

FLEXIS

MULTIFUNCTIONAL BATTERY CHARGER

Programmable, high-frequency
modular charger of traction batteries



FOR TRACTION BATTERIES

SIMPLE OPERATING



- **VERY HIGH RELIABILITY**
 - **SHORT CIRCUIT PROOF OUTPUT**
 - **SAVES EXPENSES FOR OPERATING**
 - **MODULAR SYSTEM**
 - **PRESET CHARGING CURVES**
-
- User friendly – setting of parameters via operating panel or PC
 - Efficiency up to 94%, power factor $\cos \phi \sim 1$
 - Active PFC and softstart
 - Verification of connected battery
 - High resistance to mains disturbances
 - Galvanic separated mains - output
 - High stability of output parameters
 - Possibility to set up custom charging curves
 - Memory for 1.000 charging cycles
 - Regeneration charging - desulphation and equalization
 - Possibility to use one charger for more different batteries by manual selection

FLEXIS is fully programmable, high-frequency charger of traction batteries .

Optimised charging technology prolongs working life of battery, accelerates charging and saves energy.

FLEXIS charger meets hard requirements of three-shift service in industrial areas.

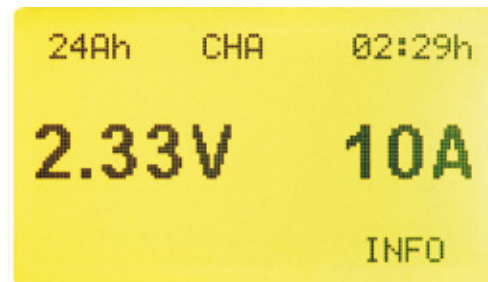
FOUR-COLOUR GRAPHIC DISPLAY



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



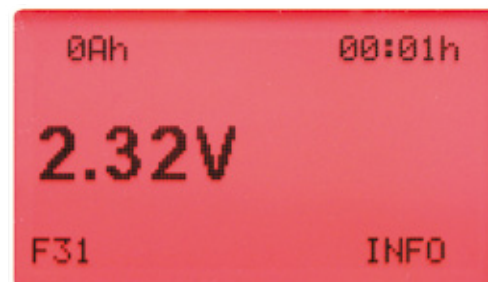
Standby mode



Charging



Charging finished



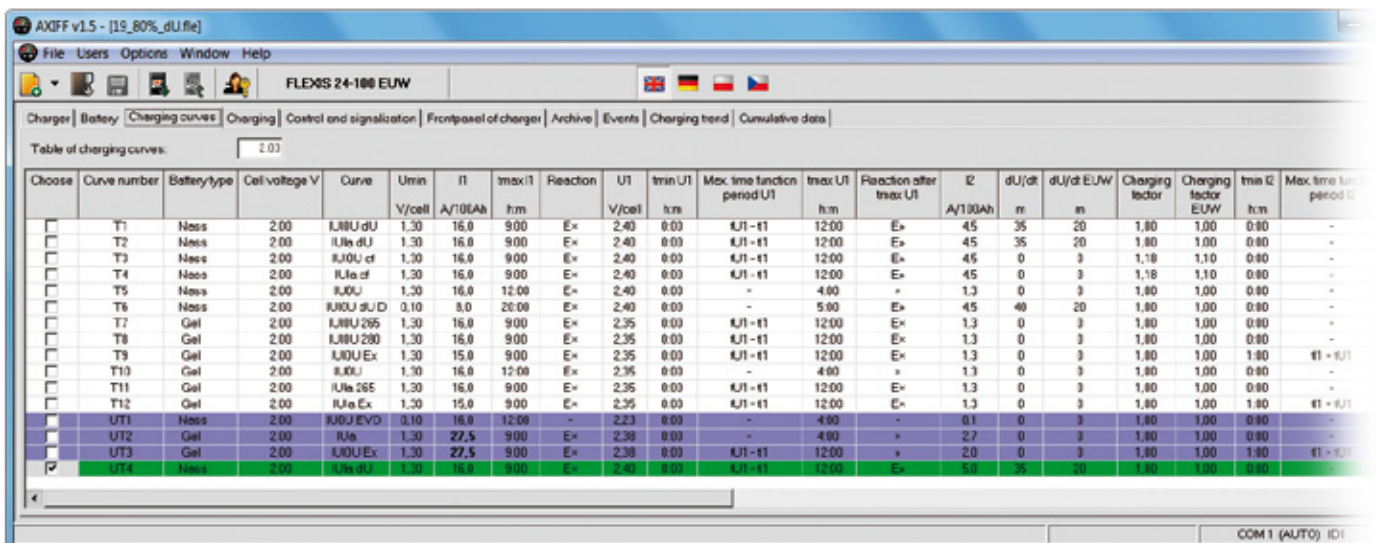
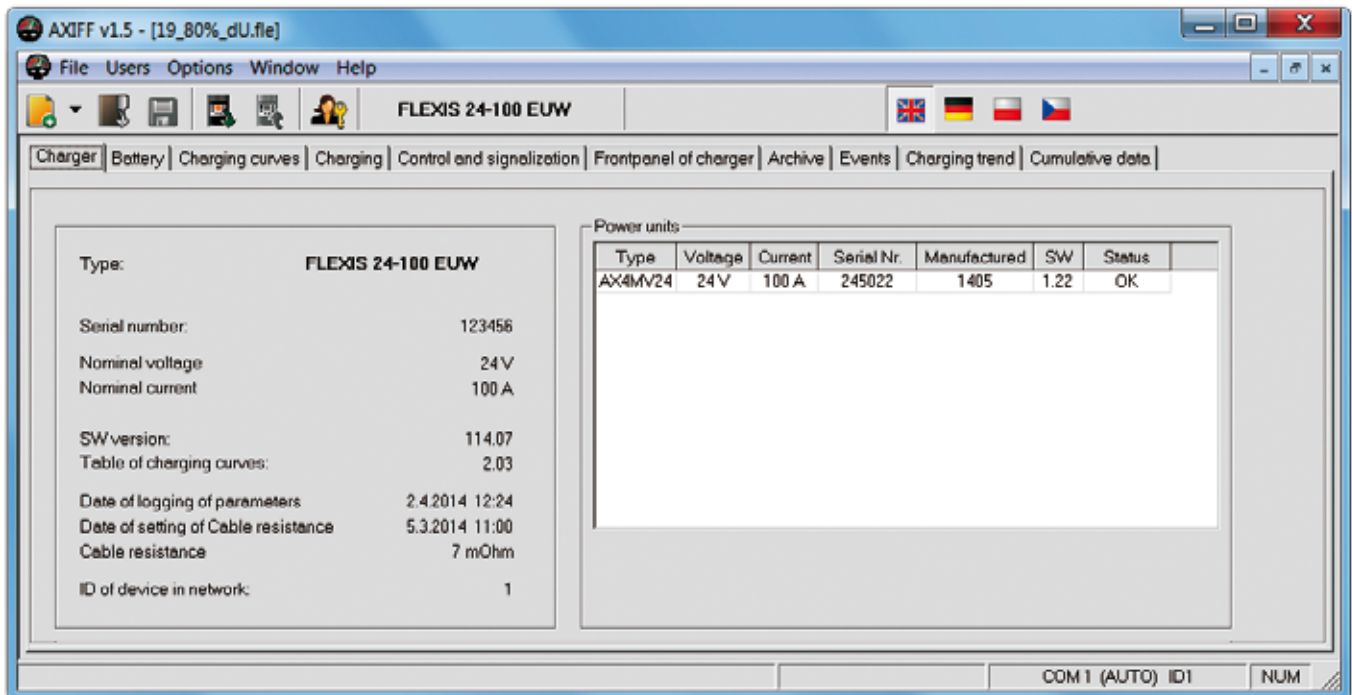
Error

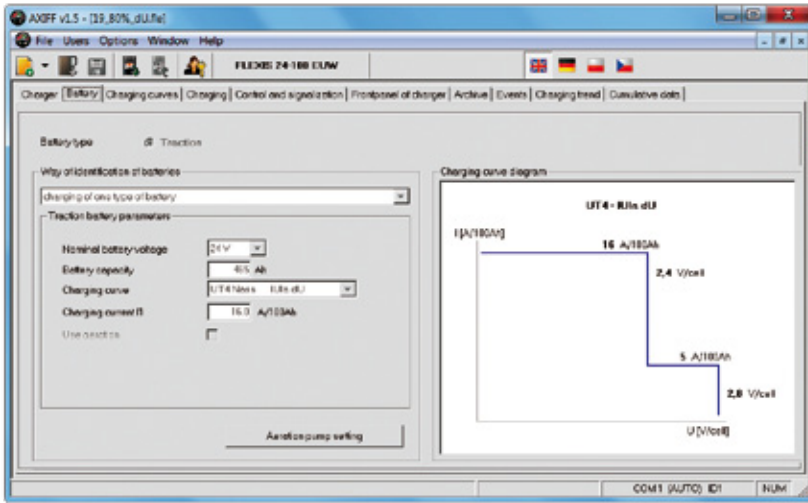
Operating conditions are signaled by change of colour of the display, all important values are displayed.

Display is sizable, all charging stages are visible from long distance.

OPTIMAL SETTING OF THE CHARGER

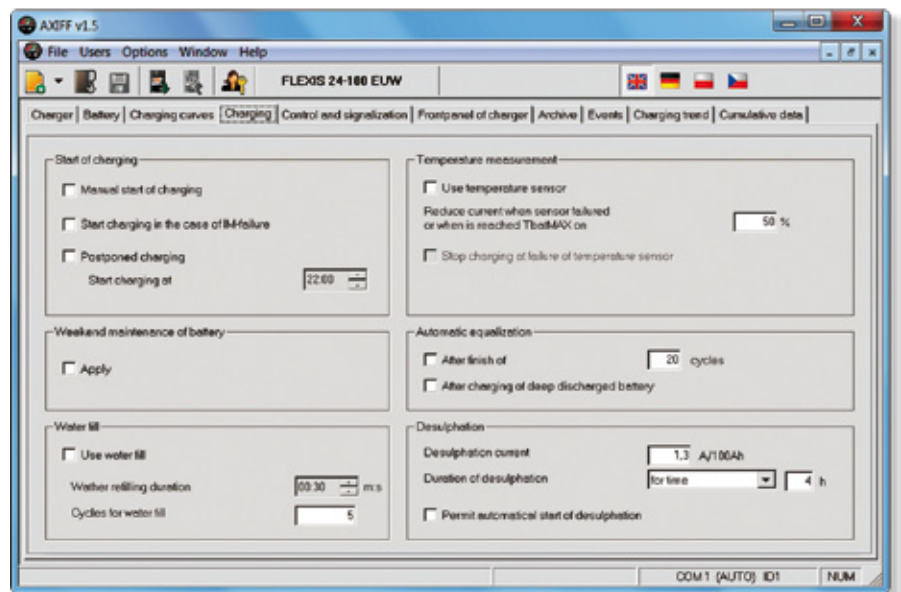
ARCHIVE OF CHARGING CYCLES





- User friendly and intuitive operating of configuration programme
- Simple choice of battery – traction or station
- Fully adjustable charging current and voltage
- Possibility to use one charger for five different batteries by manual selection

- Exact setting of charging parameters ensures perfect care of battery
- Selection from preset charging curves
- Possibility to modify extra charging curves adequate to exact battery types
- Periodical regeneration – makes care of batteries easier



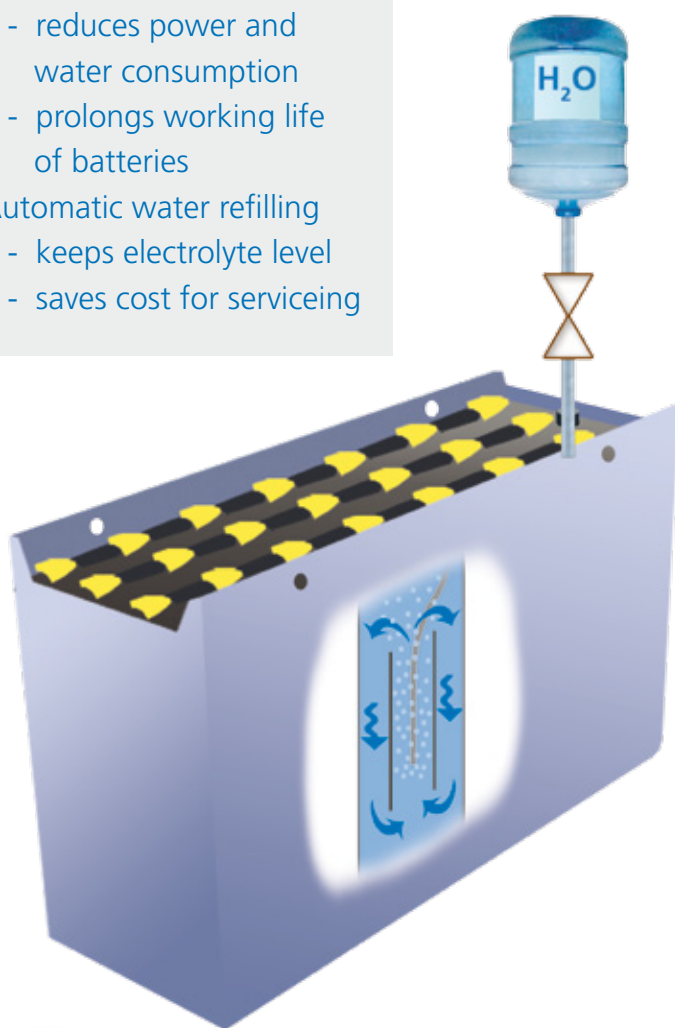
The screenshot shows the 'Archive' window in AXIFF v1.6, displaying a table of charging records. The table has 17 columns: Ord. nr., Date and time, Tab version, Battery ID, Charging curve, Charging current A, Time h:mn, Capacity Ah, Time of period I, Capacity of period I, Time of period U1, Capacity of period U1, Time of period I2, Capacity of period I2, Start voltage V/cell, Final voltage V/cell, Final A, Final °C, and Fenc. The table contains 17 rows of data, with the 10th row highlighted in yellow.

Ord. nr. /	Date and time	Tab version	Battery ID	Charging curve	Charging current A	Time h:mn	Capacity Ah	Time of period I	Capacity of period I	Time of period U1	Capacity of period U1	Time of period I2	Capacity of period I2	Start voltage V/cell	Final voltage V/cell	Final A	Final °C	Fenc
1	03.12.2013 11:56	202	T1	83.6	0.38	16	0.00	0	0.00	0	0.38	16	2.15	2.75	25.2			
2	04.12.2013 08:16	202	T1	83.6	5.58	368	2.39	248	1.33	80	1.46	45	2.03	2.73	25.3			
3	04.12.2013 16:36	202	T1	83.6	0.37	15	0.00	0	0.00	0	0.37	15	2.19	2.75	25.2			
4	05.12.2013 06:51	202	T1	83.6	8.09	482	3.30	317	1.58	97	2.41	67	1.97	2.67	25.2			
5	05.12.2013 16:20	202	T1	83.6	0.37	15	0.00	0	0.00	0	0.37	15	2.22	2.69	25.3			
6	05.12.2013 20:50	202	T1	83.6	32.12	136	0.00	0	0.00	0	0.38	16	2.17	2.72	25.3			
7	09.12.2013 11:19	202	T1	83.6	0.00	0	0.00	0	0.00	0	0.00	0	2.22	2.22	0.0			
8	09.12.2013 11:39	202	T1	83.6	0.34	13	0.00	0	0.00	0	0.34	13	2.28	2.80	24.8			
9	09.12.2013 22:28	202	T1	83.6	0.37	14	0.00	0	0.00	0	0.37	14	2.16	2.80	23.7			
10	11.12.2013 07:30	202	T1	83.6	6.18	399	2.56	265	1.48	94	1.33	39	2.00	2.74	0.5			
11	11.12.2013 11:52	202	T1	83.6	5.03	327	2.29	234	0.59	55	1.23	37	1.99	2.70	25.2			
12	12.12.2013 08:22	202	T1	83.6	6.37	448	3.41	314	1.21	74	1.25	40	1.99	2.70	25.2			
13	12.12.2013 20:18	202	T1	83.6	6.50	442	3.16	296	1.57	104	1.31	40	2.02	2.71	25.3			
14	13.12.2013 16:16	202	T1	83.6	35.44	617	4.03	387	1.14	66	1.32	38	1.99	2.70	25.3			
15	16.12.2013 08:20	202	T1	83.6	6.50	369	1.58	175	2.49	133	2.03	51	2.05	2.74	25.2			
16	17.12.2013 11:03	202	T1	83.6	0.39	16	0.00	0	0.00	0	0.39	16	2.20	2.80	25.3			
17	18.12.2013 13:30	202	T1	83.6	7.07	479	3.66	363	1.30	70	1.41	41	1.97	2.71	25.3			

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

OPTIONAL EQUIPEMENT

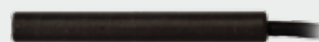
- Air electrolyte circulation
 - reduces charging time
 - reduces power and water consumption
 - prolongs working life of batteries
- Automatic water refilling
 - keeps electrolyte level
 - saves cost for servicing



- Battery identification module AXIM
 - one charger for more batteries



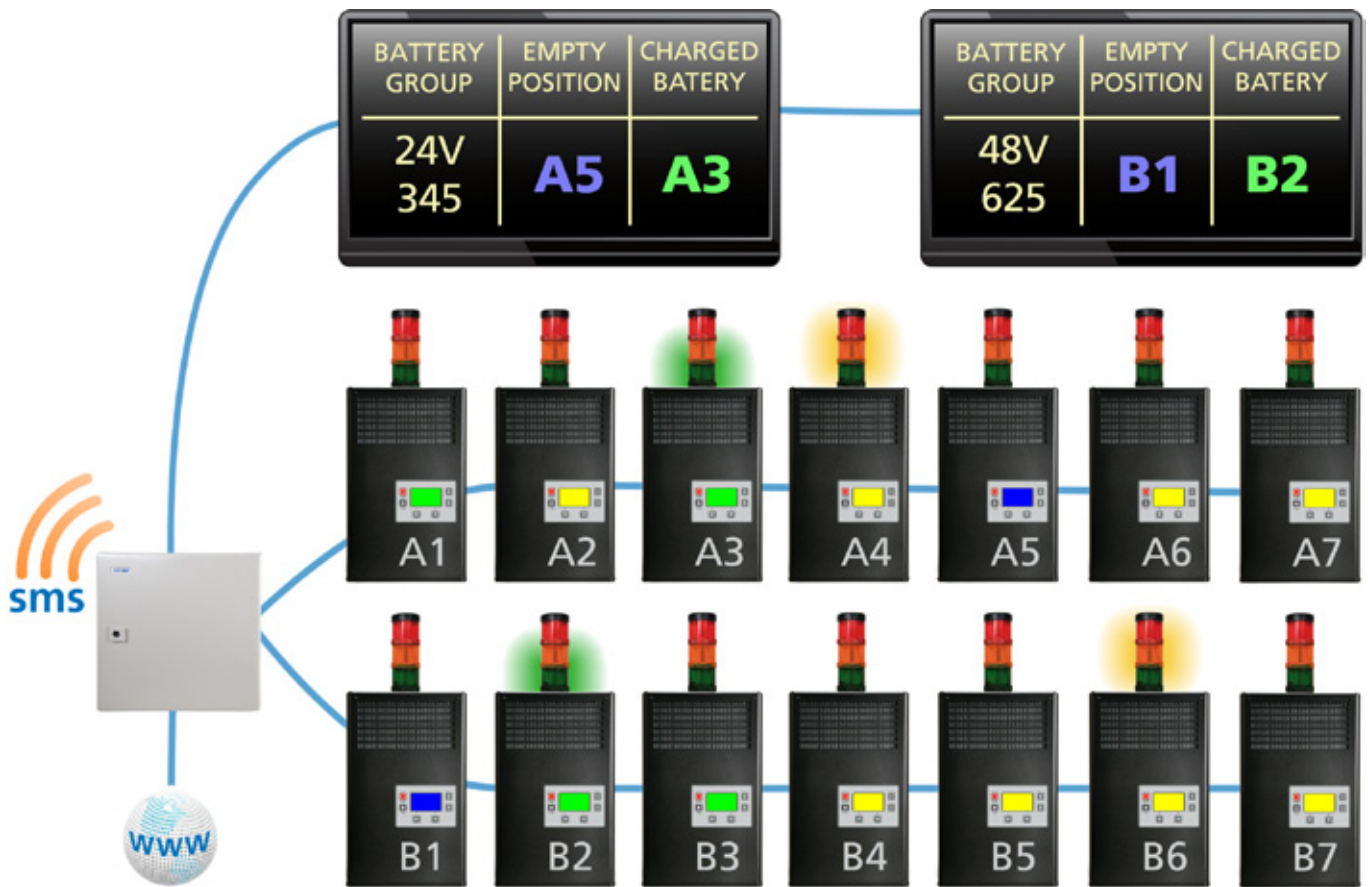
- Temperature sensor
 - compensation of charging voltage according to battery temperature



- External signaling
 - outputs for signal column
 - 3 potential-free contacts for signaling
- Remote control
 - 2 digital inputs for remote control



AXINET BATTERY MANAGEMENT AND MONITORING SYSTEM



- AXInet is management and monitoring system for FLEXIS chargers. FLEXIS chargers is possible to interconnect to the data-net and to connect to the superior system.
- Data network allows to connect up to 255 devices.

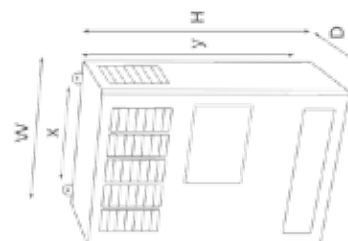


- Battery return place assigning, charged battery indication
- Sending information about operating events via SMS
- Clear visualization of individual charging points
- Utilization reports and statistics



Output voltage (V)	Output current (A)	Mains (VAC)	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		gel		with air pump	without air pump
								6h	8h	8h	10h	10h	10h	8h	10h
24	60	230	8,7	10	FF170	FF130	FLEXIS 24E60	308	462	423	571	316	15	13	
	100	230	14,1	16	FF170	FF130	FLEXIS 24E100	513	769	704	952	526	15	13	
	100	3 x 400	4,9	6	FF170	FF130	FLEXIS 24D100	513	769	704	952	526	16	14	
	200	3 x 400	9,8	10	FF250	FF250	FLEXIS 24D200	1026	1538	1408	1905	1053	26	25	
48	50	230	14,1	16	FF170	FF130	FLEXIS 48E50	256	385	352	476	263	15	13	
	50	3 x 400	4,9	6	FF170	FF130	FLEXIS 48D50	256	385	352	476	263	16	14	
	100	3 x 400	8,0	10	FF170	FF130	FLEXIS 48D100	469	704	644	871	482	20	18	
	150	3 x 400	12,9	16	FF250	FF250	FLEXIS 48D150	726	1088	996	1348	745	28	27	
80*	200	3 x 400	16,0	20	FF250	FF250	FLEXIS 48D200	938	1408	1289	1743	963	31	30	
	25	230	14,1	16	FF250	FF130	FLEXIS 80E25	128	192	176	238	132	16	13	
	25	3 x 400	4,9	6	FF250	FF130	FLEXIS 80D25	128	192	176	238	132	17	14	
	50	3 x 400	8,0	10	FF250	FF130	FLEXIS 80D50	256	385	352	476	263	20	17	
	75	3 x 400	12,9	16	FF330	FF250	FLEXIS 80D75	385	577	528	714	395	30	26	
	100	3 x 400	16,0	20	FF330	FF250	FLEXIS 80D100	513	769	704	952	526	32	28	
	125	3 x 400	20,9	25	FF550	FF330	FLEXIS 80D125	641	962	880	1190	658	42	37	
	150	3 x 400	24,0	32	FF550	FF330	FLEXIS 80D150	769	1154	1056	1429	789	45	40	
	175	3 x 400	28,9	32	FF550	FF550	FLEXIS 80D175	897	1346	1232	1667	921	54	49	
	200	3 x 400	32,0	40	FF550	FF550	FLEXIS 80D200	1026	1538	1408	1905	1053	56	52	
	225	3 x 400	36,9	40	FF720	FF720	FLEXIS 80D225	1154	1731	1585	2143	1184	65	63	

Other types on request. Battery capacity values in the table according to IULa dU charging curve.



Case	Dimension (mm)			Fastening holes spacing (mm)		
	H	W	D	x	y	y
FF130	477	302	135	230	515	515
FF170	477	302	169	230	515	515
FF250	477	302	254	230	515	515
FF330	477	302	339	230	515	515
FF550	477	547	339	499	515	515
FF720	477	717	339	669	515	515

* Intended also for 96V and 110V Batteries

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 60950-1