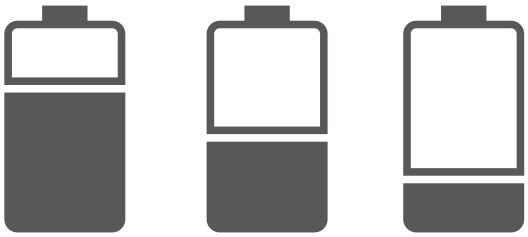
Promovec®
sustainable e-bikes

MANUAL

Readout of battery-data with “BMS Communication Tool”



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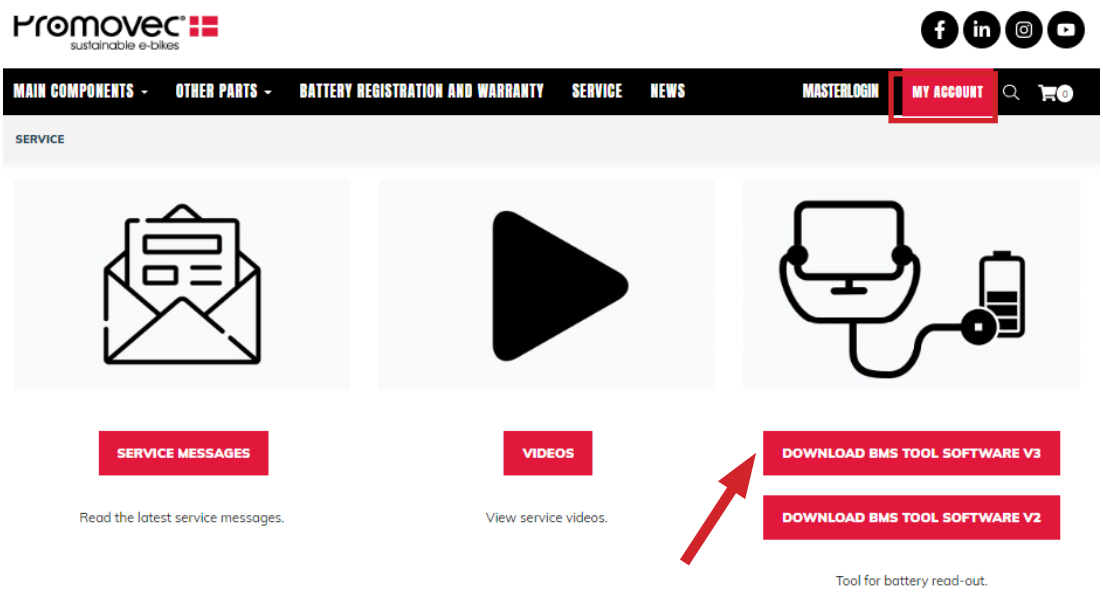
Langdyssen 6
DK-8200 Aarhus N

Tlf. +45 7027 2623
Fax. +45 7027 2429
info@promovec.dk

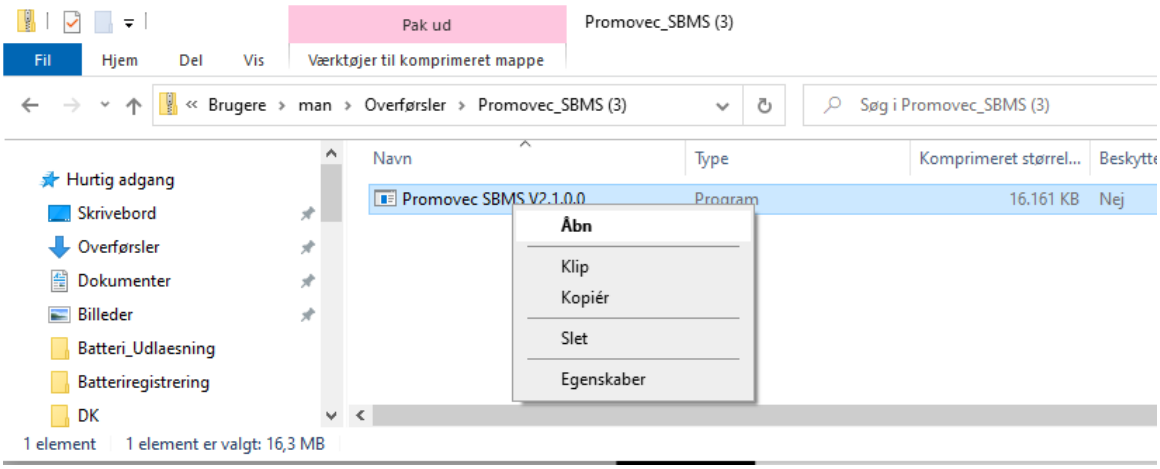
STEP
1

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

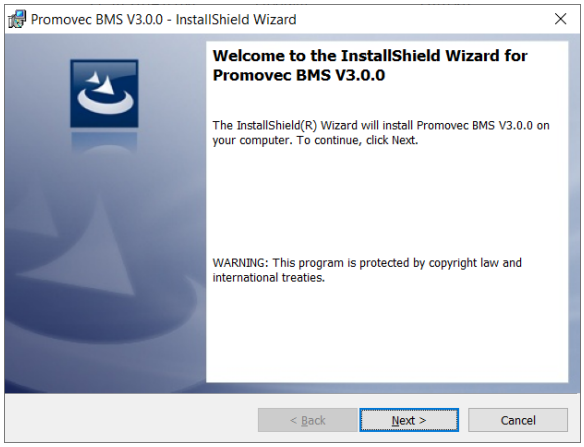
www.promovec.com



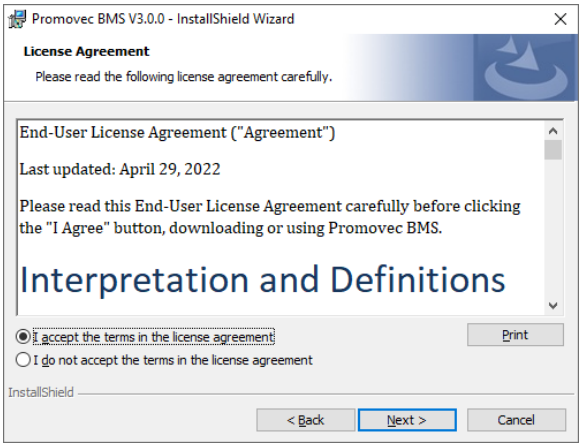
Select "Download BMS TOOL SOFTWARE" -> show in folder



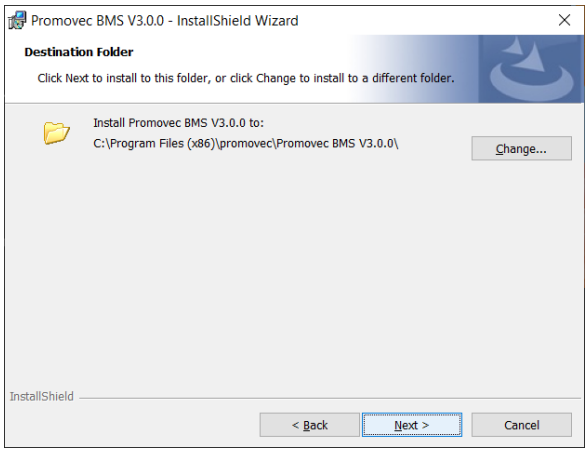
Open "Promovec.BMS.V3.0"



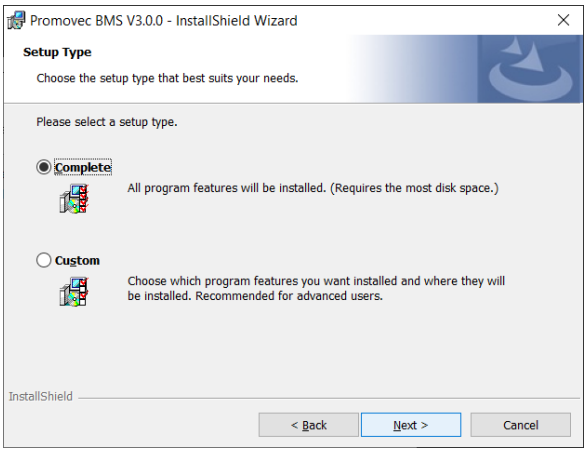
Select "Next"



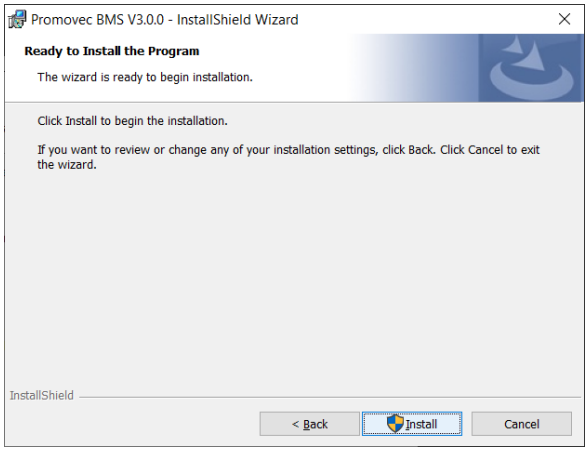
Read "License agreement"; "I accept...and Next



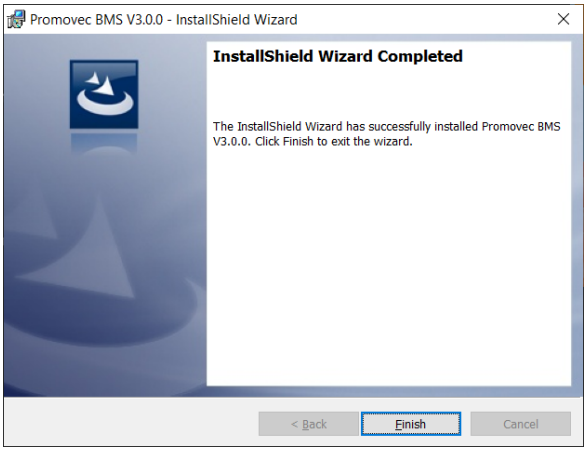
Select "Next"



Select "Complete" and "Next"

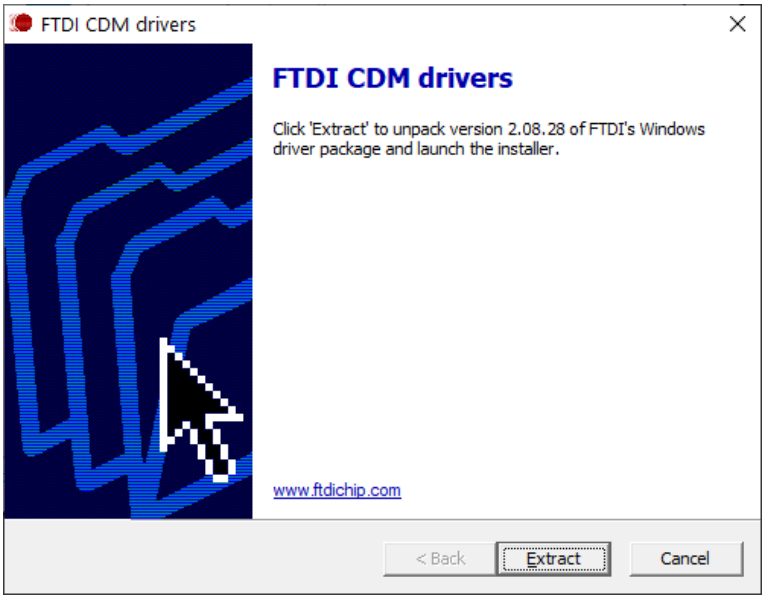


Select "Install" and the installation process starts.

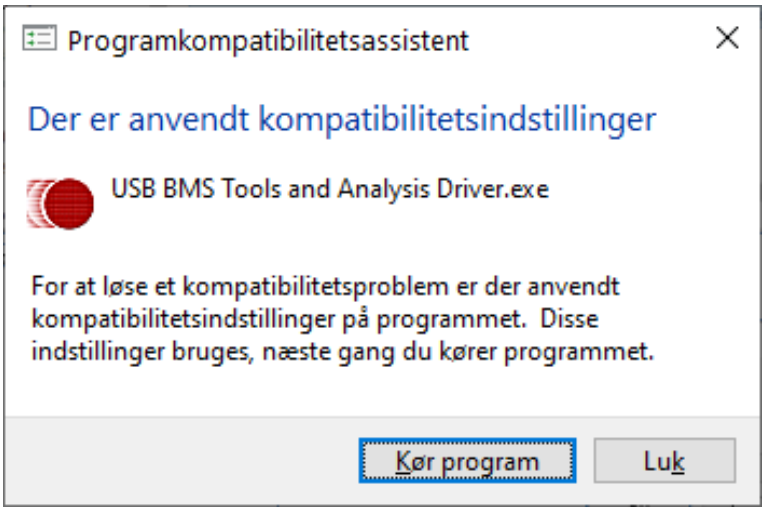


Select "Finish" to end the process

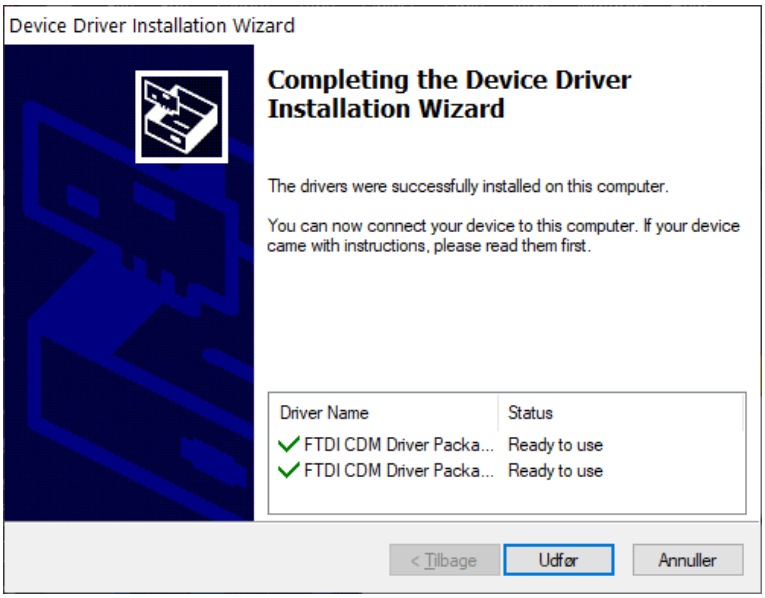
Install "USB BMS Tools Driver" included in the zip filen.



Click "Extract"



"Run program"



"Complete"

STEP 2

Parts required:

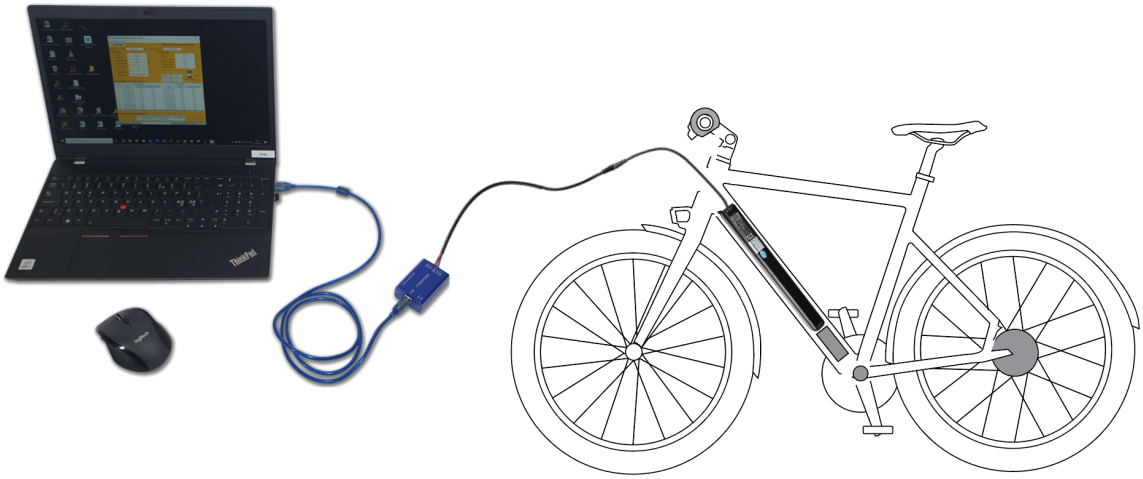
USB cable

Read out box

Read out Wire

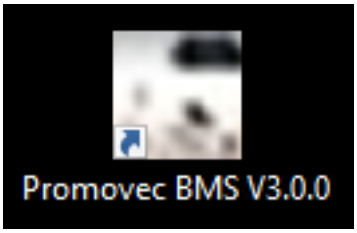
Battery

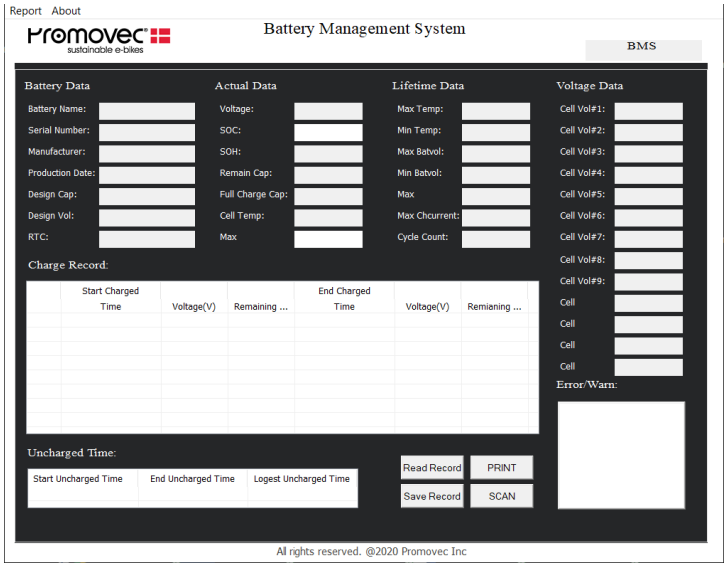
STEP 3



STEP 4

Start the program “Promovec BMS”



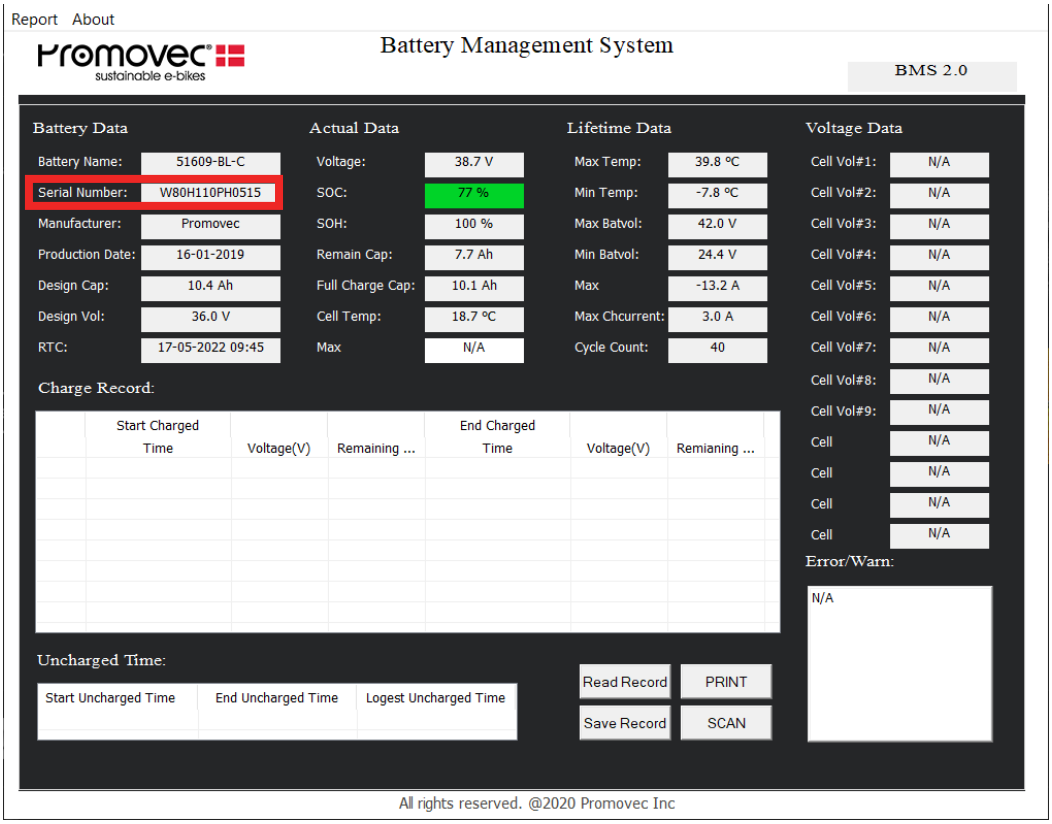


The program is ready to scan, connect a batttery and select “SCAN”

STEP

5

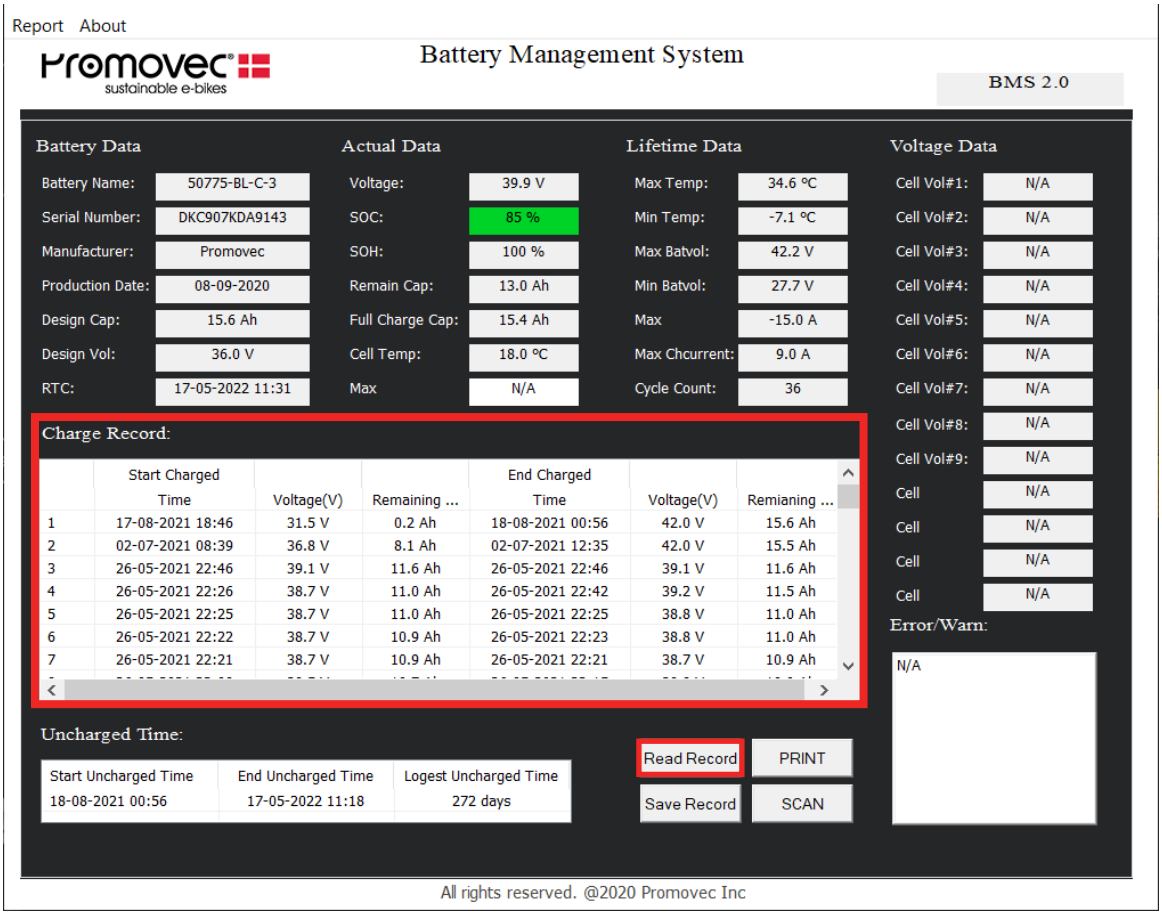
The battery serial number is visible after a readout top left in the “Battery Management System”



Readout of battery-data with “BMS Communication Tool”

STEP
6

Select “Read Record” and a charge record will be displayed.



Explanation covering the data in the program window, see page 10.

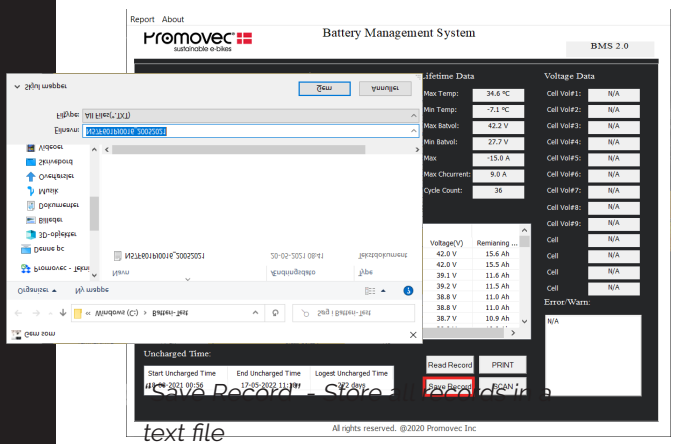
Note! When a new battery is connected the data from the previous battery read will remain until a new “SCAN” and “Read Record is performed.

STEP

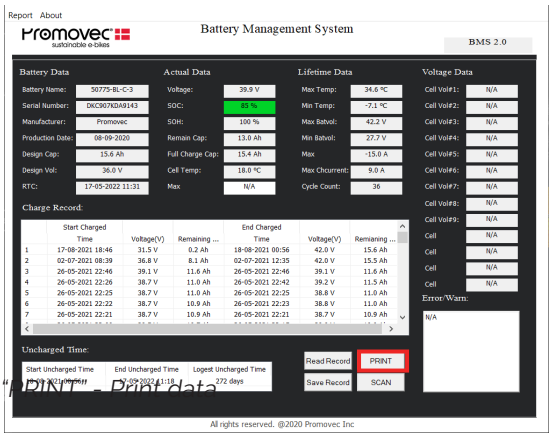
7

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

Note! When a another battery is connected the data must be read again “Read record.

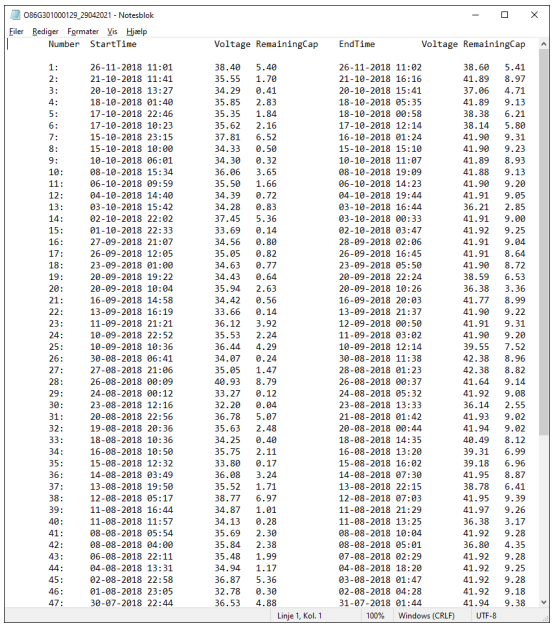


“Save Record” - Store all read data in a text file



“PRINT” - Print data

Saved report


O86G301000129_29042021 - Notesblok

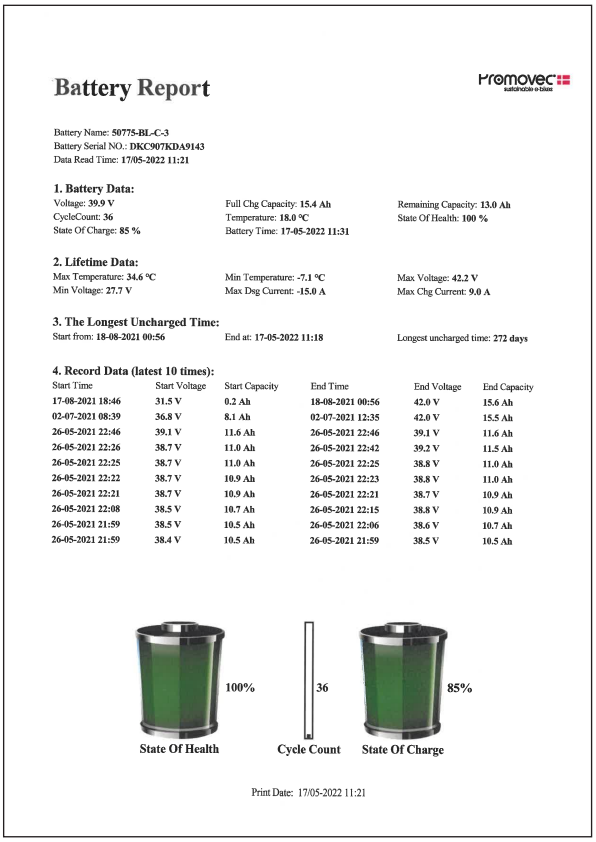
Filer Rediger Formater Vis Hjælp

	Number	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 22:46	35.35	1.84	18-10-2018 00:58	38.38	6.21
6:		17-10-2018 10:23	35.62	2.16	17-10-2018 12:14	38.14	5.80
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	41.88	9.13
11:		06-10-2018 09:59	35.50	1.66	06-10-2018 14:23	41.90	9.20
12:		04-10-2018 14:40	34.39	0.72	04-10-2018 19:44	41.91	9.05
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	0.80	28-09-2018 02:06	41.91	9.04
17:		26-09-2018 12:05	35.05	0.82	26-09-2018 16:45	41.91	8.64
18:		23-09-2018 01:00	34.63	0.77	23-09-2018 05:50	41.90	8.72
19:		20-09-2018 19:22	34.43	0.64	20-09-2018 22:24	38.59	6.53
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 22:52	35.53	2.24	11-09-2018 03:02	41.90	9.20
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 11:38	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 00:09	40.93	8.79	26-08-2018 00:37	41.64	9.14
29:		24-08-2018 00:12	33.27	0.12	24-08-2018 05:32	41.92	9.08
30:		23-08-2018 12:16	32.20	0.04	23-08-2018 13:33	36.14	2.55
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 00:44	41.94	9.02
33:		18-08-2018 10:36	34.25	0.40	18-08-2018 14:35	40.49	8.12
34:		16-08-2018 10:50	35.75	2.11	16-08-2018 13:20	39.31	6.99
35:		15-08-2018 12:32	33.80	0.17	15-08-2018 16:02	39.18	6.96
36:		14-08-2018 03:49	36.08	3.24	14-08-2018 07:30	41.95	8.87
37:		13-08-2018 19:50	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 21:29	41.97	9.26
40:		11-08-2018 11:57	34.13	0.28	11-08-2018 13:25	36.38	3.17
41:		08-08-2018 05:54	35.69	2.30	08-08-2018 10:04	41.92	9.28
42:		08-08-2018 04:00	35.84	2.38	08-08-2018 05:01	36.80	4.35
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

Linje 1, Kol. 1 100% Windows (CRLF) UTF-8

“Save record” example

Printed report


Battery Report

Promovec sustainable e-bikes

Battery Name: **50775-BL-C-3**
Battery Serial NO.: **DKC907KDA9143**
Data Read Time: **17/05-2022 11:21**

1. Battery Data:
Voltage: **39.9 V** | Full Chg Capacity: **15.4 Ah** | Remaining Capacity: **13.0 Ah**
CycleCount: **36** | Temperature: **18.0 °C** | State Of Health: **100 %**
State Of Charge: **85 %** | Battery Time: **17-05-2022 11:31**

2. Lifetime Data:
Max Temperature: **34.6 °C** | Min Temperature: **-7.1 °C** | Max Voltage: **42.2 V**
Min Voltage: **27.7 V** | Max Dsg Current: **-15.0 A** | Max Chg Current: **9.0 A**

3. The Longest Uncharged Time:
Start from: **18-08-2021 00:56** | End at: **17-05-2022 11:18** | Longest uncharged time: **272 days**

4. Record Data (latest 10 times):

Start Time	Start Voltage	Start Capacity	End Time	End Voltage	End Capacity
17-08-2021 18:46	**31.5 V**	**0.2 Ah**	**18-08-2021 00:56**	**42.0 V**	**15.6 Ah**
02-07-2021 08:39	**36.8 V**	**8.1 Ah**	**02-07-2021 12:35**	**42.0 V**	**15.5 Ah**
26-05-2021 22:46	**39.1 V**	**11.6 Ah**	**26-05-2021 22:46**	**39.1 V**	**11.6 Ah**
26-05-2021 22:26	**38.7 V**	**11.0 Ah**	**26-05-2021 22:42**	**39.2 V**	**11.5 Ah**
26-05-2021 22:25	**38.7 V**	**11.0 Ah**	**26-05-2021 22:25**	**38.8 V**	**11.0 Ah**
26-05-2021 22:22	**38.7 V**	**10.9 Ah**	**26-05-2021 22:23**	**38.8 V**	**11.0 Ah**
26-05-2021 22:21	**38.7 V**	**10.9 Ah**	**26-05-2021 22:21**	**38.7 V**	**10.9 Ah**
26-05-2021 22:08	**38.5 V**	**10.7 Ah**	**26-05-2021 22:15**	**38.8 V**	**10.9 Ah**
26-05-2021 21:59	**38.5 V**	**10.5 Ah**	**26-05-2021 22:06**	**38.6 V**	**10.7 Ah**
26-05-2021 21:59	**38.4 V**	**10.5 Ah**	**26-05-2021 21:59**	**38.5 V**	**10.5 Ah**

100% — State Of Health | 36 — Cycle Count | 85% — State Of Charge

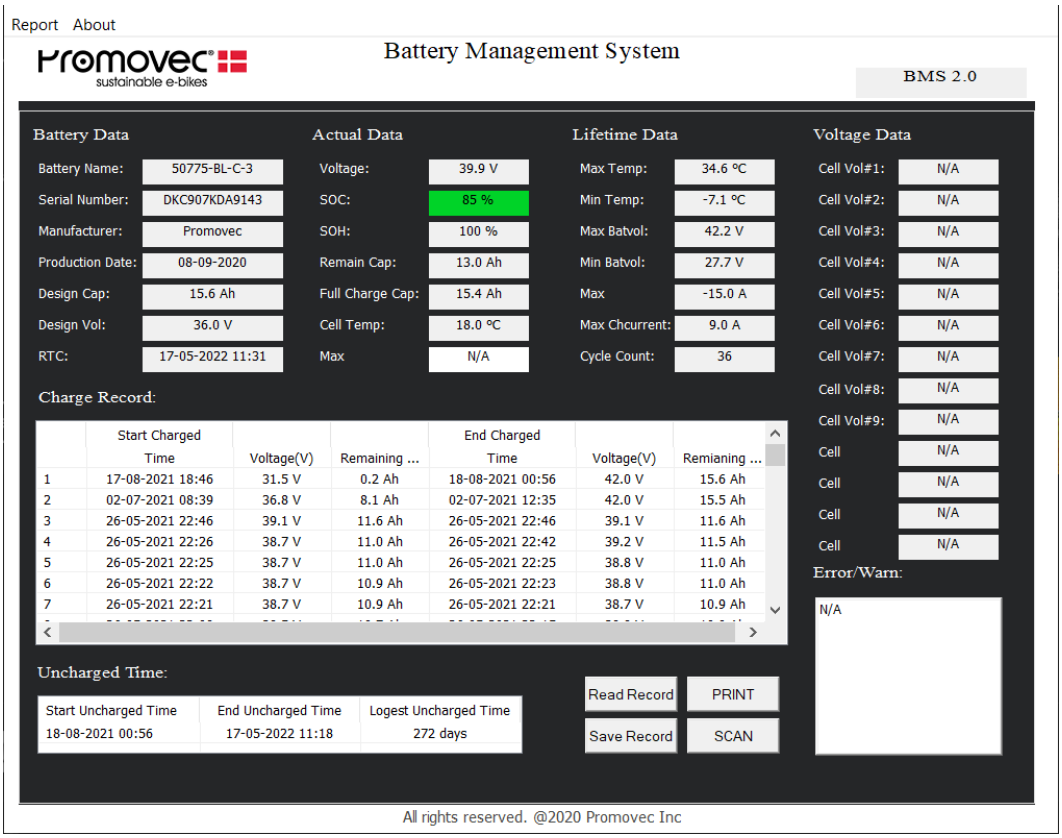
Print Date: 17/05-2022 11:21

“PRINT” example

STEP
8

Readout of data. The battery name and serial number is displayed in the top left of the window. The fields under:

- Battery Data indicates battery properties
- Actual Data indicates the state of the battery when reading it
- Lifetime Data indicates minimum and maximum registrations



Charge-data decoding and troubleshooting:

Actual Data -> MAX VolDiff:

1. If the value is higher than 500 mV, recharge the battery for 24 hours
2. read the battery
3. If the value remains above 500 mV, consider changing the battery

Charge record

- 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.

Lifetime Data

Min. Batvol: If the battery has been read to a value below 30 V it can indicate an error in the BMS.

Error/Warn

Messages in the "Error/Warn" window is described below as "Change the battery" or "For information only.

ERROR/WARN - CHANGE BATTERY
Cell Drop Error
Imbalance
Record Error
RTC Error
Discharging Mosfet Error
Charging Mosfet Error
MOS Temperature Sensor Error
Cell Temperature Sensor Error
ROM Error

ERROR/WARN - INFORMATION ONLY
Protection Chip Error
Estimate Error
Over Charge
Primary Over Discharge
Secondary Over Discharge
Primary Over Current
Secondary Over Current
Over Charge Current
Pre-Start Fail
Pre-Charge Over time
Over Discharge Temperature
Over Charge Temperature
Under Discharge Temperature
Under Charge Temperature
Over Temperature of Discharge Mosfet
Over temperature of Charge Mosfet
Over temperature of Pre-Start circuit
Discharge Fuse Burned
Charging Fuse Burned
Third Over Current
Forth Over Current

BATTERY DATA
RTC: Last time “Read”

ACTUAL DATA
Voltage: Voltage read
SOC: State of charge
SOH: State of health
Remain Cap: Remaining capacity
Full Charge Cap: 100% charge capacity
Cell temp: Battery emperature
MAX: **BMS2 batteries:** N/A **BMS3 batteries:** Max. difference between cells.

CHARGE RECORD
All registrations is displayed here with “Read Record”

UNCHARGED TIME
The longest period the battery without charge.

LIFETIME DATA
Max TMP: Highest temperature registered
Min Temp: Lowest temperature registered
Max Batvol: The highest voltage level registered
Min Batvol: The Lowest voltage level registered
Max: The highest amount of amp's the battery has been discharged with.
Max Chg Current: The highest amount of amp's the battery has been discharged with.
Cycle Count: Total charge cycle count.*

VOLTAGE DATA
Available with BMS 3 batteries. Provides data for each cell.

RAPPORTER
Read Record: Charging records displays in “Charge Record”
Save Record: Save the records on a text file
PRINT: Print a report for the customer or documentation. Includes the last 10 charging registrations.

* 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
9

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.
- “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. Measure the battery, “Step A” page 13
2. The battery has been charged with two different chargers to rule out problems with the charger
3. Check charging inlet and power-on/off lock

STEP
A

Measuring the battery (Carrier batteries)

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.

Promovec®
sustainable e-bikes

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.