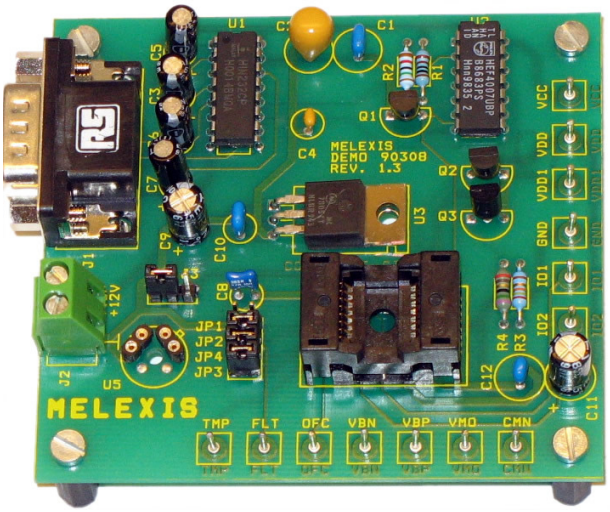
# MLX90323

***Demo kit description***

## Features

- Programming tool for Melexis' sensor interface MLX90323
- Fast development of calibration software
- Fast plug-in to software applications
- Software library and UI for Windows
- Communication through RS232




## Applications

- Tools for evaluation of Melexis Sensor interface.
- Production Equipment for calibration

## Scope

This document describes the use of the Melexis' evaluation board (EVB) and demo software for programming and calibrating the MLX90323 sensor interface.

The demo kit consists of demo software and evaluation board EVB90308 which provides a communication interface between the MLX90323 and PC. All necessary components for implementing the necessary application circuits with the user's bridge sensor are on board. This document describes the board itself and setup of the common application circuit for the EVB90308.

The MLX9323 sensor interfaces provide a versatile programmable interface to a wide assortment of sensors and transducers. The sensor interface provides gain, offset control and temperature correction for the sensor. The device contains on chip EEPROM for storage of the coefficients for making the signal corrections and adjustments.

## Related documentation

- MLX90323_datasheet.pdf
- MLX90323_software_description.pdf

## Table of contents

# 1 Hardware description

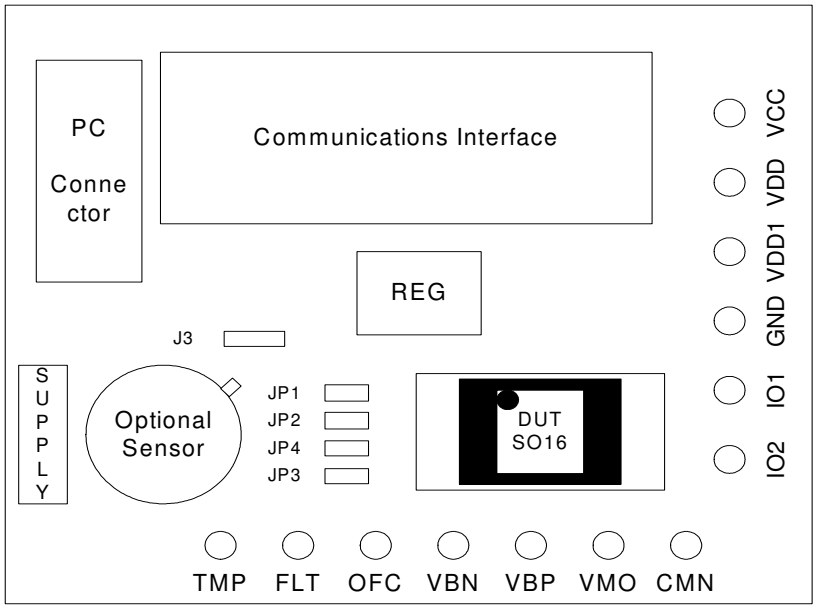



Fig.1. EVB90308 block diagram

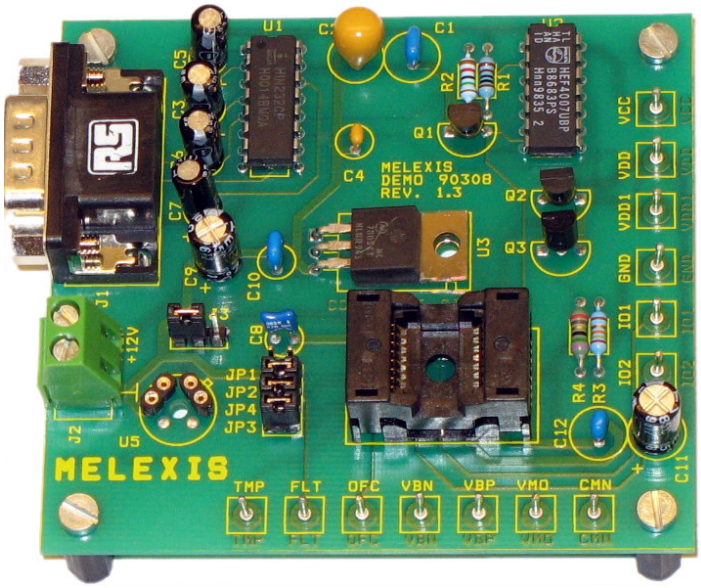



Fig. 2. Evaluation board EVB90308

## 1.1 EVB90308 pin description

Table 1. Pin description

| Connector | Function | Pin | Connector |
|---|---|---|---|
| COM | SERIAL connection to PC | - | COM |
| 12V | + 12V Power Connector | - | 12V |
| GND | General Ground Connector | 15 | GND |
| VBN | Negative Bridge Input | 7 | VBN |
| FLT | Filter Pin | 4 | FLT |
| VBP | Positive Bridge Input | 6 | VBP |
| TMP | Temperature sensor Input | 8 | TMP |
| OFC | Offset Control Output | 5 | OFC |
| VDD | Regulated Supply Voltage | 9 | VDD |
| VDD1 | Unregulated Supply Voltage | 10 | VDD1 |
| CMN | Current Mode Negative Rail | 14 | CMN |
| COMS | Communication | 16 | COMS |
| VCC | Power Supply | - | VCC |
| JP1 | TSTB to GND (Jumper open) | | JP1 |
| JP2 | FLT to 39nF (Jumper closed) | | JP2 |
| J3 | Jumper Open for use with 90323 | | J3 |
| JP4 | Shorten U5 pads to VBN (closed) | | JP4 |
| JP3 | Shorten U5 pads to VBP (closed) | | JP3 |

## 1.2 Schematics

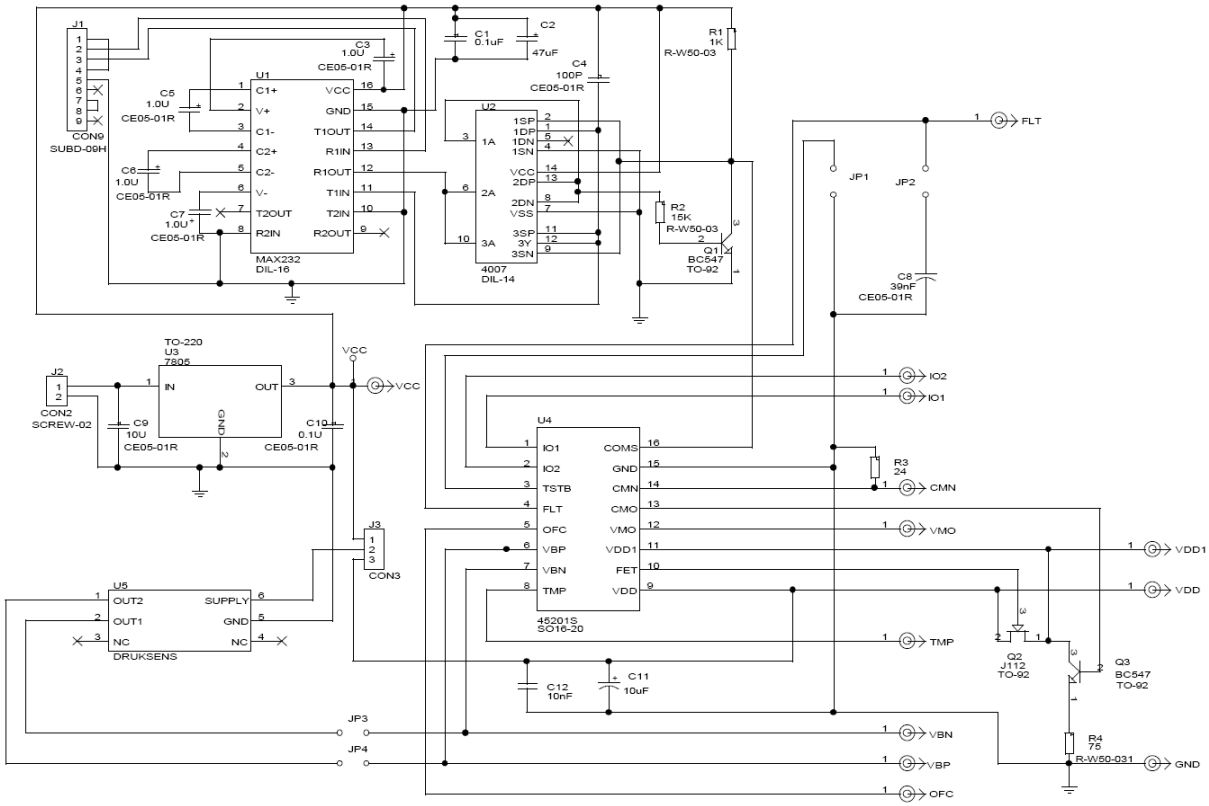



Fig. 3. EVB90308 schematics

## 1.3 Power supply requirements

The EVB90308 has to be supplied with two DC power supplies:

- board power supply: +12 V, 0.1 A
- sensor power supply: +7 V, 0.1 A.

Table 2

| | Min, V | Nom, V | Max, V |
|---|---|---|---|
| Sensor power supply | 7 | 7 | 35 |
| Board power supply | 11 | 12 | 13 |

## 1.4 Connections

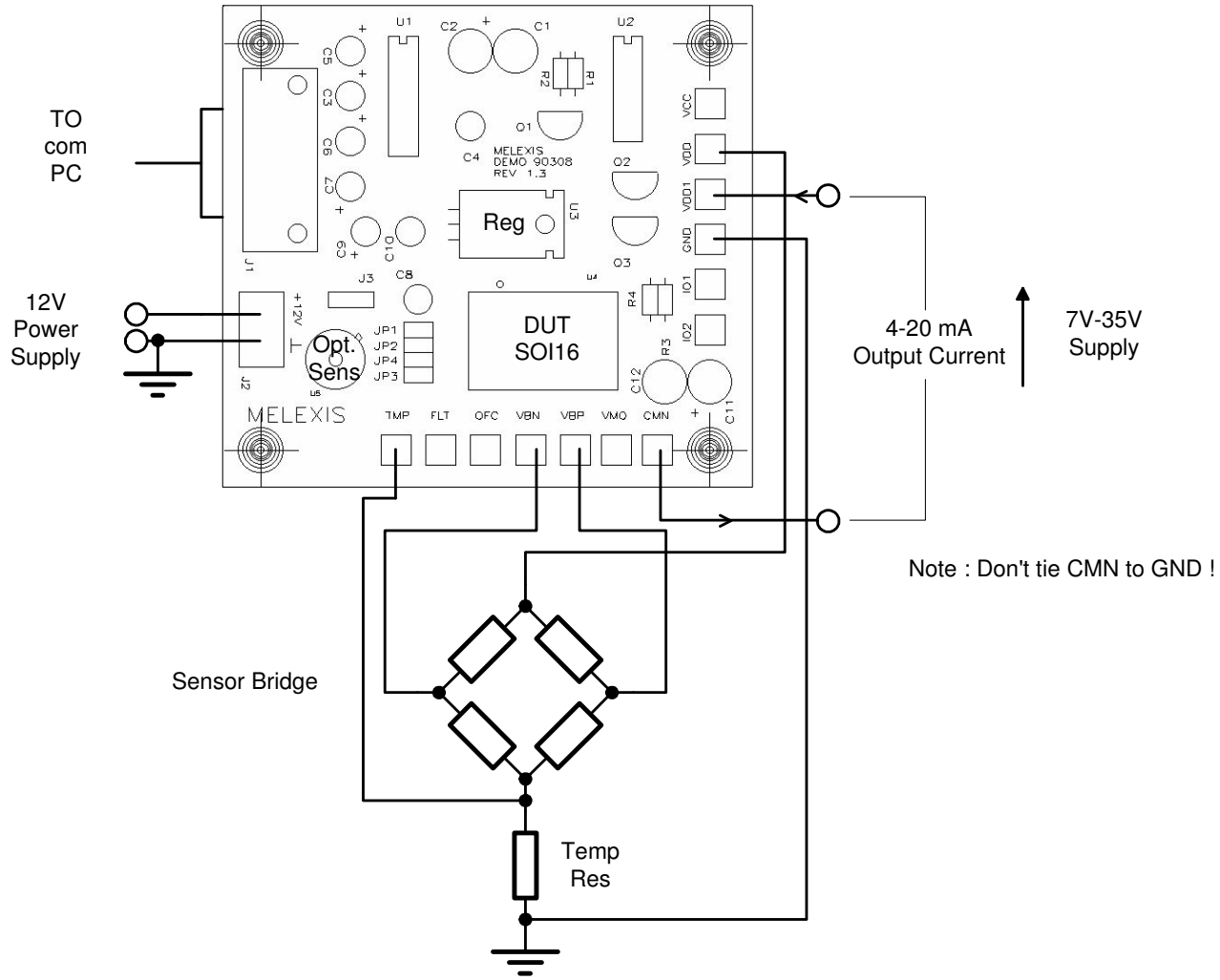



Fig. 4. Connections of EVB

The device supplies a 4 to 20mA current range for use as a 2-wire analog sensor. VDD is regulated by the onboard FET from the supply (7V to 35V) thru VDD1. JP3 must be open to separate the interface circuit supply thru J2 from the device current supply thru VDD1. The device supply ground must be floating with respect to the interface circuit ground. DO NOT CONNECT CMN to GND.

# 2 Setting up communication with the MLX90323

After all the connections are done according to figure 4 launch the MLX90323 demo software "EVB90323.exe".

## 2.1 Communication successful

Check if you can communicate correctly with the device using the software of the EVB90308. Please make sure that you set the correct settings for the communication. Press button "Open Port" to setup communication with the device.

The software will give the following message when communication with the software and the EVB are ok: "Open port status = 0" Success sending Reset command. By resetting the device we get a reply back from the device and this ensures proper communication.

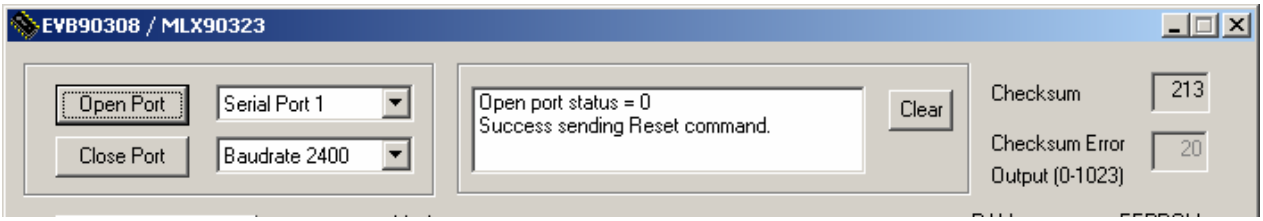



Fig.5. Communication successful

## 2.2 Communication unsuccessful

When you receive the error code = 0 and a message "Init Error", the communication with the device is not ok and you have to check your setup. This error can be caused by a not connected serial cable, a bad connected power supply.

Please use the cable provided with the EVB and check the connections for the power supply (7V and 12V) used to supply the device.

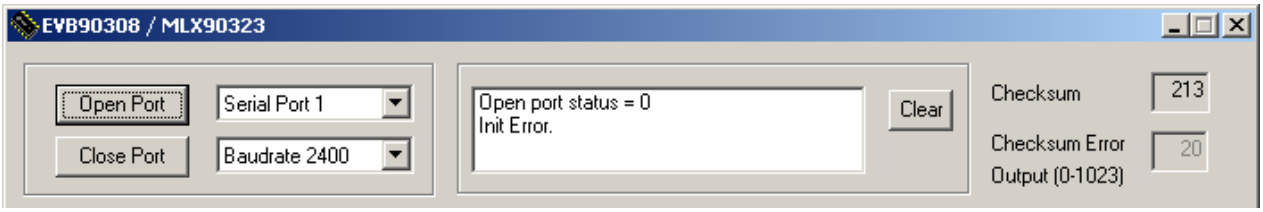



Fig.6. Communication unsuccessful

For the software usage details refer to the document "MLX90323_software_description.pdf".