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# Технические характеристики на никель-кадмиевые аккумуляторы для железных дорог серии SRM-F3

# SRM-F3 Ni-Cd battery

## The reliable backup energy for rail transit

SRM-F3 nickel-based battery provides backup energy reliability for onboard auxiliary functions and is a lower maintenance, reduced operating cost solution.

SRM-F3 battery supports electrical systems onboard a wide variety of passenger rail transit cars. It is the ideal solution for OEMs and railway operators specifying the reliability and long service life of Ni-Cd technology with the proven performance of Sintered/PBE construction. The battery's ultra-light and compact format is enabled through a reduction in size and weight of at least 20% below equivalent capacity. It is a faster-recharge, reduced maintenance battery with excellent charge efficiency, requiring water topping-up only every two years or more in normal operation.

SRM-F3 technology is housed in transparent and flame retardant polysulfone containers which are assembled into trays to create a rugged battery solution proven over several decades in multiple rail applications.

### Applications

All types of trains

- Urban transport: metros, tramways, tram-trains, airport shuttles
- Regional transport: EMU, DMU (Electric and Diesel Multiple Units)
- Intercity transport: high-speed trains, electric locomotives, passenger coaches

All types of function

- Passenger safety: onboard signaling, security lighting, door control and communication networks
- Passenger comfort: ventilation, air-conditioning, lighting, Wi-Fi
- Fail-safe train start-up: pantograph lift-up, computing, electronics

### Benefits

SRM-F3 cell design meets the specific needs of North America's OEMs and railway operators for reliable onboard backup power.

- Excellent charge efficiency with faster recharge time and chargeability at low voltage
- Reduced installation footprint and lower weight
- Cost-effective battery with extensive service life, minimal maintenance and total reliability
- Low LCC (Life Cycle Cost)



#### Temperature

Operating temperature	From -25°C to +50°C
Resistance to extreme temperatures	From -50°C to +70°C

#### Maintenance

Low maintenance thanks to long time between topping-up operation	2 years or more depending upon operation characteristics
Optional water filling vents allow for quick and accurate topping-up to minimize maintenance costs	Less than 10 minutes for active topping-up operation

#### Light and compact design

Gain in container and battery compartment size vs conventionally sized batteries	60% depending upon requested mission profile
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#### Wide capacity range

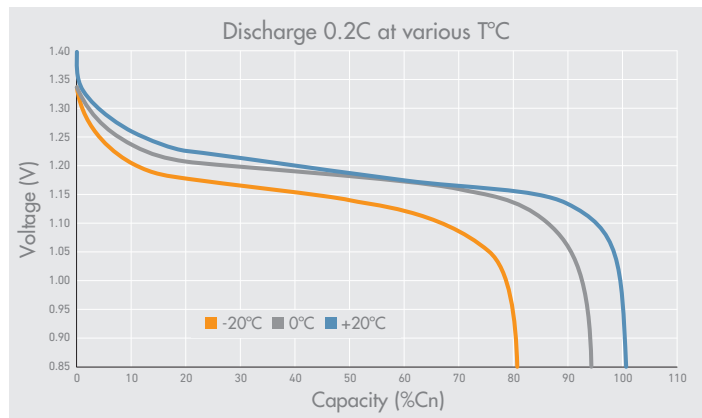
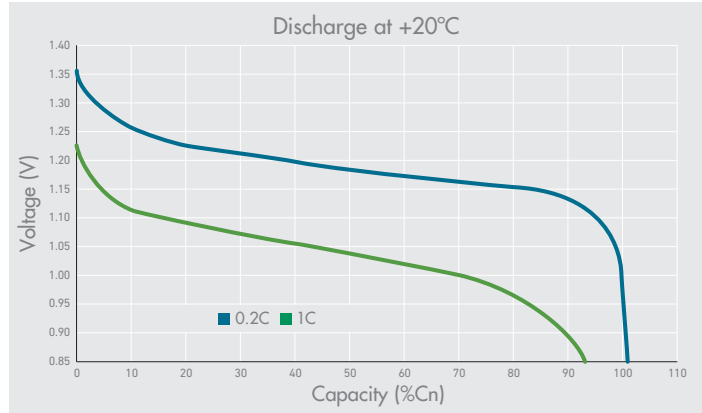
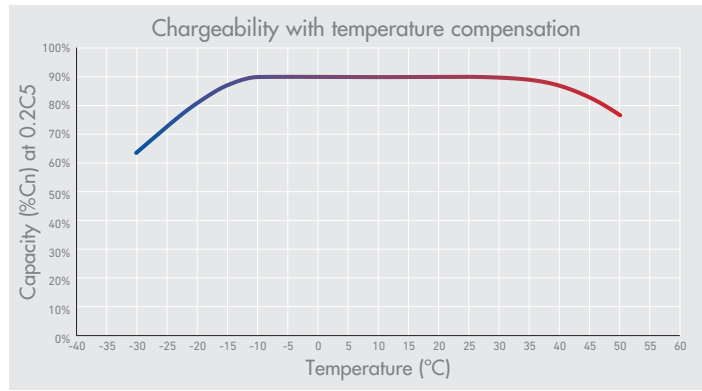
Capacity range to optimize sizing to specific performances request	From 80 to 250 Ah
Available trays for easy integration & handling	For 2 to 10 cells

## Features

- Sintered/PBE Ni-Cd technology, produced at US Valdosta factory, ensures reliable and predictable service life (over 15 years), without risk of sudden death
- Compact design and lightweight construction offers at least 20% reduction in volume and weight compared with a standard Ni-Cd battery of equivalent capacity
- Capacity range: 80 Ah – 250 Ah
- Wide operating temperature range from -25°C to +50°C
- Transparent, flame-retardant polysulfone containers
- Two years or more water topping-up interval under normal conditions
- Chargeability even at a lower charging voltage of 1.45 V/cell at +20°C (68°F) ensures faster recharge time, less installed capacity and lower water consumption

## Full conformity with quality, safety and environmental standards

- Electrical: exceeds the "M" type requirements of IEC 60 623, also significantly exceeds UIC 854 requirements
- Flammability, smoke emission and toxicity: NFPA130 (ASTM E 162, ASTM E 662), Boeing BSS7239
- Shocks & vibrations: IEC 61 373
- Quality: ISO 9001, IRIS, world class continuous improvement program
- Environment: fully recyclable, ISO 14001, RoHS, REACH



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