



# RTU-100 Series

## Hardware and Software Specification

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## 1 GENERAL

### 1.1 Scope of Document

The purpose of this document is to define the hardware and software specification for the Midnight Technologies P/L RTU-100 Series.

### 1.2 Overview

This report will show all functions supported by the RTU-100.

### 1.3 Related Documents

The following documents are related the RTU-100 product and should be uses in conjunction.

- To be added when available

### 1.4 List of Abbreviations

- RTU - **Remote Telemetry Unit**
- PC - **Personal Computer**
- SNMP - **Simple Network Management Protocol**
- GSM - **Global System for Mobile Communications**
- SMS - **Sort Message Service**
- XML - **Extendable Mark-up Language**
- NTP - **Network Time Protocol**
- SMTP - **Simple Mail Transport Protocol**
- PPP - **Point to Point Protocol**
- PoE - **Power over Ethernet**
- SSL - **Secure Socket Layer**
- SSH - **Secure SHell**
- LED - **Light Emitting Diode**
- ARA - **Alarm Received Attention**
- DC - **Direct Current**
- AC - **Alternating Current**
- TBD - **To Be Defined**

## 2 FUNCTIONALITY SUMMARY

### 2.1 RTU-100 Series

#### 2.1.1 Overview

The RTU-100 Series is designed as a low entry point low cost RTU. Maximum flexibility is achieved by 8 std I/O channels, 4 latched voltage free relay outputs, and 6 multifunction environmental probe ports and virtually endless expansion via external RS485 ADAM style industrial I/O controllers. Designed to fit 2 RTU units side by side in a 1RU footprint.

#### 2.1.2 Hardware

- Custom steel powder coated enclosure
- External plug pack
- +12 to +24VDC supply input (via Phoenix style pluggable 2way 5.08mm connector)
- Redundant DC power supply (12-72VDC) (Optional)
- -40°C to +85°C operating temperature
- 5% - 95% non-condensing operating humidity
- 215mm (W) x <44mm (H) x 110mm (D)
- Rabbit RCM3700 server
- 8 x Telstra spec Std I/O (via Phoenix style pluggable 16way 3.81mm connector)
- 6 x RJ11 sensor probe ports (Digital Temp interface)
- 4 x Voltage free latched relay outputs (via RJ11 port)
- 1 x Internal digital temperature sensor
- 1 x RTC (real time clock)
- 1 x mains fail detector
- Battery backed SRAM
- 1 x RS232 (DB9 male with hardware handshaking) serial port
- 1 x RS485 (Phoenix 5way 5.08mm) serial port
- 1 x power LED
- 1 x status LED
- 1 x buzzer
- Configuration/Status LCD with keypad (Optional)
- 1 x reset/restore recessed tact switch
  
- See accessories

#### 2.1.3 Software

- Internal WEB server
- Remote firmware upgrade
- IP connection via Ethernet and PPP
- Password security (with back door entry)
- SNMP V2c traps
- SMTP email messages
- XML
- SMS (via external modem)
- NTP
- IP to serial tunneling
- ADAM interface (ADAM-4017 8 x Analog, ADAM-4051 16 x Isolated I/P, ADAM-4068 8 x relay O/P, ADAM-4056S 12 x Isolated open collector O/P, )
- Probe port configuration (type, high/low trip points & water marks, active state etc)
- Corrective action rules
- Logging

#### 2.1.4 Compliance Information

- **Radiated and conducted emissions**  
Class B limits of EN 55022:1998  
EN55024: 1998 + A1:2001
- **Direct & Indirect ESD**  
EN61000-4-2: 1995
- **RF Electromagnetic Field Immunity**  
EN61000-4-3: 1995
- **Electrical Fast Transient/Burst Immunity**  
EN61000-4-4: 1995
- **Surge Immunity**  
EN61000-4-5: 1995
- **RF Common Mode Conducted Susceptibility**  
EN61000-4-6: 1995
- **Power Frequency Magnetic Field Immunity**  
EN61000-4-8: 1993
- **Voltage Dips and Interrupts**  
EN61000-4-11: 1994

### **3 RETAIL KITS**

#### **3.1 Server Room Kit**

The RTU-100 Series Server room kit will include the following:

- RTU-100 Series RTU
- 1 x internal Digital Temperature Sensor
- 1 x external Digital Temperature Sensor 5meter RJ-11 cable
- 4 x external sensor probe ports (rear)
- 1 x Ethernet cable
- 1 x Quick start sheet
- 12 month warranty

### **4 ACCESSORIES**

- 1RU Rack Mount Kit
- Digital Temperate Sensor
- Digital Temp / Humidity Sensor
- Room Entry Sensor
- Air Flow Sensor
- Digital Temp / Humidity Sensor
- Power Sensor
- Humidity Sensor
- Smoke Sensor
- Flood Sensor