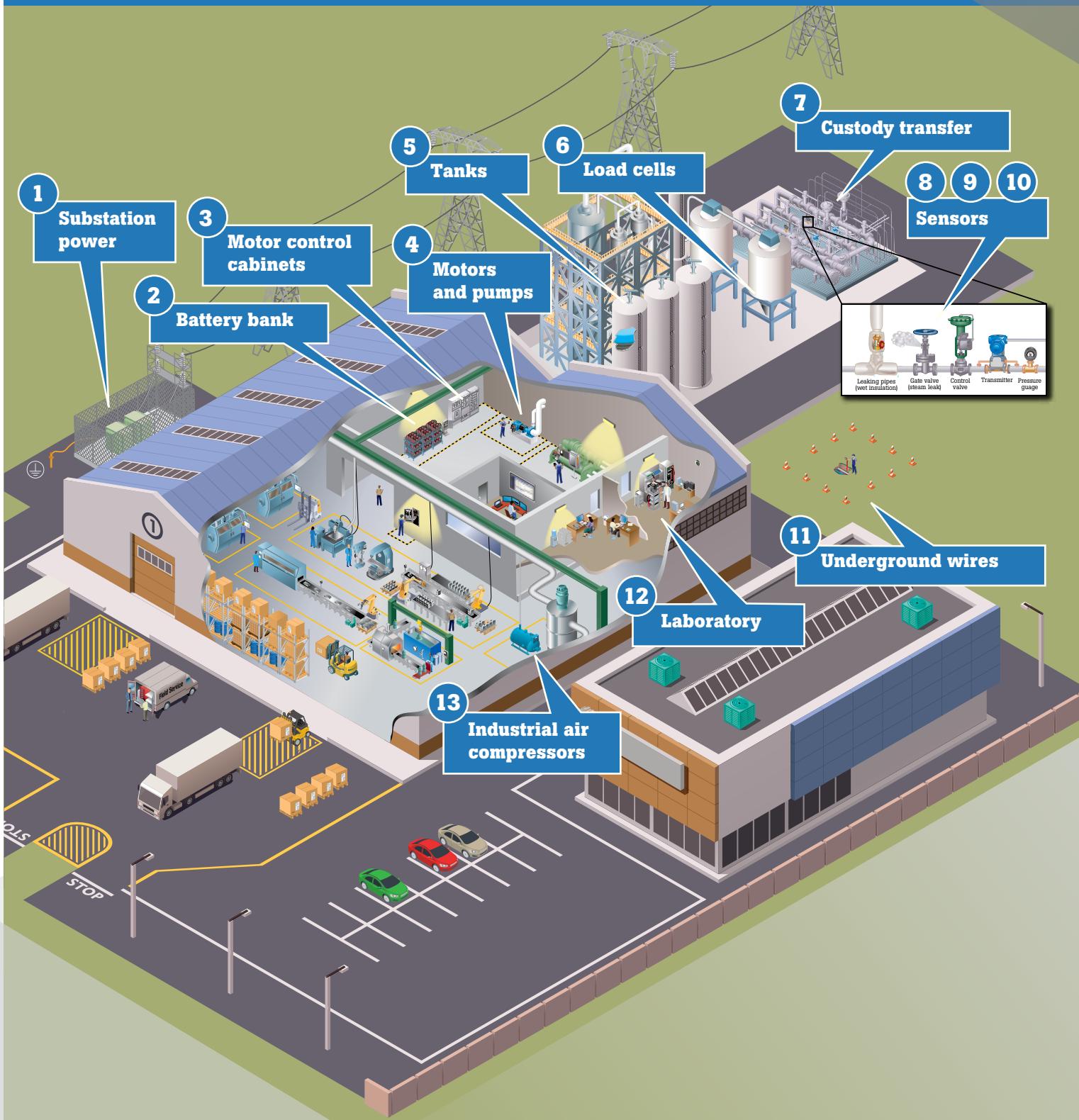


# Industrial automation maintenance, inside and out





## 1. Substation power

(ii900, Amprobe TIC300PRO, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Compliance fines for excess SF6 gas discharge and costs (state and local). 1000 volts and safety

**Solution:** Safely view gas discharge from bushings and piping using a special purpose Acoustic imager without equipment shutdown; detect and identify presence of 1kv to122kv from a distance



## 2. Battery bank

(BT521, BT520, BT510, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Backup power unavailable for mission critical facilities, emergency lighting and ventilation, over/under-charging, loose terminal, an entire string of batteries may fail due to one bad battery, explosion

**Solution:** Safely measure, record battery performance and determine health of battery string; compliance with NFPA 70e



## 3. Motor control cabinets—inspection and root cause

(Ti480 PRO and Hawk IR Windows and PQ window/power quality, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Intermittent outages caused by hot spots, transients, or unbalanced loads

**Solution:** Safely view using Fluke IR Cameras through an IR Window and PQ Analyzers with PQ Windows to measure and log all 3 phases simultaneously and to inspect waveforms



## 4. Industrial motors and pumps

(Power quality, mobile and semi-permanent vibration and alignment tool, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Unexpected bearing wear and motor failure, increased power consumption and maintenance, and the cost of 3rd party experts

**Solution:** Mobile and semi-permanent vibration measurement to monitor, record, and see trends in performance and align motors and pumps



## 5. Tanks

(IR camera and Ti300+ and TiS75+ thermal cameras, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Resource allocation—too much or too little product for the process; EPA/OSHA concerns with air/water table contamination and personnel safety

**Solution:** Safely from a distance, measure liquid level using an IR Camera and verify sensor calibration and signal values to the PLC



## 6. Load cells

(715, 789, 754, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Unable to measure and verify the mv/V sensor signal value separately from the PLC and HMI Interface.

**Solution:** Measure, calibrate, and source read mv signals



## 7. Gas custody

(721 with 720 RTD Temp probe, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Inability to confirm gas mass at transfer of ownership

**Solution:** Visual confirmation from the dual pressure measurement meter with optional temperature probe



## 8. 4-20ms sensors

(Generic, flow meters, level sensors-77x series, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Unable to measure and verify the sensor signal value separately from the PLC and HMI interfACe

**Solution:** Measure mA signals without breaking the loop using detAChable clamp with extension cable



## 9. HART sensors

(154 and 753, 709H, 729, or 754, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Require calibration from 3rd party. Most calibration communicators don't provide 24VDC loop power or 4-20 mA feedback, and are not NIST traceable

**Solution:** Parallel connection to a live system, so the Fluke instrument can communicate, configure, and calibrate HART sensors from a single platform



## 10. Temperature, humidity, pressure and vacuum sensors

(71x, 787B/789, 754, 750 Pressure Modules, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Unable to read the sensor measurement without a connection to the PLC/HMI

**Solution:** Measure and source up 17 T/C types-13 RTD types and volts and ohms with sourcing; Automatically generate pressure (729); 787B/789 is also a 1000 V DMM



## 11. Underground wires

(UAT 505, UST 610, UAT 620 series, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Accidental physical contACt with utility/powered wires, power disruption, process shutdown, ground faults

**Solution:** Safely find energized underground wires utilizing a CAT IV 600 V locator kit



## 12. Laboratory

(RSE300 and RSE600 infrared cameras, 60 Hz, 640 x 480 resolution)

**Pain:** Spotting what's hot during product development testing.

**Solution:** RSE300 and RSE600 mounted IR cameras, designed to enhance your testing and quality assurance with continuous streaming of live infrared data

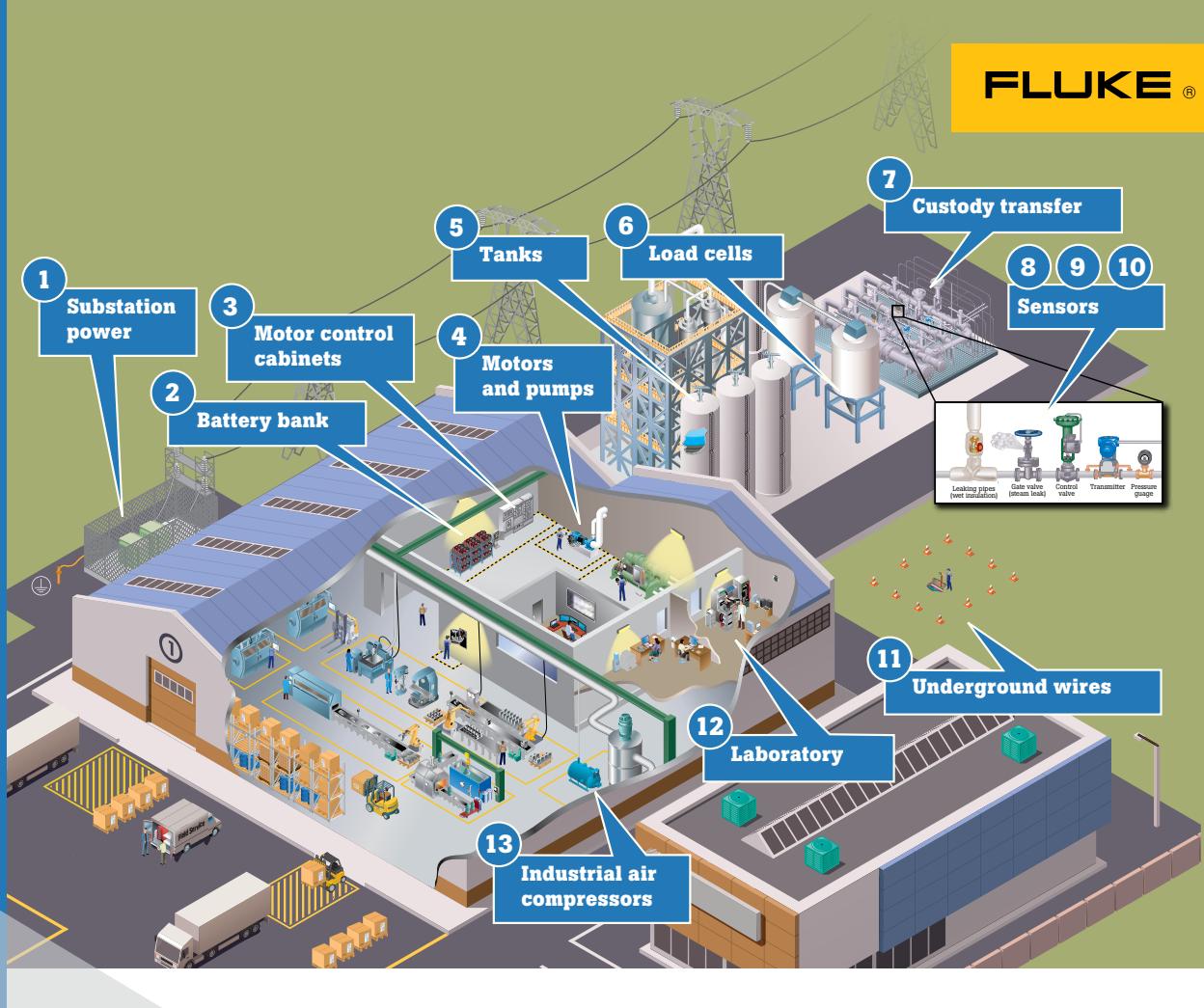


## 13. Industrial air compressors

(ii900 Sonic Industrial Imager, 1000 V AC and 1500 V DC rated insulated hand tools)

**Pain:** Companies without an air leak management system lose on average 30% -50% of their compressed air production and spend over \$30k in wasted electrical energy

**Solution:** Use SoundMap to visualize both the audible and ultrasonic blended image for the detection of compressed air, gas, and vacuum leaks



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