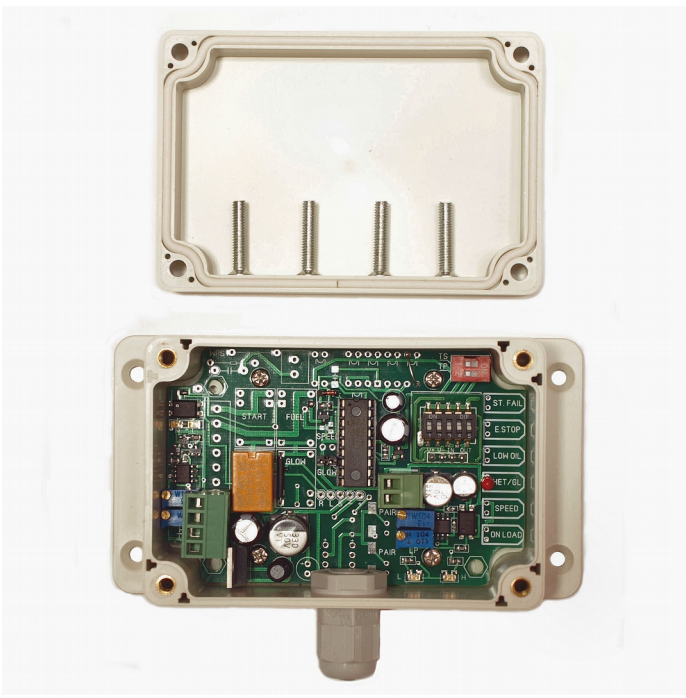
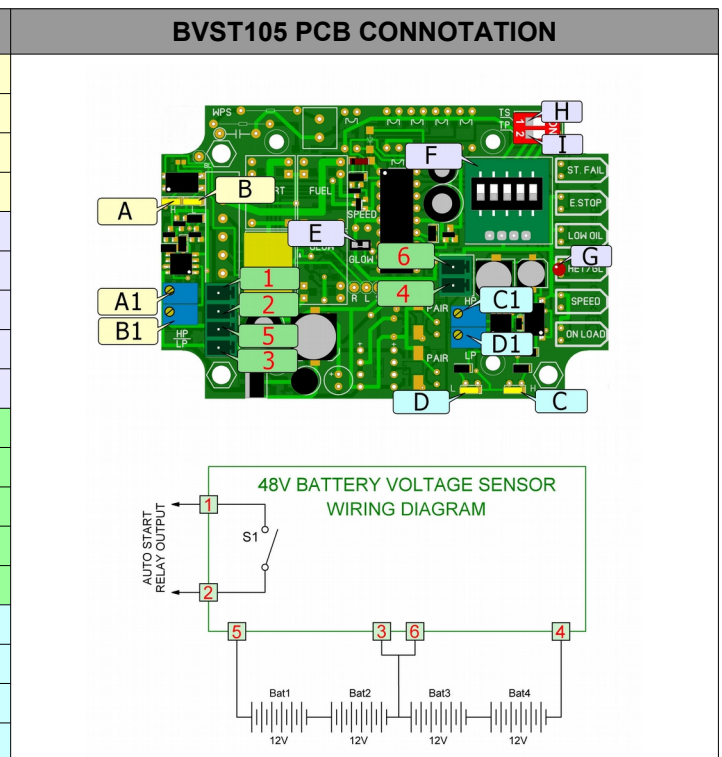




Model No: BVST105

PREFACE	Model: BVST105 IP67 rated
<p>The Model BVST105 is an intelligent Battery Voltage Sensor (BVS) designed to automatically operate the auto start enabled (2 wire start) generator (or engine) and to control 2 separate (or connected in series) 24v battery banks by automatically starting, running and shutting down the engine ones the run time set by multi-range timer elapsed and (or) voltage on both controlled battery banks has reached the high set threshold.</p> <p>How it works</p> <p>Upon sensing the low voltage threshold the BVS will wait for 5 sec to ensure the voltage recovers back to normal and stabilise above the high voltage threshold. If that happens the BVS will do nothing and remain in stand-by mode. However, if voltage hits the low voltage threshold and then stays below the high voltage threshold for more than 5 sec the BVS will trigger the multi-range timer simultaneously closing the auto start volt-free relay which would remain closed for the period set by multi-range timer (if the timer was initially enabled via DIP switch 2). With multi-range timer disabled the high voltage threshold (HVT) would be the only true point for shutting down generator immediately ones the battery voltage becomes equal to HVT.</p> <p style="text-align: center;">IMPORTANT!</p> <p>If multi-range timer set only for a short period (usually for 10~60 seconds) the BVS sensor may have the priority over the multi-range timer and continue to run the engine until the high battery voltage threshold is sensed. This is a normal situation when multi-range timer run time was not enough to charge up the battery bank and bring its voltage above the high voltage threshold.</p>	

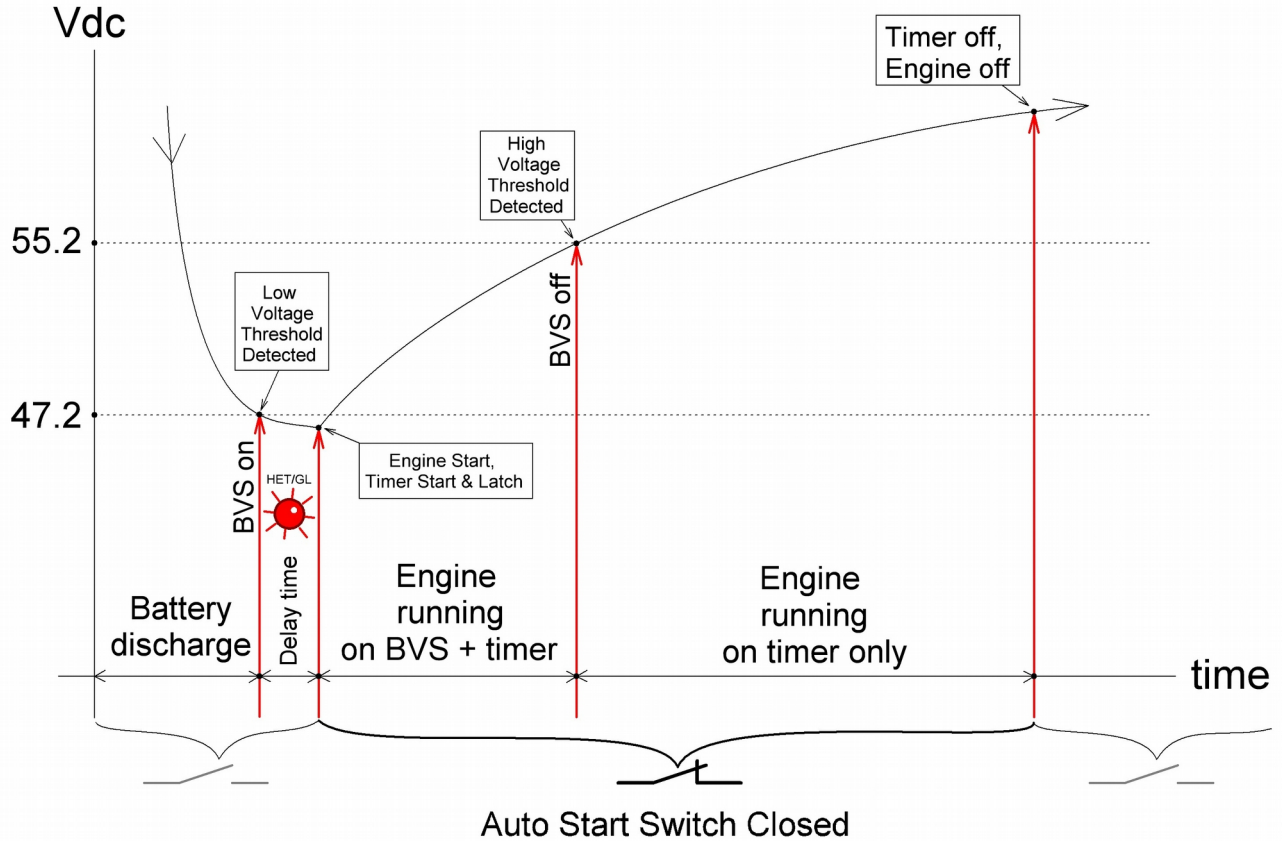
CONNOTATION	DEFAULT SETTING
A1. High Voltage Threshold Pot.	27.6Vdc (40Vdc max)
B1. Low Voltage Threshold Pot.	23.6Vdc (6Vdc min)
A. High Voltage Threshold LED	Off when HVT sensed
B. Low Voltage Threshold LED	On when LVT sensed
E. Delay time jumper link	5 sec delay time when fitted
F. Multi-range timer	10 sec...24h range
H. Timer range selector	Off (10sec-75min); On (1,5h - 24h)
I. Timer power supply	Off (timer disabled); On (timer active)
G. Delay time "On" LED	LVT sensed → LED flashing
3. Battery negative supply (-)	BVS1 (MAIN)
5. Battery positive supply (+)	BVS1 (MAIN)
1,2. Volt-free relay switch (S1)	Normally Open, 3A 30Vdc/250Vac
6. Battery positive supply (+)	BVS2 (AUXILIARY)
4. Battery negative supply (-)	BVS2 (AUXILIARY)
C1. High Voltage Threshold Pot.	27.6Vdc (40Vdc max)
D1. Low Voltage Threshold Pot.	23.6Vdc (6Vdc min)
C. High Voltage Threshold LED	Off when HVT sensed
D. Low Voltage Threshold LED	On when LVT sensed





Model No: BVST105

Functional Diagram (example)



BVS Adjustment

This procedure could also be done with help of adjustable DC power supply (when available)

HOW TO SET UP THE BVS LOW VOLTAGE THRESHOLD (LVT)

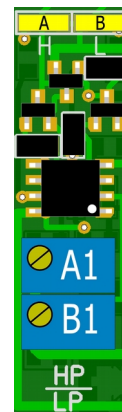
1. Connect your discharged (ready to be charged) battery to BVS according to wiring diagram provided.
2. Start turning "B1" Potentiometer (very slowly) and find the position when "B" LED changes its state from Off to On
3. Stop turning "B1" Potentiometer immediately when you notice this change.
4. Repeat steps 1-3 for "D1" and "D" respectively.

HOW TO SET UP THE BVS HIGH VOLTAGE THRESHOLD (HVT)

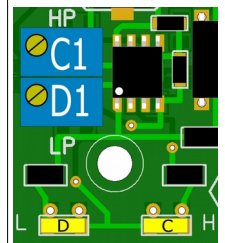
1. Connect your fully charged battery to BVS according to wiring diagram provided.
 2. Start turning "A1" Potentiometer (very slowly) and find the position when "A" LED changes its state from On to Off
 3. Stop turning "A1" Potentiometer immediately when you notice this change.
- Repeat steps 1-3 for "C1" and "C" respectively.

Note: the BVS sensor comes with pre-set LVT (47.2Vdc) and HVT (55.2Vdc) (valid for 2 x 24V battery banks connected in series).

BVS1 (MAIN)



BVS2 (AUX.)




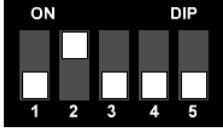


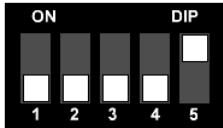
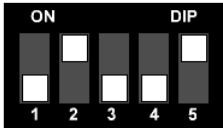
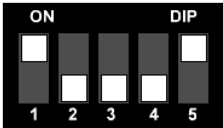

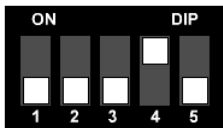
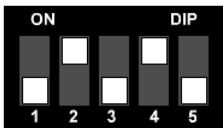
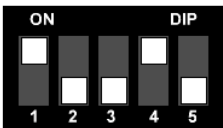
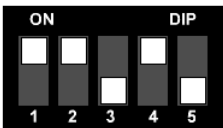
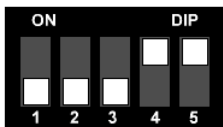


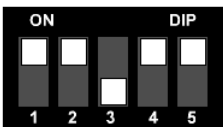
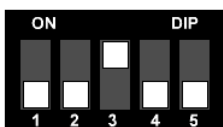

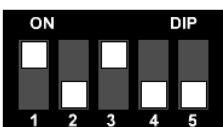















Model No: BVST105

MULTI-RANGE TIMER SETTINGS

DIP switch 1 is "OFF" DIP switch 2 is "On"



 10 sec	 4 min	 14 min	 30 min
 20 sec	 5 min	 16 min	 35 min
 30 sec	 6 min	 18 min	 40 min
 60 sec	 7 min	 20 min	 45 min
 90 sec	 8 min	 22 min	 50 min
 120 sec	 9 min	 24 min	 55 min
 150 sec	 10 min	 26 min	 60 min
 180 sec	 12 min	 28 min	 75 min

Note: DIP switch 2 in "Off" position means the multi-range timer is disabled. The module will rely on BVS low and high thresholds only.



Model No: BVST105

MULTI-RANGE TIMER SETTINGS

DIP switch 1 is "On" DIP switch 2 is "On"



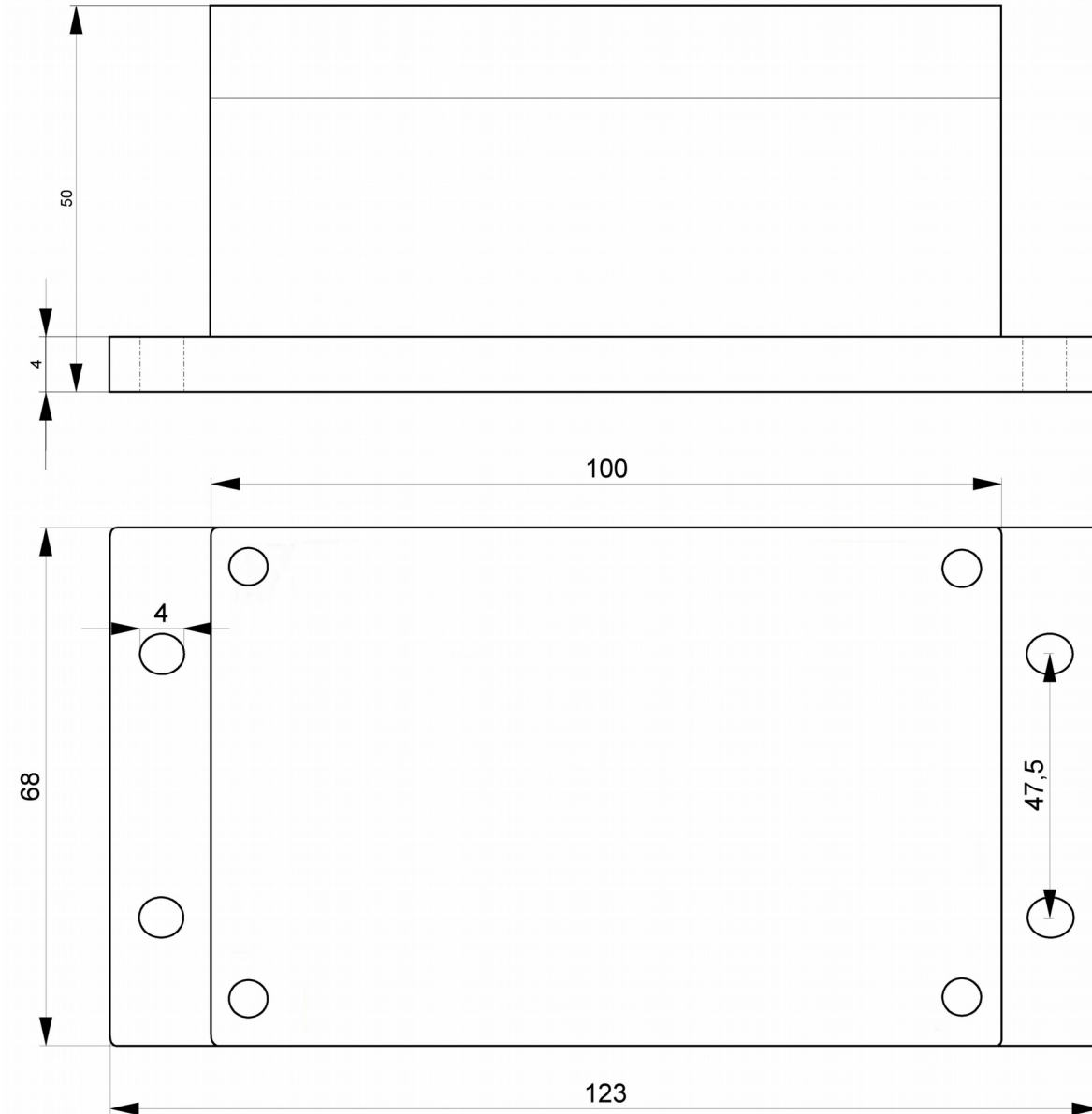
 1.5 h	 5.5 h	 9.5 h	 17 h
 2 h	 6 h	 10 h	 18 h
 2.5 h	 6.5 h	 11 h	 19 h
 3 h	 7 h	 12 h	 20 h
 3.5 h	 7.5 h	 13 h	 21 h
 4 h	 8 h	 14 h	 22 h
 4.5 h	 8.5 h	 15 h	 23 h
 5 h	 9 h	 16 h	 24 h

Note: DIP switch 2 in "Off" position means the multi-range timer is disabled. The module will rely on BVS low and high thresholds only.



Model No: BVST105

DIMENSIONS



BVST105 specification

DC Supply: 12V or 24V (6...40Vdc) for each BVS input
Max. standby current: 6,5mA @12Vdc (x2)
Auto start relay output: 3A max 30Vdc/250Vac
Run time max.: 24h

Dimensions: 100x68x50mm
Operating temperature range: -30 to +70°C
Humidity Range Operating: 20-80%
Enclosure IP code: IP67 (weatherproof type)