

# Transmission Control Module (TCM) I/O Signal

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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

### A: ELECTRICAL SPECIFICATION

TO **B54**

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

TO **B55**

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

AT-04404

# Transmission Control Module (TCM) I/O Signal

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Check with ignition switch ON						
Contents		Measured terminal (Connector & Terminal No.)		Measuring condition	Voltage (V)	Resistance (Ω)
		Positive terminal	Ground terminal			
Backup power supply		(B54) No. 25	Chassis ground	Ignition switch OFF	10 — 13	—
		(B54) No. 26				
		(B54) No. 27				
ACC power supply		(B54) No. 12	Chassis ground	Ignition switch ACC	10 — 13	—
Ignition power supply		(B54) No. 1	Chassis ground	Ignition switch ON (engine OFF)	10 — 13	—
		(B54) No. 2				
Inhibitor switch	“P” range switch	(B55) No. 14	Chassis ground	Select lever in “P” range	Less than 1	—
				Select lever in any other than “P” range	8 or more	
	“R” range switch	(B55) No. 13	Chassis ground	Select lever in “R” range	Less than 1	—
				Select lever in any other than “R” range	8 or more	
	“N” range switch	(B55) No. 11	Chassis ground	Select lever in “N” range	Less than 1	—
				Select lever in any other than “N” range	8 or more	
	“D” range switch	(B55) No. 10	Chassis ground	Select lever in “D” range	Less than 1	—
				Select lever in any other than “D” range	8 or more	
	“3” range switch	(B55) No. 8	Chassis ground	Select lever in “3” range	Less than 1	—
				Select lever in any other than “3” range	8 or more	
	“2” range switch	(B55) No. 7	Chassis ground	Select lever in “2” range	Less than 1	—
				Select lever in any other than “2” range	8 or more	
	“1” range switch	(B55) No. 19	Chassis ground	Select lever in “1” range	Less than 1	—
				Select lever in any other than “1” range	8 or more	
Brake switch		(B55) No. 20	Chassis ground	When brake pedal is depressed.	10.5 or more	—
				When brake pedal is released.	Less than 1	
ATF temperature sensor		(B55) No. 23	(B55) No. 12	ATF temperature 20°C (68°F)	3.5 — 4.3	2.5 k — 7 k
				ATF temperature 80°C (176°F)	1.0 — 2.2	300 — 800
ATF temperature sensor ground		(B55) No. 12	Chassis ground	—	0	Less than 1

# Transmission Control Module (TCM) I/O Signal

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Check with ignition switch ON					
Contents	Measured terminal (Connector & Terminal No.)		Measuring condition	Voltage (V)	Resistance (Ω)
	Positive terminal	Ground terminal			
Rear vehicle speed sensor	(B55) No. 26	(B55) No. 15	Vehicle stopped	0	—
			Vehicle speed at least 20 km/h (12 MPH)	2 or more (AC range)	
Rear vehicle speed sensor ground	(B55) No. 15	Chassis ground	—	0	Less than 1
Front vehicle speed sensor	(B55) No. 27	(B55) No. 16	Vehicle stopped	0	450 — 650
			Vehicle speed at least 20 km/h (12 MPH)	1 or more (AC range)	
Front vehicle speed sensor ground	(B55) No. 16	Chassis ground	—	—	—
Torque converter turbine speed sensor	(B55) No. 1	(B55) No. 2	Engine idling after warm-up ("D" range)	0	450 — 650
			Engine idling after warm-up ("N" range)	1 or more (AC range)	
Torque converter turbine speed sensor ground	(B55) No. 2	Chassis ground	—	—	—
Vehicle speed output signal	(B55) No. 21	Chassis ground	Vehicle speed at least 10 km/h (6 MPH)	Less than 1 ← → 4 or more	—
Engine speed signal	(B54) No. 11	Chassis ground	Ignition switch ON (engine OFF)	Less than 1	—
			Ignition switch ON (engine ON)	5 or more (AC range)	
Line pressure linear solenoid	(B55) No. 4	(B55) No. 3	Ignition switch ON (engine OFF) "R" range throttle fully closed after engine warm-up.	3.7 — 7.7	4.0 — 6.0
			Ignition switch ON (engine OFF) "R" range throttle fully open after engine warm-up.	1.1 — 5.1	
Line pressure linear solenoid ground	(B55) No. 3	Chassis ground	—	Less than 1	Less than 1
Lock-up solenoid	(B55) No. 6	Chassis ground	When lock up occurs.	10.5 or more	2.0 — 4.5
			When lock up is released.	Less than 1	
Transfer duty solenoid (Model with MP-T)	(B55) No. 5	Chassis ground	With fuse installed to FWD switch	Less than 1	2.0 — 4.5
			With fuse removed from FWD switch (1st gear)	2.0 — 3.0	
Transfer duty solenoid (Model with VTD)	(B55) No. 5	Chassis ground	"P" or "N" range	Less than 1	2.0 — 4.5
			Throttle fully opened	5.0 or more	
2-4 brake duty solenoid	(B54) No. 4	Chassis ground	"P" or "N" range	5.0 or more	2.0 — 4.5
			2nd or 4th gear	Less than 1	
High clutch duty solenoid	(B54) No. 6	Chassis ground	3rd or 4th gear	Less than 1	2.0 — 4.5
			"P" or "N" range	5.0 or more	

# Transmission Control Module (TCM) I/O Signal

## AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Check with ignition switch ON					
Contents	Measured terminal (Connector & Terminal No.)		Measuring condition	Voltage (V)	Resistance ( $\Omega$ )
	Positive terminal	Ground terminal			
Low clutch duty solenoid	(B54) No. 7	Chassis ground	1st or 2nd gear “P” or “N” range	Less than 1 5.0 or more	2.0 — 4.5
Low & reverse duty solenoid	(B54) No. 5	Chassis ground	Except “1” range “1” range	5.0 or more 2.5 — 5.0	2.0 — 4.5
FWD switch (Model with MP-T)	(B54) No. 10	Chassis ground	Fuse removed Fuse installed	10.5 or more Less than 1	—
AWD indicator light	(B54) No. 13	Chassis ground	Ignition switch ON (engine OFF) Ignition switch ON (engine ON)	Less than 1 9 or more	—
ATF temperature warning	(B54) No. 15	Chassis ground	When light is ON When light is OFF	Less than 1 9 or more	—
ABS, E/G ECM communication signal (+)	(B55) No. 18	Chassis ground	Ignition switch ON	Pulse signal	—
ABS, E/G ECM communication signal (–)	(B55) No. 17	Chassis ground		Pulse signal	
Combination meter	(B55) No. 22	Chassis ground	Ignition switch ON	Pulse signal	—
System ground	(B54) No. 20	Chassis ground	—	0	Less than 1
	(B54) No. 21	Chassis ground			
	(B54) No. 22	Chassis ground			
	(B54) No. 23	Chassis ground			
Range lock signal	(B54) No. 3	Chassis ground	“D” range vehicle speed 0 km/h (0 MPH)	10.5 or more	7 — 18
			“D” range vehicle speed 20 km/h (12 MPH)	Less than 1	
Data link signal (Subaru Select Monitor)	(B54) No. 8	Chassis ground	—	—	—