WABCO

Truck, Tractor and Bus ABS Blink Code Diagnostics, All C-Version ECUs

Includes Additional 6S/6M and 6S/4M Blink Codes

1 = 6S/6M
2 = 4S/4M
4 = 6S/4M

Introduction

The WABCO Electronic Control Unit (ECU) uses a pattern of light flashes called a blink code to identify specific problems, or faults, in the ABS. The warning lamp flashes a blink code for each fault that the ECU stores in its memory, enabling a technician to repair faults and erase them from ECU memory. For additional service information, Maintenance Manual 28, Anti-Lock Braking Systems (ABS) for Trucks, Tractors and Buses is available in electronic format on the WABCO website (wabco-na.com).

Fault Code			
Blink Code	**Location**	**Cause**	**Solution**
1-0-0 2-0-0 4-0-0	N/A	No Faults. System O.K.	No action needed.
1-6-6 2-6-6 4-6-6	Voltage Relay 1	Low voltage to the diagonal relay or defective relay.	Check vehicle voltage. Replace relay if needed.
1-6-7 2-6-7 4-6-7	Voltage Relay 2		
1-6-8 2-6-8 4-6-8	Right Front Wheel	Erratic wheel speed signal from the steering axle.	Check for loose wheel bearings, faulty sensor wiring connections, excessive hub runout, a sensor gap that is too wide or damage to tooth wheels on the steering axle.
1-6-9 2-6-9 4-6-9	Left Front Wheel		
1-6-10 2-6-10 4-6-10	Right Front Wheel	Sensor circuit failure on steering axle.	Check sensor, sensor cable and cable connections.
1-6-11 2-6-11 4-6-11	Left Front Wheel		
1-6-12 2-6-12 4-6-12	Right Front Wheel	Steering axle sensor out of adjustment.	Adjust sensors on steering axle.
1-6-13 2-6-13 4-6-13	Left Front Wheel		
1-7-0 2-7-0 4-7-0	Left Rear Wheel	Erratic wheel speed from drive axle.	Check for loose wheel bearings, faulty sensor wiring connections, excessive hub runout, sensor gap that is too wide or damage to tooth wheels on the drive axle.
1-7-1 2-7-1 4-7-1	Right Rear Wheel		
1-7-2 2-7-2 4-7-2	Left Rear Wheel	Sensor circuit failure on drive axle.	Check sensor, sensor cable and cable connections.
1-7-3 2-7-3 4-7-3	Right Rear Wheel		
1-7-4 2-7-4 4-7-4	Left Rear Wheel	Drive axle sensor out of adjustment.	Adjust sensors on drive axle. Check for differences between steer and drive tire sizes.
1-7-5 2-7-5 4-7-5	Right Rear Wheel		

The first digit of the blink code identifies the system configuration: 1 = 6S/6M, 2 = 4S/4M, 4 = 6S/4M. The last two digits identify the fault.

Fault Code			
Blink Code	**Location**	**Cause**	**Solution**
1-8-3 2-8-3 4-8-3	N/A	Improperly wired J1922 Engine Data Link. Short circuit to power or ground, or open circuit.	Check J1922 Engine Data Link, cable and connections.
1-8-5 2-8-5 4-8-5	N/A	Improperly wired J1922 Engine Data Link. Short circuit to power or ground, open circuit, wires switched.	
1-8-7 2-8-7 4-8-7	N/A	Message error detected in J1922 Engine Data Link.	Erase fault from ECU memory. No other action required.
1-8-9 2-8-9 4-8-9	N/A		
1-8-10 2-8-10 4-8-10	Right Front Wheel	Short circuit in steering axle ABS valve to ground connection.	Check ABS valve and cable. Replace as required.
1-8-11 2-8-11 4-8-11	Left Front Wheel		
1-8-12 2-8-12 4-8-12	Right Front Wheel	Open circuit in steering axle ABS valve or cable.	
1-8-13 2-8-13 4-8-13	Left Front Wheel		
1-8-14 2-8-14 4-8-14	Right Front Wheel	Short circuit in steering axle ABS valve to ground connection.	Check ABS valve and cable. Replace as required.
1-8-15 2-8-15 4-8-15	Left Front Wheel		
1-9-0 2-9-0 4-9-0	Right Front Wheel	Open circuit in steering axle ABS valve or cable.	
1-9-1 2-9-1 4-9-1	Left Front Wheel		
1-9-2 2-9-2 4-9-2	Left Rear Wheel	Short circuit to ground in drive axle ABS valve or cable.	
1-9-3 2-9-3 4-9-3	Right Rear Wheel		
1-9-4 2-9-4 4-9-4	Left Rear Wheel	Open circuit in drive axle ABS valve or cable.	
1-9-5 2-9-5 4-9-5	Right Rear Wheel		
1-9-6 2-9-6 4-9-6	Left Rear Wheel	Short circuit to ground in drive axle ABS valve or cable.	
1-9-7 2-9-7 4-9-7	Right Rear Wheel		
1-9-8 2-9-8 4-9-8	Left Rear Wheel	Open circuit in drive axle ABS valve or cable.	
1-9-9 2-9-9 4-9-9	Right Rear Wheel		

The first digit of the blink code identifies the system configuration: 1 = 6S/6M, 2 = 4S/4M, 4 = 6S/4M. The last two digits identify the fault.

Fault Code			
Blink Code	**Location**	**Cause**	**Solution**
1-10-2 2-10-2 4-10-2	Left Rear Wheel	Short circuit in ATC valve to ground connection.	Check ATC valve and cable. Replace as required.
1-10-3 2-10-3 4-10-3	Right Rear Wheel		
1-10-4 2-10-4 4-10-4	Left Rear Wheel	Open circuit in ATC valve or cable.	Check ATC valve and cable. Replace as required.
1-10-5 2-10-5 4-10-5	Right Rear Wheel		
1-10-7 2-10-7 4-10-7	N/A	Short circuit in wiring or relay that controls engine brake.	Check engine brake relay and wiring to relay coil.
1-10-8 2-10-8 4-10-8	Left Rear Wheel	Excessive drive axle wheel spin caused by driver or dynamometer.	Check steer axle sensor gap. Erase fault from ECU memory.
1-10-9 2-10-9 4-10-9	Right Rear Wheel		
1-11-12 2-11-12 4-11-12	Right Front Wheel	Short circuit between steering axle ABS valve and power supply connection.	Check ABS valve and cable. Replace as required.
1-11-13 2-11-13 4-11-13	Left Front Wheel		
1-11-14 2-11-14 4-11-14	Left Rear Wheel	Short circuit between drive axle ABS valve and power supply connection.	
1-11-15 2-11-15 4-11-15	Right Rear Wheel		
1-12-2 2-12-2 4-12-2	Left Rear Wheel	Short circuit between ATC valve and power supply connection.	Check ATC valve and cable. Replace as required.
1-12-3 2-12-3 4-12-3	Right Rear Wheel		
1-12-4 2-12-4 4-12-4	N/A	Short circuit between pin 12 of ABS ECU and power supply connection.	Check ECU harness.
1-12-7 2-12-7 4-12-7	N/A	Short circuit between engine brake and ground connection.	Check engine brake relay.
1-12-8 2-12-8 4-12-8	Right Front Wheel	Short circuit between steering axle ABS valve and battery.	Check ABS valve and cable. Replace as required.
1-12-9 2-12-9 4-12-9	Left Front Wheel		
1-12-10 2-12-10 4-12-10	Left Rear Wheel		
1-12-11 2-12-11 4-12-11	Right Rear Wheel		
1-12-14 2-12-14 4-12-14	Left Rear Wheel	Short circuit between steering axle ATC valve and battery.	Check ATC valve and cable. Replace as required.
The first digit of the blink code identifies the system configuration: 1 = 6S/6M, 2 = 4S/4M, 4 = 6S/4M. The last two digits identify the fault.			

Fault Code			
Blink Code	**Location**	**Cause**	**Solution**
1-12-15 2-12-15 4-12-15	Right Rear Wheel	Short circuit between steering axle ATC valve and battery.	Check ATC valve and cable. Replace as required.
1-13-0 2-13-0 4-13-0	N/A	Short circuit between pin 12 of ABS ECU and battery.	Check ECU harness.
1-13-4 2-13-4 4-13-4	Voltage Relay 1	Diagonal valve relay not operating correctly.	Check diagonal valve relay.
1-13-5 2-13-5 4-13-5	Voltage Relay 2		
1-13-8 2-13-8 4-13-8	Voltage Relay 1	Too high power supply voltage.	Repair vehicle power supply.
1-13-9 2-13-9 4-13-9	Voltage Relay 2		
The first digit of the blink code identifies the system configuration: 1 = 6S/6M, 2 = 4S/4M, 4 = 6S/4M. The last two digits identify the fault.			

Additional 6S/6M or 6S/4M Blink Codes

1 = 6S/6M
4 = 6S/4M

Fault Code			
Blink Code Axle 3			
Left	**Right**	**Cause**	**Solution**
1-7-8 4-7-8	1-7-9 4-7-9	Erratic wheel speed from third axle.	Check for loose wheel bearings, faulty sensor wiring connections, excessive hub runout, sensor gap that is too wide or damage to tooth wheels on third axle.
1-7-10 4-7-10	1-7-11 4-7-11	Sensor circuit failure on third axle.	Check sensor, sensor cable and cable connections.
1-7-12 4-7-12	1-7-13 4-7-13	Third axle sensor out of adjustment.	Adjust sensors on third axle. Check for differences between steer and rear tire sizes.
1-9-10	1-9-11	Short circuit to ground in third axle ABS valve or cable.	Check ABS valve and cable. Replace as required.
1-9-12	1-9-13	Open circuit in third axle ABS valve or cable.	
1-9-14	1-9-15	Short circuit to ground in third axle ABS valve or cable.	
1-10-0	1-10-1	Open circuit in third axle ABS valve or cable.	
1-12-0	1-12-1	Short circuit in connection between third axle ABS valve and battery.	
1-12-12	1-12-13		

WABCO

WABCO North America
1220 Pacific Drive
Auburn Hills, MI 48326 USA
855-228-3203
wabco-na.com

Printed in USA

TP-94157
Revised 08-18
(16579)