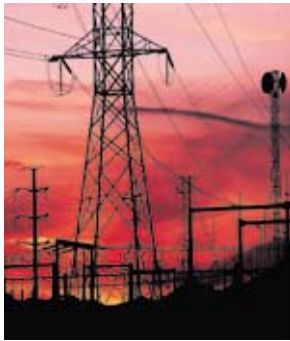


BRODERSEN

simplifying process



RTU32

A Universal Controller



Series 4500

RTU32 Universal Controller

The Brodersen RTU32 offers the functionality and performance of a traditional RTU, PLC, IPC and Data Concentrator in one! It supports IEC61131-3 programming on WinCE 5.0.NET platform and offers real time process communication with leading edge telemetry functionality.

Configuration via Web Browser

Setting up the RTU32 is very easy. General settings, as well as network and SNMP settings, are configured via the Ethernet network interface either directly or remotely using a standard Web Browser. The Ethernet TCP/IP interface offers remote access to any RTU32 connected to the network.

Powerful CPU on open WinCE Platform

A powerful 32-bit processor with large memory capacity and real-time WinCE 5.0.NET operating system ensures fast application processing, communication and data storage. Brodersen's RTU32 provides control capabilities that were previously only available in PLCs.

Time stamped event data

Our RTUs provide flexible scan rates, event logging and time-tagged data. Time-tagged data and fast scan rates in the milli-second range allow sequence of event recording and archiving of data according to time of occurrence, rather than the time the host received the data.

Redundancy and event driven communication

The Binding (or alternatively Dual Binding) Protocol and the two Ethernet ports of the RTU32 provide the ability to obtain fast and event based redundancy communication for applications that require high levels of system reliability. We take advantage of today's network technology by employing TCP/IP and event driven communication to optimise network bandwidth. This feature reduces network loading and increases data integrity for both centralised and distributed configurations.



IEC61131-3 Programming via STRATON

The RTU32 is easy to configure and program but yet flexible enough to adapt to any application. It is programmed using the STRATON Workbench, a full development diagnostic tool with comprehensive project tracking and simulation facilities. It supports all five IEC61131-3 languages (SFC, FBD, CFC, LD, IL). The RTUs can be configured remotely or locally, on-line or off-line, and from RTU to RTU, or PC to RTU.

RTU32 Offers

RTU32

Bridging the gap between PLC, IPC & RTU



Embedded Web Server/HMI

The embedded Web Server/HMI provided on the RTU is not only used to configure the RTU but can also be used to display its current state using standard graphical symbols provided by the STRATON Workbench. These include LED, slider, meter, bar graph and pie charts just to name a few.

Once these symbols are linked to the appropriate variables and the web pages are built via the STRATON Workbench, the web pages can be viewed via standard web browsers.

Compatible with many devices and networks

Brodersen RTUs communicate using a wide range of protocols that provide connection to local devices such as PLCs, flow computers and other instrumentation. Connection to communication networks is also provided, including support of the EN/IEC60870-5-101/104 utility protocol, SNMP protocol, Modem Dial Function, TCP/IP and the full suite of MODBUS protocols.

EN/IEC60870-5-101/104 Standard Utility Protocol with Configuration Tool

We have developed the EN/IEC60870-5-101/104 standardised Configuration Tool which is widely used within the electricity and water/wastewater industries. Brodersen has enhanced this by also adapting the NUC (Norwegian User Convention) specifications. By using this tool, the configuration of the RTU32 is greatly simplified, thus saving a considerable number of programming hours.

SNMP Protocol opens the way into IT Network administration and reduces downtime

SNMP (Simple Network Management Protocol) is the common language of network monitoring and used for telecommunications, facility and asset monitoring applications. The protocol allows IT Network Administration staff to easily monitor the RTUs in big networks. An even more powerful feature of the protocol is to use the RTU to monitor the network by sending/receiving SNMP network alarms. This is a feature often used by network facility managers.

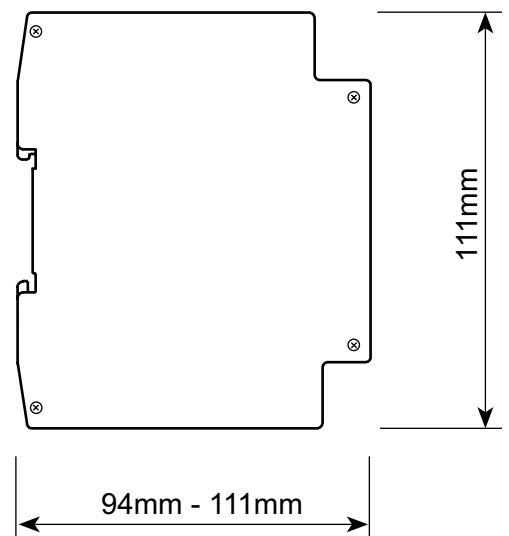
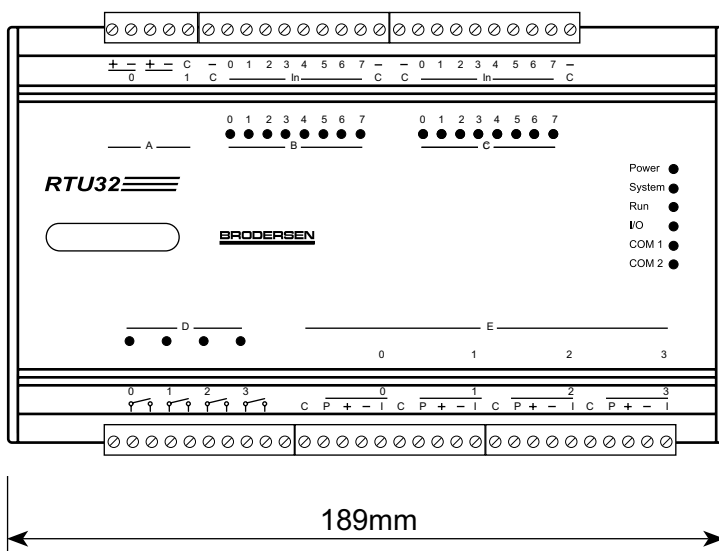
Integrated I/O and UPS

The RTU32 features integrated I/O: 16DI, 4RO, 4AI, 2AO. Analogue IOs are 14bit with 0-16383 resolution. Supports up to 32 I/O expansion modules and over 1000 physical I/Os. Power supply options include 115-230VAC with optional 12V or 24V UPS battery/charger, as well as 24-48VDC with 12VDC external supply.

Unparalleled Connectivity

RTU32 Technical Data

CPU Motherboard	300MHz x86CPU
RAM/Flash size	64MB RAM (up to 256MB RAM) 64MB Flash CompactFlash Type I/II socket supports up to 512MB
Operating System	WinCE 5.0.NET
COM options	1 x RS232 + 1 x RS232/RS485 5 x RS232 + 1 x RS232/RS485
Dual Ethernet	2 x RJ45 Ethernet interfaces
USB	2 x USB ports
PS/2	Single interface for keyboard and PS/2 mouse
VGA	1280 x 1024@8bbp (60Hz)
Power supply options	115-230VAC with optional 12V or 24V UPS battery/charger 24-48VDC with 12VDC external supply
Ambient temperature	-10 to +60°C
Mounting	35mm DIN-rail in black aluminium housing
Integrated IO	16DI, 4RO, 4AI, 2AO
Digital Inputs	Opto isolated input 10-30VDC, LED for each DI, can function as 100Hz counter inputs
Relay Outputs	4 potential free SPST-N/O contacts, LED for each output
Analogue Inputs	4 multiplexed, isolated, bipolar analogue channels 0-10V, 0-5V, -5 to +5V, -10 to +10V, 0-20mA, 4-20mA individually configurable in software 14bit, 0-16383 resolution
Analogue Outputs	2 sourced analogue channels 0-10V, 0-5V, -5 to +5V, -10 to +10V, 0-20mA, 4-20mA individually configurable in software 14bit, 0-16383 resolution
I/O Expansion	RJ45 LocalBus interface for Brodersen I/O Expansion modules. Supports up to 32 I/O expansion modules and over 1000 physical I/Os



Powerful software tools and automated engineering reduce programming time



The RTU32 is programmed using the STRATON Workbench which is

multilingual in two ways. On one hand it is available in English, German, French, Italian and Spanish. On the other, it supports all IEC61131-3 languages (FBD, LD, ST, IL and SFC), which can be used in any combination. STRATON fully supports OLE drag and drop and includes a fast compiler STRATON offers complete SoftPLC functionality.

STRATON online tools

Powerful tools are provided for online debugging and simulating the application. Step by step debugging includes the option of placing breakpoints in the source code of the application.

The Watch Window is a monitoring tool that allows the user to spy on the application variables during run time. It is possible to create animated graphical pictures during simulation or on-line testing to display real time values of project variables.

Auto-documentation

With only a mouse click, the wizard automatically generates documentation in HTML pages with cross references via hyperlinks, which can be saved, printed or converted to CHM.

Distributed applications

It is easy to link several STRATON projects with the Binding protocol (fast event based TCP/IP), which allows different applications on different target systems to exchange real time data. Global management of several nodes/RTUs as well as updating all projects at once is easy with the Global Binding Editor.

Integrated HMI using zenOn® SCADA just by adding a screen and keyboard

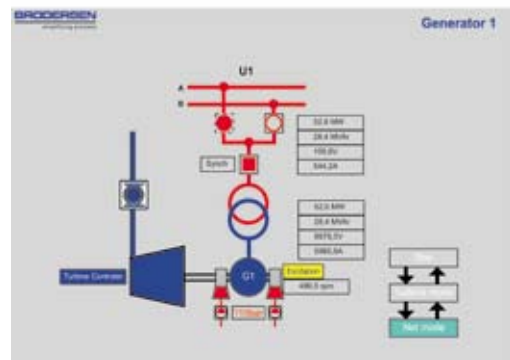
Significant savings can be achieved due to the outstanding integration of STRATON into the zenOn SCADA system by reducing the cost of developing, implementing, maintaining, and expanding a control system. zenOn/STRATON is a truly fully integrated solution in that variables or data structures created in zenOn will automatically be available to STRATON and vice versa

- Less development time
- No typing/configuration errors

- No importing of datapoint lists
- Up-to-date variable list
- Minimised project effort
- Maximum security and user friendliness
- High performance
- Multi-project functionality and control

No configuration

Easy configuration means no configuration. The communication parameters for the zenOn Runtime system are automatically detected.



Event driven data traffic

Event driven data traffic between the RTU and SCADA system minimises the communication load and increases performance.

RTU online diagnosis in SCADA system

An integrated system also offers diagnosis opportunities of the RTU in the SCADA system. The current status of the RTU code is displayed online in a zenOn picture. It is even possible to change variables.

Distributed engineering

Today, projects requiring thousands of lines of code are becoming very common which requires a multi-disciplined development team as well as a multi-user development environment.

STRATON allows a project to be broken down into a number of modules or subprojects so that they can be developed independently from each other.

Likewise, a zenOn project can also be broken down into a number of subprojects and each subproject can be stored in a server so that it can be accessed by any member of the development team. However, the automatic access control ensures that once the subproject is checked-out, no other team members can access it until the subproject is checked back into the server.

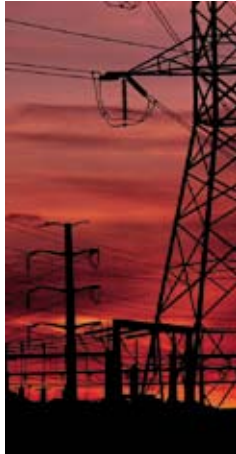
The flexibility of Brodersen RTUs means they can be used in a wide range of applications

Electricity Industry

The acceptance and use of industry standard protocols such as EN/IEC60870-5-101 and 104 makes the Brodersen RTU the obvious choice for applications in connection with sub-station automation, power plant control and customer metering. The connectivity of the RTU32 allows the connection of the RTUs to intelligent reclosers and other field devices.

Brodersen clients in the Electricity industry include:

- Areva, France
- RWE, Germany
- Cegelec, Switzerland
- Alstom, Sweden



Oil & Gas

Our pipeline management system includes distributed network control and metering as well as leakage detection with satellite communication. Our satellite based monitoring and alarm system of a gas pipeline in Iran spans over 1000km and the 115 RTUs are operating in many different climates and temperatures.

Brodersen clients in the Oil & Gas industry include:

- Cegelec, Iran
- RWE, Germany
- STEG, Tunisia



Water and Wastewater Industry



Applications for Brodersen RTUs in the water industry include monitoring and control of equipment at pump stations, reservoirs, treatment plants, pipelines, meters, valve stations, dosing points and water quality sites.

Brodersen clients in the water industry include:

- Logica, UK
- Anglian Water, UK
- Yorkshire Water, UK
- Latakia Water, Syria
- Ministry of Works, Bahrain
- National Water Supply and Drainage Board, Sri Lanka



Brodersen offers a total solution for telecommunication companies with a demand for environmental alarm monitoring. The turnkey solution incorporates hardware and software components and includes maintenance and system support. The system is located at transmission sites and monitors, for example, temperature, humidity, door open/close, fire alarms and access control.

Brodersen clients in the Telecommunication industry include:

- Telia, Worldwide
- Telenor, Norway

Transportation Industry

Brodersen RTUs are used in a variety of monitoring and control solutions in the transportation industry. Air transport applications include monitoring of aircraft landing systems, which require a system solution with a high level of failsafe and redundant features.

Brodersen clients in the Transportation Industry include:

- Copenhagen Airport, Denmark
- Frankfurt Airport, Germany
- Athens Municipal, Greece

About Brodersen

Brodersen Controls A/S has been designing and manufacturing telemetry and automation components since 1970. With nearly 40 years' experience to our credit, we continue to intensify our presence with partners and agents throughout the world.

Innovative engineering, cutting-edge technology and elegant design have long been Brodersen's hallmark.

Being ISO9001 certified, Brodersen is committed to the continuing procurement of products which will satisfy the need for powerful quality components for use within the utility and other market segments not only through a large range of standard products but equally through customer and application specific OEM developments.

Our web page www.brodersencontrols.com offers you a first hand introduction to the range of products available as well as firmware, manuals and updates for our range of products. Our offices in Scandinavia, Germany and UK as well as our world wide network of distributors and technology partners guarantees you professional support.



The success of Brodersen Telemetry products is owed to the continued unwavering focus on excellence in product design, manufacture, testing and support. To meet the market's demands for efficiency and functionality, we are constantly striving to develop systems which use the latest technologies, both in control and communications. By maintaining this pioneering spirit, we will continue to grow our international network of partners in technology, and so too our future business within this market.

**Brodersen has
many years' experience in
developing customer specific solutions**



Our Products

Our product line includes advanced remote terminal units (RTU), industrial process components and communication modules for the process and automation industry.

Our products offer solutions for communicating with remote processes via telephone, radio, mobile telephone, satellite and the Internet. They are intended for remote installation in harsh, unattended environments and can withstand extremes of temperature and humidity. Our products have been selected in the following industries.

- Water distribution and Wastewater
- Oil and Gas
- Electric power distribution
- Transportation (airport, railways, traffic control)
- Building automation (BMS)
- Telecommunication
- Asset and facility management

Our customers in these fields comprise System Integrators, engineering companies, OEMs and Utilities both public and private.



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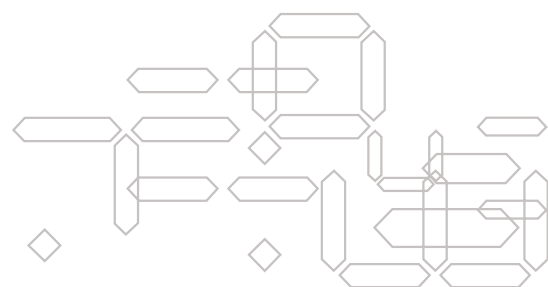
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Brodersen Controls has for more than 30 years designed and produced industrial process components including remote outstations, data loggers and data communication systems for the process and automation industry.

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