

RTUs for Substation Automation



Overview

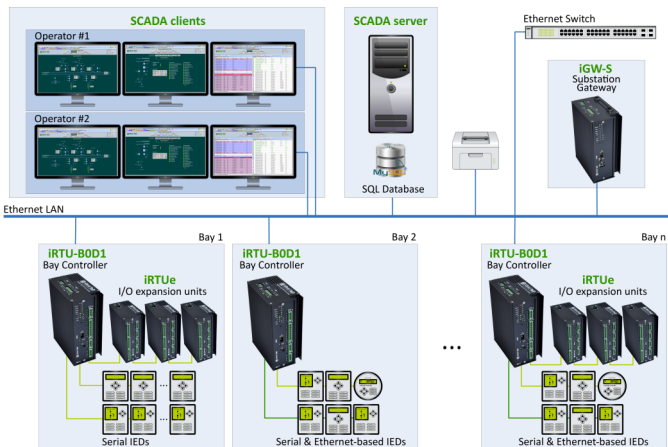
A distributed control architecture based on **iRTU** telecontrol units complies with the basis of scalability and modularity, providing a complete solution open to any technology and communication media. **iRTU** Series products may perform different functions within a facility based on their configuration: 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 controllers, protocol converters, etc.
- High I/O density. **iRTU** devices provide I/O capabilities for direct data acquisition which can be expanded by using **iRTUe** devices.

Features

- Multiple simultaneous control centers, with one or more communication protocols.
- IEC61850-3 EMC compliant.
- Multiple communication options: Ethernet, serial, GPRS/3G.
- 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.



Models

- **iRTU-B**: Ethernet and serial ports.
- **iRTU-S**: Ethernet (10/100BaseTX and FX100) with RSTP and serial ports.
- **iRTU-M**: 3G/GPRS, Ethernet and serial ports.

Internal I/O boards

- **D1**: 24 digital inputs.
- **C1**: 8 digital inputs, 4 relay outputs and 2 DC current analog inputs.

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	iRTU-B0/1: (1) Ethernet and up to (4) isolated serial ports. iRTU-M0/1: (1) Ethernet, (1) 3G/GPRS modem and up to (3) isolated serial ports. iRTU-S3: (2) Ethernet 10/100BaseTX, (2) Ethernet FX100 with RSTP and up to (4) isolated serial ports.														
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. S3 Series includes IEEE 802.1d RSTP (Rapid Spanning Tree Protocol).														
	iGComms communication stack	<table border="0"> <tr> <td>Master/Slave IEC60870-5-101</td> <td>Master/Slave IEC60870-5-104</td> </tr> <tr> <td>Master/Slave DNP3.0 (serial, UDP, TCP)</td> <td>Master/Slave ModbusRTU</td> </tr> <tr> <td>Master/Slave Modbus TCP/UDP</td> <td>Master IEC60870-5-103</td> </tr> <tr> <td>Master IEC60870-5-102</td> <td>Master DLMS</td> </tr> <tr> <td>Master Profibus DP</td> <td>Master Procome</td> </tr> <tr> <td>Master IEC62056-21</td> <td>SNMP Agent/Manager</td> </tr> <tr> <td>IEC61850 MMS Client/Server</td> <td>IEC61850 GOOSE Publisher/Subscriber</td> </tr> </table>	Master/Slave IEC60870-5-101	Master/Slave IEC60870-5-104	Master/Slave DNP3.0 (serial, UDP, TCP)	Master/Slave ModbusRTU	Master/Slave Modbus TCP/UDP	Master IEC60870-5-103	Master IEC60870-5-102	Master DLMS	Master Profibus DP	Master Procome	Master IEC62056-21	SNMP Agent/Manager	IEC61850 MMS Client/Server	IEC61850 GOOSE Publisher/Subscriber
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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 : -25°C to +70°C 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-XY-Z.V-C	<p>X:</p> <p>B0: (1) ETH 10/100BaseTX, (1) Full RS232/RS422/RS485, (2) Basic RS232/RS422/RS485, (1) RS422/RS485</p> <p>B1: (1) ETH 10/100BaseTX, (1) Full RS232/RS422/RS485, (1) Basic RS422/RS485</p> <p>S3: (2) ETH 10/100BaseTX, (2) ETH FX100, (1) Full RS232/RS422/RS485, (2) Basic RS232/RS422/RS485, (1) RS422/RS485</p> <p>M0: (1) ETH 10/100BaseTX, (1) GPRS modem, (2) Basic RS232/RS422/RS485, (1) RS422/RS485</p> <p>M1: (1) ETH 10/100BaseTX, (1) 3G modem, (2) Basic RS232/RS422/RS485, (1) RS422/RS485</p> <p>Y: Internal I/O board options: D1: (24) digital inputs C1: (8) digital inputs, 4 relay outputs (8A@250Vac) and 2 analog inputs @ 20mA</p> <p>Z: Power supply options: 24: 19.5 - 60 Vdc W: 32 - 250 Vdc / 80 - 250 Vac</p> <p>V: Digital inputs nominal voltage options: 24, 48, 110, 125 or 220 Vdc</p> <p>C: FX100 connector options for S3 models: ST, SC, or SFP</p>
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