat as well as corrosion, and wire in high-temperature equipment.

Lineup

Nominal cross-sectional area mm ²	Conductor		Taping thickness mm	Braid thickness mm	Standard overall diameter mm	Conductor resistance (23°C, standard) Ω/km	Insulation resistance (20°C, minimum) MΩ · km	Test voltage (AC, 1 min.) V	Max length m	Estimated weight kg/km
	Composition Pcs/mm	Outside diameter mm								
0.75	14/0.26	1.1	0.85	0.4	3.6	30.5	10	2,000	100m	23
1.25	24/0.26	1.5	0.85	0.4	4.0	17.8	10	2,000	100m	30
2	37/0.26	1.8	0.85	0.4	4.3	11.5	10	2,000	100m	39

3.5	66/0.26	2.6	0.85	0.4	5.1	6.46	10	2,000	100m	60
5.5	35/0.45	3.1	1.0	0.45	6.0	4.07	10	2,000	100m	85
8	50/0.45	3.7	1.2	0.45	7.0	2.85	10	2,000	50m	115
14	88/0.45	5.5	1.2	0.8	9.5	1.62	10	2,000	50m	195
22	7/20/0.45	7.0	1.2	0.8	11.0	1.04	10	2,000	50m	285

*Since NPC-MS500 series products have hygroscopicity, their insulating characteristics differ depending on the atmosphere in which each of them is routed. Therefore, avoid using NPC-MS500 series products in humid or wet places. Please feel free to contact our Sales Department for custom-made products not listed above.

List of allowable current values

Size	Ambient temperature												
	140℃	160℃	180℃	200℃	220℃	240℃	260℃	280℃	300℃	320℃	340℃	350℃	360℃
0.75SQ	39.5	38.9	38.1	37.4	36.6	35.6	34.7	33.6	32.4	31.2	29.8	29.0	28.2
1.25SQ	55.0	54.0	53.1	52.0	50.9	49.7	48.3	46.9	45.2	43.5	41.6	40.5	39.4
2SQ	79.7	78.4	77.0	75.5	73.9	72.1	70.2	68.1	65.8	63.3	60.4	58.9	57.3
3.5SQ	116	114	112	110	107	105	102	83.9	96.2	92.6	88.5	86.3	53.9
5.5SQ	154	151	149	146	143	139	136	132	127	122	117	114	111
8SQ	194	191	188	184	180	176	172	167	161	155	148	145	141
14SQ	273	269	265	260	254	249	242	235	227	219	209	204	198
22SQ	383	377	371	364	357	349	340	330	319	307	294	286	278
Size	Ambient temperature												
	370℃	380℃	390℃	400℃	410℃	420℃	430℃	440℃	450℃	460℃	470℃	480℃	490℃
0.75SQ	27.3	26.4	25.5	24.4	23.3	22.1	20.8	19.4	17.8	16.0	13.9	11.4	8.0
1.25SQ	38.2	36.9	35.6	34.1	32.6	30.9	29.1	27.1	24.8	22.4	19.5	15.9	11.2
2SQ	55.5	53.7	51.8	49.7	47.4	45.0	42.4	39.5	36.2	32.6	28.3	23.2	16.4
3.5SQ	81.4	78.7	75.8	72.8	69.6	65.9	62.1	57.9	53.1	47.9	41.6	34.1	24.1
5.5SQ	108	104	100	96.5	92.5	87.7	82.6	77.1	70.6	63.5	55.3	45.3	32.2
8SQ	136	132	127	122	117	111	104	97.4	89.5	80.4	70.2	57.5	40.9
14SQ	192	186	180	172	165	156	147	137	126	113	98.7	81.2	57.4
22SQ	270	262	252	242	231	219	206	193	177	159	138	113	80.4

*The above allowable current values are the values calculated based on the assumption that the products are used in a normal open atmosphere. Please use NPC-MS500 series products with a safety current that ensures safe operation.

*The above allowable current values of NI-MS500 series products are the reference values calculated based on our demonstration experiments.

*NI-MS500 series products are manufactured according to the Standards of Ninomiya Electric Wire Co., Ltd.