

PRODUCT DATA SHEET 99014

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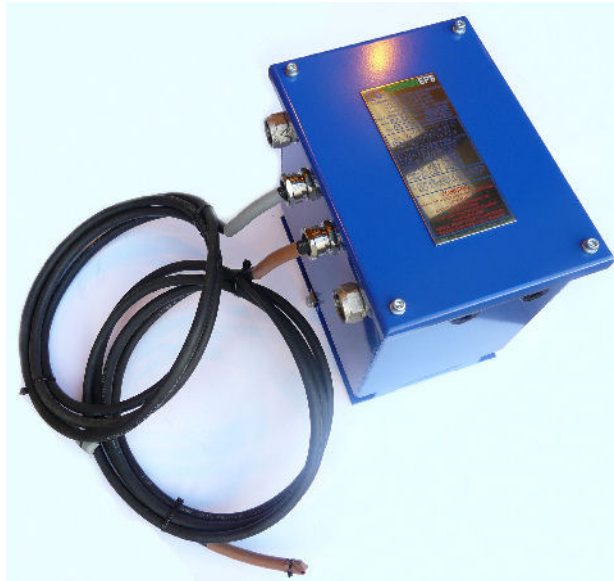
ATEX Directive 2014/34/EU – Equipment Group II (Surface Industry)

Equipment Category 3G

For use in Zone 2 Flammable Gaseous Atmospheres

II 3G Ex e IIC T4 Gb 55Ah Battery Assembly

Turner EPS Part No: 99014



(Cable and glands are not included)

Assembly Weight: 36Kg

Description:

Turner Explosion Protection Systems Increased Safety 12Vdc Battery Assembly. Incorporating the **OPTIMA® Battery Inc, Model No: BT DC 4,2** High power, Sealed Lead Acid, Dual purpose Starting and Deep Cycle, **Blue Top Marine Battery.**

- Assembly dimensions: 290mm long x 209mm wide x 284mm high.
- Absorbed electrolyte sealed construction means that the battery cannot leak even if its case is cracked open. It is fifteen times more resistant to vibration than other batteries. It has more power in the initial 1, 3, 5, and 10 seconds of the starting process than other comparable lead acid batteries. Fully charged it can sit unused for up to 12 months at room temperature and still provide the necessary power.
- Battery terminal corrosion does not occur and there is no need to add water. It is truly Maintenance Free.
- The battery design incorporates Spiralcell Technology, representing a radical rethink in lead-acid design. The pure lead plates are wound into a spiral producing tight compact cells. Electrolyte is bound into fibre-glass floss separating the plates, giving rise to an extremely low internal resistance. This construction enables the battery to replace and outperform much larger conventional flat-type batteries.
- The battery unit is enclosed within an IP44 mild steel enclosure (or optionally - 316 grade stainless steel) with a removable ventilated lid.
- The battery comes with screw terminal connections however the cable and glands are not supplied. These must be ordered separately. If internally sourcing, the cable should be double insulated, oil and fire retardant (BS638-4.S3:1996).
- The low internal resistance and high purity of components equate to extremely high cranking currents and instantaneous power providing fast, crisp starts. This makes this battery truly unique being both a starter battery as well as being specially formulated for deep cycle usage. It lasts up to 2 times longer than other batteries.

Physical Characteristics:

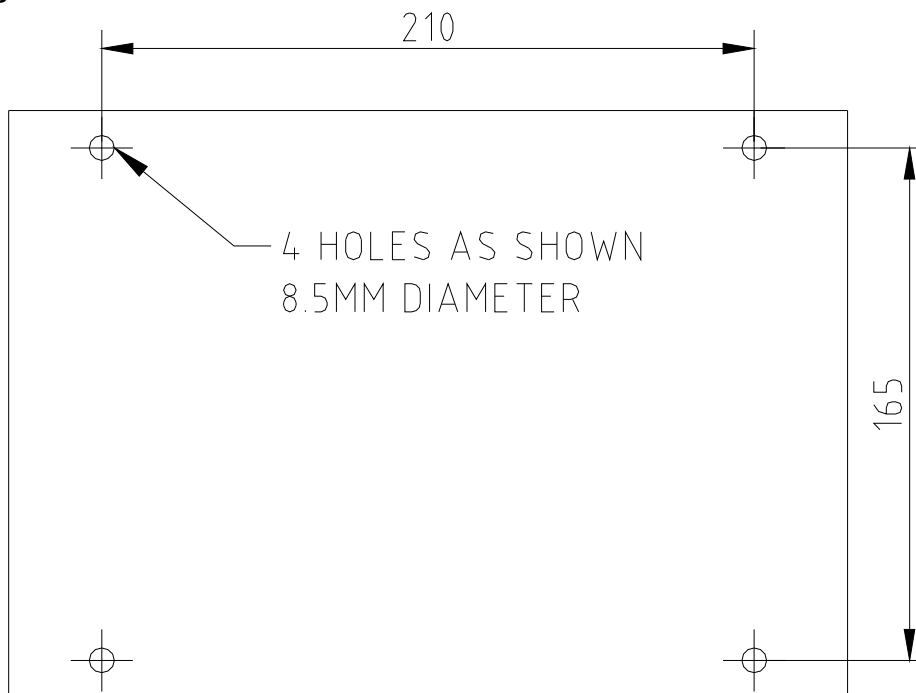
Plate Design:	High purity lead-tin alloy. Wound cell configuration utilizing proprietary SPIRALCELL TECHNOLOGY®
Electrolyte:	Sulphuric acid, H ₂ SO ₄ .
Enclosure:	Fabricated mild steel – Marine Blue (RAL 5002) other colours available on request. 316 grade stainless steel construction optional.
Internal Case:	Polypropylene - Case: Light Gray – Top Cover: Blue.
Internal Battery:	Weight 19.8 kg (<i>Lifting handle provided for unit replacement</i>)
Terminal Configuration:	Battery supply and return cables connected to threaded stainless steel studs 5/16 - 18 UNC). In addition, auxiliary battery "Posts" of SAE / BCI automotive, not used.

Installation:

Always install with the certification label facing up so that any moisture will be able to exit through the drain.

Torque for stud posts - 19ft/lb or 28N/m. Do not overtighten.

Bottom Mounting Details:



Performance Data:

Open Circuit Voltage (fully charged):	13.2 volts
Internal Resistance (fully charged):	0.0028 ohms
Capacity:	55 Ah (C120)
Reserve Capacity:	BCI: 120 minutes (25 amp discharge, 26.7°C, to 10.5 volts cut-off).
Power:	CCA (EN -18C): 765 amps MCA (EN 0°C): 870 amps.

Replacement Part Numbers:

Battery Part Number:	4300016 – Approximate Weight 19.8 Kg
Battery Enclosure:	3109284 – Approximate Weight 15.2 Kg

Certification – Turner Explosion Protection Systems Part No. 99014 Battery Assembly

ATEX Directive 2014/34/EU

EN60079-0:2012, EN60079-7:2007, IEC60079-0:2011, IEC60079-7:2006, EN60529:1992 and IEC 60529:2001

MATERIAL:
WHITE-BLACK-WHITE
TRAFFOLYTE

DATE SHOWN FOR FORMAT PURPOSES, ACTUAL TEXT WILL CHANGE ACCORDING TO ORDER

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IP44 INCREASED SAFETY BATTERY ASSEMBLY

Model: **BT DC 4.2** Serial No: **99021-XXXX**

Date: **DEC 2016** Rating: **12Vdc – 5Ah**

II 3G Ex E IIC T4 Gc
Tamb -25°C to 60°C

MAX PERMITTED DISCHARGE (WITH 8% DUTY CYCLE AND 5 MINUTE REPEAT CYCLE AT Tamb 60°C)
70MMCSA CABLE 687AMPS
50MMCSA CABLE 529 AMPS
35MMCSA CABLE 396 AMPS
25MMCSA CABLE 300 AMPS
16MMCSA CABLE 204 AMPS

BATTERY ASSEMBLY CAN BE ELECTRICALLY CONNECTED IN SERIES TO FORM 24VDC OR 48VDC ASSEMBLIES WEIGHT OF 12VDC BATTERY ASSEMBLY 36KG ORIENTATION OF EQUIPMENT: STORE, TRANSPORT AND INSTALL WITH THIS LABEL/SURFACE FACING UP

WARNING
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT
REFER TO INSTRUCTION MANUAL FOR BATTERY CHARGING
DO NOT JUMP START OR REMOTE CHARGE IN HAZARDOUS AREA
REMOVE/ISOLATE CONNECTED LOAD BEFORE DISCONNECTING CABLE AT THE STUD TERMINALS

TURNER EXPLOSION PROTECTION SYSTEMS

X's WILL BE REPLACED WITH SERIAL NUMBER ISSUED AT ORDER STAGE

180

75

Label Reference: 1310316

Discharge:

The battery assembly is intended for the starting of internal combustion engines. The maximum discharge current must not exceed that shown on the table below:

Cross Sectional Area of Cable	Current rating of increased safety battery assembly for 8% duty cycle over a five minute period for the following ambient temperatures							
	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
16mm ²	314amps	301amps	285amps	273amps	257amps	241amps	223amps	204amps
25mm ²	460amps	441amps	418amps	400amps	377amps	353amps	327amps	300amps
35mm ²	608amps	583amps	553amps	528amps	498amps	466amps	433amps	396amps
50mm ²	800amps	778amps	738amps	705amps	665amps	622amps	577amps	529amps
70mm ²	800amps	800amps	800amps	800amps	800amps	800amps	750amps	687amps

The battery assembly can also be used for mobile traction applications subject to the maximum discharge current must not exceed that stated in the table below:

Cross Sectional Area of Cable	Current rating of increased safety battery assembly for 100% duty cycle for the following ambient temperatures							
	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
16mm ²	135amps	129amps	122amps	117amps	110amps	103amps	96amps	88amps
25mm ²	180amps	172amps	163amps	156amps	147amps	138amps	128amps	117amps
35mm ²	225amps	216amps	204amps	195amps	184amps	172amps	160amps	146amps
50mm ²	285amps	273amps	259amps	247amps	233amps	218amps	203amps	185amps
70mm ²	355amps	340amps	323amps	308amps	291amps	272amps	252amps	231amps

Battery Assemblies can be electrically connected in series to form 24Vdc or 48Vdc assembly.

Charging in the hazardous area is permissible with a maximum charging voltage of 15V for 12Vdc battery assemblies, 30V for 24Vdc assemblies and 60V for 48Vdc assemblies.

Battery Maintenance:

The BT DC 4,2 battery is maintenance free. When fully charged you will not have to worry about leaking, corrosion, or gassing. Periodically inspect stud terminal/cable connections gland and cable to ensure they are secure and clean from any ingress from outside elements or external mechanical damage.

Open circuit voltage/storage, for fully charged battery > 13.0 volts.

Storage:

When possible, store battery in cool, dry location, check voltage every 6 months and charge if below 12.6 volts. Always store with the certification label facing up so that any moisture will be able to exit through the drain.

Earthing:

An M8 brass stud is provided underneath the side entry battery cables for making equipotential bonding connection to the battery case. The earthing conductor connected to this stud should have a cross section area of at least 4mm².

Recommended Charging:

The following charging methods are recommended to ensure a long battery life. (Always use a voltage regulated charger, with voltage limits set as described below.) These batteries are designed for cyclic applications and for use in vehicles / engines with large accessory loads.

Alternator:

12 volt battery: 13.65 to 15.0 volts.

Battery Charger:

12 volt battery: 13.8 to 15.0 volts with 10 amps maximum; 6-12 hours approximate (Constant Voltage).

Float Charge:

12 volt battery: 13.2 to 13.8 volts with 1 amp maximum current.

Rapid Recharge (Constant Voltage Charger)

12 volt battery: Maximum voltage 15.6 volts.

No current limit as long as battery temperature remains below 50 °C. Charge until current drops below 1 amp.

Recharge Time:

(Example assuming 100% discharge - 10.5 volts)

Current	Approx. time to 90%charge
100 amps	35 minutes
50 amps	75 minutes
25 amps	140 minutes

Recharge time will vary according to temperature and charger characteristics. When using Constant Voltage chargers, amperage will taper down as the battery becomes recharged. When amperage drops below 1 amp, the battery will be close to a full state charge.

Cyclic application or series string applications (CV/CC):

Constant Voltage with Constant Current finish:

12 volt battery: 14.7 volts, no current limit as long as battery temperature remains below 50 °C. When current falls below 1 amp, finish with 2 amp constant charge for 1 hour.

(All charge *recommendations assume an average room temperature of 25 °C*).

Always wear safety glasses when working with batteries.

Always use a voltage regulated battery charger with limits set to the above ratings. Overcharging can cause the safety valves to open and battery gases to escape, causing premature battery failure. These gases are flammable! You cannot replace water in sealed batteries that have been overcharged. Any battery that becomes very hot while charging should be disconnected immediately.

Not fully charging a battery can result in poor performance and a reduction in capacity.

Shipping and Transportation Information:

This battery can be shipped by AIR. The battery is non-spillable and is tested according to ICAO Technical Instructions DOC. 9284-AN/905 to meet the requirements of packing instructions No.806. It is classified as non-regulated by IATA Special Provision A-48 and A-67 for UN2800. Terminals and cables must be protected from short circuit. Always transport with the certification label facing up.