SENSORS

LOW POWER INSTRUMENT TRANSFORMERS (SENSORS)

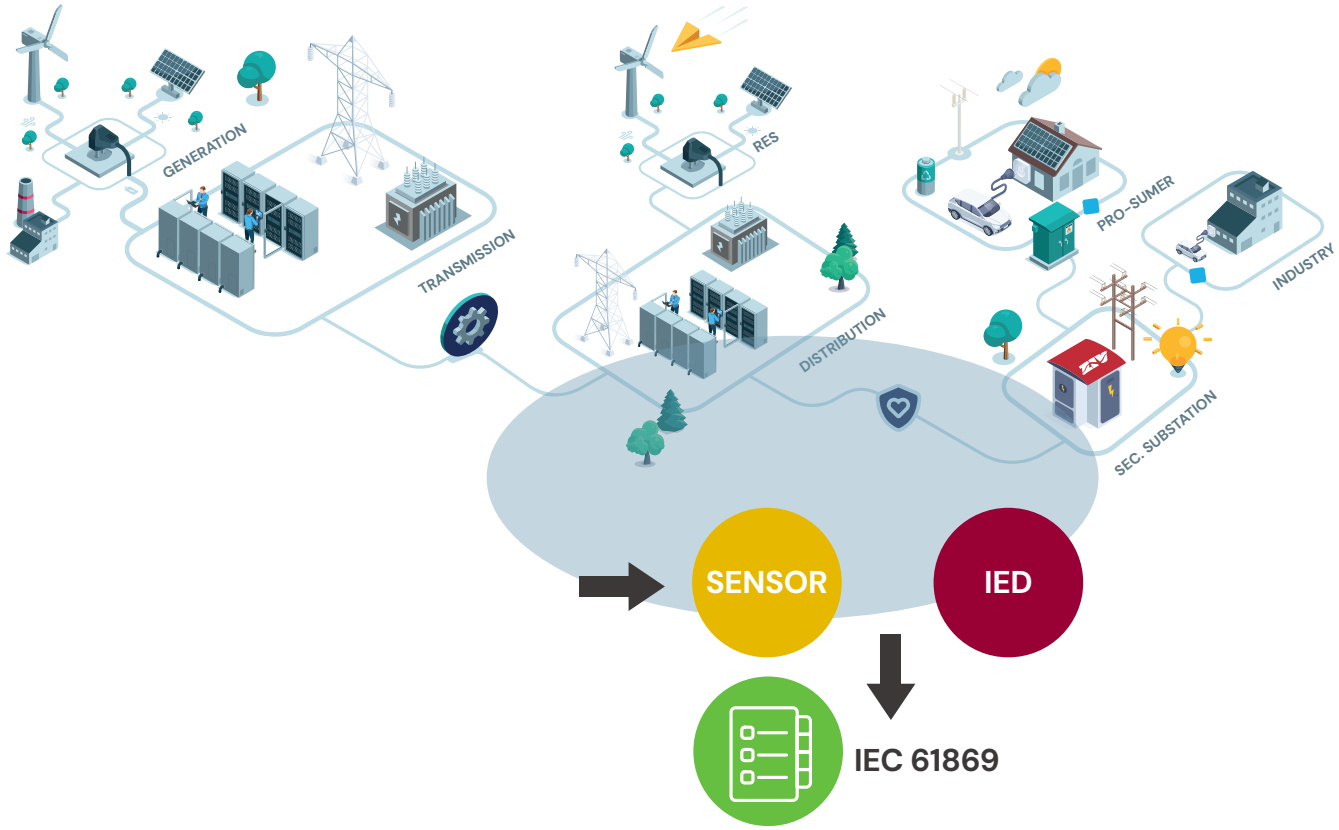
CURRENT SITUATION

MV DISTRIBUTION MONITORING

- Fault detection (fault in neutral, fuses, etc.)
- Measurement of electrical parameters of grid quality
- Device status
- Alarms

LPIT: Low Power Instrument Transformer (LPVT & LPCT)

IED: Intelligent Electronic Device.



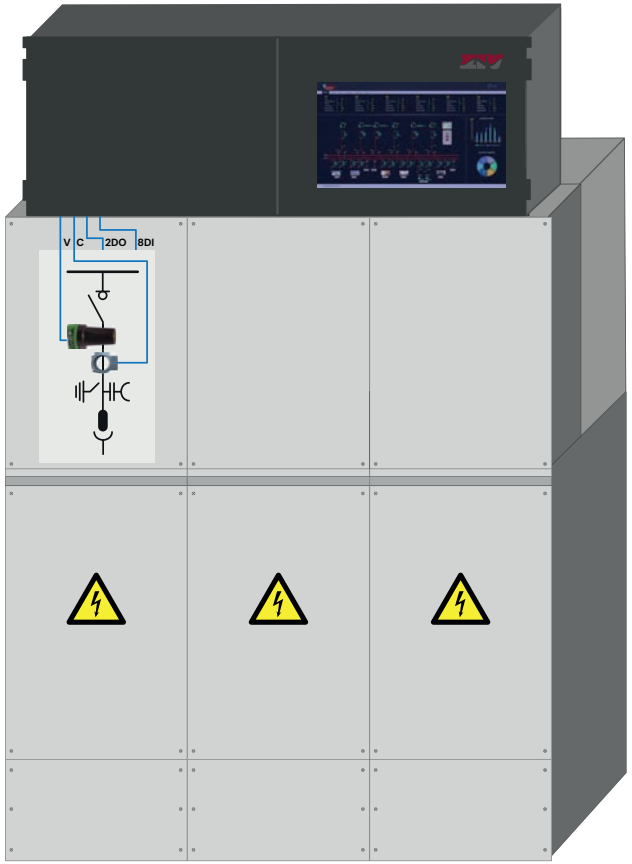
LPITs FOR THE SMART GRID

The transformation of the grid towards a more **digital**, **dynamic** and **distributed** environment demands new measurement capabilities: greater accuracy, improved response and full integration with digital systems.

In this context, **low-power sensors** (LPVT and LPCT) are establishing themselves as a key alternative to conventional transformers, thanks to their **high linearity**, **wide bandwidth**, **compact design** and **native compatibility** with IEC 61850 / 61869 architectures

Beyond measurement, these sensors enable essential functions such as **advanced protection**, **network quality monitoring** and **real-time supervision**, making them fundamental elements for the digitalisation of distribution.

ZIV supports this evolution with a portfolio of solutions designed to meet the challenges of the transition towards **smarter**, **more efficient** and **connected networks**.



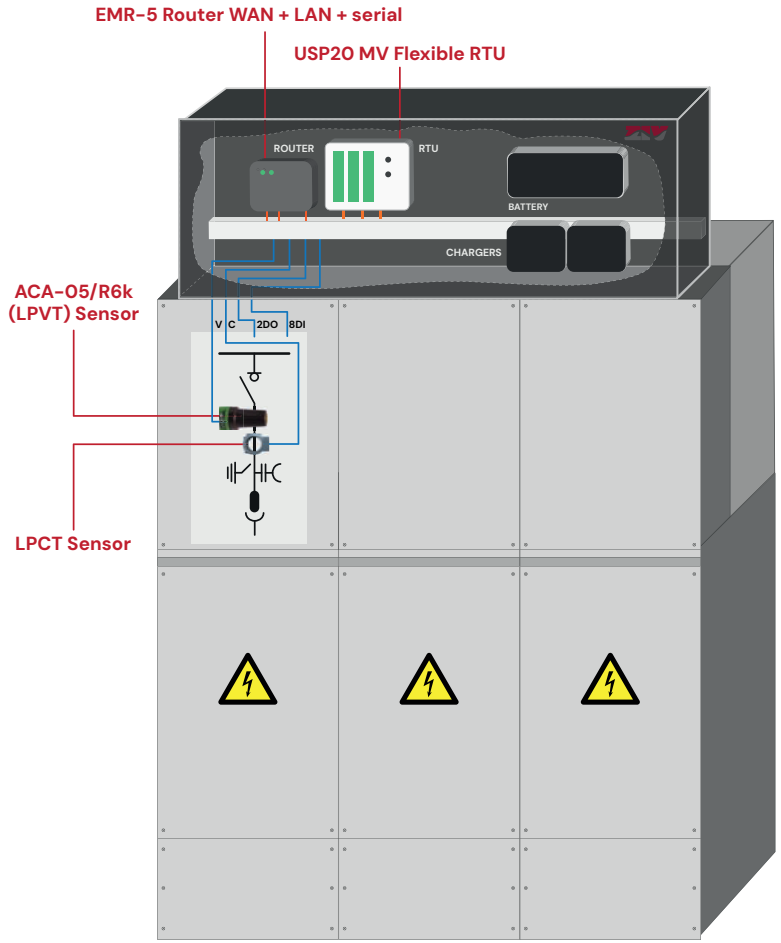
FUNCTIONS OR ROLES

- Adapt the high primary voltage/current to lower values that can be managed by the electronic equipment IED

  LPVT Low Power Voltage Transformer

  LPCT Low Power Current Transformer

- Electrical insulation for Protection, Control and Measurement devices.
- Measurement of electrical parameters (voltage, current, phase shift…) with linearity in a range of temperature.



NEW IEC 61869 SCENARIO

IMPLICATIONS FOR SENSOR DESIGN

- Connectors & Wiring
- Accuracy
- Burden and secondary voltage
- Harmonic accuracy

IMPLICATIONS FOR IEDS

- Input stages
- Accuracy
- Transient and frequency response IED tests

SENSORS PORTFOLIO

ACA-05/R6K (LPVT)

Voltage sensor intended for installation into a symmetrical tee connector in gas insulated switchgear (GIS).

LPCT (LPCT)

Low Power Current Transformer

ACA-05/R6K (LPVT)

VOLTAGE SENSOR

ELECTRICAL CHARACTERISTICS

- Connection type: Phase-ground.
- Use: indoor.
- Um: 24kVrms.
- Type: interface C.

LPVT FEATURES

- Ratio: 20kV : 3.25 Vrms ± 0.5%
- Phase variation:< 0.33°
- Accuracy class: 0.5P
- Load impedance: ZL≥2MΩ and CL≤50pF
- Temperature range: -10°C to +60°C
- LV connection: RJ45 connector.

IMPROVEMENTS TO THE PREVIOUS MODEL

- According to IEC 61869.
- One piece.
- Better accuracy class.

LPCT (LPCT)

LOW POWER CURRENT TRANSFORMER

ELECTRICAL CHARACTERISTICS

- Connection type: insulated cable up to 36kV.
- Use: Indoor GIS.
- Um: 0.72 kVrms.
- Type: one-piece toroidal core.

LPCT FEATURES

- Ratio: 500A : 225mV
- Phase variation:< 0.16°
- Accuracy class: 0.2S and 5P20.
- Load impedance: ZL≥2MΩ and CL≤50pF
- Temperature range: -10°C to +60°C
- LV connection: RJ45 connector.
- According to IEC 61869-10 (output connector, ratio).
- One piece.

For more information, please consult our website:
www.zivautomation.com