



Severe Application Solution



The Challenge

Abrasive slurry — sand-laden frack fluid, dredge spoil, ore concentrate, tailings — destroys standard magnetic flowmeters. Polyurethane liners erode. Coated electrodes wear through. Seals fail. The result is a 6–12 month replacement cycle that costs far more in downtime than in hardware: a single 3-hour unplanned shutdown can result in tens of thousands of dollars in lost production.

The Solution

TECO's Severe Application Meter (SAM) was built from the ground up to end that cycle. Its ceramic liner does not erode. Its solid billet Tungsten Carbide electrodes have no coating to wear off. An external electrode boss isolates the seal from process pressure. In over two decades of abrasive service across four industries, TECO has not recorded a single liner failure.

Product Family

Parameter	SAM	SAMBR	HP SAM
Size Range	1/2" - 16"	18" and up	2"-7"
Pressure Rating	up to 6000psi	per flange spec	up to 15,000psi
Electrodes	Solid Billet Tungsten Carbide	Hastelloy B (field-accessible wells)	Solid Billet Tungsten Carbide
Accuracy (DC/AC)	±0.5% / ± 1%	±0.5% / ± 1%	±0.5% / ± 1%
Pressure Tube	Carbon/SS	Carbon/SS	Single-piece superalloy
Environment	IP68 / NEMP 8P -40°F to 140°F	IP68 / NEMP 8P -40°F to 140°F	IP68 / NEMP 8P -40°F to 140°F
Transmitter	TECO TMAX 1000, others upon request	TECO TMAX 1000, others upon request	TECO TMAX 1000



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Applications

Industry	Flow Environment	Core Challenge	SAM Outcome
Hydraulic Fracturing	Sand/proppant slurry at high velocity	Liner erosion, electrode wear, seal failure	8+ years in service; 2B+ lbs sand, zero failures
Dredging	Sand, silt, gravel in 24"+ bore lines	Extreme abrasion; remote, no easy swap	10-yr service life; largest N.A. fleet standardized
Mining/Tailings	Ore slurry, thickener underflow, tailings	Abrasion + chemical attack + 24/7 runtime	Ceramic holds bore geometry; ceramic retrofit available
Oil & Gas Offshore	Drill mud, completion fluids at high pressure	No standard mag meter rated for injection pressure	HP SAM; only mag meter rated to 15,000 psi

Field-Proven Results

8+ years

Continuous Permian Basin SAM operation

2B+ lbs

Proppant processed without liner failure

\$160-\$200K

Saved eliminating just two outages

Up to 10:1

Lifespan gain (SAM R&D Testing)

Drop-In Compatibility & TECO Background

Every SAM is engineered to match the lay length and end connections of the meter it replaces and calibrated to work with the TECO TMAX 1000 transmitter (others available upon request) — no pipe modifications, no rewiring.

Thompson Equipment Company has over 60 years of magnetic flowmeter repair experience and operates a full NIST-traceable flow facility in New Orleans, Louisiana. That repair history — analyzing failure modes across all major manufacturers — is the direct engineering foundation of the SAM platform.

When the slurry gets severe, the SAM gets to work.

TECO

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