

INGEPAC

SR PG

PLC coupler
for gas-insulated switchgear



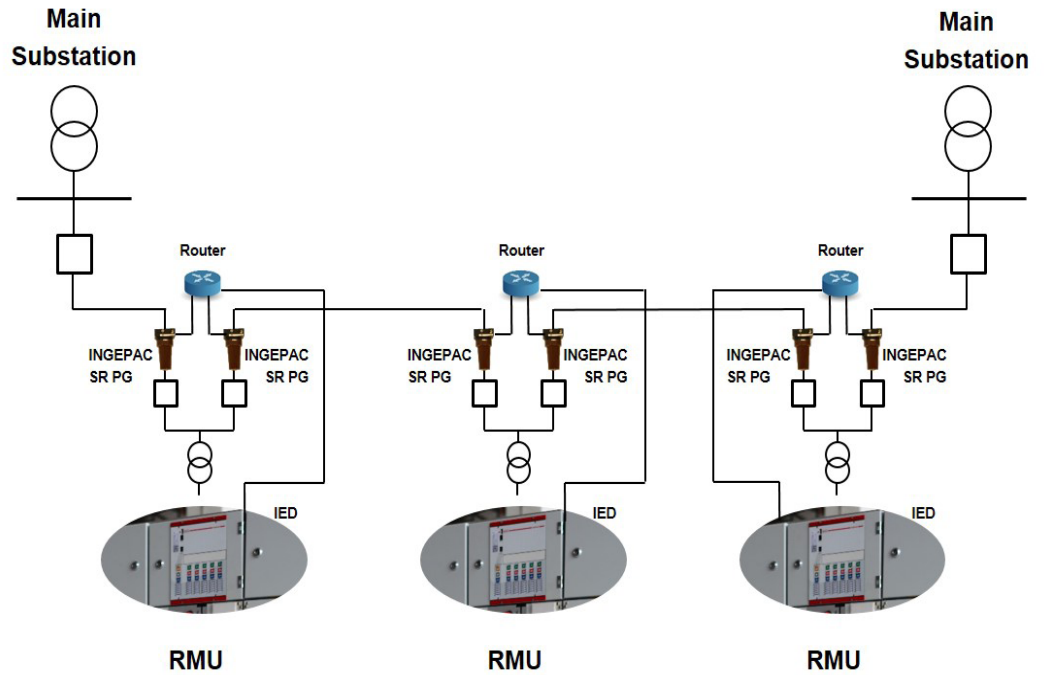
INGEPAC™ SR PG is a device that allows PLC communications coupling in gas-insulated switchgear cubicles. There is a version for up to 36 kV cubicles and another one with voltage sensor for up to 24 kV cubicles.

INGEPAC™ SR PG coupler is suitable for broadband communications, being able to transmit and receive in the **1-32 MHz** range. INGEpac SR PG complies with the **IEC 61869-1:2009** and **IEC 61869-3:2011** standards. Every unit is individually tested to ensure its accuracy.

PLC communication

Applications:

- Communication between MV stations
- Voltage signal for metering, protection, fault passage detection and power quality



Application in Ring Main Units

Type tests

· Industrial frequency withstand voltage	50 / 70 kV depending on model
· Lightning impulse withstand voltage	125 / 170 kV depending on model
· Partial discharges (UNE-EN 61869-1)	<50 pC for 1.2 • 24 kV <20 pC for 1.2 • 24 kV / √3 <10 pF for 27.45 kV @ 1 h (for model without sensor)
· Secondary side overvoltage protection tests	15 A @ 1 s withstand current test
· Dielectric strength (galvanic isolated communication stage)	5 kV @ 1 m / 50 Hz
· Drain coil current capability at industrial frequency	Permanent current: 1 Arms / 50 Hz / 66 h Short time current: 50 Arms / 50 Hz / 0.2 s
· Precision in module and argument	± 1% / ± 1 ° at -10 °C, +20 °C and +60 °C ± 1.5% / ± 1.5 ° at -10 °C, +20 °C and +60 °C
· Insertion losses	<4 dB between 2 and 30 MHz <6 dB between 1 and 2 MHz
· Free fall test (ETSI EN 300 019-2-2 / IEC 60068-2-31)	Public Transportation Environmental Class 2.3 Severity: Mass: 20 Kg Height: 1,2 m

Routine tests

· Industrial frequency withstand voltage test	50 / 70 kV depending on model
· Partial discharge test (UNE-EN 61869-1)	<50 pC for 1,2 • 24kV <20 pC for 1,2 • 24 kV / √3 <10 pF for 27.45 kV (for model without sensor)
· Dielectric strength of galvanic isolated communication stage	5 kV @ 1 m
· Insertion losses	<4 dB between 2 and 30 MHz <7 dB between 1 and 2 MHz

General features

- For the coupler:
 - Frequency range: 1-32 MHz
 - Isolation voltage: 24 or 36 kV depending on the model
 - Coupling capacity: 470 pF
 - Power frequency: 50/60 Hz
 - Temperature range: -10 ° to 60 °C
 - Burden: <10 mW (P), <45 VA (S)
- For the sensor:
 - Accuracy in module: ± 1% at 50 Hz / ± 1.5% at 60 Hz for the temperature range
 - Accuracy in argument: ± 1° at 50 Hz / ± 1.5 ° at 60 Hz for the temperature range
 - Temperature range: -10 °C to 60 °C
 - Transformation ratio: 10,000:1
 - Primary rated voltage: 11 kV, 13.2 kV, 15 kV, 20 kV
 - Power frequency: 50/60 Hz
 - Isolation voltage: 24 kV
 - Surge protection: gas discharger
 - Burden: <3 W
- Protection level at primary side: IP65
- Primary side material: resin
- Low voltage connector: BNC type
- Earthing terminal: stud bolt and M6 screw
- Connection format with MV:
 - Compatible with T terminal and DIN C type connectable bushing
 - M16 primary terminal connection and length less than 31 mm
- Total length: 147 ±2 mm
- Weight: 900 ± 20 g
- Screw material: A2 steel, hardness 70