



POWER

FLEXIS

MULTIFUNCTIONAL BATTERY CHARGER

Programmable, high-frequency modular traction batteries charger

www.axima-power.com



INTELLIGENT CHARGING

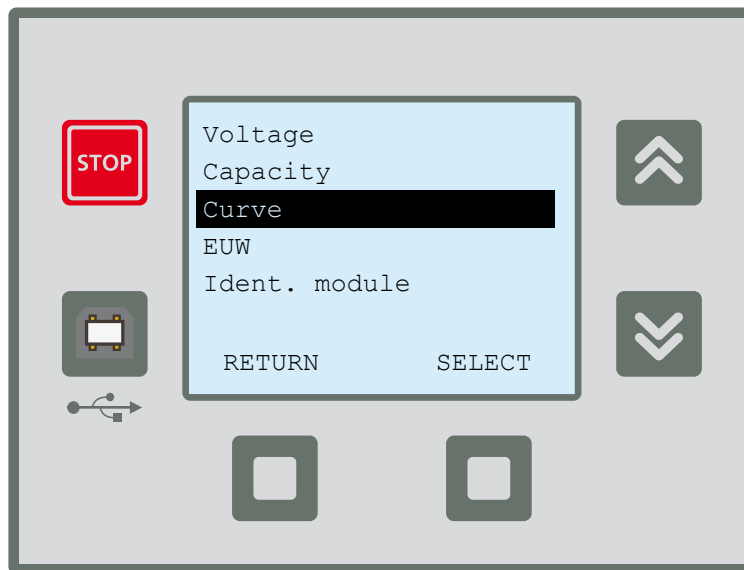


MAIN FEATURES:

- OPPORTUNITY CHARGING
 - TIME – SCHEDULED CHARGING
 - AUTOMATIC BATTERY VOLTAGE AND CAPACITY RECOGNITION
 - DEDICATED CHARGING CURVES FOR LITHIUM BATTERIES
 - ESTIMATED TIME – TO – END – OF – CHARGING CYCLE
 - LOW OPERATING COSTS
 - MODULAR SYSTEM
 - USER – FRIENDLY INTERFACE
 - SETTINGS VIA OPERATING PANEL OR PC
-
- Efficiency up to 95%, power factor $\cos \varphi \sim 1$
 - Active PFC and soft-start
 - Verification of connected battery
 - Possibility to use one charger for more different batteries
 - Possibility to set up preset and custom charging curves
 - High resistance to mains disturbances
 - Galvanic separated output mains
 - Memory for 2.000 charging cycles
 - Regeneration charging - desulphation and equalization

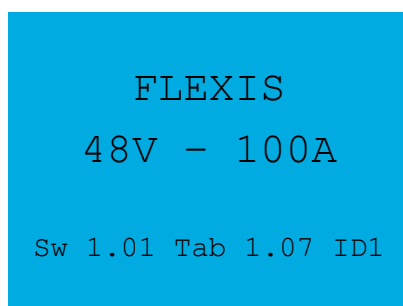
FLEXIS is a fully programmable, high-frequency traction battery charger. FLEXIS optimizes charging technology prolongs the working life of the battery, accelerates charging and saves energy. FLEXIS charger meets the hard requirements of three-shift service in industrial areas.

SIGNALING DISPLAY

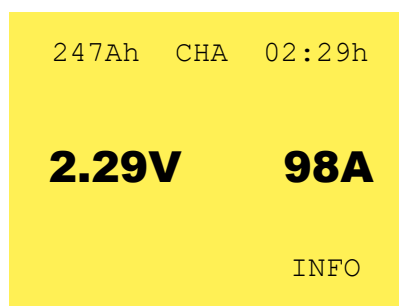


Operating panel allows to set parameters of charging – charging is adjusted to the values of battery.

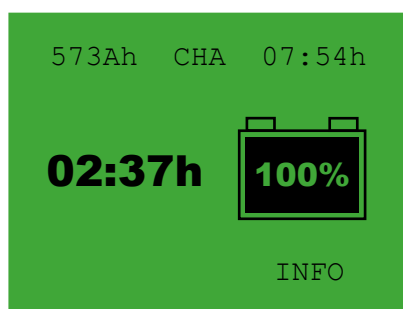
- Operating conditions are signaled by change of colour of the display important values are displayed
- Display is big and bright, all charging stages are visible from long distance and different angles
- Display shows estimated duration of the charging cycle



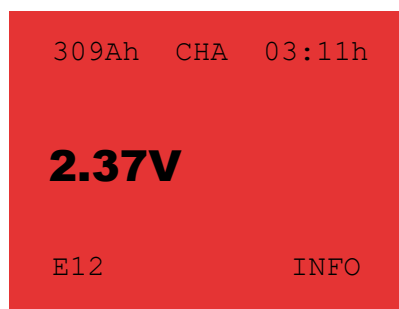
Standby mode



Charging



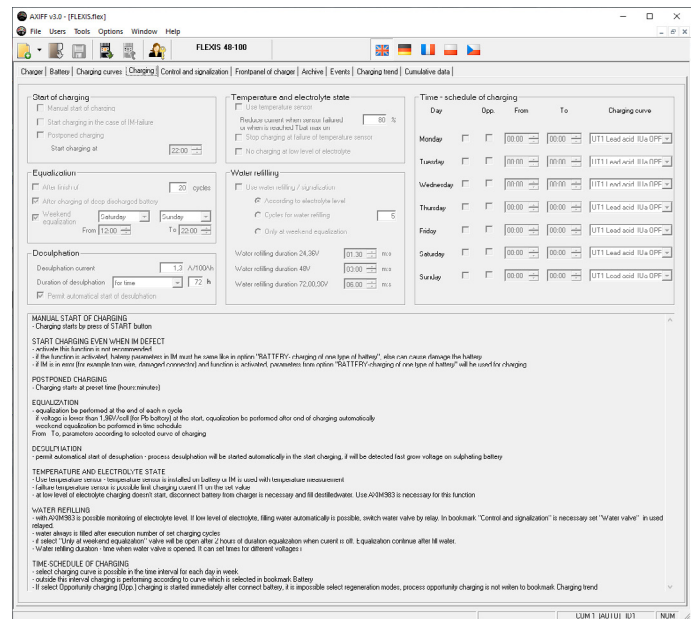
Charging finished



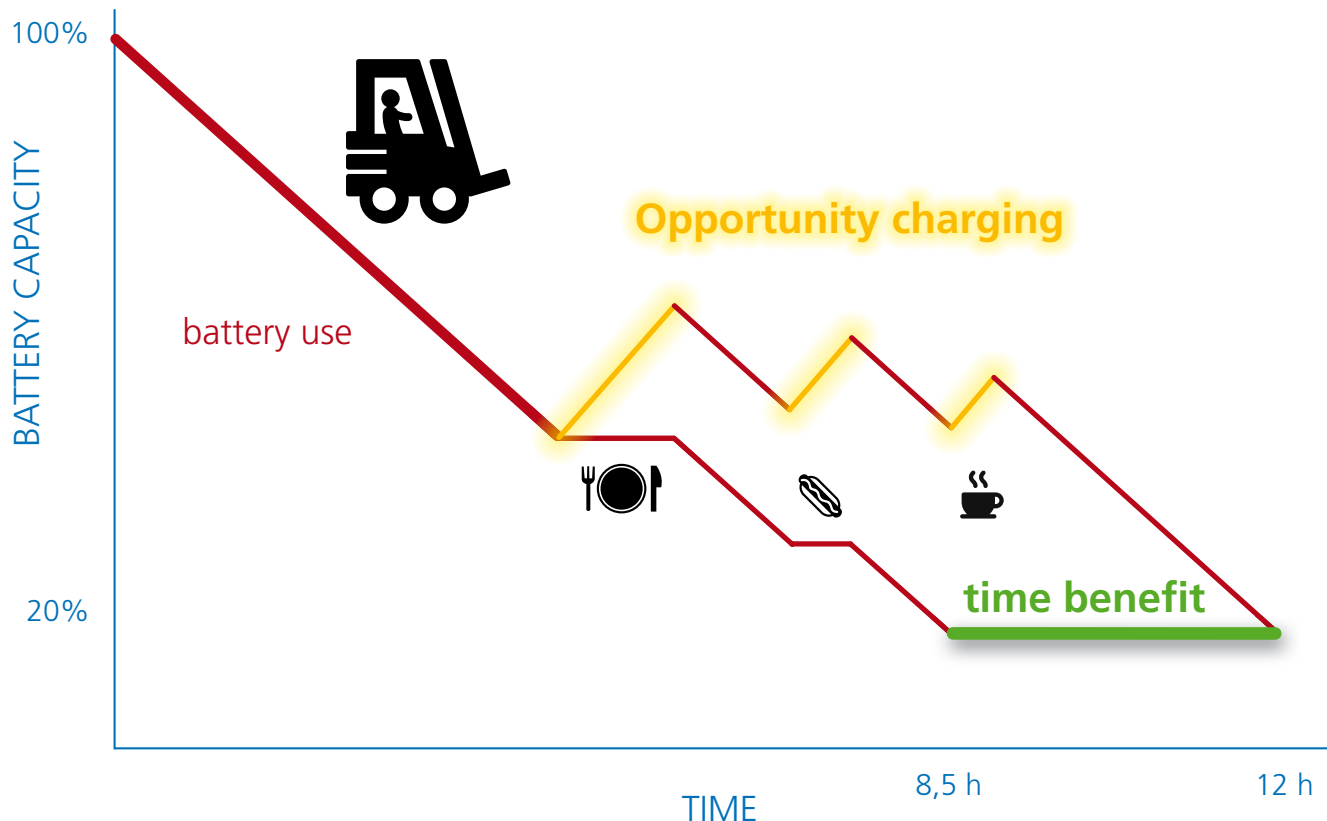
Error

CONFIGURATION SOFTWARE

- User friendly and intuitive configuration programme
- Fully adjustable charging current and voltage
- Possibility to use one charger for plenty of different batteries by manual selection
- Setting opportunity charging
- Time schedule of charging



Opportunity charging is a way of fast battery charging by higher current than common charging. During a few short and intensive charging cycles, the time of battery service is significantly longer. Working breaks are used for opportunity charging to substantially prolong the forklift worktime without a battery exchange. This way of charging minimizes downtime in operation and increases your material handling fleet effectiveness.



Back **analysis** of charging archive optimises operating costs, helps to save electrical energy and prolongs working life of battery

AXIFF v3.0 - [FLEXIS.flex]

File Users Tools Options Window Help

FLEXIS 48-100

Charger | Battery | **Charging curves** | Charging | Control and signalization | Frontpanel of charger | Archive | Events | Charging trend | Cumulative data

Table of charging curves: 1.10

Choose	Curve number	Battery type	Cell voltage V	Curve	Umin V/cell	I1 A/100Ah	t11 max h:m	Reaction after t11 max	U1 V/cell	tU1 min h:m	Max time function period U1	tU1 max h:m	Reaction after tU1 max	I2 A/100Ah	dU/dt m	dU/dt EUW	Charging factor	Charging factor EUW	t12 min h:m	Max time function period I2	t12 max h:m	Ri t
<input checked="" type="checkbox"/>	T1	Lead acid	2,00	IUIOU dU	1,30	16,0	9,00	E<	2,40	0,00	U1 - U1	12,00	E>	5,0	35	20	1,00	1,00	0,00	-	6,00	
<input type="checkbox"/>	T2	Lead acid	2,00	IUIa dU	1,30	16,0	9,00	E<	2,40	0,00	U1 - U1	12,00	E>	5,0	35	20	1,00	1,00	0,00	-	6,00	
<input type="checkbox"/>	T3	Lead acid	2,00	IUIOU cf	1,30	16,0	9,00	E<	2,40	0,00	U1 - U1	12,00	E>	5,0	0	0	1,18	1,09	0,00	-	6,00	
<input type="checkbox"/>	T4	Lead acid	2,00	IUIa cf	1,30	16,0	9,00	E<	2,40	0,00	U1 - U1	12,00	E>	5,0	0	0	1,18	1,09	0,00	-	6,00	
<input type="checkbox"/>	T5	Lead acid	2,00	IUIOU	1,30	16,0	9,00	E<	2,40	0,00	-	4,00	x	1,3	0	0	1,00	1,00	0,00	-	0,00	
<input type="checkbox"/>	T6	Lead acid	2,00	IUIOU dU D	0,10	8,0	20,00	E<	2,40	0,00	-	5,00	E>	5,0	40	20	1,00	1,00	0,00	-	6,00	
<input type="checkbox"/>	T7	Gel	2,00	IUIOU 265	1,30	16,0	9,00	E<	2,35	0,00	U1 - U1	12,00	E<	1,3	0	0	1,00	1,00	0,00	-	4,00	
<input type="checkbox"/>	T8	Gel	2,00	IUIOU 280	1,30	16,0	9,00	E<	2,35	0,00	U1 - U1	12,00	E<	1,3	0	0	1,00	1,00	0,00	-	4,00	
<input type="checkbox"/>	T9	Gel	2,00	IUIOU Ex	1,30	15,0	9,00	E<	2,35	0,00	U1 - U1	12,00	E<	1,3	0	0	1,00	1,00	1,00	U1 + U1	4,00	
<input type="checkbox"/>	T10	AGM/Gel	2,00	IUIOU	1,30	16,0	9,00	E<	2,40	0,00	-	4,00	x	1,3	0	0	1,00	1,00	0,00	-	0,00	
<input type="checkbox"/>	T11	Gel	2,00	IUIa 265	1,30	16,0	9,00	E<	2,35	0,00	U1 - U1	12,00	E<	1,3	0	0	1,00	1,00	0,00	-	4,00	
<input type="checkbox"/>	T12	Gel	2,00	IUIa Ex	1,30	15,0	9,00	E<	2,35	0,00	U1 - U1	12,00	E<	1,3	0	0	1,00	1,00	1,00	U1 + U1	4,00	
<input type="checkbox"/>	UT1	Lead acid	2,00	IUIa DPP	1,30	30,0	6,00	E<	2,40	0,00	-	4,00	x	3,0	0	0	1,00	1,00	0,00	-	0,00	
<input type="checkbox"/>	UT2	Lead acid	2,00	IUIOU DPP	1,30	30,0	6,00	E<	2,40	0,00	-	4,00	x	3,0	0	0	1,00	1,00	0,00	-	0,00	

COM 1 (AUTO) ID1 NUM

- Precise setting of the charging parameters ensures an optimal care of the battery
- Selection from the preset charging curves
- Possibility to modify extra charging curves to suit every type of battery
- Periodical regeneration – makes care of batteries easier

AXIFF v3.0 - [FLEXIS.flex]

File Users Tools Options Window Help

FLEXIS 48-100

Charger | **Battery** | Charging curves | Charging | Control and signalization | Frontpanel of charger | Archive | Events | Charging trend | Cumulative data

Battery type **Traction**

Way of identification of batteries

charging of one type of battery

Traction battery parameters

Nominal battery voltage 48 V

Battery capacity 100 Ah

Charging curve T1 Lead acid IUIOU dU

Charging current I1 16,0 A/100Ah

Use aeration ☐

Aeration pump setting

Charging curve diagram

T1 - IUIOU dU - Lead acid

I [A/100Ah]

16 A/100Ah

2,4 V/cell

5 A/100Ah

4 A/100Ah

2,23 V/cell

2,8 V/cell

U [V/cell]

If it is not possible to open "Aeration pump setting", it is necessary to choose type of charger with EUW in folder Charger

CHARGING OF ONE TYPE OF BATTERY

- standard charging of one battery

AUTOMATIC RECOGNITION of BATTERY

- allows automatic charging any type of Pb battery with liquid electrolyte

CHARGING OF LITHIUM BATTERY

- allows charging lithium battery and set the parameters

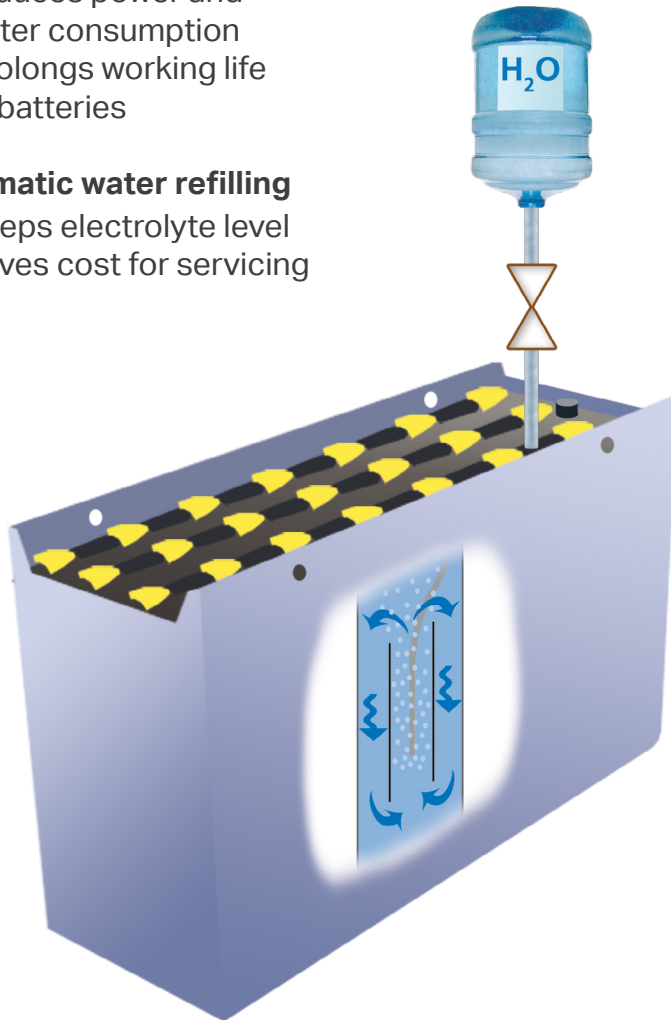
OPTIONAL EQUIPMENT

Air electrolyte circulation

- reduces charging time
- reduces power and water consumption
- prolongs working life of batteries

Automatic water refilling

- keeps electrolyte level
- saves cost for servicing



Battery identification module AXIM

- one charger for more batteries



Temperature sensor

- compensation of charging voltage according to battery temperature



External signaling

- outputs for signal column
- 3 potential-free contacts for signaling

Remote control

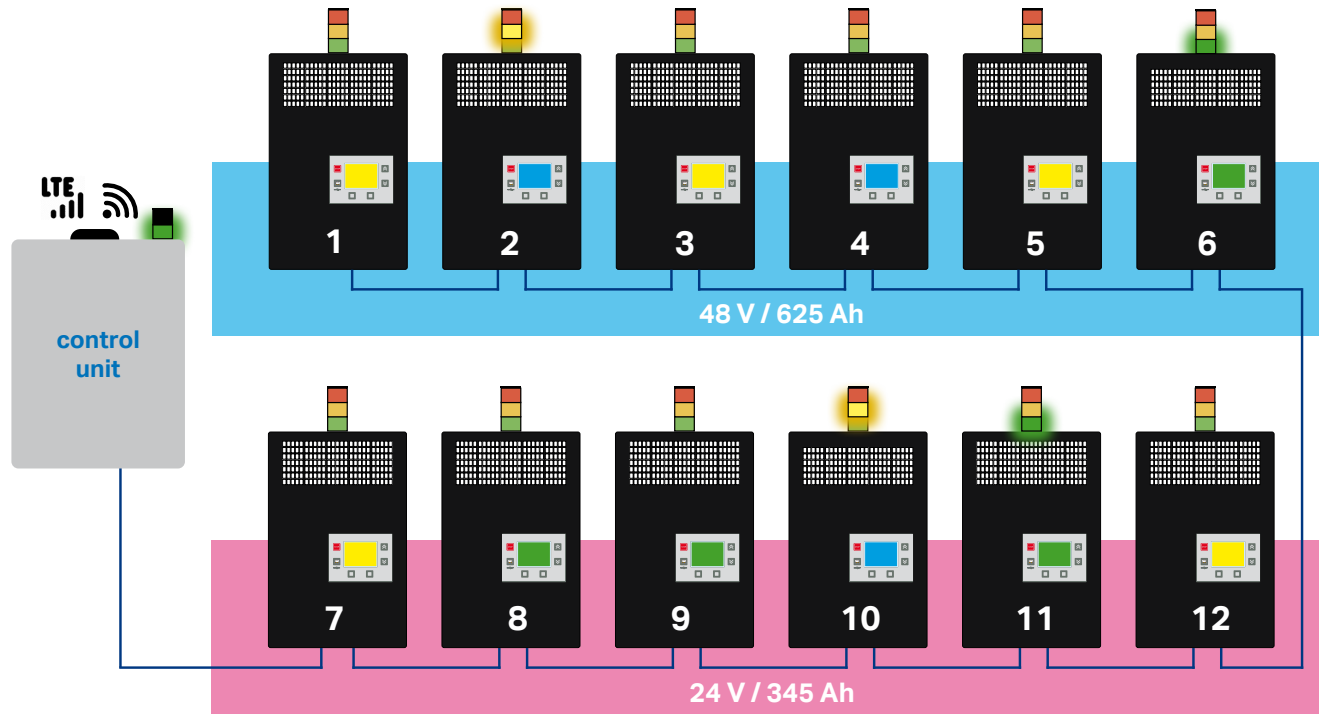
- 2 digital inputs for remote control



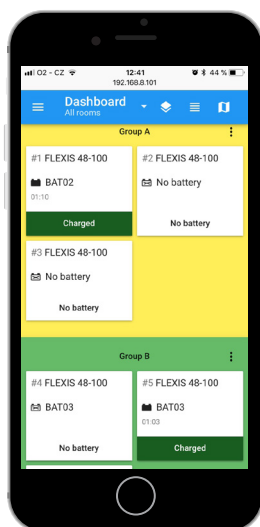
SMART BATTERY ROTATION SYSTEM

Software for effective charging station

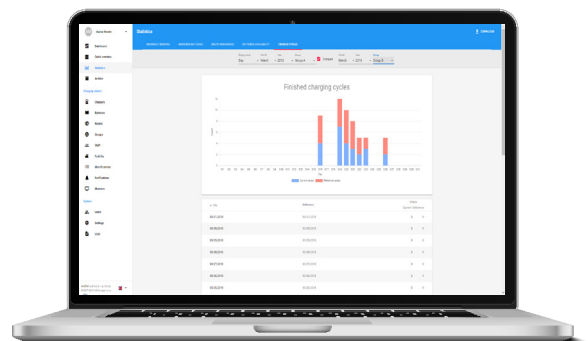
GROUP	PUT	TAKE
48 V / 625 Ah	2	6
24 V / 345 Ah	10	11



AXINET is a system that optimizes the operation of charging stations using chargers from the FLEXIS series. The system connects individual chargers into groups according to their batteries and evaluates their condition. The AXINET system increases usability of batteries and chargers, thus reducing operating costs to the minimum. The AXINET data network system can connect up to 255 FLEXIS chargers and thereby acquire an overview of the condition and utilization of the operation.



- Smart web app
- Battery return place assignment, charged battery indication
- Identification of batteries, personnel and forklifts
- Automatic reports via e-mail
- Clear visualization of individual charging points
- Archive of charging cycles
- Statistics for battery usage and operations
- Remote access via 4G



CHARGER TYPES

Output voltage (V)	Output current (A)	Mains (V AC)	Input current (A)	Mains protection (A)	Case with air pump	Case without air pump	Type	Charging time / Battery capacity (Ah max.)				Weight (kg)	
								with air pump		without air pump		with air pump	without air pump
								6h	8h	10h	10h		
24	60	230	8,7	10	FF170	FF170	FLEXIS 24E60	308	462	423	571	316	13
	100	230	14,1	16	FF170	FF170	FLEXIS 24E100	513	769	704	952	526	13
	100	3 x 400	4,9	6	FF170	FF170	FLEXIS 24D100	513	769	704	952	526	14
	200	3 x 400	9,8	10	FF250	FF250	FLEXIS 24D200	1026	1538	1408	1905	1053	25
48	50	230	14,1	16	FF170	FF170	FLEXIS 48E50	256	385	352	476	263	13
	50	3 x 400	4,9	6	FF170	FF170	FLEXIS 48D50	256	385	352	476	263	14
	100	3 x 400	8,0	10	FF170	FF170	FLEXIS 48D100	469	704	644	871	482	18
	150	3 x 400	12,9	16	FF250	FF250	FLEXIS 48D150	726	1088	996	1348	745	27
80*	200	3 x 400	16,0	20	FF250	FF250	FLEXIS 48D200	938	1408	1289	1743	963	30
	25	230	14,1	16	FF250	FF170	FLEXIS 80E25	128	192	176	238	132	13
	25	3 x 400	4,9	6	FF250	FF170	FLEXIS 80D25	128	192	176	238	132	14
	50	3 x 400	8,0	10	FF250	FF170	FLEXIS 80D50	256	385	352	476	263	17
	75	3 x 400	12,9	16	FF330	FF250	FLEXIS 80D75	385	577	528	714	395	26
	100	3 x 400	16,0	20	FF330	FF250	FLEXIS 80D100	513	769	704	952	526	28
	125	3 x 400	20,9	25	FF550	FF330	FLEXIS 80D125	641	962	880	1190	658	37
	150	3 x 400	24,0	32	FF550	FF330	FLEXIS 80D150	769	1154	1056	1429	789	40
	175	3 x 400	28,9	32	FF550	FF550	FLEXIS 80D175	897	1346	1232	1667	921	49
	200	3 x 400	32,0	40	FF550	FF550	FLEXIS 80D200	1026	1538	1408	1905	1053	52
	225	3 x 400	36,9	40	FF720	FF720	FLEXIS 80D225	1154	1731	1585	2143	1184	63

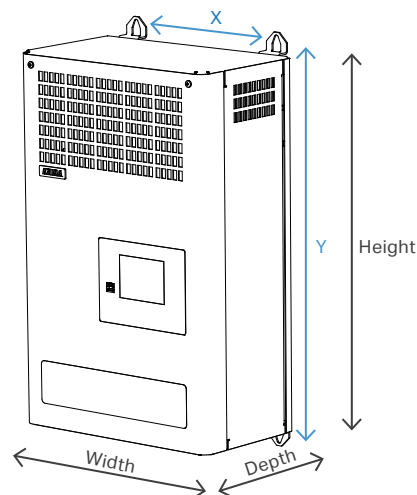
Intended also for 96V. Other types on request. Battery capacity values in the table according to IULa dU charging curve.

Dimensions for mounting on a vertical surface

Case	Width	Height	Depth	X	Y
FF170	302	477	169	230	515
FF250	302	477	254	230	515
FF330	302	477	339	230	515
FF550	547	477	339	499	515
FF720	717	477	339	699	515

Dimensions in millimetres [mm]

X and **Y** are positions of mounting holes



Efficiency	up to 94%
Output voltage stability	± 1 %
Cooling	forced ventilation
Degree of protection	IP20
Operating conditions	-10°C to +40°C
Protection class	I
Standards	EN 61000-6-2 EN 61000-6-4 EN 62368-1