ZETRON®

MODEL 1708/1716

Remote Terminal Units

FEATURES

- **Offers economical RTU for less complex applications that require minimal inputs**
- **Connects to up to 44 digital and analog Input/Output points**
- **Enjoys compatibility with other SCADA components, including Zetron Controllers, high-end RTU, and Control Programs**
- **Supports optional MODBUS protocol**
- **Reduces installation and operating costs associated with hard-wire and telephony**
- **Enhances existing systems by providing wireless, wide-area communications**

OVERVIEW

SCADA (Supervisory Control and Data Acquisition) provides automation tools that ensure real-time, centralized management of remote equipment and processes. Zetron's Wireless SCADA system consists of three components: RTUs, Controller, and Control Program.

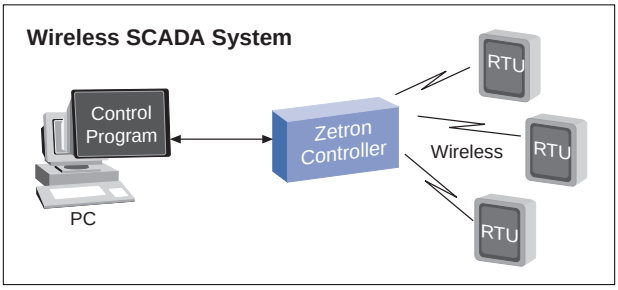
Zetron Remote Terminal Units (RTUs) are microprocessor controlled units that are typically installed at remote sites to collect data from contact closures, pulse counters, and analog voltage or current signals. RTUs also offer digital and analog outputs for remote control of process variables.

Zetron RTUs detect changes in input signals and transmit exception reports immediately, when polled by the Controller, or both. Once the Control Program receives an exception report, it can initiate corrective action by sending output commands to the same or different RTU.

Communications between remotely located RTUs and the central Control Program can be over conventional or trunked radio networks as well as leased-line telephone. An RTU and Control Program that are located at the same site can communicate via an RS-232 link.

Controllers manage wireless communications between multiple remote sites and the Control Program. Controllers transfer data between RTUs and either Zetron ULTRAc Control Programs or other programs that use open standards.

The Control Program allows an operator to monitor and control remote equipment and processes.



APPLICATIONS

Models 1708/1716 RTUs and Zetron Model 1700 Controller provide high-performance monitoring for small, simple applications such as pumping stations, door open/closed, temperature status, or water level,

In complex systems that include the Zetron Model 1730 Controller, the M1708/M1716 can handle those sites which require only a few simple inputs/outputs while Zetron's M1732 RTUs handle the larger sites.

This ability to select the appropriate RTU for each site results in significant cost-savings. All of Zetron's SCADA components were designed with the flexibility and compatibility to allow the end-user to purchase precisely what they need.

COMMUNICATIONS OPTIONS

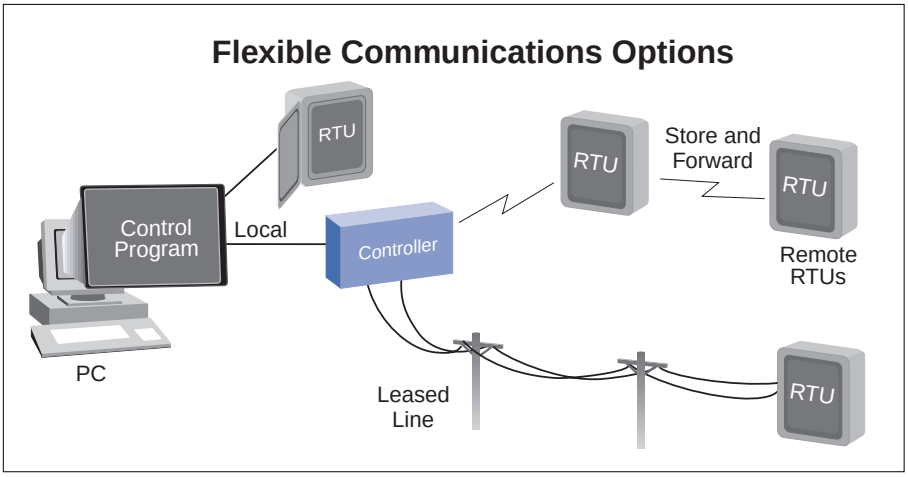
Wireless communications provide a more economical alternative to wireline connection or serve as a redundant connection for high-availability systems. The M1708 and M1716 can use a variety of wireline and wireless technologies. Organizations can use the most convenient or economical communications technology for each remote location.

- **Wide-area wireless connection:** RTUs interface directly to a wide variety of two-way radios, including conventional, trunked, or spread spectrum data radios. Includes Store and Forward capability for RTUs beyond range of controller.
- **Wide-area wired connection:** Data transfer between the RTUs and Controller can be over dedicated telephone lines.
- **Local wired connection:** An RTU in MODBUS mode can communicate directly with a co-located Control Program via a RS-232 interface.

MODBUS MODE

The M1708/1716 RTUs offer MODBUS options for direct operation with data or spread-spectrum radios.

I/O CAPACITY	Model 1708	Model 1716
Digital Inputs	8	16
Digital Outputs	8	16
Analog Inputs	4	8
Analog Outputs	—	4



SPECIFICATIONS

AGENCY COMPLIANCE

EIA standards for Electrostatic Discharge (ESD)
FCC Part 15 for Electromagnetic Interference (EMI)
CE labeled

PHYSICAL SPECIFICATIONS

Power	10.5-16 VDC
Current	75 mA typical, 150 mA maximum
Temperature	0 to +60 degrees C
Humidity	0 to 95% non-condensing
Size	7.25" W x 10.5" L x 2.25" H
Weight	2 lbs

RS-232/PROGRAMMING INTERFACE

Baud Rate	4800
Parity	None
Bits	8
Stop Bits	1

RADIO INTERFACE

Audio Output	20 mV to 2 V p-p (mic level audio), 1 kohm
Audio Input	100 mV to 4 V p-p, 50 kohm
Channel Busy Input	Low: 0 to 0.7 VDC, <100 ohm to ground High: 3.5 to 12 VDC, >10 kohm to ground
PTT Output	Relay contact closure, 300 mA max

Radio Modem

Data Rate	1200 baud
Signaling	Minimum Shift Keying (MSK)

Signal Integrity

Required Signal Strength	95% success at 12 dB SINAD
Probability of False Data	1 in 10^9 (0.0000001%)

I/O SPECIFICATIONS

External Inputs

Digital Inputs	Model 1708: 8 inputs	Model 1716: 16 inputs
	Contact closure to ground or 0-5 V or 5-0 V voltage change	
	Logic low: <500 ohm or <0.8 VDC	
	Logic high: >2.5 kohm or >2.0 VDC	
	Protected to +50 VDC	
Analog Inputs	Model 1708: 4 8-bit A/D inputs	Model 1716: 8 8-bit A/D inputs
	0 to 5 VDC or 0-20 mA user selectable	

External Outputs

Open Collector Outputs	Model 1708: 4 outputs	Model 1716: 16 outputs
	50 VDC, 100 mA max	
Analog Outputs	Model 1716: 4 outputs	
	0 to 5 VDC 8-bit D/A	

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See Zetron price list for option pricing. Specifications subject to change without notice. Literature number: 005-1234B October 2000