Magnetic Flowmeter Fault Finding Guide

Vendor neutral fault finding guide for field technicians

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Before you start

- Permit, isolation and control room informed.
- Put the loop in manual or inhibit trips as authorised.
- Use certified test equipment in hazardous areas.
- Record as found readings before changing anything.

Quick checks

- Pipe full at the meter?
- Grounding rings or electrodes connected?
- Conductivity above the meter minimum?
- Sensor factor matches tag?

Symptoms, causes and fixes

Symptom	Likely causes	Checks and fixes
Reading zero with flow	Empty pipe detection active, coil fault, wrong configuration	Check pipe full; coil resistance; flow direction setting
Noisy or jumping	Poor grounding, air bubbles, solids hitting electrodes, low conductivity	Fit grounding rings; remove air; check conductivity
Reads high or low	Wrong size or calibration factor, partly full pipe, coating	Check sensor factor and DN; check fill; clean electrodes
Reads flow when stopped	Electrode coating, grounding, valve passing	Clean electrodes; check grounding; confirm valves
Empty pipe alarm with full pipe	Coated electrodes, very low conductivity, wrong threshold	Clean; check conductivity; adjust threshold
Negative flow	Reverse direction setting or installed backwards	Check arrow and direction setting

Installation reminders

- Vertical up flow or horizontal with electrodes horizontal.
- Not at the top of a pipe or before a free outlet.
- About 5 D upstream, 2 D downstream (typical).
- Separate coil and signal cables from power cables.

NAMUR NE107 status

Status	Meaning	Action
F Failure	Output invalid	Repair or replace; check loop goes to safe state
C Function check	Simulation, calibration or maintenance active	Finish the work, return to normal mode
S Out of specification	Operating outside limits or uncertain	Check process conditions and sensor
M Maintenance required	Still valid but degrading	Plan maintenance before failure