



LM Battery Range

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THE LM BATTERY SERIES IS AN OPZS VENTED RANGE DESIGNED BY FIAMM TO MEET DIN 40736 SPECIFICATIONS.

ALL PRODUCTS HAVE BEEN DESIGNED TO PROVIDE USERS WITH A HIGHLY ROBUST PRODUCT FAMILY. THE RANGE HAS BEEN DEVELOPED FOR APPLICATIONS WHERE DISCHARGE CYCLES NEED TO BE OF THE HIGHEST LEVELS OF RELIABILITY. AS RESULT OF THIS THE RANGE EXCEEDS THE SPECIFICATION STANDARDS LAID DOWN BY THE DIN STANDARD. THIS PERFORMANCE IS THE RESULT OF A LOW ANTIMONY ALLOY PLATE WHICH PROVIDES VERY LOW WATER CONSUMPTION OVER THE LIFE OF THE PRODUCT. UNDER NORMAL FLOAT OPERATING CONDITIONS BATTERIES REQUIRE TOPPING-UP ONCE EVERY THREE YEARS. FURTHERMORE THE DESIGN HAS BEEN OPTIMIZED TO LOWER SELF-DISCHARGE DURING STORAGE. ALL OF THESE OUTSTANDING FEATURES ADD UP TO A LONGER LIFE PRODUCT WITH LOWER MAINTENANCE COSTS. LIKE ALL FIAMM LEAD-ACID BATTERIES THE LM RANGE IS ECO-FRIENDLY AND FULLY RECYCLABLE.



MAIN APPLICATIONS:



TELECOMMUNICATION



INDUSTRIAL UPS



UTILITIES AND INDUSTRY



RAILWAYS



OIL & GAS

SPECIFICATIONS

The positive tubular grid is composed of a special alloy (Pb-Sb) which is die-cast to guarantee high corrosion resistance and low water consumption (1 topping up in 3 years in float conditions)

Electrolyte: sulphuric acid electrolyte with specific gravity of 1.24kg/l at 20°C

Separators have high porosity and provide very low internal resistance

Robust design thanks to high mechanical polymers properties; box made of SAN and with an ABS lid

The vent plug is made of porous flameproof material for a superior safety

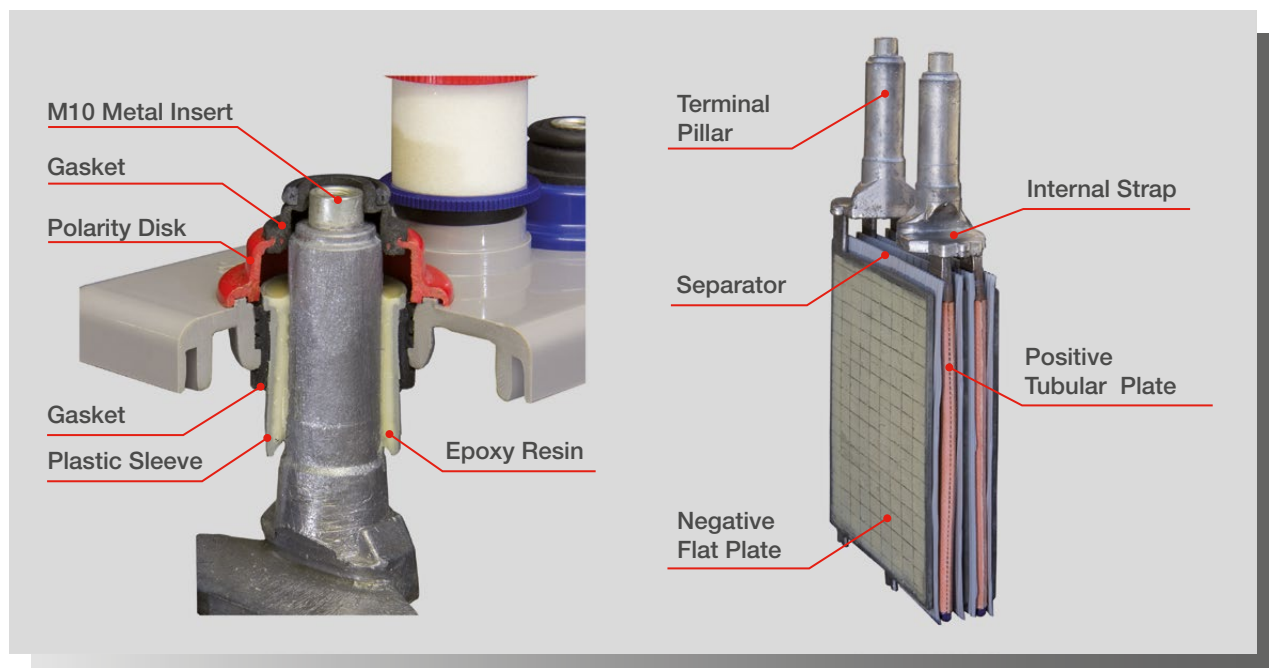
A long shelf life of up to six months is possible without recharge (<2% discharge per month)

The metallic threaded insert on terminals ensures the highest conductivity and provides maximum torque retention and easy installation

Flexible connections ensure a safe link between terminals

The connecting bolt is fully insulated but with probe hole on the top to grant electrical measurements

TECHNOLOGY



THE UNIQUE FIAMM TERMINAL DESIGN PERMITS PILLAR GROWTH DURING CELL LIFE WITHOUT LEAKAGE. THIS FEATURES AVOID MECHANICAL STRESS ON THE LID OF THE CELL.

THE LM RANGE HAS A DESIGN LIFE IS 20 YEARS DUE TO HIGH RELIABILITY AND COMPONENTS MANUFACTURE PROCESS. ALL LM MODELS ARE AVAILABLE IN A DRY CHARGE VERSION.

| BATTERY TYPE | REFERENCE OPzS DIN 40736 | NOMINAL CAPACITY (Ah) 10H to 1.8VPC at 20°C | SHORT CIRCUIT CURRENT (A) IEC 60896-11 | INTERNAL RESISTANCE (mOhm) IEC 60896-11 | NOMINAL DIMENSION (mm) | | | ELECTROLYTE QUANTITY (liters) | TYPICAL WEIGHT (with electrolyte) (kg) |
|--------------|--------------------------|--|---|--|------------------------|-------|--------|-------------------------------|--|
| | | | | | Lenght | Width | Height | | |
| LM 100 | 2 OPzS 100 | 108 | 1250 | 1.824 | 103 | 206 | 420 | 4.2 | 13.9 |
| LM 150 | 3 OPzS 150 | 162 | 1875 | 1.216 | 103 | 206 | 420 | 3.8 | 16.1 |
| LM 200 | 4 OPzS 200 | 216 | 2380 | 0.840 | 103 | 206 | 420 | 3.6 | 17.4 |
| LM 250 | 5 OPzS 250 | 270 | 2700 | 0.730 | 124 | 206 | 420 | 4.7 | 21.4 |
| LM 300 | 6 OPzS 300 | 324 | 3240 | 0.608 | 145 | 206 | 420 | 5.4 | 24.8 |
| LM 350 | 5 OPzS 350 | 390 | 3150 | 0.628 | 124 | 206 | 536 | 6.3 | 28.4 |
| LM 420 | 6 OPzS 420 | 468 | 3780 | 0.524 | 145 | 206 | 536 | 7.2 | 32.7 |
| LM 490 | 7 OPzS 490 | 546 | 4410 | 0.449 | 166 | 206 | 536 | 8.3 | 37.6 |
| LM 600 | 6 OPzS 600 | 630 | 4560 | 0.447 | 145 | 206 | 711 | 12.2 | 46.5 |
| LM 700 | 7 OPzS 700 | 735 | 5320 | 0.383 | 210 | 191 | 711 | 15.0 | 58.8 |
| LM 800 | 8 OPzS 800 | 840 | 6100 | 0.335 | 210 | 191 | 711 | 12.9 | 62.2 |
| LM 900 | 9 OPzS 900 | 945 | 6840 | 0.298 | 210 | 233 | 711 | 22.0 | 71.5 |
| LM 1000 | 10 OPzS 1000 | 1050 | 7600 | 0.268 | 210 | 233 | 711 | 17.7 | 74.9 |
| LM 1200 | 12 OPzS 1200 | 1260 | 9120 | 0.223 | 210 | 275 | 711 | 22.1 | 89.2 |
| LM 1500 | 12 OPzS 1500 | 1570 | 10200 | 0.200 | 210 | 275 | 861 | 26.7 | 114 |
| LM 1750 | 14 OPzS 1750 | 1840 | 11900 | 0.171 | 212 | 399 | 837 | 35.5 | 147 |
| LM 1875 | 15 OPzS 1875 | 1970 | 12750 | 0.160 | 212 | 399 | 837 | 34.0 | 150 |
| LM 2000 | 16 OPzS 2000 | 2100 | 13600 | 0.150 | 212 | 399 | 837 | 38.3 | 155 |
| LM 2250 | 18 OPzS 2250 | 2360 | 15300 | 0.133 | 212 | 487 | 837 | 43.6 | 181 |
| LM 2500 | 20 OPzS 2500 | 2620 | 17000 | 0.120 | 212 | 487 | 837 | 48.4 | 190 |
| LM 3000 | 24 OPzS 3000 | 3150 | 20400 | 0.100 | 212 | 576 | 837 | 52.6 | 222 |
| LM 3500 | 28 OPzS 3500 | 3500 | 23800 | 0.086 | 212 | 576 | 837 | 55.2 | 248 |

ELECTRICAL CHARACTERISTICS

Float Voltage: 2.23 V/cell at 20°C

Boost Voltage: 2.40 V/cell

Float Voltage Compensation with Temperature: -2.5 mV/cell/°C

Self-Discharge at 20°C: <2%/month

STANDARDS

DIN 40736 – specification OPzS cell

DIN 43539T5 – deep discharge

DIN 40740 – electrolyte level indicator

IEC 60896 Part 11 – vented types requirements & tests

CERTIFICATIONS

ISO 9001

Quality Management System

ISO 14001

Environmental Management System

OHSAS 18001

Workplace Safety & Health

ACCESSORIES

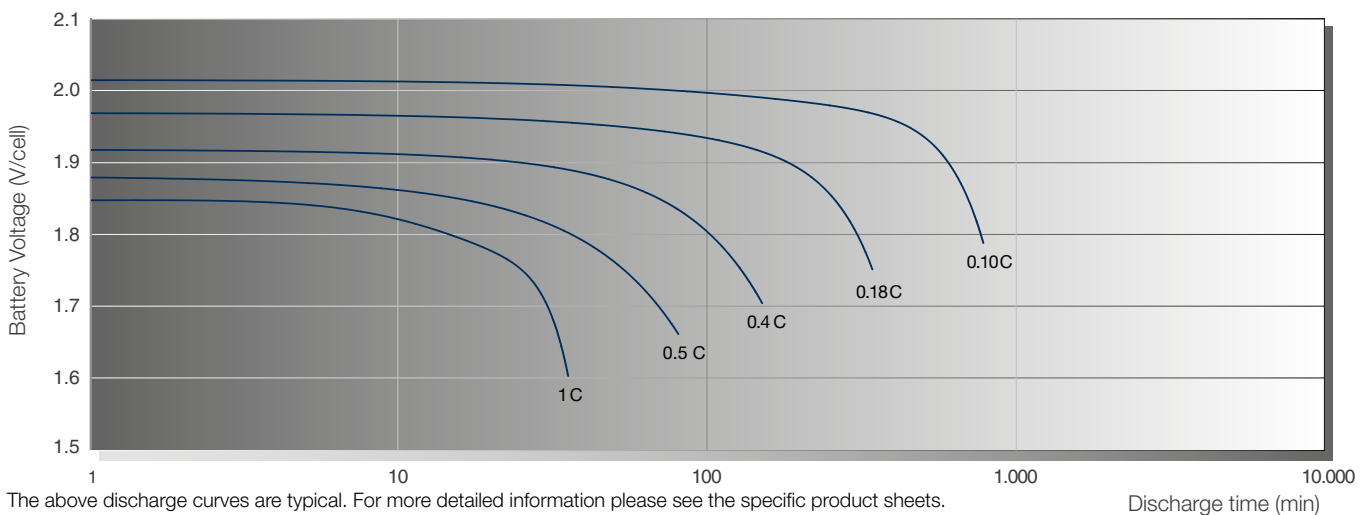
Recombination plug

Filtering plugs to DIN standard

Racks for battery installation (standard and anti-seismic)

Monitoring system

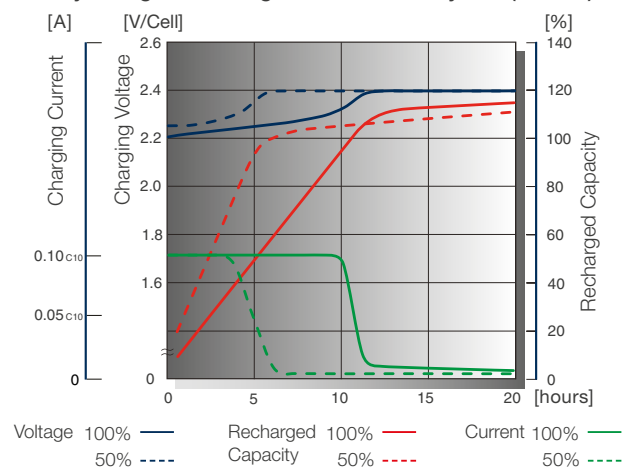
DISCHARGE CURVES at different current / final voltage (at 20°C)



The above discharge curves are typical. For more detailed information please see the specific product sheets.

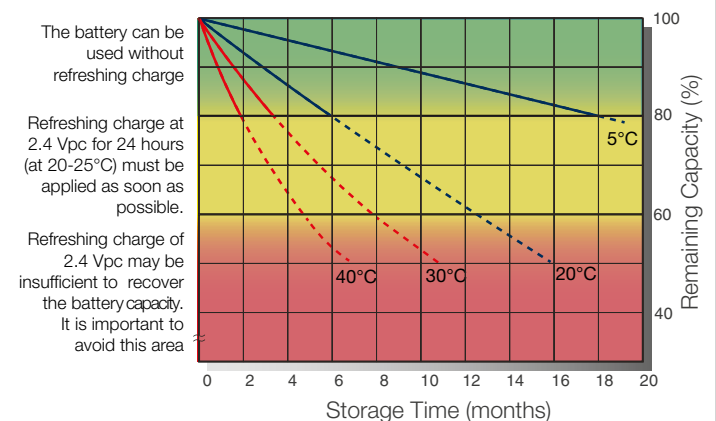
TYPICAL CHARGE CURVES

Battery Voltage and Charge Time for Standby Use (at 20°C)



STORAGE

Capacity loss during storage at various temperatures



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