



SCADA SOLUTIONS - RELIABLE COMMUNICATIONS OVER LARGE AREAS

ACE1000 REMOTE TERMINAL UNIT

Whether there is a leaking pipe or a damaged power grid breaker miles away from your control center, you need to know about it as soon as possible. The sooner you get the information, the faster you can fix the problem and avoid negative consequences.

You need technology that works seamlessly with its software and connects to your equipment to ensure reliable, well-timed communications over a large area. You can't be in multiple places at once, but with a reliable SCADA solution you can monitor your system as if you were.

The versatile and powerful ACE1000 will deliver the timely communications you need, without having to completely replace your current system. In a new, compact package, the ACE1000 is the Remote Terminal Unit (RTU) that will facilitate higher reliability and interoperability at a lower cost.

USER BENEFITS

- Easy to Install and Manage
- Interoperability with current systems
- Better processing power
- Large FLASH & RAM Memory
- ATEX Regulatory Compliance
- Power-saving features

COMMUNICATE EFFORTLESSLY

Complex communication links from your central to remote sites are what make up a reliable and secure SCADA system. The ACE1000's unique connection capabilities allow your system to communicate using a variety of outputs (medium speed RF and high speed wireless), at no extra cost.

Designed for a wireless environment, the ACE1000 assures reliable communications over RF, LAN/WAN networks, so you can be sure your data is being transferred securely. The ACE1000 allows RTU-central and RTU-RTU communications, along with a Store & Forward feature (when supported by infrastructure) which can be used to pass messages between RTUs in the system, so you don't have to purchase additional repeaters or expensive antennas. Its communication flexibility gives you the freedom to customize your system that's easy on your budget.

INTELLIGENT PERFORMANCE

Complicated control processes can be time consuming and difficult to keep track of. The ACE1000 allows you to automate processes such as multiple high speed control loops, event capture, and data storage, so you don't need to spend time doing it yourself. The ACE1000 even offers a low power and sleep mode option for when you're operating on solar power. Process automation improves efficiency and plant safety and you can be sure the important tasks are being completed at the right time. This will free up your employees to do other tasks and as a result, streamline your facility's routine.



ACE1000 Remote Terminal Unit without cover

SEAMLESS CONFIGURATION

The ACE1000 is easy to install and has the processing power to function in demanding environments and complicated networks. Its user-friendly configuration tools allow you to set up your whole system, rather than each unit individually, so you can maintain it yourself. Easy-to-use applications such as the new menu-driven GUI and the "Easy Programming Tool" reduce the amount of time and money needed for training, so your employees can get to work sooner. Your site can be supported remotely, reducing the amount of site visits you have to make.

The ACE1000's programming tools allow for easy configuration, so your system can be adapted to demanding applications or stand alone. Your current platform can be leveraged to provide the benefits of both standardization and interoperability without starting from scratch. Whether you need to collect and transmit information from existing sensors or IEDs, the ACE1000 is perfect for the job.

RUGGED AND READY FOR THE FIELD

Not only will your transferred data be safe and secure, but your equipment will too. The ACE1000 RTU is designed to withstand harsh conditions, unlike the average PLC, which is built for the factory floor. Temperature, altitude, and humidity are no match for the ACE1000, which meets rugged specifications. Whether it's installed at an offshore drilling platform or an Arctic power station, the environment won't affect the performance of your system.



ACE1000 Ex Remote Terminal Unit with covers

KEY FEATURES

- Motorola Radio Support (Digital Trunked ASTRO, Digital MOTOTRBO, TETRA)
- Easy-Programming Tool
- RTC Back-up Battery
- 256 MB of FLASH Memory
- 256 MB of RAM Memory
- ATEX - ExnA IIC T4 (Cat 3/Zone 34 2)*
- 9-30 VDC Input Voltage Range
- Sleep/Low-power Mode
- 3rd Party Modem Support

* w/o radio, in ATEX approved enclosure, per IEC 60079-0 and 60079-15 standards, for a non-sparking (nA) and protected sparking (nC) system

PRODUCT SPEC SHEET
SCADA SOLUTIONS - ACE1000

GENERAL SPECIFICATIONS

Operating Temperature ACE 1000	CPU Unit: -40 °C to +70 °C (-40 °F + 158 ° F) CPU Unit without RTC backup battery: -40 °C to +70 °C (-40 °F + 158 ° F) CPU Unit with RTC Backup Battery: -20 °C to +60 °C (-4 °F + 140 ° F)
ACE 1000 Ex	
Storage Temperature (excluding radios)	-55 °C to +85 °C (-67 °F + 185 ° F)
Operating Humidity	5% to 95% RH @ 50 °C (for 8 hrs without condensation) ²
Operating Altitude	-400 meters to +4000 meters
Dust Protection Index	IP3X
Dimensions	7.6 cm (W) x 15.9 cm (H) x 13.73 cm (D) (3" x 6.3" x 5.41") (WxHxD) Depth including the front cover: 14.59 cm (5.74")
Weight	.5 Kg
Wall Mount Option	Yes (using DIN rail)
Construction	Modular

POWER

Input Voltage	9-30 V DC
AC Power Supply	12 V DC / 120W 24 V DC/120W
Power Consumption:	max 300 mA/typical 150 mA @12V (w/o SD card and USB)
Input module:	max 180 mA @12V/typical 100 mA@12V
Output module:	max 450 mA @12V/typical 250 mA @12V
Sleep mode:	typical 5.5 mA @12V

I/O EXPANSION MODULES (UP TO 2)

DI / AI Module	12 inputs "OFF": 0 to 3V DC "ON": 5 to 30V DC Counter: up to 2KHz Isolation: 1500 V DC
Digital Inputs	
Analog Input	8 Inputs Current: 0-20mA Voltage: 0-5 VDC Resolution: 16bit Accuracy ± 0.1% Isolation: 1500 V DC
DO / AO Module	8 Relay outputs 4 X ML + 4 EE (SPDT) DO frequency :10 Hz Contact rating: Up to 30V DC / 2 A 2 Analog outputs Current: 0-20mA Voltage: 0- 10VDC Resolution: 12bit Accuracy ± 0.1% Isolation: 1500 V DC
Digital Output	
Analog Output	

CPU

Microprocessor	Ti Sitara CPU (Cortex-A8)
Clock Frequency	600 MHz
OS	Linux
Memory:	
User Flash	32 MB
User DRAM	32 MB
Micro SD Card Slot	Up to 32 GB
Real Time Clock	
Accuracy	±20ppm@25 °C or 2 sec per day (24 hours) @ 25 °C
Drift	±0.04ppm/(° C) ²
Time Synchronization	NTP, GPS (1PPS)
Optional CPU Plug-Ins	
RS-232 Ports	2 Isolated Ports up to 115.2 Kb/s
Auxiliary DC Output	5, 7.5, 9.5, 12VDC
CPU On Board I/Os	
Digital Inputs	3 (voltage input) "Off": 0 to 3V DC "ON": 5 to 30V DC
Relay Output	1 (Magnetically latched) Up to 30V DC/2A
Communication Ports	
Ethernet	10/100 Mb/s
USB	USB 2.0 OTG & Host
RS-232 / RS485 (configurable)	RS-232 up to 115.2 Kb/s RS 485 up to 460.8 Kb/s
Protocol Support	
MDLC	Serial / Ethernet / USB
ModBus Master	Serial / Ethernet
ModBus Slave	Serial / Ethernet
Configuration & Programming	
Easy Programming	Configuration & Rules
Motorola System Tools Suite (STS)	Configuration
IEC61131-3	CodeSys Programmer
'C' Tool Kit	Ubuntu

COMMUNICATIONS

Motorola Two-Way Radios	APX 4000, APX 6500, XPR 5350, MTM5200
Modem Support	Cellular, Leased line

¹ This is statically configured (not via C App) and cannot be changed without a reboot to the LTR
² For an uncontrolled humidity environment, a NEMA enclosure is recommended