AERINOS™

BSC-50D Autonomous RTU

Introduction

BSC-50D is an ultra low power wireless RTU with data logging and alarming capabilities via SMS. The unit incorporates a GSM/GPRS modem, a USB serial port, 4 digital inputs, 1 digital output, an analog input and a 3-axis digital accelerometer. An ultra low power microcontroller is utilized for alarm condition detection, subsystem activation and overall system control. The unit incorporates a Lithium Thionyl battery supplying system operation for up to 10 years.

Modes of operation

Modes of operation include autonomous battery operation or power supply through the USB port for unit configuration. During battery supplied operation, only the low power microntroller is awake. The microcontroller activates the power consuming GSM modem in case of an alarm occurence or during periodical data transfer, as also other subsystems as analog conditioning circuits for sampling the analog inputs.

Features

- Power network independent RTU/data logger
- Alarm & Data messaging via SMS
- Up to 10 years maintenance free operation
- Quick and easy installation
- 4 digital inputs, 1 digital counter, 1 analog input, internal 3-axis digital accelerometer

Applications

- Security systems
- Power network, Cable fault monitoring
- Building Management & Home Automation
- Oil & Gas distribution
- Asset management
- Greenhouse controls & irrigation systems
- M2M systems

Technical characteristics

Power supply	
Battery	Internal 13.0 Ah Lithium Thionyl
External	5V (USB power)
Consumption	20µA max (Low power operation) 2 mA (AI sampling w/o sensors) ~50mA (Alarm messaging)
Digital inputs	4, 0-30VDC or potential free contact inputs
Analog inputs	1, 0-1V, 12 bit resolution
Counters	2, 40Hz max., common with DI3,4
Transducer Excitation	5VDC/200mA or 12VDC/200mA max.
Serial port	USB serial, 9600 to 115200 bps
GSM modem	Quad band (850/900/1800/1900MHz) Sierra Wireless HL Series GPRS/EDGE
Antenna	internal, Quad Band, AMPS 824-894 MHz, GSM 900, 1800 MHz, PCN 1.9GHz
Indications	1 LED, GSM network status
Temperature	-40°C…+70°C operating
Protection	IP66
Dimensions	124 x 79.5 x 70 mm, (with cable gland)
Weight	0.3 kg (w/o Battery)

Data Acquisition

Alarm limits, sampling period, logging rate, data send rate are user defineable. Digital input states, analog and counter values can be used to trigger SMS alarms. Ultra low power standby mode followed by frequent data recording and transmission can be selected to fit the application needs, while maximizing the battery life.

Transducer excitation

A user adjustable 5V/12VDC excitation output is available for powering low power external sensors.

Alarming & messaging

SMS announcements include alarm messages, messages with measurement data and periodical status messages for verifying unit availability. The unit supports discrete recipient alarming for several users. Alarm message texts are user defineable.

Setup and programming

The unit can be programmed locally through the serial port or remotely via SMS by using simple ASCII configuration commands. The command set features commands for configuring input alarm parameters, scaling parameters and alarm limits, timing parameters and defining user groups. Remote setup SMS messages are accepted during the status message transfer.

Enclosure

Plastic enclosure (IP66/68) for in- and outdoor use.

RoHS Compliant
Directive 2002/95/EC

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Firmware features

Digital input alarm state	Transition selection
Analog input	Scale, gain, alarm limits selection
Accelerometer	Alarming thresholds
Sampling interval	1-255 minutes
Sensor warm-up time	1-255 sec
Logging rate	0-255 samples
Transmission rate	0-255 hours
Alarming	alarm state of a digital input, 2 alarm limits on the analog input, Shock (Motion) events
Alarm delay	1-255 sec
Message texts	1-64 characters
Messaging	ASCII Alarm SMS ASCII Data SMS ASCII Status SMS
Messaging retries	1-99
Retry intervall	1-255 sec
Programming	ASCII command set
Remote setup	via SMS
Local setup	via USB serial port
User setup	1-20 users, discrete recipient alarming

Ordering information

Code   BSC-50D

Typical application:
SMS Alarm on motion detection

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