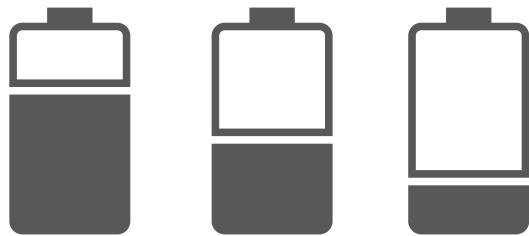




MANUAL

Readout of battery-data with "BMS Communication Tool"

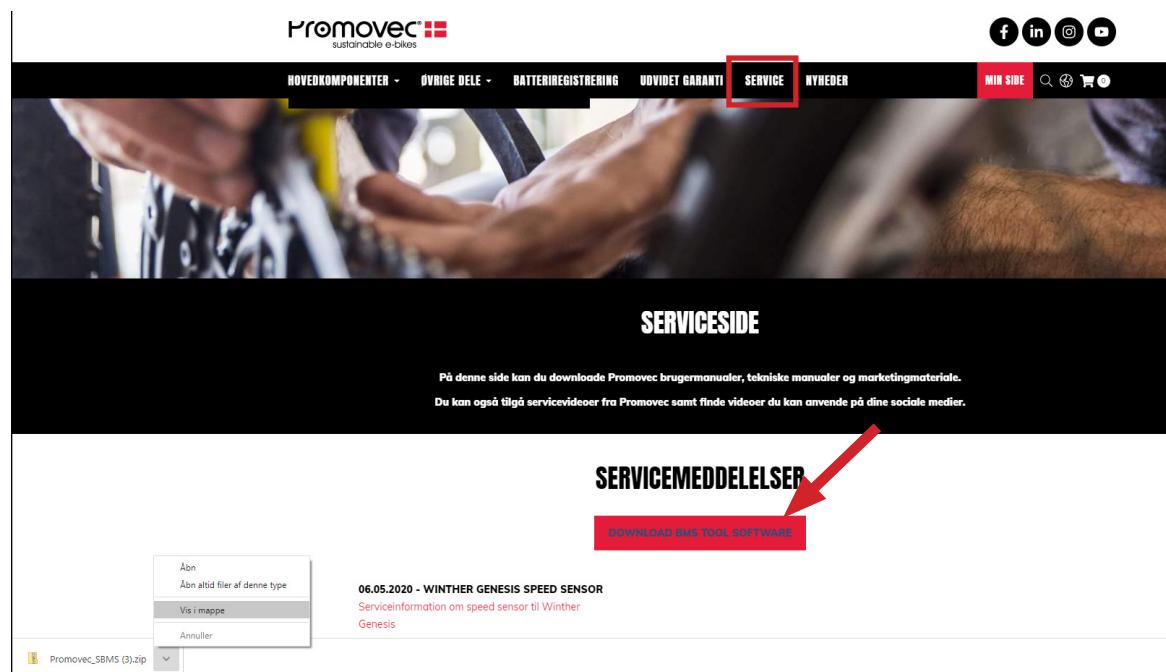


STEP

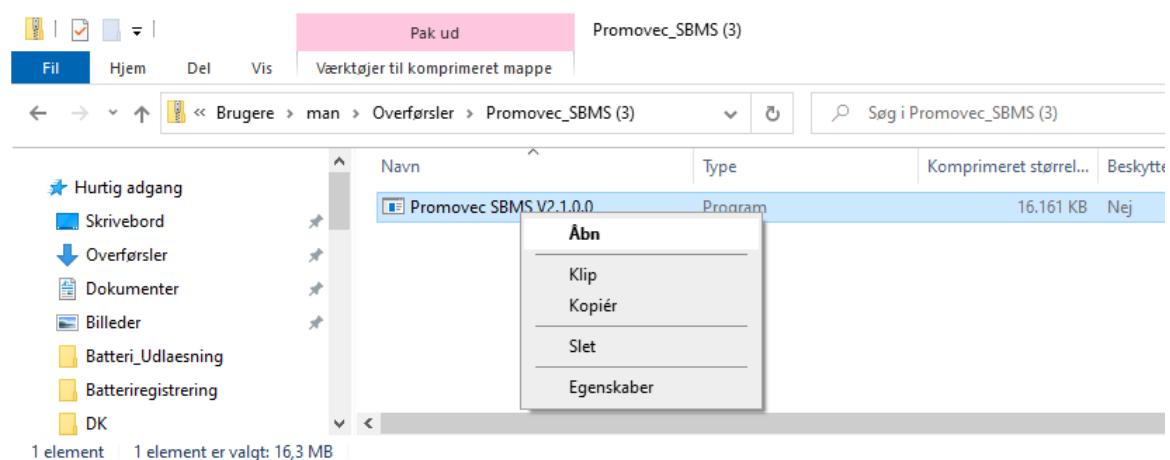
1

Download the battery read out software from Promovec's homepage and install it on your PC. Login with your retailer login, select "SERVICE", scroll down and click on "DOWNLOAD BMS TOOL SOFTWARE".

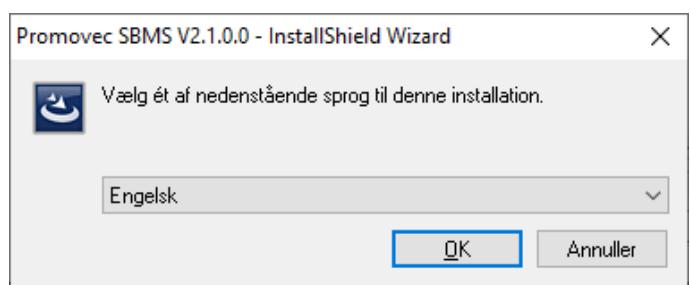
www.promovec.com



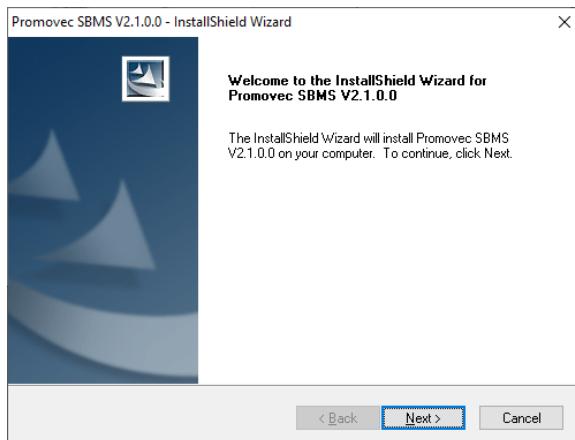
Select "Download BMS TOOL SOFTWARE" -> show in folder



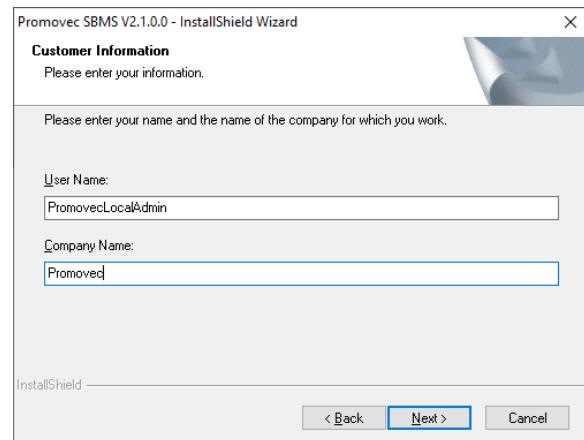
Open "Promovec.SBMS.V2.1.0.0"



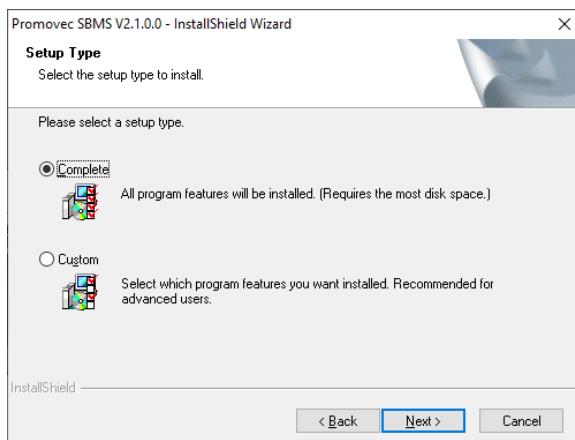
Select language



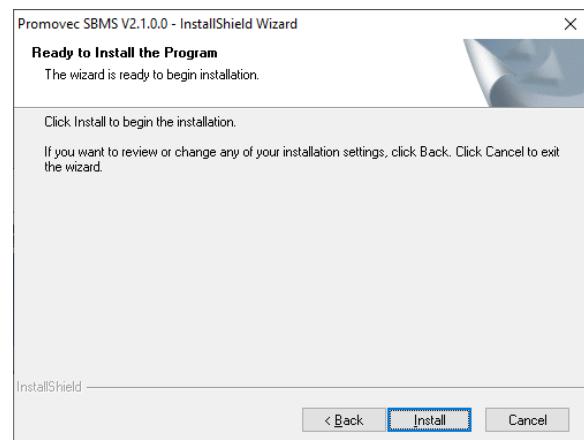
Select click "Next"



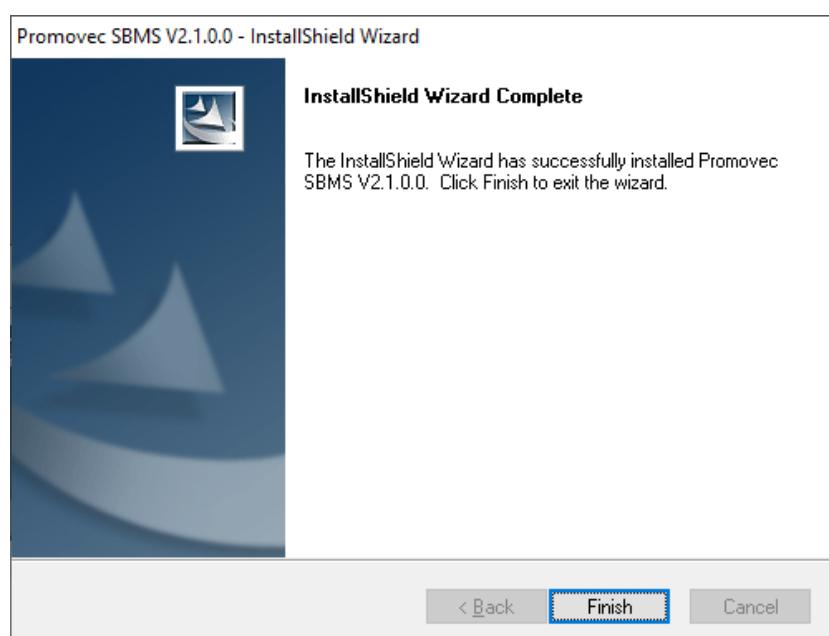
Add company name and click "Next"



Select "Complete" then click "Next"

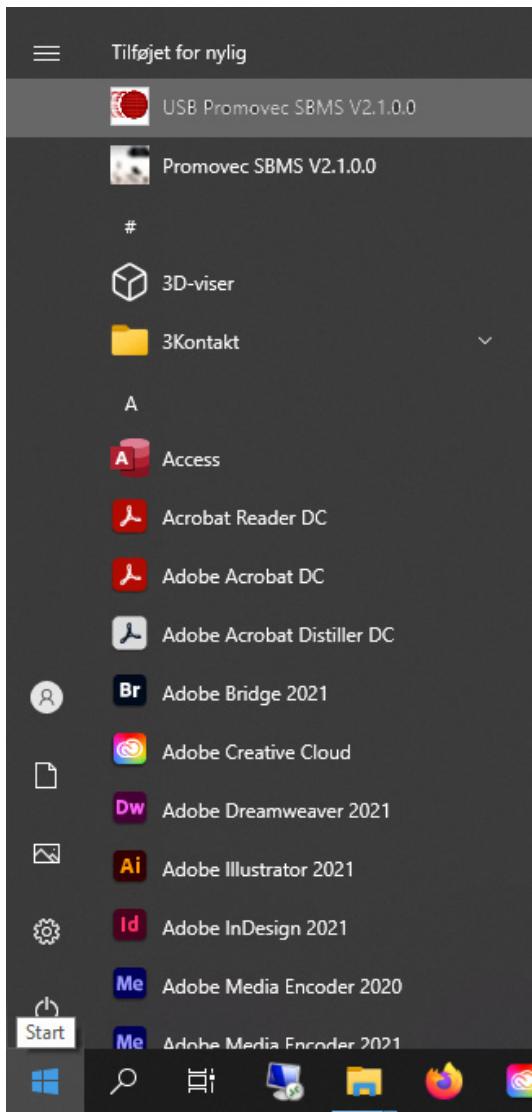


"Install"

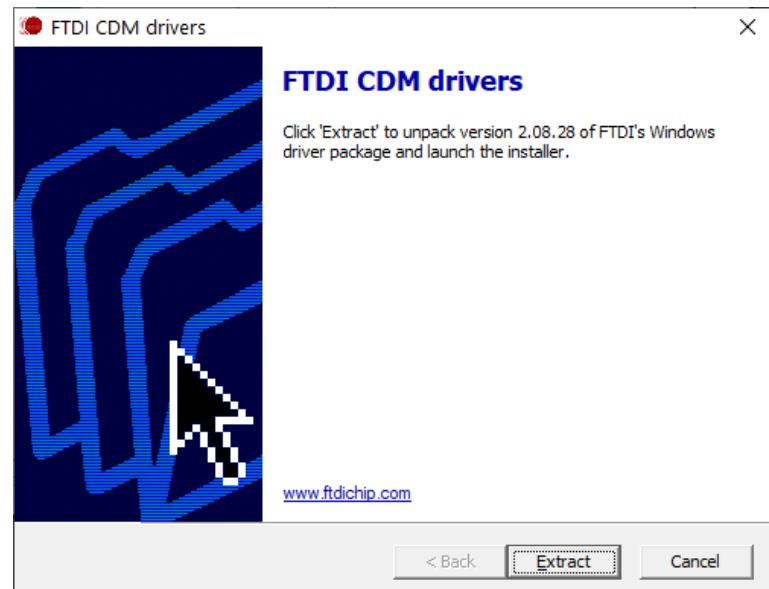


"Finish"

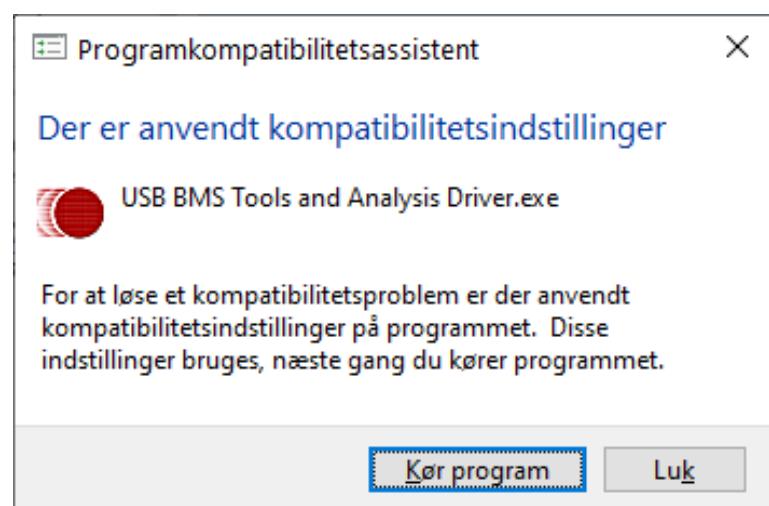
Important! Install FTDI Drivers - check next page



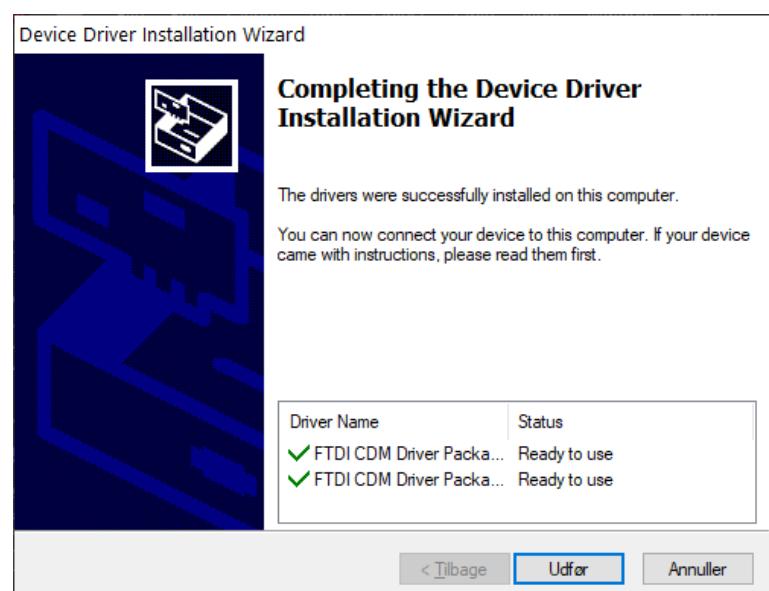
Go to start and locate "USB Promovec SBMS". e.g. USB in the search field.



Click "Extract"



"Run program"



"Complete"

STEP

2

Open the box with "BMS Communication Tool".



Parts included in the box

- Readout box (blue)
- Wire with USB connector
- Wire with 4-pin charging connector
- USB-wire for connection between PC and blue read out box
- Read out adaptor for Downtube 1 batteries
- Read out adaptor for Downtube 2 XL batteries

Depending on the battery, use one of the options illustrated below



Wire with 4-pin charging connector



USB connector



USB connector and adaptor for Downtube 1



Read out adaptor for Downtube 2 XL
connected to the USB outlet on the
blue read out tool



USB inlet

Note!

- Utilize the USB inlet if available on the battery
- Old batteries with 3-pins charging connectors and no USB inlet, can not be read with the read out tool.



Note how the different solutions must be connected to the read out box!

STEP

3



For usb connector and Downtube 2 XL dongle

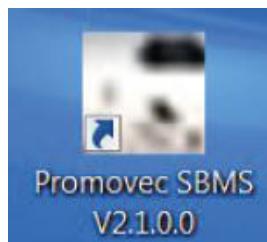
For 4-pins connector

Connect the blue cable to the PC and the read out box.

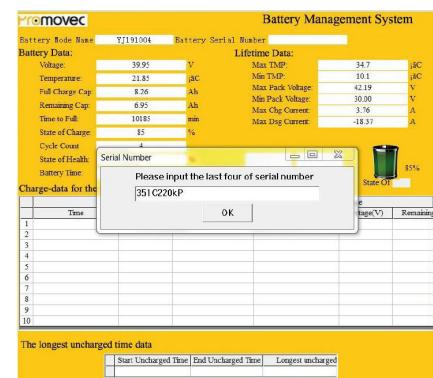
STEP

4

Start the program "Promovec SBMS"



If the connection is "Ok", the following screen is displayed.



Some batteries will request a serial number. See step 6

STEP

5

CHECK the label on the battery including the serial number.

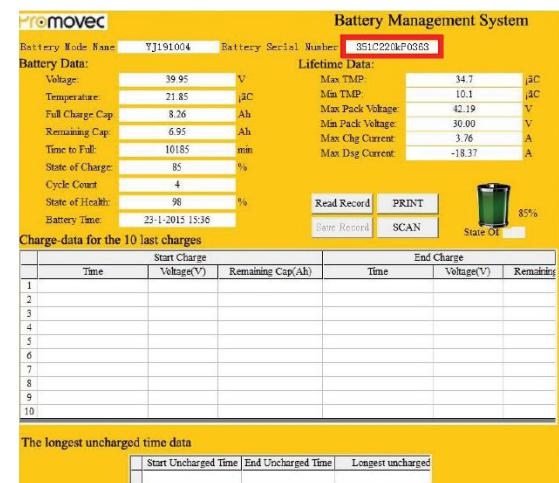
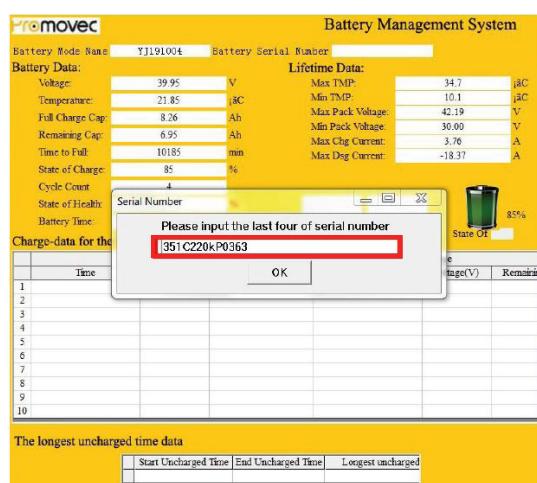


STEP

6

The serial number on the battery must match the serial number stated in "Battery Serial Number".

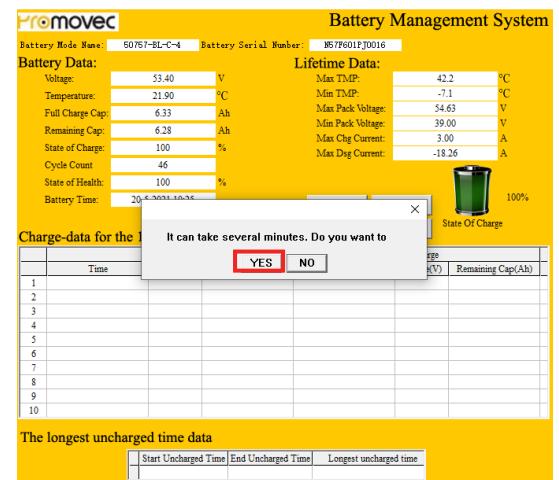
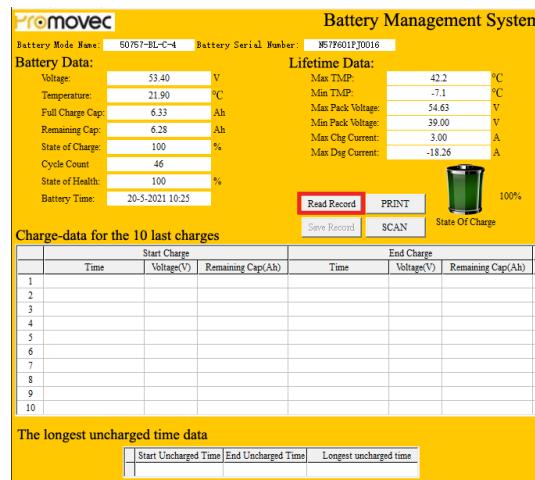
On some batteries "Battery Serial Number" is not complete. Then a dialog box will open and missing information must be typed in manually.



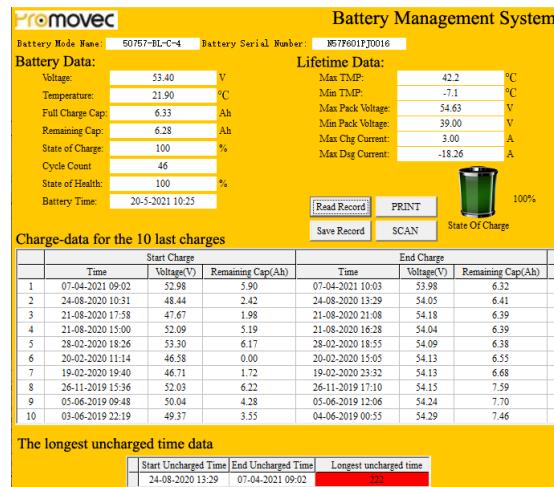
STEP

7

Select "Read Record" and information about the last 10 charges will be displayed.

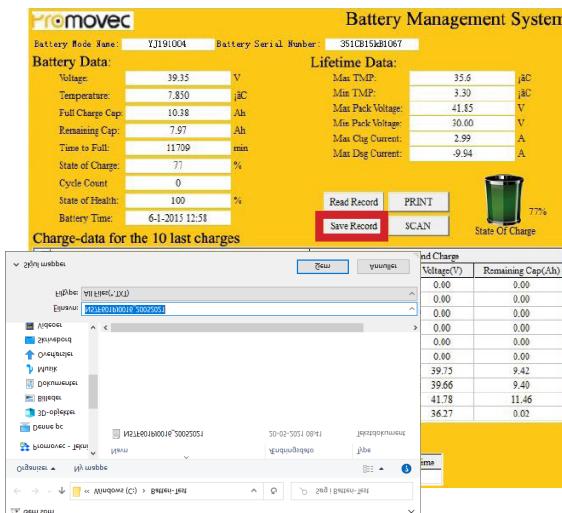


Information about the last 10 charges.

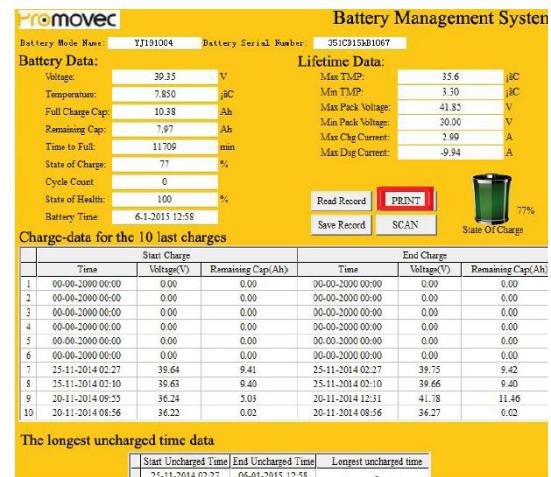


STEP 8

Select "Save Record" to save the data displayed on-screen. Select "Print" if you want a printed report.



“Save Record” - Store data



“PRINT” - Print data

Saved report

Filer	Bedjor	Förgrader	Vt	Hjälp	StartTime	Voltage	RemainingCap	EndTime	Voltage	RemainingCap
1:	26-11-2018	11:01	38,40	5,40	26-11-2018	11:02	38,60	5,41		
2:	21-10-2018	11:41	35,55	1,70	21-10-2018	16:16	41,89	8,97		
3:	20-10-2018	13:27	34,29	0,41	20-10-2018	15:41	37,06	4,71		
4:	18-10-2018	01:40	35,85	2,83	18-10-2018	05:35	41,89	9,13		
5:	17-10-2018	22:23	35,35	1,84	17-10-2018	02:16	38,60	6,21		
6:	17-10-2018	22:23	35,35	1,84	17-10-2018	12:44	36,14	9,44		
7:	15-10-2018	23:15	37,81	6,52	16-10-2018	01:24	41,90	9,31		
8:	15-10-2018	10:00	34,33	0,50	15-10-2018	15:10	41,90	9,23		
9:	10-10-2018	06:01	34,30	0,32	10-10-2018	11:07	41,89	8,93		
10:	08-10-2018	15:34	36,06	3,65	08-10-2018	19:09	41,89	9,13		
11:	06-10-2018	09:55	35,50	0,66	06-10-2018	14:22	41,90	9,20		
12:	04-10-2018	04:49	34,99	0,72	04-10-2018	10:44	41,90	9,20		
13:	03-10-2018	15:42	34,28	0,83	03-10-2018	16:44	36,21	2,85		
14:	02-10-2018	22:02	37,45	5,36	03-10-2018	00:33	41,91	9,00		
15:	01-10-2018	22:33	33,69	0,14	02-10-2018	03:47	41,92	9,25		
16:	27-09-2018	21:07	34,56	0,88	28-09-2018	02:08	41,91	9,04		
17:	26-09-2018	01:00	35,05	0,82	26-09-2018	05:00	41,91	8,66		
18:	23-09-2018	01:09	34,00	0,77	23-09-2018	05:00	41,90	8,66		
19:	20-09-2018	19:22	34,43	0,64	20-09-2018	22:24	38,59	5,63		
20:	20-09-2018	10:04	35,94	2,63	20-09-2018	10:26	36,38	3,36		
21:	16-09-2018	14:58	34,42	0,56	16-09-2018	20:03	41,77	8,99		
22:	13-09-2018	16:19	33,66	0,14	13-09-2018	21:37	41,90	9,22		
23:	11-09-2018	21:21	36,12	3,92	12-09-2018	00:50	41,91	9,31		
24:	10-09-2018	01:24	34,20	0,24	10-09-2018	12:14	39,55	7,52		
25:	10-09-2018	10:36	36,44	4,29	10-09-2018	12:14	39,55	7,52		
26:	30-08-2018	06:41	34,07	0,24	30-08-2018	11:33	42,38	8,96		
27:	27-08-2018	21:06	35,05	1,47	28-08-2018	01:23	42,38	8,82		
28:	26-08-2018	08:09	48,93	8,79	26-08-2018	08:37	41,64	9,14		
29:	23-08-2018	01:57	34,77	0,12	24-08-2018	01:23	41,90	9,06		
30:	23-08-2018	12:16	32,20	0,04	23-08-2018	13:33	36,44	9,06		
31:	20-08-2018	22:56	36,78	5,07	21-08-2018	01:42	41,93	9,02		
32:	19-08-2018	20:36	35,63	2,48	20-08-2018	00:40	41,94	9,02		
33:	18-08-2018	10:36	34,25	0,48	18-08-2018	14:35	48,49	8,12		
34:	16-08-2018	10:56	35,75	2,11	16-08-2018	13:20	39,31	6,99		
35:	14-08-2018	01:00	36,08	0,17	14-08-2018	07:30	41,90	9,06		
36:	14-08-2018	03:49	36,08	0,17	14-08-2018	07:30	41,95	9,06		
37:	13-08-2018	19:56	35,52	1,71	13-08-2018	22:15	38,78	6,41		
38:	12-08-2018	05:17	38,77	6,97	12-08-2018	07:03	41,95	9,39		
39:	11-08-2018	16:44	34,87	1,01	11-08-2018	21:21	41,97	9,26		
40:	11-08-2018	11:57	34,13	0,28	11-08-2018	13:23	36,38	3,17		
41:	08-08-2018	04:54	35,99	2,59	08-08-2018	05:42	41,94	9,06		
42:	08-08-2018	04:00	35,84	2,38	08-08-2018	05:01	36,89	2,44		
43:	06-08-2018	22:11	35,48	1,99	07-08-2018	02:29	41,92	9,28		
44:	04-08-2018	13:31	34,94	1,17	04-08-2018	18:20	41,92	9,25		
45:	02-08-2018	22:58	36,87	5,36	03-08-2018	01:47	41,92	9,28		
46:	01-08-2018	23:05	32,78	0,30	02-08-2018	04:28	41,92	9,18		
47:	30-07-2018	22:44	36,53	4,88	31-07-2018	01:44	41,94	9,38		

“Save record” example



“PRINT” example

STEP

9

Reading the data displayed in the window. The name and serial number are displayed in the top of the window. The fields under "Battery Data" in the left side represent the state of the battery when it is "Read". The fields to the right under "Lifetime Data" state minimum and maximum values registered.

Promovec **Battery Management System**

Battery Mode Name: 50757-BL-C-4 Battery Serial Number: N57F601PJ0016

Battery Data:

1 Voltage:	53.40	V
2 Temperature:	21.90	°C
3 Full Charge Cap:	6.33	Ah
4 Remaining Cap:	6.28	Ah
5 State of Charge:	100	%
6 Cycle Count	46	
7 State of Health:	100	%
8 Battery Time:	20-5-2021 10:25	

Lifetime Data:

A Max TMP:	42.2	°C
B Min TMP:	-7.1	°C
C Max Pack Voltage:	54.63	V
D Min Pack Voltage:	39.00	V
E Max Chg Current:	3.00	A
F Max Dsg Current:	-18.26	A

L Charge-data for the 10 last charges

B	Start Charge			End Charge		
	Time	Voltage(V)	Remaining Cap(Ah)	Time	Voltage(V)	Remaining Cap(Ah)
1	07-04-2021 09:02	52.98	5.90	07-04-2021 10:03	53.98	6.32
2	24-08-2020 10:31	48.44	2.42	24-08-2020 13:29	54.05	6.41
3	21-08-2020 17:58	47.67	1.98	21-08-2020 21:08	54.18	6.39
4	21-08-2020 17:58	47.67	1.98	21-08-2020 21:08	54.18	6.39
5	28-02-2020 18:26	53.30	6.17	28-02-2020 18:55	54.09	6.38
6	20-02-2020 11:14	46.58	0.00	20-02-2020 15:05	54.13	6.55
7	19-02-2020 19:40	46.71	1.72	19-02-2020 23:32	54.13	6.68
8	26-11-2019 15:36	52.03	6.22	26-11-2019 17:10	54.15	7.59
9	05-06-2019 09:48	50.04	4.28	05-06-2019 12:06	54.24	7.70
10	03-06-2019 22:19	49.37	3.55	04-06-2019 00:55	54.29	7.46

The longest uncharged time data

M	Start Uncharged Time	End Uncharged Time	Longest uncharged time
	24-08-2020 13:29	07-04-2021 09:02	222

Charge-data decoding and troubleshooting:

- Readings where entries in the "Time" column are close to each other could indicate a BMS error. Connect a charger to the battery and charge the battery to 100% to verify if there is a problem.
- If the information in the column "Voltage (V) under "End Charge" is less than 41.3 V after the battery has been fully charged, charge the battery with a new/other charger. The output on the charger must be $42 \text{ V} \pm 0.3 \text{ V}$ and when fully charged the battery must have a capacity of at least 41.3 V when measured.

See explanation covering the fields in the window above, next page.

Battery Data:

1	Voltage: Present voltage read
2	Temperature: Present temperature
3	Full Charge Cap: Capacity when fully charged
4	Remaining Cap: Remaining capacity
5	State of Charge: Actual charge state
6	Cycle Count: Number off charge-cycles*
7	State of Health: Battery health
8	Battery Time: Timestamp when battery is read

Charge-data for the last 10 charges

L	Charge-data for the 10 last charges: Displays the last 10 charge attempts**
---	---

Lifetime Data:

A	Max TMP: Highest temperature registered
B	Min Temp: Lowest temperature registered
C	Max Pack Voltage: The highest voltage level registered
D	Min Pack Voltage: The Lowest voltage level registered
E	Max Chg Current: The highest amount of Amp's the battery has been charged with.
F	Max Dsg Current: The highest amount of amp's the battery has been discharged with.
G	Read Record: The last 10 charge-data attempts are displayed (L).
H	Save Record: Saves Charge-data
I	PRINT: Print a report for the customer or documentation.
L	Charge-data: Charge-data for the last 10 charges.
K	State of Charge: Remaining capacity in percentage.
The longest uncharge time data	
M	The longest period of time the battery has not been charged.

* One cycle equals:

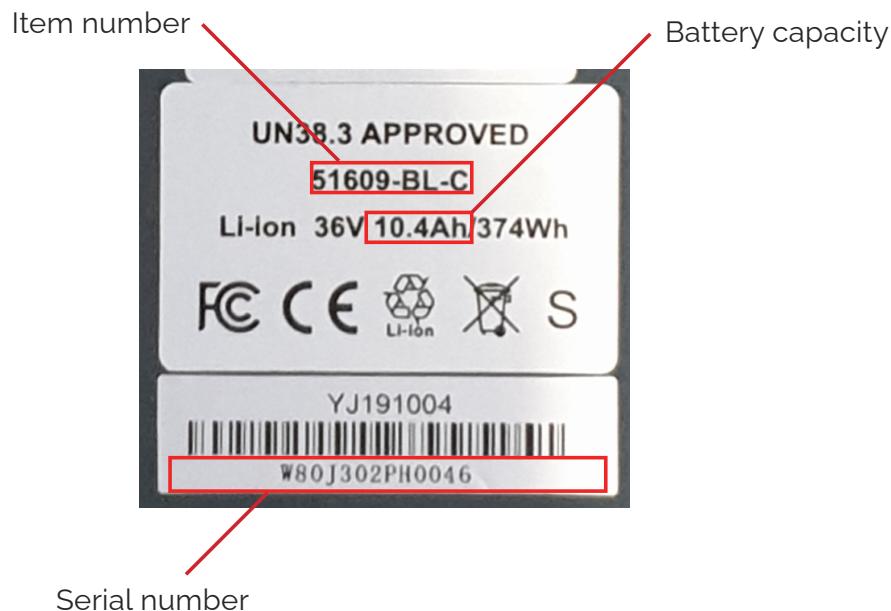
- 100% discharge + 100% charged
- (50% discharge + 50% charge) 2 times
- (20% discharge + 20% charge) 5 times

** The battery can register up to 800 charges. A full report can be saved to the PC with "Save record"

STEP 10

Warranty checklist

- Check that the battery has been registered and is within the warranty period
- "Full charge Capacity" is more than 70% of the capacity stated on the label (See picture below).
- "State of Health" must be more than 70%
- When "Longest uncharged time" is more than 30 days it may result in the warranty not covering.



Battery complaint checklist

1. Output on charger is $42V \pm 0,3V$
2. Measure the battery, "Step A" page 13
3. The battery has been charged with two different chargers to rule out problems with the charger
4. Check charging inlet and power-on/off lock
5. Fuse and fuseholder are ok, "Step B" page 14

STEP

A

Measuring the battery (Carrier batterieries)



Picture 1: Set the voltage meter to DC-Voltage and measure the battery. When a battery has been fully charged the battery must measure at least 41.3 V.

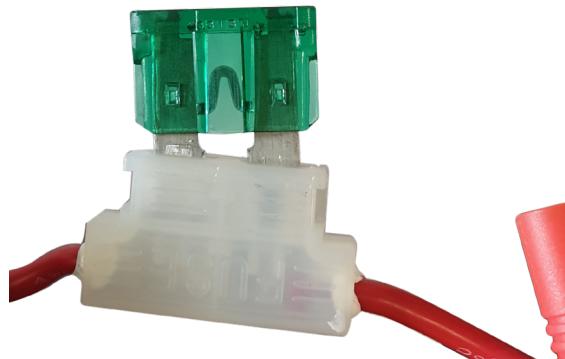
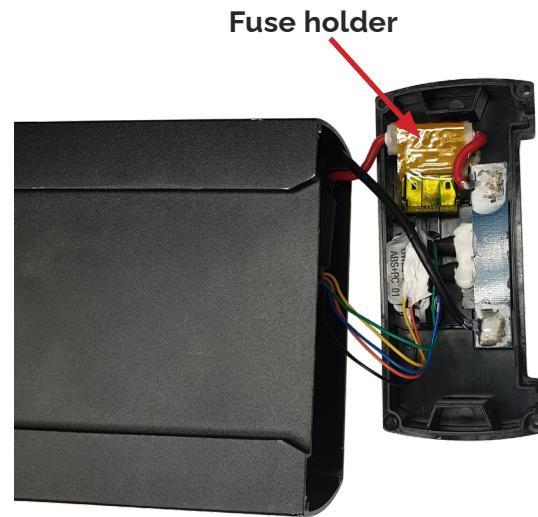
STEP

B

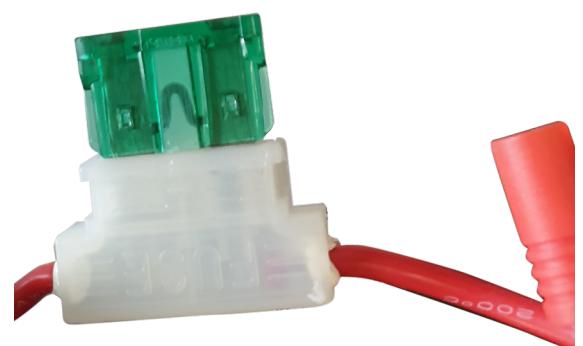
Fuse holder and fuse

Fuse Holder and fuse sit under the cover in the opposite end of the light. Remove the cover and check that the fuse is not:

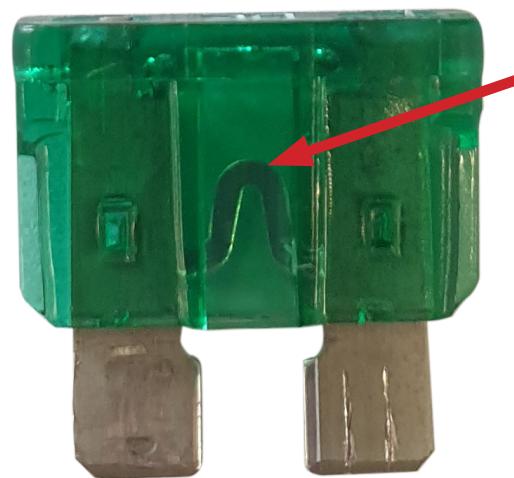
- Detached in the fuse holder
- Blown



Picture 1: The fuse is not fully inserted in the fuse holder.



Picture 2: The fuse is fully inserted.



Picture 3 and 4: Change fuse if:

1. The connection between the two legs are broken
2. There are marks that indicate overheating



ABOUT PROMOVEC

Promovec is a Danish e-bike manufacturer and developer

Promovec manufactures e-bikes for major international brands and advanced battery solutions for e-bikes

In the production of all Promovec's products we seek sustainable and high-quality solutions to best serve both the planet and our customers.

For more information about Promovec visit www.promovec.com or drop by one of our social media platforms.

