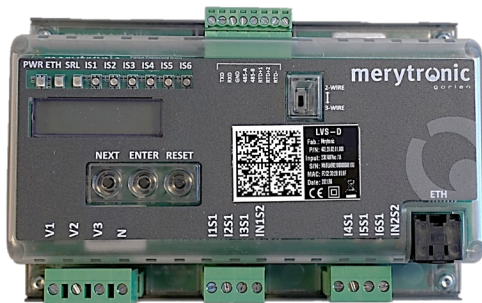


LVS | LV Transformer Supervisor

*Monitoring of LV transformer
in the Secondary Substation*

merytronic
gorlan



The **LVS | LV Transformer Supervisor** device is an element in charge of monitoring the status of the LV part of the Secondary Substation transformer.

Compatible with any type of transformer, this device includes one 3-phase voltage input and one/two 3-phase current input in order to calculate electrical measurements.

Equipped with various types of communication ports, it allows a complete monitoring of the transformer's electrical parameters, included temperature measurement in the advanced model.

Its easy-to-use and intuitive user interface, allows a quick check of its correct installation and operation.

Applications

- **Transformer supervisor** in the LV output: monitoring up to 2 different outputs. For indoor or outdoor transformers (on a pole)
- **Feeder supervisor in the Secondary Substation:** LV panel supply feeder or LV outgoing feeder
- **Monitoring of any intermediate element** of the LV network: feeder pillar, main circuit breaker protection box...
- **LV network remote monitoring.** Device compatible with a 4G communications router
- **Measurement of harmonics in voltage and current and THD** (Total Harmonic Distortion), up to $n=40$ (*)
- **Internal algorithm** for estimating **transformer oil temperature**. This data can be used to know the transformer status, its overload level and its ageing (*)



Main features

- **LVS Simple (LVS-S)**, for one transformer's output: 3 current and 3P+N voltage
- **LVS Double (LVS-D)**, for two transformer's outputs: 6 current and 3P+N voltage
- **Electrical measurements:** current, voltage, harmonics (*) and temperature (*)
- 2 independent **communication ports:** Ethernet and Serial
- PT100 input for **temperature measurement**
- Standard communication protocols: Modbus RTU and Modbus TCP
- Cybersecure communications: Secure Modbus, EST client, OCSP, TLS
- Advanced protection functions, in order to assure data integrity
- Easy-to-use interface: LCD display, buttons and visual indicators

(*) *Advanced version*

Technical Features

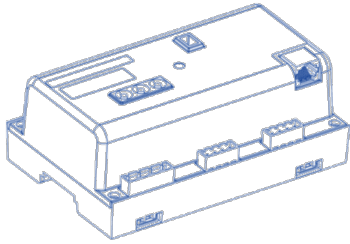
Communications ports	<ul style="list-style-type: none"> 1 Ethernet port (RJ45 connector) 1 RS232/RS485/PT100 port 1 2-wires/3-wires selector for PT100 1 4-pole connector, for three-phase power supply 1 4-pole connectors for current measurement (LVS-S) 2 4-pole connectors for current measurement (LVS-D)
Power Supply	3-phase 230/400 V _{AC} (ph-ph)
Power supply voltage	-15% - +20% (Vn)
Maximum consumption	< 5W/14VA
Temperature range (operational):	-25°C to +70°C
Dimensions	103,70 mm x 160,00 mm x 62,76 mm
Weight	500 gr
Degree of IP Protection	IP40 (EN 60529)
Materials	Industrial polycarbonate (V0)
Lifetime expectation	> 10 years
Installation	Integrated DIN rail

Compliance standards

MECHANICAL TESTS: IEC 60950-1, IEC 60068-2-75, IEC 60068-2-27, IEC 60068-2-6, IEC 60695-2-11, IEC 60529 **EMC TESTS:** IEC 61000-4-16, IEC 61000-4-6, IEC 61000-4-5, IEC 61000-4-4, IEC 61000-4-13, IEC 61000-4-11, IEC 61000-4-2, IEC 61000-4-8. **CONDUCTED AND RADIATED EMISSION:** EN 55023/CISPR32, EN 50065-1. **CLIMATIC TESTS:** IEC 60068-2-2, IEC 60068-2-78, IEC 60068-2-2, IEC 60068-2-1



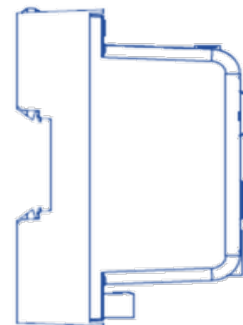
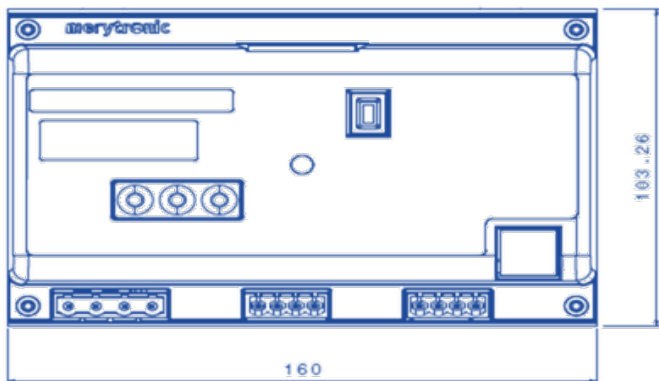
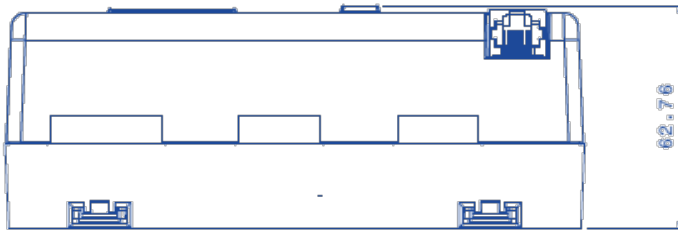
Models of device



	LVS – Simple <i>Monitoring of ONE feeder: incoming or outgoing</i>	LVS – Doble <i>Monitoring of TWO feeders: incoming and outgoing or 2 outgoing</i>
• BASIC MONITORING	✓	✓
• BASIC MONITORING • HARMONICS V-I	✓	✓
• BASIC MONITORING • HARMONICS V-I • TEMPERATURE MEASUREMENT AND HOTSPOT	✓	✓

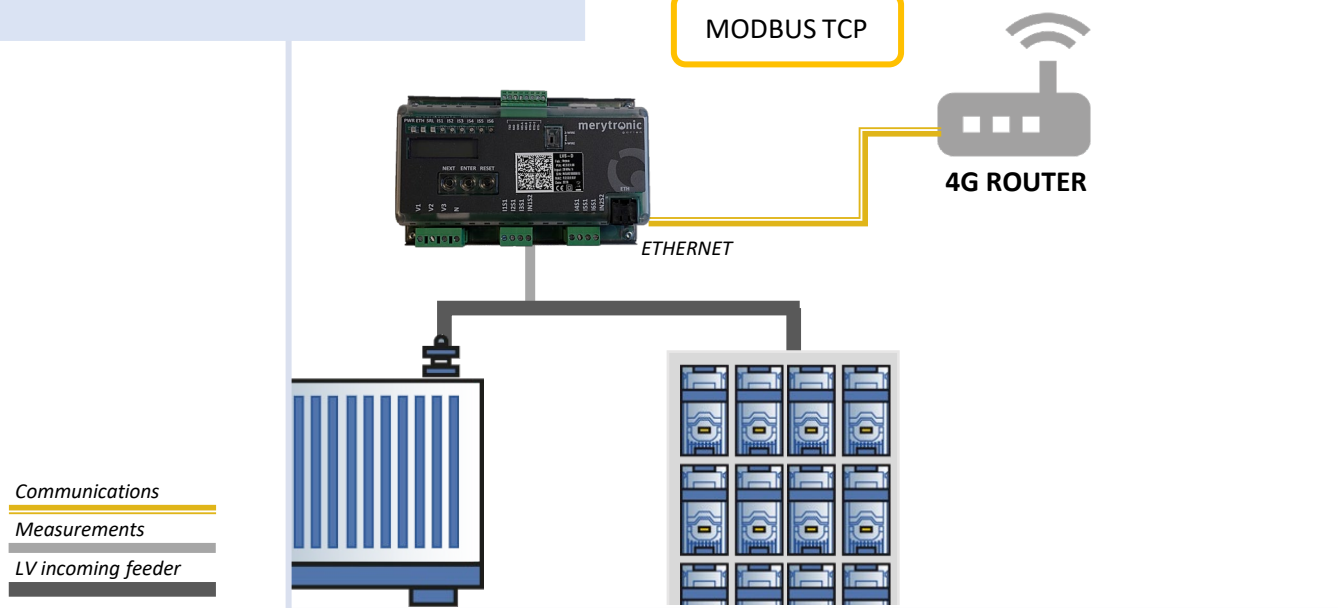
Protective enclosures available for indoor or outdoor use, with or without communications

Dimensions

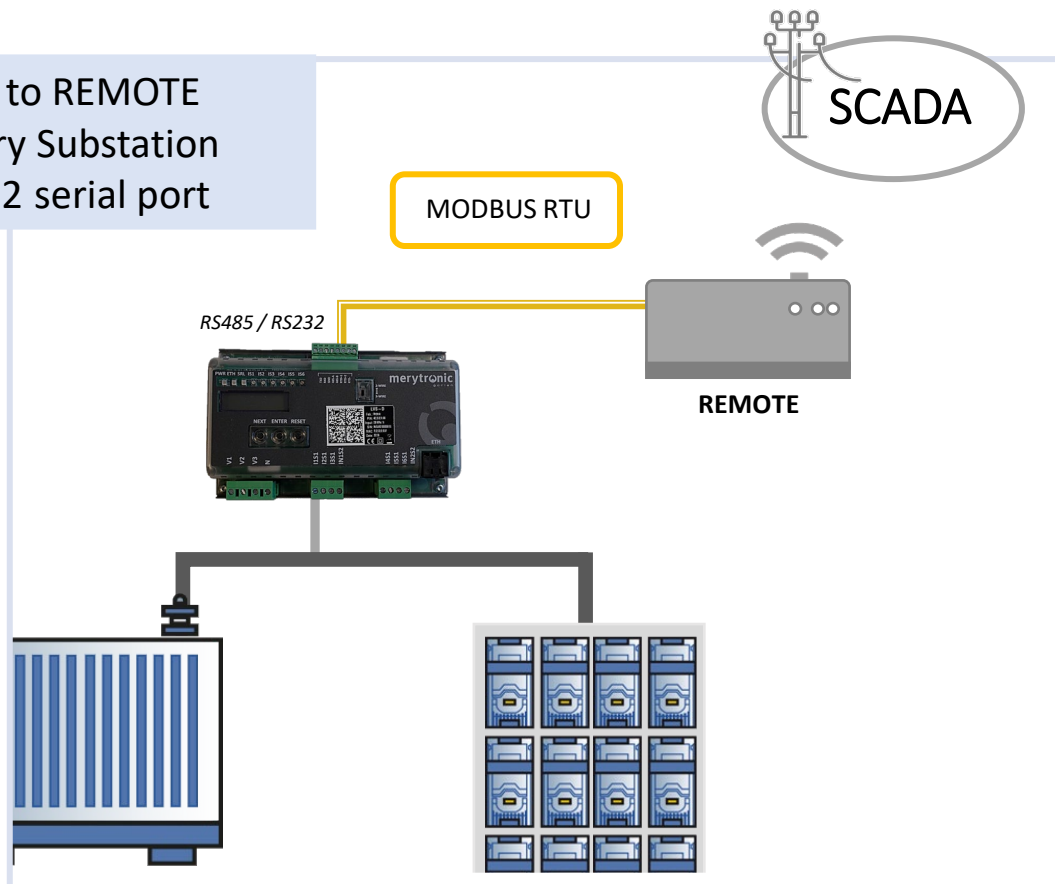


Connection diagrams

LVS connection to SCADA via external 4G Router

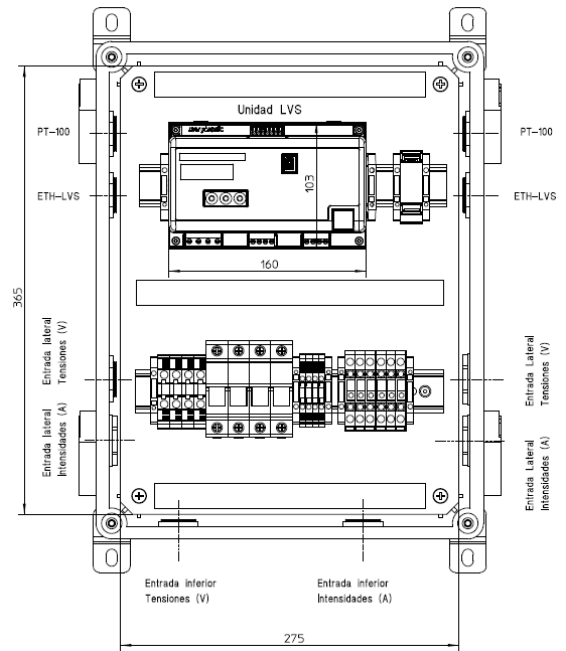
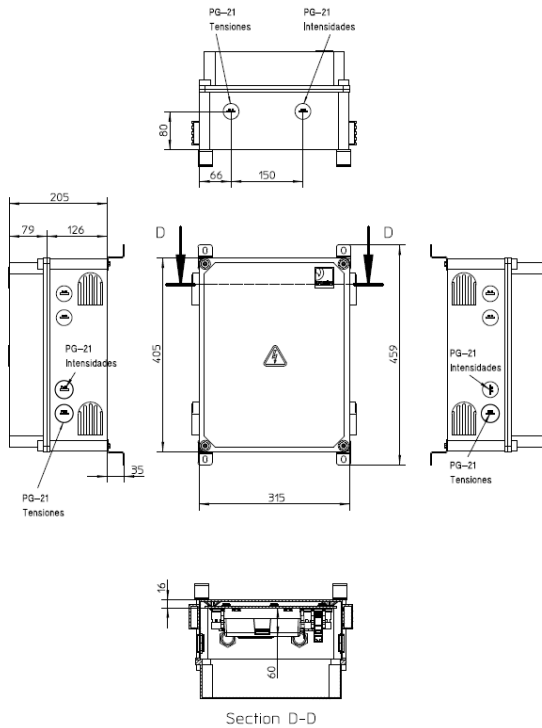


LVS connection to REMOTE inside Secondary Substation via RS485/RS232 serial port



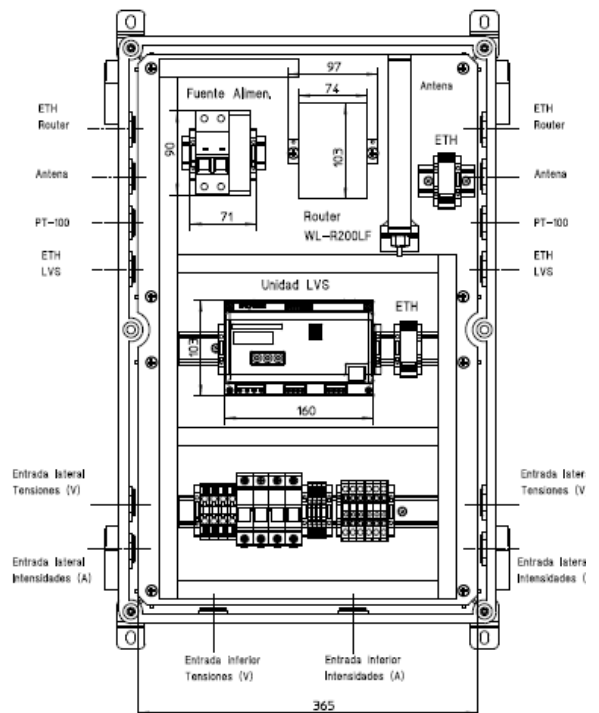
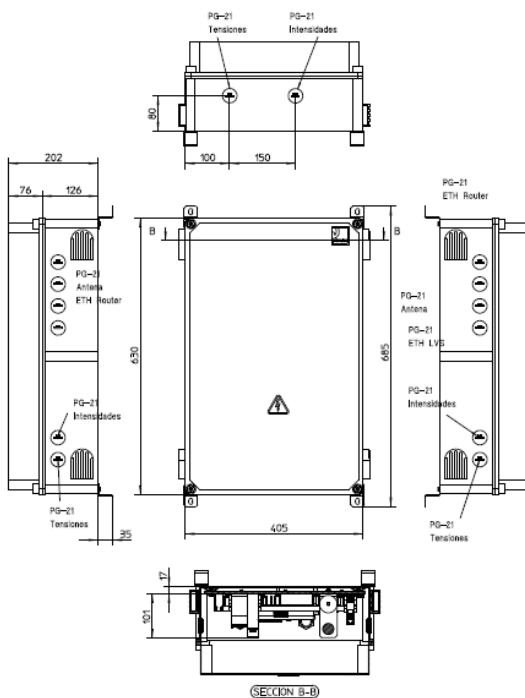
Indoor LVS box – Protections

IP54 | IK08



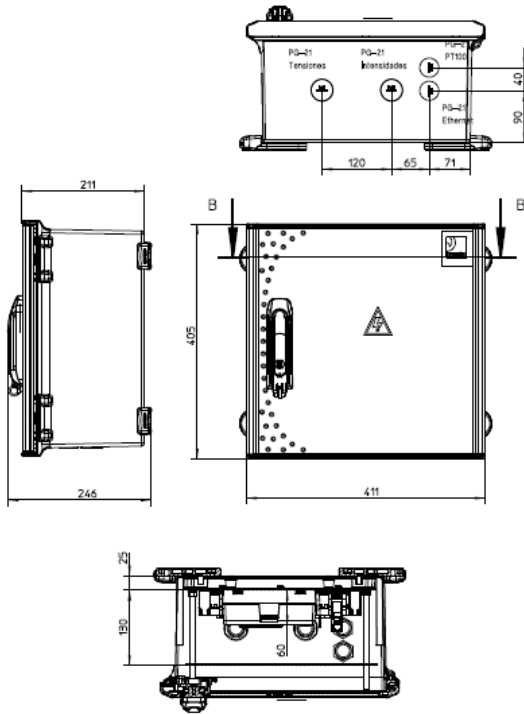
Indoor LVS box – Protections and Communications

IP54 | IK08

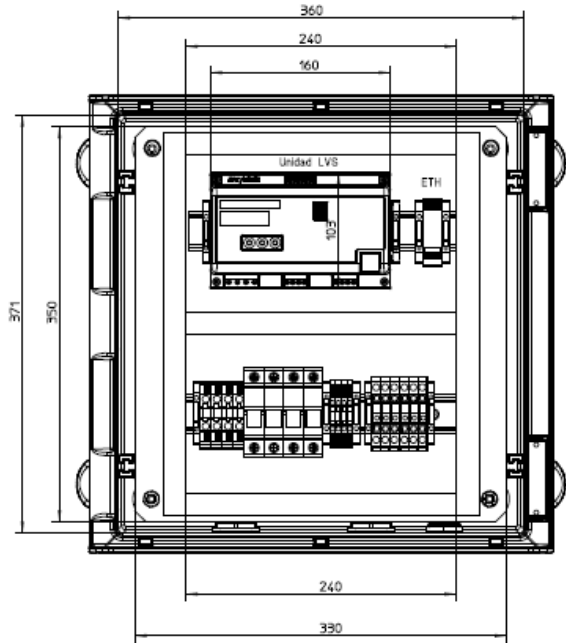


Outdoor LVS box – Protections

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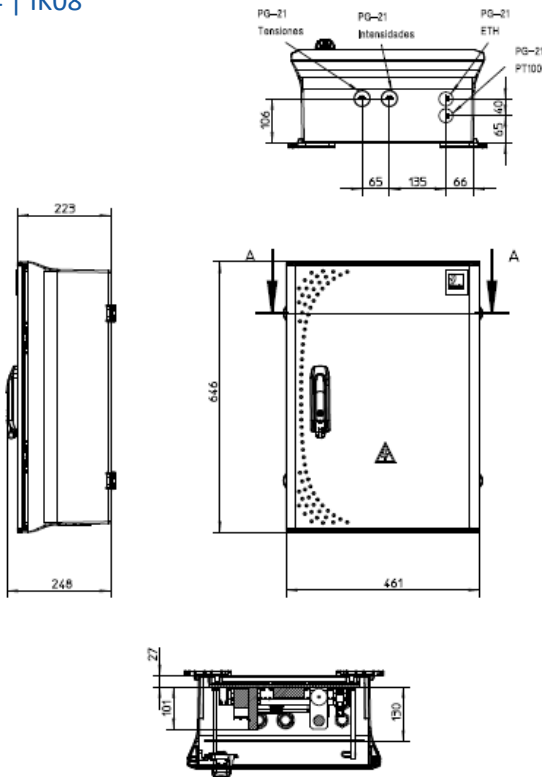


Section B-B



Outdoor LVS box – Protections and Communications

IP54 | IK08



Section A-A

