

FIELD TECHNICIAN QUICK-REFERENCE CHECKLIST

Delta-T ThetaProbe (ML3) & WET Impedance Sensor Checklist

DOCUMENT ID:	CHK-IMP-ML3-001	EFFECTIVE DATE:	September 2026
TITLE:	ThetaProbe Field Inspection Checklist	REVISION:	1.0
LEAD SPECIALIST:	Kadeem Manning	APPROVED BY:	Kadeem Manning

Step / Activity	Verification Procedure	Target Criteria	Status
1. Rod Mechanical Audit	Inspect 4 stainless steel rods for bends or damage.	Parallel gap = 15.0 mm	☐ Pass ☐ Fail
2. Power Supply Check	Measure excitation supply voltage from data logger.	5.0 to 12.0 V DC	☐ Pass ☐ Fail
3. Air Baseline Verification	Suspend clean probe in air >30 cm from metal.	$V_{air} = 0.000 \pm 0.015 \text{ V}$	☐ Pass ☐ Fail
4. DI Water Baseline Test	Submerge rods completely in deionized water at 20°C.	$V_{water} = 0.850 \pm 0.025 \text{ V}$	☐ Pass ☐ Fail
5. Cable & Connector Audit	Inspect IP68 IP-rated waterproof connector and cable shroud.	Zero water ingress	☐ Pass ☐ Fail
6. Soil In insertion	Use insertion guide to press rods vertically into soil.	Zero rod air gaps	☐ Pass ☐ Fail
7. Soil Type Model Check	Select a_0 , a_1 coefficients (mineral vs organic).	$a_0=1.60$, $a_1=8.40$ (mineral)	☐ Pass ☐ Fail
8. WET Pore-Water EC	Verify Hilhorst model pore-water EC calculation.	σ_p within expected limits	☐ Pass ☐ Fail
9. Temperature Compensation	Record thermistor temperature and apply -0.002/°C factor.	$T = 20.0 \pm 0.5^\circ\text{C}$ ref	☐ Pass ☐ Fail
10. Data Logger Sync	Verify analogue V_{out} map on datalogger channel.	V_{out} matches logger V	☐ Pass ☐ Fail

FIELD REMARKS & SITE OBSERVATIONS:

Station Location: _____ Sensor S/N: _____
Soil Horizon / Depth: _____ cm Soil Class: ☐ Sand ☐ Loam ☐ Clay ☐ Organic
Ambient Temp: _____ °C Measured V_{out} : _____ V Calculated VWC: _____ m³/m³

PREPARED & VERIFIED BY LEAD FIELD TECHNICIAN	FIELD APPROVAL SIGN-OFF
Specialist Name: Kadeem Manning Title: Lead Field Specialist & Instrument Calibration Engineer Affiliation: Environmental & Dielectric Sensing Operations	Signature: _____ Date: _____ Status: ☐ PASS ☐ FAIL