

## Features and Benefits

PTC04 interface board for testing devices:

- MLX90809
- MLX90819
- MLX90820
- MLX90817
- MLX90818
- MLX90821
- MLX90328
- MLX90329

## Applications

Experimental tool for Lab and Prototyping  
Production Equipment for Serial Programming

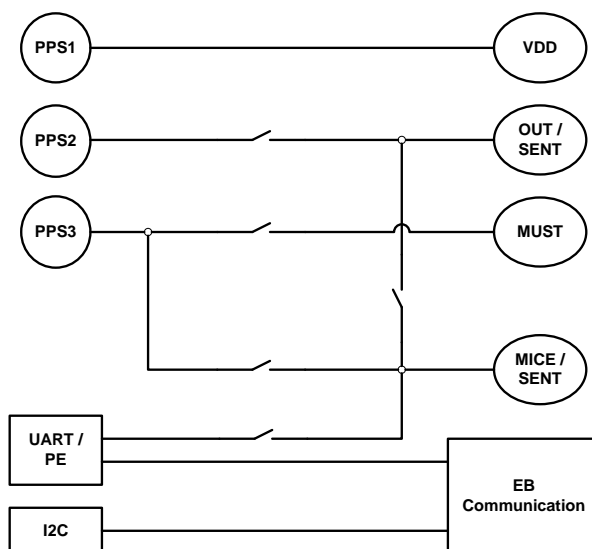
## Ordering Information

Part No.	Rev.	Description
PTC04-DB-PRESSURE01	Rev. 2.0	Daughter Board

## Accessories

Part No.	Description
	DLL's for all supported products
	User Interfaces for supported products
	Firmware for supported products

## 1. Functional Diagram



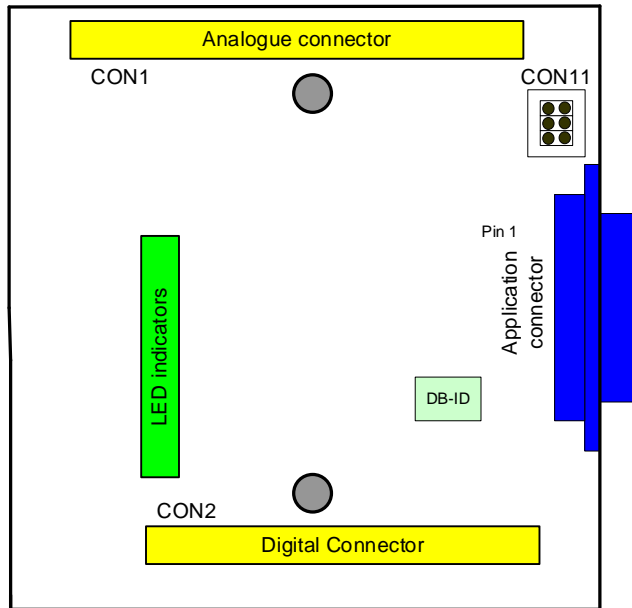
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## Table of CONTENTS

<b>FEATURES AND BENEFITS</b> .....	<b>1</b>
<b>APPLICATIONS</b> .....	<b>1</b>
<b>ORDERING INFORMATION</b> .....	<b>1</b>
<b>ACCESSORIES</b> .....	<b>1</b>
<b>1. FUNCTIONAL DIAGRAM</b> .....	<b>1</b>
<b>2. BOARD DESCRIPTION</b> .....	<b>3</b>
2.1. BOARD LAYOUT.....	3
2.2. BOARD SCHEMATICS.....	3
2.3. DAUGHTER BOARD CONNECTORS .....	5
2.3.1. <i>Digital DB Connector (40 Pins)</i> .....	5
2.3.2. <i>Analog DB Connector (48 Pins)</i> .....	6
2.4. APPLICATION CONNECTOR.....	6
<b>3. DISCLAIMER</b> .....	<b>7</b>

## 2. Board description

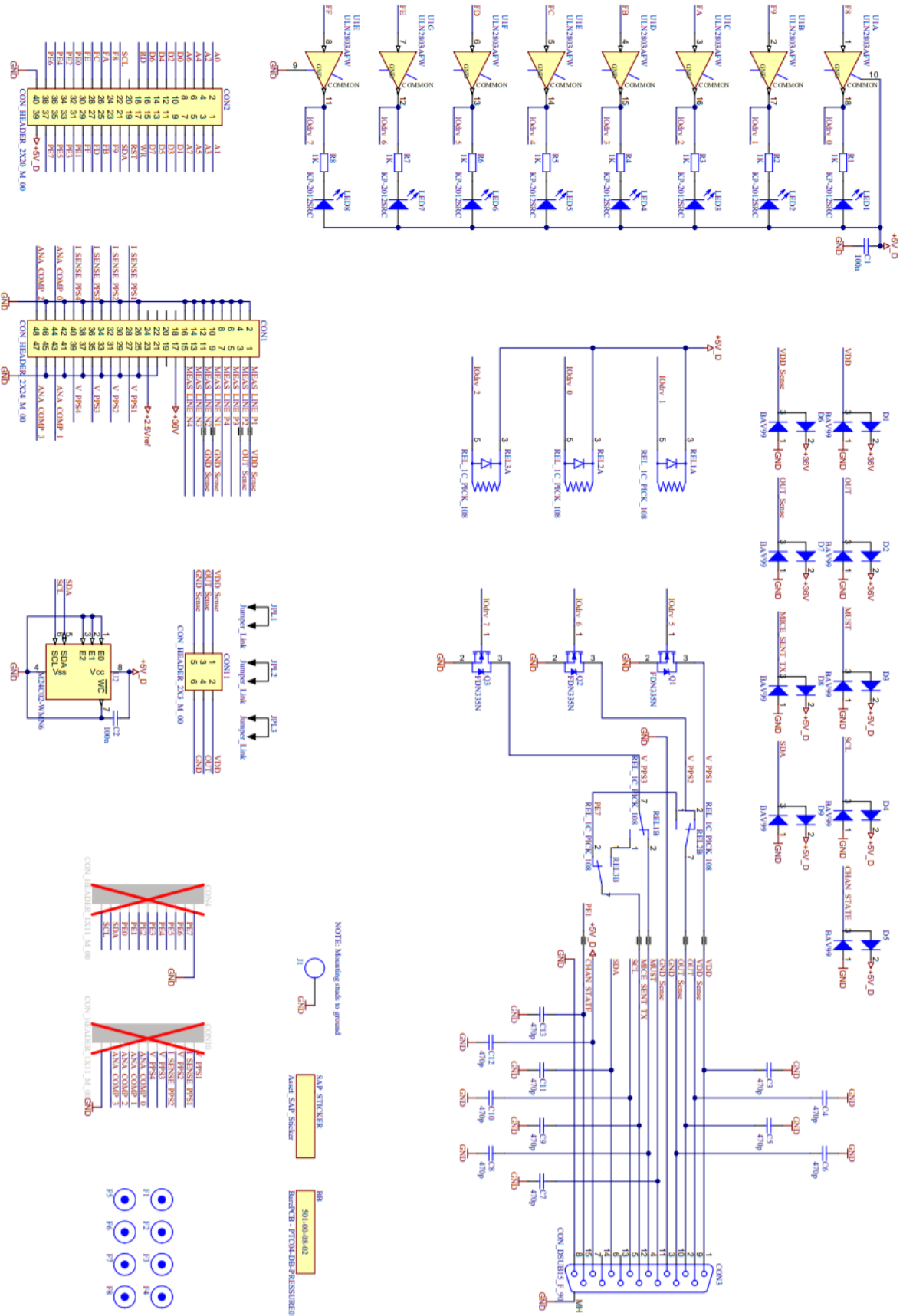
### 2.1. Board Layout



- CON11: Jumpers to connect the measurement sense lines to the force lines. These jumpers are needed when no force and sense is used.
- DB-ID: EEPROM IC with daughter board related variables. It allows the PTC04 to detect which revision of which daughter board type is connected.
- CON1, CON2: Analog and Digital connector: See below for a detailed description.
- CON3: DB Connector, Connector to the application. See section 2.3 for details.
- LED Indicators: 8 LED Indicators for the DB\_IO lines.

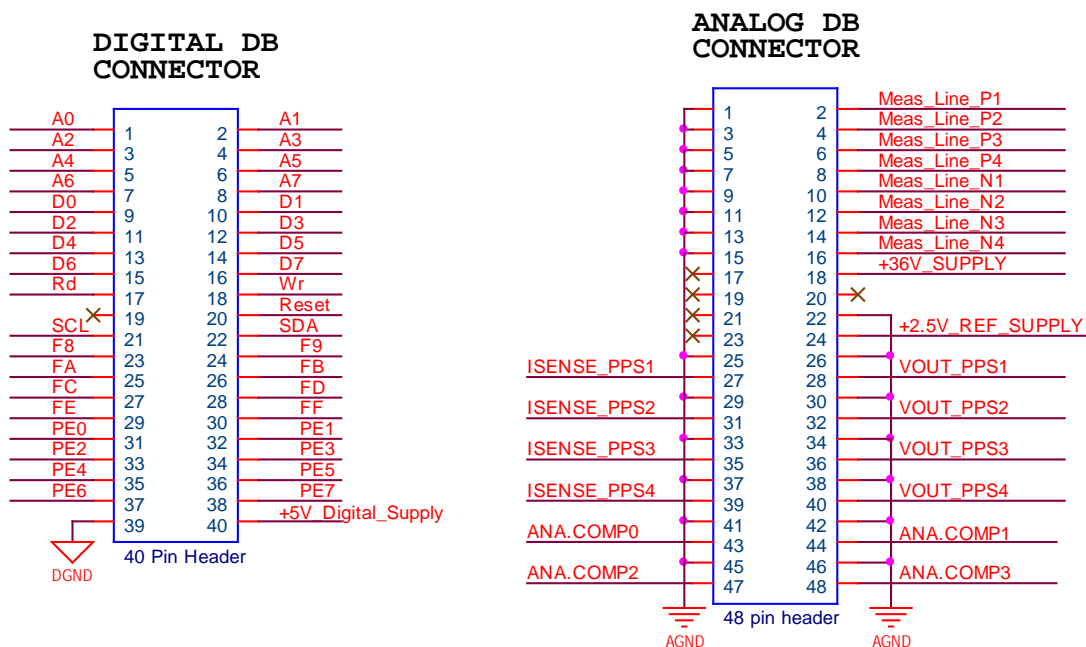
### 2.2. Board Schematics

Below you can find the complete schematics of the DB:



### 2.3. Daughter board Connectors

The PTC04 main board has two connectors to the interface with the application. The PTC04 allows adding a full PCB in between (Daughter Board). This daughter board can be mounted on the two connectors. In some exceptional cases, a daughter board contains only a few wires from the analog connector to the application connector. The pins on of the connectors are described below.



#### 2.3.1. Digital DB Connector (40 Pins)

The digital connector is used to expand the programmer's functionality.

Pins	Names	Description
1 – 8	A0 – A7	Address lines
9 – 16	D0 – D7	Data Lines active during Rd or Wr signals
17	Rd	Read: A negative pulse will indicate a sampling of the data on the Data Bus
18	Wr	Write: A Negative pulse will indicate when data is available on the Data Bus
20	Reset	This signal goes low by powering the PTC or by pressing the reset button. This line can be pulled low by application. Check firmware documentation for resetting by software.
21-22	SCL / SDA	I <sup>2</sup> C Bus
23-30	F8,F9,...,FF	CS lines when the address areas are accessed
31-38	Port E	The full Port E of the Atmega core of the PTC04 is mounted to these pins. This enables advanced features like PWM, UART, time measurements, etc. with supported firmware functions
39	DGND	Digital Ground
40	+5V Digital	5 Volt Digital Supply. Maximum current to get out of this supply: 250mA

Note: All the pins are limited to 5 Volt input/output! Despite the build-in protections, please take precautions to avoid damaging the main board.

### 2.3.2. Analog DB Connector (48 Pins)

The analog connector provides all the analog signals and measure possibilities.

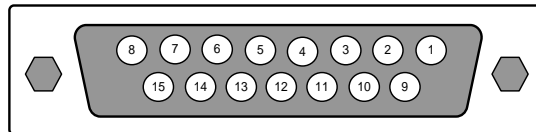
Pins	Names	Description
28,32,36	PPS 1-3	Output of the high current Programmable Supplies
40	PPS 4	Output of the Fast DAC Programmable Power Supply
27,31,35,39	Isense_PP1-4	Outputs (Driver outputs before Rsens) for current evaluations. These outputs could be used to connect to the analog comparators in order to create fast digital signals based on current.
2,4,6,8	ExtMeas1-4Pos	There are 4 differential inputs for making measurements, these are the positive inputs.
10,12,14,16	ExtMeas1-4Neg	The negative inputs of ExtMeas1- 4Pos
43,44,47,48	AnaComp0-3	Input (limited to +5V) See *Note. Fast Level comparators in order to remove time consuming measurement
18	+35V_Supply	Supply to extend the daughter board with some extra drivers
24	+2.5V_Ref	Output of internal reference
All other	AGND	Analog Ground

Note: All the pins are limited to 35 Volt input/output! Despite the build-in protections, please take precautions to avoid damaging the main board.

\* Note: Some pins are protected and limited to 5 Volt! Despite the build-in protections, please take precautions to avoid damaging the main board.

### 2.4. Application Connector

DB15 Female Connector



Pins	Names	Description
1	VDD_DIE	Device Supply
2	OUT1_DIE	Device Output 1
3	GND_DIE	Analog Ground
4	MUST	Digital test pin – MUST
5	SCL	I2C Communication (Communication with Extension Board)
6	SDA	I2C Communication (Communication with Extension Board)
7	5V_D	5V Digital Supply (Supply Extension Board)
8	DGND	Digital Ground (Supply Extension Board)
9	VDD_SENSE_DIE	Sensing Device Supply
10	OUT1_SENSE_DIE	Sensing Device Output 1
11	GND_SENSE_DIE	Sensing Analog Ground Device
12	MICE	Digital test pin – MICE
13	NC	Not Connected
14	NC	Not Connected
15	CHAN STATE	Channel Status (Communication with Extension Board)

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