

Battery powered alarming unit



Introduction

BSC-50 is a low cost, battery powered controller unit for alarm annunciation using SMS. The unit incorporates a quad band GSM/GPRS modem and a serial RS-232 port. Two device versions are prefigured: BSC-50-D with 4 digital inputs and BSC-50-S/E with 2 digital inputs, 2 analog inputs and an excitation output for powering external transducers. An ultra low power microcontroller is utilized for alarm condition detection, subsystem power switching and overall system control. The unit incorporates a Lithium Thionyl battery supplying system operation for over 10 years.

Modes of operation

Modes of operation include power network independent battery operation and external power adaptor supply operation, with the internal battery used for uninterrupted operation in case of power failure. During battery supplied operation, only the low power microcontroller is awake. The microcontroller switches (on/off) the power consuming GSM modem in case of an alarm occurrence or during periodical messaging and other subsystems as the external sensor excitation and analog conditioning circuits for sampling the analog input.

RoHS Compliant
Directive 2002/95/EC



- Low cost, power network independent alarming unit
- Maintenance free operation for over 10 years
- Quick and easy installation
- BSC-50-D: 4 digital inputs
BSC-50-S/E: 2 digital inputs, 2 analog inputs and sensor excitation output

Applications

- Power network fault monitoring
- Waste water management
- Security systems
- Asset management
- Greenhouse controls & irrigation systems
- Environmental telemetry
- M2M systems

Technical characteristics

Power supply	internal 13.0 Ah Lithium Thionyl battery or external 12-30V power adaptor
Consumption	40uA (normal operation) AV 200mA (alarm messaging)
Digital inputs	potential free contact inputs
Analog inputs	0-1V, 0-20mA differential input, 10 bit resolution
Transducer excitation	3.6V/0.4A or potential free 12V/80mA
Serial port	RS232C, 9600 to 115200 bps
GSM modem	Quad band (850/900/1800/1900MHz) GSM CSD 14.4kbps GPRS Multislot Class 10, Class B
Indications	2 LED, GSM network status, external power supply indication

Measurements

The digital inputs are scanned in closed loop by the microcontroller for detecting an alarm condition. The alarm condition (closed or open external contact) is user defineable. Analog input scaling and alarm limits are user definable. The external analog transducer excitation and the respective analog sampling period are also user definable and affect the battery life according to the transducer power supply requirements.

Transducer excitation

The unit can supply external sensors with 3.6V/400mA or potential free 12V/80mA over a DC-DC converter.

Alarming & messaging

SMS announcements include alarm induced messages and periodical 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 periodical message processing.

Enclosures

The standard enclosure is a metallic enclosure (IP50) with excellent EM shielding characteristics for indoor use. An optional polycarbonate enclosure (IP67) for outdoor use is available on demand.

Firmware features

Digital input alarm state	Open or closed contact selection
Analog input	Scale, alarm limits selection
Analog sample interval	1-9999 minutes
Alarming	on alarm state of a digital input, 2 alarm limits on each analog input
Alarm delay	1-255 sec
Message texts	1-30 characters
Periodical Messaging	1-99 days
Messaging Retries	1-99
Retry intervall	1-255 sec
Programming	ASCII command set
Remote setup	via SMS
Local setup	via serial port
User setup	1-20 users, discrete recipient alarming

Enclosures



Type M

IP50 Metallic enclosure, wall mount or DIN rail mount, 110x120x50 mm



Type P

IP67 Polycarbonate enclosure, 180 x 130 x60 mm

Ordering information

Code	BSC-50-XY
X	D: Alarming unit with 4 digital inputs . S: Alarming unit with 2 digital inputs, 2 analog inputs and 3.6V excitation.
	E: Alarming unit with 2 digital inputs, 2 analog input and 12V excitation.
Y	Enclosure type M, P