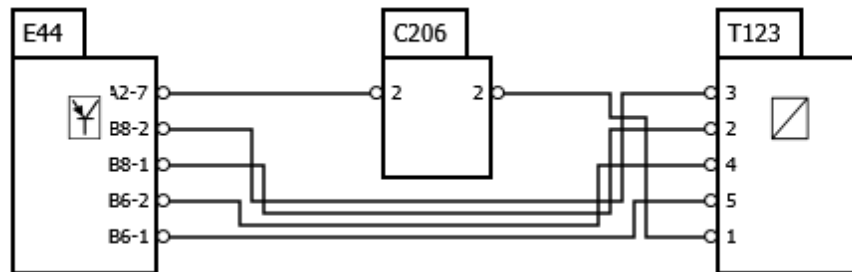


YS2R6X400E9183445 / EMS, Engine Management System / E 44, EMS control unit / S6 / T, Sensors and monitors / T123, Fan rotational speed sensor and solenoid valve



T123, Fan rotational speed sensor and solenoid valve

## T123, Fan rotational speed sensor and solenoid valve

The component contains the rotational speed sensor and solenoid valve for the fan. The rotational speed sensor for the fan tells the engine control unit what the fan speed is. The solenoid valve controls the fan speed by means of a control signal from the engine control unit. The fan coupling houses a magnetic pulse wheel which has 6 teeth per revolution. The pulse wheel rotates with the fan. When the sensor is opposite a tooth on the pulse wheel a magnetic field is generated. The Hall effect sensor opens in this position and grounds the signal going to the control unit. When the sensor is in the space between the teeth, there is no magnetic field and the sensor is then closed and the control unit receives a voltage of +5 V. The signal read by the control unit varies from 0 V (ground) and +5 V. The control unit therefore receives a PWM signal in which there are 6 pulses for each rotation of the fan. The control unit uses the information to calculate the fan speed, the faster the signal changes from 0 V to 5 V, the higher the fan speed. The engine control unit uses the information from the sensor to check that the fan speed corresponds to the speed the engine control unit is supplying.

## Fan rotational speed

Fan rotational speed

## Fan control

When the fan control is at 0%, the engine control unit does not send a signal to the fan. The fan rotates at full speed, which means that it follows engine speed. When the fan control from the engine control unit is 100%, the fan rotates at the slowest speed.