

ZMD31XXX – Evaluation KIT

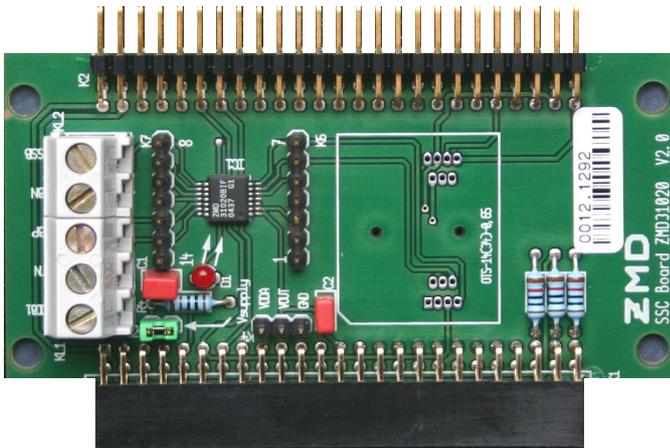
Datasheet ZMD31XXX Evaluation Board

Features

- “plug & play” capability
- power supply of the SSC evaluation board by communication board
- screw terminal for external bridge sensor element
- access to all I/O-signal lines of the ZMD-SSC-IC on board
- on-board-LEDs display the status of 5 VDC – power supply
- ZIF-socket for simple interchange of SSC-IC (optional)

Benefits

- “plug & play” – capability allows simple installation and interchange of SSC evaluation board
- ZIF-socket allows simple interchange of SSC-IC
- system evaluation with sensor dummy or external bridge sensor element



Example: ZMD31020 USB-Evaluation Board

Brief Description

The new modular evaluation kit system of ZMD’s sensor signal conditioner ICs allows the user a very simple and intuitive handling of both, evaluation hardware and software. For the evaluation of different SSC-ICs only this IC-specific SSC evaluation board and software has to be interchanged, the other parts of the evaluation hardware (communication board and bridge simulator) are almost the same.

The SSC evaluation board allows a simple-to-install-evaluation of ZMD’s SSC-IC matching with this board. Either this IC is assembled directly on the PCB by soldering (standard version), or is connected via a common SSOP-ZIF-socket for simple IC-interchange (optional).

On board there are two 50-pin-connectors for “plug & play” – connection to the communication board and (if necessary) to the sensor replacement board. Alternatively, by the on-board-screw terminal an external bridge sensor element can be connected too for a more realistic evaluation.

On-board-LEDs display the status of 5 VDC-power supply and (depending on SSC-IC-type) the status of digital outputs (e.g. ALARM 1 and 2 at ZMD31050). Several strips allow the access to all signal-I/O-lines of the SSC-IC for a simple system check.

Every SSC-evaluation board type is hard-coded, this allows its identification by the μ C of the communication board.

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Important Note

Restrictions in Use

The ZMD31XXX USB Evaluation Kit hardware and ZMD31XXX USB Evaluation Kit software is designed for IC evaluation, laboratory setup and module development only.

The ZMD31XXX USB Evaluation Kit hard- and software must not be used for module production and production test setups.

Disclaimer

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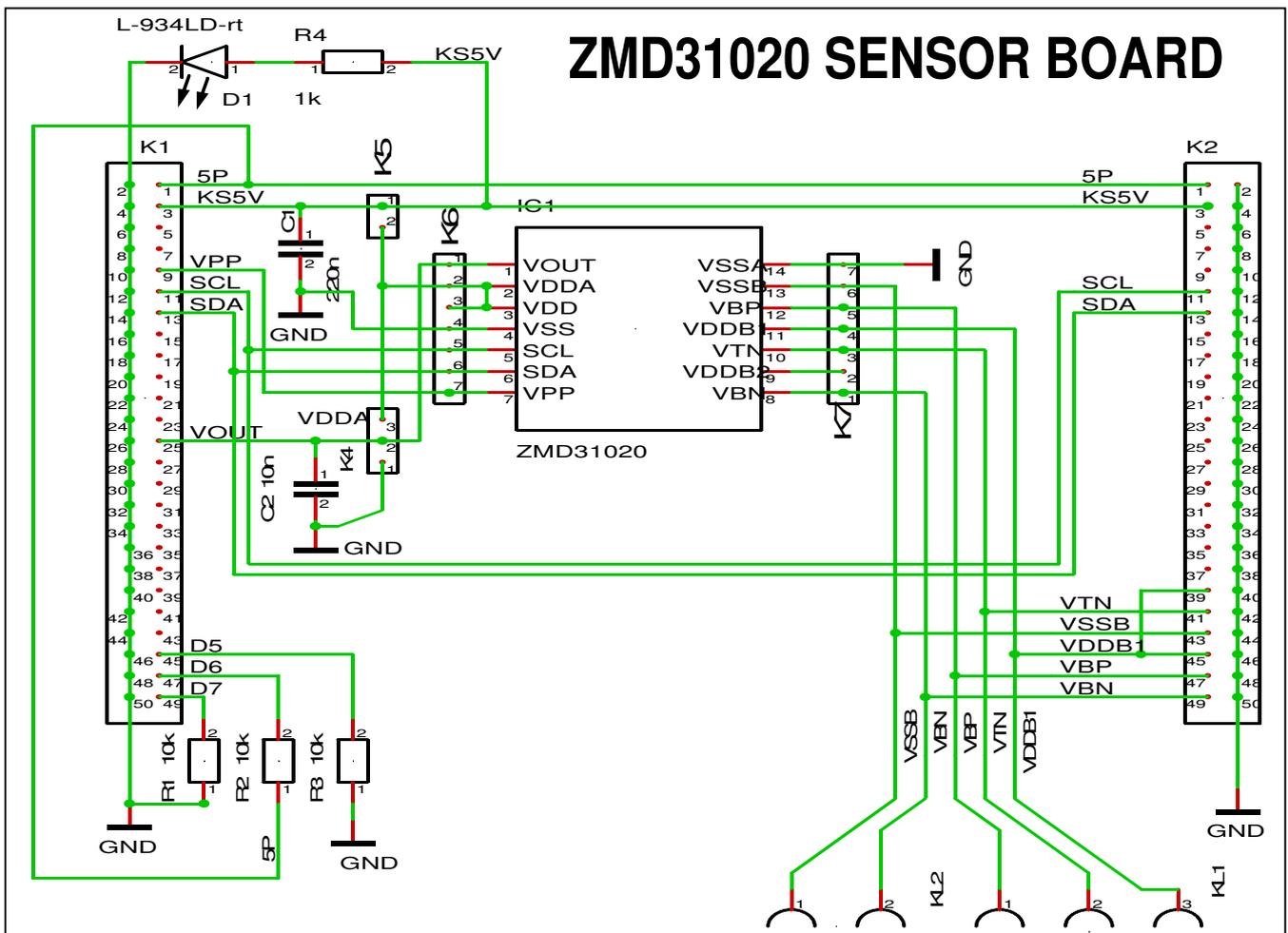
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1. ZMD31020 – USB – Evaluation board

1.1 ZMD31020 USB Evaluation board description

The ZMD31020 Evaluation board is supplied by the regulated 5 VDC-power line controlled by the μC via a relay of the communication board. Additionally, an on-board-jumper allows the manual cut of the IC-power supply and a simple measurement of the supply current of the ZMD31020. A red LED displays the power supply status, its forward current is not included in the measured supply current. The I²C-communication between μC and ZMD31020 allows both, the digital readout of measured stimulus values and the configuration of the ZMD31020. The EEPROM programming voltage VPP is supplied by the communication board too. The analog output voltage VOUT of the ZMD31020 is connected with μC -input "ADC 0", thus a direct processing of this analog signal by the μC is possible. This board is hard-coded by three resistors on (D7=L / D6 = H / D5 = L). It is connected to the communication board via a 50-pin-connector (female). On-board there are two strips for a simple access on bridge sensor signals, VOUT and bridge power supply voltage. Via a second 50-pin-connector (male) the sensor replacement board can be connected. Alternatively, an external bridge sensor element is connectable by the on-board screw terminal.

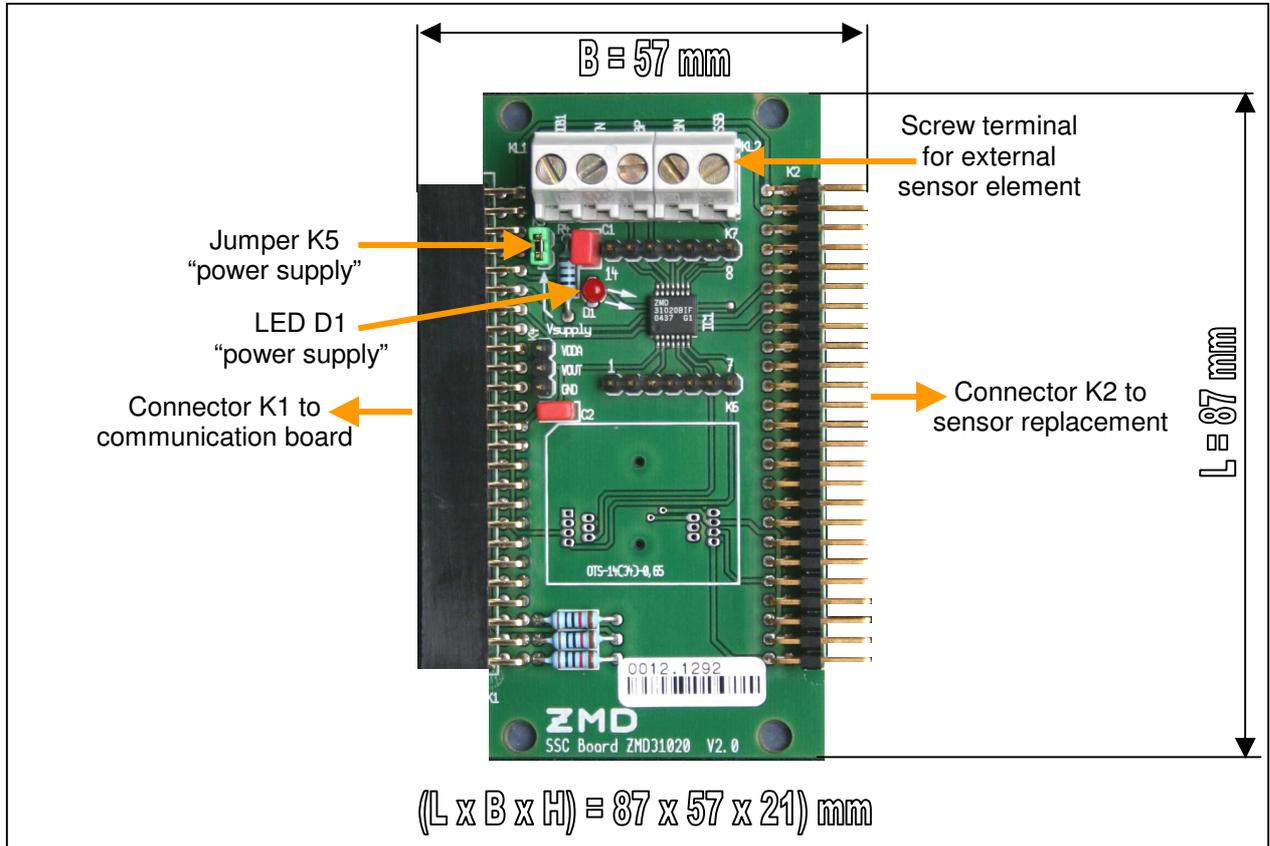
1.2 ZMD31020 USB Evaluation Board – Schematics



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1.3 ZMD31020 USB Evaluation Board – PCB



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2. ZMD31030 – USB – Evaluation board

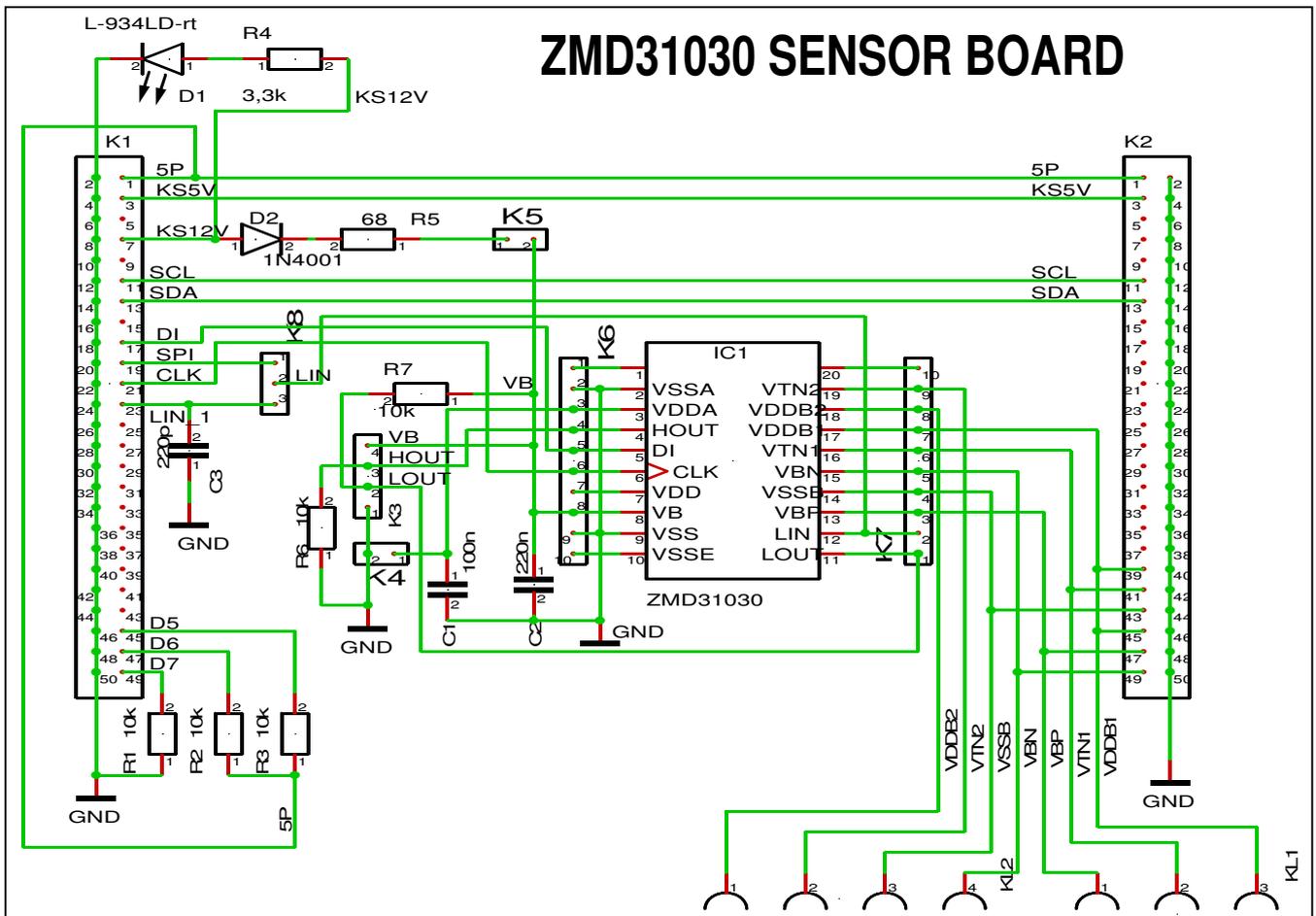
2.1 ZMD31030 USB Evaluation board description

The ZMD31030 Evaluation board is supplied by the 12 VDC-power line controlled by the μ C via a relay of the communication board. Additionally, an on-board-jumper allows the manual cut of the IC-power supply and a simple measurement of the supply current of the ZMD31030. A red LED displays the power supply status, its forward current is not included in the measured supply current.

There are two communication modes between μ C and ZMD31030, a common SPI-mode (3-wire-interface directly) and the LIN-mode (1-wire-interface via LIN-transceiver-IC). An on-board-jumper adjusts the communication mode to be used. Both allows the digital readout of measured stimulus values and the configuration of the ZMD31030. Additionally, two PWM-output modes (HighSideSwitch or LowSideSwitch) allows the readout of measured stimulus values.

This board is hard-coded by three resistors on (D7=L / D6 = H / D5 = H). It is connected to the communication board via a 50-pin-connector (female). On board there are four strips for a simple access on bridge sensor signals, I/O-signals and bridge power supply voltage. Via a second 50-pin-connector (male) the sensor replacement board can be connected. Alternatively, an external bridge sensor element and an external temperature sensor are connectable by the on-board screw terminal.

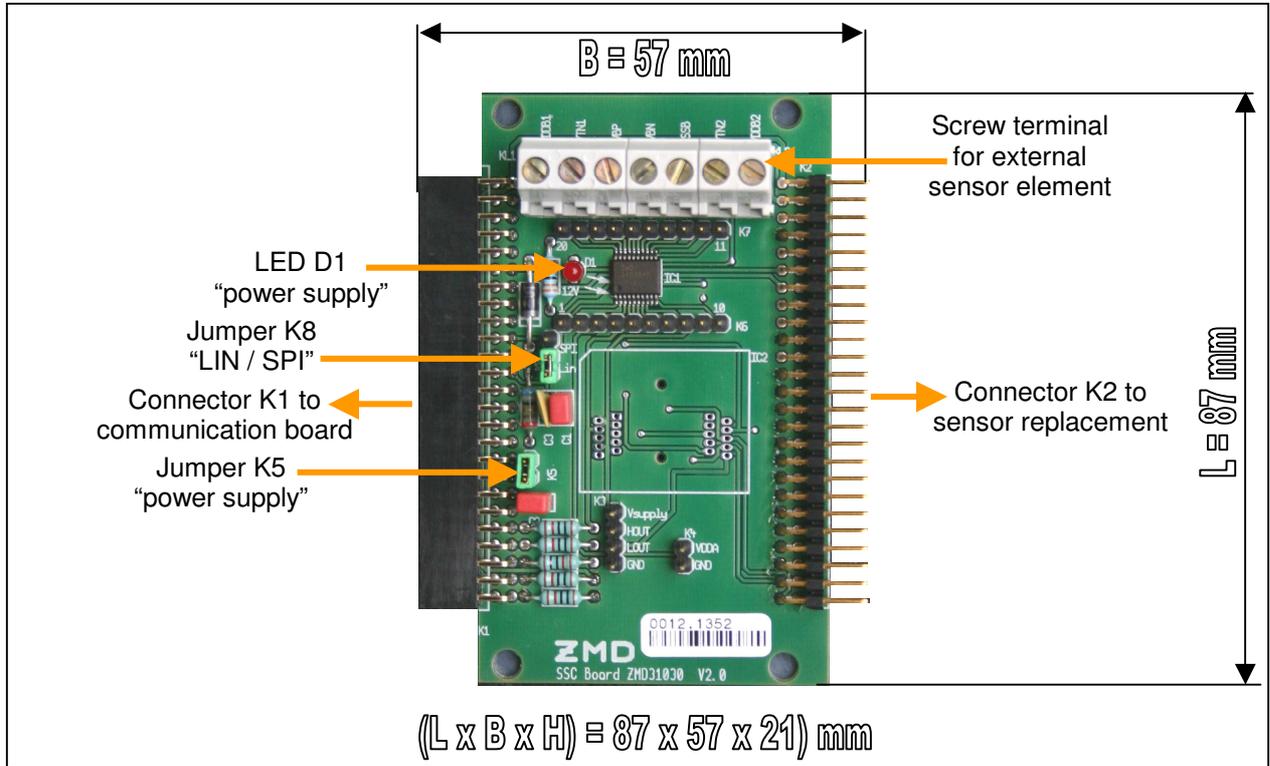
2.2 ZMD31030 USB Evaluation Board – Schematics



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2.3 ZMD31030 USB Evaluation Board – PCB



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3. ZMD31035 – USB – Evaluation board

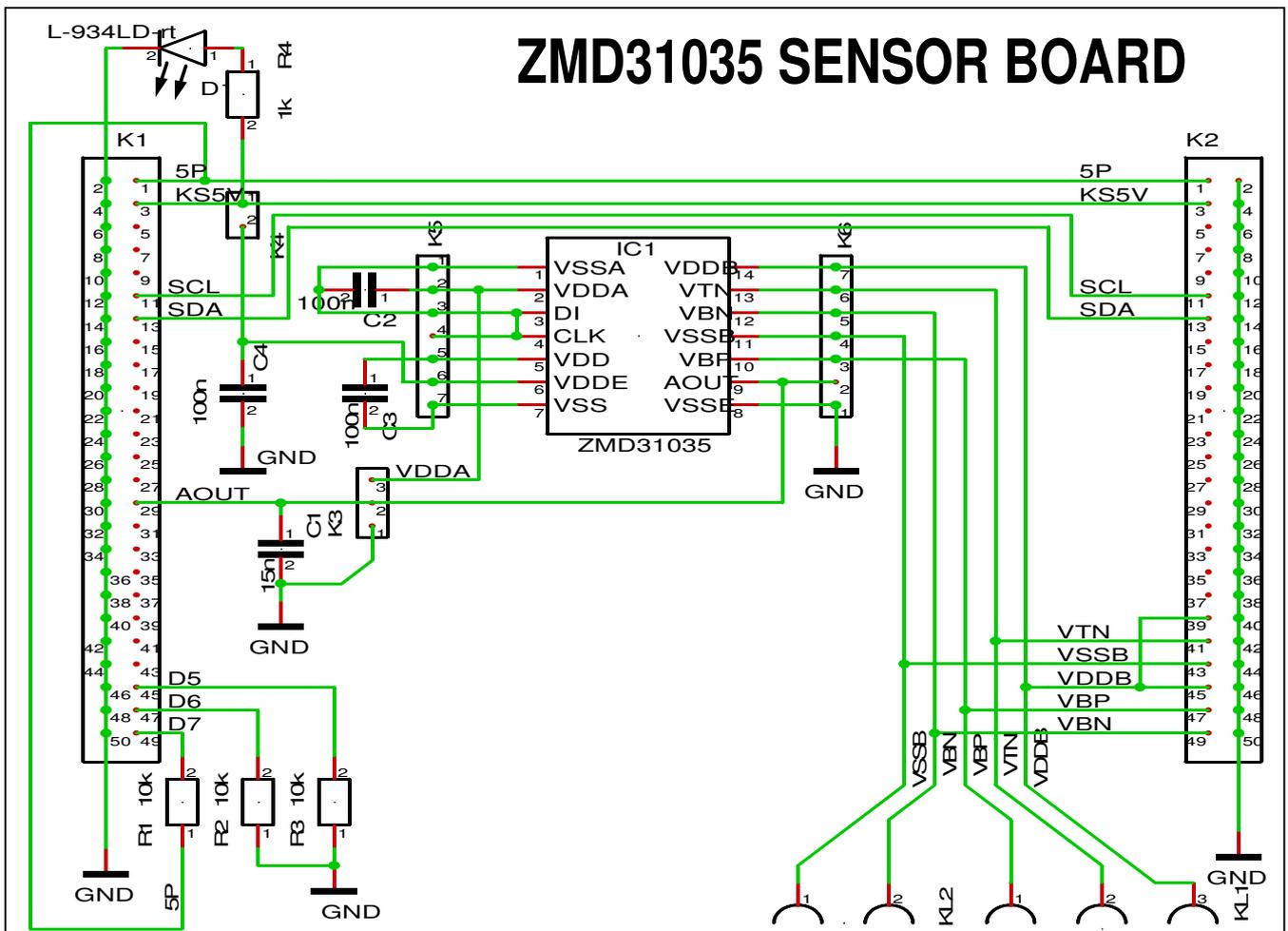
3.1 ZMD31035 – Evaluation board description

The ZMD31035 Evaluation board is supplied by the regulated 5 VDC-power line controlled by the μC via a relay of the communication board. Additionally, an on-board-jumper allows the manual cut of the IC-power supply and a simple measurement of the supply current of the ZMD31035. A red LED displays the power supply status, its forward current is not included in the measured supply current.

The LINwire-communication between μC and ZMD31035 allows both, the digital readout of measured stimulus values and the configuration of the ZMD31035. The analog output voltage V_{OUT} of the ZMD31035 is connected with μC -input “ADC 2”, thus a direct processing of this analog signal by the μC is as possible as the LINwire-communication.

This board is hard-coded by three resistors on ($D7=H / D6 = H / D5 = L$). It is connected to the communication board via a 50-pin-connector (female). On board there are three strips for a simple access on bridge sensor signals, V_{OUT} and bridge power supply voltage. Via a second 50-pin-connector (male) the sensor replacement board can be connected. Alternatively, an external bridge sensor element is connectable by the on-board screw terminal.

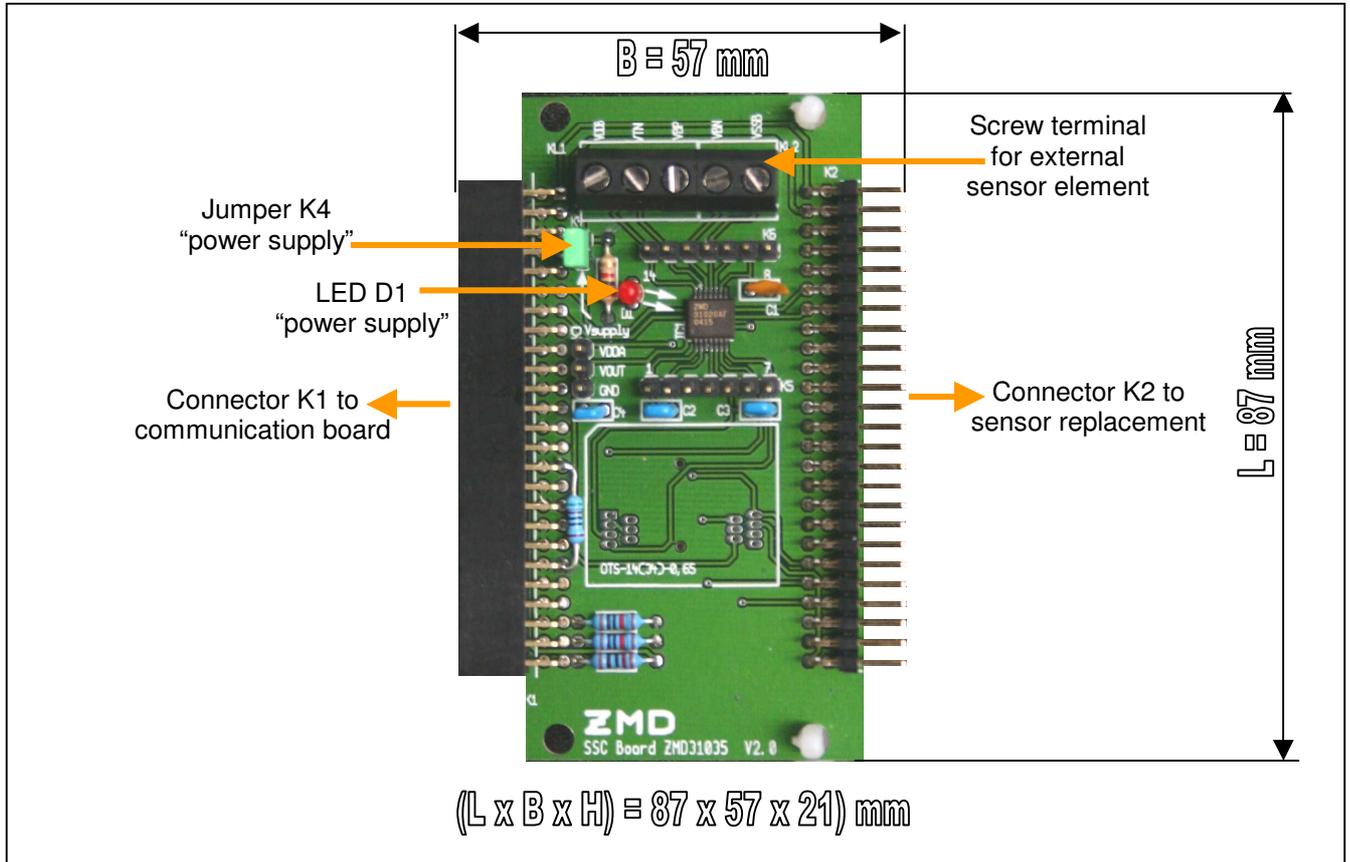
3.2 ZMD31035 USB Evaluation Board – Schematics



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3.3 ZMD31035 USB Evaluation Board – PCB



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4. ZMD31035 – USB – Evaluation board

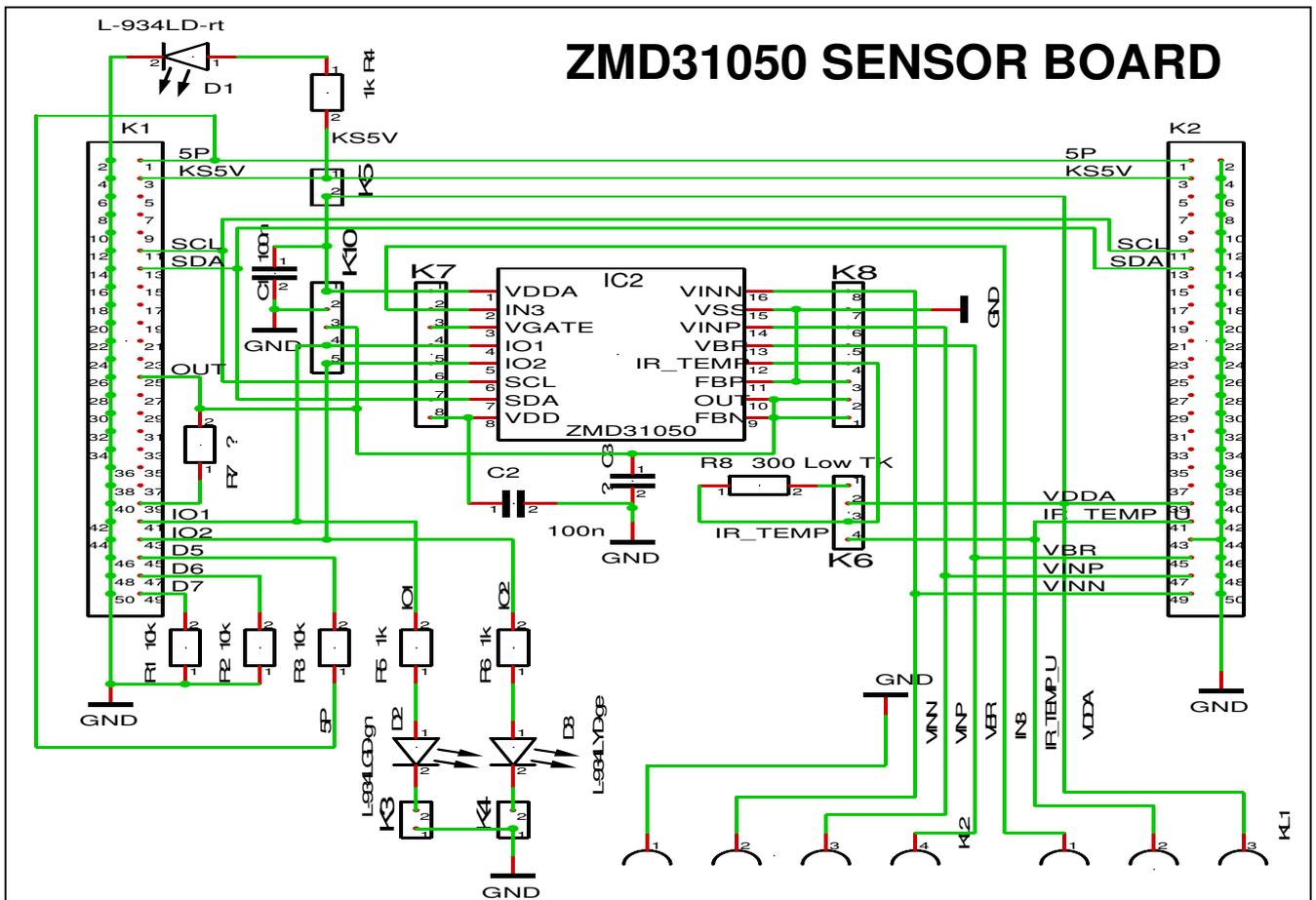
4.1 ZMD31050 – Evaluation board description

The ZMD31050 Evaluation board is supplied by the regulated 5 VDC-power line controlled by the μC via a relay of the communication board. Additionally, an on-board-jumper allows the manual cut of the IC-power supply and a simple measurement of the supply current of the ZMD31050. A red LED displays the power supply status, its forward current is not included in the measured supply current.

There are two communication modes between μC and ZMD31050, a common I²C-mode (2-wire-interface) and ZMD's ZACwire-mode (1-wire-interface). This modes allows both, the digital readout of measured stimulus values and the configuration of the ZMD31050. The analog output voltage VOUT of the ZMD31050 is connected with μC -input "ADC 0", thus a direct processing of this analog signal by the μC is as possible as the ZACwire-communication.

This board is hard-coded by three resistors on (D7=L / D6 = L / D5 = H). It is connected to the communication board via a 50-pin-connector (female). On board there are five strips for a simple access on bridge sensor signals, I/O-signals and bridge power supply voltage. Via a second 50-pin-connector (male) the sensor replacement board can be connected. Alternatively, an external bridge sensor element and an external temperature sensor are connectable by the on-board screw terminal. Two green LEDs display the status of the output signals IO1 and IO2.

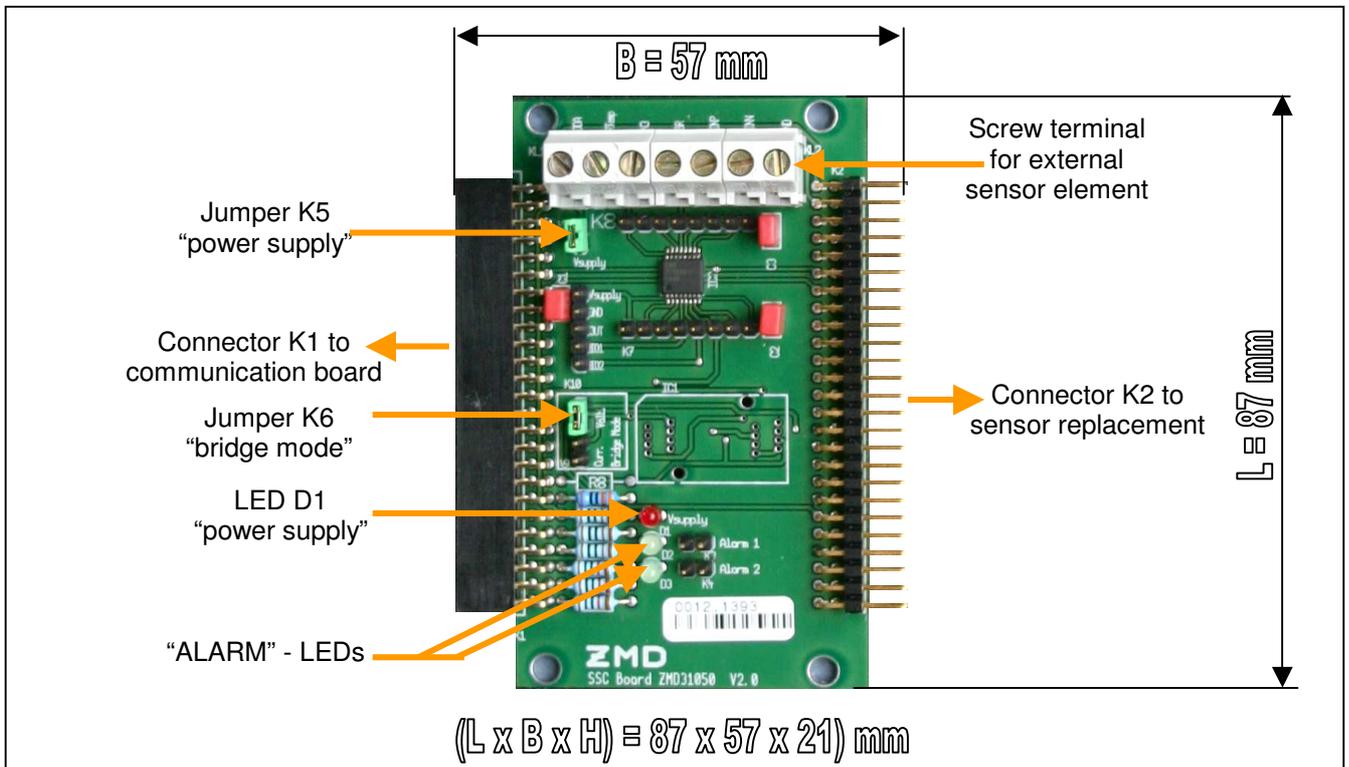
4.2 ZMD31050 USB Evaluation Board – Schematics



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4.3 ZMD31050 USB Evaluation Board – PCB



For electrical specifications of ZMD's Sensor Signal Conditioner ICs please look at the regarding datasheets and functional descriptions.

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