RightWON® Satellite CPU

The RightWON is specifically designed for remote management of equipment with features for data acquisition, monitoring, control and remote maintenance.

Remote access is made possible through the RightWON's integrated networking, security and telecommunication functions, and is supported by a broad range of Smart Plug-in modules. These modules support a wide variety of industrial protocols (for example, DNP3.0, IEC-61850, Modbus) and provide transparent Web access and remote maintenance.

Description

The main appeal of the RightWON solution is its impressive quality-to-cost ratio and flexible features, which include:

- Acquisition and control at discrete input/output points and/or intelligent end devices (IEDs, PLCs, RTUs) via field bus and communication networks

- Integrated information processing using the Straton PLC engine, which is IEC 61131-3 standard compliant. Application functions can be programmed using the Straton Workbench®, which supports five standard languages:

  - Ladder (LD), relay diagram
  - Sequential function chart (SFC), similar to the Grafcet language
  - Functional block diagrams (FBD)
  - Structured text (ST)
  - Instruction list (IL), a pseudo-assembler

- Integrated web-based user interface that provides a human-machine interface (HMI) for monitoring and control operations via a Web browser.

- Events history Sequence of Events Recorder (SER) and integrated data points and trends

- Communication manager supporting the main protocols used in the industry

- Direct forwarding of remote management variables to users or groups that share common interests. For example, these profiles can be used to forward operations data to operators, maintenance data to the maintenance group, and configuration data to the engineering group.

- Communications management and secured sessions, including support for security certificates.

- The system supports sending email and short message service (SMS), telephone voice messaging or pager. Users who receive a message can access the RightWON using a Web browser to view the data and operate the site remotely

The RightWON product not only meets general industry functional requirements, it also offers features that lend themselves to new applications, including:

- Local automation of functions, including filtering data and calls to the central site

- Integration of security functions, including support of additional or future standard protocols such as DNPS and/or security certificate exchange.

RightWON® CPU Characteristics

Processor and memory

- Processor: 32-bit RISC architecture
- Performance: 150 MHz, 210 DMIPS
- RAM memory: 64 Mb
- Program memory: 16 Mb
- Application data memory: 1 Gb
- Retentive data application memory: 8 Kb

Power supply

- Operating range: 8 to 30 V dc ± 10% (7.2 to 33 V dc)
- Power requirements: 3W nominal, 10W with GSM modem
- AC/DC power supply recommendation: Lambda DPP30-24 (85-260 V ac, 90-375 V dc, 15 W)

Time Synchronization

The RightWON Plus' time synchronization can be achieved with:

- PTP-1588 (IEEE Standard Precision Time Protocol) service over the Ethernet network. Supported profile is: ''PTP/IEEE-1588v2 UDP/IPv4, Multicast, End-to-End, Slave Only''.
- NTP (client and Server) service
- Protocol based (DNP3, IEC68070)
- External GPS-PPS clock synchronization

Environment

- Storage temperature: -65 °C to 90 °C
- Operating temperature: -40 °C to 75 °C
- Relative humidity: 5% to 95%, non-condensing
- Immunity: IEC 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6
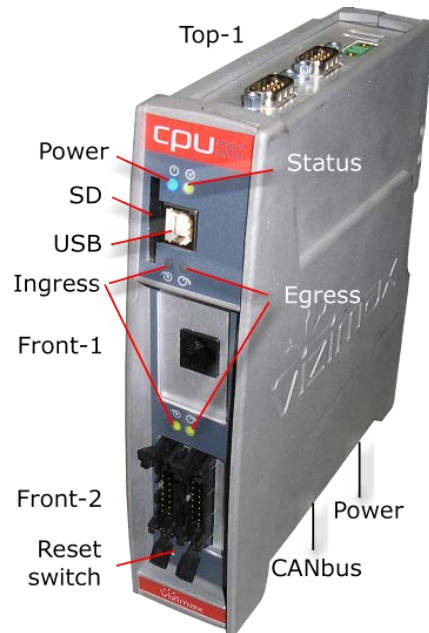
Mechanical

- Enclosure: Aluminum
- Dimensions: 152 mm H x 44.5 mm W x 133 mm D (6" H x 1.75" W x 5.25" D)
- Weight: 720 g (1.6 lb.)
- Mounting: DIN rail. Panel mount with optional adapter (RWAAA0000)

RightWON® CPU Compliance

- Environmental:

- Marking:

RightWON® CPU Interfaces

SD Slot

- Supports Secure Digital (SD) memory cards
- Compatible with SD Memory Card Specification V1.0
- Compatible with MicroSD, with adapter

USB port

The USB port provides access to local unit maintenance, programming and configuration, and supports file backup and event log management, as well.

- Slave interface on Type B connector
- Compatible with USB 2.0 and UTMI specifications
- Communication modes: Hi (480 Mbps) and Full (12 Mbps)

CANbus port

This port provides connection to remote RightWON I/O units via a high-speed bus, which has the following characteristics:

- CAN interface, isolated to 2,000 V
- Communication speed (120 Ω cable):
  - 1 Mbps at 40 m
 - 50 Kbps at 1000 m

LEDs

The RightWON Satellite CPU is equipped with six status indicators: two ('power' and 'status') for the RightWON Satellite CPU, and four (2x 'Egress' et 2x 'Ingress') for plug-in modules.

RightWON® CPU Configuration parameters

The configuration parameters are set using the Hardware Configuration Manager 🗄 in the RightWON Configuration Suite.

Straton variable register binding

In order to control and read the CPU registers from a Straton application, Variable binding is required. This is done using the **Register Binding** application, which is available when you insert a new Variable 🗂 in the **I/O Drivers** window.
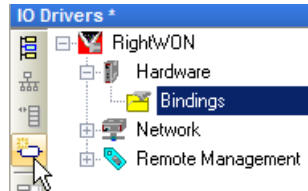
In the navigation area, select the CPU to view which registers are available for binding in the work area.
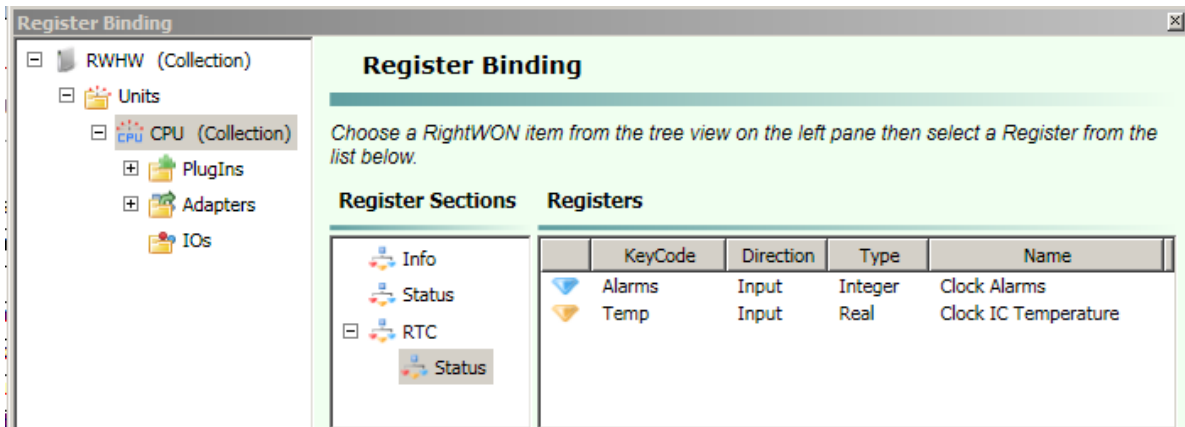
The following registers are available for binding:

Register Name	Direction	Type	Description
Info.Model	Input	String	CPU model number
Info.SerialNumber	Input	String	CPU serial number
Info.HWRevision	Input	String	CPU hardware revision number
Info.AppVersion	Input	String	CPU application version
Info.EthMACAddr1	Input	String	CPU Ethernet MAC Address of slot **Front-1**
Info.EthMACAddr2	Input	String	CPU Ethernet MAC Address of slot **Front-2**
Info.EthMACAddr3	Input	String	CPU Ethernet MAC Address of slot **Top-1**
Status.RestartCause	Input	Integer	State causing the latest application restart or CPU reboot.
RTC.Status.Alarms	Input	Integer	CPU Real-time clock alarms.
RTC.Status.Temp	Input	Real	CPU IC temperature of the real-time clock. This value is updated once per minute.

RightWON® CPU Hardware configuration

No hardware configuration is required on the CPU card. JP1 should be in position (both pins shorted together). JP3 and JP4 should be out (either not installed or installed on one post only).

Battery replacement

A 3V lithium coin cell maintains the time-of-day clock operating on the RightWON unit. The battery has a 5- to 10-year life expectancy without power. The battery should be replaced with the Hitachi Maxell CR1220 or equivalent.
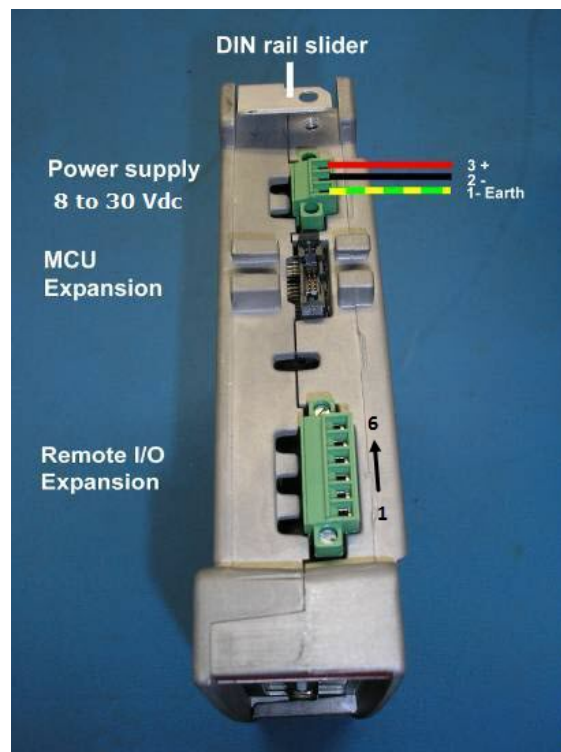
Connector assignment

Power supply

The power supply feeding the RightWON system is connected at the bottom rear of the CPU.

Note: CPU and MCU power supply connections are identical. They should be powered from the same source (8 to 30 VDC).

The pin assignment is as follows:

Pin number	Assignment
1 (front)	Earth
2	Negative (0 VDC)
3 (rear)	Positive (8 to 30 VDC)

⚠️ Power supply recommendations:

- The use of an approved, limited DC power source that complies with the IEC/EN 60950 standard is recommended.

- In all cases where the power supply is capable of supplying more than 5 amps, or where a battery pack without a limiting device is used, the integrator or installer shall provide branch fusing of 5 amp maximum.

- An isolated 15W power supply such as the Lambda DPP30-24 (85-260 VAC, 90-375 VDC, 15W) is recommended. It shall be selected according to the requirements of the application and regulatory agency approvals (CSA/UL/CE).

CANbus

The CANbus is connected at the bottom front of the CPU. Its pin assignment is as follows:

Pin number	Assignment
1 (front)	Protective ground. Connect to cable shield
2	Not connected
3	CAN GND (reference GND)
4	CAN L
5	CAN H
6 (rear)	120-ohm termination. Jump to pin 5 to insert the termination.

The CANbus adapter bit rate is determined by the STRATON application. I/Os offered by KEP, Wago and Phoenix are supported.

Ordering information

RWU010000 - RWU/SAT/CPU/E

Support contact: support@VIZIMAX.com
                                                              www.VIZIMAX.com/support