

1.14 Instrument Cluster (IC) Models 129, 140, 170, 202 (as of 6/97), Models 208, 210 (as of 3/97) with FSS

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
Entire instrument cluster (A1) not functioning.	Power supply, Instrument cluster (A1)	Model 129: 23 ⇒ 1.0 Model 140: 24 ⇒ 1.0 Model 170: 25 ⇒ 1.0 Model 202, 208, 210: 26 ⇒ 1.0
Warning lamps/Indicator lamps are not functioning.	Power supply, Instrument cluster (A1)	Model 129: 23 ⇒ 1.0 Model 140: 24 ⇒ 1.0 Model 170: 25 ⇒ 1.0 Model 202, 208, 210: 26 ⇒ 1.0
Communication between HHT and instrument cluster not possible.	Wiring, Instrument cluster (A1)	Model 129: 23 ⇒ 2.0 Model 140: 24 ⇒ 2.0 Model 170: 25 ⇒ 2.0 Model 202, 208, 210: 26 ⇒ 2.0
Low engine coolant level (ECL) indicator lamp (A1e11), low windshield washer fluid level indicator lamp (A1e13) illuminated - does not function.	ECL switch (S41) Windshield washer fluid level switch (S42) Wiring Instrument cluster (A1)	Model 129: 23 ⇒ 3.0 Model 140: 24 ⇒ 3.0 Model 170: 25 ⇒ 3.0 Model 202, 208, 210: 26 ⇒ 3.0
Warning lamps/Indicator lamps (brake fluid level, parking brake, brake pad wear, ABS, ETS, ASR, ESP) illuminate simultaneously and speedometer needle rests at the bottom stop.	Traction system control module (N47)	DM, Chassis and Drivetrain, Volume 3, Section 9 and 10 WIS
Tachometer needle, ECT needle remain at rest on the bottom stop. Engine oil low level warning lamp illuminates.	Injection control module (N3)	DM, Diesel Engines, Volume 1.1

¹⁾ Observe Preparation for Test, see 22.

1.14 Instrument Cluster (IC) Models 129, 140, 170, 202 (as of 6/97), Models 208, 210 (as of 3/97) with FSS

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
Warning lamps/Indicator lamps (brake fluid level, parking brake, brake pad wear, oil level, ABS, ETS, ASR, ESP) illuminate simultaneously and tachometer speedometer needle rests at the bottom stop.	CAN Bus disruption	Model 129: 23 ⇒ 4.0 Model 140: 24 ⇒ 4.0 Model 170: 25 ⇒ 4.0 Model 202, 208, 210: 26 ⇒ 4.0

¹⁾ Observe Preparation for Test, see 22.



Note regarding diagnosis:

To narrow the search for the possible fault, the diagnostic chart indicates how the warning lamps or indicators are activated and controlled by a particular system.

If the warning lamps or indicators are displayed for more systems simultaneously, it is almost always the evidence of the faulty CAN Bus.

The A/C system can also be affected by the faulty CAN Bus since the A/C control module receives CAN data over the K1 and K2 information bus from the Instrument Cluster interface.

(For more information on Instrument Cluster refer to the green microfiche, Function Description Instrument Cluster (KI) in SMS or refer to WIS)



Following warning lamps/indicators receive the information via CAN Bus from Traction systems control module (N47):

- Odometer, trip odometer
- Electronic speedometer
- Low brake fluid level/parking brake indicator (only parking signal is sent via CAN Bus)
- Warning lamp brake pad wear
- ABS indicator
- ETS, ASR, ESP indicator
- Warning lamp ETS, ASR, ESP

Note:

On vehicles with multi-functional Instrument Clusters additionally a message appears in the display area.

1.14 Instrument Cluster (IC) Models 129, 140, 170, 202 (as of 6/97), Models 208, 210 (as of 3/97) with FSS

Diagnosis – Complaint Related Diagnostic Chart



Following warning lamps/indicators receive the information via CAN Bus from Injection systems control module (N3):

- Tachometer
- Low oil level warning lamp
- Coolant temperature
- Preglow indicator (diesel only)
- Fuel reserve warning lamp (if a fuel system leak is detected or fuel filler cap is not closed tightly while the engine is running, the warning lamp (A1e4) will blink. Not correcting the problem will cause the "Check Engine" lamp to illuminate).
- Flexible Service System (FSS)
 - Oil quality
 - Oil level
 - Oil temperature
 - Engine speed, coolant temperature

Note:

On vehicles with multi-functional Instrument Clusters additionally a message appears in the display area.



Instrument cluster receives direct information for the following warning lamps/indicators:

- Outside temperature display
- Fuel gauge
- Oil pressure gauge (models 129 and 140 only)
- Turn signal indicator left
- Turn signal indicator right
- High beam indicator
- Fuel reserve warning lamp
- Low level brake fluid/parking brake warning lamp (only low level brake fluid direct)
- Windshield washer fluid low level warning lamp
- Coolant low level warning lamp
- Battery charging control/warning lamp
- Seat belt warning lamp
- Safety belt/rear seat back latch warning lamp
- Glow plug failure warning lamp
- Hydraulic oil low level warning lamp (model 210 only)
- ADS, suspension warning lamp
- Turn signal audio device
- Seat belt warning buzzer
- Lights on warning buzzer
- Key in ignition warning buzzer
- Retractable hardtop warning buzzer (model 170 only)
- Steering lock warning lamp

1.14 Instrument Cluster (IC) Models 129, 140, 170, 202 (as of 6/97), Models 208, 210 (as of 3/97) with FSS

Diagnosis – Complaint Related Diagnostic Chart



The Instrument Cluster sends/receives data via the K - information bus to the A/C control module.

The following signals are send via K1 serial information bus from IC to the A/C control module:

- Outside temperature
- Coolant temperature
- Vehicle speed
- Terminal 58d signal (illumination)
- Engine speed
- °F/°C switch over
- Full throttle cut-off (diesel)
- Acceleration recognition (gasoline)
- A/C compressor emergency cut-off (engine control module sends the signal via CAN bus to the K1 bus)
- A/C compressor switch off at acceleration (engine control module sends the signal via CAN bus to the K1 bus)

The following signals are send via K2 serial information bus from the A/C control module to the Instrument cluster:

- Refrigerant pressure
- Engine Idle speed increase