

MANUAL

Readout of battery-data with "BMS Communication Tool"



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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

 I I I I I I I I I I I I I I I I I I I	Værktø	Pak ud øjer til komprimeret mappe	Promovec_SBMS (3)		
← → · ↑ 📱 « Brugere >	man →	Overførsler > Promovec_9	SBMS (3) 🗸 🗸 🗸	ට 🔎 Søgil	Promovec_SBMS (3)
🔹 Hurtig adgang	^	Navn	Туре		Komprimeret størrel Beskyt
		Promovec SBMS V2.1.	0.0 Program	ը	16.161 KB Nej
Skrivebord	*		Åbn		
🕂 Overførsler	*		/lin		
🟥 Dokumenter	*		, .,		
E Billeder	*		Copier		
Batteri_Udlaesning			ölet		
Batteriregistrering		1	Egenskaber		
DK	~	<		<i>.</i>	
1 element 1 element er valgt: 16,	3 MB				

Open "Promovec.BMS.V3.0"







Select "Complete" and "Next"



Select "Install" and the installation process starts.

Select "Next"

Select "Finish" to end the process

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

FTDI CDM drivers		×
	FTDI CDM drivers	
~	Click 'Extract' to unpack version 2.08.28 of FTDI's Windows driver package and launch the installer.	
	www.ttdichip.com	
	< Back Extract Cancel	

Click "Extract"

E Programkompatibilitetsassistent	×
Der er anvendt kompatibilitetsindstillinger	
USB BMS Tools and Analysis Driver.exe	
For at løse et kompatibilitetsproblem er der anvendt kompatibilitetsindstillinger på programmet. Disse indstillinger bruges, næste gang du kører programmet.	
<u>K</u> ør program Lu <u>k</u>	

"Run program"

Device Driver Installation Wi	zard
	Completing the Device Driver Installation Wizard
	The drivers were successfully installed on this computer.
	You can now connect your device to this computer. If your device came with instructions, please read them first.
	Driver Name Status
	✓ FTDI CDM Driver Packa Ready to use
	✓ FTDTCDM Driver Packa Ready to use
	< Tilbage Udfør Annuller

"Complete"

STEP



Read out Wire

Promovec

Read out box

USB

sтер **4**

Start the program "Promovec BMS"

Parts required:

USB cable



Prom	OVEC [®]		Batter	y Managei	nent System	1	BMS	5
Battery Data		Ad	tual Data		Lifetime Data		Voltage Data	
Battery Name:		V	oltage:		Max Temp:		Cell Vol#1:	
Serial Number	:	S	DC:		Min Temp:		Cell Vol#2:	
Manufacturer:		s	DH:		Max Batvol:		Cell Vol#3:	
Production Dat	e:	R	emain Cap:		Min Batvol:		Cell Vol#4:	
Design Cap:		R	III Charge Cap:		Max		Cell Vol#5:	
Design Vol:		0	all Temp:		Max Chcurrent:		Cell Vol#6:	
RTC:		м	ах		Cycle Count:		Cell Vol#7:	
Charge Rec	ord:						Cell Vol#8: Cell Vol#9:	_
S	tart Charged Time	Voltage(V)	Remaining	End Charged Time	Voltage(V)	Remianing	Cell	
							Cell	
							Cell	
							Cell	
							Error/Warn:	
Uncharged	Time:							
Start Uncharg	ged Time Er	nd Uncharged Tin	e Logest Unch	arged Time	Read Record	PRINT		
		-			Save Record	SCAN		

Battery

The program is ready to scan, connect a battlery and select "SCAN"

step 5

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

			Batte	ery Managen	nent System	1	E	MS 2.0
Battery Data		A	ctual Data		Lifetime Data		Voltage Data	
Battery Name:	51609-BL	-c v	oltage:	38.7 V	Max Temp:	39.8 °C	Cell Vol#1:	N/A
Serial Number:	W80H110PH	0515 S	oc:	77 %	Min Temp:	-7.8 °C	Cell Vol#2:	N/A
Manufacturer:	Promove	c s	он:	100 %	Max Batvol:	42.0 V	Cell Vol#3:	N/A
Production Date:	16-01-20	19 R	emain Cap:	7.7 Ah	Min Batvol:	24.4 V	Cell Vol#4:	N/A
Design Cap:	10.4 Ah	F	ull Charge Cap:	10.1 Ah	Max	-13.2 A	Cell Vol#5:	N/A
Design Vol:	36.0 V	c	ell Temp:	18.7 °C	Max Chcurrent:	3.0 A	Cell Vol#6:	N/A
RTC:	17-05-2022 (09:45 N	lax	N/A	Cycle Count:	40	Cell Vol#7:	N/A
Charge Recor	d:						Cell Vol#8:	N/A
Star	t Charged			End Charged			Cell Vol#9:	N/A
500	Time	Voltage(V)	Remaining	Time	Voltage(V)	Remianing	Cell	N/A
							Cell	N/A
							Cell	N/A
							Cell	N/A
							Error/Warn:	
							N/A	
Uncharged Ti	me:				Deed Derrord	DDINT		
Start Uncharged	Time End	d Uncharged Tir	ne Logest Unc	harged Time	Read Record	PRINT		
					Save Record	SCAN		

sтер **6**

Re	port About	
		Battery Management System

Select "Read Record" and a charge record will be displayed.

	sustaina	ble e-bikes								В	MS 2.0
Batter	y Data			Ac	tual Data		Lifetime Data	1	Volta	ige Data	
Battery	Name:	50775-	BL-C-3	V	oltage:	39.9 V	Max Temp:	34.6 °C	Cell V	/ol#1:	N/A
Serial I	lumber:	DKC907k	(DA9143	S	DC:	85 %	Min Temp:	-7.1 °C	Cell V	/ol#2:	N/A
Manufa	cturer:	Prom	iovec	S	OH:	100 %	Max Batvol:	42.2 V	Cell V	/ol#3:	N/A
Product	tion Date:	08-09	-2020	Re	emain Cap:	13.0 Ah	Min Batvol:	27.7 V	Cell V	/ol#4:	N/A
Desian	Cap:	15.6	i Ah	Fi	Ill Charge Cap:	15.4 Ah	Мах	-15.0 A	Cell V	/ol#5:	N/A
Desian	Vol:	36.	0 V	Ce	ell Temp:	18.0 °C	Max Chcurrent:	9.0 A	Cell V	/ol#6:	N/A
RTC:		17-05-20	22 11:31	М	ax	N/A	Cycle Count:	36	Cell V	/ol#7:	N/A
	_						,		Cell \	/ol#8:	N/A
Charg	e Recor	rd:								(ol#0:	N/A
	Star	t Charged				End Charged			^ Ceil V	01#9.	N/X
		Time	Voltag	e(V)	Remaining	Time	Voltage(V)	Remianing	Cell		N/A
1	17-08	-2021 18:46	31.5	V	0.2 Ah	18-08-2021 00:	56 42.0 V	15.6 Ah	Cell		N/A
2	02-07	-2021 08:39	36.8	V	8.1 Ah	02-07-2021 12:	35 42.0 V	15.5 Ah	0-11		
3	26-05	-2021 22:46	39.1	V	11.6 Ah	26-05-2021 22:	46 39.1 V	11.6 Ah	Cell	Cell	N/A
4	26-05	-2021 22:26	38.7	V	11.0 Ah	26-05-2021 22:	42 39.2 V	11.5 Ah	Cell		N/A
5	26-05	-2021 22:25	38.7	V	11.0 Ah	26-05-2021 22:	25 38.8 V	11.0 Ah		/***	
6	26-05	-2021 22:22	38.7	V	10.9 Ah	26-05-2021 22:	23 38.8 V	11.0 Ah	Efro	//warn:	
7	26-05	-2021 22:21	38.7	V	10.9 Ah	26-05-2021 22:	21 38.7 V	10.9 Ah	N/A		
<								>	V N/A		
Inch	arged Ti	me:									
onen	ngeu II	me.					Read Record	PRINT			
Start Uncharged Time End Uncharged		ged Tim 2 11:18	ne Logest Un	charged Time	Sava Bagard	SCAN					
10 00	2021 00.		1, 35 262	- 11.10	. 27	2 00,0	Save Record	SCAN			
					All r	iahts reserved. @	2020 Promovec In	с			

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.

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.



Saved report

Printed report

ler Re	diger Form	ater Vis Hiælr							
	Number	StartTime		Voltage	RemainingCap	EndTime	Voltage	Remain	ing
	1:	26-11-2018	11:01	38.40	5.40	26-11-2018	11:02	38.60	5.
	2:	21-10-2018	11:41	35.55	1.70	21-10-2018	16:16	41.89	8.
	3:	20-10-2018	13:27	34.29	0.41	20-10-2018	15:41	37.06	4.
	4:	18-10-2018	01:40	35.85	2.83	18-10-2018	05:35	41.89	9.
	5:	17-10-2018	22:46	35.35	1.84	18-10-2018	00:58	38,38	6.
	6:	17-10-2018	10:23	35.62	2.16	17-10-2018	12:14	38.14	5
	7:	15-10-2018	23:15	37.81	6.52	16-10-2018	01:24	41.90	9.
	8:	15-10-2018	10:00	34,33	0.50	15-10-2018	15:10	41.90	9
	9:	10-10-2018	06:01	34.30	0.32	10-10-2018	11:07	41.89	8
	10:	08-10-2018	15:34	36,06	3,65	08-10-2018	19:09	41.88	9
	11:	06-10-2018	09:59	35.50	1.66	06-10-2018	14:23	41.90	9
	12.	04-10-2018	14-49	34 39	0.72	04-10-2018	19.44	41 91	9
	13:	03-10-2018	15:42	34.28	0.83	03-10-2018	16:44	36.21	2
	14.	02-10-2018	22-02	37.45	5 36	03-10-2018	60:33	41 91	9
	15	01-10-2018	22.33	33,69	0 14	02-10-2018	03:47	41 92	9
	16	27-09-2018	21.07	34.56	0.80	28-09-2018	02:06	41 91	6
	17.	26-09-2018	12:05	35.05	0.82	26-09-2018	16:45	41 91	8
	18.	23-09-2018	01-00	34 63	0.77	23-09-2018	05-50	41 90	8
	19.	20-09-2010	19-22	34.43	0.64	20-09-2010	22.24	38 59	6
	20.	20 00 2010	10.04	35.94	2.63	20 00 2010	10:26	36 39	
	20.	16-09-2018	14-58	34.42	0.56	16-09-2018	20.03	41 77	8
	22.	12 00 2019	16.10	22.66	0.14	12 00 2010	21.27	41 00	
	22.	11 09 2018	21.21	36 12	3 02	12 09 2018	00.50	41.90	
	24.	10 00 2019	22.21	25 52	3.34	11 00 2010	02.00	41.00	
	24.	10 00 2010	10.26	36 44	4 20	10 00 2010	12:14	20 55	
	20.	20.09.2010	06.41	34.97	9.25	20 09 2010	11.14	43.39	
	20:	37 09 3019	21.06	25.05	1 47	20-00-2010	01.02	42.30	
	20.	27-08-2018	21.00	40.03	9 70	26-00-2010	00.27	42.30	
	20.	20-00-2010	00.03	22.37	0.75	20-00-2010	05.37	41.03	
	29.	24-00-2010	12.16	22.20	0.12	24-00-2010	12.22	41.52	2
	34.	23-08-2018	22.10	32.20	5.07	23-00-2010	13.33	41 02	6
	22.	10 09 2019	22:30	25.62	3.07	21-00-2010	01:42	41.95	
	22.	19-00-2010	10.26	24.25	2.40	10 00 2010	14.25	41.74	
	34.	16-08-2018	10.50	34.25	0.40	16 00 2010	12.00	20.21	6
	25.	15 09 2019	10:00	22.00	2.11	10-00-2010	15:20	20.19	6
	35.	14 09 2019	12.32	35.00	2 24	14 09 2010	07.20	41 05	
	37.	12 08 2018	10.50	36.68	1 71	12 00 2010	07.30	41.55	6
	20.	13-00-2010	19:30	20.77	6.07	13-00-2010	22:13	20.70	
	30.	12-00-2010	10.17	30.77	1.01	12-00-2010	07.05	41.07	
	59:	11-00-2010	10:44	24.0/	0.00	11-00-2010	12.25	41.97	
	40:	11-00-2010	11:57	34.15	0.20	11-00-2010	10:20	50.50	
	41:	00-00-2010	05:54	35.09	2.50	00-00-2010	10:04	41.92	9
	42:	00-00-2018	04.00	35.04	2.00	00-00-2018	03:01	41.00	4.
	421	00-00-2018	12.21	24.04	1.77	0/-00-2018	12:27	41.92	9.
	44:	04-00-2018	13.31	34.94	1.1/	04-00-2018	10:20	41.92	9.
	45:	02-06-2018	22:30	20.8/	0.00	00-06-2018	01:47	41.92	9.
	40:	01-08-2018	23:05	32.78	0.30	02-08-2018	04:28	41.92	9
	47:	30-07-2018	22:44	36.53	4.88	31-07-2018	01:44	41.94	9
					Linje 1, Kol. 1	100%	Windows (CRLF)	UTF-8)

Battery Name: 50775-	BL-C-3				
Battery Serial NO.: D Data Read Time: 17/0	KC907KDA9143 5-2022 11:21				
1. Battery Data:					
Voltage: 39.9 V		Full Chg Capacity	15.4 Ah	Remaining Capacity	-: 13.0 Ah
CycleCount: 36 State Of Charge: 85 %		Temperature: 18.0 Battery Time: 17-	0℃ 05-2022 11:31	State Of Health: 10)%
2. Lifetime Data:					
Max Temperature: 34.	6 °C	Min Temperature:	-7.1 ℃	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 U	ncharged Time	:			
Start from: 18-08-2021	00:56	End at: 17-05-202	2 11:18	Longest uncharged t	time: 272 days
4. Record Data (l	atest 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
40-03-2021 21.39	36.4 1	10.5 AL	20-03-2021 21:39	38.5 V	10.5 AB
			Π		
		100%	36	85%	
	State Of Healt	h Cy	cle Count State	Of Charge	

"PRINT" example

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

Port A		s		Battery	Manage	eme	nt System	L			BMS 2.0
Battery	y Data		Actual D	ata		I	ifetime Data		Vo	oltage Dat	a
Battery	Name: 5077	5-BL-C-3	Voltage:	3	9.9 V		Max Temp:	34.6 ℃	G	ell Vol#1:	N/A
Serial N	lumber: DKC90	7KDA9143	SOC:	8	5 %		Min Temp:	-7.1 °C	C	ell Vol#2:	N/A
Manufa	cturer: Pro	movec	SOH:	1	00 %		Max Batvol:	42.2 V	C	ell Vol#3:	N/A
Producti	ion Date: 08-0	9-2020	Remain C	ap: 13	3.0 Ah		Min Batvol:	27.7 V	O	ell Vol#4:	N/A
Design (Cap: 15	.6 Ah	Full Charg	e Cap: 15	5.4 Ah		Мах	-15.0 A	0	ell Vol#5:	N/A
Design \	Vol: 3	6.0 V	Cell Temp	: 18	3.0 °C		Max Chcurrent:	9.0 A	o	ell Vol#6:	N/A
RTC:	17-05-2	2022 11:31	Max	_	N/A		Cycle Count:	36	o	ell Vol#7:	N/A
							'			ell Vol#8:	N/A
Charg	e Record:								ŭ	all Vol#0:	N/A
	Start Charged			E	End Charged	1			^	211 V01#91	N/A
	Time	Voltage	(V) Remai	ning	Time		Voltage(V)	Remianing	. C	ell	N/A
1	17-08-2021 18:4	46 31.5 \	/ 0.2	Ah 18-	08-2021 00:	:56	42.0 V	15.6 Ah	C	ell	N/A
2	02-07-2021 08:3	39 36.8 \	/ 8.1	Ah 02-	07-2021 12:	:35	42.0 V	15.5 Ah			N/A
3	26-05-2021 22:4	16 39.1 V	/ 11.6	5 Ah 26-	05-2021 22:	:46	39.1 V	11.6 Ah		-	N/A
4	26-05-2021 22:2	26 38.7 \	/ 11.0) Ah 26-	05-2021 22:	:42	39.2 V	11.5 Ah	C	ell	N/A
5	26-05-2021 22:2	25 38.7 \	/ 11.0) Ah 26-	05-2021 22:	25	38.8 V	11.0 Ah	Er	ror/Warn	
6	26-05-2021 22:2	22 38.7 \	/ 10.9	9 Ah 26-	05-2021 22:	23	38.8 V	11.0 Ah		ion, main.	
7	26-05-2021 22:2	21 38.7 \	/ 10.9	9 Ah 26-	05-2021 22:	:21	38.7 V	10.9 Ah	✓ N	/A	
<								>			
Uncha	arged Time										
	ngou inno.						Read Record	PRINT			
Start U	Jncharged Time	End Uncharge	ed Time Lo	ogest Uncharge	d Time		0	00411			
10-08-	2021 00.30	17-03-2022	11.10	272 udys			Save Record	SCAN			
				All rights r	eserved. @	a2020	Promovec Inc	2			

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.

* 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"

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.

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



A

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.



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 highquality 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.

