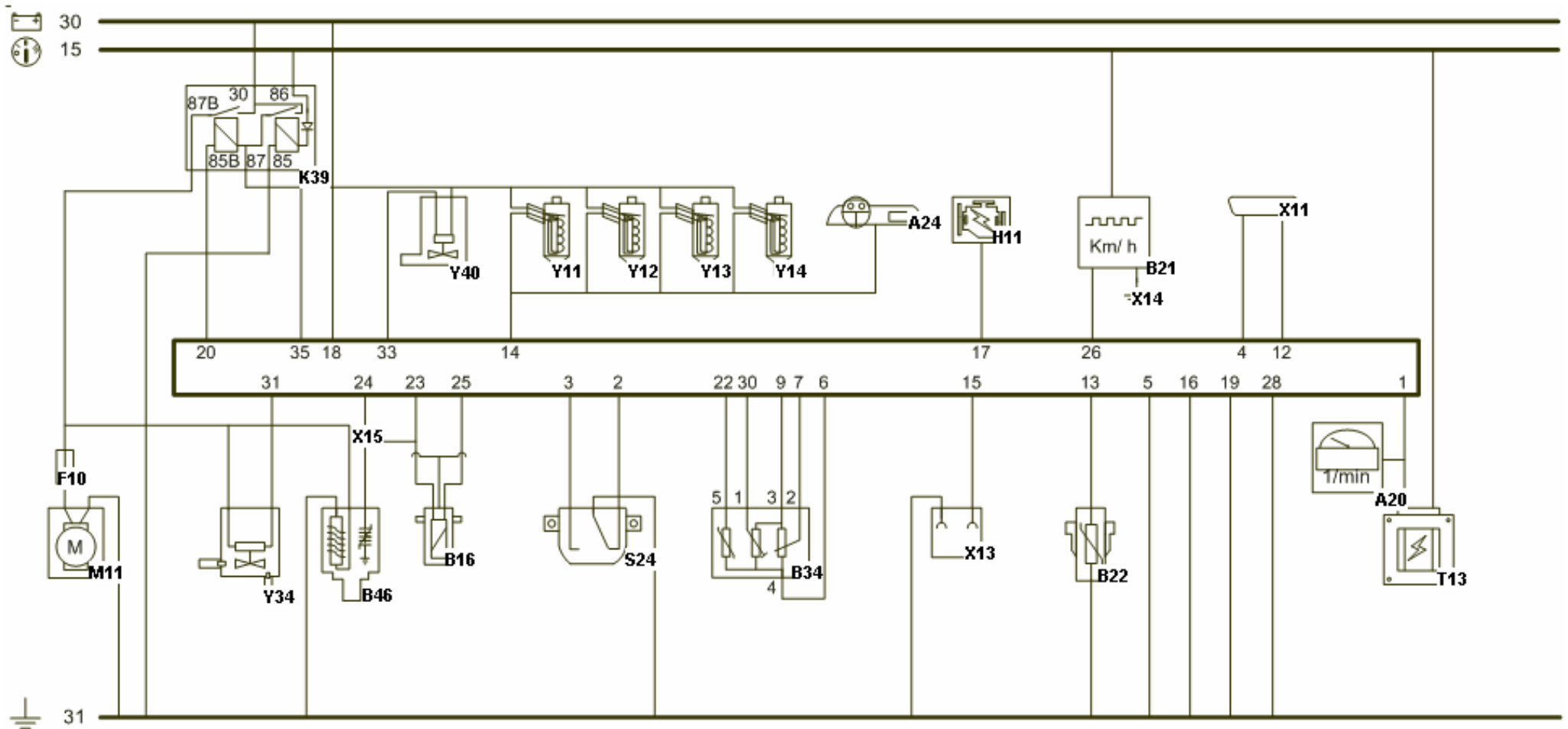


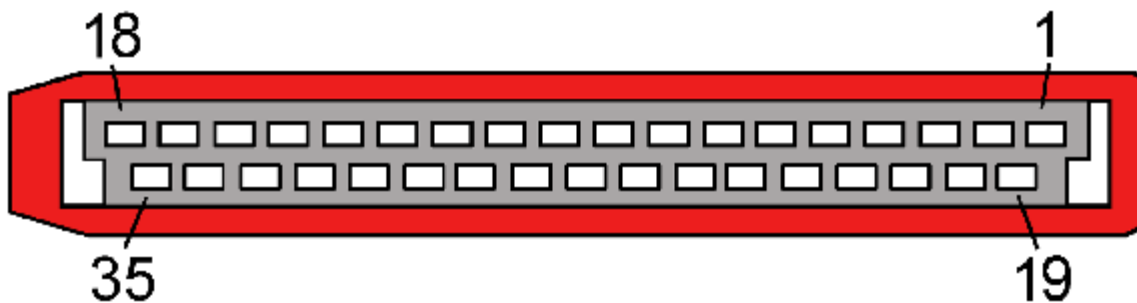
Bosch Motronic ML4.1 (Kat.)



Opel Omega A 2,0i Omega A/Carlton

Bosch Motronic ML4.1 (Kat.)

| | |
|-----|--------------------------------------|
| A20 | Tachometer |
| A24 | Instrument cluster |
| B16 | Inductive crankshaft position sensor |
| B21 | Vehicle speed sensor |
| B22 | Coolant temperature sensor |
| B34 | Air flow meter with CO potentiometer |
| B46 | O2-sensor with pre-heater |
| F10 | Fuse |
| H11 | ECU lamp |
| K39 | System relay |
| M11 | Fuel pump |
| S24 | Idle/ full throttle switch |
| T13 | Ignition coil |
| X11 | Diagnostic connector |
| X13 | Octane adjustment |
| X14 | Ground connection |
| X15 | Cable screen |
| Y11 | Injector 1 |
| Y12 | Injector 2 |
| Y13 | Injector 3 |
| Y14 | Injector 4 |
| Y34 | Canister purge valve |
| Y40 | Idling control valve |



Troubleshooting-data

Model: Omega A 2,0i

Motor: C20NE / Bosch Motronic ML4.1 (Kat.

| Component: | From: | To: | Condition: | Value | Measured | dic. |
|--------------------------------------|-------|---------|-----------------------------------|---------------|----------|------|
| . | . | . | Connector seen from wire side | . | | |
| Battery (earth) | 16 | Batt. - | Ignition on | 0 V | | |
| Battery (earth) | 19 | Batt. - | Ignition on | 0 V | | |
| Battery (earth) | 28 | Batt. - | Ignition on | 0 V | | |
| Battery (earth) | 5 | Batt. - | Ignition on | 0 V | | |
| Battery (positive) | 18 | Batt. - | Ignition on | 11 - 14 V | | |
| Idle/ full throttle switch | 2 | Batt. - | Ignition on, throttle valve close | 0 V | | |
| Idle/ full throttle switch | 3 | Batt. - | Ignition on, throttle valve close | 5 V | | |
| Idle/ full throttle switch | 2 | Batt. - | Ignition on, throttle valve open | 5 V | | |
| Idle/ full throttle switch | 3 | Batt. - | Ignition on, throttle valve open | 0 V | | |
| Ignition coil | 1 | Batt. - | Ignition on | 11 - 14 V | | |
| Ignition coil | 1 | Batt. - | Starter rpm | 30 mV | | |
| Ignition coil | 1 | Batt. - | Idle | | | 1041 |
| Injector 1 | 14 | Batt. - | Ignition on | 11 - 14 V | | |
| Injector 1 | 14 | Batt. - | Idle, warm | 2,3 - 3,2 ms | | 1004 |
| Injector 2 | 14 | Batt. - | Ignition on | 11 - 14 V | | |
| Injector 2 | 14 | Batt. - | Idle, warm | 2,3 - 3,2 ms | | 1004 |
| Injector 3 | 14 | Batt. - | Ignition on | 11 - 14 V | | |
| Injector 3 | 14 | Batt. - | Idle, warm | 2,3 - 3,2 ms | | 1004 |
| Injector 4 | 14 | Batt. - | Idle, warm | 2,3 - 3,2 ms | | 1004 |
| Injector 4 | 14 | Batt. - | Ignition on | 11 - 14 V | | |
| Inductive crankshaft position sensor | 25 | Batt. - | Starter rpm | 1,4 V | | 1013 |
| Inductive crankshaft position sensor | 23 | Batt. - | Starter rpm | 0 V | | |
| Vehicle speed sensor | 26 | Batt. - | Ignition on, push vehicle | 0 V - Batt. + | | 1057 |
| O2-sensor with pre-heater | 24 | Batt. - | Idle, warm | 0,1 - 1 V | | 1016 |
| Canister purge valve | 31 | Batt. - | Ignition on | 11 - 14 V | | |
| Canister purge valve | 31 | Batt. - | Idle | 11 - 14 V | | |
| Canister purge valve | 31 | Batt. - | Idle, rev up | 2 sek. 0 V | | 1029 |
| Coolant temperature sensor | 13 | Batt. - | Idle, cold | 3 - 3,5 V | | |
| Coolant temperature sensor | 13 | Batt. - | Idle, 70 - 110° C | 0,5 - 1,5 V | | |
| Idling control valve | 33 | Batt. - | Ignition on | 11 - 14 V | | |
| Idling control valve | 33 | Batt. - | Idle, warm | 35 - 50 % | | 1035 |
| Air flow meter with CO potentiometer | 9 | Batt. - | Ignition on | 5 V | | |
| Air flow meter with CO potentiometer | 7 | Batt. - | Idle | 0,5 - 1,5 V | | |
| Air flow meter with CO potentiometer | 6 | Batt. - | Ignition on | 0 V | | |
| ECU lamp | 17 | Batt. - | Ignition on, light on | 0 - 1 V | | |
| ECU lamp | 17 | Batt. - | Ignition on, lamp off | 11 - 14 V | | |

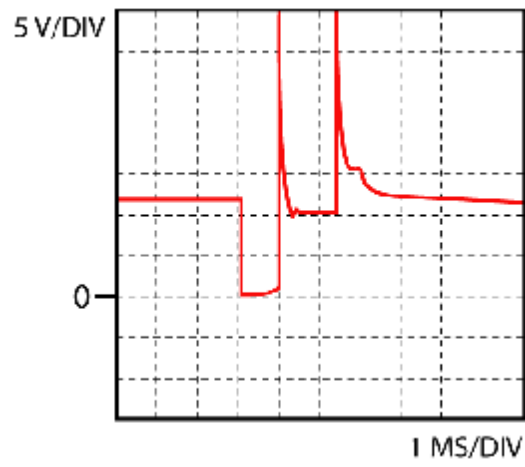
Troubleshooting-data

Model: Omega A 2,0i

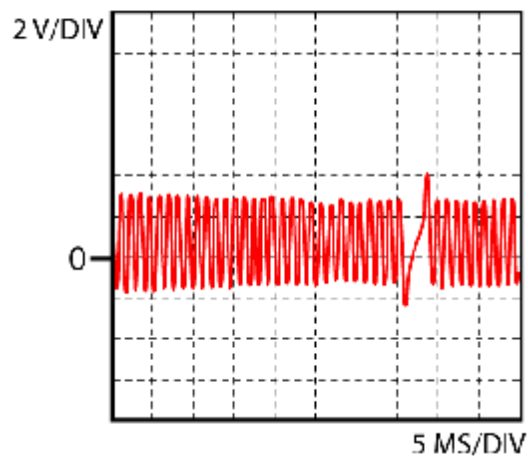
Motor: C20NE / Bosch Motronic ML4.1 (Kat. ...)

| Component: | From: | To: | Condition: | Value | Measured | dic. |
|-------------------|--------------|------------|-------------------|--------------|-----------------|-------------|
| System relay | 20 | Batt. - | Ignition on | 11 - 14 V | | |
| System relay | 35 | Batt. - | Ignition on | 11 - 14 V | | |
| System relay | 20 | Batt. - | Starter rpm | 0 - 1 V | | |

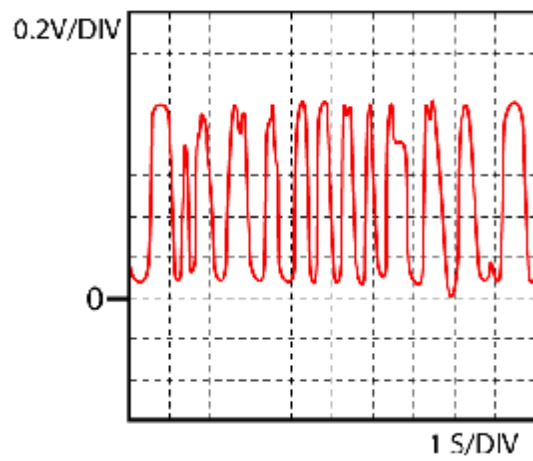
1004



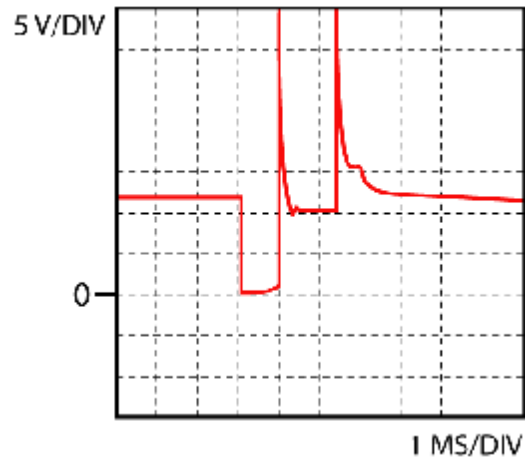
1013



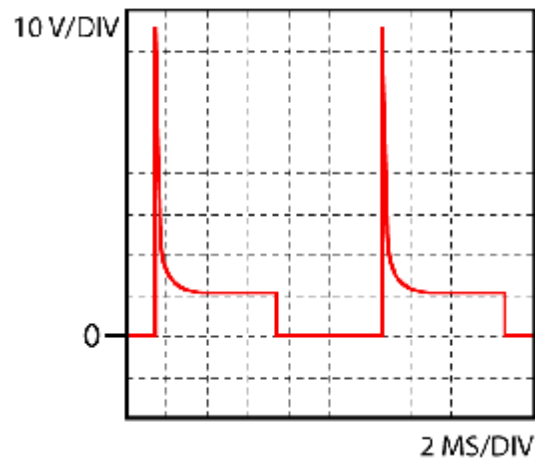
1016



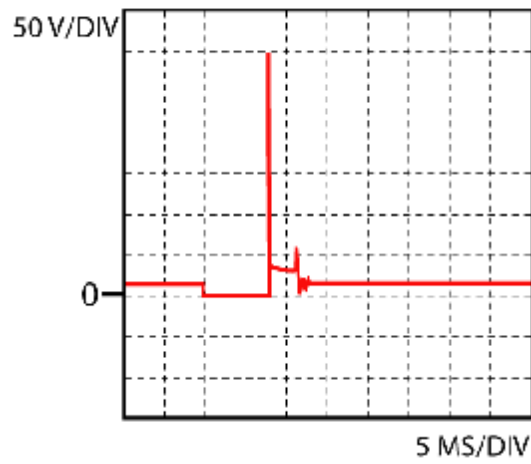
1029

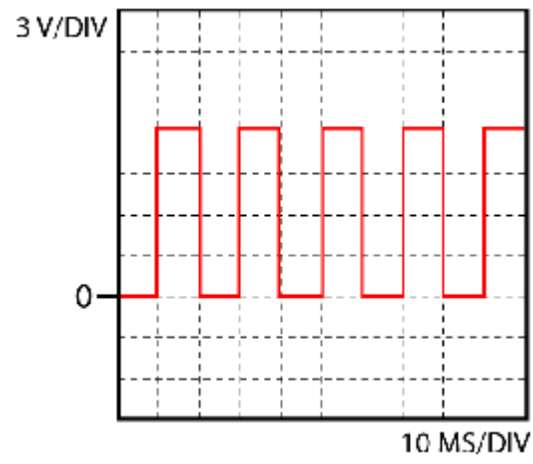


1035

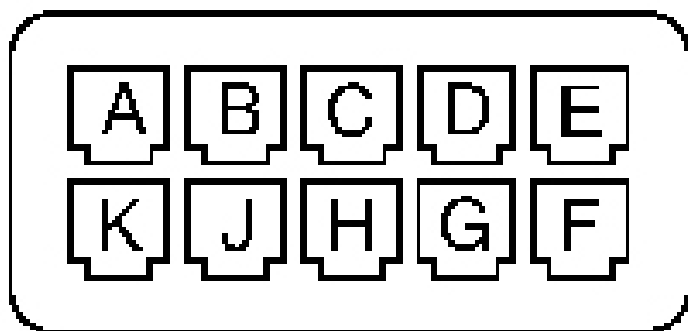


1041

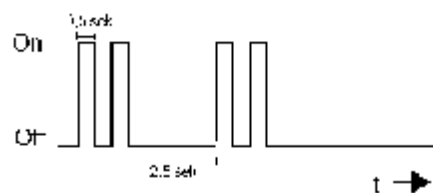




Diagnosis plug



Flash code:



- A = Ground
- B = Engine management test terminal
- C = Transmission management test terminal
- D = LCD instrumentation and microcomputer test terminal
- E = Check engine lamp
- F = Permanent positive terminal
- G = Two-way datawire engine and transmission managem.
- H = Electronic steering damper test terminal
- J = 4X4 test terminal
- J = ETC (Astra F) test terminal
- K = ABS test terminal

Code example: 22

Procedure

Faultcode read-out:

1. Find pin F (B+) to place the rest of the pins.
2. Connect pin A with B in the diagnostic connector.
3. Ignition on.
4. Faultcodes are shown on the faultcode lamp in the dashboard.

Resetting the ECU:

1. Disconnect the ground cable to the battery's negative terminal for at least 30 seconds.