



RTU8

The RTU for small utility applications
featuring Modbus



BRODERSEN
simplifying systems

RTU8 Compact Outstation Remote Data logger



TYPE	UCR-28IO/RTUzxx.Dx	UCR-28IO/RTUzxx.Dx	UCR-32DI/RTUzxx.D1	UCR-12I/RTUzxx	UCR-8DIO/RTUzxx.P1	CABLES, SOFTWARE & COMPATIBLE ACCESSORIES	
INPUTS/OUTPUTS	16 (including 2 Counter/SO input)	16 (including 2 Counter/SO input)	32	8 (incl. 2 counter/SO input)	8	DESCRIPTION	PART NUMBER
Digital inputs	8	8	-	-	8	CABLES	
Digital outputs	4	4	-	4	-	Null-modem, 9-pole female/female, 3m.	UCC-561
Analogue inputs	4	4	-	-	-	Modem, 9-pole female/25-pole male.	UCC-563
Expansion	Via expansion modules.	Via expansion modules.	Via expansion modules.	Via expansion modules.	Via expansion modules.	Modem cable shielded 9 pole/9 pole 0,5m	UCC-565
Maximum number of I/O	496 digital or 100 analogue or combination of both.	496 digital or 100 analogue or combination of both.	496 digital or 100 analogue or combination of both.	496 digital or 100 analogue or combination of both.	496 digital or 100 analogue or combination of both.	Modem cable shielded 9 pole/9 pole 1,5m	UCC-567
Galvanic separation	Optocoupler.	Optocoupler.	Optocoupler.	Optocoupler.	Optocoupler.	Modem cable std. 9pole/9 pole 1,5m	UCC-568
Indicators DI/DO	Red LED inputs/yellow LED outputs.	Red LED inputs/yellow LED outputs.	Red LED inputs.	Red LED inputs.	Red LED inputs/yellow LED outputs	GSM modem cable 9 pole/15 pole	
Built-in power supply	Yes (see options).	Yes (see options).	Yes (see options).	Yes (see options).	Yes (see options).	Local bus, 10 cm.	UCC-501
Built-in battery charger	Option.	Option.	Option.	Option.	Option.	Local bus, 50 cm.	UCC-502
12/24V loop supply	Yes (see options).	Yes (see options).	-	-	-	Local bus, 100 cm.	UCC-503
External voltage output	Yes (see options).	Yes (see options).	Yes. (see options)	Yes (see options)	Yes (see options)	Modem cable 2nd serial, 0,5m	UCC-300/0,5
						Modem cable 2nd serial, 1,5m	UCC-300/1,5
						Null modem cable 2nd serial, 0,5m	UCC-301/0,5
						Null modem cable 2nd serial, 1,5m	UCC-301/2,5
COMMUNICATION	MODBUS RTU (slave).	MODBUS RTU (slave).	MODBUS RTU (slave).	MODBUS RTU (slave).	MODBUS RTU (slave).	SOFTWARE	
Protocol	Serial cable, modem, radio and GSM.	Serial cable, modem, radio and GSM.	Serial cable, modem, radio and GSM.	Serial cable, modem, radio and GSM.	Serial cable, modem, radio and GSM.	Windows based IEC1131-3 programming	IOTOOL32 Pro
Data transmission	19200 Bit/sec.	19200 Bit/sec.	19200 Bit/sec.	19200 Bit/sec.	19200 Bit/sec.	Object oriented programming.	
Max. Baud rate	8, 1, None.	8, 1, None.	8, 1, None.	8, 1, None.	8, 1, None.	Drivers and tools, incl. DDE/DLL support.	
Data format	480 Kbytes - resizeable 5-100%	480 Kbytes - resizeable 5-100%	480 Kbytes - resizeable 5-100%	480 Kbytes - resizeable 5-100%	480 Kbytes - resizeable 5-100%	COMPATIBLE PRODUCTS	Tested by Brodersen
Log capacity	Yes.	Yes.	Yes.	Yes.	Yes.	ZenOn (Copa Data) • B. V. Electronic	Tested by Brodersen
Built-in real time clock	Yes, up to 30 telephone numbers.	Yes, up to 30 telephone numbers.	Yes, up to 30 telephone numbers.	Yes, up to 30 telephone numbers.	Yes, up to 30 telephone numbers.	Citect • Factory Link • iFIX • IgSS • InTouch	Tested by Brodersen
Dial-up function	Password and Dial Back.	Password and Dial Back.	Password and Dial Back.	Password and Dial Back.	Password and Dial Back.	InControl • Kepware • Labtech Notebook •	Tested by Brodersen
Security	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Labtech Control • LabWIEW •	Tested by Brodersen
SMS	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Yes, with GSM modem	Microsoft Excel • Microsoft Access •	Tested by Brodersen
						Microsoft Visual Basic	Tested by Brodersen
MOUNTING	35 mm symmetrical.	35 mm symmetrical.	35 mm symmetrical.	35 mm symmetrical.	35 mm symmetrical.	MODEMS	
DIN rail	Anodized aluminium.	Anodized aluminium.	Anodized aluminium.	Anodized aluminium.	Anodized aluminium.	Brodersen UCM-8x • LASAT Safire 560 •	Tested by Brodersen
Housing	Yes.	Yes.	Yes.	Yes.	Yes.	LASAT Unique • US Robotics Sportster •	Tested by Brodersen
Plug-in input/output terminals	Yes. 9 Pole Sub D male connector.	Yes. 9 Pole Sub D male connector.	Yes. 9 Pole Sub D male connector.	Yes. 9 Pole Sub D male connector.	Yes. 9 Pole Sub D male connector.	Westermo TD-32 (industrial modem) •	Tested by Brodersen
RS232 serial port						Westermo TD-23	Tested by Brodersen
Dimensions: (HxWxD)	80 x 162 x 62 mm.	80 x 162 x 62 mm.	80 x 162 x 62 mm. (RTU00: 80 x 108 x 62 mm.)	80 x 162 x 62 mm. (RTU00: 80 x 108 x 62 mm.)	80 x 162 x 62 mm. (RTU00: 80 x 108 x 62 mm.)	GSM MODULE	Tested by Brodersen
excluding terminal blocks						Brodersen UCM-91/92 • Wavecom	Tested by Brodersen
PROGRAMMING	IOTOOL32 Pro	IOTOOL32 Pro	IOTOOL32 Pro	IOTOOL32 Pro	IOTOOL32 Pro	RADIO	Tested by Brodersen
Config with B-CONW or A-WARE						Brodersen UCW-5x	Tested by Brodersen
Upload/communication software						PASCALL Wireless 500 • SATEL 2ASX	Tested by Brodersen
Maximum size of programmes	23 Kbyte.	23 Kbyte.	23 Kbyte.	23 Kbyte.	23 Kbyte.	VARTA BATTERIES	Tested by Brodersen
						ACCU CF12V/3AH • ACCU CF12V/6,5AH	Tested by Brodersen
						ACCU CF12V/12AH0	Tested by Brodersen
RTUzxx OPTIONS	Modbus RTU Master	Modbus RTU Master	Modbus RTU Master	-	Modbus RTU Master		
Additional RS232 port options (z)	Mirrored Modbus RTU Slave	Mirrored Modbus RTU Slave	-	-	-		
RTU1xx	Modbus RTU Slave	Modbus RTU Slave	Modbus RTU Slave	-	Modbus RTU Slave		
RTU2xx							
RTU3xx							
Power Supply options (xx)			PS (10-30V)	PS (12V DC +10%)	PS (10-30V DC)		
RTU00	PS (110-240V)	PS (110-240V)	PS (110-240V)	PS (110-240V)	PS (110-240V)		
RTU10	PS (110-240V), LPS (24V/200mA)	PS (110-240V), LPS (24V/200mA)	-	-	-		
RTU11	PS (110-240V), LPS (12V/400mA)	PS (110-240V), LPS (12V/400mA)	-	-	-		
RTU12	PS (110-240V), UPS 12V	PS (110-240V), UPS 12V	PS (110-240V), UPS 12V	PS (110-240V), UPS 12V	PS (110-240V), UPS 12V		
RTU20	PS (110-240V), UPS, LPS (24V/200mA)	PS (110-240V), UPS, LPS (24V/200mA)	-	-	-		
RTU21	PS (110-240V), UPS, LPS (12V/400mA)	PS (110-240V), UPS, LPS (12V/400mA)	-	-	-		
RTU22	PS (24-48V), EXT PS 12V	PS (24-48V), EXT PS 12V	PS (24-48V), EXT PS 12V	PS (24-48V), EXT PS 12V	PS (24-48V), EXT PS 12V		
RTU30	-	-	-	BS	BS		
RTU40	ps (24-60v), ext. ps 24v	ps (24-60v), ext. ps 24v	ps (24-60v), ext. ps 24v	ps (24-60v), ext. ps 24v	ps (24-60v), ext. ps 24v		
RTU50	ps (110-240v), ups 24v	ps (110-240v), ups 24v	ps (110-240v), ups 24v	ps (110-240v), ups 24v	ps (110-240v), ups 24v		
RTU60							
Analogue inputs Dx:	0-10V/0-20mA	0-10V/0-20mA	-	0-10V/0-20mA	-		
D1:	4-20mA	4-20mA	-	4-20mA	-		
D2:	0-5V	0-5V	-	0-5V	-		
D3:	0-20mA	0-20mA	-	0-20mA	-		
D6:	0-2V	0-2V	-	0-2V	-		

PS = Built-in power supply.
 UPS = Built-in battery charger for 12V battery.
 LPS = 12/24V Loop supply.
 BS = Battery supply interface incl. solar panel connection

Remote data logging

Telemetry/Remote data logging

CONCEPT

The RTU8 is designed specifically for low cost remote monitoring and control applications. Although the DIN-rail mountable unit only measures 80 (H) x 162 (W) x 62 (D), it provides all the RTU functions that you will expect from a general purpose RTU and a lot more...

Process signals:

- On board I/O options – 16DI/8DO/4AI, 16DIO, 32DI, 8DI/4AI, or 8DIO.
- I/O expansion – up to 31 plug 'n' play I/O expansion modules:
 - digital input (24V or 48V DC).
 - digital output – PNP, relay or AC light control (230 VAC, 42VAC or 10-15VAC).
 - analogue output – voltage or current.
 - analogue input (V, I, PT100, PT-500, PT-1000, or thermocouple J/K/R/S/T).
 - counter input.
- All I/Os are isolated.

IEC1131-3 application programming environment.

Flexible communication:

- Bearers - PSTN, GPRS, GSM, satellite, leased line, radio or Ethernet.
- Open protocols - Modbus RTU, IEC-60870-101 or TCP/IP.
- 2nd serial port gateway option (eg Modbus RTU Master/slave).
- SMS messaging via GSM or GPRS modems.

480 KB of RAM for data logging.

PC Data Collection Utility (DDE Server and DLL APIs) available that interfaces to industry standard SCADA systems such as zenOn, InTouch, Factory Link, Labview and Fix32.

Extensive AC/DC power options.

PRINCIPLE

(master) can communicate with a large number of RTU8s (slaves).

At the central monitoring station, the PC is equipped with communication software (IOTOOL32 Pro/Scada), which handles the communication to the RTU8 modules.

Telemetry/Remote data logging

APPLICATIONS

Asset and Facilities Management
Telemetry is being used increasingly in Asset & Facilities Management for the following reasons:

- Current focus on the speed to respond to customers` needs will be changed to the speed to predict customers` needs.
- Outsourcing of maintenance service to:
 - reduce capital expenditure
 - provide more flexibility
 - enable rapid installation and implementation
 - focus on core business
 - reduce risk
 - minimise downtime through innovative smart asset management service.

The RTU8 is extensively used in monitoring and control of assets such as pumping stations, flow meters, pressure sensors, waste and water treatment works, electrical switch gear, transformers, motors and gas pipelines.

In Facilities Management, the RTU8 is being used to monitor fire alarms, HVAC, access control, compressors and standby generators.

Energy Management

The deregulation of the utilities industry has created many opportunities for remote metering and demand management. Sophisticated systems are being implemented to monitor and control electricity consumption. This has resulted in the RTU8 being employed in many metering applications.

Traffic and Signal Management

As traffic grows in major cities all around the world, it is increasingly important to be able to detect traffic light failures remotely and efficiently to avoid gridlock situations. The RTU-8 is being used in conjunction with the traffic light controllers to ensure faulty traffic lights are reported within seconds to the control rooms.

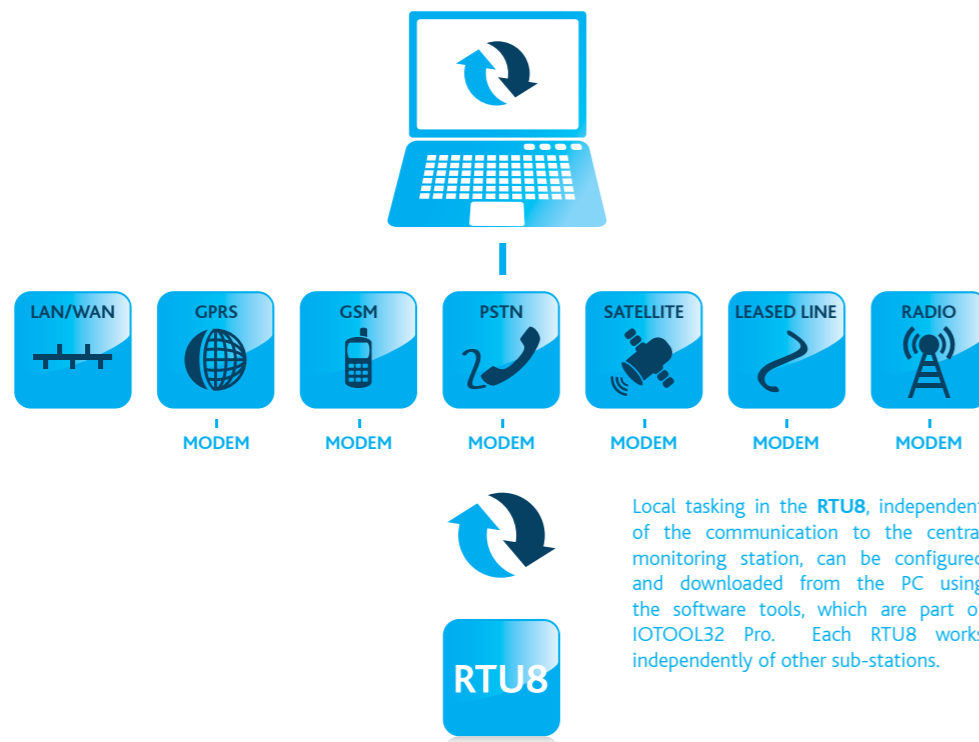
Similar applications are also found in railway signalling equipment. This ranges from point heating to light failure and level crossings.

Supply Chain Management

Although it has always been possible to operate Vendor Managed Inventory (VMI) schemes in bulk raw materials supply (eg fuel, sugar, liquid yeast, cement, and plastic granules), it was only recently that these schemes have begun to prosper. This is partly due to:

- purchasers seeking to establish a closer relationship with their suppliers
- the need for real-time demand data to ensure a steady and timely supply of goods
- the dramatic fall in the pay back period for telemetry schemes in the last few years.

With the Brodersen telemetry system, the re-ordering level (or the level of safety inventory) can be set by the customer and used by the supplier to trigger an automatic "just in time" replenishment of stock. Suppliers benefit from having the real time consumption data that their Enterprise Resource Planning (ERP) system can use to plan their production.



Concept & Applications

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Brodersen Systems has for more than 30 years designed and produced industrial process components including remote outstations, data loggers and data communication systems for the process and automation industry.



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