

BMW Series 5, E34 (EURO) High Cluster

11 Pin LCD Display Pinout

Part ID: 1 388 799

Blue Connector for VDO Display w/ 11 Pins
1 388 788

| Pin | Type | Description | Connection | Signal Type | Pin (High) | Use-case | Wire Color |
|--------|------|-----------------------|-------------------------|---------------|----------------|---|------------|
| Pin 1 | M | Ground | Ground Connection | GND | | Ground Connection | N/A |
| Pin 2 | E | VCC +5V | Cluster - PCB Connector | 4.98V | | Likely a 5V PSU for power supply, providing VCC to power the HD44780 controller | N/A |
| Pin 3 | E | Contrast Voltage (VO) | Cluster - PCB Connector | 0.03V - 0.07V | | Voltage adjustment for contrast control | N/A |
| Pin 4 | E | Register Select (RS) | Cluster - PCB Connector | 4.86V - 5.02V | | Controls command/data selection for the display | N/A |
| Pin 5 | E | Read/Write (RW) | Cluster - PCB Connector | 4.86V - 5.02V | | Specifies read (1) or write (0) operation | N/A |
| Pin 6 | E | DB4 | Cluster - PCB Connector | 0.01V - 0.02V | HD44780A84 DB4 | | N/A |
| Pin 7 | E | DB5 | Cluster - PCB Connector | 0.01V - 0.08V | HD44780A84 DB5 | | N/A |
| Pin 8 | E | DB6 | Cluster - PCB Connector | 0.03V | HD44780A84 DB6 | | N/A |
| Pin 9 | E | DB7 | Cluster - PCB Connector | 0.03V | HD44780A84 DB7 | | N/A |
| Pin 10 | E | Power Supply +5V | Cluster - PCB Connector | 4.98V | | 5V Power supply for driving the LCD display | N/A |
| Pin 11 | E | Enable Signal (E) | Cluster - PCB Connector | 1.03V | | Enable Signal for latching data into the HD44780 Controller | N/A |

Pin Types

| TYPE | DESCRIPTION |
|------|-------------|
| E | Input |
| A | Output |
| M | Ground |

Abbreviation

| Symbol | Description |
|--------|---------------------------------|
| ABS | Assisted Breaking System |
| SIA | Service Lights Indicator |
| TI | Injection Signal |
| TD | Engine Speed Signal |
| CC | Check-Control |
| CCM | Check-Control Module |
| LKM | Lamp Control Module |
| AHM | Trailer Module |
| ASC | Automatic Stability Control |
| EGS | Electronic Transmission Control |
| K | Instrument Cluster |
| KVA | Fuel Consumption Indicator |
| TQ | Injection Quantity Diesel |



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Possible Uses for the Pins

- Pin 1 (GND): A ground/earth connection based on the pinout PCB line tracing
- Pin 2 (VCC): A consistent 5V power supply suggests it's providing VCC to power the HD44780 controller
- Pin 3 (VO): A fluctuating low voltage (0.03-0.07V) matches VO, which is used to control the contrast of the display
- Pin 4 (RS): The pin shows 4.86-5.02V, indicating a digital input likely used for "Register Select" (RS)
- Pin 5 (RW): A mirrored or redundant 5V pin, likely controlling "Read/Write" functionality
- Pin 6 (DB4): A HD44780 controller DB4 traceout line
- Pin 7 (DB5): A HD44780 controller DB5 traceout line
- Pin 8 (DB6): A HD44780 controller DB6 traceout line
- Pin 9 (DB7): A HD44780 controller DB7 traceout line
- Pin 10 (PSU): 5V power supply for driving the LCD display
- Pin 11 (E): The voltage (1.03V) resembles the Enable pin logic, which latches data into the HD44780, might also be a reference voltage for an ADC or other analog circuit

References Used

- http://bitsavers.informatik.uni-stuttgart.de/components/hitachi/_dataBooks/1987_Hitachi_Liquid_Crystal_Display_Modules.pdf
- <https://www.crystalfontz.com/blog/the-legendary-hd44780-controller/>
- <https://www.datasheetarchive.com/pdf/download/distributors/Datasheets-17/DSA-336564.pdf>

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These pins align well with a standard HD44780 controller interface.

