iGrid T&D
SMART SOLUTIONS FOR SMART GRIDS

iRTU-B0D1

RTUs for Substation Automation

Overview

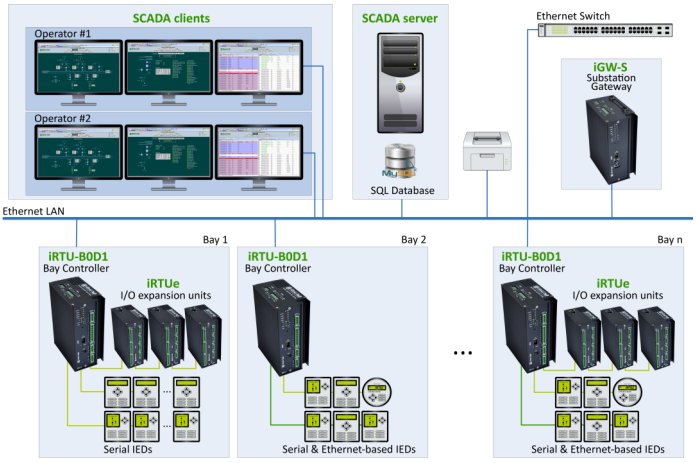
A distributed control architecture based on **iRTU** telecontrol units complies with the basis of scalability and modularity, providing a complete solution open to any technology and communication media. **iRTU** Series products may perform different functions within a facility based on their configuration: they are able to operate as Remote Terminal Units (RTU), as concentrators of data from other devices (gateways) or as a BCU (bay control unit), complying at all times with the required power transmission and distribution industry standards, on any voltage level.

Highlights

- Smart and modular remote telecontrol units suitable for HV Substation Automation and Telecontrol of MV grids.
- High scalability and optimal adaptation to any particular need.
- Availability of multiple communication options including embedded Ethernet switches, built-in GPRS or PSTN modems.
- **iRTU** family may perform different functions within a facility based on their configuration. They can be used as remote telecontrol units, substation gateways, I/O IEDs, bay

Features

- Multiple simultaneous control centers, with one or more communication protocols.
- IEC61850-3 EMC compliant.
- Communication ports: 10/100BaseTx Ethernet port (RJ45 connector) and RS232/485/422 serial ports.
- IEC61131-3 PLC automation programming.
- Real time processing with 1ms accuracy.



- Real time clock with 1.5ppm time drift.
- **iRTU** models come with a full range of protocols including IEC60870-5-101, IEC60870-5-102, IEC60870-5-103, IEC60870-5-104, IEC61850 MMS client/server, IEC61850 GOOSE publisher/subscriber, Modbus RTU/TCP, DNP3.0 (serial and TCP), DLMS, IEC62056, Profibus and Procome, in order to ensure the communication with new and legacy IEDs and SCADA master stations.
- Digital inputs:
  - **iRTU-B0D1** devices provide 24 isolated (2.5kVrms) digital inputs for direct data acquisition.
  - High I/O density, which can be expanded by using **iRTUe** devices.
  - Rated input voltage: 24 Vdc, 48 Vdc, 110Vdc, 125 Vdc or 220Vdc (ON-activation voltage Vi>85%Vn and OFF-deactivation voltage Vi<60%Vn).
  - 1 ms accuracy.

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Specification Sheet

General	Configuration & Maintenance	Easy configuration with our free iConf tool. Command console with complete information of packet exchange, on all available protocols. Local or remote maintenance connection, using USB or Ethernet ports.
	RTC	High accuracy real time clock with 1.5ppm drift.
	Web Browser Viewer	Internal web server, allowing the real time monitoring of the system and all internal parameters.
	CPU features	ARM9 @ 400Mhz, with 256Mbytes Flash and 128Mbytes RAM.
	Communication ports	- (1) Ethernet 10/100BaseTX port (RJ45). - (4) Serial ports (2.5 kVrms isolation) with TX/RX LED indicators: • (1) Full RS232/RS422/RS485 software configurable. • (2) Basic RS232/RS422/RS485 software configurable. • (1) RS422/RS485 (EXP422 port) software configurable, for connection to iRTUe I/O modules.
	Digital inputs	Isolation: 2.5 kVrms Time accuracy: 1ms Activation/Deactivation : ON when Vi>85%Vn OFF when Vi<60%Vn Other levels upon requirement Connectors: MVSTBR 2,5 9 pins, grouping digital inputs in blocks of 8 DIs and one common.
iGComms Software application	Time synchronization	SNTP (client and server), IEC60870-5-101, IEC60870-5-102, IEC60870-5-103, IEC60870-5-104, DNP3.0, DLMS, Procome and Profibus DP.
	Redundancy	iRTU can be deployed on a hot-standby configuration, and include redundant power supply.
	iGComms communication stack	Master/Slave IEC60870-5-101 Master/Slave DNP3.0 (serial, UDP, TCP) Master/Slave Modbus TCP/UDP Master IEC60870-5-102 Master Profibus DP Master IEC62056-21 IEC61850 MMS Client/Server Master/Slave IEC60870-5-104 Master/Slave ModbusRTU Master IEC60870-5-103 Master DLMS Master Procome SNMP Agent/Manager IEC61850 GOOSE Publisher/Subscriber
	Security	IEC 62351-3 and IEC 62351-5 support, including TLS/SSL and VPN connections.
	IEC61131-3 Automation	Logic and PLC programming is available in iRTU applications.
	Calculations and formulas	Using iConf and LUA language, simple and complex formulas can be setup.
Device features	Power consumption	Less than 3W.
	Power supply	W : wide range, 32 - 250Vdc / 80 - 250Vac (2.5kVrms isolation) 24 : 19.5-60Vdc (2.5kVrms isolation)
	EMC type test	IEC 60950-1, IEC 60255-5:2000, EC 60255-22:2000, EN 55022, IEC 61000-6-4, IEC 61000-6-5, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-9, IEC 61000-4-10, IEC 61000-4-12, IEC 61000-4-16, IEC 61000-4-17, IEC 61000-4-18, IEC 61000-4-29.
	Environmental	Operating temperature : -25ºC to +70ºC IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-3, IEC 60068-2-14, IEC 60068-2-30, IEC 60068-2-38
	Vibration & Shock test	IEC 60068-2-6, IEC 60068-2-7
	Physical	External dimensions: 173 x 137 x 78.4 (mm)
		Rail mounting

Ordering information	iRTU-B0D1-Z.V	**Z:** Power supply options: **24**: 19.5 - 60 Vdc **W**: 32 - 250 Vdc / 80 - 250 Vac **V:** Digital inputs nominal voltage options: **24**, **48**, **110**, **125** or **220**Vdc Examples: iRTU-B0D1-W.48, iRTU-B0D1-24.24, iRTU-B0D1-W.220

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