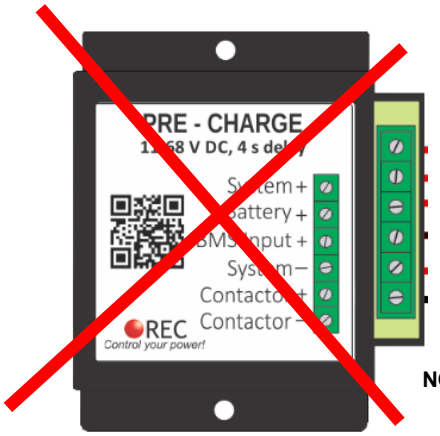
Upgrade REC 1Q to 2Q Wiring
removing redundant Precharge module

Remove your wires from 1Q green terminal block

Cells connector pins	
1	Cell 1 negative (⊥)
2	Cell 1 positive
3	Cell 2 positive
4	Cell 3 positive
5	Cell 4 positive
6	Cell 5 positive
7	Cell 6 positive
8	Cell 7 positive
9	Cell 8 positive
10	Cell 9 positive
11	Cell 10 positive
12	Cell 11 positive
13	Cell 12 positive
14	Cell 13 positive
15	Cell 14 positive
16	Cell 15 positive
17	Cell 16 positive

Crimp on a pin and insert in new 2@Q connector

Pin	Connection	Description
1	CELL 1-	Cell 1 negative (PACK -)
2	CELL 2+	Cell 2 positive
3	CELL 4+	Cell 4 positive
4	CELL 6+	Cell 6 positive
5	CELL 8+	Cell 8 positive
6	CELL 10+	Cell 10 positive
7	CELL 12+	Cell 12 positive
8	CELL 14+	Cell 14 positive
9	CELL 16+	Cell 16 positive
10	PRE-CHARGE OUT	Pre-charge out – connect to System + side of the contactor
11	PACK-	BMS Power supply negative (Cell 1 negative)
12	CELL 1+	Cell 1 positive
13	CELL 3+	Cell 3 positive
14	CELL 5+	Cell 5 positive
15	CELL 7+	Cell 7 positive
16	CELL 9+	Cell 9 positive
17	CELL 11+	Cell 11 positive
18	CELL 13+	Cell 13 positive
19	CELL 15+	Cell 15 positive
20	PACK +	BMS Power supply positive



Remove redundant Precharge Module and connect wires as follows

Disconnect the **System +** wire and connect to pin 10 of the 20 pin plug

** Disconnect the **Battery +** wire and connect to pin 20 of the 20 pin plug **

Disconnect the **BMS input +** wire and connect to Contactor + wire

Disconnect the **System -** wire and connect to Contactor - wire

Disconnect the **Contactor +** wire and connect to BMS + wire

Disconnect the **Contactor -** wire and connect to BMS - wire

NOTE: ** If existing Battery + is fused, it should be rerun straight the battery pack +

Project:	
Drawing:	REC 1Q-2Q with Pinouts
Date:	May 2, 2025
Revision:	1.0.0

Upgrade REC 1Q to 2Q Wiring and retain Precharge module

Remove your wires from 1Q green terminal block

Cells connector pins	
1	Cell 1 negative (⊥)
2	Cell 1 positive
3	Cell 2 positive
4	Cell 3 positive
5	Cell 4 positive
6	Cell 5 positive
7	Cell 6 positive
8	Cell 7 positive
9	Cell 8 positive
10	Cell 9 positive
11	Cell 10 positive
12	Cell 11 positive
13	Cell 12 positive
14	Cell 13 positive
15	Cell 14 positive
16	Cell 15 positive
17	Cell 16 positive

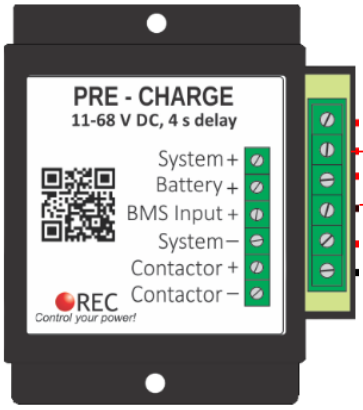
Crimp on a pin and insert in new 2@Q connector

Pin	Connection	Description
1	CELL 1-	Cell 1 negative (PACK -)
2	CELL 2+	Cell 2 positive
3	CELL 4+	Cell 4 positive
4	CELL 6+	Cell 6 positive
5	CELL 8+	Cell 8 positive
6	CELL 10+	Cell 10 positive
7	CELL 12+	Cell 12 positive
8	CELL 14+	Cell 14 positive
9	CELL 16+	Cell 16 positive
10	PRE-CHARGE OUT	Pre-charge out – connect to System + side of the contactor
11	PACK-	BMS Power supply negative (Cell 1 negative)
12	CELL 1+	Cell 1 positive
13	CELL 3+	Cell 3 positive
14	CELL 5+	Cell 5 positive
15	CELL 7+	Cell 7 positive
16	CELL 9+	Cell 9 positive
17	CELL 11+	Cell 11 positive
18	CELL 13+	Cell 13 positive
19	CELL 15+	Cell 15 positive
20	PACK +	BMS Power supply positive

Add new Wire from pin 20 to Battery pack + (last cell)

Not used

Although we do not recommend it, in some cases you may want to keep your existing precharge.
Retain all existing wiring except as shown here



Add new wire to Battery +

Remove and disconnect old BMS Input wire and add new

The Output/ON/Off connector comes prewired with your new 2Q BMS

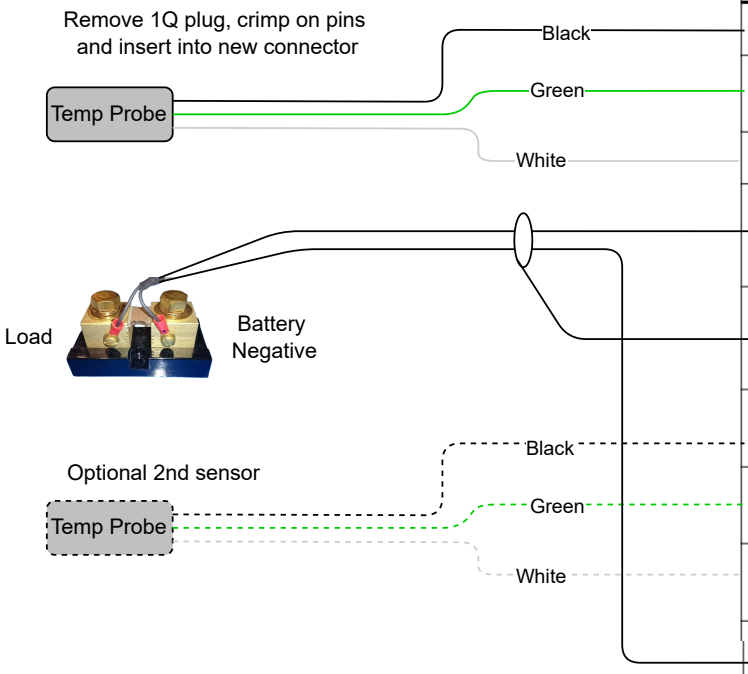
Pin	Connection	Description
1	OPTOCOUPLER 1 EMITTER	Optocoupler 1 emitter (negative)
2	OPTOCOUPLER 2 EMITTER	Optocoupler 2 emitter (negative)
3	OPTO-RELAY OUT	Opto-relay output signal
4	REMOTE ON/OFF -	BMS Remote ON/OFF input
5	OPTOCOUPLER 1 COLLECTOR	Optocoupler 1 collector (positive)
6	OPTOCOUPLER 2 COLLECTOR	Optocoupler 2 collector (positive)
7	OPTO-RELAY IN	Input supply + for the OPTO – RELAY (100V DC, 3 A max)
8	REMOTE ON/OFF +	BMS Remote ON/OFF source (connect to REMOTE ON/OFF – pin 4 to enable the BMS)

See REC 2Q Quickstart manual for connecting your other optocoupler outputs

Project:	
Drawing:	REC 1Q-2Q with Precharge Pinouts
Date:	May 2, 2025
Revision:	1.0.0

Re-Use existing Temperature and/o Shunt wires

If it is impractical to replae your temeratures probe(s) or existing shunt wires they can be reused by cutting off the 1Q style connectors and crimping on pins and inserting in new connector block as shown here



Pin	Connection	Description
1	1-WIRE GND port 1	1-WIRE temperature sensor DS18B20 Supply GND
2	1-WIRE SIGNAL port 1	1-WIRE temperature sensor DS18B20 signal
3	1-WIRE +5 V port 1	1-WIRE temperature sensor DS18B20 Supply +5 V
4	CURRENT SENS -	Shunt sensor Kelvin connection negative (shunt system side sens connection)
5	CURRENT SENS CABLE SHIELD	Current sensor cable shield
6	1-WIRE GND port 2	1-WIRE temperature sensor DS18B20 Supply GND
7	1-WIRE SIGNAL port 2	1-WIRE temperature sensor DS18B20 signal
8	1-WIRE +5 V port 2	1-WIRE temperature sensor DS18B20 Supply +5 V
9	CURRENT SENS +	Shunt sensor Kelvin connection positive (shunt battery side sens connection)
10	-	-

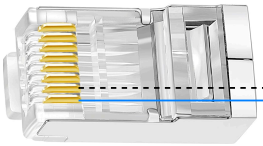
Project:	
Drawing:	REC 2 Temp-Shunt Pinouts
Date:	May 2, 2025
Revision:	1.0.0

Upgrade REC 1Q to 2Q Wiring
Converting Existing CANBus cable

The 2Q BMS comes c/w a standard CANBus adapter as part of the 14pin harness included with the BMS. You can either purchase a new 2Q to Victron or SMA adapter cable or just cut the DB9 end and connect the CAN HI and CAN LO wires together as shown below.

Note: The DB9 includes the 5V CAN wires and an internal EOL resistor which are no longer needed as the EOL resistor is now buit into the 2Q BMS and uses a jumper across pins to enable it.

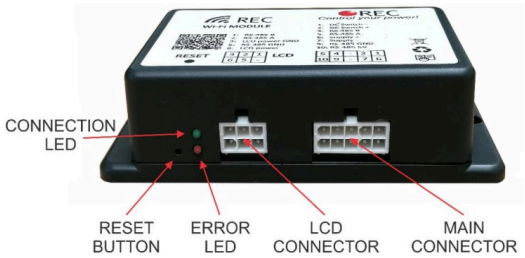
Victron Cerbo VE.CAN Pinout



Pin 7 CAN LO
Pin 8 CAN HI

grey
white
Blue

Pin	Connection	Description
1	CP AGND	EVSE CP ground
2	CAN TERMINATION L	120 Ω CAN termination low
3	CAN L	CAN signal low
4	5V + CAN/-	CAN 5V + supply/-*
5	RS-485 +5 V ENABLE in	BMS Enable input from Master BMS in Master-Slave configuration
6	RS-485 B in	Signal B in
7	RS-485 A in	Signal A in
8	CP	EVSE CP signal
9	CAN TERMINATION H	120 Ω CAN termination high
10	CAN H	CAN signal high
11	CAN GND/CAN SGND	BMS GND/ CAN System GND*
12	RS-485 CABLE SHIELD in	SHIELD IN
13	RS-485 GND	RS-485 Power supply GND
14	RS-485 +5V	RS-485 +5 V Power supply



The WiFI module now comes with a WiFi to REC 2Q cable but if you need to reuse your existing cable, you can cut off the the DB9 connector and crimp on pins and use a 6 pin connector as shown here

MAIN CONNECTOR PIN	DESIGNATOR
1	DC Switch –
2	DC Switch +
3	N/C
4	RS-485 - B
5	RS-485 - A
6	Power supply +
7	Power supply GND
8	N/C
9	RS-485 – GND
10	RS-485 – 3.3V

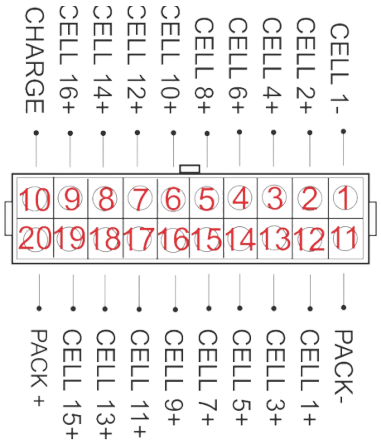
Green
Yellow
White
Brown

Pin	Connection	Description
1	RS-485 B out	Signal B out
2	RS-485 A out	Signal A out
3	RS-485 +5 V ENABLE out	BMS Enable output from Master BMS in Master-Slave configuration
4	RS-485 +5 V out	RS-485 +5 V Power supply
5	RS-485 GND out	RS-485 Power supply GND
6	RS-485 CABLE SHIELD out	SHIELD OUT

Project:	
Drawing:	REC 2Q CANBu-WiFi Pinouts
Date:	May 2, 2025
Revision:	1.0.0

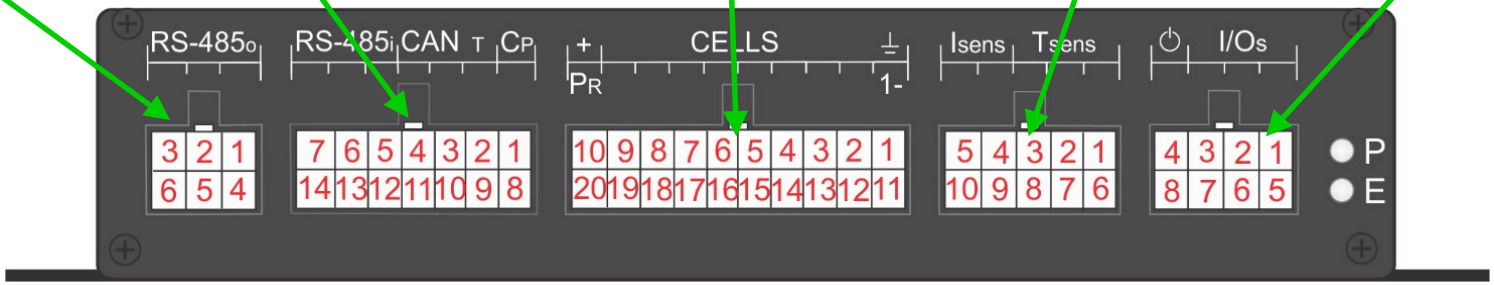
Pin	Connection	Description
1	RS-485 B out	Signal B out
2	RS-485 A out	Signal A out
3	RS-485 +5 V ENABLE out	BMS Enable output from Master BMS in Master-Slave configuration
4	RS-485 +5 V out	RS-485 +5 V Power supply
5	RS-485 GND out	RS-485 Power supply GND
6	RS-485 CABLE SHIELD out	SHIELD OUT

Pin	Connection	Description
1	CP AGND	EVSE CP ground
2	CAN TERMINATION L	120 Ω CAN termination low
3	CAN L	CAN signal low
4	+ 5V CAN	CAN driver power supply in case of required galvanic isolation (+5 V between pin 11 and pin 4)*
5	RS-485 +5 V ENABLE in	BMS Enable input from Master BMS in Master-Slave configuration
6	RS-485 B in	Signal B in
7	RS-485 A in	Signal A in
8	CP	EVSE CP signal
9	CAN TERMINATION H	120 Ω CAN termination high
10	CAN H	CAN signal high
11	CAN GND	CAN ground - BMS GND. If galvanically isolated
		use as +5V supply AGND.*
12	RS-485 CABLE SHIELD in	SHIELD IN
13	RS-485 GND	RS-485 Power supply GND
14	RS-485 +5V	RS-485 +5 V Power supply

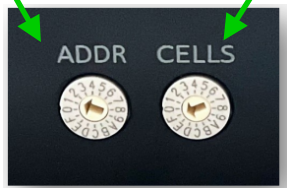


Pin	Connection	Description
1	1-WIRE GND port 1	1-WIRE temperature sensor DS18B20 Supply GND
2	1-WIRE SIGNAL port 1	1-WIRE temperature sensor DS18B20 signal
3	1-WIRE +5 V port 1	1-WIRE temperature sensor DS18B20 Supply +5 V
4	CURRENT SENS -	Shunt sensor Kelvin connection negative
5	CURRENT SENS CABLE SHIELD	Current sensor cable shield
6	1-WIRE GND port 2	1-WIRE temperature sensor DS18B20 Supply GND
7	1-WIRE SIGNAL port 2	1-WIRE temperature sensor DS18B20 signal
8	1-WIRE +5 V port 2	1-WIRE temperature sensor DS18B20 Supply +5 V
9	CURRENT SENS +	Shunt sensor Kelvin connection positive
10	-	-

Pin	Connection	Description
1	OPTOCOUPLER 1 EMITTER	Optocoupler 1 emitter (negative)
2	OPTOCOUPLER 2 EMITTER	Optocoupler 2 emitter (negative)
3	OPTO-RELAY OUT	Opto-relay output signal
4	REMOTE ON/OFF -	BMS Remote ON/OFF input
5	OPTOCOUPLER 1 COLLECTOR	Optocoupler 1 collector (positive)
6	OPTOCOUPLER 2 COLLECTOR	Optocoupler 2 collector (positive)
7	OPTO-RELAY IN	Input supply + for the OPTO – RELAY (100V DC, 3 A max)
8	REMOTE ON/OFF +	BMS Remote ON/OFF source (connect to REMOTE ON/OFF – pin 4 to enable the BMS)



Selection	Setting
0	Address 0 (ERROR 6)
1	Address 1
2	Address 2
3	Address 3
4	Address 4
5	Address 5
6	Address 6
7	Address 7
8	Address 8
9	Address 9
A	Address 10
B	Address 11
C	Address 12
D	Address 13
E	Address 14
F	Address 15



Selection	Setting
0	1 cell (ERROR 6)
1	2 cell (ERROR 6)
2	3 cells (ERROR 6)
3	4 cells
4	5 cells
5	6 cells
6	7 cells
7	8 cells
8	9 cells
9	10 cells
A	11 cells
B	12 cells
C	13 cells
D	14 cells
E	15 cells
F	16 cells

Project:	
Drawing:	REC 2Q Pinouts
Date:	July 31, 2023
Revision:	1.0.0