

5. Transmission Control Module (TCM) I/O Signal

A: ELECTRICAL SPECIFICATION

TO B54								TO B55							
7 6 5 4 3 2 1								6 5 4 3 2 1							
19 18 17 16 15 14 13 12 11 10 9 8								16 15 14 13 12 11 10 9 8 7							
27 26 25 24 23 22 21 20								27 26 25 24 23 22 21 20 19 18 17							
35 34 33 32 31 30 29 28								35 34 33 32 31 30 29 28							

AT-04576

NOTE:

Measure after warming up.

Item	Connec-tor No.	Termini-al No.	Measuring conditions	Measured value	Resistance between terminal and chassis ground	Remarks
P/L solenoid out-put	B55	6	Engine ON, "P" range, accelerator OFF, brake ON	3.5 — 7.5 V	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
I/C oil pressure switch input	B55	20	While driving at 1st — 3rd of manual mode	6 V or more		
			While driving at 4th or 5th of manual mode	Less than 1.5 V		
Power GND1	B55	12	Always	Approx. 0 V	—	
CAN communica-tion line (+)	B54	21	—	—	—	
CAN communica-tion line (-)	B54	20	—	—	—	
ATF temperature sensor input	B55	17	Ignition switch ON ATF oil temperature 20°C (68°F)	3.5 — 4.3 V	2.5 — 7.0 kΩ	Measure the resistance with the connector disconnected.
			Ignition switch ON ATF oil temperature 80°C (176°F)	1 — 2.2 V	0.3 — 0.8 kΩ	
Backup power supply	B54	24	Ignition switch ON	8 V or more	—	
			Ignition switch OFF			
I/C solenoid out-put	B55	3	While driving at 1st — 3rd of manual mode	5 V or more	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
			While driving at 4th or 5th of manual mode	Less than 1.5 V		
H & LR/C solenoid output	B55	5	While driving at 2nd of manual mode	5 V or more	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
			While driving at 1st, 3rd — 5th of manual mode	Less than 1.5 V		

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AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Item	Connec-tor No.	Termini-al No.	Measuring conditions	Measured value	Resistance between terminal and chassis ground	Remarks
Power GND2	B55	13	Always	Approx. 0 V	—	
Analog GND	B55	18	Always	Approx. 0 V	—	
Fr/B solenoid out-put	B55	4	While driving at other than 4th of manual mode	5 V or more	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
			While driving at 4th of manual mode	Less than 1.5 V		
L/U solenoid out-put	B55	7	When lock-up	3 V or more	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
			When not lock-up	Less than 1 V		
D/C solenoid out-put	B55	1	While driving at 1st or 5th of manual mode	5 V or more	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive fre-quency: 300 Hz
			While driving at 2nd-4th of manual mode	Less than 1.5 V		
D/C oil pressure switch input	B55	22	While driving at 1st or 5th of manual mode	6 V or more		
			While driving at 2nd-4th of manual mode	Less than 1.5 V		
Data link signal (Subaru Select Monitor communication line)	B54	8	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Sensor GND (analog)	B55	16	Always	Approx. 0 V	—	
H&LR/C oil pres-ure switch input	B55	14	While driving at 2nd of manual mode	6 V or more	—	
			While driving at 3rd-5th of manual mode	Less than 1.5 V		
Fwd/B solenoid output	B55	19	While driving at 1st or 2nd of manual mode	5 V or more		Drive fre-quency: 300 Hz
			While driving at 3rd-5th of manual mode	Less than 1.5 V		
Fwd/B oil pres-ure switch input	B55	21	While driving at 1st or 2nd of manual mode	Less than 1.5 V		
			While driving at 3rd-5th of manual mode	6 V or more		
Front vehicle speed sensor input	B55	24	While driving at 2nd and 20 km/h (12 MPH) of manual mode	Approx. 500 — 700 rpm	—	Use the Subaru Select Monitor.
			While driving at 4th and 80 km/h (50 MPH) of manual mode	Approx. 2,000 — 2,500 rpm		Use the Subaru Select Monitor.
Inhibitor switch 1 input	B55	8	Ignition switch ON, "P" range	Less than 0.5 V	—	
			Ignition switch ON, "N" range	5 V or more		
Inhibitor switch 2 input	B55	9	Ignition switch ON, "P" range	5 V or more	—	
			Ignition switch ON, "D" range	Less than 0.5 V		
Ignition power supply	B55	27	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Rear vehicle speed sensor input	B55	23	While driving at 2nd and 20 km/h (12 MPH) of manual mode	Approx. 500 — 700 rpm	—	Use the Subaru Select Monitor.
			While driving at 4th and 80 km/h (50 MPH) of manual mode	Approx. 2,000 — 2,500 rpm		Use the Subaru Select Monitor.

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Item	Connec- tor No.	Termini- tal No.	Measuring conditions	Measured value	Resistance between termi- nal and chassis ground	Remarks
Fr/B oil pressure switch input	B55	15	While driving at other than 4th of manual mode	Less than 1.5 V	—	
			While driving at 4th of manual mode	6 V or more		
Turbine speed sensor 1 input	B55	26	2nd of manual mode, turbine speed sensor is 2,000 rpm (Read from Subaru Select Monitor)	Approx. 0 rpm	—	Use the Subaru Select Monitor.
			4th of manual mode, turbine speed sensor is 2,000 rpm (Read from Subaru Select Monitor)	Approx. 1,900 — 2,100 rpm		Use the Subaru Select Monitor.
Inhibitor switch 3 input	B55	10	Ignition switch ON, "R" range	5 V or more	—	
			Ignition switch ON, "D" range	Less than 0.5 V		
Control GND1	B54	23	Ignition switch ON	Approx. 0 V	—	
			Ignition switch OFF			
Control GND2	B54	22	Ignition switch ON	Approx. 0 V	—	
			Ignition switch OFF			
Inhibitor switch 4 input	B55	11	Ignition switch ON, "P" range	Less than 0.5 V	—	
			Ignition switch ON, "D" range	5 V or more		
Back-up light relay output	B54	13	Ignition switch ON, "R" range	Less than 1 V	90 — 110Ω (ATF temperature 25°C (77°F))	
			Ignition switch ON, other than "R" range	8 V or more		
AWD solenoid output	B55	2	Engine ON, "P" range or "N" range, accelerator OFF	Less than 1 V	3 — 9 Ω (ATF temperature 20°C (68°F))	Drive frequency: 300 Hz
			Engine ON, "D" range, accelerator OFF, brake ON	2 V or more		
Turbine speed sensor 2 input	B55	25	2nd gear of manual mode, turbine speed sensor is 2,000 rpm (Read from Subaru Select Monitor)	Approx. 1,200 — 1,500 rpm	—	Use the Subaru Select Monitor.
			4th of manual mode, turbine speed sensor is 2,000 rpm (Read from Subaru Select Monitor)	Approx. 1,900 — 2,100 rpm		Use the Subaru Select Monitor.
PN signal output	B54	11	Ignition switch ON, Other than "P" range or "N" range	8 V or more	—	
			Ignition switch ON, "P" range or "N" range	Less than 1 V		
Ignition power supply 1	B54	26	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Ignition power supply 2	B54	19	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Ignition power supply 3	B54	18	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Ignition power supply 4	B54	25	Ignition switch ON	8 V or more	—	
			Ignition switch OFF	Less than 1 V		
Paddle shift DOWN switch	B54	4	Ignition switch ON, Paddle shift DOWN switch ON	Less than 1 V	—	
			Ignition switch ON, Paddle shift DOWN switch OFF	8 V or more		

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Item	Connec- tor No.	Termini- tal No.	Measuring conditions	Measured value	Resistance between termi- nal and chassis ground	Remarks
Paddle shift UP switch	B54	5	Ignition switch ON, Paddle shift UP switch ON	Less than 1 V	—	
			Ignition switch ON, Paddle shift UP switch OFF	8 V or more	—	
Manual mode switch	B54	6	Ignition switch ON, Manual mode switch ON	Less than 1 V	—	
			Ignition switch ON, Manual mode switch OFF	8 V or more	—	