Actuation of engine and air conditioning electric suction fan with integrated control (M4/7) shown on automatic air conditioning

A1  Instrument cluster
B11/4  Coolant temperature sensor
B12/2  Refrigerant pressure and temperature sensor
B14  Outside temperature display temperature sensor
M4/7  Engine and AC electric suction fan with integrated control
N3/9  CDI control unit (with diesel engine)
N3/10  ME-SFI [ME] control unit (with gasoline engine)

Depending on the refrigerant pressure or the coolant temperature and the outside temperature, the fan speed is increased infinitely controllably.

The AAC [KLA] control and operating unit (N22) or the comfort AAC [KLA] control and operating unit transmits the request for engine and air conditioning electric suction fan with integrated control (M4/7) ON to the EIS [EZS] control unit (N73) via CAN-B (CAN). The EIS [EZS] control unit (N73) receives, via CAN-B (CAN), the refrigerant pressure, detected by the refrigerant temperature sensor (B12/2) and the outside temperature from the outside temperature indicator temperature sensor (B14).

This input information is passed on to the control unit integrated in the electric suction fan engine and air conditioning electric suction fan with integrated control (M4/7) is actuated with the following values:

- Outside temperature < 15 °C
- Refrigerant pressure < 12 bar = fan OFF
- Refrigerant pressure > 20 bar = fan ON (100 %)
- Refrigerant pressure 12 to 20 bar = continuous linear speed increase of suction fan (20 to 100 %)
- Vehicle speed > 75 km/h
- Vehicle speed > 75 km/h
- Temperature-dependent fan speed remains the same
- Pressure-dependent fan speed remains the same

For the engine and air conditioning electric suction fan with integrated control (M4/7) to continue running even when the refrigerant compressor (A9) is shut down temporarily via the antifreeze protection, a run-on time of approx. 60 seconds is possible.