SIGb battery back-up Technical Specification

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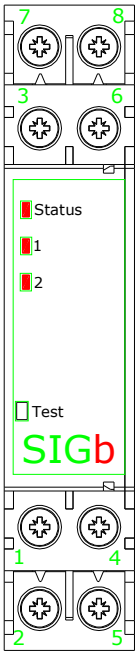
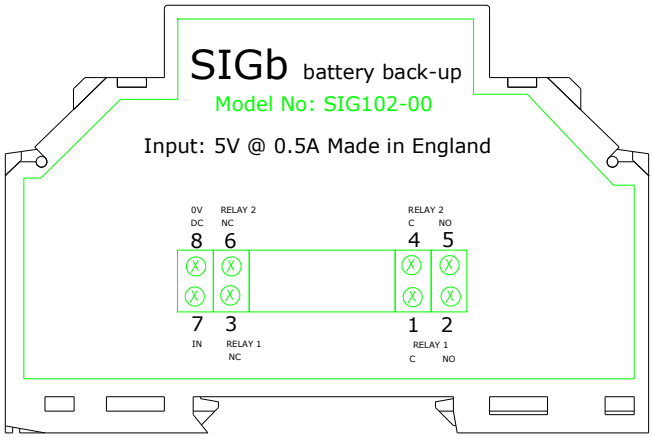
Revision History			
Date	Issue	Author	Changes
20.02.12	0.1	M.Ali	Initial Draft
04.04.12	0.2	M.Ali	Release
11.04.12	0.3	M.Ali	Updated SIGb branding colour

1. INTRODUCTION

a. SIGb battery back-up module is used in conjunction with the SIGg GPRS modem unit to provide auxillary battery back-up supply if the primary AC mains supply was not present. The mechanical dimensions are of a standard MCB which encompasses the DIN Rail mount technology and ease of install into any existing or new MCB installations.

b. SIGb battery back-up – battery + charger**:**





2. Description

a. The SIGb battery back-up – is an intelligent battery source and charger which acts as a slave unit that communicates over a common bus provided and maintained by the SIGg GPRS unit. SIGb battery back-up unit has an internal Lithium battery which provides auxiliary supply to the SIGg unit when the primary AC Mains supply is not available. This auxiliary supply will allow the SIGg unit to report and allow event logging for a period up to 1hour before allowing the SIGg GPRS unit to shut down safely. This unit will also have the capability to switch on / off auxiliary mini circuit breakers and provide status control as a closed loop system.

3. SIGb battery back-up Internal / External Interfaces

a. 2 x Relay Outputs
b. 1 x Configurable Input
c. 1 x MODBUS Interface (RS485)
d. 1 x Microcontroller
e. 1 x Lithium polymer battery
f. 1 x Charger

4. 2 Relay Output Channels

a. Connectivity:	5A 250V / 5A 30VDC
b. Output type:	SPDT
c. Contact Life:	> 100K Operations

5. 1 Configurable Input

a. Connectivity:	Non AC
b. Analogue-to-Digital converter	
i. Input type:	0 – 10V DC for full scale range
ii. Resolution:	> 8-bit Analogue-to-Digital conversion
iii. Input Impedance:	10K
c. Digital Input Channel(s)	
i. Input type:	Configurable Active high / Low
ii. Maximum Input Voltage	
1. for On State:	30 Volts DC
iii. Minimum Input Voltage	
1. for On State:	> 2.5 Volts DC
iv. Maximum Input Voltage	
1. for Off State:	< 1 Volts DC
v. Default Active State:	Active low
vi. Maximum Input Frequency:	< TBD

6. 1 x MODBUS RS485

a. Controller:	Microchip
b. Protocol:	SIG Proprietary
c. Bit rate:	115200
d. Physical Interface:	Internal 2 wire bus RS485

7. Microcontroller: Microchip

a. Program Memory Type:	Flash
b. Program Memory Size:	16K
c. Internal RAM:	up to 1K SRAM
d. Operating Temperature:	-40 to +105C
e. Operating Frequency:	4MHz

8. Power Supply type: Multi stage charger

a. Power Consumption:	500mW
b. Internal Battery Fast Charge	500mA @ 5V
c. Internal Battery Const Charge	100mA @ 5V
d. Internal Battery Life	100% capacity at 300 deep discharge cycles
e. System Standby Life	system 1Ah rate = 1 hour back-up

9. Operating Characteristics:

a. Sleep Current:	< 10mA/h
b. Unit Operating Temperature:	0 to +45C
c. Relative Humidity:	5 to 95% non condensing

10. Type approvals:

a. CE

11 Limitations

b. Operating Temperature
    i. The Microprocessor will operate as normal up to 85 °C as monitored from the on-board temperature sensor but when the temperature exceeds 85 °C the relay output may not change state and input monitoring may have an increased read error, affecting reading resolution.
c. Humidity
    i. The electronics will not be conformal coated as it shall operate within a consumer unit environment.
d. Vibration / Shock
    i. The product is not designed to withstand any Vibration / Shock but there could be a limitation where any attached connectors show damage if not fastened correctly.
e. Chemical Resistance
    i. Not Applicable, No specific type of fluid has been specified.
f. IP Rating
    i. The product has no IP Rating although it does need a degree of safety to human interface.
g. Approvals
    i. CE as part of larger system.
h. Approval Number
    i. To be notified by SGS.