

**SMART.UP+**

**NEW SYSTEM FOR BATTERY AND FORKLIFT MONITORING**



SmartUP+ is a device designed for the monitoring and control of lead batteries. Its main features are:

- Measurement of the instantaneous battery data including voltage, current, available Ah and temperature. An indication of the amount of Ah available is provided by LEDs on the panel
- Built-in RTC (Real Time Clock) to build a log of the data collected with date and time
- Storage of historical data. The history of the battery can be viewed on a PC using the SmartViewII software application. The data collected can be viewed grouped by working cycle or by day. For each working cycle the data is presented both in figures and graphics
- Data download to a PC: Through a USB connection, all data can be sent to the SmartViewII PC program
- Data download to a USB memory dongle: inserting a USB memory dongle into the SmartUP USB port, it is possible to upload all of the stored data. Afterwards, connecting the dongle to a PC, it is possible to import all of the fleet data using the SmartViewII.
- Statistical analysis. SmartViewII has numerous functions able to provide statistics to check the correct use of the battery and the charge reporting any anomaly
- RS485 field bus to interface to SmartKey (system for forklift access control with sensing and storage for events and mechanical bumps) and SmartEnergy (controlled recharger).
- CAN BUS to interface to third parts
- External temperature probe input
- Electrolyte level sensor input
- Relay for forks-lock functions

Optional accessories:

- temperature probe for immersion
- electrolyte level probe.

It monitors battery data:

- Measure of instantaneous data: V, I, T, Ah, electrolyte level
- Storage and analysis of old data
- Statistical analysis
- Upload data to a PC

It preserves the battery efficiency

- forks-lock on battery under-discharge
- forks-lock on undesired opportunity charge

**Technical data:**

Stored working cycles	400
Current and voltage graphic data	11400 samples (47 days setting Samplig Time = 6min)
Temperature graphic data	11400 samples (47 days setting Samplig Time = 6min)
SmartKey data	454 events
Stored daily data	Last 30 days

**WORKING RANGE:**

Current size: T200	Suitable for batteries from 100Ah to 340Ah
Current size: T400	Suitable for batteries from 350Ah to 740Ah
Current size: T800	Suitable for batteries from 750Ah to 1500Ah

**ELECTRICAL DATA:**

Power supply min ÷ max	18V ÷ 144V
Avarage absorbed power	< 1.5W
Internal protection	Fuse at the supplì port
Working temperature	-20°C ÷ +50°C

**Physical data:**

Mechanical size	60mm x 60mm x 130mm
Weight	200g
Protection grade	IP 54

SUMMARY

#	Start Discharge	DisT hh:mm	StartV V/cce	Ah-> Ah	MinV V/cce	Soc %	Start Charge	ChaT hh:mm	Ah<- Ah	IStop A	StopV V/cce	Soc %	Alarms
23	27/05/13 15:49	0:00	-	0	54.61	-	27/05/13 15:49	0:08	10	69.3	2.22	-	
22	27/05/13 15:49	0:00	-	0	54.61	0	00/00/00 00:00	0:00	0	0.0	0.00	0	
21	27/05/13 15:36	0:00	-	0	54.61	-	27/05/13 15:37	0:00	0	0.0	0.00	-	
20	27/05/13 15:36	0:00	-	0	54.61	0	00/00/00 00:00	0:00	0	0.0	0.00	0	
19	27/05/13 15:26	0:00	-	0	54.61	25	27/05/13 15:26	0:00	0	0.0	0.00	25	
18	27/05/13 12:54	2:30	2.26	127	1.84	0	00/00/00 00:00	0:00	0	0.0	0.00	25	
17	27/05/13 12:54	0:00	-	0	54.61	-	27/05/13 12:54	0:00	0	0.0	0.00	-	
16	27/05/13 12:54	0:00	-	0	54.61	0	00/00/00 00:00	0:00	0	0.0	0.00	0	
15	27/05/13 12:41	0:00	-	0	54.61	-	27/05/13 12:42	0:00	0	0.0	0.00	-	
14	27/05/13 12:41	0:00	-	0	54.61	0	00/00/00 00:00	0:00	0	0.0	0.00	0	
13	27/05/13 12:28	0:00	-	0	54.61	100	27/05/13 12:28	0:00	0	0.0	0.00	100	
12	27/05/13 11:52	0:12	54.61	10	2.01	96	27/05/13 12:10	0:17	11	23.2	2.39	100	
11	25/05/13 19:12	3:18	54.61	167	1.65	39	27/05/13 09:42	1:53	152	24.0	2.38	100	
10	24/05/13 19:04	3:21	2.22	169	1.65	19	25/05/13 15:09	3:44	177	10.8	2.38	100	
9	24/05/13 15:27	1:47	2.27	91	1.91	56	24/05/13 17:15	1:46	94	12.5	2.38	100	
8	23/05/13 18:13	3:16	2.29	166	1.65	20	24/05/13 09:06	5:08	191	6.7	2.37	100	
7	23/05/13 15:42	0:52	54.61	44	1.94	79	23/05/13 16:41	1:30	51	8.6	2.39	100	
6	23/05/13 15:42	0:00	-	0	54.61	100	23/05/13 15:42	0:00	0	0.0	0.00	100	
5	23/05/13 10:16	1:17	2.28	65	1.92	69	23/05/13 11:34	3:16	83	6.8	2.38	100	
4	22/05/13 18:28	0:00	-	0	54.61	-	22/05/13 18:28	1:07	27	6.6	2.39	-	
3	22/05/13 18:28	0:00	-	0	54.61	0	00/00/00 00:00	0:00	0	0.0	0.00	0	
2	25/02/13 15:14	2:51	2.22	144	1.65	-	26/02/13 08:39	6:45	186	6.7	2.36	-	
1	25/02/13 15:08	0:00	-	0	54.61	-	00/00/00 00:00	0:00	0	0.0	0.00	-	

The data analysis can be done in an intuitive way. You can consult the "Monthly Summary" Tab.

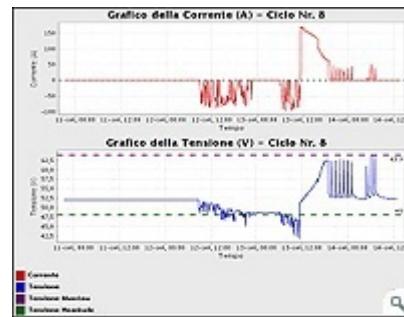
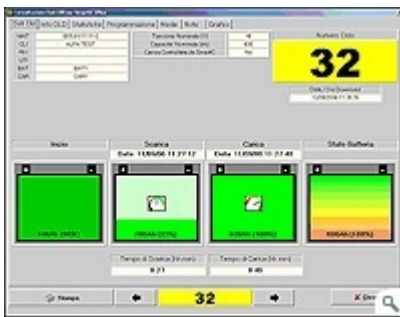
**On a table are shown all of the battery working cycles:**

1. In blue the discharging phase
2. In orange the charging phase

**The anomalies are indicated with red dots :**

3. Low electrolyte level
4. Overdischarged Battery
5. Timer 1° phase
6. Timer 2° phase
7. Overrecharge
8. Low battery efficiency
9. Recharging not completed

WORKING CYCLE VIEW (with SmartViewII)



400 working cycles stored (Discharge/Recharge)

- Discharging time and capacity
- Recharging time and capacity
- Detailed working data
- Battery faults during the battery use and recharge

Battery voltage and current diagrams

- Working cycle Data e Time
- Zoom capability

