81700094

Installation instruction
for stationary lead acid batteries (Batteries / Stands / Cabinets)

EXIDE TECHNOLOGIES
INDUSTRIAL ENERGY

- Observe these Instructions and keep them located near the battery for future reference. Work on the battery should only be carried out by qualified
- personnel.

- Do not smoke.
- Do not use any naked flame or other sources of ignition.
- Risk of explosion and fire.

- While working on batteries wear protective eye-glasses and clothing.
- Observe the accident prevention rules as well as EN 50 272-2, EN 50110-1.

- An acid splash on the skin or in the eyes must be flushed with plenty of clean water immediately. Then seek medical assistance.
- Spillages on clothing should be rinsed out with water.

- Explosion and fire hazard, avoid short circuits.

- Electrolyte is very corrosive. In normal working conditions the contact with the electolyte is impossible. If the cell or monobloc container is damaged do not touch the exposed electrolyte because it is corrosive.

- Cells and monoblocs are heavy! Always use suitable handling equipment for transportation.
- Handle with care because cells and monoblocs are sensitive to mechanical shock.

- Dangerous electric voltage!
  Caution! Metal parts of the battery are always alive, therefore do not place items or tools on the battery.

Non-compliance with installation instruction, installations or repairs made with other than original accessories and spare parts or with accessories and spare parts not recommended by the battery manufacturer or repairs made without authorization (e. g. opening of valves on VRLA batteries) and use of additives for the electrolytes on flooded batteries (alleged enhancing agents) render the warranty void.

1. Installation preconditions and preparations

1.1
Prior to commencing installation, ensure that the battery room is clean and dry and that it has a lockable door. The battery room must meet the requirements in accordance with EN 50 272-2 and be marked as such. Pay attention to the following aspects:

– Load bearing capacity and nature of the floor (transport paths and battery room)
– Electrolytic resistance of the area where the battery is to be installed
– Ventilation

To ensure trouble free installation, coordination should be made with other personnel working in the same area.

1.2
Check delivery for complete and undamaged components. If necessary, clean all parts prior to installation.

1.3
Follow instructions in the documentation supplied (e.g. installation drawings for battery, stand, cabinet).

1.4
Prior to removing old batteries always ensure that all of the leads have been disconnected (load-break switches, fuses, insulations). This must be carried out only by personnel authorised to perform circuit operations.

<u>WARNING:</u> Do not carry out any unauthorised circuit operation!

1.5
Carry out open circuit voltage measurements on the individual cells or monobloc batteries. At the same time, ensure that they are connected in the correct polarity. As for unfilled and charged batteries, these measurements can only be taken after commissioning. The open-circuit voltages of fully charged cells at temperature of 20 °C are as follows:

Product range flooded (Classic)

OPzS-cells	DIN 40736	2.08 Vpc ± 0.01
OPzS-blocs	DIN 40737	2.08 Vpc ± 0.01
OCSM-cells		2.10 Vpc ± 0.01
GroE-cells	DIN 40738	2.06 Vpc ± 0.01
OGi-cells ≤ 250 Ah		2.08 Vpc ± 0.01
OGi-cells ≥ 260 Ah		2.10 Vpc ± 0.01
OGi-blocs		2.10 Vpc ± 0.01
Energy Bloc		2.08 Vpc ± 0.01

Product range VRLA (Gel, AGM)

OPzV-cells	DIN 40742	min. 2.12 Vpc
OPzV-blocs	DIN 40744	min. 2.12 Vpc
OGiV-blocs		min. 2.14 Vpc

The open-circuit of the individual cells / blocs must not vary from each other by more than the approved values in the table below.

Product range	flooded	VRLA (Gel, AGM)
Singlecell	0.02 V	0.04 V
4 V-bloc	0.04 V	0.08 V
6 V-bloc	0.06 V	0.12 V
10 V-bloc	0.10 V	–
12 V-bloc	0.13 V	0.24 V

Higher temperatures cause the open-circuit voltage to be lower, whereas lower temperatures cause it to be higher. At a deviation of 15 K from the nominal temperature, the open circuit-voltage changes by 0.01 Vpc. If the deviation is any higher, contact the supplier.

2. Stands

2.1
Locate the stands/racks within the battery room in accordance with the installation plan. If an installation plan does not exist, observe the following minimum distances:

– From the wall: 100 mm all around, with regard to cells or monoblocs, or 50 mm, concerning of the stands.
– At a nominal voltage or partial voltage >120 V: 1.5 metres between non-insulated leads or connectors and grounded parts (e.g. water pipes) and/or between the battery terminals. During the installation of the batteries, ensure that EN 50 272-2 part 2 is observed (e.g. by covering electrically conductive parts with insulating mats).
– Width of aisles: 1.5 x cell width (built-in depth), but not less than 500 mm.

2.2
Balance battery stands horizontally, using the balance parts supplied, or adjustable insulators. The distances of the base rails must correspond to the dimensions of the cells or monobloc batteries. For horizontal installation of blocks/cells please ensure, that the beam does not support the lid/cover of blocks/cells see drawing 1. Check the stands for stability and all screwed and clamped joints for firm connection. Earth (ground) the stand or parts of the stand, if required. Screwed joints must be protected against corrosion.

2.3
Check cells or monobloc batteries for perfect condition (visual check, polarity).

2.4
Place cells or monobloc batteries on the stand one after another, ensuring correct polarity. For large cells it is useful to start installing the cells in the middle of the stand:

- Align cells or monobloc batteries parallel to each other. Distance between cells or monobloc batteries approx. 10 mm, at least 5 mm.
- If necessary, clean the contacting surfaces of the terminals and connectors.
- Place and screw intercell or monobloc connectors, using an insulated torque wrench (for correct torque value refer to battery operating instructions). If applicable, observe special instructions with regard to the intercell connectors (e.g. welded connectors).
- Place the series, step or tier connectors supplied and screw them together, observing the given torque values.
- Avoid short circuits! Use leads of at least 3 kV breakdown voltage or keep an air distance of approx. 10 mm between the leads and electrically conductive parts, or apply additional insulation to the connectors. Avoid applying any mechanical force on the cell/battery poles.
- If applicable, remove transport plugs and replace by operational plugs.
- Check electrolyte level. (Observe operating instructions / commissioning instructions).
- Measure total voltage (nominal voltage: sum of open circuit voltages of the individual cells or monobloc batteries).
- If necessary sequentially number the cells or monobloc batteries in a visible place between the positive terminal of the battery and the negative terminal of the battery.
- Apply polarity signs for the battery leads.
- Attach safety marking, type lable and operating instructions in a visible place.
- If necessary, fit insulating covers for cell / monobloc connectors and terminals.

3. Cabinets

3.1
Cabinets with **built-in** battery:

- Install the battery cabinet at the location assigned, observing the accident prevention rules.
- Leave additional space from the wall for possible or planned cable entries.
- If applicable, remove transport protection from the built-in cells or monobloc batteries.
- Check cells or monobloc batteries for correct positioning and for any mechanical damage.

3.2
Cabinets with **separately delivered** cells or monobloc batteries:

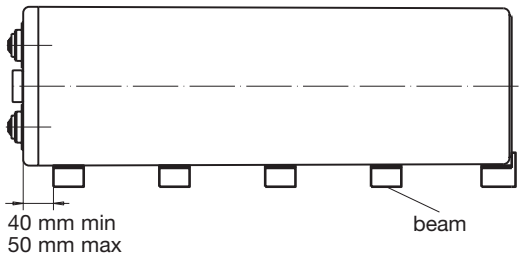
- Only filled and charged cells and/or monobloc batteries (vented or valve regulated) are built into cabinets.
- Assemble cabinet, place and align at the assigned location (observe the accident prevention rules).
- Place cells or monobloc batteries in the cabinet, in accordance with the installation plan, use the enclosed cellular rubber according drawing 2 and the defined distances, connect electrically and apply markings (see point 2.4).

4. CE marking

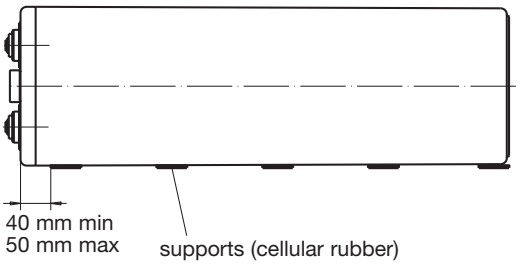
From 1 January 1997, batteries with a nominal voltage from 75 V onwards require an EC conformity declaration in accordance with the low voltage directive (73/23/EWG), which entails that the CE marking is applied to the battery.
The company installing the battery is responsible for supplying the declaration and applying the CE marking.

WARNING:
Prior to connecting the battery to the charger, ensure that all installation work has been duly completed.

Drawing 1



Drawing 2



For drawing 1 and 2
Number of supports:

4 OPzV	200	-	6 OPzV	300	= 3 pieces
5 OPzV	350	-	7 OPzV	490	= 4 pieces
6 OPzV	600	-	12 OPzV	1200	= 5 pieces
15 OPzV	1500	-	24 OPzV	3000	= 6 pieces

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