SIMP-BMS V2.1 – Wiring Basics
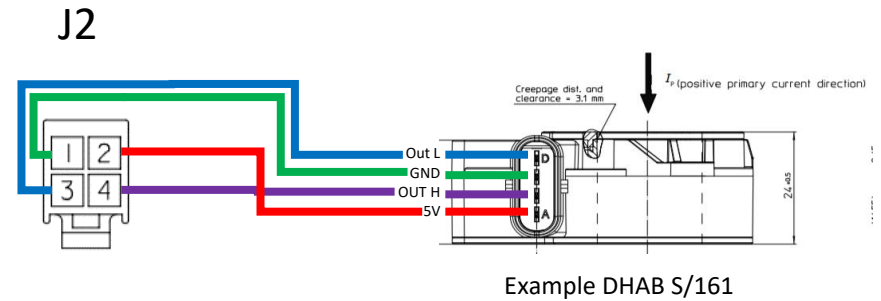
By T de Bree
10-03-19

J4   J2   J1

J3   J5

BMS Slaves : see pages below

Analogue Current Sensor

J2

Out L
GND
OUT H
5V

Creepage dist. and
clearance = 3.1 mm

I_P (positive primary current direction)

24.45

Example DHAB S/161

Power and Contactors

12V +

Negative
Contactor

PreCharge
Contactor

Positive
Contactor

12V IN   10 Amp

GND

Positive
Contactor

Negative
Contactor

Charge
Contactor

GND

J4

GND

12V +

12V +

Input and Comms

KEY ON   12V +
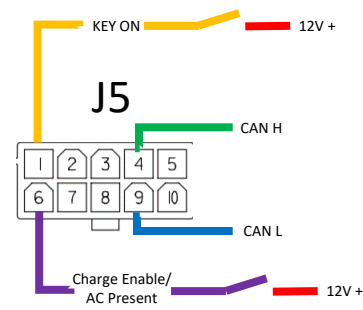
KEY ON or CHARGE ENABLE, can be fed with 5-16V.
Need to be constant signal not a pulse

J5

No CAN termination resistor present on SIMP-BMS

CAN H

CAN H and L shared with J3

CAN L
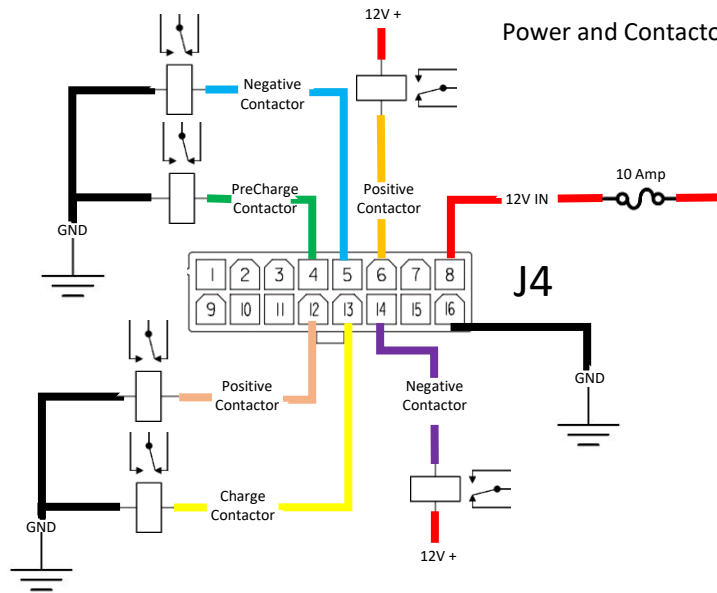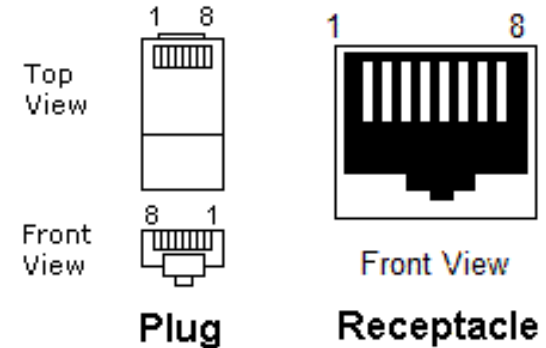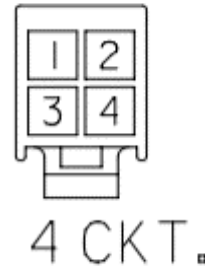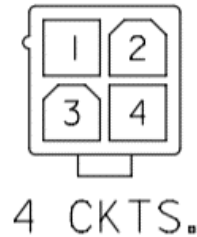
Charge Enable/
AC Present   12V +
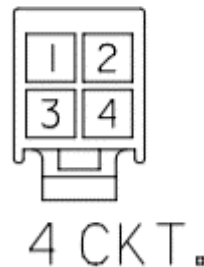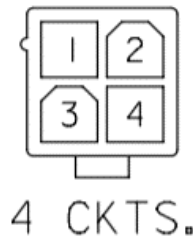
SIMP-BMS V2.1 – Wiring Basics

By T de Bree
18/08/18

Connector 1 Tesla BMS
Supplier   Molex
Family   Mini fit 4 way
Part no   39-28-x04x
Harness Part 39-01-x04x

Pin	Function
1	GND
2	5V
3	RXbms
4	TXbms

4 CKTS.   4 CKT.

Connector 2   Current Sensor
Supplier   Molex
              Mini fit 4
Family   way
Part no   39-28-x04x
Harness Part 39-01-x04x

Pin	Function
1	GND
2	5V
3	Current 1
4	Current 2

4 CKTS.   4 CKT.

Top View
Front View

Plug   Receptacle
Front View

Connector 3 Comms
Supplier   -
Family   RJ45
Part no   -
Harness Part -

Pin	Function
1	GND
2	12V
3	
4	12V
5	GND
6	
7	CanH
8	CanL

SIMP-BMS V2.1 – Wiring Basics

By T de Bree
18/08/18
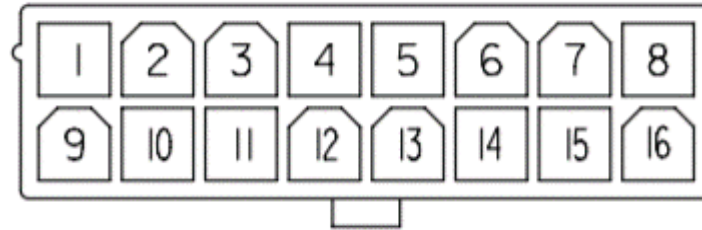
16 CKTS.

16 CKT.

Connector 4 IO
Supplier   Molex
Family   Mini fit 10 way
Part no   39-28-x16x
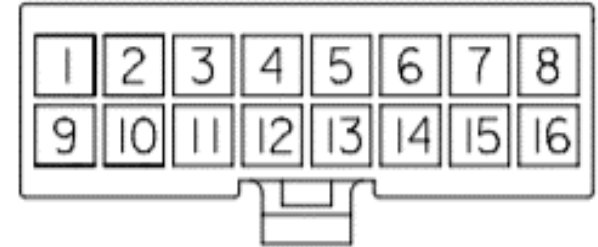Harness Part 39-01-x16x

Pin	Function	Switching	Type	V2 Normal usage	ESS Mode
1	5V Out	-	Supply	-	-
2	GND	-	Ground	-	-
3	GND	-	Ground	-	-
4	Out 2	High	Output	Precharge Cont	*Cooling Demand**
5	Out 4	High	Output	Negative Cont	*Heating Demand**
6	Out 6	Low	Output	Positive Cont	Charge Enable
7	Out 7	Low	Output	-	Negative Cont
8	12V IN	-	Power	Fused 12V IN	Fused 12V IN
9	12V	-	Supply	-	-
10	12V	-	Supply	-	-
11	12V	-	Supply	-	-
12	Out 1	High	Output	Positive Cont	Discharge Enable
13	Out 3	High	Output	Charge Cont	Charge Enable
14	Out 5	Low	Output	Negative Cont	Discharge Enable
15	Out 8	Low	Output	Gauge Out	Gauge Out
16	GND	-	Ground		

Function	Pin	Pin	Function
12V IN	8	16	GND
Out 7	7	15	Out 8
Out 6	6	14	Out 5
Out 4	5	13	Out 3
Out 2	4	12	Out 1
GND	3	11	12V
GND	2	10	12V
5V	1	9	12V

*to be implemented

SIMP-BMS V2.1 – Wiring Basics

By T de Bree
18/08/18

IO CKTS.

IO CKT.
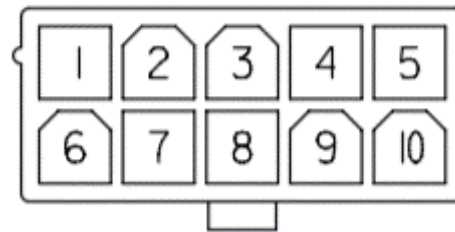
Connector 5 Comms
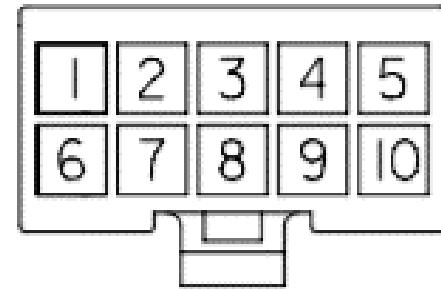Supplier Molex
Family Mini fit 8 way
Part no 39-28-x10x
Harness Part 39-01-x10x

Pin	Function	Switching	Type	V2 Normal usage	ESS Mode
1	In 1	High	Input	Key on	Storage Mode
2	In 2	High	Input	AC present	-
3	Txspare	-	Comms	-	-
4	CanH	-	Comms	Can	Can
5	5V Out	-	Supply	-	-
6	In 3	High	Input	-	-
7	In 4	High	Input	-	-
8	Rxspare	-	Comms	-	-
9	CanL	-	Comms	Can	Can
10	GND	-	Ground		

Function	Pin	Pin	Function
In 3	6	1	In 1
In 4	7	2	In 2
Rxspare	8	3	Txspare
CanL	9	4	CanH
GND	10	5	5V

SIMP-BMS V2.1 – Wiring Basics

By T de Bree
18/08/18

Can Bus Devices

Outlander CMU conncetor	
Supplier	JST
Part No	08CPT-B-2A

	Outlander Slave		SimpBMS	
Function	Connector	Pin	Connector	Pin
GND	X1	7	X4	2
12V	X1	1	X4	9
CAN L	X1	4	X5	9
CAN H	X1	8	X5	4
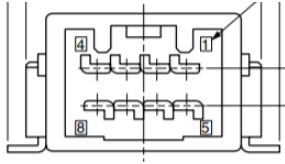
CAB 300	
Supplier	TE
Part No	1473672-1

	CAB 300		SimpBMS	
Function	Connector	Pin	Connector	Pin
GND	X1	3	X4	2
12V	X1	4	X4	9
CAN L	X1	1	X5	9
CAN H	X1	2	X5	4

VW Slave conncetor	
Supplier	TE
Part No	1-1670990-1
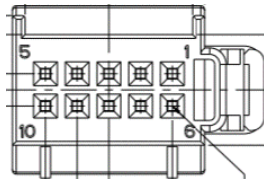
	VW Slave		SimpBMS	
Function	Connector	Pin	Connector	Pin
GND	X1	1	X4	2
12V	X1	5	X4	9
CAN H	X1	6	X5	9
CAN L	X1	7	X5	4
Enable	X1	3	X4	9

SIMP-BMS V2.1 – Wiring Basics

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Tesla Slaves

1st Module Pin 4/9 to 2nd Module Pin 2/7

GND

10 9 8 7 6
5 4 3 2 1

10 9 8 7 6
5 4 3 2 1

1 2
3 4

+5V

+5V

GND

TX to 1st Module Pin 2/7

RX from last Module Pin 4/9

Connector 1 Tesla BMS
Supplier   Molex
Family   Mini fit 4 way
Part no   39-28-x04x
Harness Part 39-01-x04x

Pin	Function
1	GND
2	5V
3	RXbms
4	TXbms

1 2
3 4

4 CKTS.

1 2
3 4

4 CKT.