



Bodybuilder's Bulletin

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Connections to the Bodybuilder Interface Module (KSM)

MAN recommend that a Customer Specific Module (KSM or Bodybuilder Interface Module) should be specified on the vehicle from new to allow bodybuilder's equipment to communicate with the vehicle's CAN-bus system.

The module has a number of outputs and inputs that can be used by the bodybuilder to read status signals from the vehicle or control the vehicle from the body equipment.

Typical functions are tabulated below:

Function Description	Input or Output
Engine Speed Control	Input
Engine Cooling Temperature Warning	Output
Engine Oil Pressure Warning	Output
Park Brake Signal	Output
Reverse Gear Selected	Output
Brake Signal	Output
Clutch Signal	Output
Gearbox Neutral	Output
Low Fuel Warning	Output
Speed Signal	Output

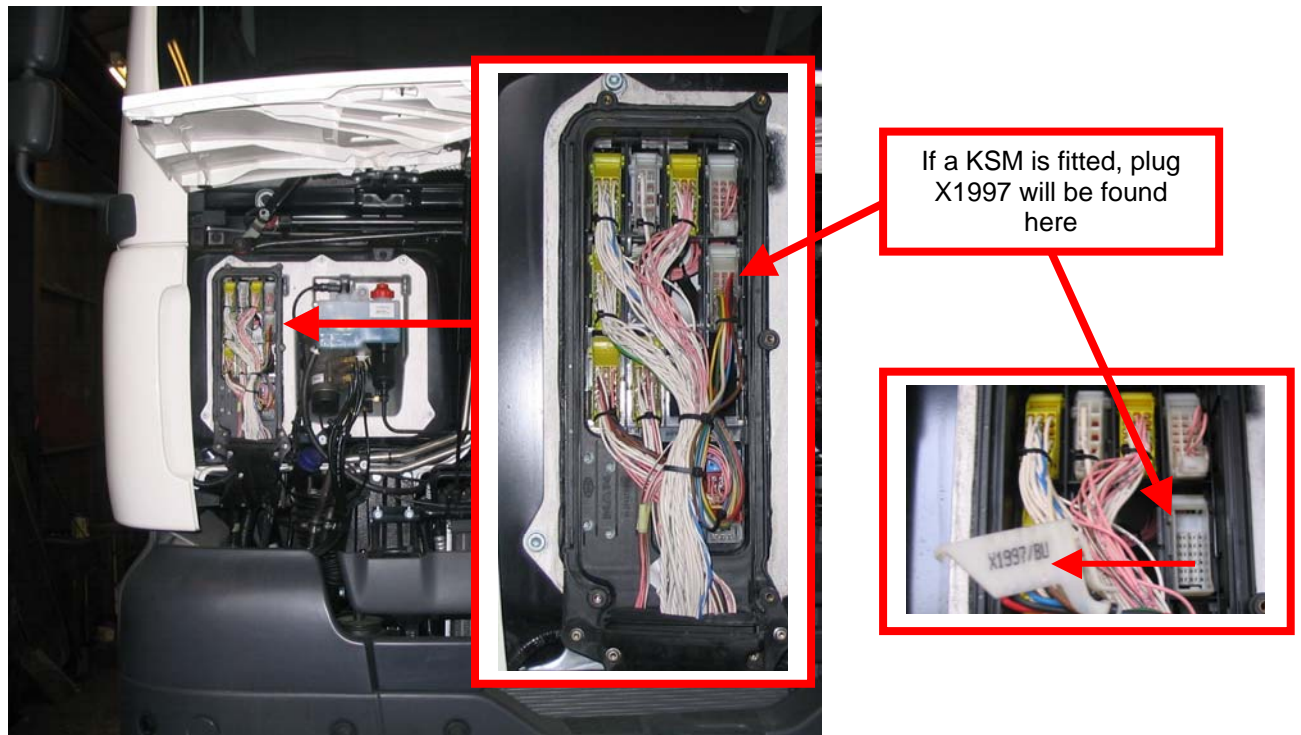
The KSM also has a CAN connection called the 'A-CAN' where CAN conversant body equipment can be connected to the system.

The connection to the KSM is made through plug X1997 that is found under the left hand (when viewed from the front) cover under the front grille (this is also an easy identifier to double check whether a KSM has been fitted, i.e., no X1997 – no KSM!)

The plug is clearly labelled with its number printed on its side, and its pin numbers can be read in the socket half. Contacts for the socket can be bought from MAN parts departments:

Contacts	MAN Part No
Blade Terminal 2.8x1/0.1-1	07.91202.0848
Blade Terminal 2.8x2.5/1.5-2.5	07.91202.0849
Snap-in Contact 2.8x1/0.5-1	07.91201.0222
Snap-in Contact 2.8x2.5/1.5-2.5	07.91201.0224

Connection Location Under Front Grille



X1997 is an 18-pin connector. The pin numbers and connections are as follows (version STEP 1 shown – for earlier versions contact Product Engineering):

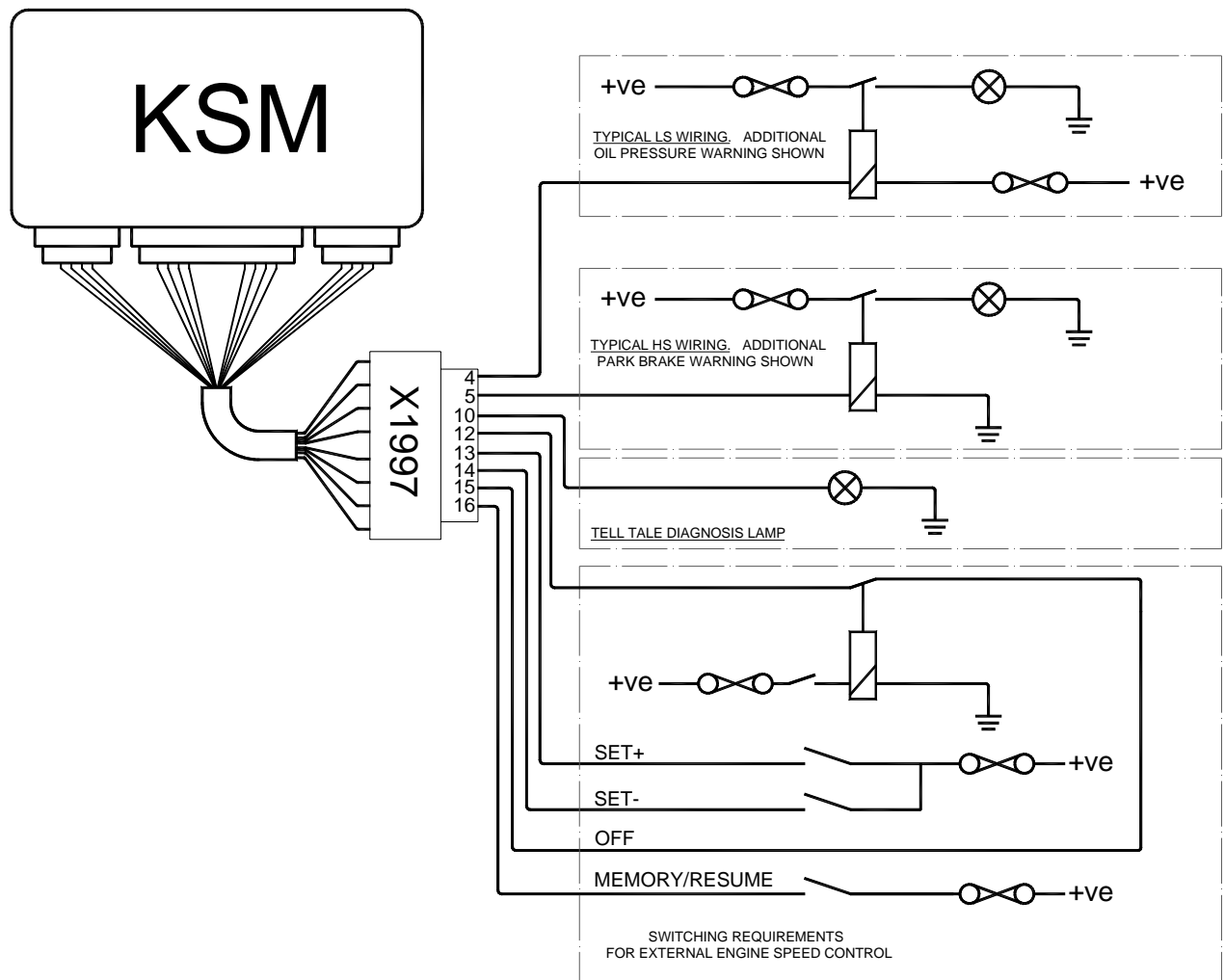
Connector X1997 – Pin Numbers			
	Step 1	Output/Input	Condition
1	Speed/Torque Limiter 1/3	*	*
2	Speed/Torque Limiter 2/3	*	*
3	Cooling Water	Output	LS
4	Oil Pressure	Output	LS
5	Parking Brake Signal	Output	HS
6	Brake Signal	Output	HS
7	Reverse Gear Signal	Output	HS
8	Clutch Signal	Output	HS
9	Gearbox Neutral Signal	Output	LS
10	Tell Tale Diagnosis Lamp	Output	HS
11	Tank Warning	Output	HS
12	KSM Power Ready (2A Max)	Output	HS
13	SET + (increase speed)	Input	-
14	SET – (reduce speed)	Input	-
15	OFF (cancel speed)	Input	-
16	MEMORY (resume speed)	Input	-
17	A CAN High	Output/Input	-
18	A CAN Low	Output/Input	-
Connector X1996 – Pin Numbers			
14	Engine Speed Signal	Output	HS

KEY: HS High Switched
 LS Low Switched
 * Dealer Programmable

Depending upon whether the individual signal is HS or LS determines how the connection is made from the X1997 plug. In any case the signal **must** be used to trigger a relay which in turn powers the desired consumer, with the exception of the tell tale diagnosis lamp and KSM power ready connections. The tell tale diagnosis lamp can be wired directly to its pin, providing that the current draw is no more than 600mA and the resistance of the load is <400 ohms. The tell tale diagnosis lamp provides a KSM self check indication on start up, i.e., it illuminates for 3 seconds, and then will only illuminate if a fault is detected.

The KSM power ready can be used to provide power to bodybuilder's own ECUs or to power relays, provided that the current draw does not exceed 2 A.

Typical wiring examples are shown thus:



There is a permanent link wire between pins 12 and 15. This link has to be temporarily opened to turn the external speed control off as shown above.

For further information, please see:

http://manted.mn.man.de/manted/aufbaurichtlinien/gb_zdr_ksm_step1.html

Should you have any queries on the above, please contact Product Engineering on 01793 448170 or email bodybuilder@man.co.uk.

Please circulate and then retain in the Bodybuilder's Manual