

# DATA ACQUISITION SYSTEM

## Model OutDAQ™ 3300 RTU

### APPLICATIONS

The OutDAQ™ 3300 RTU (Remote Terminal Unit) is an automated measurement system for:

- Field performance monitoring for civil structures; dams, tunnels and underground works
- Expansion of existing SCADA systems in non-powered, transient-prone environments
- Water collection and distribution monitoring
- Environmental monitoring networks-air and water quality

### DESCRIPTION

The OutDAQ™ 3300 RTU interfaces to a variety of sensing devices in difficult field environments. It is compatible with existing or new SCADA host software or drivers supporting Modbus protocols. Installations can thereby be completely stand-alone or fully SCADA-integrated. Low-cost modular I/O assemblies can be attached to the RTU base controller, allowing you to select just the combination of I/O that you need.

The RTU and I/O Module assemblies snap to a DIN mounting rail. Each I/O assembly consists of a base to which field wiring is attached, and a pluggable instrumentation module that contains all of the active components of an I/O assembly. A low-impedance grounding system distributes local earth ground to each I/O base unit where gas discharge tubes shunt transient voltage spikes and surges from field wiring terminals to local ground. This transient protection is rendered far more effective by increasing the impedance and breakdown voltage across opto-isolation barriers built into each I/O Module.

Using the Modbus RTU or Modbus ASCII protocols, an added control pin on the serial port interface allows the RTU to recognize Geomation Data Link devices and to configure itself to use those device characteristics for remote communications. Data Link devices are available from Geomation for operating 3300 RTUs over isolated RS-485 communication lines, multimode fiber optic cable, and high-speed, license-free spread spectrum radio. Satellite communications are also supported.



### FEATURES

- Economical remote deployment, even for single instrument locations
- I/O modules can be extended from the RTU controller in multiple clusters, up to a total I/O XBUS extension of 1200 M
- Built-in multi-stage transient protection, with optical isolation from the I/O XBUS – Provides unparalleled transient immunity
- Measurement & status conditions can be viewed on local display
- RTUs use standard Modbus protocol – Allows interoperability with existing SCADA systems and RTUs or PLCs with Modbus drivers

Adding to the versatility of the Model 3300 RTU design is the unique capability of separating the I/O assemblies from the RTU controller by distances of up to 1.2 kilometers using cable extension or up to several kilometers using 2.4 GHz Spread Spectrum radios. For widely dispersed measurement points in linear arrays, such as plants, tunnels, dams or pipelines, this capability allows for the reduction of the number of required RTUs while keeping noise-sensitive analog sensor wiring short. Also, locating the I/O assemblies close to instruments provides the required transient protection for the instruments themselves, saving you even more.

## RTU COMMUNICATIONS

The 3300 RTU communicates with a master controller over a full-duplex RS-232 serial port.

## SPECIFICATIONS

### INPUT POWER

Voltage	7–30 Vdc Isolated or negative ground
Current	(@12 V supply) 4 mA idle; 35 mA active

### ENVIRONMENTAL

Operating temperature	–40°C to +70°C
Humidity	0 to 95% RH, non-condensing

### MECHANICAL

Material	Polycarbonate
Mounting	35 × 7.5 mm carrier rail DIN/EN Standard 50022

### COMMUNICATION PORT

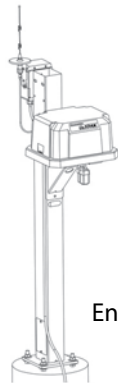
Signaling	RS-232, Async, 300 bps to 115.2 kbps
Interface	10 pin receptacle (mating cable included with Link Device)
Protocols	Modbus RTU & Modbus ASCII
Link Device Support	Model 1420 WDL – Wireline Digital Model 1430 FOL – Fiber Optic Model 1440 RML – Radio Modem, 900 MHz Spread Spectrum Model 1441 RML – Radio Modem 2.4 GHz Spread Spectrum 1400 Series – automatic configuration Other 3rd party links – manual configuration

### I/O XBUS INTERFACE

Architecture	5-wire multi-drop, linear bus
Signaling	2-wire RS-485, power, reference ground
Power	7-30 Vdc, Isolated
Speed	57.6 kbps
Maximum length	1200 m, with recommended cable, or 2.4 GHz Spread Spectrum radio expansion
Protocol	Proprietary master-slave CRC16 error detection
Addressing	6-bit binary, maximum of 60 Modules

## ACCESSORIES

- Communication BUS
- Instrument interfaces
- Other modules



I/O XPAK™ Field  
Enclosure for up to 5  
I/O assemblies



OutPAK™ Field  
Enclosure for RTU  
and 3 I/O assemblies

Products and specifications are subject to change without notice.  
Condensed from Geomation's datasheet no. 16-101-10 – [www.geomation.com/docs\\_home.cfm](http://www.geomation.com/docs_home.cfm) – Model 3300 RTU



environmental systems & services  
8 River Street, Richmond VIC 3121 Australia  
T + 61 3 8420 8999 | F + 61 3 8420 8900  
[geotechnical@esands.com](mailto:geotechnical@esands.com) | [www.esands.com](http://www.esands.com)