

PRODUCT GUIDE / BADGER METER MODMAG M2000

Installation & Troubleshooting Guide

Wiring, mounting, maintenance, and the real field-troubleshooting table – condensed from Badger Meter's own M2000 User Manual (MAG-UM-01272-EN-28, January 2023).

INSTALLATION

Mounting, Temperature & Wiring

Two mounting configurations, real temperature limits by liner material, and the wiring rules that prevent the most common field failures.

Requirement	Detail
Mounting options	Meter mount (transmitter on sensor) or remote mount (up to 500 ft / 150 m separation via conduit)
Use remote mount when	Sensor protection class IP68 required; fluid temp > 212°F (100°C); strong vibration present
Transmitter ambient temp	-4°F to 140°F (-20°C to 60°C)
Sensor fluid temp (PTFE/PFA liner)	-40°F to 302°F (-40°C to 150°C)
Sensor fluid temp (hard/soft rubber liner)	32°F to 176°F (0°C to 80°C)
Wiring	Twisted pair shielded wire on all outputs; never bundle signal lines with power lines; all units must be grounded
Fuse	T2 H 250V AC, 2A, slow blow, 5×20mm — authorized personnel only

Rigging & lifting: never lift a meter by its transmitter, junction box, sensor neck, or cables. Never rig lifting devices through the flow tube — this can damage the isolating liner. Use soft straps between flanges (2–8 in. flow tubes) or lifting lugs (10 in. and larger).

TROUBLESHOOTING

Field Diagnostic Table

Badger Meter recommends inspecting the liner and electrodes after six months of service on high-conductive-solids fluids — deposits reduce measuring output. The table below is the manual's own diagnostic reference, condensed for field use.

Symptom	Likely Cause	Action
Flow present but display reads "0"	Disconnected signal cable, sensor mounted opposite flow direction, or coil/electrode cables swapped	Check signal cable; turn sensor 180° or swap terminals E1/E2; check for cross-wiring
Inaccurate measuring	Improper calibration, pipe not fully filled, air in pipe, invalid fluid conductivity	Restore calibration defaults; verify sensor factor/size vs. data sheet; purge air from line
No display	No/incorrect power, blown fuse, bad wiring	Check power value; replace fuse (2A, 250V AC, slow blow); check display ribbon cable
Flow rate value known to be wrong	Deposits on electrodes/liner, incorrect pipe size programmed	Check and remove deposits; verify programmed pipe size
Flow rate indication unstable	Cable/grounding issue, partially full pipe, air in pipe, nearby electrical interference	Verify shielded cable is not vibrating; confirm proper earth ground; confirm pipe is full
"Err: Sensor" on display	No sensor connection, low supply voltage, grounded coils, water in sensor	Check sensor/cable connections per manual; contact Technical Support if unresolved
"Err: Empty pipe" on display	Pipe not full, or fluid/conductivity requires recalibration	Purge trapped air; recalibrate for actual fluid conductivity
"Err: AD-Range" on display	AD-Converter exceeding signal limits, grounding issue	Check grounding scheme per manual; verify pipe is not empty

Maintenance: no scheduled maintenance is required for the M2000 electronics or flow tube under normal operation. Clean the flow tube/electrodes only per the fluid's MSDS guidelines — disconnect the sensor from the pipeline first, never clean with liquid or aerosol cleaners.

Specifying or replacing a ModMAG M2000?

Send LibertyCES your fluid, pipe size, mounting constraints, and current wiring configuration — we'll confirm the right meter configuration before anything ships.

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