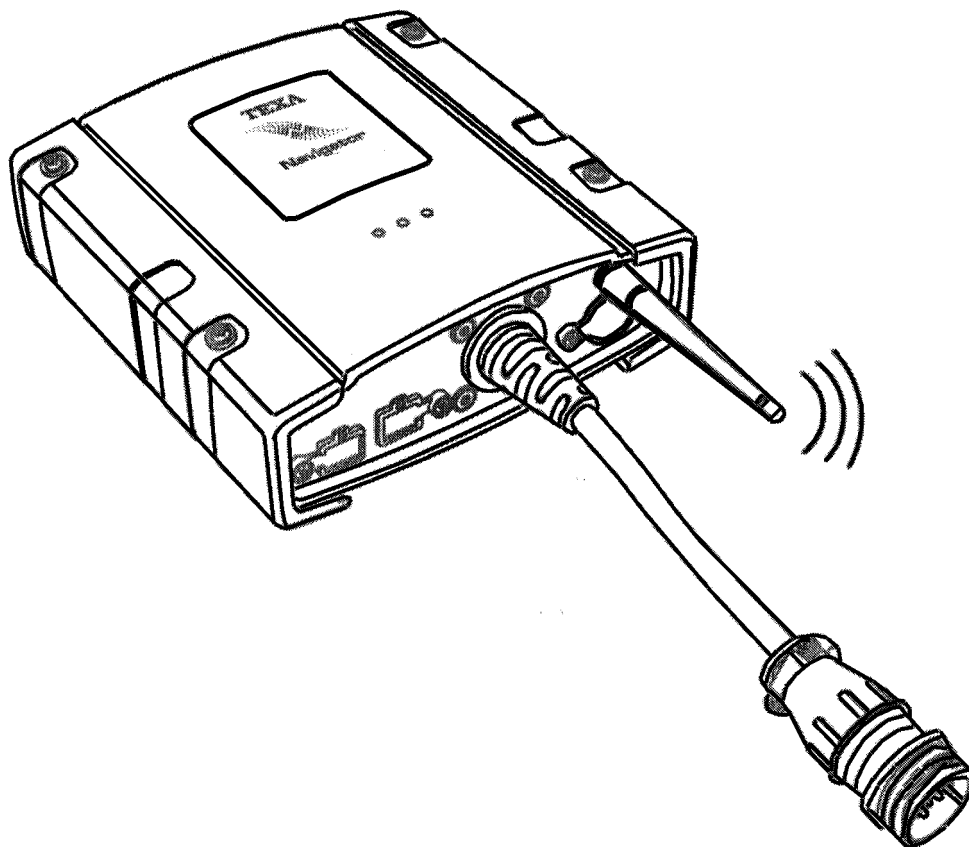




## **FAULT CODE LIST**

**Futura / Magiq / Citea**  
**EBS - ESC**

1740

DD0196\_01

### **Foreword**

The fault code list is part of the workshop manual. The safety regulations must be strictly observed.

This fault code list contains all the relevant information to help when tracing and solving technical problems, when making adjustments and when carrying out repair work.

### **Experienced mechanics**

The technical information stated in this fault code list has been compiled with the utmost care.

Whilst compiling this fault code list, it has been assumed that the mechanic has the necessary experience and has had the required education or training to be able to carry out the work in a responsible and safe manner.

### **Vehicle type**

The information in this workshop manual has been updated until the time of printing and only concerns the following series of vehicles:

Citea CLF PR - Heavy Duty Euro 4/5

### **Disclaimers**

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Any dispute here under shall be referred to the decision of the District Court of 's Hertogenbosch in the Netherlands

Next remark is relevant if the text has been translated for your convenience from the English original into an other language.

A translation, however, can have the consequence that differences of interpretation arise with respect to the content and meaning of the text.

In all cases, therefore, the English version of this document will be regarded exclusively as the single and authentic source to establish the content and the meaning of the text in case of a dispute.

| WABCO - EBS                         |    |        | <= Faulty Component (KWP 2000 Diagnosis) | <= DM1-SPN (SAE J 1939-73) | <= Failure Modes (KWP 2000 Diagnosis) => |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
|-------------------------------------|----|--------|------------------------------------------|----------------------------|------------------------------------------|---------------------|------------------------|--------------------------------------|------------------|---------------|-------------|----------------------------|---------------------------------------|------------------------------------|-------------------------------------|---------------------------------|-------------------------------|----------------------------------|----------------------------------------|-------------------------------------|------------------------------|------------------------------------|---------------------------------|------------------------------------|---------------------------------|----------------|-------------------------|---------------------------|--------------------------|-------------------------------|----------------------------|-----------------------------------|----------------------|--------------------|---------------------------------|---------|-----------------|-----------------------------------|---|
|                                     |    |        |                                          |                            | EEPROM Failure                           | Incorrect Parameter | Component incompatible | Undefined ESC/SAS/CM/AM Failure Bits | Internal Failure | Total Failure | Overvoltage | Under Voltage / Contacting | Short Circuit Ground (inlet solenoid) | Short Circuit +UB (inlet solenoid) | Cable Breakage (ground return line) | Cable Breakage (inlet solenoid) | Permanent Current Consumption | Cable Breakage (outlet solenoid) | Short Circuit Ground (outlet solenoid) | Short Circuit +UB (outlet solenoid) | Supply Line / Cable Breakage | Supply Line / Short Circuit Ground | Supply Line / Short Circuit +UB | Return Line / Short Circuit Ground | Return Line / Short Circuit +UB | Cable Breakage | Signal / Cable Breakage | Implausible Vehicle Speed | TCO-signal not available | Signal / Short Circuit Ground | Signal / Short Circuit +UB | No Sensor Signal / Signal Too Low | Short Circuited Coil | Pole Wheel Failure | Inadmissible Wheel Speed Signal | Run Out | Air Gap Failure | Steering angle signal implausible |   |
| Group 1: ECU, voltage supply        |    |        |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Voltage Supply Pin 30a              | 11 | 520203 |                                          |                            |                                          |                     |                        |                                      |                  | X             |             |                            |                                       |                                    |                                     |                                 |                               |                                  | X                                      |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Voltage Supply Pin 30b              | 12 | 520204 |                                          |                            |                                          |                     |                        |                                      | X                |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  | X                                      |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Voltage Supply Pin 15               | 13 | 520205 |                                          |                            |                                          |                     |                        |                                      | X                |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Sensor Voltage Supply 24V           | 14 | 520206 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        | X                                   | X                            |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Voltage Supply Axle Modulator       | 15 | 520207 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     | X                            |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| EBS-Central-Module                  | 16 | 520208 | X                                        | X                          |                                          |                     | X                      |                                      | X                | X             |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   | X |
| ESC/SAS Voltage Supply              | 17 | 520209 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  | X                                      | X                                   |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Group 2: wheel speed sensors        |    |        |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Wheel Speed Sensor (front right)    | 21 | 520213 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Wheel Speed Sensor (front left)     | 22 | 520214 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Wheel Speed Sensor (rear right)     | 23 | 520215 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Wheel Speed Sensor (rear left)      | 24 | 520216 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Wheel Speed Sensor (3rd axle right) | 25 | 520217 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Wheel Speed Sensor (3rd axle left)  | 26 | 520218 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              | X                       |                           | X                        | X                             |                            | X                                 | X                    | X                  | X                               | X       | X               |                                   |   |
| Group 3: brake signal transmitter   |    |        |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Brake Signal Transmitter            | 31 | 520223 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Brake Switch Signal 1               | 32 | 520224 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              |                         |                           | X                        |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Brake Switch Signal 2               | 33 | 520225 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 | X              |                         |                           | X                        |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Brake Sensor Signal 1               | 34 | 520226 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           | X                        |                               | X                          |                                   |                      |                    |                                 |         |                 |                                   |   |
| Brake Sensor Signal 2               | 35 | 520227 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           | X                        |                               | X                          |                                   |                      |                    |                                 |         |                 |                                   |   |
| Group 4: communication, lamps       |    |        |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| SAE J 1939 - Data Connection        | 41 | 520233 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Braking System CAN                  | 42 | 520234 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Trailer Interface (ISO 11992)       | 43 | 520235 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Failure Lamp A (EBS / red)          | 45 | 520237 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Failure Lamp B (ABS / yellow)       | 46 | 520238 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Lamp C (ATC/ASR-Information)        | 47 | 520239 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Lamp D (lining wear info)           | 48 | 520240 |                                          |                            |                                          |                     | X                      |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| ESC1 (steering-system, 3rd axle)    | 49 | 520241 |                                          |                            |                                          | X                   |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| Group 5a: ABS valves                |    |        |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| ABS-Solenoid Valve (front left)     | 51 | 520243 |                                          |                            |                                          |                     |                        |                                      |                  | X             | X           | X                          | X                                     | X                                  | X                                   | X                               | X                             | X                                |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| ABS-Solenoid Valve (front right)    | 52 | 520244 |                                          |                            |                                          |                     |                        |                                      |                  | X             | X           | X                          | X                                     | X                                  | X                                   | X                               | X                             | X                                |                                        |                                     |                              |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |
| ABS-Solenoid Return Line (GND)      | 53 | 520245 |                                          |                            |                                          |                     |                        |                                      |                  |               |             |                            |                                       |                                    |                                     |                                 |                               |                                  |                                        | X                                   | X                            |                                    |                                 |                                    |                                 |                |                         |                           |                          |                               |                            |                                   |                      |                    |                                 |         |                 |                                   |   |



| WABCO - EBS                              |    |        | <= Failure Modes (KWP 2000 Diagnosis) => |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
|------------------------------------------|----|--------|------------------------------------------|----------------------------------|-----------------------|-------------------------|------------------------|------------------------------|-------------------|----------------------------|--------------------------------|--------|--------------------------|------------------------------|---------------------|-------------------------|-----------------------|---------------------|-------------------------------|-----------------------|----------------------------------------|-----------------------------|--------------------------|------------------------------|------------------|-----------------|-----------------|--------------------|------------------|-------------|------------------|------------------------------------|---------------------|-----------------------|-----------------------|---------------------|------------------------------------|-------------------------------|---------------------|-----------------|-----------------|----------------------------|--|---|
|                                          |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| <= Faulty Component (KWP 2000 Diagnosis) |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| <= DM1-SPN (SAE J 1939-73)               |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
|                                          |    |        | 51                                       | 52                               | 53                    | 54                      | 55                     | 56                           | 57                | 58                         | 59                             | 61     | 62                       | 63                           | 64                  | 65                      | 66                    | 67                  | 68                            | 69                    | 71                                     | 72                          | 73                       | 74                           | 75               | 76              | 77              | 78                 | 81               | 82          | 83               | 84                                 | 85                  | 86                    | 87                    | 89                  | 91                                 | 92                            | 93                  | 94              | 95              | 96                         |  |   |
|                                          |    |        | Brake Pressure too High                  | Big Difference of Sensor Signals | Wrong Tire Dimensions | Pressure Sensor Failure | Brake Pressure too Low | Vehicle Deceleration Too Low | Worn Brake Lining | Timeout Driveline-Retarder | Timeout CFG Driveline-Retarder | BusOff | TCO-signal not plausible | Communication / Interruption | Timeout EBS-Modules | Timeout Engine-Retarder | Timeout Engine (EEC1) | Timeout Gear (ETC1) | Timeout Cruise Control (CCVS) | Timeout Tacho-Message | Timeout Brakes/Supply-Pressure-Message | Timeout CFG Engine-Retarder | Timeout Exhaust-Retarder | Timeout CFG Exhaust-Retarder | CAN High Failure | CAN Low Failure | Timeout ESC/SAS | Timeout CFG Engine | Assembly Failure | Calibration | CPU check faulty | Steering angle ratio not plausible | Invalid ESC Barcode | Timeout Engine (EEC2) | Timeout Engine (EEC3) | Timeout Gear (ETC2) | Inplausibility Tachosignal-Yawrate | Timeout ECAS (Vehicle Weight) | Timeout Gear (ETC7) | Warning-Level 1 | Warning-Level 2 | Timeout Time and Date (TD) |  |   |
| Group 1: ECU, voltage supply             |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Voltage Supply Pin 30a                   | 11 | 520203 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Voltage Supply Pin 30b                   | 12 | 520204 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Voltage Supply Pin 15                    | 13 | 520205 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Sensor Voltage Supply 24V                | 14 | 520206 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Voltage Supply Axle Modulator            | 15 | 520207 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| EBS-Central-Module                       | 16 | 520208 |                                          |                                  | X                     |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| ESC/SAS Voltage Supply                   | 17 | 520209 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Group 2: wheel speed sensors             |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (front right)         | 21 | 520213 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (front left)          | 22 | 520214 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (rear right)          | 23 | 520215 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (rear left)           | 24 | 520216 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (3rd axle right)      | 25 | 520217 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Wheel Speed Sensor (3rd axle left)       | 26 | 520218 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Group 3: brake signal transmitter        |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Brake Signal Transmitter                 | 31 | 520223 |                                          | X                                |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Brake Switch Signal 1                    | 32 | 520224 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Brake Switch Signal 2                    | 33 | 520225 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Brake Sensor Signal 1                    | 34 | 520226 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Brake Sensor Signal 2                    | 35 | 520227 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Group 4: communication, lamps            |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| SAE J 1939 - Data Connection             | 41 | 520233 |                                          |                                  |                       |                         |                        |                              |                   | X                          | X                              | X      | X                        | X                            |                     | X                       | X                     | X                   | X                             | X                     | X                                      | X                           | X                        | X                            |                  |                 |                 | X                  |                  |             |                  |                                    |                     |                       | X                     | X                   | X                                  | X                             | X                   | X               |                 |                            |  | X |
| Braking System CAN                       | 42 | 520234 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Trailer Interface (ISO 11992)            | 43 | 520235 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                | X      |                          | X                            |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              | X                | X               |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Failure Lamp A (EBS / red)               | 45 | 520237 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Failure Lamp B (ABS / yellow)            | 46 | 520238 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Lamp C (ATC/ASR-Information)             | 47 | 520239 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Lamp D (lining wear info)                | 48 | 520240 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| ESC1 (steering-system, 3rd axle)         | 49 | 520241 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          | X                            |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| Group 5a: ABS valves                     |    |        |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| ABS-Solenoid Valve (front left)          | 51 | 520243 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| ABS-Solenoid Valve (front right)         | 52 | 520244 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |
| ABS-Solenoid Return Line (GND)           | 53 | 520245 |                                          |                                  |                       |                         |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |  |   |

| WABCO - EBS                                                                        |    |                         | <= Faulty Component (KWP 2000 Diagnosis) |                       | <= DM1-SPN (SAE J 1939-73) |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  | <= Failure Modes (KWP 2000 Diagnosis) => |  |
|------------------------------------------------------------------------------------|----|-------------------------|------------------------------------------|-----------------------|----------------------------|------------------------|------------------------------|-------------------|----------------------------|--------------------------------|--------|--------------------------|------------------------------|---------------------|-------------------------|-----------------------|---------------------|-------------------------------|-----------------------|----------------------------------------|-----------------------------|--------------------------|------------------------------|------------------|-----------------|-----------------|--------------------|------------------|-------------|------------------|------------------------------------|---------------------|-----------------------|-----------------------|---------------------|------------------------------------|-------------------------------|---------------------|-----------------|-----------------|----------------------------|----|----|----|--|--|------------------------------------------|--|
|                                                                                    |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
|                                                                                    |    |                         |                                          |                       | 51                         | 52                     | 53                           | 54                | 55                         | 56                             | 57     | 58                       | 59                           | 61                  | 62                      | 63                    | 64                  | 65                            | 66                    | 67                                     | 68                          | 69                       | 71                           | 72               | 73              | 74              | 75                 | 76               | 77          | 78               | 81                                 | 82                  | 83                    | 84                    | 85                  | 86                                 | 87                            | 89                  | 91              | 92              | 93                         | 94 | 95 | 96 |  |  |                                          |  |
|                                                                                    |    | Brake Pressure too High | Big Difference of Sensor Signals         | Wrong Tire Dimensions | Pressure Sensor Failure    | Brake Pressure too Low | Vehicle Deceleration Too Low | Worn Brake Lining | Timeout Driveline-Retarder | Timeout CFG Driveline-Retarder | BusOff | TCO-signal not plausible | Communication / Interruption | Timeout EBS-Modules | Timeout Engine-Retarder | Timeout Engine (EEC1) | Timeout Gear (ETC1) | Timeout Cruise Control (CCVS) | Timeout Tacho-Message | Timeout Brakes/Supply-Pressure-Message | Timeout CFG Engine-Retarder | Timeout Exhaust-Retarder | Timeout CFG Exhaust-Retarder | CAN High Failure | CAN Low Failure | Timeout ESC/SAS | Timeout CFG Engine | Assembly Failure | Calibration | CPU check faulty | Steering angle ratio not plausible | Invalid ESC Barcode | Timeout Engine (EEC2) | Timeout Engine (EEC3) | Timeout Gear (ETC2) | Inplausibility Tachosignal-Yawrate | Timeout ECAS (Vehicle Weight) | Timeout Gear (ETC7) | Warning-Level 1 | Warning-Level 2 | Timeout Time and Date (TD) |    |    |    |  |  |                                          |  |
| Group 5b: other valves, relays                                                     |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Relay Engine Brake Cut Off                                                         | 54 | 520246                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| EBS-Back-Up-Valve (rear axle)                                                      | 55 | 520247                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| ATC/ASR-Cut Off Valve                                                              | 57 | 520249                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Auxiliary Valve                                                                    | 59 | 520251                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Group 6: brake pressure valves                                                     |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Prop.Rel.Valve (front axle)                                                        | 61 | 520253                  |                                          |                       |                            |                        | X                            |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Prop.Rel.Valve (pressure sensor)                                                   | 62 | 520254                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Prop.Rel.Valve (solenoid)                                                          | 63 | 520255                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Axle Modulator (rear axle)                                                         | 64 | 520256                  | X                                        | X                     |                            | X                      |                              |                   |                            |                                |        |                          |                              | X                   |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 | X               |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Axle Modulator (3rd axle)                                                          | 65 | 520257                  | X                                        | X                     |                            | X                      |                              |                   |                            |                                |        |                          |                              | X                   |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 | X               |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Trailer Control Valve                                                              | 66 | 520258                  |                                          |                       |                            |                        | X                            |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Trailer Control Valve (pr. sensor)                                                 | 67 | 520259                  | X                                        |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Trailer Control Valve (solenoid)                                                   | 68 | 520260                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Group 7: other components                                                          |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| El. Trailer Braking System                                                         | 73 | 520265                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Stability Control (ESC-Module)                                                     | 74 | 520266                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              | X                   |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 | X                  |                  |             | X                | X                                  | X                   |                       | X                     |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Steering Angle Sensor (SAS)                                                        | 75 | 520267                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 | X                  |                  |             | X                |                                    | X                   |                       |                       |                     |                                    |                               |                     |                 |                 |                            | X  | X  |    |  |  |                                          |  |
| Group 8: brake lining sensors                                                      |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (front right)                                                  | 81 | 520273                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (front left)                                                   | 82 | 520274                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Lining Sensor Supply (front axle)                                                  | 83 | 520275                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (rear right)                                                   | 84 | 520276                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (rear left)                                                    | 85 | 520277                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Lining Sensor Supply (rear axle)                                                   | 86 | 520278                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (3rd axle right)                                               | 87 | 520279                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Brake Lining Sensor (3rd axle left)                                                | 88 | 520280                  |                                          |                       |                            |                        |                              | X                 |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Lining Sensor Supply (3rd axle)                                                    | 89 | 520281                  |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |
| Remark: The failure code 99/99 is displayed, if an undefined failure has occurred. |    |                         |                                          |                       |                            |                        |                              |                   |                            |                                |        |                          |                              |                     |                         |                       |                     |                               |                       |                                        |                             |                          |                              |                  |                 |                 |                    |                  |             |                  |                                    |                     |                       |                       |                     |                                    |                               |                     |                 |                 |                            |    |    |    |  |  |                                          |  |

Remark: The failure code 99/99 is displayed, if an undefined failure has occurred.

Onboard faults

| SAE<br>DTC<br>(SPN) | SAE<br>DTC<br>(FMI) |
|---------------------|---------------------|
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 0                   | 11                  |
| 110                 | 9                   |
| 251                 | 9                   |
| 627                 | 0                   |
| 627                 | 1                   |
| 629                 | 11                  |
| 629                 | 12                  |
| 630                 | 12                  |
| 639                 | 2                   |
| 639                 | 9                   |
| 746                 | 3                   |
| 746                 | 4                   |
| 746                 | 5                   |
| 789                 | 0                   |
| 789                 | 1                   |
| 789                 | 3                   |
| 789                 | 4                   |
| 789                 | 5                   |
| 789                 | 6                   |
| 789                 | 7                   |
| 789                 | 11                  |
| 789                 | 14                  |
| 790                 | 0                   |
| 790                 | 1                   |
| 790                 | 3                   |
| 790                 | 4                   |
| 790                 | 5                   |
| 790                 | 6                   |
| 790                 | 7                   |
| 790                 | 11                  |
| 790                 | 14                  |
| 791                 | 0                   |
| 791                 | 1                   |
| 791                 | 3                   |
| 791                 | 4                   |
| 791                 | 5                   |
| 791                 | 6                   |
| 791                 | 7                   |
| 791                 | 11                  |
| 791                 | 14                  |
| 792                 | 0                   |
| 792                 | 1                   |
| 792                 | 3                   |
| 792                 | 4                   |
| 792                 | 5                   |
| 792                 | 6                   |
| 792                 | 7                   |
| 792                 | 11                  |
| 792                 | 14                  |

Reference in fault code list

| Components<br>(EURO) | Fault<br>(EURO) |
|----------------------|-----------------|
| 99                   | 99              |
| 41                   | 71              |
| 44                   | 63              |
| 44                   | 15              |
| 59                   | 12              |
| 75                   | 13              |
| 59                   | 33              |
| 59                   | 32              |
| 59                   | 31              |
| 18                   | 32              |
| 74                   | 83              |
| 27                   | 94              |
| 75                   | 14              |
| 41                   | 88              |
| 41                   | 96              |
| 16                   | 17              |
| 16                   | 18              |
| 16                   | 12              |
| 16                   | 15              |
| 16                   | 11              |
| 41                   | 61              |
| 41                   | 63              |
| 58                   | 33              |
| 58                   | 32              |
| 58                   | 31              |
| 22                   | 38              |
| 22                   | 48              |
| 22                   | 42              |
| 22                   | 41              |
| 22                   | 37              |
| 22                   | 44              |
| 22                   | 45              |
| 22                   | 46              |
| 22                   | 47              |
| 21                   | 38              |
| 21                   | 48              |
| 21                   | 42              |
| 21                   | 41              |
| 21                   | 37              |
| 21                   | 44              |
| 21                   | 45              |
| 21                   | 46              |
| 21                   | 47              |
| 24                   | 38              |
| 24                   | 48              |
| 24                   | 42              |
| 24                   | 41              |
| 24                   | 37              |
| 24                   | 44              |
| 24                   | 45              |
| 24                   | 46              |
| 24                   | 47              |
| 23                   | 38              |
| 23                   | 48              |
| 23                   | 42              |
| 23                   | 41              |
| 23                   | 37              |
| 23                   | 44              |
| 23                   | 45              |
| 23                   | 46              |
| 23                   | 47              |

Onboard faults

| SAE<br>DTC<br>(SPN) | SAE<br>DTC<br>(FMI) |
|---------------------|---------------------|
| 793                 | 0                   |
| 793                 | 1                   |
| 793                 | 3                   |
| 793                 | 4                   |
| 793                 | 5                   |
| 793                 | 6                   |
| 793                 | 7                   |
| 793                 | 11                  |
| 793                 | 14                  |
| 794                 | 0                   |
| 794                 | 1                   |
| 794                 | 3                   |
| 794                 | 4                   |
| 794                 | 5                   |
| 794                 | 6                   |
| 794                 | 7                   |
| 794                 | 11                  |
| 794                 | 14                  |
| 795                 | 3                   |
| 795                 | 3                   |
| 795                 | 4                   |
| 795                 | 4                   |
| 795                 | 5                   |
| 795                 | 5                   |
| 795                 | 5                   |
| 795                 | 14                  |
| 796                 | 3                   |
| 796                 | 3                   |
| 796                 | 4                   |
| 796                 | 4                   |
| 796                 | 5                   |
| 796                 | 5                   |
| 796                 | 5                   |
| 796                 | 14                  |
| 801                 | 3                   |
| 801                 | 4                   |
| 801                 | 5                   |
| 801                 | 13                  |
| 802                 | 3                   |
| 802                 | 4                   |
| 806                 | 3                   |
| 806                 | 4                   |
| 806                 | 5                   |
| 806                 | 13                  |
| 810                 | 2                   |
| 810                 | 9                   |
| 810                 | 13                  |
| 810                 | 14                  |
| 917                 | 9                   |
| 925                 | 3                   |
| 1042                | 8                   |
| 1042                | 9                   |
| 1042                | 10                  |
| 1042                | 11                  |
| 1042                | 12                  |
| 1043                | 3                   |
| 1043                | 4                   |
| 1045                | 4                   |
| 1045                | 5                   |
| 1046                | 4                   |
| 1046                | 5                   |

Reference in fault code li

| Components<br>(EURO) | Fault<br>(EURO) |
|----------------------|-----------------|
| 26                   | 38              |
| 26                   | 48              |
| 26                   | 42              |
| 26                   | 41              |
| 26                   | 37              |
| 26                   | 44              |
| 26                   | 45              |
| 26                   | 46              |
| 26                   | 47              |
| 25                   | 38              |
| 25                   | 48              |
| 25                   | 42              |
| 25                   | 41              |
| 25                   | 37              |
| 25                   | 44              |
| 25                   | 45              |
| 25                   | 46              |
| 25                   | 47              |
| 51                   | 22              |
| 51                   | 28              |
| 51                   | 21              |
| 51                   | 27              |
| 51                   | 24              |
| 51                   | 23              |
| 51                   | 26              |
| 51                   | 25              |
| 52                   | 22              |
| 52                   | 28              |
| 52                   | 21              |
| 52                   | 27              |
| 52                   | 24              |
| 52                   | 23              |
| 52                   | 26              |
| 52                   | 25              |
| 54                   | 33              |
| 54                   | 32              |
| 54                   | 31              |
| 54                   | 12              |
| 53                   | 33              |
| 53                   | 32              |
| 57                   | 33              |
| 57                   | 32              |
| 57                   | 31              |
| 57                   | 12              |
| 41                   | 62              |
| 41                   | 69              |
| 41                   | 91              |
| 41                   | 39              |
| 41                   | 79              |
| 15                   | 33              |
| 43                   | 75              |
| 43                   | 63              |
| 43                   | 76              |
| 43                   | 61              |
| 73                   | 15              |
| 14                   | 33              |
| 14                   | 32              |
| 32                   | 41              |
| 32                   | 37              |
| 33                   | 41              |
| 33                   | 37              |

## Onboard faults

## Reference in fault code list

## Onboard faults

## Reference in fault code list

| SAE DTC (SPN) | SAE DTC (FMI) |
|---------------|---------------|
| 1047          | 3             |
| 1047          | 3             |
| 1047          | 4             |
| 1047          | 4             |
| 1047          | 5             |
| 1047          | 7             |
| 1047          | 12            |
| 1047          | 14            |
| 1049          | 3             |
| 1049          | 4             |
| 1050          | 9             |
| 1050          | 11            |
| 1050          | 12            |
| 1050          | 13            |
| 1050          | 19            |
| 1051          | 0             |
| 1051          | 3             |
| 1051          | 4             |
| 1051          | 5             |
| 1051          | 13            |
| 1052          | 2             |
| 1052          | 7             |
| 1053          | 9             |
| 1053          | 11            |
| 1053          | 12            |
| 1053          | 13            |
| 1053          | 13            |
| 1053          | 19            |
| 1054          | 0             |
| 1055          | 2             |
| 1055          | 7             |
| 1056          | 3             |
| 1056          | 3             |
| 1056          | 4             |
| 1056          | 4             |
| 1056          | 5             |
| 1056          | 7             |
| 1056          | 12            |
| 1056          | 13            |
| 1056          | 14            |
| 1058          | 0             |
| 1058          | 3             |
| 1058          | 4             |
| 1060          | 3             |
| 1060          | 4             |
| 1061          | 3             |
| 1061          | 4             |
| 1062          | 3             |
| 1062          | 4             |
| 1063          | 3             |
| 1063          | 4             |
| 1064          | 3             |
| 1064          | 4             |
| 1065          | 3             |
| 1065          | 4             |
| 1066          | 2             |
| 1066          | 12            |
| 1067          | 2             |
| 1067          | 4             |
| 1068          | 2             |
| 1068          | 4             |

| Components (EURO) | Fault (EURO) |
|-------------------|--------------|
| 63                | 33           |
| 63                | 35           |
| 63                | 32           |
| 63                | 34           |
| 63                | 36           |
| 61                | 55           |
| 61                | 16           |
| 63                | 25           |
| 62                | 42           |
| 62                | 43           |
| 64                | 64           |
| 64                | 14           |
| 64                | 16           |
| 64                | 13           |
| 64                | 83           |
| 64                | 51           |
| 55                | 33           |
| 55                | 32           |
| 55                | 31           |
| 55                | 12           |
| 64                | 54           |
| 64                | 52           |
| 65                | 64           |
| 65                | 14           |
| 65                | 16           |
| 65                | 12           |
| 65                | 13           |
| 65                | 83           |
| 65                | 51           |
| 65                | 54           |
| 65                | 52           |
| 68                | 33           |
| 68                | 35           |
| 68                | 32           |
| 68                | 34           |
| 68                | 36           |
| 66                | 55           |
| 66                | 16           |
| 66                | 12           |
| 68                | 25           |
| 67                | 51           |
| 67                | 42           |
| 67                | 43           |
| 82                | 42           |
| 82                | 43           |
| 81                | 42           |
| 81                | 43           |
| 85                | 42           |
| 85                | 43           |
| 84                | 42           |
| 84                | 43           |
| 88                | 42           |
| 88                | 43           |
| 87                | 42           |
| 87                | 43           |
| 31                | 52           |
| 31                | 16           |
| 34                | 43           |
| 34                | 41           |
| 35                | 43           |
| 35                | 41           |

| SAE DTC (SPN) | SAE DTC (FMI) |
|---------------|---------------|
| 1069          | 11            |
| 1070          | 7             |
| 1079          | 3             |
| 1079          | 4             |
| 1080          | 3             |
| 1080          | 4             |
| 1099          | 1             |
| 1100          | 1             |
| 1101          | 1             |
| 1102          | 1             |
| 1103          | 1             |
| 1104          | 1             |
| 1230          | 2             |
| 1230          | 19            |
| 1438          | 12            |
| 1439          | 12            |
| 1482          | 8             |
| 1482          | 9             |
| 1482          | 10            |
| 1483          | 8             |
| 1483          | 9             |
| 1483          | 10            |
| 1542          | 4             |
| 1542          | 4             |
| 1543          | 4             |
| 1543          | 4             |
| 1793          | 12            |
| 1807          | 1             |
| 1807          | 2             |
| 1807          | 2             |
| 1807          | 2             |
| 1807          | 2             |
| 1807          | 8             |
| 1807          | 9             |
| 1807          | 10            |
| 1807          | 11            |
| 1807          | 12            |
| 1807          | 13            |
| 1807          | 14            |
| 1807          | 17            |
| 1807          | 18            |
| 1807          | 19            |
| 1807          | 31            |
| 2000          | 8             |
| 2000          | 9             |
| 2015          | 9             |
| 2015          | 10            |
| 2016          | 9             |
| 2016          | 10            |
| 2041          | 9             |
| 2041          | 10            |
| 2042          | 2             |
| 2042          | 9             |
| 2042          | 10            |
| 2047          | 9             |
| 2048          | 9             |
| 2080          | 2             |
| 2080          | 9             |
| 2080          | 10            |
| 2620          | 12            |
| 2622          | 9             |

| Components (EURO) | Fault (EURO) |
|-------------------|--------------|
| 16                | 53           |
| 79                | 94           |
| 83                | 33           |
| 83                | 32           |
| 86                | 33           |
| 86                | 32           |
| 82                | 57           |
| 81                | 57           |
| 85                | 57           |
| 84                | 57           |
| 88                | 57           |
| 87                | 57           |
| 42                | 61           |
| 42                | 16           |
| 46                | 16           |
| 45                | 16           |
| 41                | 93           |
| 41                | 67           |
| 41                | 89           |
| 41                | 87           |
| 41                | 66           |
| 41                | 86           |
| 11                | 18           |
| 11                | 31           |
| 12                | 18           |
| 12                | 31           |
| 47                | 16           |
| 75                | 18           |
| 16                | 49           |
| 75                | 43           |
| 75                | 16           |
| 75                | 95           |
| 75                | 63           |
| 75                | 77           |
| 75                | 16           |
| 75                | 14           |
| 75                | 15           |
| 75                | 12           |
| 75                | 94           |
| 99                | 99           |
| 75                | 49           |
| 75                | 77           |
| 75                | 82           |
| 41                | 68           |
| 41                | 78           |
| 41                | 65           |
| 41                | 72           |
| 41                | 58           |
| 41                | 59           |
| 41                | 73           |
| 41                | 74           |
| 76                | 16           |
| 76                | 63           |
| 76                | 36           |
| 41                | 92           |
| 41                | 71           |
| 71                | 16           |
| 71                | 63           |
| 71                | 36           |
| 48                | 16           |
| 99                | 99           |



Onboard faults

| SAE<br>DTC<br>(SPN) | SAE<br>DTC<br>(FMI) |
|---------------------|---------------------|
| 2622                | 9                   |
| 2622                | 12                  |
| 2836                | 4                   |
| 2927                | 2                   |
| 2927                | 9                   |
| 3509                | 3                   |
| 3509                | 4                   |
| 3511                | 3                   |
| 3511                | 4                   |
| 520210              | 1                   |
| 520210              | 2                   |
| 520210              | 7                   |
| 520210              | 9                   |
| 520210              | 9                   |
| 520210              | 9                   |
| 520210              | 9                   |
| 520210              | 11                  |
| 520210              | 12                  |
| 520210              | 12                  |
| 520210              | 13                  |
| 520210              | 14                  |
| 520211              | 13                  |
| 520212              | 2                   |
| 520213              | 31                  |
| 520214              | 2                   |
| 520230              | 0                   |
| 520230              | 15                  |
| 520240              | 2                   |
| 520240              | 9                   |
| 520240              | 10                  |

Reference in fault code list

| Components<br>(EURO) | Fault<br>(EURO) |
|----------------------|-----------------|
| 77                   | 63              |
| 99                   | 99              |
| 13                   | 18              |
| 49                   | 15              |
| 49                   | 63              |
| 17                   | 33              |
| 17                   | 32              |
| 89                   | 33              |
| 89                   | 32              |
| 74                   | 18              |
| 74                   | 15              |
| 74                   | 81              |
| 74                   | 77              |
| 64                   | 77              |
| 65                   | 77              |
| 74                   | 64              |
| 74                   | 14              |
| 74                   | 16              |
| 74                   | 11              |
| 74                   | 12              |
| 74                   | 49              |
| 74                   | 13              |
| 74                   | 85              |
| 74                   | 82              |
| 75                   | 84              |
| 78                   | 95              |
| 78                   | 94              |
| 72                   | 16              |
| 72                   | 63              |
| 72                   | 36              |