

SRM F3 Ni-Cd battery

Reliable back-up energy for rail transit



SRM F3 battery efficiency featuring Ni-Cd reliability

For all on-board emergency lighting, HVAC, braking, communications, microprocessor and control functions, Saft SRM F3 batteries offer the most reliable back-up energy, combined with less maintenance and reduced operating costs.



SRM F3 cells are in transparent plastic polysulfone containers held by cliplocks and lifting handles to make up a rugged battery tray that is industry proven over several decades in passenger rail transit cars.

Greater durability

Equipment productivity depends on durable components. SRM F3 sintered/plastic bonded electrode (s/pbe) technology will maximize battery life, particularly under the severe operating and cycling conditions that often exist in rail transit operations.

Meeting recognized standards

SRM F3 batteries comply with major rail industry electrical and mechanical standards, including IEC 60623, IEC 60077 and IEC 61373.

Flammability, smoke emission, toxicity

SRM F3 batteries are flame retardant, classified as VO per UL94 standard, complying with the ASTM E 162 (flame), ASTM E 662 (smoke), and Boeing BSS 7239 (toxicity) industry requirements for passenger rail transit cars.

Two years between maintenance checks

SRM F3 batteries require water topping-up only every two years

when charged at 1.47 V/cell at 20°C (68°F).

Maintenance is reduced to an absolute minimum due to the battery's excellent chargeability at low voltage levels, resulting in a reduction of overcharge current.

In addition, with the elimination of graphite in the plates and the stable condition of the electrolyte, there is no need for electrolyte changes during the life of the battery.

Outstanding chargeability

SRM F3 batteries offer excellent charge efficiency, featuring less voltage variation between charge and discharge.

The improved chargeability even at a lower charging voltage of 1.45 V/cell at 20°C (68°F) ensures features such as:

- **faster recharge time**, with possibility of restoring 85% capacity in just over two hours
- **less installed capacity**, by using smaller derating factors, thereby reducing the need to oversize the battery and charging system
- **less water consumption** due to less overcharging

Slimmer and lighter

The SRM F3 battery range offers weight and mass reduction of at least 20% for equivalent capacity. This is due to the outstanding properties of sintered/plastic bonded electrodes and separators over those used in other battery technologies, and enhances SRM F3's overall suitability for lighter and less bulky transport equipment.

Lower life cycle costs

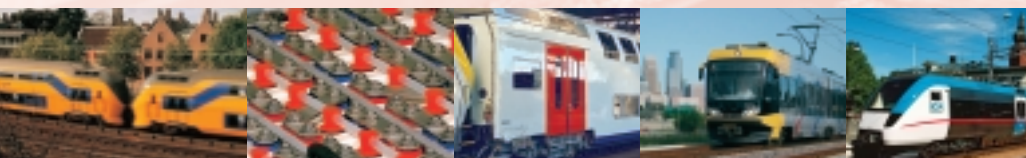
With its extensive service life, simplified maintenance and total reliability, the SRM F3 is a genuinely cost effective battery.

Recoverable and recyclable

SRM F3 batteries are recycled as part of Saft's battery recovery program for end-of-life batteries. Usable metals, especially cadmium, are almost 100% reclaimed and recycled, closing the industrial loop and ensuring a responsible attitude toward the environment.

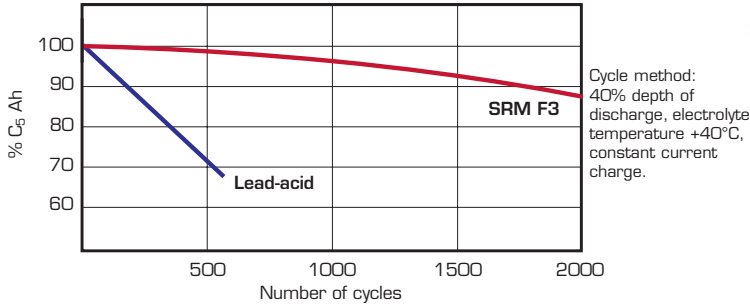
High quality manufacturing, ISO qualified

SRM F3 batteries are manufactured at Saft's Valdosta, GA facility, where the quality management system applies ISO 9001 procedures at each step in the production process, from design through manufacturing to after-sales service. And since they are manufactured in the USA, they meet all Buy America requirements.

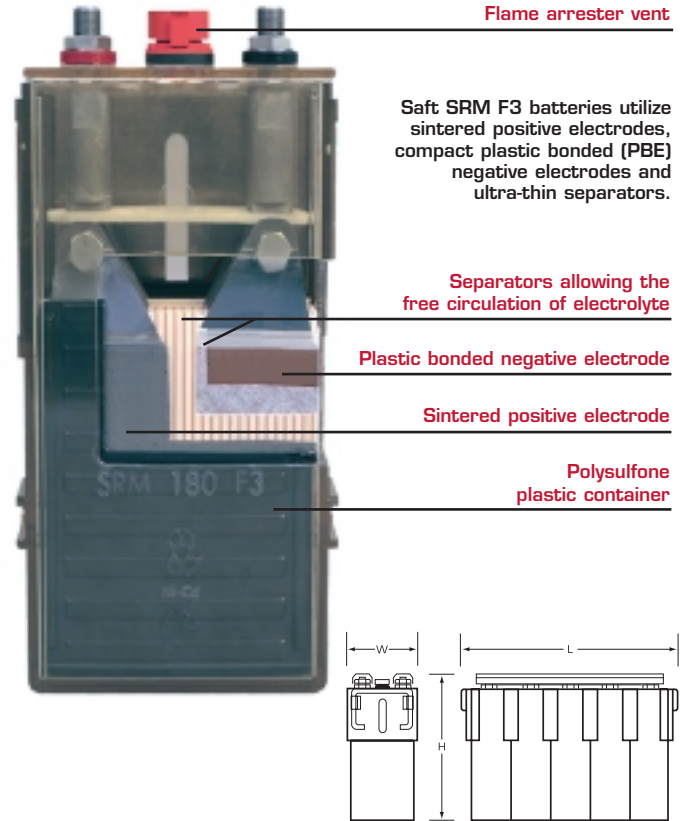
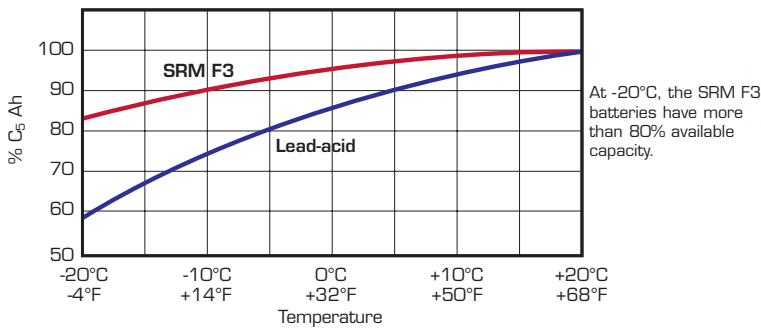


The low maintenance solution at reduced size, volume and weight

Performances and advantages of SRM F3



Typical influence of temperature on cell capacity



Mechanical features

Cell type	Capacity (C ₅ Ah)	Electrolyte reserve cm ³	Weight - 1 cell		Weight - 5-cell tray		Dimensions - 5-cell tray							
			lb	kg	lb	kg	H		W		L			
							in	mm	in	mm	in	mm	in	mm
SRM80F3	80	500	11.0	5.0	58	26.3	11.71	297.4	6.46	164.1	16.27	413.3		
SRM100F3	100	500	11.6	5.3	61	27.7	11.71	297.4	6.46	164.1	16.27	413.3		
SRM120F3	120	775	15.6	7.1	81	36.7	11.73	297.9	6.46	164.1	22.64	575.1		
SRM140F3	140	775	16.6	7.5	86	39.0	12.84	326.1	6.95	176.5	19.36	491.7		
SRM140LF3	140	770	16.2	7.4	84	38.1	11.73	297.9	6.46	164.1	22.64	575.1		
SRM160F3	160	770	17.0	7.7	88	39.9	12.84	326.1	6.95	176.5	19.36	491.7		
SRM180F3	180	770	17.2	7.8	89	40.4	12.84	326.1	6.95	176.5	19.36	491.7		
SRM250CF3	250	1100	26.0	11.8	133	60.3	17.70	449.6	6.46	164.1	22.57	573.3		

Notes: Footprint dimensions are smaller
Height dimensions are to the top of the terminal cover

Length dimensions are with slide handles
Soft drawings are provided per project request

Electrical performance - available amperes at +20°C ±5°C (+68°F ±9°F)

Performance for fully charged cells by constant current charge according to IEC 60623 standard

Cell type	Capacity (C ₅ Ah)	End voltage 1.00 V/Cell							End voltage 1.05 V/Cell							End voltage 1.10 V/Cell								
		5	3	2	1.5	1	45	30	Capacity (C ₅ Ah)	5	3	2	1.5	1	45	30	Capacity (C ₅ Ah)	5	3	2	1.5	1	45	30
SRM80F3	80	16.0	26.3	38.6	50.1	72.7	91.2	116.8	80	15.8	23.2	36.0	46.4	64.0	76.8	93.6	80	15.4	22.4	32.8	41.6	52.8	60.0	69.6
SRM100F3	100	20.0	32.9	48.2	62.6	90.9	114.0	146.0	100	19.8	29.0	45.0	58.0	80.0	96.0	117.0	100	19.3	28.0	41.0	52.0	66.0	75.0	87.0
SRM120F3	120	24.0	39.5	57.8	75.1	109.1	136.8	175.2	120	23.8	34.8	54.0	69.6	96.0	115.2	140.4	120	23.2	33.6	49.2	62.4	79.2	90.0	104.4
SRM140F3	140	28.0	46.1	67.5	87.7	127.3	159.6	204.4	140	27.7	40.6	63.0	81.2	112.0	134.4	163.7	140	27.0	39.2	57.4	72.8	92.4	105.0	121.9
SRM140LF3	140	28.0	46.1	67.5	87.7	127.3	159.6	204.4	140	27.7	40.6	63.0	81.2	112.0	134.4	163.7	140	27.0	39.2	57.4	72.8	92.4	105.0	121.9
SRM160F3	160	32.0	52.6	77.1	100.2	145.5	182.4	233.6	160	31.7	46.4	72.0	92.8	128.0	153.6	187.1	160	30.9	44.8	65.6	83.2	105.6	120.0	139.3
SRM180F3	180	36.0	59.2	86.8	112.7	163.6	205.3	262.8	180	35.6	52.2	81.0	104.4	144.0	172.7	210.5	180	34.7	50.4	73.8	93.6	118.8	135.0	156.7
SRM250CF3	250	50.0	82.2	120.5	156.5	227.3	285.1	365.0	250	49.5	72.5	112.5	145.0	200.0	239.9	292.4	250	48.3	70.0	102.5	130.0	165.0	187.6	217.6

Committed to a clean environment

Saft takes seriously its responsibility to safeguard the environment.

At several sites worldwide, more than 99% of metals contained in the battery are recycled. This process safeguards valuable natural resources and is a service to customers that Saft will continue to offer for future generations. To locate the nearest collection site, visit www.saftbatteries.com



Africa

Export sales dpt, France
Tel: +33 1 49 93 19 18
Fax: +33 1 49 93 19 56

Argentina

Energia Alcalina, Buenos Aires
Tel: +54 11 4334 9034/35
Fax: +54 11 4342 5024

Australia

Saft Australia Pty Ltd,
Seven Hills
Tel: +61 2 9674 0700
Fax: +61 2 9620 9990

Austria

Statron GmbH, Wien
Tel: +43 1 617 40 60
Fax: +43 1 617 40 60/40

Belgium

AEF Belgium SA, Brussels
Tel: +32 2 529 6543
Fax: +32 2 529 6449

Brazil

FSE (Fábrica de Sistemas de Energia) Ltda.,
Sao Paulo
Tel: +55 11 6100 6304
Fax: +55 11 6100 6338

Canada

Please contact USA office.

Chile

Techno Parts Ltda.,
Santiago
Tel: +86 21 5866 7935
Fax: +86 21 5866 6403

China

Saft Trading
Tel: +86 21 5866 7935
Fax: +86 21 5866 6403

Czech Republic

Saft Ferak a.s., Prague
Tel: +420 257 013 260
Fax: +420 257 013 261

Denmark

Scansupply A/S, Birkerød
Tel: +45 45 82 50 90
Fax: +45 45 82 54 40

Finland

HansaBattery Oy, Espoo
Tel: +358 9 260 65 292
Fax: +358 9 260 65 299

France

Division France, Bagnolet
Tel: +33 1 49 93 19 18
Fax: +33 1 49 93 19 64

Germany

Saft Batterien GmbH,
Nürnberg
Tel: +49 911 94 174-0
Fax: +49 911 426 144

Hong Kong

Saft Ltd, Kowloon
Tel: +852 2796 99 32
Fax: +852 2798 06 19

India sub continent

Export sales dpt, Sweden
Tel: +46 491 680 00
Fax: +46 491 681 80

Italy

Saft Batterie Italia S.r.l.,
Segrate (Milano)
Tel: +39 02 89 28 07 47
Fax: +39 02 89 28 07 62

Japan

Sumitomo Corp., Tokyo
Tel: +81 3 5144 9082
Fax: +81 3 5144 9267

Korea

Energys Korea Co. Ltd,
Kyunggi-Do
Tel: +82 2501 0033
Fax: +82 2501 0034

Mexic

Troop y Compania, SA de CV,
Mexico
Tel: +52 55 50 82 10 30
Fax: +52 55 50 82 10 39

Middle East

Saft Nife ME Ltd,
Limassol, Cyprus
Tel: +357 25 820040
Fax: +357 25 748492

Netherlands

Saft Batteries B.V.,
Haarlem
Tel: +31 23 750 5720
Fax: +31 23 750 5725

Norway

Saft AS, Osteraas
Tel: +47 6716 4160
Fax: +47 6716 4170

Russia

ZAO Alcatel, Moscow
Tel: +7 095 937 0967
Fax: +7 095 937 0906

Singapore

Saft Batteries Pte Ltd,
Singapore
Tel: +65 6512 1500
Fax: +65 6749 7282

Spain

Saft Baterias S.L.,
San Sebastian de los Reyes
Tel: +34 916 59 34 80
Fax: +34 916 59 34 90

Sweden

Saft AB, Oskarshamn
Tel: +46 491 680 00
Fax: +46 491 681 80

Switzerland

Statron AG, Mägenwil
Tel: +41 62 887 4 887
Fax: +41 62 887 4 888

United Kingdom

Saft Ltd, Harlow
Tel: +44 1279 772 550
Fax: +44 1279 420 909

USA

Saft America Inc.,
Cockeysville
Tel: +1 410 771 3200
Fax: +1 410 771 1144

Venezuela

Corporación INTELEC C.A.,
Caracas
Tel: +58 212 9631122

Saft

Industrial Battery Group

12, rue Sadi Carnot
93170 Bagnolet – France
Tel: +33 1 49 93 19 18
Fax: +33 1 49 93 19 64

www.saftbatteries.com

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