

GAZ Geräte- und Akkumulatorenwerk  
Zwickau GmbH

# GAZ

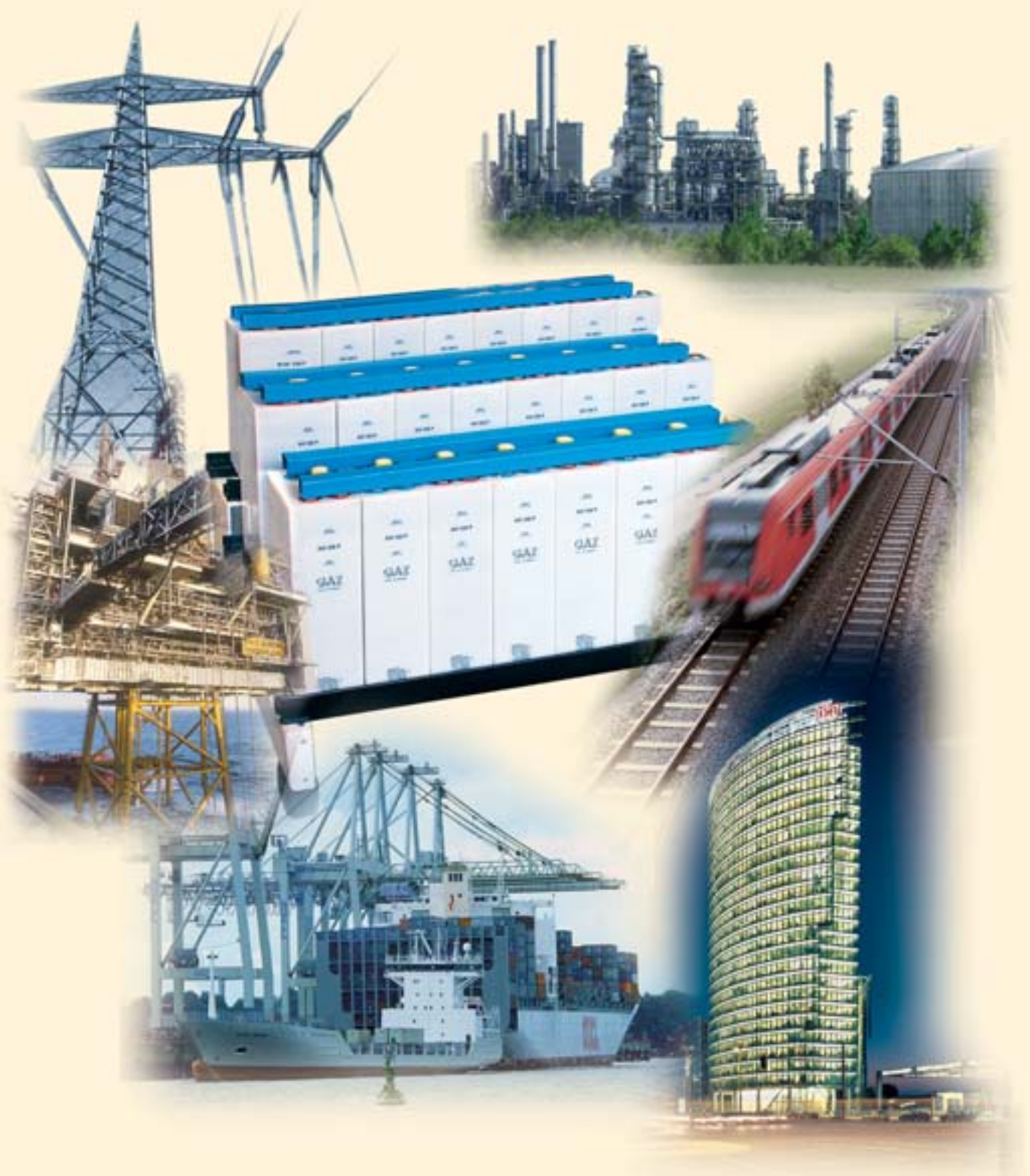


Nickel-Cadmium Batterien Baureihe KH ...P  
Taschenplattenelektroden

*Nickel-Cadmium Batteries Range KH ...P  
pocket plate electrodes*

# GAZ

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# KH ... P Battery Range

## Batteriebaureihe KH ... P

### KH ... P Battery Range

This GAZ® H type was designed especially for high current discharging over short discharge periods. The recommended discharge time for this cell range is 1 s to 30 min.

#### Important Notice

The nominal capacity  $C_5$  is not the basis for the performance of the batteries. 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.

The nominal capacity  $C_5$  of KH ... P range batteries is based on the available ampere hours (Ah) at a discharge rate of 5 hours to a final discharge voltage of 1.00 V per cell at  $20\text{ °C} \pm 5\text{ °C}$ .

Nominal voltage per cell is 1.2 V.

#### Discharging conditions

The discharge performances as well as the nominal capacities  $C_5$  given in this brochure are only valid for fully charged cells in accordance with EN 60623/ IEC 60623.

#### Charging conditions KH ... P Battery Range

##### 1. Constant voltage

Stand by	
Float:	1.36 – 1.42 V/cell
Boost charge:	1.55 – 1.65 V/cell
Buffer operation	
Average value:	1.55 – 1.60 V/cell
Current limitation:	$0.5 I_t$ A

##### 2. Constant current at 25 °C [A]

Standard charge:	$0.2 I_t$ A for 7 – 8 h
Boost recharge:	$0.5 I_t$ A for 2.5 h
followed by	$0.2 I_t$ A for 2.5 h

### Baureihe KH ... P

Ni-Cd Zellen dieser Baureihe sind speziell für Hochstromanwendungen mit kurzen Entladezeiten konstruiert. Die empfohlene Entladezeit für die KH ... P oder TSP Baureihe beträgt 1 s bis 30 min.

#### Wichtig

Die Nennkapazität  $C_5$  ist keine Bemessungsgrundlage für die Leistung. Die Leistung hängt von der Batteriekonstruktion, bzw. von der Typenbaureihe ab. Deshalb sollten unsere Entladetabellen genutzt werden, um den entsprechenden Zellentyp für eine bestimmte Anwendung zu bestimmen.

Die Nennkapazität  $C_5$  der KH ... P Baureihe basiert auf den entnehmbaren Amperestunden (Ah) bei fünfstündiger Entladung und auf einer Entladeschlussspannung von 1,00 V pro Zelle bei  $20\text{ °C} \pm 5\text{ °C}$ .

Die Nennspannung pro Zelle beträgt 1,2 V.

#### Entladeverhalten

Die in unseren Tabellen angegebenen Entladewerte sowie die Nennkapazitäten beruhen auf ordnungsgemäß geladenen Zellen laut IEC 60623 und EN 60623.

#### Ladebedingungen Baureihe KH ... P

##### 1. Konstantspannung

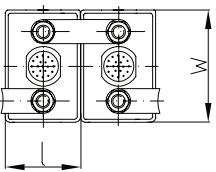
Bereitschaftsbetrieb	
Erhaltungsladen:	1,36 – 1,42 V/Zelle
Starkladen:	1,55 – 1,65 V/Zelle
Pufferbetrieb	
Mittelwert:	1,55 – 1,60 V/Zelle
Strombegrenzung:	$0,5 I_t$ A

##### 2. Konstantstrom bei 25 °C [A]

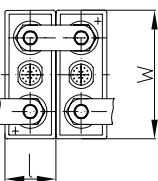
Standardladung:	$0,2 I_t$ A während 7 – 8 h
Starkladung:	$0,5 I_t$ A während 2,5 h
dann	$0,2 I_t$ A während 2,5 h

### Battery Layout

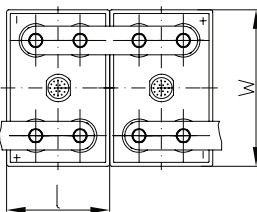
KH 10 P – KH 20 P



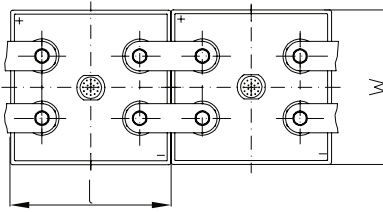
KH 30 P – KH 125 P (M 8)



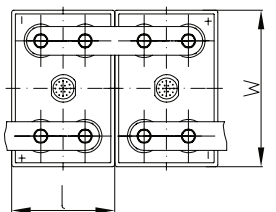
KH 150 P (M 8)



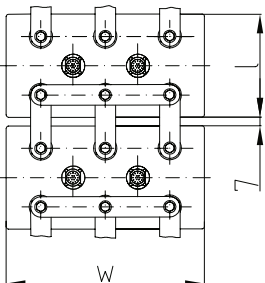
KH 185 P – KH 250 P (M 8)



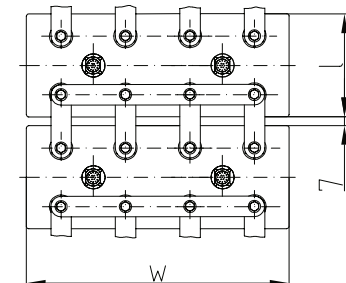
KH 280 P – KH 320 P (M 10)



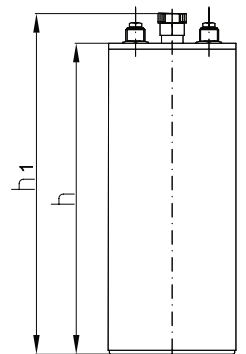
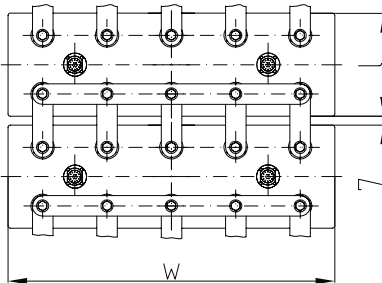
KH 360 P – KH 480 P (M 10)



KH 520 P – KH 640 P (M 10)



KH 700 P – KH 800 P (M 10)





**Technical Specifications / Technische Kenndaten**

Cell type Zelltyp		Nominal Capacity C <sub>5</sub> [Ah] at 1.00 V Nennkapazität C <sub>5</sub> [Ah] bei 1,00 V	Dimensions / Abmessungen [mm]				Terminals / Pole		Weight / Gewicht [kg]	
			l	w	h	h <sub>1</sub>	Type / Art M = Nut / Mutter S = Screw / Schraube	Size / Größe	without Electrolyte / ohne Elektrolyt	Total Weight / Gesamtgewicht
KH	10 P	10	46,0	85	237	261	M	2 x M 10	1.1	1.6
KH	20 P	20	46,0	85	237	261	M	2 x M 10	1.6	1.9
KH	30 P	30	53,0	134	330	360	S	2 x M 8	2.7	4.1
KH	40 P	40	53,0	134	330	360	S	2 x M 8	3.1	4.4
KH	50 P	50	53,0	134	330	360	S	2 x M 8	3.6	4.6
KH	65 P	65	69,0	134	330	360	S	2 x M 8	4.5	6.1
KH	80 P	80	69,0	134	330	360	S	2 x M 8	5.4	6.6
KH	100 P	100	103,5	134	330	360	S	2 x M 8	6.5	8.8
KH	125 P	125	103,5	134	330	360	S	2 x M 8	7.8	9.7
KH	150 P	150	108,0	164	330	360	S	4 x M 8	8.9	11.9
KH	185 P	185	164,0	158	330	360	S	4 x M 8	10.6	15.6
KH	200 P	200	164,0	158	330	360	S	4 x M 8	11.4	16.2
KH	235 P	235	164,0	158	330	360	S	4 x M 8	12.6	17.1
KH	250 P	250	164,0	158	330	360	S	4 x M 8	13.0	17.4
KH	280 P	280	176,0	246	330	360	S	4 x M 10	17.0	23.7
KH	300 P	300	176,0	246	330	360	S	4 x M 10	17.7	24.2
KH	320 P	320	176,0	246	330	360	S	4 x M 10	18.5	24.6
KH	360 P	360	176,0	368	330	360	S	6 x M 10	22.7	33.9
KH	390 P	390	176,0	368	330	360	S	6 x M 10	23.8	34.7
KH	420 P	420	176,0	368	330	360	S	6 x M 10	24.8	35.4
KH	450 P	450	176,0	368	330	360	S	6 x M 10	26.0	36.3
KH	480 P	480	176,0	368	330	360	S	6 x M 10	27.1	37.0
KH	520 P	520	176,0	448	330	360	S	8 x M 10	31.5	44.7
KH	560 P	560	176,0	448	330	360	S	8 x M 10	33.0	45.9
KH	600 P	600	176,0	448	330	360	S	8 x M 10	34.5	47.0
KH	640 P	640	176,0	448	330	360	S	8 x M 10	36.0	48.1
KH	700 P	700	176,0	558	330	360	S	10 x M 10	41.1	57.2
KH	750 P	750	176,0	558	330	360	S	10 x M 10	43.0	58.6
KH	800 P	800	176,0	558	330	360	S	10 x M 10	44.9	60.0





## Important Important

The rated capacity  $C_5$  is not the basis for the performance of the batteries. Always take into account that the performance depends on the battery construction, respectively on the different battery ranges. The cell size for specific application should be calculated according to actual recommended practice IEEE 1115 for stationary applications.

The rated capacity  $C_5$  of *lomain*<sup>™</sup> 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 the technical specification table per cell at  $20\text{ °C} \pm 5\text{ °C}$ .

Nominal voltage per cell is 1.2 V.

### Discharging conditions

The discharge performances as well as the rated capacities  $C_5$  given in this brochure are only valid for fully charged cells in accordance with IEC 62259.

### Charging conditions

#### 1. Two step charge

Float: 1.40 – 1.42 V/cell  
Boost charge: 1.45 – 1.46 V/cell  
Current limitation:  $0.1 I_A$

#### 2. Single step charge

Standard charge: 1.42 – 1.44 V/cell  
Current limitation:  $0.1 I_A$

Note: A higher charging level is possible, but effects the recombination rate and causes higher water consumption.

All dimensions and weights stated are subject to usual manufacturing tolerances. Electrical values are approximate.

The right is reserved to make any alterations without prior notice.

Toutes les dimensions et tous les poids indiqués sont soumis aux tolérances de fabrication habituelles. Les valeurs électriques sont approximatives. Sous réserve de modification sans devoir de notification.

# GAZ<sup>®</sup>

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La capacité nominale  $C_5$  n'est pas une base pour le calcul de la performance des batteries. Celle-ci dépend de la construction de la batterie et des différentes gammes de batteries. Pour le dimensionnement de systèmes de batteries stationnaires, il convient d'appliquer la recommandation actuelle selon IEEE 1115.

La capacité assignée  $C_5$  de la gamme de batteries *lomain*<sup>™</sup> se base sur les ampères-heures (Ah) disponibles à un taux de décharge de 5 heures pour les tensions finales par élément indiquées sous «Spécifications techniques» à  $20\text{ °C} \pm 5\text{ °C}$ .

La tension nominale d'un élément est d' 1,2 V.

### Conditions de décharge

Les valeurs de décharge ainsi que les capacités nominales  $C_5$  indiquées dans nos tableaux reposent sur des éléments chargés de manière conforme en accord avec IEC 62259.

### Conditions de charge

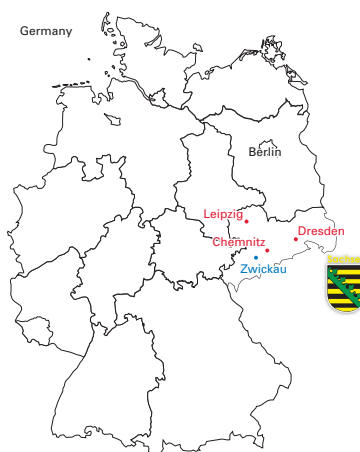
#### 1. Charge à deux paliers

Floating: 1,40 – 1,42 V/élément  
Charge élevée: 1,45 – 1,46 V/élément  
Limitation de courant:  $0.1 I_A$

#### 2. Charge mono-palier

Charge standard: 1,42 – 1,44 V/élément  
Limitation de courant:  $0,1 I_A$

Important: Une tension de charge plus élevée est possible, mais influence le taux de recombinaison et conduit à une consommation d'eau plus importante que celle indiquée.



Authorized Distributor



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