

TEST REPORT

PMSM Inductance Calibration Validation

Validation of the inverter motor-inductance calibration routine against a bench LCR reference.

Document ID	OV-TEST-HW-MOTOR-IND-CAL
Test ID	2
Version	0.1
Date	2026-08-08
Status	draft
Applies to	openvvvf-control-module, chassis-size-2
Product line	openvvvf
Normative references	OV-TEST-HW-MOTOR-CAL-INDEX, OV-TEST-HW-INDEX

1. PMSM Inductance Calibration Validation

This report validates the inverter's motor-inductance calibration routine by comparing its estimate against a direct bench LCR measurement of the test motor. The test was run on the C2 chassis test fixture, but the routine itself is shared across all OpenVVVF chassis; motor-specific validation is only needed when a different motor or harness is used.

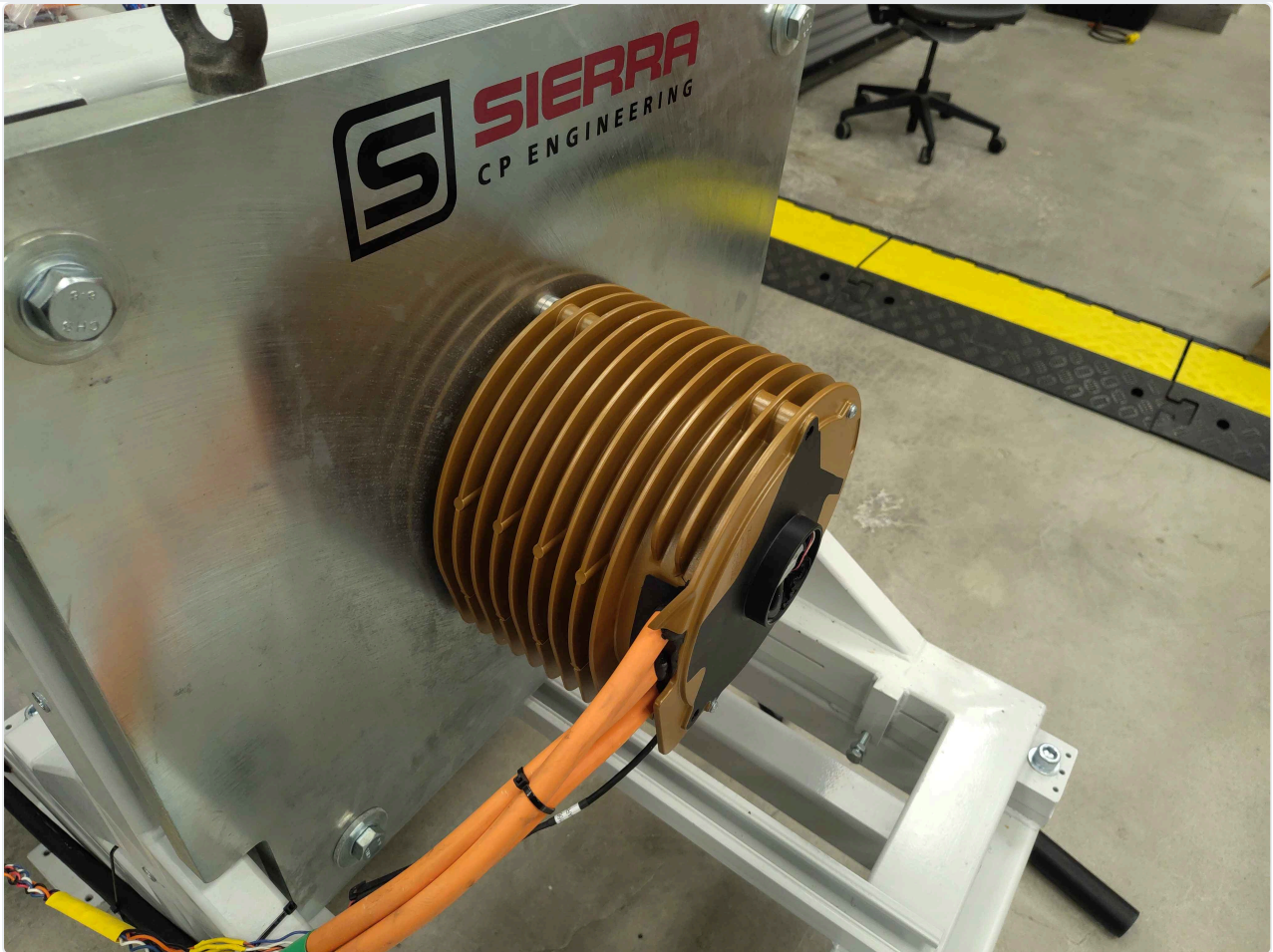
Resistance reference measurements are kept in the PMSM Resistance Calibration Validation report.

A separate induction-machine test report is in Induction Motor Testbed.

1.1. Test setup

The motor is mounted on the Sierra CP Engineering test fixture with phase leads accessible for direct LCR measurement.





1.2. Instrument

- **Instrument:** BK Precision 894 20 Hz - 500 kHz LCR Meter
- **Test frequency:** 1.000 kHz
- **Test level:** 2.000 V
- **Bias:** 0.00 mV
- **Range:** AUTO

1.3. Measurements

1.3.1. Phase inductance and series resistance (Ls-Rs)

Two Ls-Rs readings were captured at 1.000 kHz.

Reading	Ls	Rs	Instrument settings
1	71.2980 μH	0.02817 Ω	FUNC: Ls-Rs, FREQ: 1.000 kHz, LEVEL: 2.000 V, RANGE: AUTO, SPEED: FAST
2	34.6583 μH	0.00974 Ω	FUNC: Ls-Rs, FREQ: 1.000 kHz, LEVEL: 2.000 V, RANGE: AUTO, SPEED: FAST





1.4. Inverter-calibrated inductance

The inverter's inductance calibration routine will be run and its output compared against the LCR reference readings above. Add the command log, telemetry, and comparison table here.

1.5. Notes

- The Ls-Rs readings are series inductance and resistance at 1 kHz.
- Which phase pair or winding configuration each Ls-Rs reading corresponds to should be recorded when the calibration routine results are compared against these reference values.