YS2R6X400E9183445 / EMS, Engine Management System / E 44, EMS control unit / S6 / T, Sensors and monitors / T123, Fan rotational speed sensor and solenoid valve

E 44, EMS control unit

Control unit pin	Task	Signal type	Source/destination
A1/1	Injector control.	Pulsed voltage signal	9 litre: XPI injector, (V143). 13 litre: XPI injector, (V144). 16 litre: XPI injector, (V142).
A1/2	Injector control.	Pulsed voltage signal	9 litre: XPI injector, (V146). 13 litre: XPI injector, (V145). 16 litre: XPI injector, (V143).
A1/3	Injector control.	Pulsed voltage signal	13 litre: XPI injector, (V146). 16 litre: XPI injector, (V145).
A1/4	Injector control.	Pulsed voltage signal	16 litre: XPI injector, (V148).
A1/5	Not used.		
A1/6	Grounding, injector.	Ground	9 litre: XPI injector, (V143). 13 litre: XPI injector, (V144). 16 litre: XPI injector, (V142).
A1/7	Grounding, injector.	Ground	9 litre: XPI injector, (V146). 13 litre: XPI injector, (V145). 16 litre: XPI injector, (V143).
A1/8	Grounding, injector.	Ground	13 litre: XPI injector, (V146). 16 litre: XPI injector, (V145).
A1/9	Grounding, injector.	Ground	16 litre: XPI injector, (V148).
A1/10	Not used.		
A2/1	Not used.		
A2/2	Ground, exhaust gas pressure sensor.	Ground	Exhaust gas pressure sensor, (T125).
A2/3	Voltage supply, exhaust gas pressure sensor.	+5V	Exhaust gas pressure sensor, (T125).
A2/4	Ground, fuel pressure sensor.	Ground	Fuel pressure sensor, (T111).

A2/5	Voltage supply, fuel pressure sensor.	+5V	Fuel pressure sensor, (T111).
A2/6	Not used.		
A2/7	Exhaust gas pressure sensor signal.	Analogue signal	Exhaust gas pressure sensor, (T125).
A2/8	Not used.		
A2/9	Not used.		
A2/10	Fuel pressure sensor signal.	Analogue signal	Fuel pressure sensor, (T111).
A3/1	Control.	Digital output signal	Valve block, (V107).
A3/2	Signal, camshaft position sensor.	Input signal frequency	Camshaft position sensor, (T135).
A3/3	Signal, camshaft position sensor.	Input signal frequency	Camshaft position sensor, (T135).
A3/4	Signal from engine speed sensor T75.	Input signal frequency	Engine speed sensor, (T75).
A3/5	Signal from engine speed sensor T75.	Input signal frequency	Engine speed sensor, (T75).
A3/6	Ground, bypass valve	Ground	Valve block, (V107).
A3/7	Ground, EGR damper.	Ground	Valve block, (V107).
A3/8	EGR damper control.	PWM output signal	Valve block, (V107).
A3/9	Grounding exhaust brake damper.	Ground	Valve block, (V107).
A3/10	Grounding exhaust brake damper.	PWM output signal	Valve block, (V107).
A4/1	Not used.		
A4/2	Grounding.	Ground	13 litre: Valve block, (V107).
A4/3	Throttle control.	PWM output signal	13 litre: Valve block, (V107).
A4/4	Grounding the EGR valve position sensor.	Ground	EGR valve position sensor, (T124).
A4/5	Voltage supply, position sensor for EGR valve.	+5V	EGR valve position sensor, (T124).
A4/6	CAN bus to variable geometry turbocharger, M30, M42.	CAN High	CAN communication to E44.

A4/7	CAN bus to variable geometry turbocharger, M30.	CAN Low	CAN communication to E44.
A4/8	Not used.		
A4/9	Not used.		
A4/10	Signal from EGR valve position sensor.	Analogue signal	EGR valve position sensor, (T124).
A5/1	Wastegate valve control	PWM output signal	Valve block, (V107).
A5/2	Not used.		
A5/3	Not used.		
A5/4	Signal from engine speed sensor T74.	Input signal frequency	Engine speed sensor, (T74).
A5/5	Signal from engine speed sensor T74.	Input signal frequency	Engine speed sensor, (T74).
A5/6	Ground to wastegate valve control.	Ground	Valve block, (V107).
A5/7	Not used.		
A5/8	Not used.		
A5/9	Not used.		
A5/10	Not used.		
A6/1	Grounding, coolant pump rotational speed sensor.	Ground	Coolant pump rotational speed sensor, (V124).
A6/2	Voltage supply, coolant pump rotational speed sensor.	+12V	Coolant pump rotational speed sensor, (V124).
A6/3	Voltage supply of intake air temperature and flow sensor:	+24V	Intake air temperature and flow sensor, (T126).
A6/4	Grounding, pneumatic throttle position sensor.	Ground	Pneumatic throttle position sensor, (T162).
A6/5	Voltage supply, pneumatic throttle position sensor.	+5V	Pneumatic throttle position sensor, (T162).
A6/6	Signal, coolant pump rotational speed sensor.	PWM input signal	Coolant pump rotational speed sensor, (V124).
A6/7	Not used.		
A6/8	Grounding of intake air	Ground	Intake air temperature and

	temperature and flow sensor:		flow sensor, (T126).
A6/9	Signal from intake air temperature and flow sensor:	Analogue signal	Intake air temperature and flow sensor, (T126).
A6/10	Signal, pneumatic throttle position sensor.	Analogue signal	Pneumatic throttle position sensor, (T162).
A7/1	Not used.		
A7/2	Grounding, oil pressure sensor.	Ground	Oil pressure sensor, (T5).
A7/3	Voltage supply, oil pressure sensor.	+5V	Oil pressure sensor, (T5).
A7/4	Grounding, coolant pump solenoid valve.	Ground	Coolant pump solenoid valve, (V124).
A7/5	Control, coolant pump solenoid valve.	PWM output signal	Coolant pump solenoid valve, (V124).
A7/6	Grounding of intake air temperature and flow sensor:	Ground	Intake air temperature and flow sensor, (T126).
A7/7	Supply voltage to and signal from, intake air temperature and flow sensor.	+5V/Analogue signal	Intake air temperature and flow sensor, (T126).
A7/8	Signal, oil pressure sensor.	Analogue signal	Oil pressure sensor, (T5).
A7/9	Voltage supply to and signal from, coolant temperature sensor.	+5V/Analogue signal	Coolant temperature sensor, (T33).
A7/10	Grounding, coolant temperature sensor.	Ground	Coolant temperature sensor, (T33).
B1/1	Injector control.	Pulsed voltage signal	9 litre: XPI injector, (V142). 13 litre: XPI injector, (V141). 16 litre: XPI injector, (V141).
B1/2	Injector control.	Pulsed voltage signal	9 litre: XPI injector, (V144). 13 litre: XPI injector, (V142). 16 litre: XPI injector, (V144).
B1/3	Injector control.	Pulsed voltage signal	9 litre: XPI injector, (V145). 13 litre: XPI injector, (V143). 16 litre: XPI injector, (V146).
B1/4	Injector control.	Pulsed voltage signal	16 litre: XPI injector, (V147).
B1/5	Not used		

B1/6	Grounding of injector.	Ground	9 litre: XPI injector, (V142). 13 litre: XPI injector, (V141). 16 litre: XPI injector, (V141).
B1/7	Grounding of injector.	Ground	9 litre: XPI injector, (V144). 13 litre: XPI injector, (V142). 16 litre: XPI injector, (V144).
B1/8	Grounding of injector.	Ground	9 litre: XPI injector, (V145). 13 litre: XPI injector, (V143). 16 litre: XPI injector, (V146).
B1/9	Grounding of injector.	Ground	16 litre: XPI injector, (V147).
B1/10	Not used.		
B2/1	Not used.		
B2/2	Not used.		
B2/3	Not used.		
B2/4	Grounding of charge air pressure sensor.	Ground	Charge air pressure sensor, (T122).
B2/5	Voltage supply, charge air pressure sensor.	+5V	Charge air pressure sensor, (T122).
B2/6	Not used.		
B2/7	Not used.		
B2/8	Grounding, charge air temperature sensor.	Ground	Charge air temperature sensor, (T121).
B2/9	Voltage supply to and signal from, charge air temperature sensor.	+5V/Analogue signal	Charge air temperature sensor, (T121).
B2/10	Signal, charge air pressure sensor.	Analogue signal	Charge air pressure sensor, (T122).
B3/1	Voltage supply 2, control unit.	+24V	P2.
B3/2	Grounding 2, control unit.	Ground	G15.
B3/3	Signal via starter lock.	+24V	15 voltage.
B3/4	Grounding, electric motor for variable geometry turbocharger, M30.	Ground	G15.

B3/5	Not used.		
B3/6	Voltage supply 1, control unit.	+24V	P2.
B3/7	Grounding 1, control unit.	Ground	G15.
B3/8	Voltage supply, electric motor for variable geometry turbo-charger.	+24V	P2.
B3/9	CAN Red bus.	CAN High	Red CAN.
B3/10	CAN Red bus.	CAN Low	Red CAN.
B4/1	Switching off the alternator. ADR only.	PWM output signal	ADR only.
B4/2	Not used.		
B4/3	Not used.		
B4/4	Not used.		
B4/5	Not used.		
B4/6	Not used.		
B4/7	Internal CAN communication.	CAN High	EEC3, (E67). GCS, (E88).
B4/8	Internal CAN communication.	CAN Low	EEC3, (E67). GCS, (E88).
B4/9	Not used.		
B4/10	Not used.		
B5/1	Control of starter motor.	Digital output signal	Starter motor (Relay) M1.
B5/2	Not used.		
B5/3	Signal from alternator.	Digital input signal	Alternator, (P3).
B5/4	Signal from alternator.	Digital input signal	Bus: Alternator, (P500).
B5/5	Signal, fan rotational speed sensor.	PWM input signal	Fan rotational speed sensor, (T123).
B5/6	Not used.		
B5/7	Grounding, fuel inlet metering valve.	Ground	Fuel inlet metering valve, (V120).

B5/8	Control of fuel inlet metering valve.	PWM output signal	Fuel inlet metering valve, (V120).
B5/9	Control of alternator 1.	PWM output signal	Alternator, (P3).
B5/10	Control of alternator 2.	PWM output signal	Bus: Alternator, (P500).
B6/1	Control of fan solenoid valve.	PWM output signal	Fan solenoid valve, (T123). Bus: Hydraulic pump (V119).
B6/2	Voltage supply, oil level sensor.	+5V	Oil level sensor (T110).
B6/3	Control of coupling coil for A/C compressor.	Digital output signal	Coupling coil for A/C compressor, (V2).
B6/4	Grounding of coupling coil for A/C compressor.	Ground	Coupling coil for A/C compressor, (V2).
B6/5	Voltage supply of fan rotational speed sensor.	+12V	Fan rotational speed sensor, (T123).
B6/6	Grounding of fan solenoid valve.	Ground	Fan solenoid valve, (T123). Bus: Hydraulic pump (V119).
B6/7	Grounding of oil level sensor.	Ground	Oil level sensor, (T110).
B6/8	Signal, oil level sensor.	Analogue signal	Oil level sensor, (T110).
B6/9	Grounding of fan rotational speed sensor.	Ground	Fan rotational speed sensor, (T123).
B6/10	Not used.		
B7/1	Signal, turbo speed sensor.	Frequency, input signal	Turbo speed sensor, (T120).
B7/2	Voltage supply, electric motor for variable geometry turbocharger.	+24V	Electric motor for variable geometry turbocharger, (M30).
B7/3	Not used.		
B7/4	Grounding, differential pressure sensor for particulate filter and pressure sensor for charge air cooler.	Ground	EEV: Differential pressure sensor for particulate filter, (T141). Euro 6: Charge air cooler pressure sensor, (T166).
B7/5	Voltage supply, differential pressure sensor for particulate filter and pressure sensor for charge air cooler.	+5V	EEV: Differential pressure sensor for particulate filter, (T141). Euro 6: Charge air cooler pressure sensor, (T166).

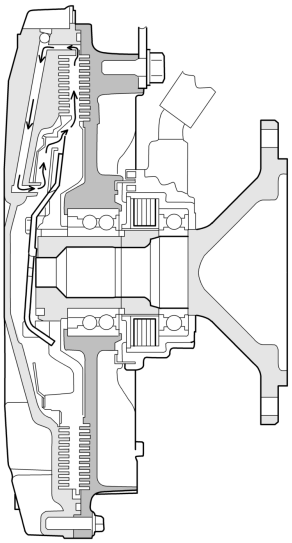
B7/6	Signal, turbo speed sensor.	Frequency, input signal	Turbo speed sensor, (T120).
B7/7	Grounding, electric motor for variable geometry turbo-charger.	Ground	Electric motor for variable geometry turbocharger, (M30).
B7/8	Not used.		
B7/9	Not used.		
B7/10	Signal, charge air cooler pressure sensor. Vehicles with EEV only: Signal, particulate filter differential pressure sensor.	Analogue signal	Euro 6: Charge air cooler pressure sensor, (T166). EEV: Differential pressure sensor for particulate filter, (T141).

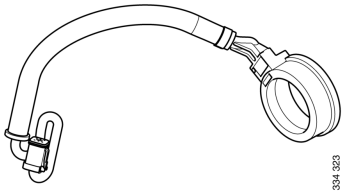
T 123, Fan rotational speed sensor and solenoid valve

The sensor is a Hall effect sensor. The sensor reacts to a varying magnetic field. This sensor is an active sensor and therefore needs a 12 V power supply.

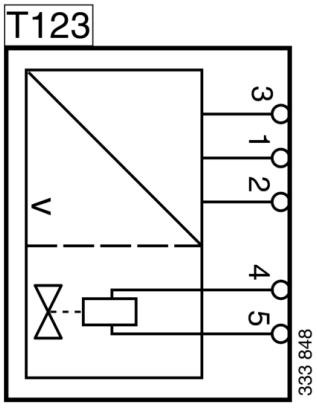
Pin	Signal type	Source/Destination
1	Supply voltage (+5 V)	A2-7 EMS S6 (E44)
2	Ground, fan speed sensor	B8-1 EMS S6 (E44)
3	Output signal, fan speed sensor	B8-2 EMS S6 (E44)
4	Ground, fan relay	B6-2 EMS S6 (E44)
5	Input signal, fan relay	B6-1 EMS S6 (E44)

T 123, Fan rotational speed sensor and solenoid valve





T 123, Fan rotational speed sensor and solenoid valve



T 123, Fan rotational speed sensor and solenoid valve