



RTU for medium and small applications

INGEPAC™ DA PTS is an Intelligent Electronic Device (IED) designed for remote terminal unit functions that allows data acquisition, IEC 61131-3 programmable logic capabilities and the integration of IEDs with different protocols.

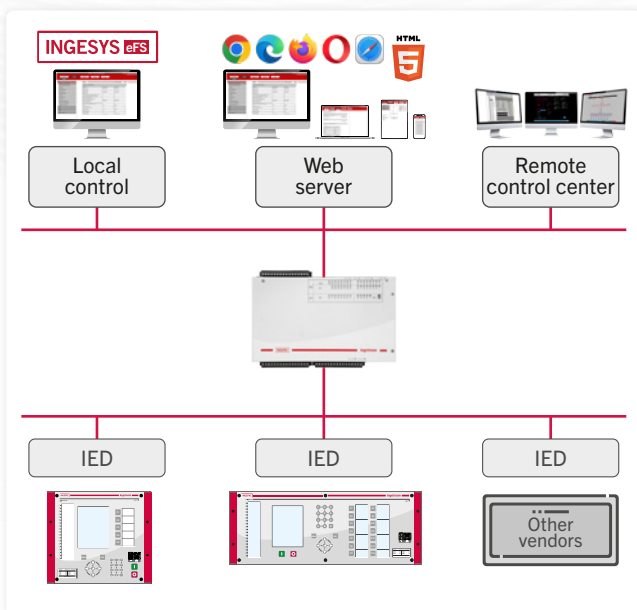
Its high-performing and compact design, including **DIN rail or front mounting**, make it ideal solution for small or medium substations.

INGEPAC™ DA PTS acts as a **communication gateway** between the substation and the different telecontrol centres enabling remote monitoring of status, measurements and alarms.

The device manages the main protocols including **IEC 61850** (certificated) and provides the latest **cybersecurity** features.

Applications

- Remote Terminal Unit (RTU) for small substations
- Integration of IEDs with different protocols
- Programmable Logic Controller (PLC) for substation process automation



Functions

Telecontrol centers gateway
 Remote command
 Capture of wired digital signals
 Acquisition of analog signals from converter (mA or V)
 IEDs integration

Communications

Protocols: IEC 61850, IEC 60870-5-101/103/104, DNP3, Modbus
 Redundancy: PRP, HSR, D-link failure, switch mode
 Web services: HTTP/HTTPS, FTP/sFTP

Synchronization

IEEE 1588 v2
 SNTP
 IRIG-B

Local HMI

3,5" display (optional)
 Configurable graphical displays
 I/O/L/R pushbuttons and programmable keyboard
 Configurable LEDs

Data acquisition

SOE (2000)

IEC 61131-3 logics



INSULATION AND ELECTROMAGNETIC TESTS

Electromagnetic compatibility requirements	IEC 60255-26
Dielectric withstand	IEC 60255-27
Insulation resistance measurement	IEC 60255-27
Voltage impulse	IEC 60255-27
Electrostatic discharge immunity	IEC 61000-4-2
Radiated radiofrequency electromagnetic field immunity	IEC 61000-4-3
Electrical fast transient / burst immunity	IEC 61000-4-4
Surge immunity	IEC 61000-4-5
Immunity to conducted disturbances, induced by radiofrequency fields	IEC 61000-4-6
Power frequency magnetic field immunity	IEC 61000-4-8
Impulse magnetic field immunity	IEC 61000-4-9
Damped oscillatory magnetic field immunity	IEC 61000-4-10
Immunity to conducted, common mode disturbances	IEC 61000-4-16
Ripple on DC input power port	IEC 61000-4-17
Damped oscillatory wave immunity	IEC 61000-4-18
Voltage dips, short interruptions and voltage variations immunity	IEC 61000-4-29
Withstand to radiated electromagnetic interference from transceivers	IEEE 37.90.2

CLIMATIC TESTS

Cold	IEC 60068-2-1
Dry heat	IEC 60068-2-2
Change of temperature	IEC 60068-2-14
Damp heat cyclic	IEC 60068-2-30
Damp heat steady	IEC 60068-2-78
External protection level	IEC 60529

MECHANICAL TESTS

Vibrations	IEC 60255-21-1
Shock and bump	IEC 60255-21-2
Seismic	IEC 60255-21-3
Random vibrations	IEC 60068-2-64



MAIN FEATURES

Different mechanical solutions (compact, front panel, DIN rail) and front interfaces (pushbuttons, LEDs, etc.), offering the optimal configuration for different spaces and facilities

Through the front USB you can access the device to retrieve reports and equipment CID, load an external CID, load the firewall configuration, or update the equipment firmware

Synchronization from communications protocols, SNTP, IEEE 1588 v2 (PTP), demodulated IIRIG-B input or PPS input, pacFactory or display

Web server for monitoring and setting without needing additional software

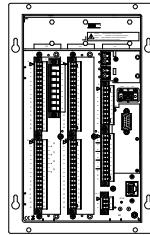
Cybersecurity features: sFTP, HTTPs, firewall, audit log, password accessing, RBAC, LDAP, session management, etc.

HARDWARE OPTIONS

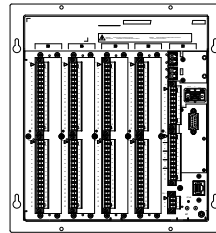
Mounting options

Flush or backplate surface mounting:

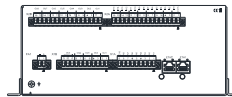
- 1/3 19" rack (up to 2 I/O slots)



- 2/3 19" rack (up to 4 I/O slots)



- Compact housing (1 I/O slot)



Boards options

- 15 DI + 8 DO
- 24 DI + 16 DO
- 15 DI + 16 DO
- 4 DI + 5 DO
- 11 DI
- 13 DI
- 8 AI from converter (mA or V)
- 4 V + 4 I + 4 DI + 5 DO
- 4 V + 4 I + 4 DI + 13 DO

Optional

- High speed digital outputs

Communication ports

- 1 serial + 2 Ethernet

Power supply

- Available voltages: 24/48 Vdc or 125/220 Vdc

Optional IP55 front protection

SOFTWARE

All the devices in the INGEpac™ product range can be accessed using powerful software tools developed by Ingeteam which run on Windows®

Application specifically designed for simple and user-friendly access to the equipment

INGESYS eFS