Pumps, Pumping Systems and Ancillaries

NEWTON NORTHSTAR BATTERIES

Long Float Life Lead Acid Batteries

Rev 1.0 - 28 April 2016

PRODUCT CODES - BB20, BB21, BB22

INTRODUCTION

The NorthStar range of 60FT, 100FT, and 190FT batteries are ultra high performance and premium quality units that use pure lead plates to delivery exceptionally long life, even at elevated temperatures. The batteries are manufactured by NorthStar at their plants in Missouri, USA, in the most advanced lead-acid manufacturing facilities in the world, utilising the latest in robotic processing, manufacturing technology, and computer-controlled monitoring. The result are easily-installed batteries with high surface and capacity density, rapid recharge capability, a wide range of operating temperatures, and an extremely long float life.

KEY BENEFITS

- Pure lead AGM technology delivers long float life even at elevated temperatures
- 15 year float life at 20 °C (68°F)
- EUROBAT design life definition: Long Life (12+ years)
- High energy density
- Operating temperature range: -40°C to +65°C (-40°F to 149°F)
- State-of-the-art automated manufacturing ensures consistency and reliability
- Advanced 3 stage terminal design to ensure leak-free operation
- Female M8 brass terminals provide maximum performance
- 2 year shelf life at 25 °C (77°F)
- High modulus Polyphenylene Oxide (PPO) plastic materials designed to withstand extended elevated operating temperatures and maintain high battery compression essential for reliable operation
- Non-halogenated, thermally sealed plastic casing
- Flame retardant (UL 94 VO) and LOI of at least 28%
- Integral handles and front access terminals ensure ease of installation and maintenance

BATTERIES

The Victron Inverter/Charger units draw 12V power from a single or a bank of 12V batteries which is inverted into clean, pure sine wave, 230V power.

The range of batteries available are:

- NorthStar NSB 60FT (Product code BB20) - 59Ah High Efficency battery - 12V
- NorthStar NSB 100FT (Product code BB21) - 99Ah High Efficency battery - 12V
- NorthStar NSB 190FT (Product code BB22) - 191Ah High Efficency battery - 12V

WEIGHT

- NorthStar NSB 60FT (BB20) - 21kg
- NorthStar NSB 100FT (BB21) - 33kg
- NorthStar NSB 190FT (BB22) - 60kg

DIMENSIONS - H x W x D

- NorthStar NSB 60FT (BB20) - 263 x 108 x 287 mm
- NorthStar NSB 100FT (BB21) - 287 x 108 x 396 mm
- NorthStar NSB 190FT (BB22) - 320 x 125 x 560 mm

WARRANTY

The batteries are covered by a 5-year warranty.

The warranty includes site replacement. A new battery will be delivered and the old battery collected (service does not include disconnection and reconnection). If the warranty claim is upheld, there is no charge for the exchange. If the warranty claim is not upheld, the client must decide the course of action, which will include the purchase of the replacement battery or the return of the original battery and payment of all of the costs associated with the failed warranty claim.

The expected service life of the batteries is 12+ years.

(a trading name of John Newton & Co. Ltd.)
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TECHNICAL DATA																
Features	NorthStar NSB 60FT					NorthStar NSB 100FT					NorthStar NSB 190FT					Units
Newton product code	BB20					BB21					BB22					
Battery capacity	59					99					191					Ah
Battery life cycles at 50% depth of discharge	500					700					1700					
Service design life	12+					12+					12+					
Starting efficiency draw	800					1545					1600					MCA
Weight	21					33					60					kg
Dimensions (L x W x H)	287 x 108 x 263					396 x 108 x 287					560 x 125 x 320					mm
Warranty	5					5					5					years
Electrical Specifications @ International Standard 20°C																
8 hr capacity to 1.75 VPC	58					98					188					Ah
10 hr capacity to 1.80 VPC	59					99					191					Ah
Float voltage	2.29 +/- 0.02					2.29 +/- 0.02					2.29 +/- 0.02					VPC
Nominal voltage	12					12					12					V
Impedance (1kHz) @ 25°C	4.8					3.9					2.6					mΩ
Conductance	965					1,298					2,041					S
Short circuit current	2,100					3,500					6,000					A
Ah Capacity Ratings @ 25°C																
Capacity discharge	1	2	4	8	10	1	2	4	8	10	1	2	4	8	10	Hours
Capacity @ 25°C	46	50	54	59	60	81	88	94	100	100	150	167	181	191	192	Ah
End of discharge	1.70	1.75	1.75	1.75	1.80	1.70	1.75	1.75	1.75	1.80	1.70	1.75	1.75	1.75	1.80	VPC

PERFORMANCE EXAMPLES

The table below is test data from our pump testing rig and confirms the volumes of water that should be removed with the specified system. The test rig was set with a pumping head of 4m with 4 pump starts per hour, approximately 66 litres of water discharged at each start, water discharge temperature of 20ºC and standard DC power cables. 400 watt pump flow rate was 137 litres per minute. 750 watt pump flow rate was 225 litres per minute, measured by flow per metre.

	400W Pumps				750W Pumps			
	Start Volts	Starts	Hours	Litres	Start Volts	Starts	Hours	Litres
1 x NorthStar NSB 60FT	12.84	56	14.2	3825	12.98	48	12.0	3154
2 x NorthStar NSB 60FT	12.71	104	26.6	7035	12.84	102	25.7	6879
1 x NorthStar NSB 100FT	12.98	106	27.1	7295	13.08	87	21.9	5803
2 x NorthStar NSB 100FT	12.85	212	54.0	14417	12.90	180	45.5	11992
1 x NorthStar NSB 190FT	12.80	182	46.7	12394	12.82	162	41.0	11002
2 x NorthStar NSB 190FT	12.84	395	101.5	26822	13.10	353	89.6	23936
1 x NorthStar NSB 190FT[1]	12.80	2568	642.0	282480	13.10	1632	408.0	244800

[1] Figure is based upon the actual performance of 1 x NorthStar NSB 190FT and the charging rate of the generator and is calculated, not tested. Figures based upon one full tank of fuel and generator recharge set to 50% of battery discharge. Refuelling as required would give unlimited number of starts, duration and volume of water pumped.

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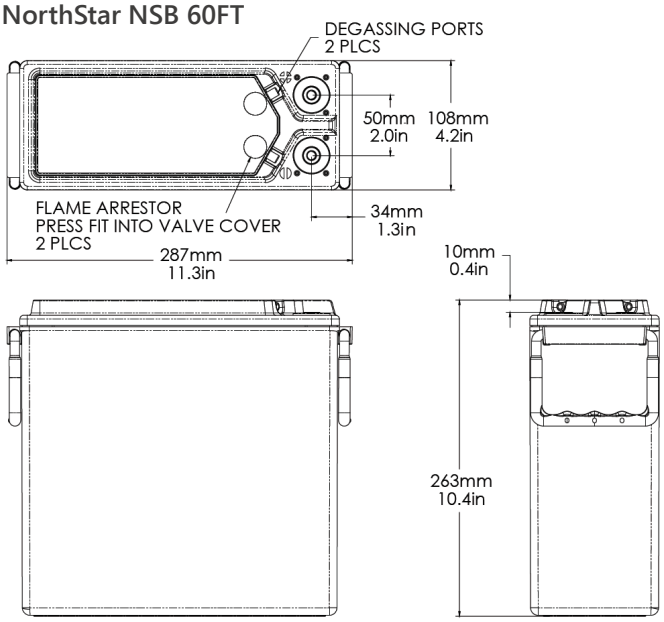
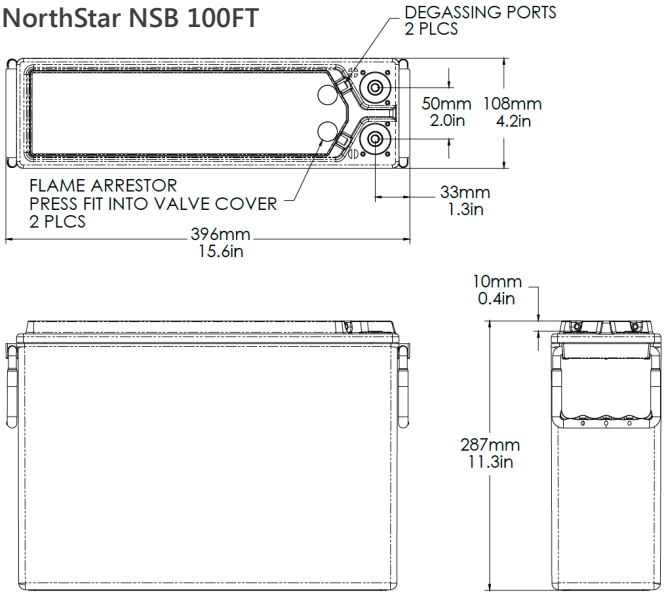
DRAWINGS

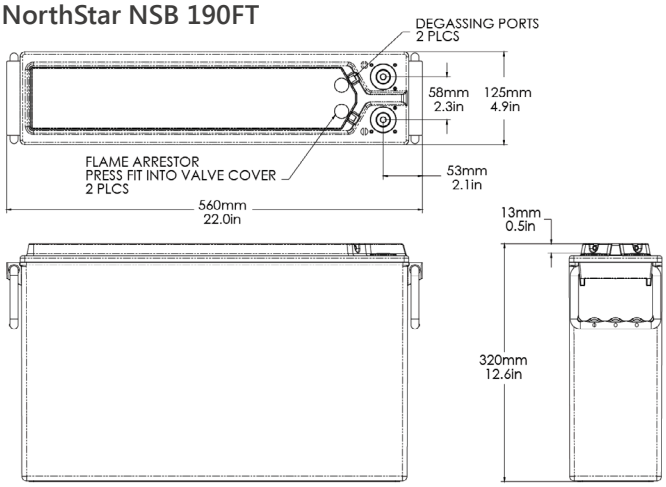
NorthStar NSB 60FT



NorthStar NSB 100FT



NorthStar NSB 190FT



TRAINING AND COMPETENCY OF THE USER

The Newton Victron Inverter/Charger units, with which the NorthStar batteries will be used, are mains powered and should be installed by persons who are electrically competent by way of appropriate training to either fit a fused plug or wire directly to a fused spur. Knowledge of DC input by battery and the connection of DC batteries leads to both the battery(s) and the Inverter/Charger is required.

In most cases these battery back-up systems will be installed as part of our System 500 cavity drain waterproofing system by a Newton Registered Contractor (NSBC) who are trained and experienced in the installation of all Newton battery back-up systems, pumps, pumping systems, panels and telemetry systems.

INSTALLATION INSTRUCTIONS

Please refer to the installation manuals:

Installation Manuals - Victron Battery Back-up Systems

STORAGE

Batteries must be installed and stored in a dry internal environment.

SPECIFICATION

Newton Waterproofing Sysems are in partnership with RIBA NBS who publish details of our products and systems within their specification clause library to allow Architects ease of specification through their NBS Plus interface.

NBS clauses can be accessed via the technical resources area of the web site where a live NBS Feed is available at NBS Plus Live Feed

Our website has drawings available for download in Technical Drawings. A selection are also available via FastrackCAD, as well as a range of BIM objects on the NBS National BIM Library

HEALTH & SAFETY

Use appropriate PPE for the environment the system is installed within. Use products only as stated within the this data sheet. Read the MSDS before use.

Batteries are heavy. We recommend that a Manual Handling Risk Assessment is carried out in accordance with current Health & Safety Regulations on the sizing and installation of the battery(s).

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