



SVE BULLETIN

SPECIAL VEHICLE ENGINEERING – BODY BUILDERS ADVISORY SERVICE

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QVM Bulletin: Q-250

Date: 08 August, 2016

Transit High Spec Interface Connector

Models Affected: 2017 MY Transit vehicles built before 8/16/2016 with the Auxiliary Fuse Panel with High Spec Interface Connector or with both the Auxiliary Fuse Panel with High Spec Interface Connector and the High Capacity Upfitter Switches.

Purpose: To provide direction for connecting the following:

1. Outputs to the switches (either Ford factory-installed switches or 3rd party switches),
2. Outputs to the 2 un-switched circuits
3. Outputs to the 43-way High Specification Interface Connector (allows access to vehicle signals)

Background: 2017 MY Transit vehicles built before 8/16/2016 do not come with an accessory kit. These vehicles will need upfitters to build their own jumper harnesses. The following procedure explains how to determine what equipment features the vehicle may be equipped with and it provides the technical information which will allow upfitters to build jumper harnesses. Vehicles built after 8/16/2016 will have an accessory kit delivered with the vehicle as described in the BEMM.

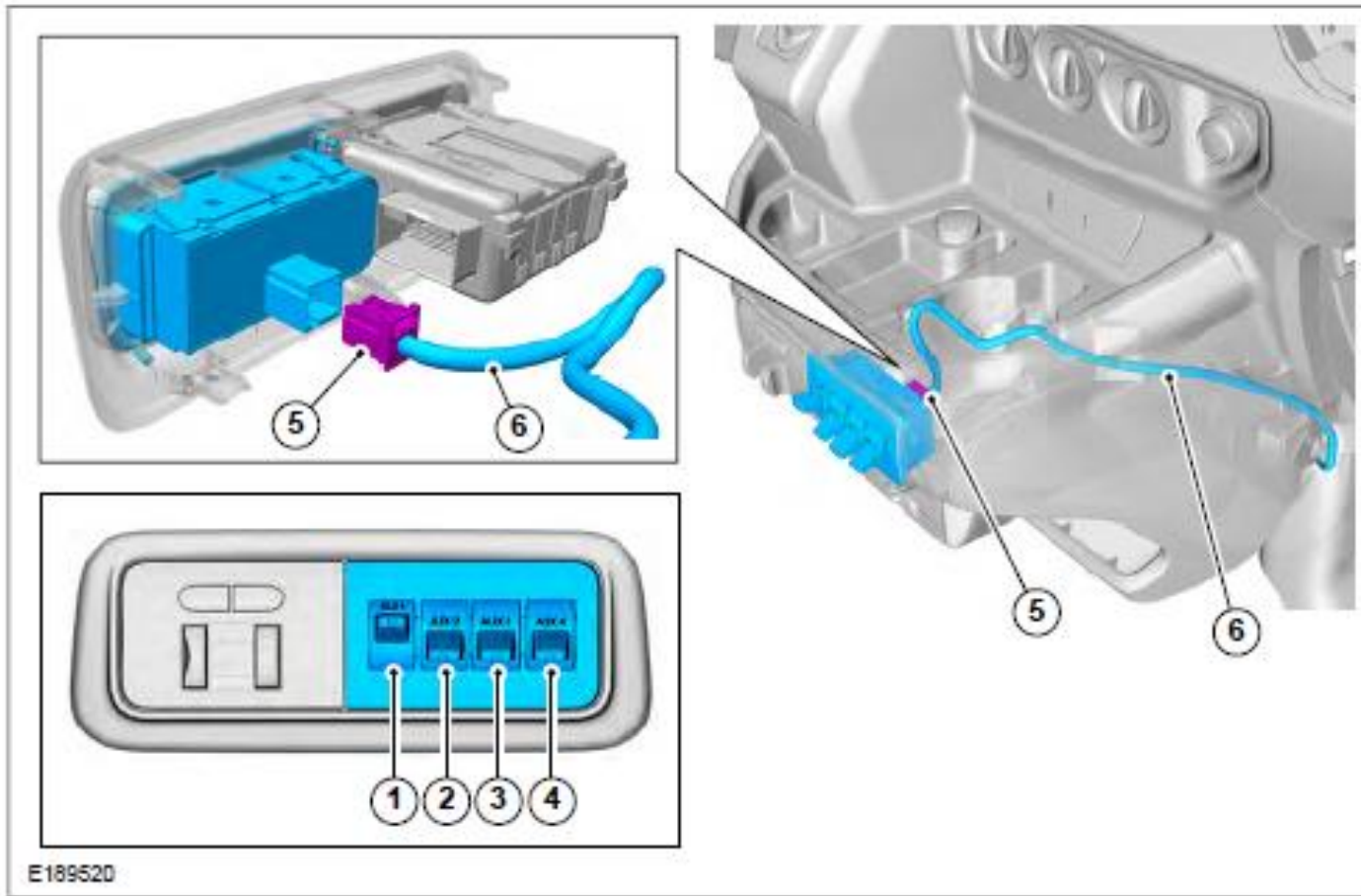
Procedure: The modifier will need to determine if the vehicle has the Auxiliary Fuse Panel with High Spec Interface Connector and/or the High Capacity Upfitter Switches before proceeding. If these options are not present, this bulletin does not apply to that specific vehicle. You may determine if your vehicle is equipped with either of these options by examining the optional equipment listed on the invoice, or by inspecting the vehicle as described below.

High Capacity Upfitter Switches (order code 67C): Ford-installed 4-switch bank (Figure 1). Please note, that if you have the Ford-installed High Capacity Upfitter Switches, you will also have the Auxiliary Fuse Panel with High Spec Interface Connector.

Auxiliary Fuse Panel with High Spec Interface Connector (order code 87E): Refer to Figure 2 for feature content. If items 1-6, shown behind the glove box are present, you have this option. Additionally, the following Packaged Options contain the Auxiliary Fuse Panel with High Spec Interface Connector:

<u>Option Package Name</u>	<u>Package Order Code</u>
Motor Home Prep package	47M
Shuttle Bus Prep Package	47S
School Bus Prep Package	47C
Multi-Functional School Activity Bus Prep Package	47Q
Ambulance Prep Package – Van	47B

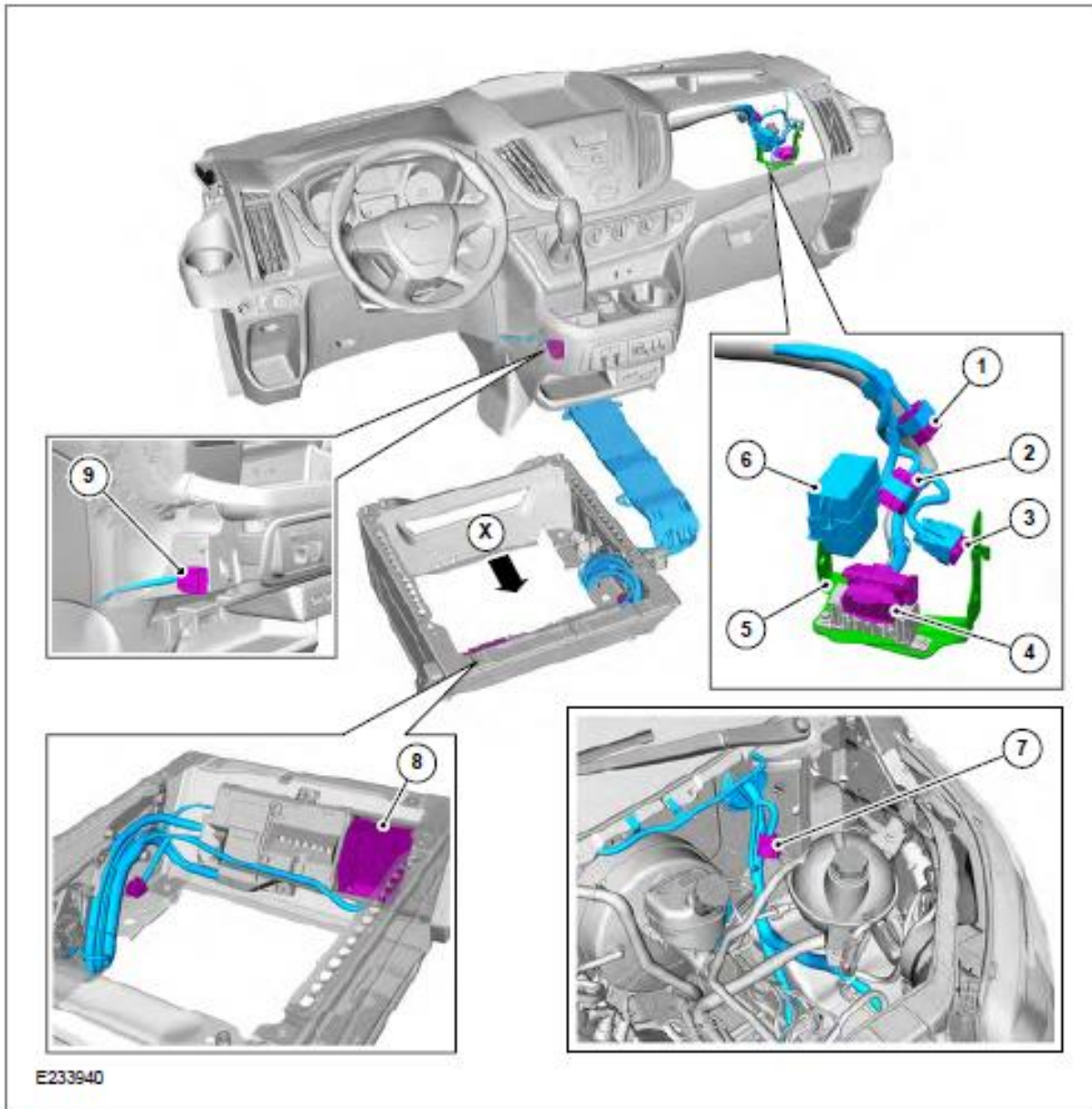
Figure 1. High Capacity Upfitter Switches



Item	Description	Current (A)	Comments
1	1 Aux 1	20	Ignition supplied
2	Aux 2	20	Ignition supplied
3	Aux 3	40	Ignition supplied
4	Aux 4	40	Engine Run
-	Unswitched	20	Ignition Supplied
-	Unswitched	20	Ignition Supplied
5	Auxiliary Switch Pack Connector		
6	14401 Harness		

Note: Unswitched outputs are available even without Ford-installed/3rd party switches.

Figure 2. Auxiliary Fuse Panel with High Spec Interface.

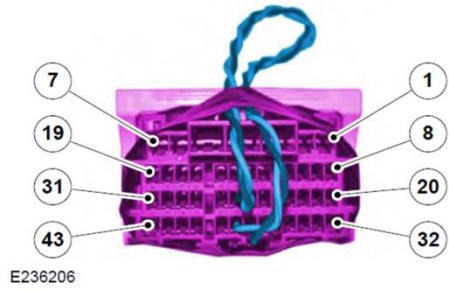


Item	Description
1	C33-D Connector
2	C33-C Connector
3	C33-H Connector
4	High Specification Vehicle Interface Connector
5	Auxiliary Fuse Box Bracket
6	Auxiliary Fuse Box
7	C12-A Connector
8	Upgraded Auxiliary Fuse Panel
9	C11-H Connector - located in the engine bay

High Specification Vehicle Interface Connector (Item 4 in Figure 2)

Yazaki Part Number: 7282-4192-40

The vehicle comes with the mating 43-way connector on the harness. Terminals, wire, and additional connectors can be ordered through aftermarket suppliers. Please refer to the chart below to understand how to connect to the desired circuits.

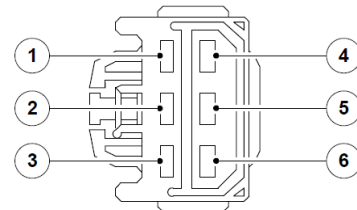


Cavity	Wire	Wire color	Wire length	Circuit	Terminal Yazaki #	Terminal Size	Signal	Comments	Fuse	Fuse Rating	Nominal Rating
1	2.5	YE	2780	CAC05	7114-4112-02	2.8	Upfitter switch 1 Output (20Amax, Ignition Supplied)	For EMC reasons, use Grounds in this connector	8	20A	16A
2	2.5	GN/BN	2780	CAC06	7114-4112-02	2.8	Upfitter switch 2 Output (20Amax, Ignition Supplied)	For EMC reasons, use Grounds in this connector	7	20A	16A
3	2.5	VT/GN	2780	CAC07	7114-4121-02	6.3	Unswitched upfitter Output (20Amax, Ignition Supplied)	For EMC reasons, use Grounds in this connector	6	20A	16A
4	-	-	-	-	-	-	-	-	-	-	-
5	2.5	BK/YE	2780	GD178A	7114-4121-02	6.3	KL31-20A max.	Ground	-	-	-
6	2.5	BK/YE	2780	GD178B	7114-4112-02	2.8	KL31-20A max.	Ground	-	-	-
7	2.5	BK/YE	2780	GD178D	7114-4112-02	2.8	KL30	Battery Supply	-	-	-
8	0.5	BU/GN	2780	CLS21F	7114-6315-02	1.5	Turn Signal Left	Low Power: Only to be used to drive relay coil	-	-	-
9	0.5	BU/GN	2780	CLS25F	7114-6315-02	1.5	Turn Signal Right	Low Power: Only to be used to drive relay coil	-	-	-
10	0.5	BN	2780	CLN17K	7114-6315-02	1.5	IP+Switch Illumination	PWM Signal from BCM	-	-	-
11	0.75	YE/GY	2780	CLS17C	7114-6316-02	1.5	Stop Lamp Signal (CHMSL)	PWM Signal from BCM	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-
16	0.35	GN	2780	CPL36C	7114-6315-02	1.5	LHS Sliding Door Ajar	Door Open = Ground (<50 ohms)	10	5A	4A
17	0.35	WH	2780	CPL31C	7114-6315-02	1.5	Passenger Door Ajar	Door Closed = Ground (<50 ohms)	11	10A	8A
18	0.35	GN/VT	2780	CPL26C	7114-6315-02	1.5	Drivers Doo Ajar	Door Closed = Ground (<50 ohms)	12	5A	4A
19	0.35	BN/VT	2780	CPL81D	7114-6315-02	1.5	Cargo Door Ajar	Door Open (<50 ohms)	-	-	-
20	0.75	GY/BN	2780	CLF02B	7114-6316-02	1.5	High Beam Signal	Output from BCM	-	-	-
21	0.75	BN/BU	2780	CLF04B	7114-6316-02	1.5	Low Beam Signal	Output from BCM	-	-	-
22	0.5	GN/OG	2780	CLS06C	7114-6315-02	1.5	Parking/Marker Lights	PWM Signal from BCM	-	-	-
23	0.5	VT/GN	2780	CRH04C	7114-6315-02	1.5	Horn Signal	Relay Coil Switched Ground (by BCM)	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-
25	0.5	GY/OG	220	VDB06 (TP1)	7114-6315-02	1.5	MS-CAN High OUT	Bridged via circuit on mating connector to ensure CAN functionality. If mating connector removed, CAN disruption	-	-	-
26	0.5	GY/OG	220	VDB06 (TP1)	7114-6315-02	1.5	MS-CAN High IN		-	-	-
27	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-
29	0.35	BN/YE	2780	CE607C-B	7114-6315-02	1.5	Engine Run	Engine Running = Ground (<50 ohms)	-	-	-
30	0.5	WH/VT	2780	CMC25C	7114-6315-02	1.5	Park Brake Signal	Park Brake Engaged = Ground (<50 ohms)	-	-	-
31	0.75	YE	2780	CPL39B	7114-6316-02	-	RHS Sliding Door Ajar	Door Open = Ground (<50 ohms)	-	-	-
32	2.5	BN	2780	CAC08	7114-4112-02	2.8	Unswitched Upfitter Output (20A max, Ignition Supplied)	For EMC reasons, use Grounds in this connector	-	-	-
33	0.75	GN/BN	2780	CLS10E	7114-6316-02	1.5	Reverse Signal	PWM Signal from BCM	-	-	-
34	0.5	VT/OG	2780	VMC05D	7114-6315-02	1.5	Vehicle Speed	to be used as input to ECU's only	-	-	-
35	-	-	-	-	-	-	-	Output from BCM	-	-	-
36	-	-	-	-	-	-	-	-	-	-	-
37	0.5	VT/OG	220	VDB07 (TP1)	7114-6315-02	1.5	MS CAN Low OUT	Bridged via circuit on mating connector to ensure CAN functionality. If mating connector removed, CAN disruption	-	-	-
38	0.5	VT/OG	220	VDB07 (TP1)	7114-6315-02	1.5	MS CAN Low IN		-	-	-
39	-	-	-	-	-	-	-	-	-	-	-
40	-	-	-	-	-	-	-	-	-	-	-
41	0.35	GY/YE	2780	CPL42D	7114-6315-02	1.5	Lock Request	+12V 500ms. Ground (<50 ohms) all other times.	-	-	-
42	0.35	VT/GY	2780	CPL43D	7114-6315-02	1.5	Unlock Request	+12V 500ms. Ground (<50 ohms) all other times.	-	-	-
43	2.5	BK/YE	2780	GD178E	7114-4112-02	2.8	Ground KL31 (20A max)	-	-	-	-

C33-H High Capacity Auxiliary Switch Output Connector (Item 3 in Figure 2)

Yazaki Part Number: 7283-3740-40

Terminals, wire, and connectors can be ordered through aftermarket suppliers. Please refer to the chart below to understand how to connect to the desired circuits.



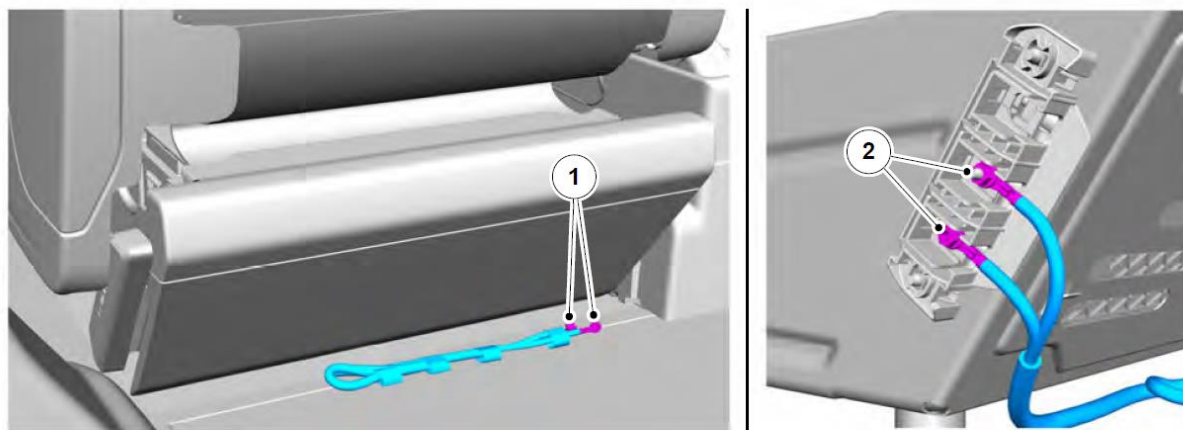
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Cavity	Wire	Wire color	Wire length	Circuit	Terminal Yazaki #	Terminal Size	Signal	Comments	Fuse	Fuse Rating	Nominal Rating
1	4	BK/YE	780	GD178G	7116-4122-02	6.3	Ground KL31 (40A max)	-	-	-	-
2							Not to be used	For EMC	-	-	-
3	4	BU/OG	780	CAC13	7116-4122-02	6.3	Upfitter switch 3 Output (40A max, Ignition Supplied)	For EMC reasons, use Ground Pin 1 in this connector	13	40A	32A
4	4	BK/YE	780	GD178H	7116-4122-02	6.3	Ground KL31 (40A max)	-	-	-	-
5							Not to be used	For EMC	-	-	-
6	4	YE/OG	780	CAC14	7116-4122-02	6.3	Upfitter switch 4 Output (40A max, Ignition Supplied)	For EMC reasons, use Ground Pin 4 in this connector	14	40A	32A

Additional Notes:

As described in the BEMM, the two 40A supplies are not connected at the assembly line. The power supply is stowed under the carpet behind the driver’s seat pedestal which the upfitter is required to connect to the Customer Connection Points, see figure 3.

Figure 3. Customer Connection Points to Power 40A Switches.



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