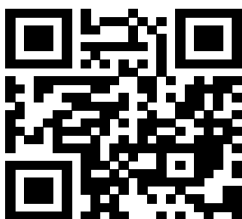


# DYNAMIS

## SMART POWER SOLUTIONS



### Battery Products 2017



DYNAMIS Development

DYNAMIS Batterien GmbH in Dettingen on Lake Constance - the centre of competence for batteries and innovative battery products. As a manufacturer of battery packs, DYNAMIS Batterien GmbH has been active since 2008 in the field of intelligent energy storage solutions.

With production at our headquarters in Dettingen, we offer products that are 'Made in Germany'. This ensures lasting quality and on-schedule production. Our employees, with their professional expertise, work closely to assist our customers.



DYNAMIS Production

DYNAMIS manufactures both standard accumulator and battery packs as well as specially tailored designs to meet customers' wishes. Working closely with customers, our engineers develop and design new battery solutions. In all common chemical systems, especially the innovative lithium technology, we assist our customers from the project phase to successful series production. We ensure the continuous support of running series and optimize series as well.

One of the focuses of our activities is the complete development of hardware and software for customized battery management systems, including coordinated hardware production for DYNAMIS battery products.



DYNAMIS Test Laboratory

To complement our high-quality battery products, our DYNAMIS Test Laboratory has been in operation since autumn 2012. We offer tests in accordance with UN 38.3 and IEC 62133, along with further comprehensive electrical tests for cells and batteries.

#### Our Service activities for you:

- | Application service
- | Development department for hardware and software
- | Design and development of pack configurations
- | Cable assembling and engineering department
- | Sampling support
  - Tests according to UN 38.3. and IEC 62133
- | Special offers for projects
- | Individual logistic conceptions
- | > 1000 m<sup>2</sup> storage

This catalogue replaces all former catalogues. All specifications represent the latest technical information and are subject to change without notice. For current update please refer to [www.dynamis-batterien.com](http://www.dynamis-batterien.com).

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### Battery assembly using popular chemical systems

Standard and specific custom built battery packs  
Conception of new battery designs, Product idea, Prototype phase, Serial production

4



### Development and supply of universal BMS

Battery management systems incl. hardware and software

4



### DYNAMIS Test Laboratory

Tests and measurements according to UN 38.3, IEC 16133 and customers' request

5



Lithium Ion Standard Packs in various configurations,  
with and without NTC, already compliant with UN 38.3 transportation test

6



### Lithium Polymer High-capacity batteries

prismatic cells, with housing available 3.7 V, to 10 Ah



7



### Lithium Thionyl chloride batteries

cylindrical cells 3.6 V, 1.2 – 35 Ah

8 - 9



### Lithium LIX Batteries

High capacity batteries + Supercap, optimized for pulse applications

10



### Lithium standard assemblies

Battery packs for electronic control systems (PLC)

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### Lithium Manganese 9V Block

LM 9V-P, with a high nominal capacity of 1300 mAh

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### Lithium button cells

Lithium Manganese Dioxide, with and without pins

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### Lead Line

Maintenance free AGM batteries 6V / 12V, 0.8 – 65 Ah

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DYNAMIS AGBs

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## Battery Assembly

Standard and specific custom built battery packs

DYNAMIS manufactures both standard accumulator and battery packs as well as specially tailored designs to meet customers' wishes. Working closely with customers, our engineers develop and design new battery solutions. In all common chemical systems, especially the innovative lithium technology, we assist our customers from the project phase to successful series production. We ensure the continuous support of running series and optimize series as well.



Our key competences

- | Conception of new battery designs:  
Product idea – Prototype phase – Serial Production
- | Specific custom built battery packs
- | Standard battery packs already compliant with UN section 38.3 transportation test
- | Production of DYNAMIS Battery Management Systems
- | Complete certifications according to UN38.3 and IEC62133

## Development and supply of Universal Battery Management Systems

incl. hardware and software

Entire New Developments.



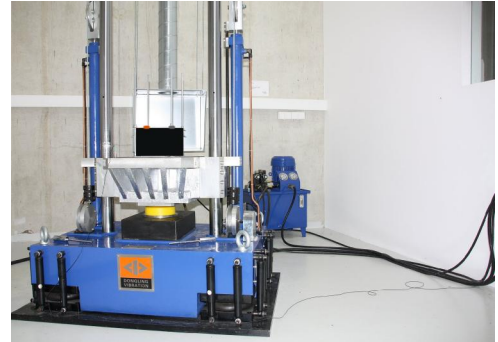
The increasing use of rechargeable Lithium Accumulators demands the introduction of protective devices (Protective Circuit Modules or BMS, resp.). They control the battery functions according to the cell specifications and ensure the safe operation including under unusual conditions. In order to achieve this, specific electronic components are used and - depending on the customer demand - further control and monitor functions can be added. This may vary from supervising detail functions to communications with outside equipment and interactive control mechanisms.

On the basis of our extended experience with a wide variety of technologies and appropriate battery solutions DYNAMIS Batterien GmbH develops software as well as the hardware of such BM systems. In addition DYNAMIS offers the manufacturing of the BMS or can supply the complete product.

## DYNAMIS Test Laboratory

in Dettingen

Our test laboratory located in Dettingen/Konstanz, Germany, provides numerous test services for customers, including tests and measurements in accordance with international standards for cells and batteries.



We offer a large variety of tests, electrical tests e.g.:

- | Transport safety tests according to UN 38.3 requirements.
- | Safety requirement for use in application acc. IEC 62133 Chapter 7 and 8.
- | Long term / short term cycling performance for systems up to 80V (50A) or 5V (1mA - 500A), climate control possible.
- | Various charging and discharging tests.
- | Simulations, project- / special application-defined testing for cells and batteries of all technologies.
- | Combinations of mechanical / environmental and electrical tests upon request.

The service is open to all customers and not limited to customers procuring battery systems solely from DYNAMIS.

## Lithium Ion Standard packs

rechargeable

We assemble Li-Ion batteries from cells of well-known manufacturers and **UL-recognized** components.



All batteries (in shrink tube) are equipped with **PCM** and **150mm wire**.

For easy implementation in your application, all batteries already comply with **UN section 38.3 transportation test**.

The custom-built PCM ensures high safety during operation.

Part no.	Type	incl. NTC	Nominal Capacity (mAh)	Nominal Voltage (V)	Max. continuous discharge (A)	Dimension (mm) ca.	Weight (g)
60.16211	1S1P Panasonic NCR18650BL	no	3350	3.6	6	19/69	53
60.16212		yes					
60.16215	2S1P Panasonic NCR18650BL	no	3350	7.2	6	38/19/69	105
60.16216		yes					
60.16217	3S1P Panasonic NCR18650BL	no	3350	10.8	6	57/19/70	149
60.16218		yes					
60.16219	4S1P Panasonic NCR18650BL	no	3350	14.4	6	75/19/70	205
60.16220		yes					

Detailed datasheets available upon request.

Li-Ion Batteries can be customized to fulfill your special needs.

Possible features for customized Li-Ion Batteries:

- Different connector types
- Single-cell balancing
- Integrated charging circuits
- Fuel Gauge

## Lithium Polymer High-capacity batteries

Prismatic cells in Standard and High Cycle versions  
Special High Power type  
rechargeable



- | Space-saving assembling in various sizes and capacities
- | Packs with nominal voltage from 3.7 up to 66.6V possible.
- | Custom versions of protection circuit (PCB) with various possibilities for parameter registration to ensure safe operation
- | Optional: charge state gauge, cell balancing

Part no.	Type	Footprint	Nominal Capacity mAh	Dimensions (mm)			Weight g
				Height	Width	Length	
60.10097	LP 481624	*1624	150	5.0	16.5	24.5	3.0
60.10215	LP 402020	*2020	105	4.0	20.0	21.0	12.5
60.10016	LP 502030	*2030	250	5.0	20.5	30.5	5.5
60.10102	<b>LP 402030c</b>	*2030	190	4.0	20.5	30.5	5.0
60.10105	LP 552035	*2035	350	5.5	20.5	35.5	7.0
60.10106	LP 602035	*2035	380	6,2	20.5	35.5	11.5
60.10171	LP 903041	*3041	1250	9.2	30.0	41.0	25.0
60.10124	<b>LP 423248c</b>	*3248	600	4.2	32.5	48.5	11.0
60.10048	LP 723250	*3250	1250	7,2	32.0	50.0	19.5
60.10216	LP 383434	*3434	400	4.0	34.0	34.0	9.0
60.10092	<b>LP 503759c</b>	*3759	1250	5.2	37.5	59.5	25.0
60.10217	LP 553770	*3770	1700	5.5	37.0	70.0	30.0
60.10164	LP 605080	*5080	2300	6.2	50.5	80.5	55.0
60.10172	LP 605365	*5365	2500	6.0	53.0	65.0	41.0
60.10161	LP 456377	*6377	2500	4.7	63.5	77.5	30.0

Additional sizes upon request.

- | "c" types are optimized for cyclic purpose.
- | General delivery condition is equipped with standard PCM
- | Availability and MOQs may vary by model type
- | Additional models and special types or special features upon customer request possible



Part no. 60.10262

**Cell LP 553770G 3.7V and 1700 mAh with housing**, developed for ambitious applications e. g. medical applications. **For this cell tests according UN 38.3 and IEC62133 are already executed and certified.**

We are pleased to offer our customers technical support and design-in solutions.

In our **DYNAMIS Test Laboratory** we execute and certify Transport Safety tests according to UN 38.3 requirements and Safety test for the use in applications according to IEC 62133 requirements Chapter 7 and 8.



## Lithium Thionyl Chloride batteries

(Li/SOCl<sub>2</sub>)

3,6 Volt Nominal Voltage, Temperature Range -55°C ~ +85°C

### LI-100

- ▮ High capacity
- ▮ For low current applications

Part no.	Type	Size	Nominal Capacity	max. Continuous Discharge Current	max. Pulse Discharge Current	Weight	Pin-Configurations
60.08170	LI-110	½ AA	1200 mAh	40 mA	100 mA	10 g	S
60.08171	LI-110	½ AA	1200 mAh	40 mA	100 mA	10 g	T
60.08172	LI-110	½ AA	1200 mAh	40 mA	100 mA	10 g	P
60.08173	LI-110	½ AA	1200 mAh	40 mA	100 mA	10 g	PT
60.08188	LI-120	2/3 AA	1650 mAh	75 mA	150 mA	12 g	S
60.08189	LI-120	2/3 AA	1650 mAh	75 mA	150 mA	12 g	T
60.08190	LI-120	2/3 AA	1650 mAh	75 mA	150 mA	12 g	P
60.08191	LI-120	2/3 AA	1650 mAh	75 mA	150 mA	12 g	PT
60.08180	LI-130	AA	2600 mAh	100 mA	200 mA	19 g	S
60.08181	LI-130	AA	2600 mAh	100 mA	200 mA	19 g	T
60.08182	LI-130	AA	2600 mAh	100 mA	200 mA	19 g	P
60.08187	LI-130	AA	2600 mAh	100 mA	200 mA	19 g	PT
60.08244	LI-135	2/3 A	2100 mAh	40 mA	120 mA	18 g	S
60.08245	LI-135	2/3 A	2100 mAh	40 mA	120 mA	18 g	T
60.08246	LI-135	2/3 A	2100 mAh	40 mA	120 mA	18 g	W
60.08363	LI-140	A	3400 mAh	130 mA	180 mA	26 g	S
60.08238	LI-140	A	3400 mAh	130 mA	180 mA	26 g	T
60.08239	LI-140	A	3400 mAh	130 mA	180 mA	26 g	P
60.08274	LI-145	A	4000 mAh	130 mA	180 mA	28 g	S
60.08275	LI-145	A	4000 mAh	130 mA	180 mA	28 g	T
60.08276	LI-145	A	4000 mAh	130 mA	180 mA	28 g	P
60.08357	LI-150	C	8500 mAh	150 mA	300 mA	51 g	S
60.08109	LI-150	C	8500 mAh	150 mA	300 mA	51 g	T
60.08110	LI-150	C	8500 mAh	150 mA	300 mA	51 g	P
60.08358	LI-160	D	19000 mAh	230 mA	400 mA	100 g	S
60.08112	LI-160	D	19000 mAh	230 mA	400 mA	100 g	T
60.08113	LI-160	D	19000 mAh	230 mA	400 mA	100 g	P
60.08297	LI-170	DD	35000 mAh	420 mA	500 mA	195 g	S
60.08368	LI-170	DD	35000 mAh	420 mA	500 mA	195 g	T

### LI-200

- ▮ Spiral construction allows a higher discharge current
- ▮ Less weight

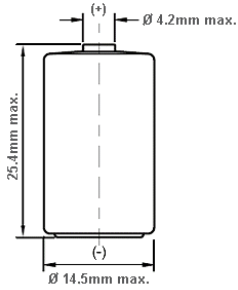
60.08243	LI-210	½ AA	750 mAh	100 mA	350 mA	10 g	S
60.08355	LI-230	AA	2000 mAh	400 mA	1000 mA	19 g	S
60.08278	LI-245	A	3500 mAh	1000 mA	2000 mA	33 g	S
60.08370	LI-250	C	6500 mAh	1000 mA	2000 mA	52 g	S
60.08296	LI-260	D	13000 mAh	2000 mA	4000 mA	110 g	S

Detailed technical information: See datasheets

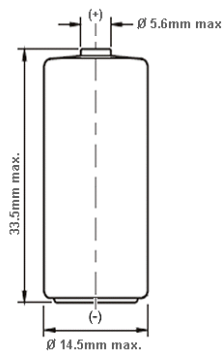
Cells of **High-temperature serie LI-300** for project design-in are available upon request.



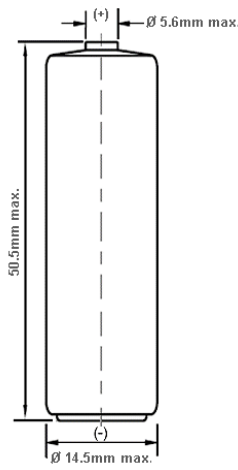
LI-110 / LI-210  
Size 1/2 AA



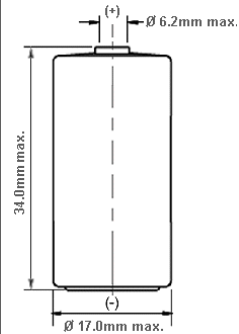
LI-120  
Size 2/3 AA



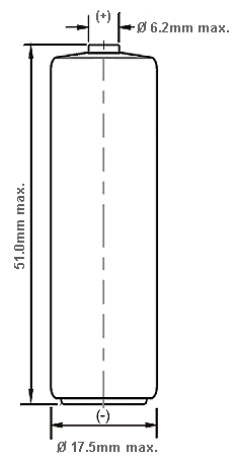
LI-130 / LI-230  
Size AA



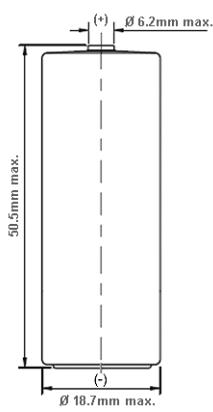
LI-135  
Size 2/3 A



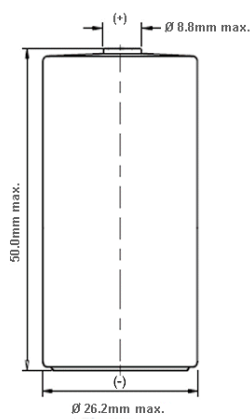
LI-140  
Size A



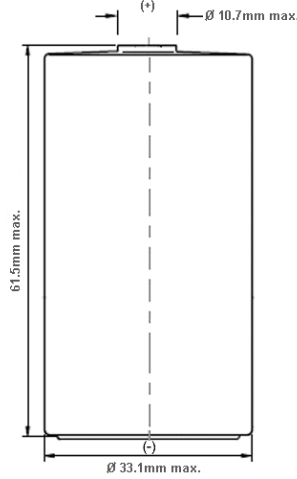
LI-145 / LI-245  
Size A



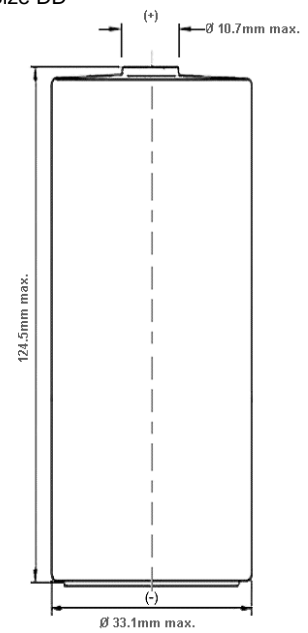
LI-150 / LI-250  
Size C



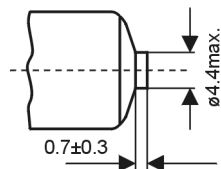
LI-160 / LI-260  
Size D



LI-170  
Size DD



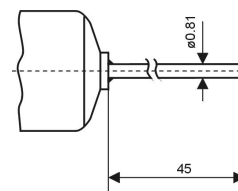
Pin Configuration Standard S



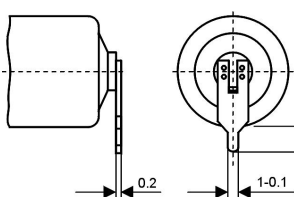
Typ Dimension A Tabs T

Typ	Dimension A	Tabs T
1/2 AA	7±0.5	
2/3 AA	7±0.5	
AA	7±0.5	
C	16 <sup>+1</sup> <sub>-2</sub>	
D	12 <sup>+1</sup> <sub>-2</sub>	
DD	12 <sup>+1</sup> <sub>-2</sub>	

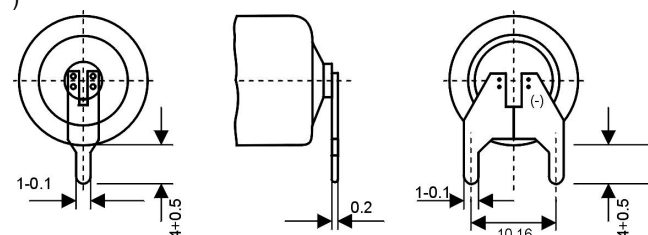
Pins P \*\*



Pins Radial PR\*) upon request



Polarized tabs PT\*)



\*) Only available for 1/2 AA and AA

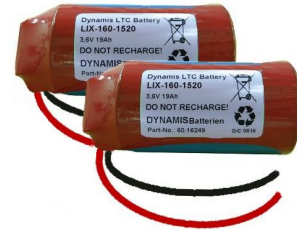
\*\*) Please note our customer information: Processing of cells w/ axial pins (/P Versions)

## Lithium LIX Batteries

High capacity and high pulse reliability

Where-ever a high pulse current is needed, the DYNAMIS LIX Batteries are the right choice.

- Optimized for pulse applications
- Containing a high capacity Lithium battery and a Supercap
- Combining the high-capacity advantages of both technologies.
- Temperature range -40 ~ +85°C.



### LIX Battery High capacity Lithium-Battery + Supercap














Dynamis Type	Alternative to Tadiran Type	Terminations	Primary-cell	SCX	Nominal voltage [V]	Nominal capacity [Ah]	Max. Pulse capability [mA]	Dimension [mm]
LIX-110-1550/W	TLP-96111/A/SM	cable	1/2AA	1550	3,6	1,2	5000	55 x 32 x 16
LIX-110-1520/S	TLP-96311/A/SM	flat contacts	1/2AA	1520	3,6	1,2	2000	16 (Ø) x 50 (h)
LIX-110-1520/T	TLP-96311/A/ST	pins	1/2AA	1520	3,6	1,2	2000	16 (Ø) x 50 (h)
LIX-120-1550/W	TLP-97111/A/SM	cable	2/3AA	1550	3,6	1,65	5000	55 x 32 x 16
LIX-120-1520/S	TLP-97311/A/SM	flat contacts	2/3AA	1520	3,6	1,65	2000	16 (Ø) x 58 (h)
LIX-120-1520/T	TLP-97311/A/ST	pins	2/3AA	1520	3,6	1,65	2000	16 (Ø) x 58 (h)
LIX-130-1550/W	TLP-91111/A/SM	cabel	AA	1550	3,6	2,6	5000	55 x 32 x 16
LIX-130-1520/S	TLP-91311/A/SM	flat contacts	AA	1520	3,6	2,6	2000	16 (Ø) x 75 (h)
LIX-130-1520/T	TLP-91311/A/ST	pins	AA	1520	3,6	2,6	2000	16 (Ø) x 75 (h)
LIX-150-1550/W	TLP-92111/A/SM	cabel	C	1550	3,6	8,5	5000	55 x 44 x 28
LIX-150-1520/W	TLP-92311/A/SM	cabel	C	1520	3,6	8,5	2000	29 (Ø) x 67 (h)
LIX-160-1550/W	TLP-93111/A/SM	cabel	D	1550	3,6	19	5000	64 x 50 x 35
LIX-160-1520/W	TLP-93311/A/SM	cabel	D	1520	3,6	19	2000	34 (Ø) x 78 (h)

### Supercap (Capacitor) Max. Voltage 3,95V

Dynamis Type	Alternative to Tadiran Type	Terminations	Nominal capacity	Weight [g]	max. Continuous discharge current[mA]	Puls peak ability [mA]	Dimension [mm]
DYNAMIS SCX-1020/S	HLC-1020L	standard	30As	4,1	150	500	10 (Ø) x 20 (h)
DYNAMIS SCX-1020/T	HLC-1020L/T	pins	30As	4,3	150	500	10 (Ø) x 21 (h)
DYNAMIS SCX-1020/PT	HLC-1020L/TP	print tabs	30As	4,3	150	500	10 (Ø) x 21 (h)
DYNAMIS SCX-1520/S	HLC-1520A/S	standard	140As	8	500	2000	15 (Ø) x 21 (h)
DYNAMIS SCX-1520/T	HLC-1520A/T	pins	140As	8,5	500	2000	15 (Ø) x 22 (h)
DYNAMIS SCX-1520/PT	HLC-1520A/TP	print tabs	140As	8,5	500	2000	15 (Ø) x 22 (h)
DYNAMIS SCX-1530/S	HLC-1530A/S	standard	380As	12	750	3000	15 (Ø) x 28 (h)
DYNAMIS SCX-1530/T	HLC-1530A/T	pins	380As	12,5	750	3000	15 (Ø) x 29 (h)
DYNAMIS SCX-1530/PT	HLC-1530A/TP	print tabs	380As	12,5	750	3000	15 (Ø) x 29 (h)
DYNAMIS SCX-1550/S	HLC-1550A/S	standard	560As	20	2000	5000	15 (Ø) x 51 (h)
DYNAMIS SCX-1550/T	HLC-1550A/T	pins	560As	20,5	2000	5000	15 (Ø) x 52 (h)
DYNAMIS SCX-1550/PT	HLC-1550A/TP	print tabs	560As	20,5	2000	5000	15 (Ø) x 52 (h)

Detailed datasheets upon request.

## Lithium Standard Battery Assembly

	Part no.	Type	For Electronic Control Systems
	60.15000	Panasonic BR-CCF2TH	A98L-0001-0902 A06B-0073-K001 A06B0073K001 A98L00010902
	60.15001	Panasonic BR-AGCF2P	A06B-0177-D106 A06B0177D106 A98L-0031-0011 A98L00310011
	60.15002	Panasonic BR-AGCT4A	A98L-0031-0025 A98L-0031-0025 A98L00310025
	60.15003	FDK CR 17450SE-R	A02B-0200-K102 A98L-0031-0012 SANYO 17450ER-CX
	60.15028	Panasonic BR-A with wire and plug	Allen Bradley PLC-5/11 PLC-5/20, PLC-5/30, PLC-5/40, PLC-5/60 1770-XYC PLC Battery PLC-5 Controller Series A, B, C, D, E, F - SB9758T 1771-DMC1, 1771-DMC4, 1785-L11B, 1785-L20B, 1785-L20BK, 1785-L30B, 1785-L40B, 1785-L40BK, 1785-L40L, 1785-L60B, 1785-L60L, 1785-L80B, 1785-L80BK, 1785-L16B, 1785-L26B, 1785-L36B, 1785-L46B, 1785-L46L, 1785-L66B, 1785-L66L, 1785-L86B, 1785-L20E, 1785-L40E, 1785-L80E, 1785-L20C, 1785-L40C, 1785-L60C, 1785-L80C, 1785-L20C15, 1785-L40C15, 1785-L60C15, 1785-L80C15, 1785-L46C15
	60.15138	Panasonic BR-CCF1TH	A20B-0130-K106 A20B0130K106 GE Fanuc CNC 16i, 18i A98L-0031-0007, A98L00310007
	60.15307	Panasonic BR-2/3A with 80 mm wire and plug	GE Fanuc A06B 90-20, 90-30 PCM IC963
	60.15361	LI-110 with 50 mm wire and plug	Toshiba 146705-1
	60.15493	LI-130 with wire and 3-pole special plug	Rexroth PPC-R01.2 PPC-R02.2
	60.15809	Lithium Battery 3/LI-160	3HAC13150-1, 3HAC16831-1 ABB IRB 6600, ABB IRB 7600
	60.15982	Lithium Battery-Pack 2/CR17450 SE-R	GE Fanuc series Beta SVU and BETA iSV
	60.16049	CR1/2AA with wire and plug	S5-90U, S7-300, S7-312CPU, S7-314CPU C116i, C116iP, D425, D435 D445, D840 810D, 810DE, 840D, 840DE, 840Di
	60.16092	LI-130 with 100mm wire and plug	Mitsubishi CR1, CR2, CR2A, CR3 M500, M600

Other battery packs for control systems from manufacturer Allen Bradley, Mitsubishi, Yaskawa, Rexroth, Fanuc, Toshiba e. g. upon request.

## High Capacity Lithium Manganese Block

9V Lithium-Manganese Dioxide (Li-MnO<sub>2</sub>) Battery

- | High nominal capacity of 1300 mAh
- | Continuous discharge current
- High energy density
- | Useable in a temperature range from 30 °C to +85°C
- | Very low self-discharge with a 10 years service life



Ideal areas of application are Medical Devices, Alarm Systems and Security Equipment, as well as Smoke Detectors, Meters and Gas Emission Alarm Devices. In addition we supply to many kinds of Measuring Devices, Control Systems, Audio and Industrial Applications.

Nominal capacity	1300 mAh	
Nominal voltage	9,0V	
Max. recommended continuous current	120 mA	
Max. pulse current capability	400 mA	
Storage temperature (recommended)	+30°C max.	
Operating temperature range	-30°C ~ +85°C	
Dimensions L/W/H	26.0   17.2   48.8 mm	
weight	50 g	

For more technical information  
please refer to our website:



### Lithium Manganese button cells

3,0V Primary Lithium-Manganese Dioxide (Li-MnO<sub>2</sub>)



Operating Temperature: -20°C ~ +70°C

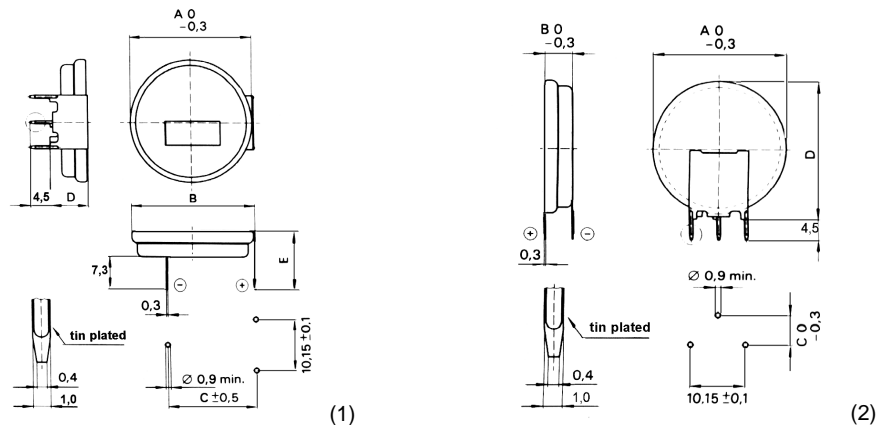
Electrical characteristics (typical values relative to cells stored for one year or less at +30°C max.)

Part no.	Typ	Packing type	Nominal capacity (mAh) <sup>1)</sup>	max. Constant current (mA) <sup>1)</sup>	max. Pulse current (mA) <sup>2)</sup>	max. Dimensions mm		Weight g	Packing unit
						Ø	h		
60.08514	LM 1620	bulk	70	3	8	16.0	2.0	1.3	20/200
60.08503	LM 2016	bulk	80	3	15	20.0	1.6	1.8	20/200
60.08513	LM 1632	bulk	120	3	8	16.0	3.2	1.6	20/200
60.08504	LM 2025	bulk	160	3	15	20.0	2.5	2.5	20/200
60.08500	LM 2032	bulk	225	3	15	20.0	3.2	3.1	20/200
60.08501	LM 2430	bulk	280	6	25	24.5	3.0	4.5	20/200
60.08515	LM 2450	bulk	600	6	25	24.5	5.0	7.0	20/200
60.08523	LM2477N	bulk	1000	6	25	24.5	7.7	10.0	20/200

<sup>1)</sup> Nominal capacity shown above is based on standard discharge current to an end voltage of 2,0V at 23°C.

<sup>2)</sup> Current value is determined so that 70% of the nominal capacity can be used when reaching an end voltage of 2,0V at 23°C.

Other types upon request.



#### Horizontal, 3 Pins Type PCB/3 (1)

Part no.	Type	Capacity (mAh)	Abmessungen (mm)					Weight g
			A	B	C	D	E	
60.08506	LM 2016 PCB/3	80	20.2	20.0	17.8	5.2	9.1	2.1
60.08505	LM 2025 PCB/3	160	20.0	20.2	17.8	4.85	8.85	2.8
60.08512	LM 2032 PCB/3	225	20.0	20.2	17.8	6.70	9.45	3.3
60.08507	LM 2430 PCB/3	280	24.5	24.7	17.8	5.45	9.45	4.7
60.08525	LM 2477N PCB/3	1000	siehe Datenblatt					10.0
60.08524	LM 2477N PCB/2	1000	siehe Datenblatt					10.0

#### Vertical, 3 Pins Type SLF/3 (2)

Part no.	Type	Capacity (mAh)	A	B	C	D	Weight g
60.08508	LM 2016 SLF/3	80	20.0	1.6	2.1	21.3	2.1
60.08509	LM 2025 SLF/3	160	20.0	2.5	2.8	21.0	2.8
60.08510	LM 2032 SLF/3	225	20.0	3.2	3.5	21.0	3.3
60.08511	LM 2430 SLF/3	280	24.5	3.0	3.3	25.5	4.7

**Warning** | Forbid short-circuit, charge between “+” and “-” | Take out the battery when discharging to cut-off voltage and embedding it under the ground or jump in the deep water.  
 | Forbid over-discharge, fire, damage.  
 | Finish sealing less more 5 seconds at 200°C~250°C

#### Battery holder:

Battery holder for für Lithium button cells to 23 mm Ø for 1 cell. Print assembling	Battery holder für Lithium button cells to 20 mm Ø for 1 cell. SMD version
Holder for LM 2430, LM 2450 and LM 2477 upon request	Holder for LM 2430, LM 2450 and LM 2477 upon request



## Lead Line

Rechargeable Sealed Lead-Acid batteries

Technical Characteristics:

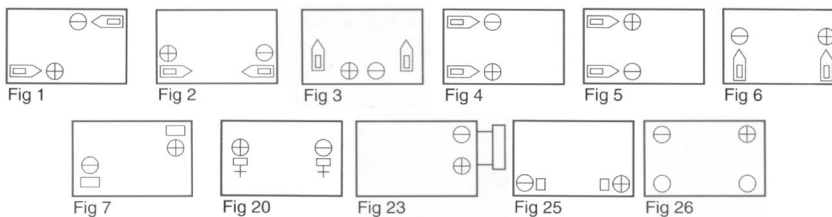
- ┆ High quality and reliability
- ┆ No dangerous goods
- ┆ Leakage safe construction
- ┆ Fully recyclable
- ┆ Case material ABS (shockproof)
- ┆ Maintenance free
- ┆ Low operating cost
- ┆ AGM technology
- ┆ Valve regulated lead-acid
- ┆ according to DIN 43534
- ┆ VdS/UL - approvals

Part no.	Type	VdS no.	Nominal voltage V	Capacity (C <sub>20</sub> ) at 20 hrs. rate Ah	Dimensions in mm			Weight kg	Layout	Terminal	Pack. unit
					l	w	h*				
60.05035	LL 1-6S		6	1	51	42	55	0.3	Fig. 1	S	20
60.05002	LL 1,2-6 S	-	6	1.2	97	25	51.5	0.3	Fig. 2	S	20
60.05003	LL 2-6 S	-	6	2	75	51	53	0.54	Fig. 1	S	20
60.05005	LL 4-6 S	-	6	4	70	46,5	107	0.81	Fig. 7	S	20
60.05006	LL 7-6 S	-	6	7	116	50	99	1.39	Fig. 1	S	10
60.05007	LL 10-6 S	-	6	10	151	50	94	1.7	Fig. 2	S	10
60.05008	LL 20-6 G5	-	6	20	157	83	125	3.9	Fig. 20	G5	4
60.05009	LL 0,8-12	-	12	0.8	96	25	62	0.4	Fig. 23	wire	20
60.05010	LL 1,2-12 S	G 104053	12	1.2	97	43	59	0.6	Fig. 4**	S	20
60.05011	LL 2,2-12 S	G 104054	12	2.2	178	34	66	0.95	Fig. 2	S	10
60.05012	LL 2,3-12 S	-	12	2.3	178	34	66	0.95	Fig. 2	S	10
60.05014	LL 2,9-12 S	-	12	2.9	79	56	107	1.2	Fig. 6	S	10
60.05029	LL 3,3-12 S	-	12	3.3	134	67	65.5	1.37	Fig. 4**	S	10
60.05030	LL 5-12 S	-	12	5	90	70	107	1.9	Fig. 3	S	10
60.05015	LL 5-12 E	-	12	5	90	70	107	1.9	Fig. 3	SR	10
60.05025	LL 7-12 S	G 114054	12	7	151	65	102	2.25	Fig. 5	S	5
60.05016	LL 7,2-12 S	G 110064	12	7.2	151	65	102	2.45	Fig. 5	S	5
60.05017	LL 7,2-12 SR	G 110064	12	7.2	151	65	102	2.45	Fig. 5	SR	5
60.05018	LL 10-12 E	-	12	10	151	65	118	3.31	Fig. 5	SR	5
60.05027	LL 12-12 S	G 115030	12	12	151	100	97.5	3.7	Fig. 5	S	4
60.05020	LL 12-12 E	-	12	12	151	98	97.5	4.3	Fig. 5	SR	4
60.05028	LL 18-12 G5	G 115031	12	18	181	76	167	5.6	Fig. 25	G5	2
60.05022	LL 26-12 G5	G 104059	12	26	166	175	125	9.5	Fig. 25	G5	2
60.05023	LL 45-12 G6	G 104060	12	45	198	166	171	14.1	Fig. 25	G6	1
60.05024	LL 65-12 G6	G 104061	12	65	350	166	174	23.3	Fig. 25	G6	1

Other types upon request

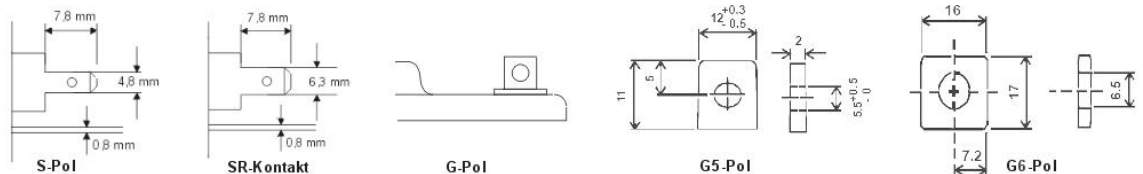
\* height including terminal

Layouts:



\*\*Please note:  
At Fig. 4: the positive terminal is on the bottom and the negative terminal is on the top, opposite to Exide GNB and Yuasa

Terminals:



## General Terms and Conditions of Sale of DYNAMIS Batterien GmbH (Rev. 11/2016)

### I. Scope of Validity

1. These Conditions shall apply exclusively to all our offers, supplies and services to our Customer. These Conditions shall also apply for future orders, supplies and services without the need of any express agreement thereon at the conclusion of such transaction.
2. Any conditions of the Customer, which differ from our Conditions shall not be recognized, whether or not we have objected to such conditions. Our Conditions shall also apply, if we, knowing of any contradictory or dissenting conditions of our Customer, unconditionally execute the supply.
3. Our Conditions shall apply only to contractors as defined by § 310, Section 1 BGB (German Civil Code).

### II. Offer and Acceptance

1. Our quotations are subject to change without notice and are not binding unless they are expressly described as being binding.
2. Any describing data of our products, such as illustrations, drawings, specifications, weights, dimensions, performance-, operational- and consumption data, loading capacities, tolerances, and information relating to the use or suitability for a particular application, contained in our offer, in prospectus, catalogues or similar documents, constitute an approximate guide and shall not be binding unless expressly described as binding. Any such data relate to serial products which have been tested under central European operation conditions and describe their standard functions. They are not to be deemed guaranteed properties but are descriptions or definitions of the goods or services.
3. Customary changes in quantities, quality or specifications of the goods, changes as a result of a change of law and technical improvements shall be allowed. We may also replace parts of the goods with other equal parts provided such parts do not impair their suitability for the purpose provided for by the contract.
4. We reserve the right of ownership and copyright of all quotation documents; they may not be made available to third parties unless upon our approval.
5. Offers made by the Customer shall be in writing (letter, telefax, e-mail).
6. We may accept an order made by a Customer within 4 weeks after its receipt, which shall be confirmed in writing.

### III. Prices and Terms of Payment

1. The prices quoted by us are in EURO and are given on the basis ex works (EXW as per Incoterms 2000) for deliveries within and outside Germany, subject to the provisions under Section IV.1 hereunder. Value added tax shall be added at the rate applicable at the time of invoicing.
2. Unless otherwise agreed, the price shall be paid within 10 calendar days (without discount).
3. If the Customer is in delay in making payment, we are entitled to charge interest for late payment at the rate of 9 % p.a. above the relevant base rate of the Deutsche Bundesbank. The creditor of a remuneration has in case of default also the right to get a flat payment of 40 Euro. If we are able to demonstrate a greater loss as a result of late payment, then we are entitled to claim for this loss.
4. Any offsetting or retaining of payment by the Customer is only permitted if Customer's counterclaims are not contested or have been finally decided by the court.

### IV. Delivery

1. Deliveries within Germany and outside Germany shall be made Ex Works (EXW according to Incoterms 2000). The means of shipment shall be at our sole discretion. We will deliver in customary packaging. Unless otherwise agreed upon, we will charge the Customer for all shipment and packaging costs as accrued. At the request of the Customer, the deliveries will be insured by us at his expense.
2. We are entitled to make partial deliveries.
3. We are entitled to charge the Customer for costs incurred by us due to Customer's failure to accept the goods or because of false information given by him.
4. The minimum order value for shipments shall be EURO 25,- (without VAT).

### V. Transfer of Risk

1. The risk of accidental loss and accidental deterioration of the goods passes to the Customer when the goods are ready for shipment.
2. If the delivery is delayed due to circumstances for which the Customer is responsible for, the risk passes over to him from the date of readiness for shipment.

### VI. Transportation Damages

1. The Customer shall give notice in writing without delay to us as well as to the carrier or such other party in charge of the transport of any transport damage within the following time-limits :

#### In case of damaged packaging :

- a) Mail :The damage needs to be confirmed upon handing over and to be notified at the post office within 24 hours (!). The damage needs to be notified to us within 48 hours.
- b) Parcel Post :The damaged goods need to be unpacked in the presence of the driver and the damage needs to be confirmed by him. The damage is to be notified to us within 48 hours.
- c) Transport: The damaged goods need to be unpacked in the presence of the driver and the damage needs to be confirmed on the bill of lading. The damage is to be notified to us within 48 hours.

#### In case of undamaged packaging :

- a) Mail: Immediately (within 24 hours) the post office in charge needs to be notified and an inspection and a finding of facts is to be applied for. The damage is to be notified to us within 48 hours.
- b) Parcel Post: The damage is to be notified to us within 48 hours.
- c) Transport :The damaged goods need to be unpacked in the presence of the driver and the damage needs to be confirmed on the bill of lading, indicating that the packaging has been undamaged prior to the ascertainment of the damage. The damage is to be notified to us within 48 hours.

### VII. Delivery Time

1. Compliance with the agreed due dates for delivery requires that the Customer has fulfilled all his obligations in good time and in the appropriate way.
2. The delivery time has been complied with if by the end of the delivery period, the ordered goods have been handed over to the Customer, or the carrier or the other party in charge of the transport, or is ready for shipment and this has been notified to the Customer.
3. If non-compliance with an agreed delivery period is due to force majeure or other circumstances for which we are not responsible, the delivery period will be extended by the duration of such events.
4. If a delivery is in delay due to circumstances for which we are responsible for, or becomes impossible, our liability for damages shall be limited in accordance with the provisions of Section X hereunder.

### VIII. Retention of Title

1. The property of all goods supplied shall remain with us until all amounts outstanding to us under the business relationship with the Customer are fully paid. In the event of a breach of contract by the Customer, especially in case of default of payment or in case of enforcement measures by third parties, we are entitled to demand return of the goods. Return of the goods or their seizure shall not be deemed termination or cancellation of the contract, unless we have expressly declared so. We are entitled to the sale or any other use or exploitation of such returned goods.
2. The Customer may neither pledge nor assign the goods by way of security. The Customer shall notify us immediately in the event of seizures of or other enforcement measures by third parties to the goods.

3. The Customer is entitled to resell the goods in the ordinary course of business.

Once the goods are resold, payment claims by the customer against his own buyer as a result of the resale are deemed to have been assigned to us, whether or not such goods have been incorporated into, processed or mixed with other goods. We herewith accept such assignment. Upon assignment the Customer shall be entitled to collect any receivables arising from the resale of the goods. We reserve our right to collect such receivables by ourselves in case the Customer fails to fulfil his payment obligations.

4. Any processing of the goods shall always be made in our name and for our behalf. In case the goods are incorporated into or mixed with other goods not belonging to us, we will become the co-owner of such other goods in relation of the value of our goods to the value of the other goods.

5. We undertake to release the securities due to us at the request of the Customer in so far as their value exceed the secured debts by more than 20 %, in so far as these have not yet been settled.

#### **IX. Liability for Defects**

1. We accept liability for defects of the goods or services supplied only if the Customer has complied with his legal inspection and notification duties. The Customer shall inspect the goods without delay upon delivery and shall give notice to us of any defect without delay. If the Customer fails to give such notice, the goods shall be conclusively accepted, except for a defect which has not been detectable during inspection.

2. In case of a defect, we shall make good such defect at our option by repair or by the supply of a replacement. In case of repair we will bear all expenses necessary for such repair, except those expenses which are the result of the goods being transferred to another location than the place of performance agreed upon.

3. If repair or replacement is unsuccessful, the Customer is entitled, at his option, to demand a corresponding reduction in the purchase price or cancellation of the contract.

4. No claims for defects can be made in case of minor deviations from the properties agreed upon or in case of a minor impairment of the suitability, in case of normal wear and tear, in case of damages resulting from misuse, use of unsuitable operating materials, in case of external influences, which have not been agreed upon or have not been a condition of the contract, or in case of defects of the software which cannot be reproduced.

5. This liability for defects does also not apply if the Customer modifies the goods without our consent or has them modified by third parties and such modification makes the remedy more difficult or impossible. In either case the Customer shall be liable for the additional expenses incurred due to such modification.

6. In case of defects in goods as are not of our manufacture, we are entitled at our option to pursue our warranty claims against the manufacturer or supplier of such goods or to assign such claims to our Customer. The Customer may claim against us in case of such defects only, if Customer's claim against the supplier or manufacturer has been unsuccessful or, for instance due to insolvency, is unpromising.

7. Claims for defects hereunder are always subject to the return of defective parts by the Customer to us.

8. The defects liability period is one (1) year from delivery of the goods.

9. Used goods are sold without any liability for defects.

10. We are not giving the Customer any guarantees within the legal meaning of the word, unless we expressly grant such a guarantee in a given case.

11. The provisions under Section X – Liability apply to any claims for damages by the Customer.

#### **X. Liability**

1. Our liability for damages or compensation, irrespective of the legal ground, in particular with respect to impossibility of performance, delays, defective or false supply, breach of contract, defective or non performed consulting or information, breach of duties in negotiations and wrongful acts, in so far as negligence is legally required, shall be limited to the extent set forth in this Section X.

2. We shall not be liable in case of ordinary negligence on the part of our managing director, legal representatives, executives or other agents.

3. We are liable under the legal provisions, if the damage was caused by negligent breach of a major contractual obligation (cardinal obligation); in such a case our liability for compensation shall be limited to the foreseeable damage that may typically occur. Cardinal obligations are understood to be obligations, which are mandatory for the proper performance of the contract and upon which the Customer could rely upon on a regular basis.

4. The foregoing limitations and exclusions of liability shall not apply in case of guaranteed properties, not in case of physical injuries or damage to health or loss of life for which we are responsible for and shall also not apply for claims made by the Customer under product liability.

#### **XI. Special Supplemental Terms for Battery Testing**

##### **1. Quotation of Prices:**

The prices quoted by us for battery testing are in EURO and are given on the basis ex works DYNAMIS Batterien GmbH, Dettingen, Germany, as per Incoterms 2010. Value added tax shall be added at the rate applicable at the time of invoicing.

The prices are quoted on the assumption that the related safety components of the batteries to be tested have already been demonstrably tested. If this not the case, a new agreement for the tests to be performed will be required.

##### **2. Prices and Terms of Payment:**

The prices are defined in the offer and shall be paid from the date of invoice within the time limit set in the offer. The full price of a test will also be charged even if the test sample has not passed the test, whether during the first steps of a test or at the end of the test.

##### **3. Scope of the Test(s):**

The tests shall be performed solely on the basis of the terms and conditions referred to in this Section as well as of these General Terms and Conditions of Sale of DYNAMIS Batterien GmbH.

We will perform the tests in accordance with the specific requirements of the Customer and in compliance with the generally accepted technical rules and standards.

The test samples can be collected at our premises after completion of the tests or, upon Customer's request, will be stored subject to a charge (duration and costs to be agreed upon), or will be disposed of in accordance with the regulations.

#### **XII. Waste Disposal under the German Electrical and Electronic Appliances Act**

1. If the goods are subject to the German Electrical and Electronic Appliances Act, we offer to our Customer the option to carry out for him the waste disposal as stipulated by law. This service is provided against reimbursement of the actual cost that have been incurred and on condition that it has been requested in writing at the time of the purchase contract. Otherwise the Customer himself shall be liable for the correct legally stipulated waste disposal of the delivered goods at his own expense upon the termination of use of the goods.

2. In such a case the Customer shall indemnify us and our suppliers against any duties arising from section 10 II of the German Electrical and Electronic Appliances Act (Reacceptance Duty of the Manufacturer) and thus also against any associated third-party claims.

3. The Customer shall impose a contractual commitment on any third-party contractor to which he passes on the delivered good, specifying that the third party shall, at its own expense, ensure the correct legally stipulated waste disposal of the delivered good upon termination of use and that the third party shall furthermore impose the same commitment on further third parties in case that the relevant goods are passed on further. If the customer fails to impose a waste disposal commitment and a passing-on duty in respect of this commitment in his relationship with third-party contractors to which he passes on the delivered goods, then the Customer shall be liable to reaccept the delivered goods upon termination of use at his own expense and to ensure correct legally stipulated waste disposal of the same. If the Customer passes on the goods to non contractors, then the provisions of Section XI.2 here above shall apply.

4. Our claim towards Customer for take-over/indemnification shall not become subject to statute-barring until the expiration of two years following the final termination of use of the goods. This period shall start no earlier than our receipt of written notification from the Customer and/or from the Customer's customer concerning termination of use.

#### **XIII. Final Provisions**

1. In the case of disputes arising out of the business relationship with contractors, Konstanz is agreed as the legal venue, or, at our option, the principal place of business of our Customer.

2. Unless otherwise agreed, the place of performance is Konstanz.

3. The laws of the Federal Republic of Germany shall apply. The provisions of the United Nations Convention on Contracts for the International Sale of Goods do not apply.

DYNAMIS Batterien GmbH



## **DYNAMIS** Distributors/Representatives

### **UK, Ireland:**

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Website: [www.locationsound.com](http://www.locationsound.com)

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