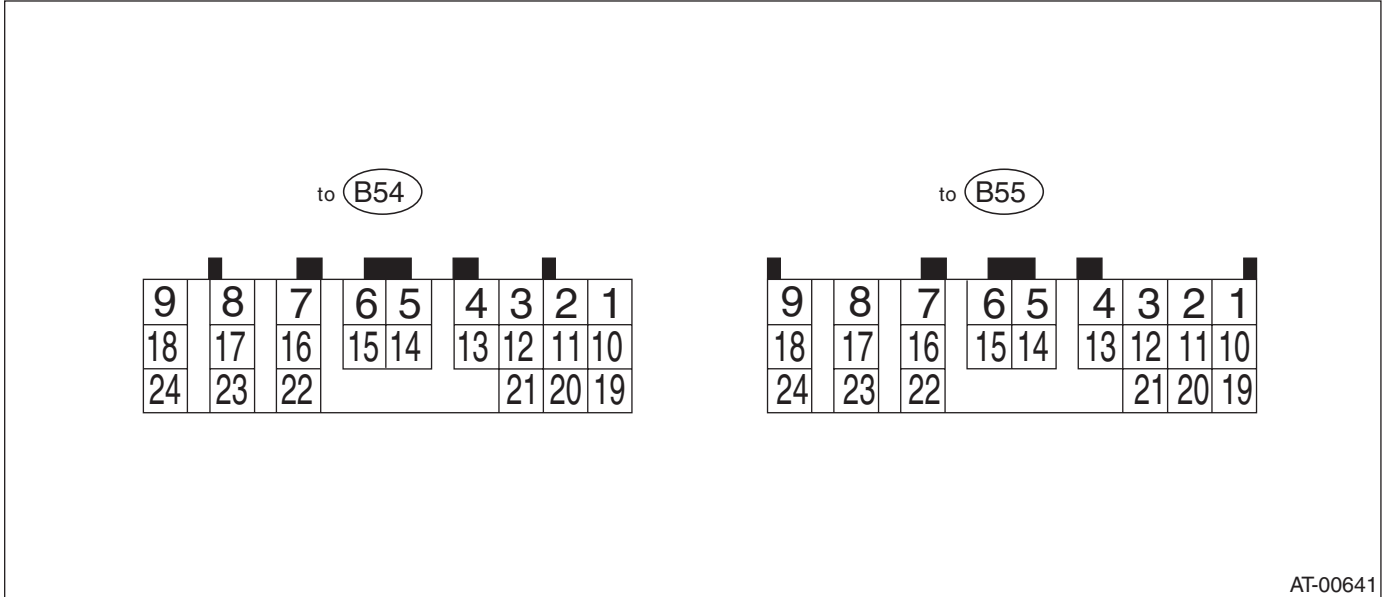


TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

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

A: ELECTRICAL SPECIFICATION



AT-00641

Check with ignition switch ON.						
Content	Connector No.	Terminal No.	Measuring conditions	Voltage (V)	Resistance to body (ohms)	
Back-up power supply	B55	6	Ignition switch OFF	10 — 13	—	
Ignition power supply	B54	23	Ignition switch ON (with engine OFF)	10 — 13	—	
	B54	24				
Inhibitor switch	"P" range switch	B55	23	Select lever in "P" range	Less than 1	—
				Select lever in any other than "P" range (except "N" range)	More than 8	
	"N" range switch	B55	22	Select lever in "N" range	Less than 1	—
				Select lever in any other than "N" range (except "P" range)	More than 8	
	"R" range switch	B55	17	Select lever in "R" range	Less than 1	—
				Select lever in any other than "R" range	More than 8	
	"D" range switch	B55	8	Select lever in "D" range	Less than 1	—
				Select lever in any other than "D" range	More than 8	
	"3" range switch	B55	18	Select lever in "3" range	Less than 1	—
				Select lever in any other than "3" range	More than 8	
	"2" range switch	B54	10	Select lever in "2" range	Less than 1	—
				Select lever in any other than "2" range	More than 8	
	"1" range switch	B54	1	Select lever in "1" range	Less than 1	—
				Select lever in any other than "1" range	More than 8	
Brake switch	B55	24	Brake pedal depressed.	More than 10.5	—	
			Brake pedal released.	Less than 1		
ABS signal	B54	19	ABS switch ON	Less than 1	—	
			ABS switch OFF	More than 6.5		
AT OIL TEMP warning light	B54	3	Light ON	Less than 1	—	
			Light OFF	More than 9		
Throttle position sensor	B55	2	Throttle fully closed.	0.2 — 1.0	—	
			Throttle fully open.	4.2 — 4.7		
Throttle position sensor power supply	B55	1	Ignition switch ON (With engine OFF)	4.8 — 5.3	—	

TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Check with ignition switch ON.					
Content	Connector No.	Terminal No.	Measuring conditions	Voltage (V)	Resistance to body (ohms)
ATF temperature sensor	B55	11	ATF temperature 20°C (68°F)	1.6 — 2.0	2.1 k — 2.9 k
			ATF temperature 80°C (176°F)	0.4 — 0.9	275 — 375
Rear vehicle speed sensor	B55	3	Vehicle stopped.	0	450 — 650
			Vehicle speed at least 20 km/h (12 MPH)	More than 1 (AC range)	
Front vehicle speed sensor	B55	5	Vehicle stopped	0	450 — 650
			Vehicle speed at least 20 km/h (12 MPH)	More than 1 (AC range)	
Torque converter turbine speed sensor	B55	12	Engine idling after warm-up (“D” range)	0	450 — 650
			Engine idling after warm-up (“N” range)	More than 1 (AC range)	
Vehicle speed output signal	B55	13	Vehicle speed at most 10 km/h (6 MPH)	Less than 1 ← → More than 4	—
Engine speed signal	B55	4	Ignition switch ON (with engine OFF)	0	—
			Ignition switch ON (with engine ON)	0 — 13 or more	
Cruise set signal	B54	11	When cruise control is set (SET light ON)	Less than 1	—
			When cruise control is not set (SET light OFF)	More than 6.5	
Torque control signal 1	B54	13	Ignition switch ON (with engine ON)	More than 4.0	—
Torque control signal 2	B54	21	Ignition switch ON (with engine ON)	More than 4.0	—
Torque control cut signal	B54	2	Ignition switch ON	8	—
Intake manifold pressure signal	B55	20	Engine idling after warm-up.	0.4 — 1.6	—
Shift solenoid 1	B54	7	1st or 4th gear	More than 9	10 — 16
			2nd or 3rd gear	Less than 1	
Shift solenoid 2	B54	6	1st or 2nd gear	More than 9	10 — 16
			3rd or 4th gear	Less than 1	
Line pressure duty solenoid	B54	9	Ignition switch ON (with engine OFF). Throttle fully closed after warm-up.	1.5 — 4.0	2.0 — 4.5
			Ignition switch ON (with engine OFF). Throttle fully open after warm-up.	Less than 1	
Dropping resistor	B54	18	Throttle fully closed (with engine OFF) after warm-up.	More than 8.5	9 — 15
			Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	
Lock-up duty solenoid	B54	16	When lock up occurs.	More than 8.5	10 — 17
			When lock up is released.	Less than 0.5	
Transfer duty solenoid	B54	15	Fuse on FWD switch	More than 8.5	10 — 17
			Fuse removed from FWD switch (with throttle fully open and with select lever in 1st gear).	Less than 0.5	
2-4 brake duty solenoid	B54	8	Throttle fully closed (with engine OFF) after warm-up.	1.5 — 5.0	2.0 — 4.5
			Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	
2-4 brake dropping resistor	B54	17	Throttle fully closed (with engine OFF) after warm-up.	More than 8.5	9 — 15
			Throttle fully open (with engine OFF) after warm-up.	Less than 0.5	
2-4 brake timing solenoid	B54	5	1st gear	Less than 1	10 — 16
			3rd gear	More than 9	

TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL

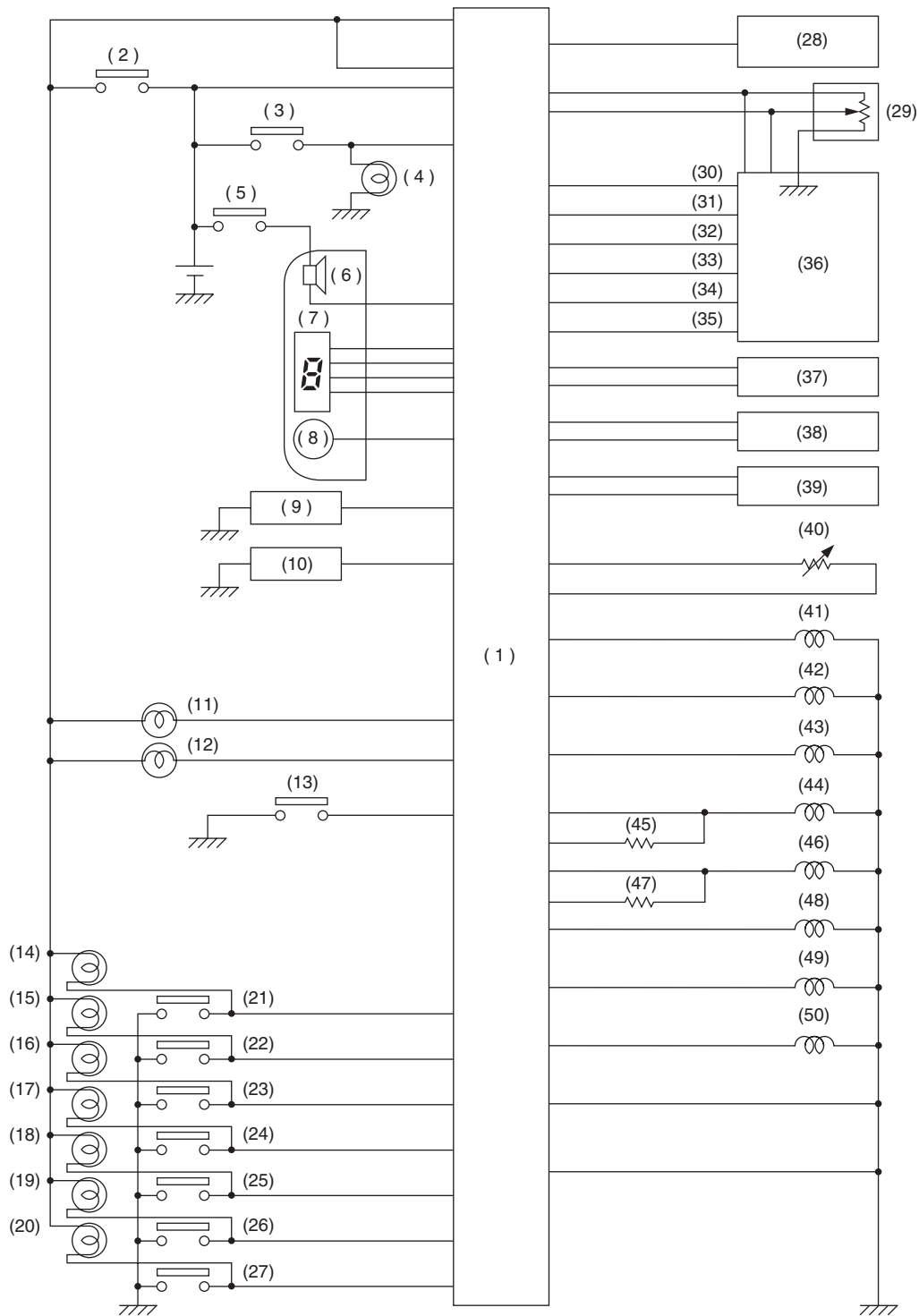
AUTOMATIC TRANSMISSION (DIAGNOSTICS)

Check with ignition switch ON.					
Content	Connector No.	Terminal No.	Measuring conditions	Voltage (V)	Resistance to body (ohms)
Low clutch timing solenoid	B54	14	2nd gear	Less than 1	10 — 16
			4th gear	More than 9	
Sensor ground line 1	B55	10	—	0	Less than 1
Sensor ground line 2	B55	21	—	0	Less than 1
System ground line	B55	9	—	0	Less than 1
		19			
FWD switch	B55	14	Fuse removed.	More than 9	—
			Fuse installed.	Less than 1	
AWD warning light	B54	12	Fuse ONFWD switch	Less than 1	—
			Fuse removed from FWD switch	More than 9	
AT diagnosis signal (Pulse signal)	B54	4	Ignition switch ON	Less than 1 ← → More than 4	—
Data link signal (Subaru Select Monitor)	B55	7	—	—	—

TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

B: SCHEMATIC



AT-02953

TRANSMISSION CONTROL MODULE (TCM) I/O SIGNAL

AUTOMATIC TRANSMISSION (DIAGNOSTICS)

- | | | |
|--|--------------------------------------|--|
| (1) Transmission control module | (18) "3" range indicator light | (36) Engine control module |
| (2) Ignition switch | (19) "2" range indicator light | (37) Front vehicle speed sensor |
| (3) Brake switch | (20) "1" range indicator light | (38) Rear vehicle speed sensor |
| (4) Brake light | (21) "P" range switch | (39) Torque converter turbine speed sensor |
| (5) Ignition relay | (22) "R" range switch | (40) ATF temperature sensor |
| (6) Buzzer (with SPORT shift) | (23) "N" range switch | (41) Shift solenoid 1 |
| (7) SPORT shift indicator (with SPORT shift) | (24) "D" range switch | (42) Shift solenoid 2 |
| (8) Speedometer | (25) "3" range switch | (43) 2-4 brake timing solenoid |
| (9) Cruise control module | (26) "2" range switch | (44) 2-4 brake duty solenoid |
| (10) ABS control module | (27) "1" range switch | (45) 2-4 brake dropping resistor |
| (11) AWD warning light | (28) Data link connector | (46) Line pressure duty solenoid |
| (12) "AT OIL TEMP" warning light | (29) Throttle position sensor | (47) Line pressure dropping resistor |
| (13) FWD switch | (30) Engine speed signal | (48) Lock-up duty solenoid |
| (14) "P" range indicator light | (31) Torque control cut signal | (49) Low clutch timing solenoid |
| (15) "R" range indicator light | (32) Torque control signal 2 | (50) Transfer duty solenoid |
| (16) "N" range indicator light | (33) Torque control signal 1 | |
| (17) "D" range indicator light | (34) Intake manifold pressure signal | |
| | (35) AT diagnosis signal | |