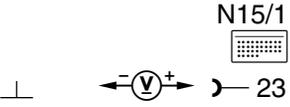
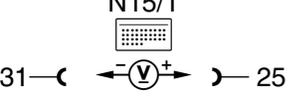
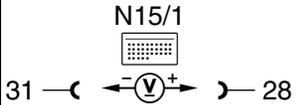


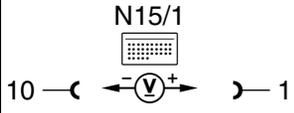
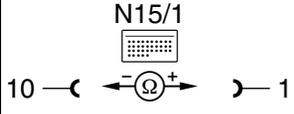
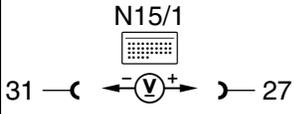
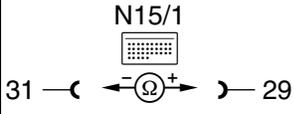
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0		Transmission control module (TCM) (N15/1) Voltage supply Circuit 87 SA	 <p>N15/1 31 —(←(V)→)— 23</p>	Ignition: ON	11 – 14 V	⇒ 1.1, Ground (electronics output ground - right footwell) (W15), Wiring.
⇒ 1.1		Voltage supply from base module (N16/1)	 <p>N15/1 ⊥ ←(V)→)— 23</p>	Ignition: ON	11 – 14 V	Wiring, Fuse (F3) at base module (N16/1), ⇒ 1 23
⇒ 2.0		Diagnosis output	 <p>N15/1 31—(←(V)→)— 25</p>	Ignition: ON	10 – 14 V	Wiring, TCM (N15/1).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 3.0		TR “D” contact switch (S16/9) Activation		Ignition: ON Selector lever in: P-R-N-D 4-3-2	 11 – 14 V < 1 V	⇒ 3.1
⇒ 3.1		Switch operation		Ignition: OFF Disconnect TCM (N15/1). Selector lever in: P-R-N-D 4-3-2	 < 1 Ω > 20 Ω	Wiring, S16/9

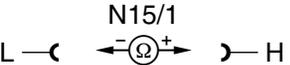
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	007 009 010	Valve block control valve (Y3/1y2) Activation for 4GR		Engine: at Idle Engine speed > 1000 rpm	> 5 V	⇒ 4.1, TCM (N15/1).
4.1		Coil resistance		Ignition: OFF Disconnect N15/1	4 – 8 Ω (temperature dependent, see Figure 2)	Wiring, Valve block control valve (Y3y12).
5.0		Kickdown switch (S16/7) Activation kickdown solenoid valve (Y3/1y1)		Engine: at Idle Depress kickdown switch (S16/7) by hand (behind accelerator pedal).	< 1 V 11 – 14 V	Wiring, ⇒ 4.0, S16/7, TCM (N15/1). Base module (N16/1):
6.0		Transmission Mode switch (S16/5)		Engine: at Idle S16/5 in position:	W 11 – 14 V S < 1 V	Wiring, S16/5, TCM (N15/1).

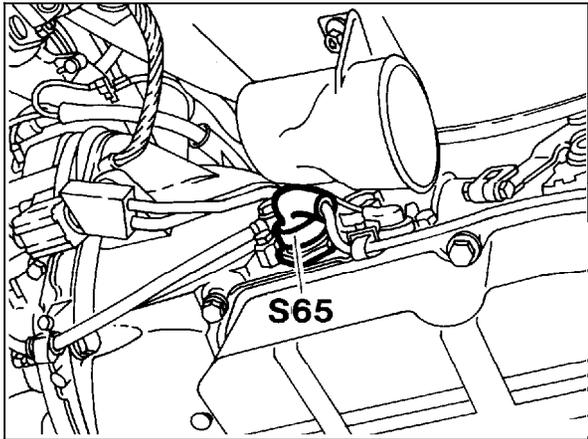
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		Valve block kickdown solenoid valve (Y3/1y1) Coil resistance	N15/1  31 —(—(←(Ω)→ —(—(—) 27	Ignition: OFF Disconnect TCM (N15/1).	10 – 30 Ω	Wiring, Y3/1y1.
8.0		Non-USA vehicles only.				
9.0		Overload protection Wiring to DI control module (N1/3)	N15/1  31 —(—(←(V)→ —(—(—) 34	Vehicles with 2GR Start: Engine: at Idle Selector lever in: D Vehicles with 1GR Start: Engine: at Idle Drive vehicle on dynamometer above 13 mph	4.7 – 5.3 V < 1 V 4.7 – 5.3 V < 1 V	Wiring, ⇒ 9.1, If reading of 2 – 3 V is obtained, TCM (N15/1).
9.1			N15/1  31 —(—(←(V)→ —(—(—) 34	Disconnect TCM (N15/1). Engine: at Idle	4.7 – 5.3 V	Wiring, Model 140 with LH-SFI: Read out DTC memory for DI control module (N1/3), (DM, Engines, Vol. 2, section 5.2 or 5.3 11). Model 129, 140 with HFM-SFI: Read out DTC memory for engine control module (N3/4), (DM, Engines, Vol. 2, section 1.1 11).

Electrical Test Program – Test

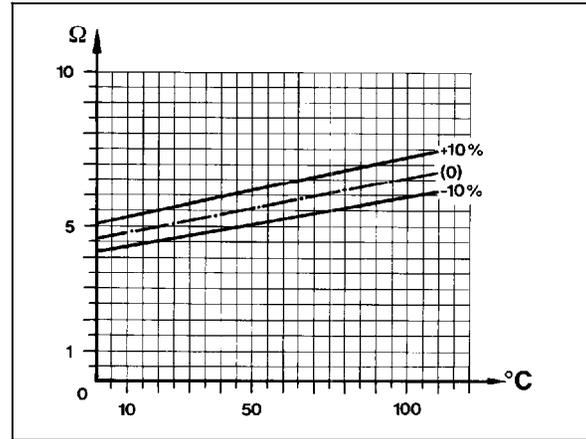
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0	004 005 006	CAN data bus	 <p style="text-align: center;">N15/1</p>	Ignition: OFF Disconnect contact module or TCM (N15/1). Test with ohmmeter directly at the two wide pins in the TCM (N15/1) connector.	55 – 65 Ω	Databus, Check resistance directly at LH-SFI (N3/1), DI/KSS (N1/3), HFM-SFI (N3/4), EA/CC/ISC (N4/1) or CC/ISC (N3/4) control modules. See D.M., Engines and D.M., Body and Accessories.

Electrical Test Program – Test



P27-5095-13

Figure 1
S65 Transmission overload protection switch

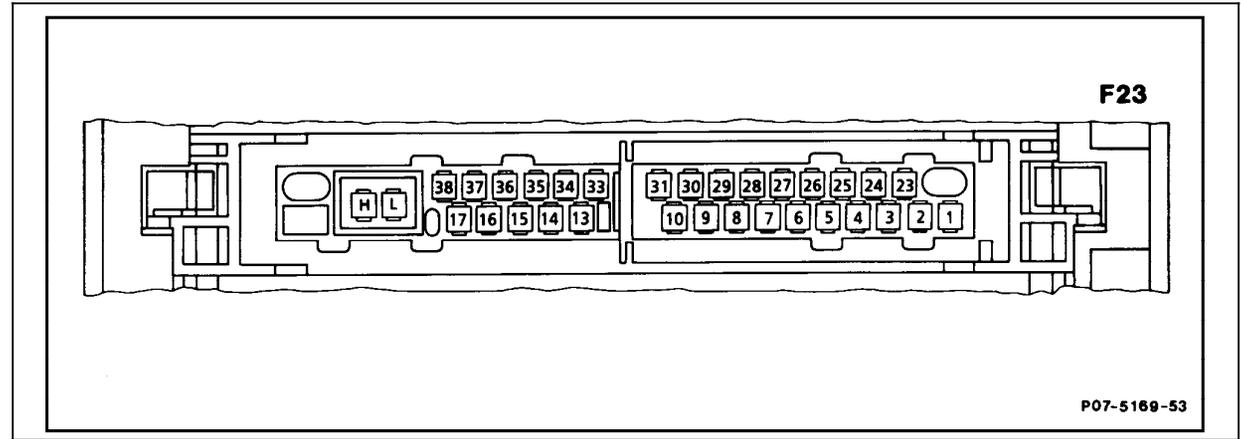


P27-0187-13

Figure 2
Diagram
Resistance of kickdown solenoid valve (Y3/1y2) dependent on temperature

Electrical Test Program – Test

TCM (N15/1) connector layout
 Models 140, 129 control module
 Located in module box (aluminum)



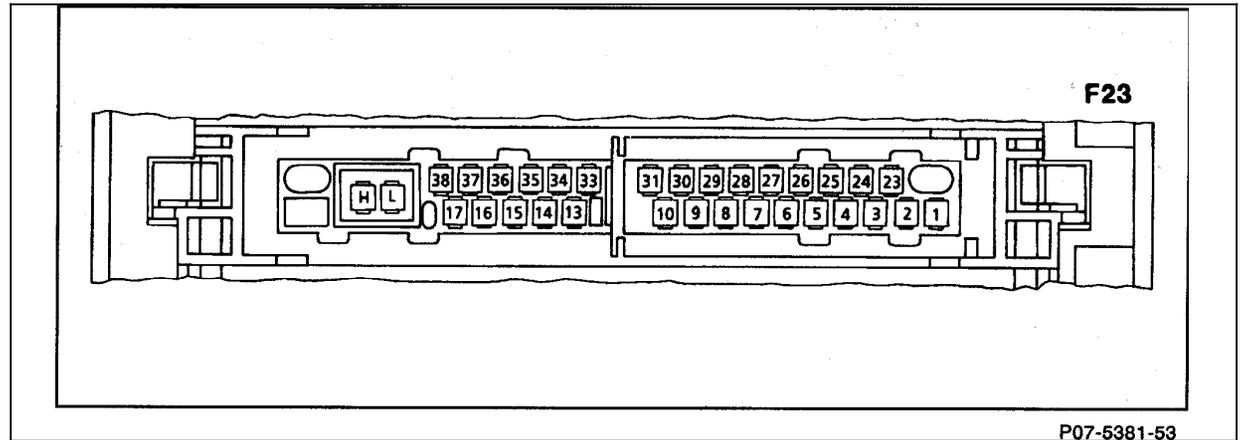
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Figure 3

F23	Module box	30	Not used
1	Valve block control valve (Y3/1y2) (+)	31	Ground (W15)
2-9	Not used	33	Not used
10	Valve block control valve (Y3/1y2) (-)	34	Transmission overload protection switch (S65)
13-17	Not used	35-38	Not used
23	Voltage supply circuit 87SA (from base module N16/1)	L	CAN Data line (-)
24	Not used	H	CAN Data line (+)
25	Diagnosis (output)		
26	Not used		
27	Kickdown switch (S16/6)		
28	TR "D" contact switch (S16/9)		
29	Transmission mode switch (S16/5)		

Electrical Test Program – Test

TCM (N15/1) connector layout
 Models 129, 140 control module
 Located in module box (plastic)



P07-5381-53

Figure 4

1	Valve block control valve (Y3/1y2) (+)
2-9	Not used
10	Valve block control valve (Y3/1y2) (-)
12-17	Not used
23	Voltage supply circuit 87SA
24	Not used
25	Diagnosis (output)
26	Not used
27	Kickdown switch (S16/6)
28	TR "D" contact switch (S16/9)
29	Transmission mode switch (S16/5)
30	Ground (W15, W15/1)
33	Not used
34	Transmission overload protection switch (S65)
35-38	Not used
L	CAN Data line (-)
H	CAN Data line (+)