

Figures

FIG. 1 — Line-Mounted GridLeak Sensor Node (Exterior Overview)

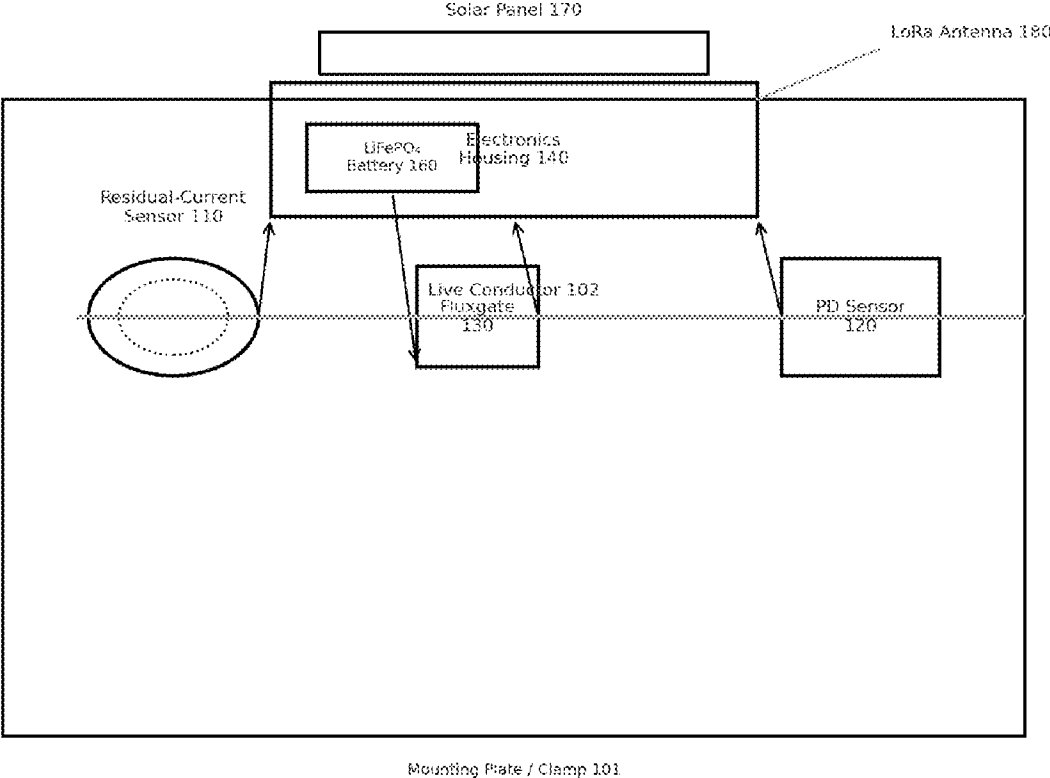


FIG. 2 — Isometric Exterior View of Sensor Node

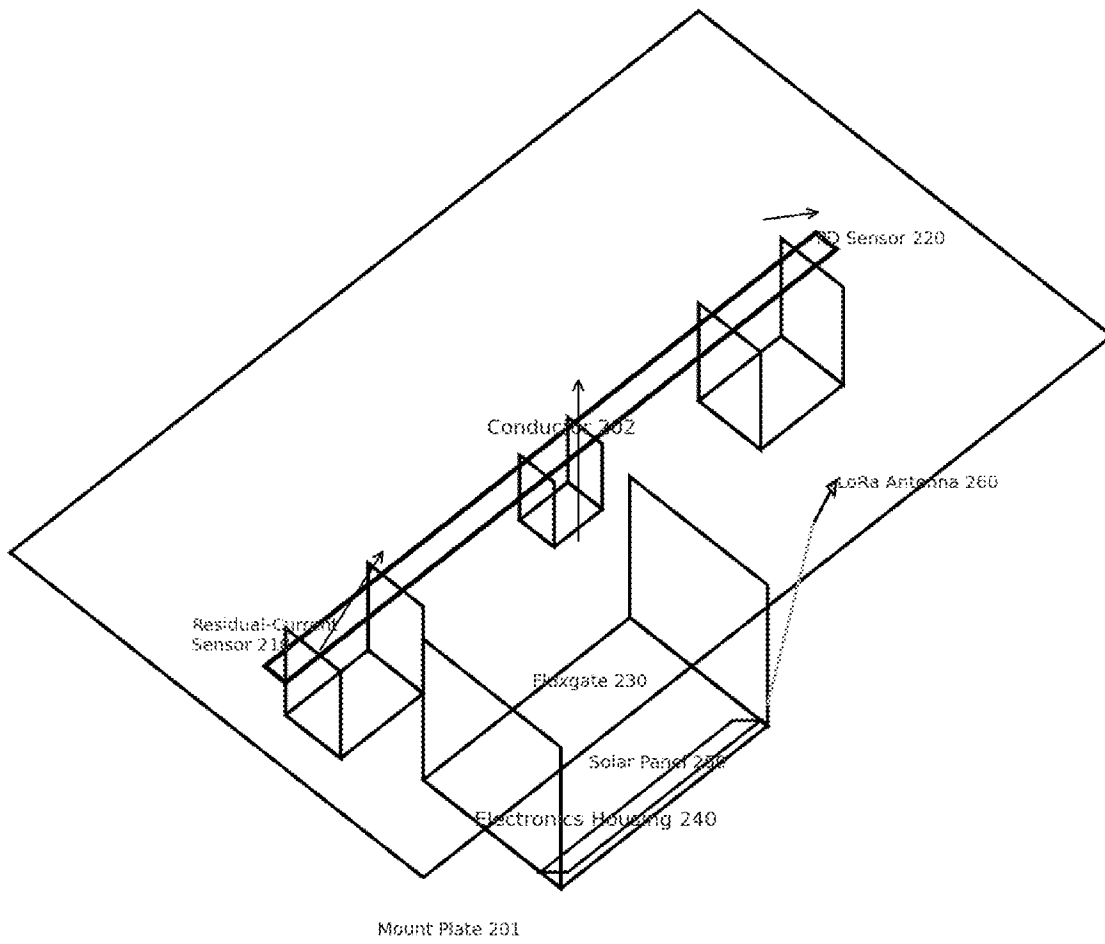


FIG. 3 — Dual-Source Power Harvesting & Management Subsystem

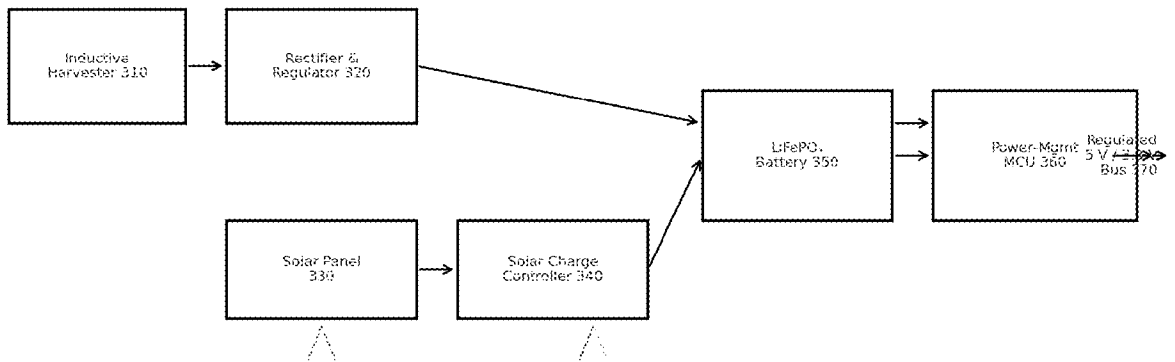
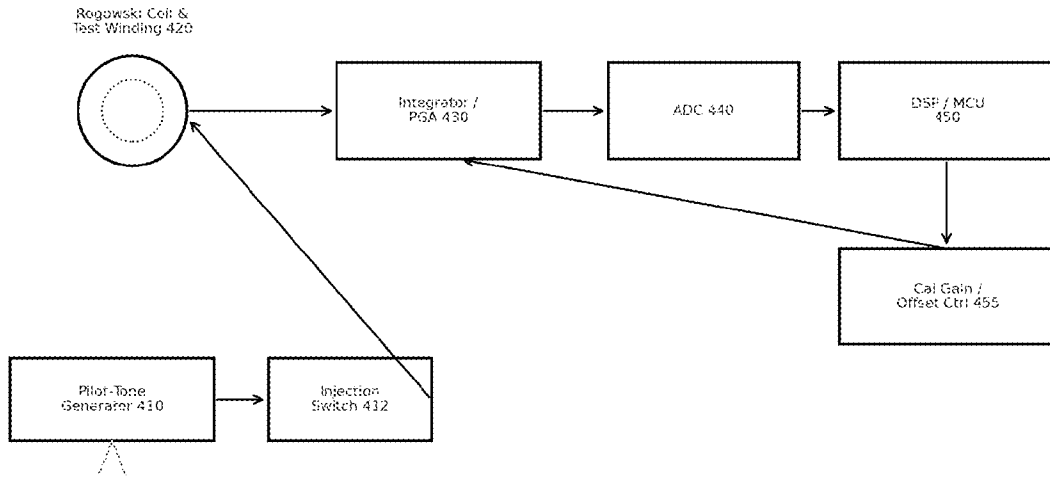


FIG. 4 — Pilot-Tone Self-Calibration Loop



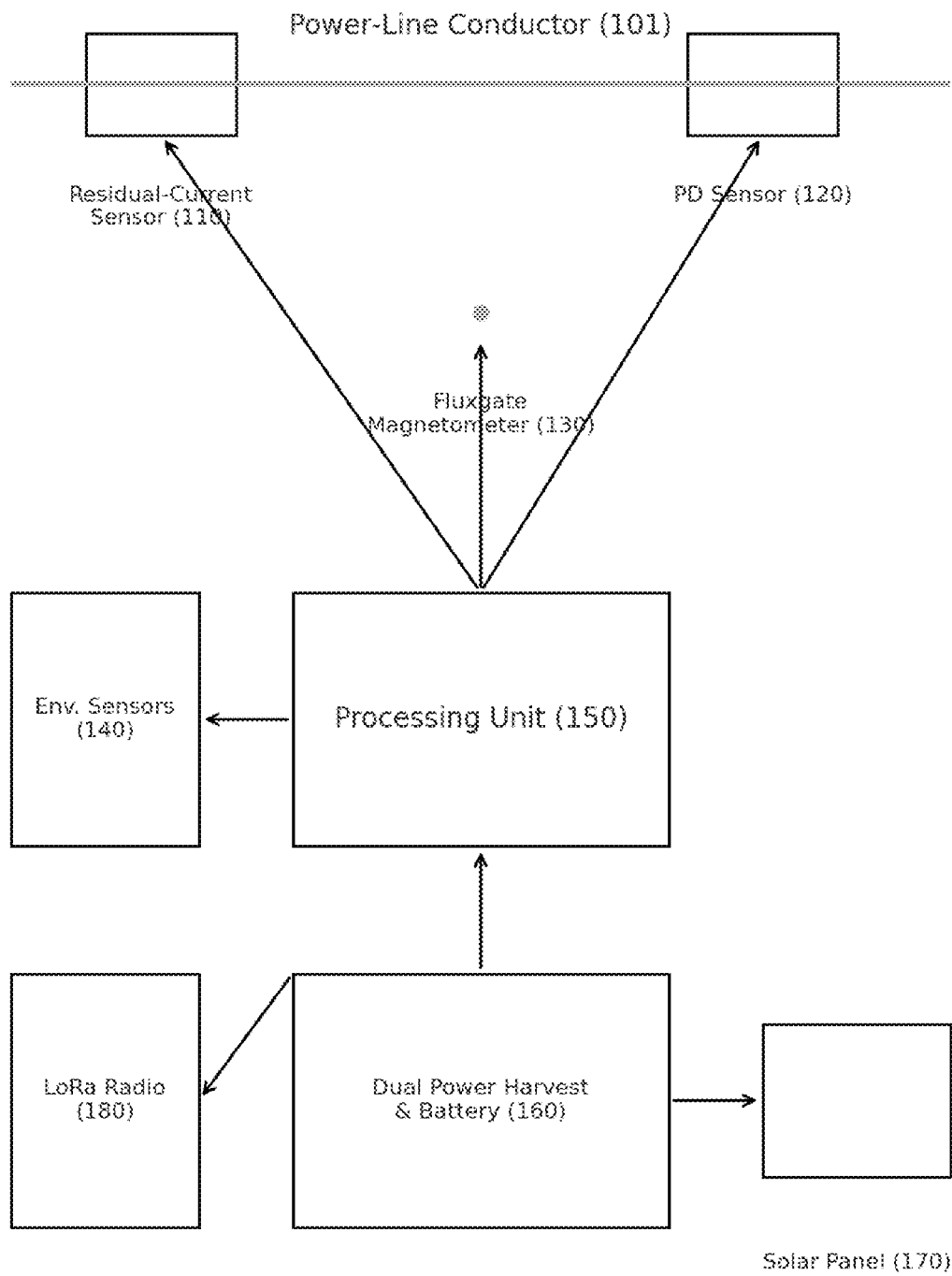


FIG. 5 — Fluxgate DC-Drift Detection & Kalman Estimator Path

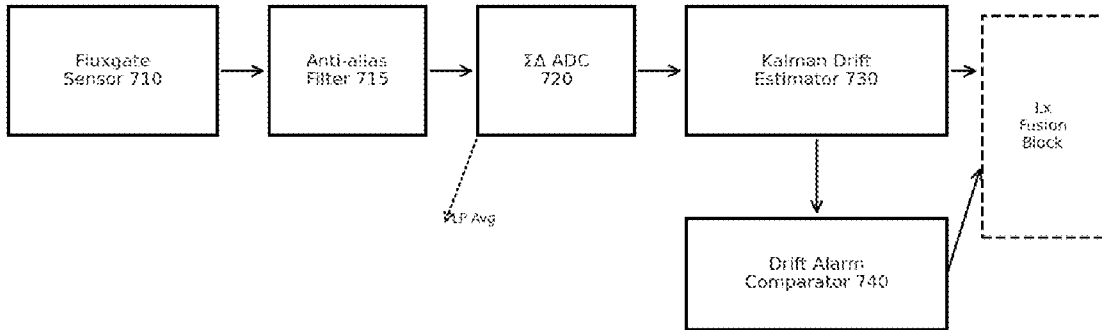


FIG. 6 — Phase-Resolved PD Map Generation & LoRa Compression Path

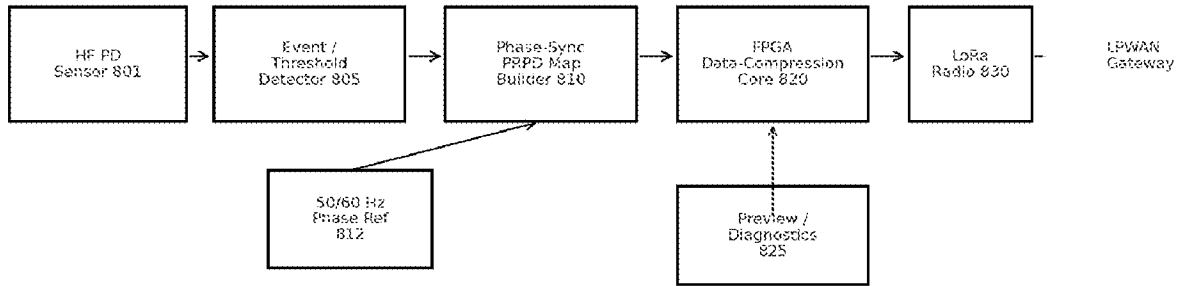


FIG. 7A — Sensor-Fusion Architecture for Leak-Index Computation

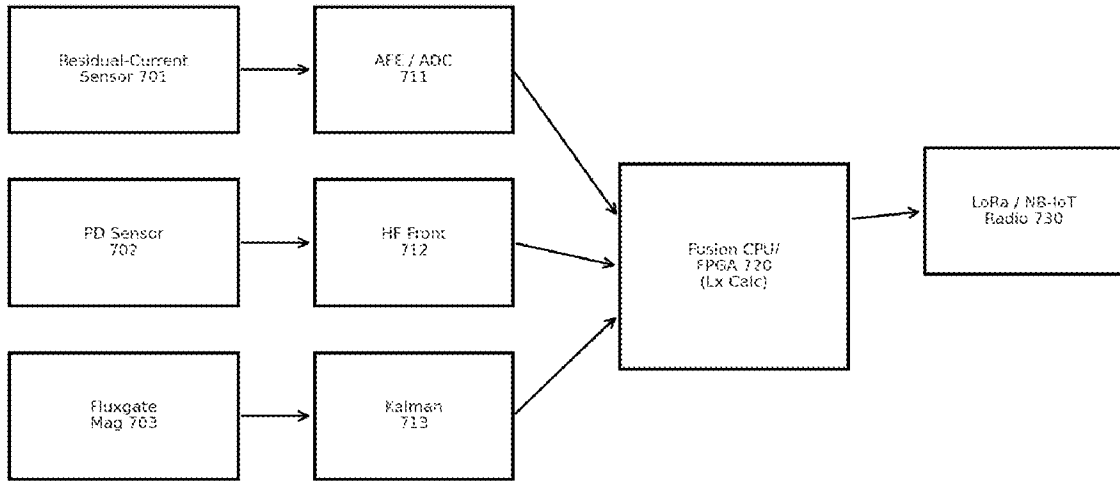
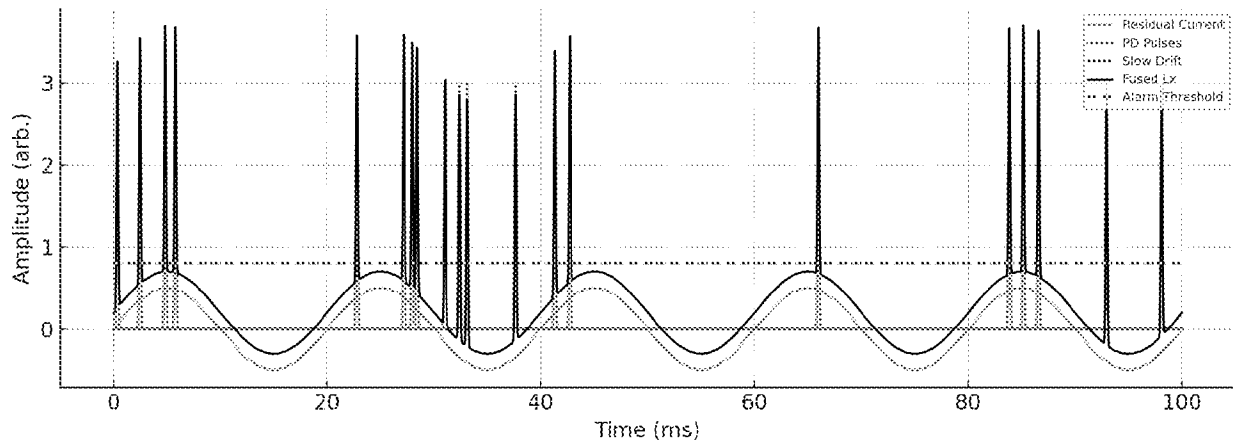


FIG. 7B — Contributions of Sensor Channels to Fused Lx



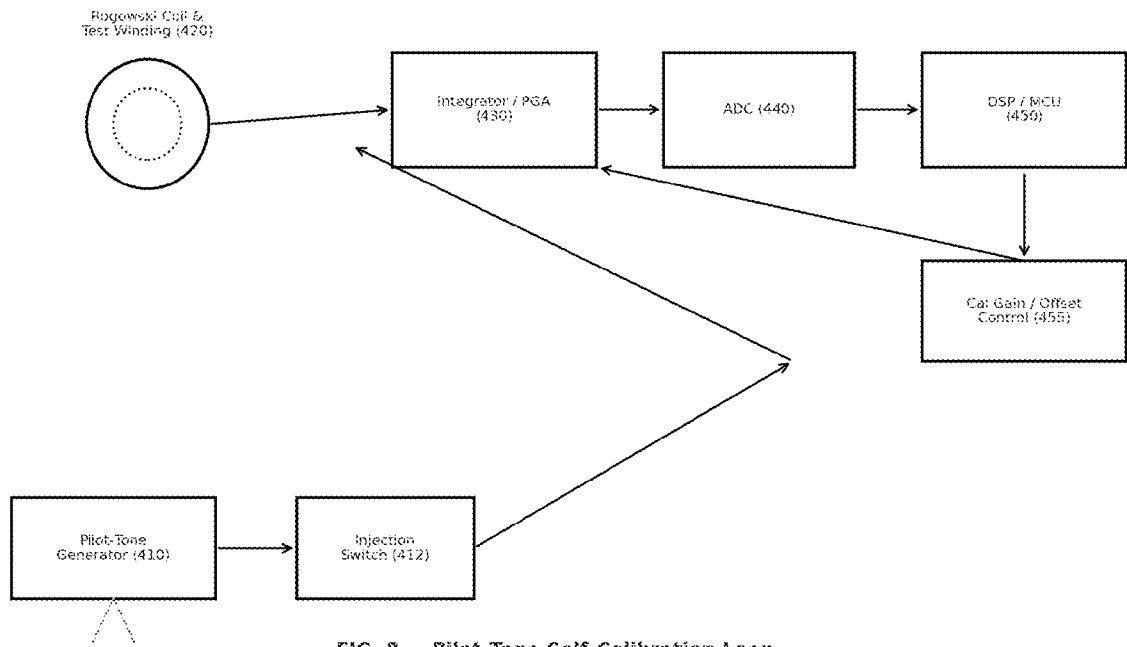


FIG. 8 — Pilot-Tone Self-Calibration Loop

FIG. 9 — PRPD Processing & Compression Flow

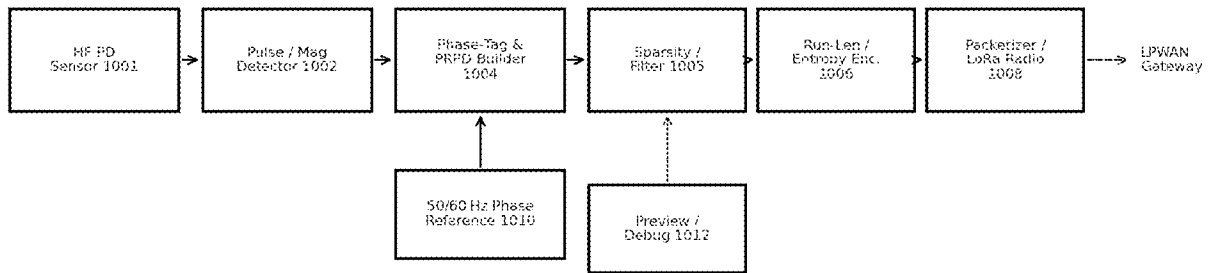


FIG. 10 — Environmental Weighting & Adaptive Threshold Path

