COPPER WIRE, SOFT ROUND, POLYURETHANE (PUR) INSULATION WITH POLYAMIDE (PA) OVERCOAT, 155 °C (98 Cu – 2 Ni) **WSF-M2L68-A3/A4**

COPPER WIRE, SOFT ROUND, POLYURETHANE (PUR) INSULATION WITH POLYAMIDE (PA) OVERCOAT, 155 °C (94 Cu – 6 Ni) **WSF-M2L68-A5**

COPPER WIRE, SOFT ROUND, POLYURETHANE (PUR) INSULATION WITH POLYAMIDE (PA) OVERCOAT, 155 °C (78 Cu – 22 Ni) **WSF-M2L68-A6**

1. SCOPE

The materials defined by these specifications are soft round copper alloy wires with a single film high temperature polyurethane insulation and a polyamide overcoat.

2. APPLICATION

These specifications were released originally for materials used for resistance for instrument cluster gauges.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.4 COLOR

The color of the polyurethane and overcoating shall be specified on the engineering drawing.

3.5 WIRE SIZE SPECIFICATION

The wire size shall be specified on the engineering drawing and/or release according to the American gauge number desired

3.6 BARE WIRE COMPOSITION, % (ASTM B 38)

	A3/A4	A5	A6
Nickel	2	6	22
Copper	98	94	78

3.7 JOINTS

Each spool of wire shall be one continuous length without any joints.

3.8 INSULATION AND COATING THICKNESS

(NEMA MW1000, Section MW 80-C,
Single, Thermal Class 155)

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3.9 INSULATION SIZES

For wire sizes between the AWG sizes, the increase in diameter due to polyurethane and polyamide coating shall be the same for the next larger AWG size and the test values shall be the same as for the next smaller AWG size.

3.10 ELECTRICAL RESISTANCE, ohm / m
(ASTM B 63, at 25 °C)

The wire shall be drawn to the following:

A3	# 34 AWG	2.475 +/- 0.074
A4	# 38 AWG	6.148 +/ - 0.184
A5	# 38 AWG	12.188 +/- 0.244
A6	# 38 AWG	36.909 +/- 1.107

3.11 RESISTIVITY
(ASTM B 193, at 25 +/- 1 °C)

A3/A4	0.5^{-7} ohm/m
A5	1.0^{-7} ohm/m
A6	3.0^{-7} ohm/m

3.12 TEMPERATURE COEFFICIENT OF RESISTANCE, max
(ASTM B 267, Table 1, between 20 and 100 °C)

A3/A4	1700 ppm/ °C
A5	900 ppm/ °C
A6	210 ppm/ °C

3.13 ELONGATION, min 15%
(NEMA MW1000, para 3.3.1.1)

3.14 CONTINUITY, max 10
(NEMA MW1000, para 3.8.1.1.1
or 3.8.1.1.2)

3.15 CONFORMITY WITH THIS SPECIFICATION

In the case of failure under any of the foregoing tests, two additional tests shall be made, and the wire shall be regarded as meeting the requirements of this specification if the results of the additional tests are satisfactory. The wire shall be regarded as not meeting the requirements of this specification if the results of either of the two additional tests are unsatisfactory.

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