

32" Alpha

NORTHERN STRANDS GROUP of COMPANIES MOTOR WINDING CHECK PROCEDURE		
Date Issued: 04-01-2024	Code: GOC-MNT-01-01-09	
Date Revised:	Revision Nb: 00	



Use this worksheet to check windings on 3 Phase Squirrel Cage motors (typical fan motors up to 100 HP). 6 Post motors use all connections not shaded in the tables below. 9 Post motors use all connections in tables, including shaded entries. **All wiring & bridge bars must be disconnected.**

TESTING:

GROUND TO TERMINALS

Using the Resistance setting on multi-meter/ohm meter (marked with Ω), test each terminal for grounding condition. Attach Probe 1 to Ground Connection/motor housing, and then place Probe 2 on each terminal. Record results below. **Any result not reading 'OL' or open line / no connection indicates a short to ground in that coil or terminal connection.**

TEST	RESULT	TEST	RESULT	TEST	RESULT
GND to U1	22 K Ω	GND to V1	22 K Ω	GND to W1	22 K Ω
GND to U2	22 K Ω	GND to V2	22 K Ω	GND to W2	22 K Ω
GND to U5	22 K Ω	GND to V5	22 K Ω	GND to W5	22 K Ω

EUROPEAN TO NORTH AMERICAN MARKING CHART

U1 - T1	V1 - T2	W1 - T3
U2 - T4	V2 - T5	W2 - T6
U5 - T7	V5 - T8	W5 - T9

EQUAL RESISTANCE ACROSS COILS

Test each coil for equal resistance. Attach probe to each terminal as indicated in the table below. Record results below, and mark if each row indicates equal resistance. **Unequal resistance indicates a bad coil or winding.** Readings should be between .3 and 2 Ohms.

TEST	RESULT	TEST	RESULT	TEST	RESULT	EQUAL?
U1 to U2	0.44 Ω	V1 to V2	0.40 Ω	W1 to W2	0.40 Ω	✓
V1 to W5	0.4 Ω	V1 to U5	0.40 Ω	W1 to V5	0.36 Ω	

NO SHORTS BETWEEN COILS

Test each coil for short circuit to another coil. Attach Probe 1 to either lead for first coil listed below, and then place Probe 2 on either lead for second coil. All results should be 'OL' or open line / no connection. **Any other result indicates a short circuit between those two windings.**

TEST	RESULT	TEST	RESULT	TEST	RESULT
U1/U2 to V1/V2	22 K Ω	U1/U2 to W1/W2	22 K Ω	V1/V2 to W1/W2	22 K Ω
U1/U2 to U5/V5/W5	N/A	V1/V2 to U5/V5/W5	N/A	W1/W2 to U5/V5/W5	N/A

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INSULATION TEST

Insolation test should be set at a minimum of two times windings rated voltage. All unused leads should be capped to prevent accidental shock or inaccurate readings. Reading should be a minimum one megohm for each 1,000 volts of operating voltage, a read of zero is a sign of complete lose of insulation.

TEST	RESULT	TEST	RESULT	TEST	RESULT
GND to U1/U2	550 m Ω	U1/U2 to V1/V2	550 m Ω	U1/U2 to U5/V5/W5	N/A
GND to V1/V2	550 m Ω	U1/U2 to W1/W2	550 m Ω	V1/V2 to U5/V5/W5	N/A
GND to W1/W2	550 m Ω	V1/V2 to W1/W2	55 m Ω	W1/W2 to U5/V5/W5	N/A
GND to U5/V5/W5	N/A				

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