

# Stop Wedge Overheating Before It Stops Your Potline

One overheated wedge. 5 minutes unnoticed. Potline voltage spikes. OCP trips. Production frozen for days.

## Why Your Wedges Matter More Than You Think

### 300–600 kA flows through every wedge during bypass operations.

Busbar wedges bridge cathode busbars when pots go offline for startup failures, relining, or maintenance – keeping your potline current and continuous.

### Why Wedges Fail:

- Imperfect contact causes current to leak through the wedge body
- I<sup>2</sup>R losses generate extreme localized heat (300–600 kA)
- Thermal runaway softens aluminium, raising resistance further
- Deformation, melting, or burn-through follows
- Line voltage drops trigger potline freeze catastrophic shutdown



**Potline Freeze = Production Loss + Equipment Damage + Cost: \$Crores in Minutes**

### You've seen the evidence:

- Emergency wedge pulls at 2 AM
- Burn marks on busbars
- Unexplained voltage instability
- Production teams pointing fingers between potroom and maintenance

## The Monitoring Gap Killing Your Uptime

Current Reality	What Actually Happens
Manual IR gun checks	Miss 90% of thermal runaway events
Periodic visual inspections	Find damage AFTER wedge failure
Voltage monitoring only	Too late – wedge already destroyed

**Deep Industry Truth:** Potline protection systems watch pots and OCP circuits. No one watches the wedges carrying full line current.

# XYMA's WEDGESENSE – Sensing Beyond Limits

XYMA Analytics brings high-temperature IIoT expertise to aluminium smelters, protecting potlines with wireless wedge monitoring that prevents thermal runaway failures

## Contact Sensors on Every Wedge

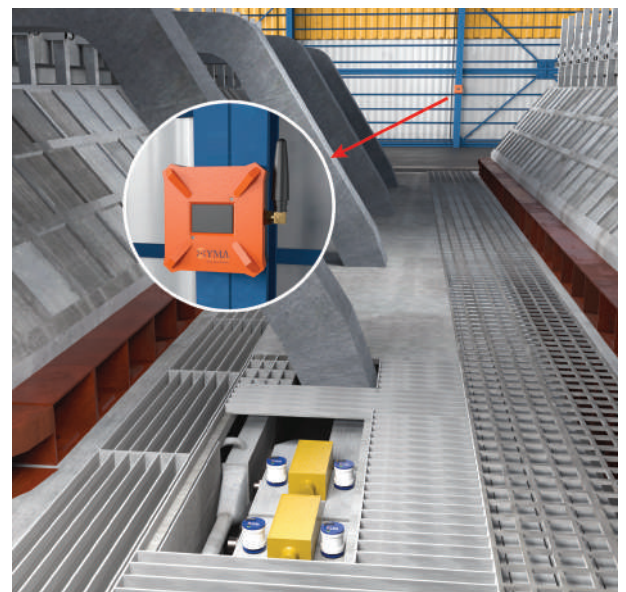
- Wireless temperature measurement where runaway starts
- Survives 950°C radiant heat + 600kA magnetic fields
- Field-replaceable battery
- Heavy-duty cast aluminium enclosure for potline extremes

## Plug & Play Installation

- Ceramic glue + clamps (no drilling, no welding)
- Deploy on existing wedges in 2 minutes
- Zero busbar modifications or disruption
- Installation support included

## 24/7 Trend Monitoring & Alerts

- Cloud dashboard + rate-of-rise detection
- SMS/Email/Phone alerts before crisis hits
- Catch thermal runaway in MINUTES, not DAYS
- Historical trending for predictive maintenance



### Prevents Potline Freeze



Early warning enables wedge replacement before failure

### Reduces Cost



Avoid catastrophic downtime and equipment loss

### Data-Driven Operations



Historical trending for predictive maintenance

**Prevent 1 potline freeze = Save \$1M+ per incident Initiate a Discussion Today**

## XYMA Analytics Private Limited

B4-01, B-Block, 4th Floor, IITM Research Park, Kanagam Road, Taramani, Chennai, Tamil Nadu, India