Power & Industrial Battery Systems GmbH (PIBAS)

Range Summary Ni-Cd KL…P/KM…P/KH…P Ni-Cd Standard Range Batteries

PIBAS® Ni-Cd Batteries

Based on the more than 130 years of experience PIBAS® KL…P/KM…P/KH…P ranges are build on the well proven pocket plate design combined with new latest technology components. PIBAS® Ni-Cd batteries are leading the battery world in terms of high performance, longest proven service life, widest operational temperature range and lowest maintenance requirments. The plate technology and electrolyte choice tolerates temperature fluctuations from –50°C to +70°C with no effect on plate structure. The high temperature characteristics offer the unchallanged, longest lifetime of any battery in this hostile environment. The PIBAS® Ni-Cd battery design offers a 20 years+ service life, while it provides the most predictalbe aging in the battery industry, offering the highest safety and relaibility in the market. Ni-Cd batteries are the perfect products when the total cost of ownership (TOC) and an optimized OPEX is considered.

Field of application

PIBAS® Ni-Cd batteries are perfectly suited for all stationary standby energy storage applications and leading the market in Oil & Gas, Utility and Power Plants, demanding UPS and Telecom applications.

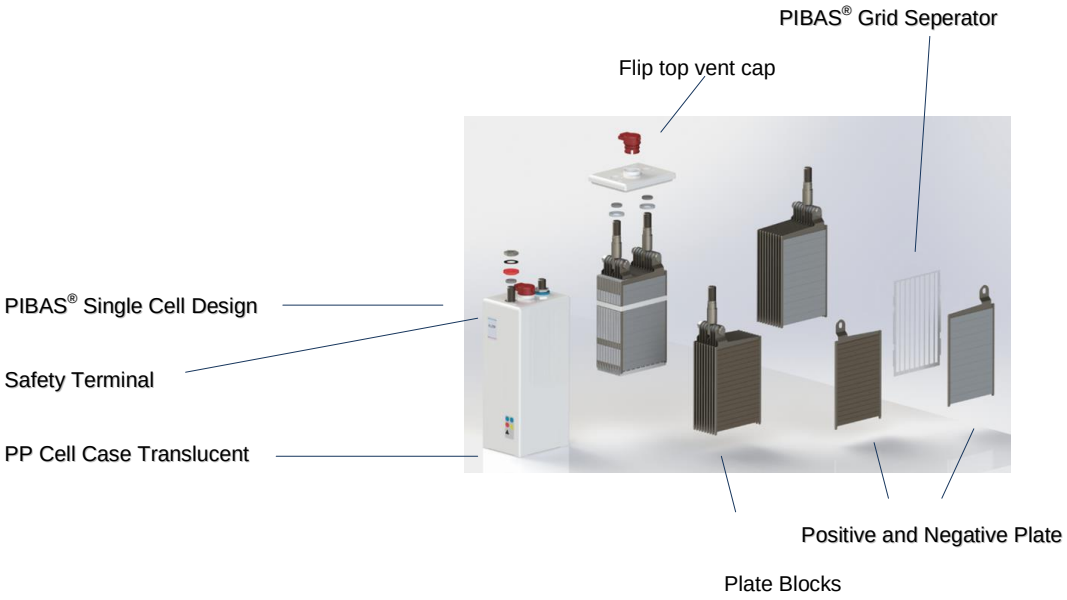
Advantages of PIBAS® Ni-Cd batteries

- very good high power rating
- very good cycling capability
- reduced maintenance
- exceptional life cycle costs
- no risk of terminal runaway effect
- low internal resistance
- reduced loss of capacity at deep temperature
- no ice formation at temperatures below 0 °C
- exceptional lifetime at high temperatures
- insensitive against deep discharge
- long shelf life
- no electrolyte stratification and plate corrosion
- insensitive against misuse

Configuration forms

PIBAS® Ni-Cd cells can be assembled into many different configuration forms, for example:

- Putting up on battery racks and cabinets
- Mounting as compact blocks
- Assembling in plastic/ stainless steel crates or battery troughs



Power & Industrial Battery Systems GmbH, Klosterstr. 1, 08056 Zwickau Germany, Email:power @pibas.de,
Tel: +49 375 273996 0, Fax: +49 375 273996 20, Internet: www.pibas.de

PIBAS® KL…P Range

This PIBAS® KL…P is used for low rates of discharge over long periods with a recommended discharge time of 1 h to over 100 h. It is used when the discharge current is relatively low compared with the total stored energy. PIBAS® KL…P offers a good cycle life for which pocket plate batteries are known of. PIBAS® KL…P range offers 41 capacity steps (11 Ah to 17000 Ah) ensuring a close economic fit to your load requirement – you can buy what you need with accuracy.

Typ *Type*	Bemessungs-kapazität *Nominal capacity* [Ah]*		Abmessungen *Dimensions* [mm] l	w	h	h_1	Pole / Terminals *Größe* Size	*Art /Kind* M-Mutter/ Nut S-Schraube/ Screw	Gewicht *Weight* [kg] ohne Elektrolyt *without electrolyte*	Gesamtgewicht *total weight*
KL	11	P	46	85	167	193	2 x M10	Screw	0,8	1,3
KL	18	P	59	113	213	235	2 x M10	Nut	0,9	1,4
KL	24	P	59	113	213	235	2 x M10		1,1	1,5
KL	30	P	59	113	213	235	2 x M10		1,3	1,6
KL	40	P	59	113	213	235	2 x M10		1,8	2,7
KL	45	P	59	113	213	235	2 x M10		1,9	2,8
KL	55	P	59	113	213	235	2 x M10		2,0	2,8
KL	65	P	60	127	253	275	2 x M14		2,3	2,9
KL	80	P	74	136	339	357	2 x M10		3,3	5,3
KL	100	P	74	136	339	357	2 x M10		3,7	5,6
KL	120	P	74	136	339	357	2 x M10		3,9	5,7
KL	140	P	112	134	291	327	2 x M16		4,5	6,1
KL	150	P	112	134	291	327	2 x M16		4,9	7,1
KL	160	P	112	134	291	327	2 x M16		5,7	9,8
KL	185	P/S	118	167	327	362	4 x M20		6,3	9,9
KL	185	P	129	167	364	400	2 x M20		6,3	9,9
KL	200	P/S	118	167	327	362	4 x M20		6,7	10,5
KL	200	P	129	167	364	400	2 x M20		6,7	10,5
KL	230	P/S	118	167	327	362	4 x M20		7,5	10,8
KL	230	P	129	167	364	400	2 x M20		7,5	10,8
KL	270	P	129	167	364	400	2 x M20		8,4	11,3
KL	300	P	129	167	364	400	2 x M20		9,1	11,8
KL	340	P	129	167	364	400	2 x M20		11,5	16,5
KL	370	P	129	167	364	400	2 x M20		12,3	17,0
KL	400	P	171	174	337	372	4 x M20		13,0	17,8
KL	435	P	171	174	337	372	4 x M20		13,8	18,3
KL	470	P	171	174	337	372	4 x M20		14,6	18,8
KL	520	P	155	169	491	527	4 x M16	Screw	18,3	26,7
KL	560	P	155	169	491	527	4 x M16		18,8	27,2
KL	625	P	155	169	491	527	4 x M16		20,4	28,3
KL	650	P	176	368	382	421	6 x M10		23,7	37,0
KL	740	P	176	368	382	421	6 x M10		25,9	38,0
KL	800	P	176	368	382	421	6 x M10		26,5	38,7
KL	840	P	176	368	382	421	6 x M10		28,0	40,6
KL	910	P	176	368	382	421	6 x M10		30,5	43,9
KL	1000	P	176	448	382	421	8 x M10		39,3	52,5
KL	1040	P	176	448	382	421	8 x M10		40,5	55,2
KL	1120	P	176	448	382	421	8 x M10		41,5	56,2
KL	1250	P	176	558	382	421	10 x M10		42,5	62,0
KL	1350	P	176	558	382	421	10 x M10		44,9	64,9
KL	1400	P	176	558	382	421	10 x M10		46,5	67,3
KL	1500	P	176	558	382	421	10 x M10		48,9	66,4
KL	1620	P	176	558	382	421	10 x M10		52,2	70,8
KL	1700	P	176	558	382	421	10 x M10		55,5	75,3

PIBAS® KM…P Range

This PIBAS® KM…P has been especially designe for “mixed loads” that include a mixture of high and low rates of discharge. It is used for frequent and infrequent discharges and the recommended discharge time is 30 min to 3 h.
PIBAS® KM…P range offers 44 different capacities from 11 Ah to 1390 Ah.

Typ *Type*	Bemessungs-kapazität *Nominal capacity* [Ah]*		Abmessungen *Dimensions* [mm] l	w	h	h_1	Pole / Terminals *Größe* Size	*Art /Kind* M-Mutter/ Nut S-Schraube/ Screw	Gewicht *Weight* [kg] ohne Elektrolyt *without electrolyte*	Gesamtgewicht *total weight*
KM	11	P	46	85	167	193	2 x M10	Screw	0,7	1,0
KM	18	P	59	113	213	235	2 x M10		1,0	1,5
KM	24	P	59	113	213	235	2 x M10		1,2	1,6
KM	30	P	59	113	213	235	2 x M10		1,4	1,7
KM	40	P	59	113	213	235	2 x M10		1,9	2,8
KM	48	P	60	127	253	275	2 x M14		2,1	2,8
KM	55	P	60	127	253	275	2 x M14		2,3	3,0
KM	65	P	60	127	253	275	2 x M14		3,6	4,9
KM	75	P	74	136	339	357	2 x M10		3,8	5,0
KM	90	P	74	136	339	357	2 x M10		4,4	6,2
KM	110	P	74	136	339	357	2 x M10		4,9	6,5
KM	125	P	74	136	339	357	2 x M10		5,6	7,7
KM	140	P	112	134	291	327	2 x M16		6,0	7,8
KM	160	P	112	134	291	327	2 x M16		6,9	10,6
KM	185	P/S	118	167	327	362	4 x M20		7,5	10,9
KM	185	P	129	167	364	400	2 x M20	Nut	7,5	10,9
KM	205	P/S	118	167	327	362	4 x M20		8,3	11,2
KM	205	P	129	167	364	400	2 x M20		8,3	11,2
KM	225	P/S	118	167	327	362	4 x M20		8,8	11,6
KM	225	P	129	167	364	400	2 x M20		8,8	11,6
KM	250	P	129	167	364	400	2 x M20		9,6	12,2
KM	270	P	129	167	364	400	2 x M20		11,2	16,3
KM	300	P	129	167	364	400	2 x M20		11,5	16,5
KM	320	P	129	167	364	400	2 x M20		12,2	17,0
KM	340	P	129	167	364	400	2 x M20		13,0	17,5
KM	355	P	129	167	364	400	2 x M20		13,7	18,0
KM	380	P	171	174	337	372	4 x M20		32,0	43,1
KM	400	P	171	174	337	372	4 x M20		15,1	18,9
KM	420	P	171	174	337	372	4 x M20		18,7	25,4
KM	450	P	171	174	337	372	4 x M20		20,0	27,3
KM	470	P	155	169	491	527	4 x M16		20,9	28,5
KM	500	P	155	169	491	527	4 x M16		21,2	28,3
KM	520	P	155	169	491	527	4 x M16		22,4	29,4
KM	550	P	155	169	491	527	4 x M16		22,4	29,3
KM	570	P	155	169	491	527	4 x M16		23,2	30,4
KM	600	P	176	368	382	420	6 x M10		27,0	40,7
KM	630	P	176	368	382	420	6 x M10		28,4	42,7
KM	675	P	176	368	382	420	6 x M10		30,8	43,7
KM	705	P	176	368	382	420	6 x M10	Screw	29,5	41,9
KM	750	P	176	368	382	420	6 x M10		32,0	43,1
KM	850	P	176	448	382	420	8 x M10		36,2	48,8
KM	950	P	176	448	382	420	8 x M10		40,7	53,2
KM	1000	P	176	448	382	420	8 x M10		42,8	56,0
KM	1050	P	176	448	382	420	8 x M10		44,9	58,8
KM	1150	P	176	558	382	420	10 x M10		48,2	63,4
KM	1250	P	176	558	382	420	10 x M10		52,4	68,9
KM	1390	P	176	558	382	420	10 x M10		58,3	76,6

PIBAS® KH…P Range

This PIBAS® KH…P has been especially designe for high current discharging over a short period of time. The recommended discharge time is 1 s to 30 min but it is also a perfect product for starting engines and to be use in short period back up power solutions.

Typ *Type*	Bemessungs-kapazität *Nominal capacity* [Ah]*		Abmessungen *Dimensions* [mm] l	w	h	h_1	Pole / Terminals *Größe* Size	*Art /Kind* M-Mutter/ Nut S-Schraube/ Screw	Gewicht *Weight* [kg] ohne Elektrolyt *without electrolyte*	Gesamtgewicht *total weight*
KH	10	P	46	85	167	193	2 x M10		1,11	1,62
KH	20	P	59	113	213	235	2 x M10		1,57	1,90
KH	30	P	59	113	213	235	2 x M10		2,70	4,13
KH	40	P	60	127	253	275	2 x M14		3,12	4,37
KH	50	P	60	127	253	275	2 x M14		3,59	4,61
KH	65	P	74	136	339	357	2 x M14		4,52	6,10
KH	80	P	74	136	339	357	2 x M14		5,37	6,63
KH	100	P	112	134	291	327	2 x M16		6,49	8,82
KH	125	P	112	134	291	327	2 x M16		7,82	9,69
KH	150	P	118	167	327	362	4 x M20		8,87	11,90
KH	185	P	171	174	337	372	4 x M20		10,57	15,59
KH	200	P	171	174	337	372	4 x M20		11,38	16,18
KH	235	P	171	174	337	372	4 x M20		12,60	17,06
KH	250	P	171	174	337	372	4 x M20	Nut	13,00	17,35
KH	280	P	176	246	330	360	4 x M10		16,98	23,70
KH	300	P	176	246	330	360	4 x M10		17,68	24,18
KH	320	P	176	246	330	360	4 x M10		18,46	24,60
KH	360	P	176	368	330	360	6 x M10		22,68	33,86
KH	390	P	176	368	330	360	6 x M10		23,78	34,66
KH	420	P	176	368	330	360	6 x M10		24,83	35,40
KH	450	P	176	368	330	360	6 x M10		25,98	36,25
KH	480	P	176	368	330	360	6 x M10		27,08	37,04
KH	520	P	176	448	330	360	8 x M10		31,50	44,73
KH	560	P	176	448	330	360	8 x M10		33,00	45,86
KH	600	P	176	448	330	360	8 x M10		34,50	47,00
KH	640	P	176	448	330	360	8 x M10		36,00	48,11
KH	700	P	176	558	330	360	10 x M10		41,13	57,20
KH	750	P	176	558	330	360	10 x M10		43,00	58,60
KH	800	P	176	558	330	360	10 x M10	Screw	44,88	60,00

Important

The rated capacity C_5 is not the basis for the performance of the batteries. It is to take into account that the performance depends on the battery construction, i e on the different battery ranges. Therefore, our discharge tables should be used to find out the appropriated cell type for a specific application in comparision to prices, dimensions …

The rated capacity C_5 of PIBAS® KL…P/KM…P/KH…P range batteries is based on the available ampere hours (Ah) at a discharge rate of 5 hours to the final discharge voltage which is stated in technical specification table per cell at 20 °C ± 5 °C.

Nominal voltage per cell is 1.2 V.

PIBAS® Ni-Cd battery cells …P fulfil all requirements according to IEC 60623.

Discharging conditions

The rated capacities C_5 given in this brochure are only valid for fully charged cells in accordance with IEC 60623.

Charging conditions

1. Constant voltage

Stand by

Floating: *1.40 – 1.42 V/cell*

Boost charge: *1.55 – 1.70 V/cell*

Buffer operation

Average value: *1.55 – 1.60 V/cell*

Current limitation: *0.4* I_t A

2. Constant current at 25 °C [A]

Standard charge: *0.2* I_t A *for 7 - 8 h*

Boost recharge: *0.4* I_t A *for 2.5 h*

followed by *0.2* I_t A *for 2.5 h*

PIBAS Power & Industrial Battery Systems GmbH
Klosterstr. 1
08056 Zwickau / GERMANY
Tel: +49 375 273996 0
Fax: +49 375 273996 20
Internet: www.pibas.de
Email: power@pibas.de

All diimensions and weights are subject to manufacturing tolerances.

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