

# MS S65 Pinout Diagram

| Number | X-pin, colour   | Description                          |
|--------|-----------------|--------------------------------------|
| X60001 | 26-pin, grey    | Component connector DME control unit |
| X60002 | 26-pin, black   | Component connector DME control unit |
| X60003 | 6-pin, black    | Component connector DME control unit |
| X60004 | 6-pin, black    | Component connector DME control unit |
| X60005 | 44-pin, black   | Component connector DME control unit |
| X60006 | 12-pin, black   | Component connector DME control unit |
| X60007 | 26-pin, natural | Component connector DME control unit |

## Pin assignments at plug connector X60001

| Pin | Type | Description /Signal type                     | Connection /Measuring notes               |
|-----|------|----------------------------------------------|-------------------------------------------|
| 1   | A/E  | Signal PT-CAN low                            | Powertrain CAN-bus                        |
| 2   | E    | Start signal                                 | Car access system                         |
| 3   | A/E  | BSD signal                                   | Battery sensor                            |
| 4   | E    | Brake light signal                           | Brake light switch                        |
| 5   |      | Not used                                     |                                           |
| 6   | E    | Signal Temperature sensor at radiator outlet | Temperature sensor at radiator outlet     |
| 7   | E    | Signal Accelerator pedal module              | Accelerator pedal module                  |
| 8   | A    | Signal Electric fan                          | Electric fan                              |
| 9   |      | Not used                                     |                                           |
| 10  | M    | Ground Accelerator pedal module              | Accelerator pedal module                  |
| 11  | A    | Supply Accelerator pedal module              | Accelerator pedal module                  |
| 12  | E    | Signal Power button                          | Power button                              |
| 13  | A    | Activation Secondary air pump relay          | Secondary air pump relay                  |
| 14  | A/E  | Signal PT-CAN high                           | Powertrain CAN-bus                        |
| 15  | E    | Signal, electronic vehicle immobilizer       | Car access system                         |
| 16  | E    | Brake light test signal                      | Brake light switch                        |
| 17  | E    | Signal, rear right wheel speed               | Connector X10186 (rear right wheel speed) |
| 18  |      | Not used                                     |                                           |
| 19  | E    | Signal Temperature sensor at radiator outlet | Temperature sensor at radiator outlet     |
| 20  | E    | Signal Accelerator pedal module              | Accelerator pedal module                  |

|    |     |                                                    |                                         |
|----|-----|----------------------------------------------------|-----------------------------------------|
| 21 | A/E | TD signal                                          | Connector TD signal                     |
| 22 | A   | Signal Electronically controlled fuel pump         | Electronically controlled fuel pump     |
| 23 | M   | Ground Accelerator pedal module                    | Accelerator pedal module                |
| 24 | A   | Supply Accelerator pedal module                    | Accelerator pedal module                |
| 25 | E   | USA Signal Secondary air - hot-film air-mass meter | Secondary air - hot-film air-mass meter |
| 26 | A   | Negative activation E-box fan                      | E-box fan                               |

## Pin assignments at plug connector X60002

| Pin | Type | Description /Signal type                     | Connection /Measuring notes             |
|-----|------|----------------------------------------------|-----------------------------------------|
| 1   | E    | Wake-up signal, terminal 15                  | Connector, terminal 15 wake-up          |
| 2   |      | Not used                                     |                                         |
| 3   | A/E  | CAN bus low                                  | CAN-bus connector                       |
| 4   | A/E  | CAN bus high                                 | CAN-bus connector                       |
| 5   | E    | Signal, pressure sensor                      | Fuel pressure sensor                    |
| 6   | M    | Ground Fuel pressure sensor                  | Fuel pressure sensor                    |
| 7   | E    | Signal Exhaust temperature sensor            | Exhaust temperature sensor              |
| 8   |      | Not used                                     |                                         |
| 9   |      | Not used                                     |                                         |
| 10  |      | Not used                                     |                                         |
| 11  |      | Not used                                     |                                         |
| 12  |      | Not used                                     |                                         |
| 13  |      | Not used                                     |                                         |
| 14  | A    | Not used                                     |                                         |
| 15  | E    | USA Signal, fuel tank leak diagnosis valve   | Diagnostic module for fuel tank leakage |
| 16  | E    | USA Signal, fuel tank leak diagnosis pump    | Diagnostic module for fuel tank leakage |
| 17  | E    | USA Signal, fuel tank leak diagnosis heating | Diagnostic module for fuel tank leakage |
| 18  | E    | Signal Vacuum sensor                         | Vacuum sensor                           |
| 19  | A    | Supply Fuel pressure sensor                  | Fuel pressure sensor                    |
| 20  | E    | Signal Oil pressure switch                   | Oil pressure switch                     |
| 21  | E    | Signal Exhaust temperature sensor 2          | Exhaust temperature sensor 2            |
| 22  |      | Not used                                     |                                         |
| 23  |      | Not used                                     |                                         |

|    |  |          |  |
|----|--|----------|--|
| 24 |  | Not used |  |
| 25 |  | Not used |  |
| 26 |  | Not used |  |

### Pin assignments at plug connector X60003

| Pin | Type | Description /Signal type               | Connection /Measuring notes |
|-----|------|----------------------------------------|-----------------------------|
| 1   | E    | Supply, terminal 30                    | Fuse F26                    |
| 2   | E    | Supply, terminal 87                    | Fuse F03                    |
| 3   |      | Not used                               |                             |
| 4   | M    | Ground                                 | Ground point                |
| 5   | A    | Activation Relay, electric vacuum pump | Relay, electric vacuum pump |
| 6   |      | Not used                               |                             |

### Pin assignments at plug connector X60004

| Pin | Type | Description /Signal type                   | Connection /Measuring notes     |
|-----|------|--------------------------------------------|---------------------------------|
| 1   | A    | Activation VANOS solenoid valve, intake    | VANOS solenoid valve, intake    |
| 2   | A    | Activation VANOS solenoid valve, exhaust   | VANOS solenoid valve, exhaust   |
| 3   | A    | Activation VANOS solenoid valve 2, intake  | VANOS solenoid valve 2, intake  |
| 4   | A    | Activation VANOS solenoid valve 2, exhaust | VANOS solenoid valve 2, exhaust |
| 5   | A    | Activation Electric oil pump               | Electric oil pump               |
| 6   | A    | Activation Electric oil pump 2             | Electric oil pump 2             |

### Pin assignments at plug connector X60005

| Pin | Type | Description /Signal type      | Connection /Measuring notes              |
|-----|------|-------------------------------|------------------------------------------|
| 1   | E    | Signal, oxygen sensor heating | Oxygen sensor before catalytic converter |
| 2   |      | Not used                      |                                          |
| 3   |      | Not used                      |                                          |
| 4   | E    | Signal, oxygen sensor         | Oxygen sensor before catalytic converter |
| 5   | E    | Signal, oxygen sensor         | Oxygen sensor before catalytic converter |

|    |     |                                                   |                                            |
|----|-----|---------------------------------------------------|--------------------------------------------|
| 6  | M   | Ground Oxygen sensor before catalytic converter   | Oxygen sensor before catalytic converter   |
| 7  | E   | Signal, oxygen sensor                             | Oxygen sensor before catalytic converter   |
| 8  | M   | Sensor ground                                     | Connector Sensor ground                    |
| 9  |     | Not used                                          |                                            |
| 10 | E   | Signal, intake air temperature                    | Air mass flow sensor                       |
| 11 | E   | Signal Air mass flow sensor                       | Air mass flow sensor                       |
| 12 | A   | 5 V supply                                        | Connector 5 V supply                       |
| 13 | A   | Activation, main relay                            | DME relay                                  |
| 14 | A   | Supply voltage, sensors                           | Connector Throttle valve sensor            |
| 15 |     | Not used                                          |                                            |
| 16 |     | Not used                                          |                                            |
| 17 | A   | Signal Electric throttle valve actuator           | Electric throttle valve actuator           |
| 18 | E   | Signal, oxygen sensor                             | Oxygen sensor after catalytic converter    |
| 19 | A   | Activation Charcoal filter valve                  | Charcoal filter valve                      |
| 20 | A/E | CAN bus high                                      | CAN-bus connector                          |
| 21 | A/E | CAN bus high                                      | CAN-bus connector                          |
| 22 | E   | Signal, oxygen sensor heating                     | Oxygen sensor after catalytic converter    |
| 23 | E   | Signal, oxygen sensor heating                     | Oxygen sensor 2 before catalytic converter |
| 24 | A   | Activation Pressure accumulator valve VANOS       | Pressure accumulator valve VANOS           |
| 25 |     | Not used                                          |                                            |
| 26 | E   | Signal, oxygen sensor                             | Oxygen sensor 2 before catalytic converter |
| 27 | E   | Signal, oxygen sensor                             | Oxygen sensor 2 before catalytic converter |
| 28 | M   | Ground Oxygen sensor 2 before catalytic converter | Oxygen sensor 2 before catalytic converter |
| 29 | E   | Signal, oxygen sensor                             | Oxygen sensor 2 before catalytic converter |
| 30 | E   | Signal, coolant temperature                       | Coolant temperature sensor                 |
| 31 | E   | Not used                                          |                                            |
| 32 | E   | Signal, intake air temperature                    | Air mass flow sensor 2                     |
| 33 | E   | Signal Air mass flow sensor 2                     | Air mass flow sensor 2                     |

|    |     |                                           |                                           |
|----|-----|-------------------------------------------|-------------------------------------------|
| 34 | M   | Sensor ground                             | Connector Sensor ground                   |
| 35 | A/E | BSD signal                                | Connector BSD signal                      |
| 36 | E   | Signal Throttle valve sensor 2            | Throttle valve sensor 2                   |
| 37 | E   | Signal Throttle valve sensor              | Throttle valve sensor                     |
| 38 | M   | Sensor ground                             | Connector Sensor ground                   |
| 39 | A   | Signal Electric throttle valve actuator 2 | Electric throttle valve actuator 2        |
| 40 | E   | Signal, oxygen sensor                     | Oxygen sensor 2 after catalytic converter |
| 41 | A   | Activation Fuel tank vent valve 2         | Fuel tank vent valve 2                    |
| 42 | A/E | CAN bus low                               | CAN-bus connector                         |
| 43 | A/E | CAN bus low                               | CAN-bus connector                         |
| 44 | E   | Signal, oxygen sensor heating             | Oxygen sensor 2 after catalytic converter |

## Pin assignments at plug connector X60006

| Pin | Type | Description /Signal type | Connection /Measuring notes |
|-----|------|--------------------------|-----------------------------|
| 1   | A    | Signal, fuel injector    | Fuel injector, cylinder 1   |
| 2   | A    | Signal, fuel injector    | Fuel injector, cylinder 2   |
| 3   | A    | Signal, fuel injector    | Fuel injector, cylinder 3   |
| 4   | A    | Signal, fuel injector    | Fuel injector, cylinder 4   |
| 5   | A    | Signal, fuel injector    | Fuel injector, cylinder 5   |
| 6   |      | Not used                 |                             |
| 7   | A    | Signal, fuel injector    | Fuel injector, cylinder 6   |
| 8   | A    | Signal, fuel injector    | Fuel injector, cylinder 7   |
| 9   | A    | Signal, fuel injector    | Fuel injector, cylinder 8   |
| 10  | A    | Signal, fuel injector    | Fuel injector, cylinder 9   |
| 11  | A    | Signal, fuel injector    | Fuel injector, cylinder 10  |
| 12  |      | Not used                 |                             |

## Pin assignments at plug connector X60007

| Pin | Type | Description /Signal type | Connection /Measuring notes |
|-----|------|--------------------------|-----------------------------|
| 1   | A    | Signal, ignition         | Ionic current control unit  |
| 2   | A    | Signal, ignition         | Ionic current control unit  |
| 3   | A    | Signal, ignition         | Ionic current control unit  |
| 4   | A    | Signal, ignition         | Ionic current control unit  |

|    |   |                                   |                              |
|----|---|-----------------------------------|------------------------------|
| 5  | A | Signal, ignition                  | Ionic current control unit   |
| 6  |   | Not used                          |                              |
| 7  | A | Ionic current signal gain         | Ionic current control unit   |
| 8  | A | Ionic current signal gain         | Ionic current control unit 2 |
| 9  | E | Signal, ionic current             | Ionic current control unit   |
| 10 |   | Not used                          |                              |
| 11 | E | Signal Intake camshaft sensor     | Intake camshaft sensor       |
| 12 | E | Signal Exhaust camshaft sensor    | Exhaust camshaft sensor      |
| 13 | E | Signal Crankshaft sensor          | Crankshaft sensor            |
| 14 | A | Signal, ignition                  | Ionic current control unit 2 |
| 15 | A | Signal, ignition                  | Ionic current control unit 2 |
| 16 | A | Signal, ignition                  | Ionic current control unit 2 |
| 17 | A | Signal, ignition                  | Ionic current control unit 2 |
| 18 | A | Signal, ignition                  | Ionic current control unit 2 |
| 19 |   | Not used                          |                              |
| 20 | A | Signal, ionic current measurement | Ionic current control unit   |
| 21 | A | Signal, ionic current measurement | Ionic current control unit 2 |
| 22 | E | Signal, ionic current             | Ionic current control unit 2 |
| 23 | M | Ground                            | Ground connector             |
| 24 | E | Signal Intake camshaft sensor 2   | Intake camshaft sensor 2     |
| 25 | E | Signal Exhaust camshaft sensor 2  | Exhaust camshaft sensor 2    |
| 26 | M | Ground Crankshaft sensor          | Crankshaft sensor            |