









Installation Instruction – range MVR

Stationary valve regulated batteries, type VRLA

	Observe the present Installation and Operating instructions and keep them located nearby 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.
	While working on batteries wear protective eyeglasses and clothing. Observe the accident prevention rules of International standards and local regulations.
	Explosion and fire hazard, avoid short-circuits. Caution! Metal parts of the battery are always alive, therefore do not place items or tools on the battery.
	In normal working conditions the contact with the electrolyte is impossible. If the cell or monobloc container is damaged, do not touch the exposed electrolyte, since it is highly corrosive.
	Cells and monoblocs are heavy. Always use suitable handling equipment for transportation.
	Batteries marked with the recycling symbol should be processed via a recognized recycling agency. By agreement, they may be returned to the manufacturer. Batteries must not be mixed with domestic or industrial waste.
	The product is in conformity with EU EMC - DIRECTIVE 89/336/EEC.

1. Transport

All cells and monoblocs are to be transported in an upright position. To avoid short circuits, the terminals have to be fully insulated. Batteries without any visible damages are not defined as dangerous goods if they are protected against short circuit, slipping, upsetting or damaging and packed in upright, proper and secure condition onto pallets or in wooden boxes. In case of damaged battery containers, refer to national regulations (dangerous goods).

2. Storage

VRLA cells and monoblocs are delivered charged and ready for operation. Store them in a dry and cool or cold place, away from heat, chemicals, vapors and direct sunlight. The average self-discharge of the MVR range batteries at 20°C is less than 2.5 % per month, providing 12 months shelf life without necessity of recharge. Whenever the average unit voltage has fallen below 2.06 Vpc, then a recharge with 2.27 Vpc ± 1% for at least 48 hours should be carried out. Note that low ambient temperatures (T<10°C) will allow longer storage times.

3. Unpacking

Check for correct shipment quantities, transport damage and the voltage of each unit. These voltages should be at least 2.02 V per cell. Voltages below this value indicate that an irreversible damage has occurred during transport or storage and replacement is necessary. Contact MONBAT or your local supplier for additional information. If unit cleaning is needed, use water damp cloth only. Never use sprays, chemicals, solvents and feather dusters.

4. Installation safety measures

Install the batteries in a dry and vented place with ambient temperature as close as possible to 20°C, away from direct sunlight. It is highly recommended to use qualified and protected personnel for installing the batteries. Ensure the stability of shelves, cabinets and racks before installing cells and monoblocs. Avoid open flames, electrostatic discharges, sparks and short circuits with clothing, jewelry, wristwatches and tools when installing and operating the batteries.

5. Inter-unit connections

Check unit polarity and voltage before making inter-unit connections. Use only provided or specified by the manufacturer connectors and accessories. Assure at least an 8 to 10 mm air gap between units and between units and cabinet walls for proper airflow. Tighten the supplied screws with torque of 9±1 Nm. Verify that no screws have been overlooked. Use the provided grease to protect the terminals. Cover the connectors, terminals and cable lugs firmly with the supplied insulating covers.

6. Connecting strings in parallel

Connect two or more strings of batteries in parallel with cables of similar resistance, only at the end terminals of the string. Provide that each string is equipped with a circuit breaker and a fuse. With parallel strings, only constant voltage charging is acceptable.

7. Connection to charger or exterior circuit

Check voltage and polarity of the complete battery and battery strings. Assure that the settings of the charger or rectifier are set to correct float charge conditions with 2.27 Vpc ± 1% at 20°C. Power-down the charger or rectifier. Connect first the positive (+) terminal of the battery with the positive (+) terminal of the charger or exterior circuit and then the negative (-) terminal of the battery with the negative (-) terminal of the charger or exterior circuit. Minor sparking may occur when the connection is made.

8. Start-up

Start up the entire installation as directed by charger supplier. For instructions on battery operation, charging conditions, maintenance and inspection, refer to the Operating Instructions. If necessary, contact the manufacturer or your local vendor.

9. Danger warnings

Exposed metal parts of the batteries may carry dangerous voltages. Installation in a hermetically sealed cubicles is not permitted. If the batteries are installed in switchgear cubicles, make sure they have adequate change of air. Never lift the elements or monoblocs by the terminals. Install the cells and monoblocs only in approved orientation.

Nominal values for the MVR range			
Batt. type	Cells	Nominal Voltage, V	Nominal Capacity, Ah
12MVR50TA	6	12	50
12MVR65TA	6	12	65
12MVR80TA	6	12	80
12MVR60	6	12	60
12MVR80	6	12	80
12MVR100	6	12	100
12MVR125	6	12	125
12MVR150	6	12	150
6MVR160	3	6	160
6MVR180	3	6	180
6MVR200	3	6	200
4MVR225	2	4	225
4MVR250	2	4	250
4MVR275	2	4	275
4MVR300	2	4	300
2MVR350	1	2	350
2MVR400	1	2	400
2MVR450	1	2	450
2MVR500	1	2	500
2MVR550	1	2	550
2MVR600	1	2	600

* Capacity is given as 10 hour discharge capacity at 20°C to final voltage of 1.8 Vpc.