Ferak Ni-Cd battery range

KPH - KPM - KPL - KPL LM

Total power reliability without compromise







FERAK

Ferak Ni-Cd batteries
for performance, reliability and versatility




Saft Ferak a.s. has over 60 years experience in the design, development, manufacture and through-life service support of nickel-cadmium (Ni-Cd) pocket plate cells and batteries for a broad range of railway and general industrial applications where reliability and optimized life cycle costs are critical.

Saft's commitment to research and development and innovative engineering ensures that Ferak batteries offer the very latest in design, quality and industrial process technology. Ferak's comprehensive service from initial consultancy to volume delivery covers every requirement from supplying individual batteries for new-build and replacement contracts to managing major turnkey projects for fully integrated battery systems.

Total onboard and trackside reliability for railway applications

Comprehensive backup solutions for onboard and trackside signaling

Ferak Ni-Cd batteries provide effective onboard and trackside backup power to meet the safety, security and reliability challenges of today's railway landscape. Onboard Ferak batteries support vital services such as lighting, data and communications systems, ventilation and door opening functions as well as electromagnetic braking.
Trackside Ferak Ni-Cd batteries ensure total reliability for signaling, level crossing and points operation, positive train control, security surveillance and telecommunications equipment.

High power for even the most demanding applications

Ferak batteries supply high power for demanding critical backup applications. For locomotives and DMUs they deliver exceptionally high cranking currents that ensure fast and reliable engine starting, especially in 'no-idling' operations where train operators require frequent stopping and starting to save fuel and reduce noise while cutting emissions to reduce their CO_2 footprint.

Stationary applications

Reliable and robust batteries for backup power in stationary applications

Power continuity is absolutely vital for a wide variety of stationary applications such as Uninterruptible Power Supply (UPS) systems, substation switching and transmission functions, emergency and security systems, industrial fire monitors and alarms, data centers, process control installations and signaling systems. If the main power source is lost, Ferak backup batteries support critical systems until primary power can be re-established or a controlled shutdown is carried out.

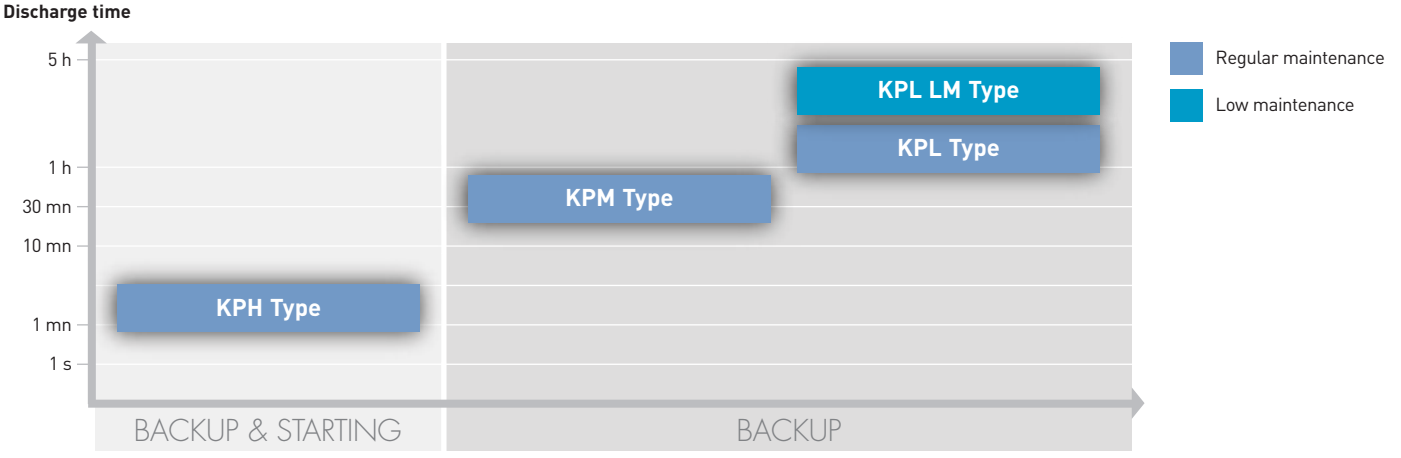
Ferak Ni-Cd range **a wide choice of capacity and performance**

Ferak KPL, KPM, KPH and KPL Low Maintenance batteries are the ideal solution for all discharge profiles. Based on Saft's reliable Ni-Cd pocket plate technology, they operate over a wide range of temperatures, resist electrical abuse, shock and vibrations, need only basic maintenance and offer optimized Total Cost of Ownership (TCO).

Saft Ferak's single cell portfolio comprises high, medium, low rate discharge types

	KPH Type	KPM Type	KPL Type	KPL LM (KPL PR LM) Type
Range of cells	20	22	18	10
Capacity	14 – 265 Ah	11 - 375 Ah	10 - 375 Ah	100 – 375 Ah
Average topping-up operation	3 - 12 months	3 - 12 months	3 - 12 months	1 - 2 years
Performance	For high rate discharge over short periods less than 30 minutes	For varied loads with low and high discharge rate between 20 minutes and 3 hours	For low rate discharge over long period between 1 to 5 hours	For low rate discharge over long period between 1 to 5 hours
IEC qualification	ČSN EN 60 623	ČSN EN 60 623	ČSN EN 60 623	ČSN EN 62 259
Applications	Power back-up and starting	Power back-up		

Covering every need - from starting to backup



Ferak range's robust engineering **ensures total reliability and long life**



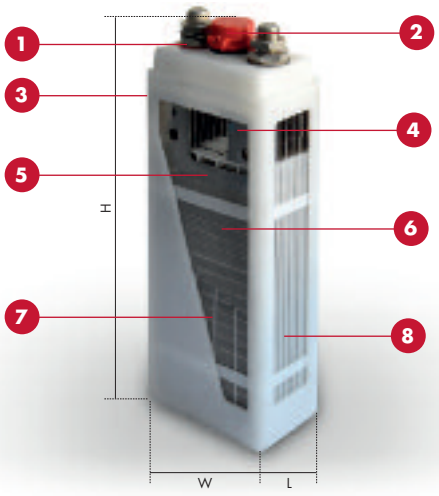
Ferak KP Ni-Cd batteries feature high quality construction, advanced pocket plate technology and a large electrolyte reserve. This ensures exceptional reliability with the benefit of total peace of mind and lower operating costs over a long service life.

Features

- Operation over a wide temperature range from - 20°C to + 50°C with extremes from - 50°C to + 70°C
- Performs well at low temperature
- Resists high temperature aging
- Resists electrical abuse and shock and vibration
- Requires only simple maintenance
- Easy and inexpensive to install
- Ensures over 20 years' service life at normal operating conditions (+ 25°C) in stationary applications

Options for added versatility

- Batteries normally supplied in polypropylene plastic containers assembled into plywood crates
- Crates can be equipped with front terminals
- Flip-top arresting vents as standard
- Optional centralized water filling system
- Batteries also supplied in flame retardant or stainless steel containers, assembled in formats to suit particular requirements



1/ Terminal seal
This is mechanically clipped and provides an excellent seal. This minimizes carbonation deposits.

2/ Flame arresting vent

3/ Cell container
Material: translucent polypropylene.

4/ Plate group bus
Connects the plate tabs with the terminal post. Plate tabs and terminal posts are projection welded to the plate group bus.

5/ Plate tab
Spot welded to the plate side frames, to the upper edge of the pocket plate and to the plate group bus.

6/ Plate
Horizontal pockets of double-perforated steel strips.

7/ Separating grids
These separate the plates and insulate the plate frames from each other. The grids allow free circulation of electrolyte between the plates.

8/ Plate frame
Seals the plate pockets and serves as a current collector.

KPH Range

Cell capacities and dimensions

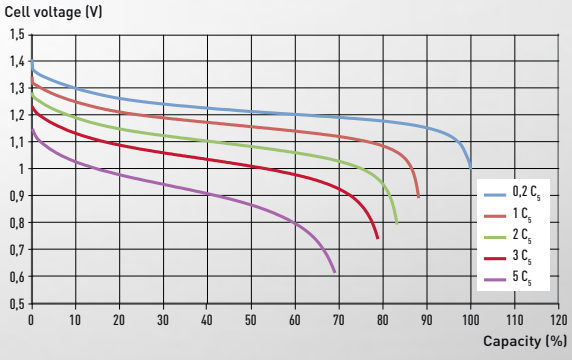
Cell type	Capacity (Ah)	Dimensions (mm)			Cell connection bolt per pole	Electrolyte reserve (ml)	Weight (kg)
		W	L	H			
KPH 14 P	14	86	46	283	M10	115	1,9
KPH 18 P	18	86	46	283	M10	110	2,0
KPH 22 P	22	86	46	283	M10	105	2,2
KPH 26 P	26	86	86	283	M10	235	3,3
KPH 34 P	34	86	86	283	M10	230	3,5
KPH 38 P	38	86	86	283	M10	225	3,7
KPH 46 P	46	86	86	283	M10	220	4,0
KPH 50 P	50	86	86	283	M10	215	4,1
KPH 65 P	65	136	69	360	M20	480	5,7
KPH 80 P	80	136	69	360	M20	460	5,9
KPH 100 P	100	136	83	360	M20	570	6,7
KPH 125 P	125	164	103	360	2 x M20	910	10,9
KPH 150 P	150	164	103	360	2 x M20	890	11,2
KPH 170 P	170	164	128	362	2 x M20	1060	14,4
KPH 190 P	190	164	128	362	2 x M20	1040	14,9
KPH 210 P	210	164	128	362	2 x M20	1020	15,4
KPH 220 P	220	164	156	362	2 x M20	1290	18,0
KPH 245 P	245	164	156	362	2 x M20	1290	18,0
KPH 255 P	255	164	156	362	2 x M20	1280	18,2
KPH 265 P	265	164	156	362	2 x M20	1275	18,5

KPM Range

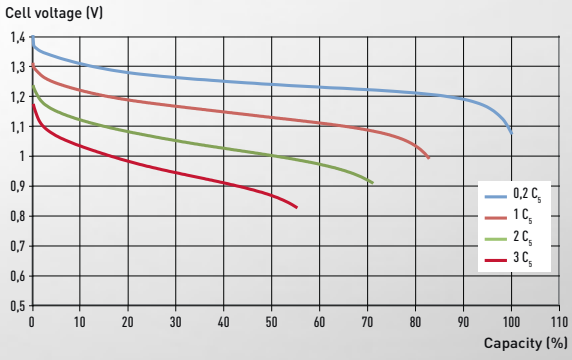
Cell capacities and dimensions

Cell type	Capacity (Ah)	Dimensions (mm)			Cell connection bolt per pole	Electrolyte reserve (ml)	Weight (kg)
		W	L	H			
KPM 11 P	11	86	46	283	M10	120	1,7
KPM 18 P	18	86	46	283	M10	118	1,9
KPM 25 P	25	86	46	283	M10	115	2,0
KPM 32 P	32	86	86	283	M10	240	3,0
KPM 38 P	38	86	86	283	M10	235	3,2
KPM 45 P	45	86	86	283	M10	233	3,4
KPM 50 P	50	86	86	283	M10	230	3,6
KPM 60 P	60	86	86	283	M10	225	3,7
KPM 80 P	80	136	83	328	M20	430	5,8
KPM 95 P	95	136	83	328	M20	420	6,0
KPM 105 P	105	136	83	328	M20	410	6,2
KPM 120 P	120	136	93	312	M20	470	6,7
KPM 140 P	140	136	112	328	M20	580	8,1
KPM 160 P	160	136	112	328	M20	570	8,3
KPM 180 P	180	192	93	363	M20	750	10,6
KPM 210 P	210	192	93	363	M20	740	10,9
KPM 230 P	230	192	93	363	M20	730	11,3
KPM 250 P	250	192	93	363	M20	720	11,6
KPM 280 P	280	198	130	360	M20	1010	14,5
KPM 300 P	300	198	130	360	M20	1005	14,8
KPM 340 P	340	198	130	360	M20	995	15,1
KPM 375 P	375	198	130	360	M20	985	15,4

KPH cells - Typical discharge at + 20°C / + 25°C



KPM cells - Typical discharge at + 20°C / + 25°C



KPL Range

Cell capacities and dimensions

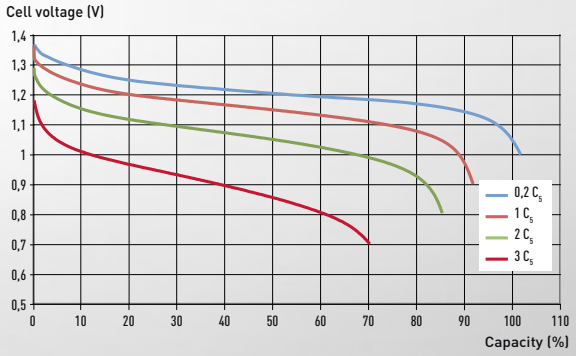
Cell type	Capacity (Ah)	Dimensions (mm)			Cell connection bolt per pole	Electrolyte reserve (ml)	Weight (kg)
		W	L	H			
KPL 10 P	10	122	35	173	M6	80	0,9
KPL 20 P	20	122	35	173	M6	80	1,1
KPL 30 P	30	122	45	233	M6	175	1,8
KPL 40 P	40	122	45	233	M6	170	1,9
KPL 55 P	55	122	54	288	M10	215	2,8
KPL 60 P	60	136	60	267	M10	250	2,9
KPL 70 P	70	122	54	288	M10	210	3,1
KPL 100 P	100	136	75	365	M10	480	5,7
KPL 125 P	125	136	75	365	M10	480	5,8
KPL 140 P	140	136	112	328	M20	610	6,4
KPL 160 P	160	136	112	328	M20	600	6,7
KPL 180 P	180	136	112	328	M20	590	6,9
KPL 220 P	220	164	103	365	M20	660	8,5
KPL 250 P	250	164	103	365	M20	650	8,7
KPL 280 P	280	164	156	365	M20	1070	12,5
KPL 300 P	300	164	156	365	M20	1060	12,7
KPL 350 P	350	164	156	365	M20	1050	13,0
KPL 375 P	375	164	156	365	M20	1040	13,3

KPL LM (KPL PR LM) Range

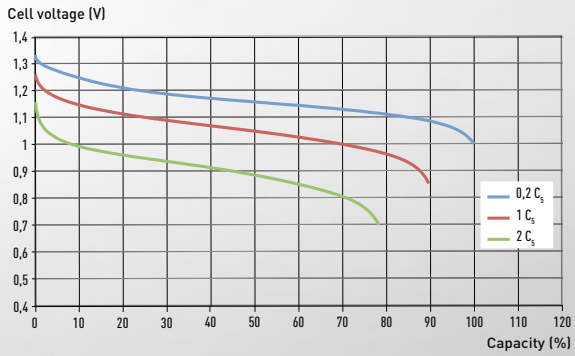
Cell capacities and dimensions

Cell type	Capacity (Ah)	Dimensions (mm)			Cell connection bolt per pole	Electrolyte reserve (ml)	Weight (kg)
		W	L	H			
KPL 100 P LM	100	136	75	365	M10	370	5,4
KPL 125 P LM	125	136	75	365	M10	350	5,8
KPL 160 P LM	160	136	112	328	M20	540	7,7
KPL 210 P LM	210	198	130	360	M20	990	9,9
KPL 250 P LM	250	198	130	360	M20	960	11,4
KPL 300 P LM	300	198	130	360	M20	930	14,6
KPL 375 P LM	375	198	130	360	M20	890	15,7
KPL 250 PR LM	250	164	103	365	M20	600	9,1
KPL 300 PR LM	300	164	156	365	M20	970	13,4
KPL 375 PR LM	375	164	156	365	M20	950	13,6

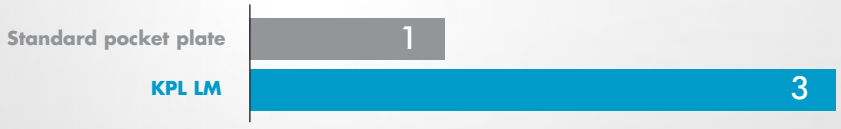
KPL cells - Typical discharge at + 20°C / + 25°C



KPL LM cells - Typical discharge at + 20°C / + 25°C



Topping up intervals multiplied by three compared to standard pocket plate batteries



Railway battery crate configurations

Ferak cells for railway applications are generally supplied in crates in a variety of configurations to suit different customer needs, including: plywood, full plastic and steel-plastic.

Plywood with handles

KPL 10 P - 375 P
100 P LM - 375 P LM
250 PR LM - 375 PR LM

KPM 11 P - 375 P

KPH 14 P - 265 P

Plywood with handles and terminals

KPL 10 P - 375 P
100 P LM - 375 P LM
250 PR LM - 375 PR LM

KPM 11 P - 375 P

KPH 14 P - 150 P

Full plastic

KPL 220 P - 375 P
250 PR LM - 375 PR LM

KPH 125 P - 265 P

Full plastic with terminals

KPL 210 P LM - 375 P LM

KPM 280 P - 375 P

Steel-plastic

KPM 80 P - 160 P

KPH 100 P

Strapped

KPL 10 P - 70 P

KPM 11 P - 60 P

KPH 14 P- 50 P

Ferak Ni-Cd batteries are designed in full compliance with the highest quality, safety and environmental standards

Electrical characteristics:

- Certified ČSN EN 60623 and ČSN EN 62259

Shock & vibration characteristics:

- Designed to comply with: ČSN EN 61 373

Quality:

- ISO 9001 and ISO 14001
- Saft world class continuous programme

Environment & Recycling:

- Fully recyclable
- RoHS – Although batteries and accumulators are not within the scope of the RoHS directive, Saft has taken voluntary measures to make sure that the substances forbidden by RoHS are not present in the battery, with the exception of the electro-chemical core.
- REACH – The Saft Group has adopted internal procedures to ensure conformity with the European REACH (Registration, Evaluation, Authorisation and Restriction of Chemical Substances) Regulation.

Saft is committed to the highest standards of environmental stewardship

As part of this environmental commitment, Saft prioritises the use of recycled raw materials over virgin raw materials in all manufacturing processes. We also strive, year on year, to reduce air and water emissions from our plants, as well as minimizing water usage, reducing consumption of fossil energy consumption and associated CO_2 emissions, and ensuring that all our customers have access to recycling solutions for their spent batteries. To facilitate the end-of-life collection and recycling of industrial batteries, including our nickel & lithium-based technologies, Saft has developed well-established partnerships with collection companies in most EU countries, in North America and in many other countries worldwide. This collection network receives spent batteries from our customers and dispatches them to fully approved recycling facilities, in compliance with the laws governing trans-boundary waste shipments. This collection network is currently undergoing minor adaptations to meet the requirements of the EU batteries directive. A list of our battery collection points is available on our web site. In other countries, Saft will assist anyone using our batteries in finding environmentally sound recycling solutions. Please contact your sales representative for further information.

FERAK

Saft Ferak a.s.
Pekařská 12 - 155 00 Praha 5
Czech Republic
Tel.: +420 257 013 260
Fax: +420 257 013 261
praha@saftbatteries.com

Saft Ferak a.s.
Raškovice 247 - 739 04 Pražmo
Czech Republic
Tel.: +420 558 426 302
Fax: +420 558 426 301
raskovice@saftbatteries.com

www.saft-ferak.cz

Document N° 25005-2-1214
Edition: December 2014

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Printed on FSC paper