Melexis Programmer PTC-04
for MLX90316 / MLX90333

Daughterboard PTC04-DB-90316

RS232 connector to PC (9pin Sub-D/male)

USB connector to PC (Standard B)

25pin Sub-D Connector (female)

Screw terminals for direct chip wiring

Motherboard PTC04

Internal supply „PWRCON1" (48VDC)

Power supply 48V DC
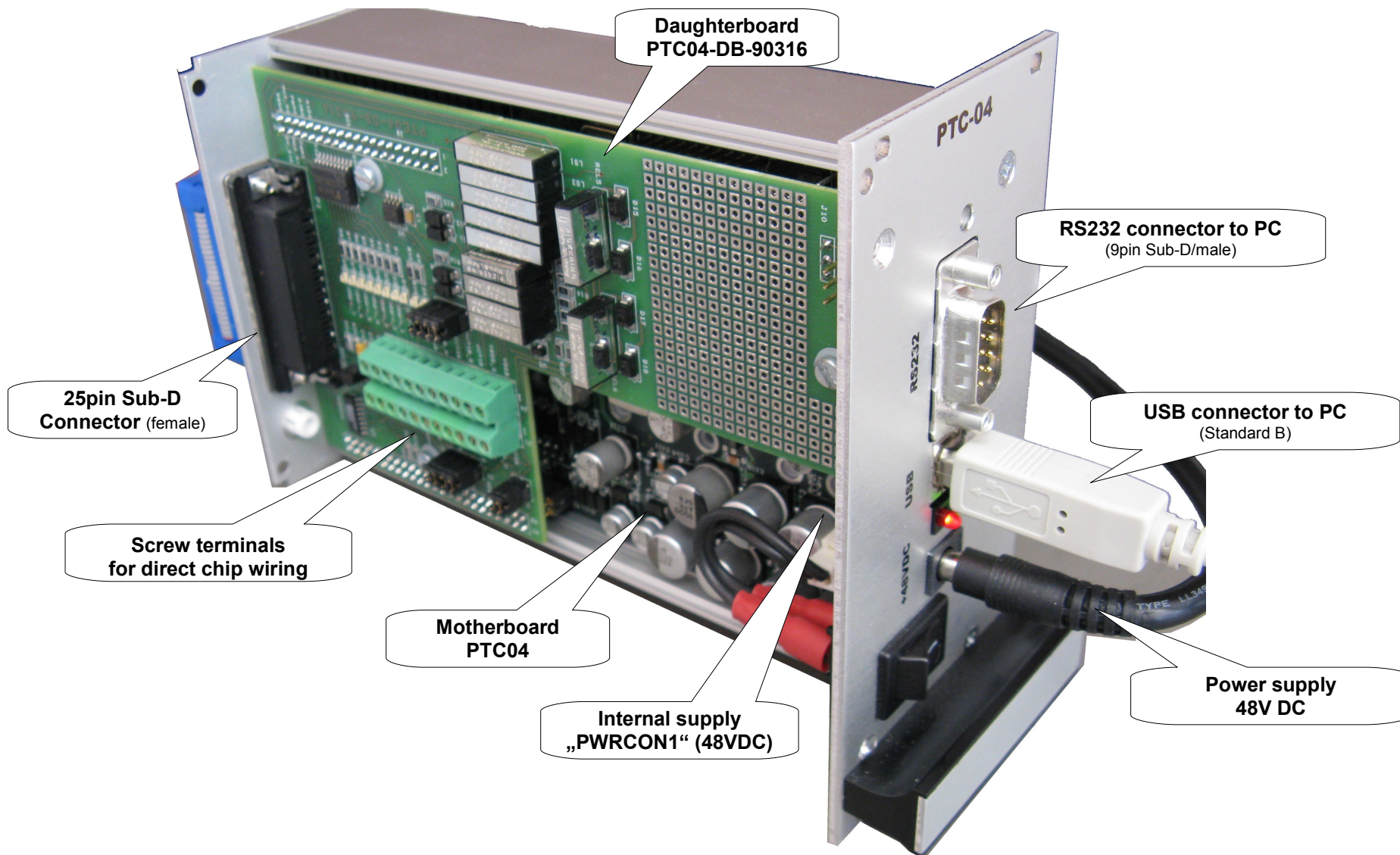
PTC-04

Melexis Programmer PTC-04
Connection example for DB25 and EVB90316

Daughterboard PTC04-DB-90316

25pin Sub-D Connector (DB25 male)

VSSA Pin 4 (GND)

OUT1A Pin 2

VDDA Pin 1 (V+)

Cable bushing

Evaluation Board EVB90316

DB25 male
view to pin/connector side

1   13

14   25
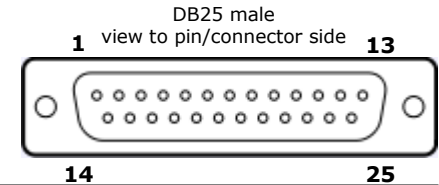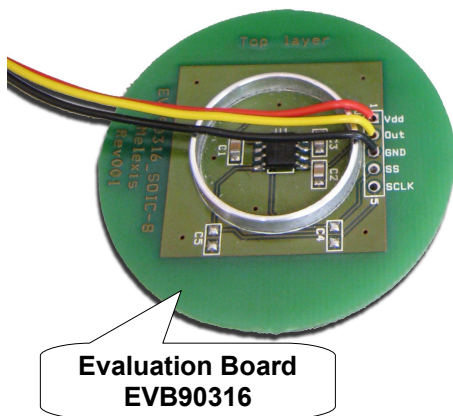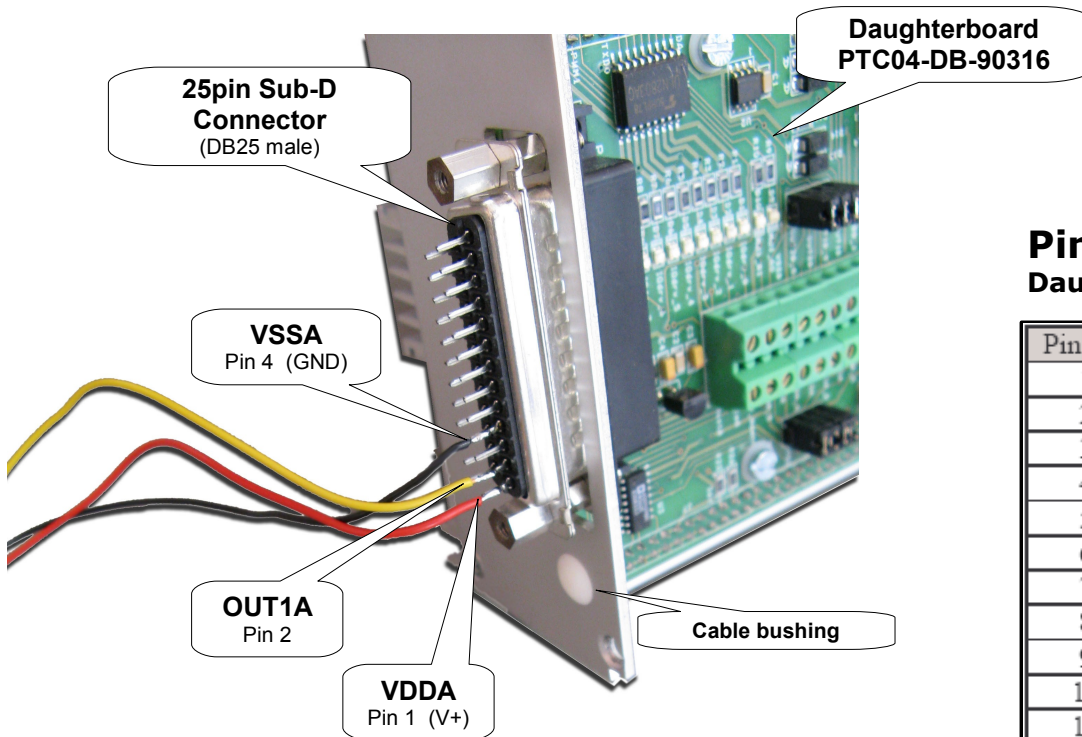
Pinout DB25
Daughterboard PTC-04-DB-90316

Pins	Names	Description
1	VDDA	Supply Device A
2	OUT1A	Output 1 Device A
3	OUT2A	Output 2 Device A
4	VSSA	Analog Ground Device A
5	Kick_DownA	Test Signal Device A
6	MustA	Test Signal Device A
7	VOUT_PPS3	Programmer's PPS3 (for external load connection)
8	VDDB	Supply Device B
9	OUT1B	Output 1 Device B
10	OUT2B	Output 2 Device B
11	VSSB	Analog Ground Device B
12	Kick_DownB	Test Signal Device B
13	MustB	Test Signal Device B
14	VDDA_Sense	Sensing Supply Device A
15	OUT1A_Sense	Sensing Output 1 Device A
16	OUT2A_Sense	Sensing Output 2 Device A
17	VSSA_Sense	Sensing Analog Ground Device A
18	MiceA	Test Signal Device A
19	NC	Not Connected
20	NC	Not Connected
21	VDDB_Sense	Sensing Supply Device B
22	OUT1B_Sense	Sensing Output 1 Device B
23	OUT2B_Sense	Sensing Output 2 Device B
24	VSSB_Sense	Sensing Analog Ground Device B
25	MiceB	Test Signal Device A

Screw terminals for direct chip wiring

VDDA (V+ / DIE 'A')

OUT1A (OUT1 / DIE 'A')

Sens-Line Jumper* (J2/J3)
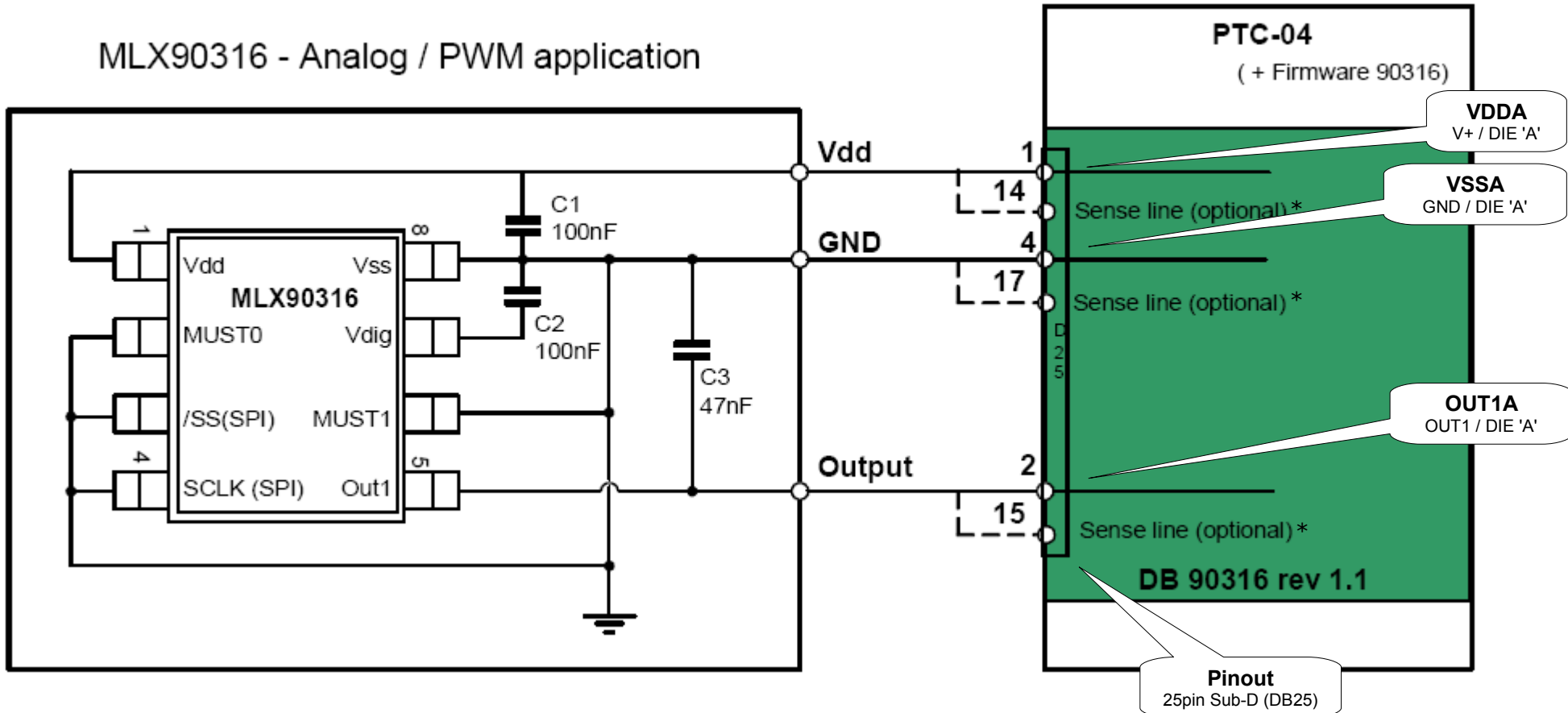
VSSA (GND / DIE 'A')

* The Sense-Line Jumpers have to be removed in two wire mode!
In single wire mode the jumpers are closed to shorten the sense lines to the force lines.

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MLX90316 - Analog / PWM application

PTC-04
(+ Firmware 90316)

MLX90316	
Vdd	Vss
MUST0	Vdig
/SS(SPI)	MUST1
SCLK (SPI)	Out1

C1 100nF
C2 100nF
C3 47nF

Vdd — 1
14 — Sense line (optional) *
GND — 4
17 — Sense line (optional) *
Output — 2
15 — Sense line (optional) *

VDDA
V+ / DIE 'A'

VSSA
GND / DIE 'A'

OUT1A
OUT1 / DIE 'A'

Pinout
25pin Sub-D (DB25)

DB 90316 rev 1.1

* Remove the Sense-Line Jumpers J2/J3 in two wire mode.
 In single wire mode the jumpers are closed
 to shorten the sense lines to the force lines.

Melexis Programmer PTC-04
wiring diagram MLX90333 (SOIC8)

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Analog Output Wiring with the MLX90333 in SOIC Package

PTC-04
(+ Firmware 90316)

Vdd	1
	14
GND	4
	17
Out 1	2
	15
Out 2	3

Sense line (optional) *
Sense line (optional) *
Sense line (optional) *

D 2 5

DB 90316 rev 1.1

VDDA
V+ / DIE 'A'

VSSA
GND / DIE 'A'

OUT1A
OUT1 / DIE 'A'

OUT2A
OUT2 / DIE 'A'

Pinout
25pin Sub-D (DB25)

MLX90333

Vdd — Vss
Test 1 — Vdig
NotUsed — Test 2
Out 2 — Out 1
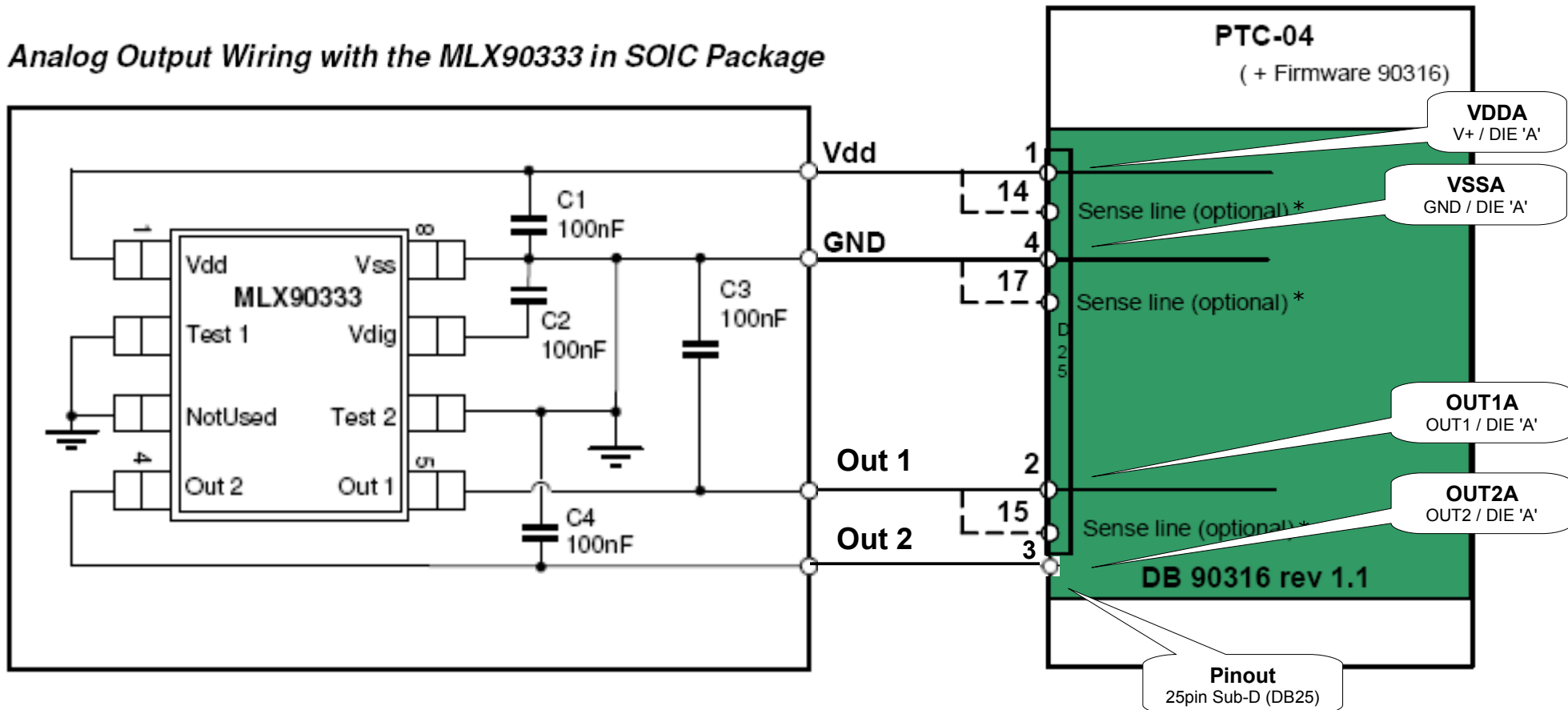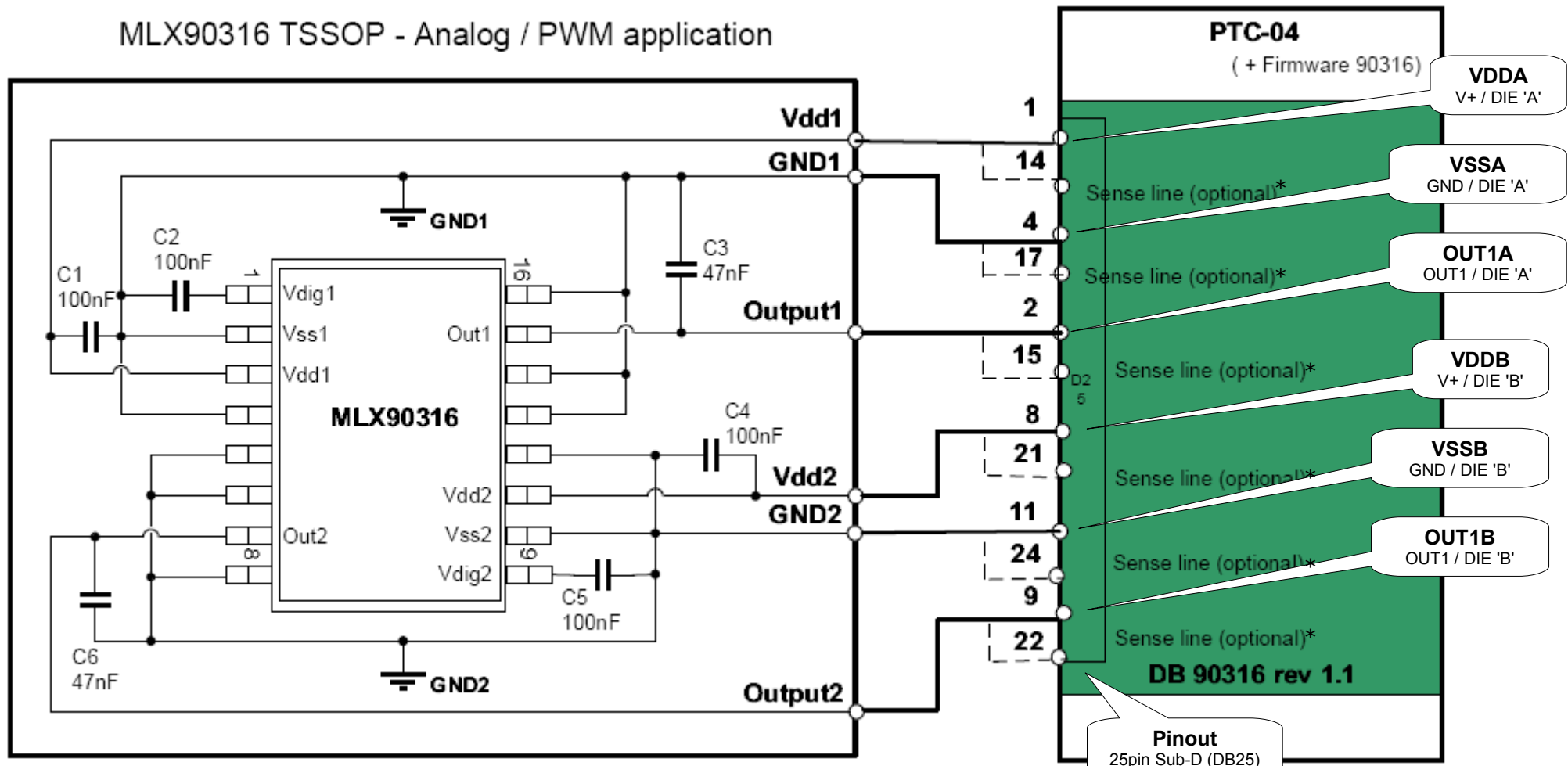
C1 100nF
C2 100nF
C3 100nF
C4 100nF

* Remove the Sense-Line Jumpers J2/J3 in two wire mode.
  In single wire mode the jumpers are closed
  to shorten the sense lines to the force lines.

Melexis Programmer PTC-04
Wiring diagram MLX90316 (TSSOP16)

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MLX90316 TSSOP - Analog / PWM application

PTC-04
(+ Firmware 90316)

MLX90316

C1 100nF
C2 100nF
C3 47nF
C4 100nF
C5 100nF
C6 47nF

Vdig1
Vss1
Vdd1
Out1
Vdd2
Out2
Vss2
Vdig2

Vdd1
GND1
Output1
Vdd2
GND2
Output2

GND1
GND2

Pin	Sense
1	
14	Sense line (optional)*
4	
17	Sense line (optional)*
2	
15	Sense line (optional)*
8	
21	Sense line (optional)*
11	
24	Sense line (optional)*
9	
22	Sense line (optional)*

VDDA
V+ / DIE 'A'

VSSA
GND / DIE 'A'

OUT1A
OUT1 / DIE 'A'

VDDB
V+ / DIE 'B'

VSSB
GND / DIE 'B'

OUT1B
OUT1 / DIE 'B'
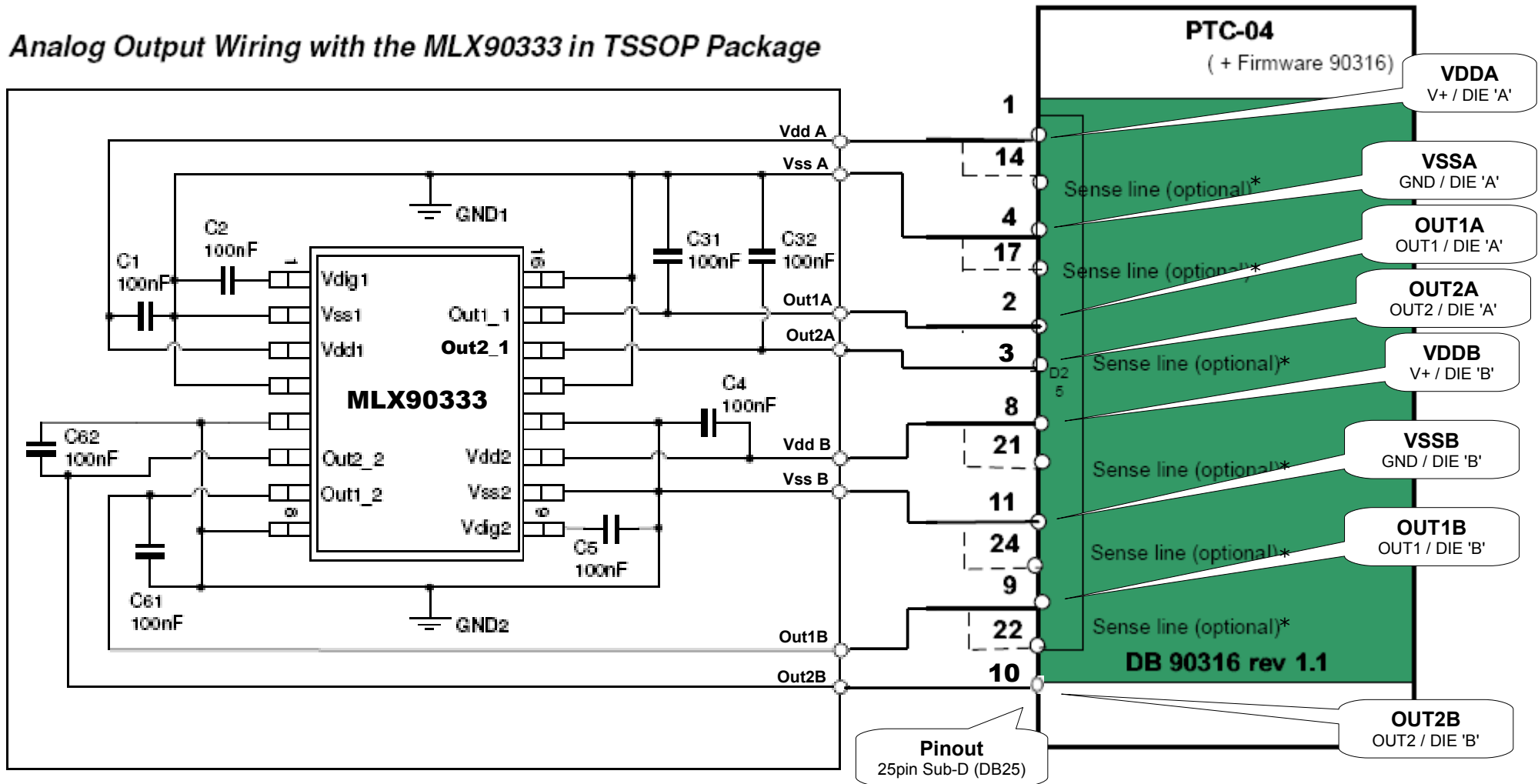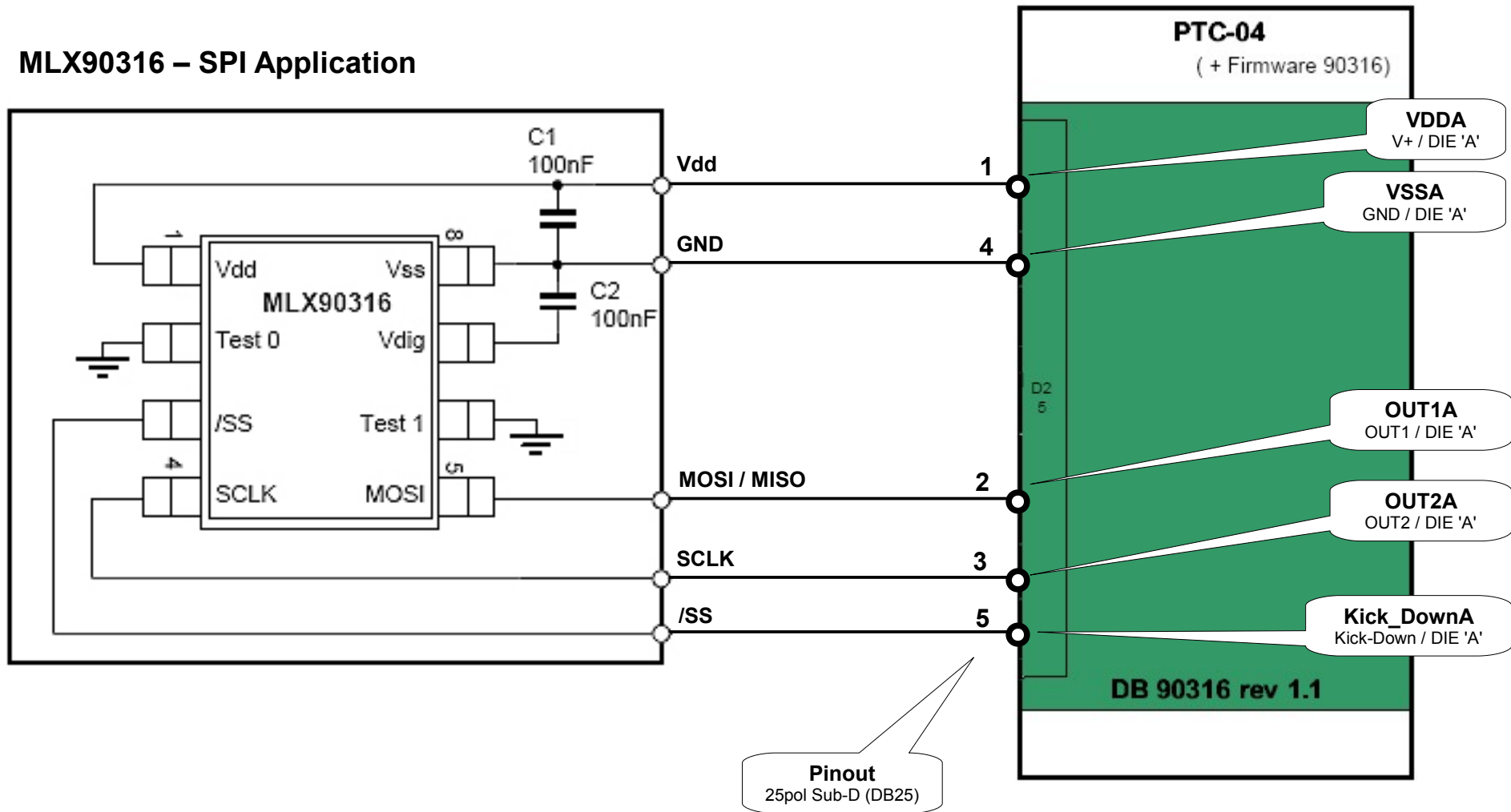
DB 90316 rev 1.1

Pinout
25pin Sub-D (DB25)

* Remove the Sense-Line Jumpers J2/J3 in two wire mode.
  In single wire mode the jumpers are closed
  to shorten the sense lines to the force lines.

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Analog Output Wiring with the MLX90333 in TSSOP Package

PTC-04
(+ Firmware 90316)

Pin	
1	Vdd A
14	Vss A
4	Sense line (optional)*
17	Sense line (optional)*
2	Out1A
3	Out2A
8	Sense line (optional)*
21	Vdd B
11	Vss B
24	Sense line (optional)*
9	Sense line (optional)*
22	Out1B
10	Out2B

Components: C1 100nF, C2 100nF, C31 100nF, C32 100nF, C4 100nF, C5 100nF, C61 100nF, C62 100nF

MLX90333 — Vdig1, Vss1, Vdd1, Out1_1, Out2_1, Out2_2, Out1_2, Vdd2, Vss2, Vdig2

GND1, GND2

VDDA — V+ / DIE 'A'
VSSA — GND / DIE 'A'
OUT1A — OUT1 / DIE 'A'
OUT2A — OUT2 / DIE 'A'
VDDB — V+ / DIE 'B'
VSSB — GND / DIE 'B'
OUT1B — OUT1 / DIE 'B'
OUT2B — OUT2 / DIE 'B'

D25

DB 90316 rev 1.1

Pinout
25pin Sub-D (DB25)

* Remove the Sense-Line Jumpers J2/J3 in two wire mode.
  In single wire mode the jumpers are closed
  to shorten the sense lines to the force lines.

Melexis Programmer PTC-04
Wiring diagram MLX90316 (SOIC8)

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MLX90316 – SPI Application

PTC-04
(+ Firmware 90316)

C1 100nF	Vdd	**1**
	GND	**4**
C2 100nF		

MLX90316

Vdd — Vss
Test 0 — Vdig
/SS — Test 1
SCLK — MOSI

MOSI / MISO	**2**
SCLK	**3**
/SS	**5**

VDDA
V+ / DIE 'A'

VSSA
GND / DIE 'A'

OUT1A
OUT1 / DIE 'A'

OUT2A
OUT2 / DIE 'A'

Kick_DownA
Kick-Down / DIE 'A'

D2
5

DB 90316 rev 1.1

Pinout
25pol Sub-D (DB25)

Melexis Programmer PTC-04
Software installation procedure for
MELEXIS Programmable Toolbox (MPT)

AS ELECTRONIC

The software installation of **MELEXIS' Programmable Toolbox** (MPT) for programmer PTC-04
is roughly structured in a few steps as seen below:

- Installation of MPT
- Installing Product Specific Function libraries (PSF) and User-Interfaces (UI) for PTC-04 and MLX903xx devices
- Connecting PTC-04 to the PC and installation of USB drivers
- Uploading the firmware for the MLX903xx device into programmer PTC-04

To install the MPT from the **as electronic Workshop-CD** please follow the steps below:

1. Installation of MPT
Doubleclick the file **MPTApp_revXXX.exe** in folder
[CDROM]\Software\Programmer_PTC-04\Toolbox_MPT on the as electronic Workshop-CD
and follow the installers' instructions.

2. Installation of Product Specific Functions (PSF) and User-Interface (UI) for PTC-04
Open the file **PSF0PTC04AAMLX_revXXX.exe** out of folder
[CDROM]\Software\Programmer_PTC-04\Funktionsbibliothek_PTC-04 of as electronic Workshop-CD.
Afterwards start **UI_0PTC04AAMLX_revXXX.exe** in folder
[CDROM]\Software\Programmer_PTC-04\User-Interface_PTC-04 and follow the instructions.

3. Installation of Product Specific Functions (PSF) and User-Interface (UI) for MLX903xx devices
Open the file **PSF0903xxAAMLX_revXXX.exe** in folder
[CDROM]\Software\MLX903xx\Funktionsbibliothek_MLX903xx on as electronic Workshop-CD.
Then doubleclick **UI_0903xxAAMLX_revXXX.exe** out of folder
[CDROM]\Software\MLX903xx\User-Interface_MLX903xx and follow the instructions.
Please repeat step 3. for any device and any devices' version you want to program with PTC-04 (e.g. MLX90316BAD and MLX90316BCG).

4. Connection of PTC-04 and installation of USB drivers
Please connect the PTC-04 to an USB port on your PC and switch the PTC-04 on. The operating system will now recognize the new device
and it will ask you for the path to the drivers. Choose the path to the drivers manually and confirm the selection:
**[CDROM]\Software\Programmer_PTC-04\USB-Treiber\USB_VCP_Driver_revXXX**

5. Upload the firmware for the MLX903xxx device into programmer PTC-04
If the installation was completed successful, please start **MELEXIS Programmable Toolbox** by doubleclicking the icon on the desktop or via the start menu.
In the left window pane of MPT you will find the user interface of **PTC-04** under **Workspace** >> **UI modules**.
By doubleclicking **PTC-04** and choosing **Upload firmware** you get to the firmware selection menu.
Please select the file **ptc04_mlx90316_firmware_revXXX.hex** out of folder **[CDROM]\Software\MLX90316\Firmware_MLX90316**
This Firmware is suitable for MLX90316 as well as MLX90333.
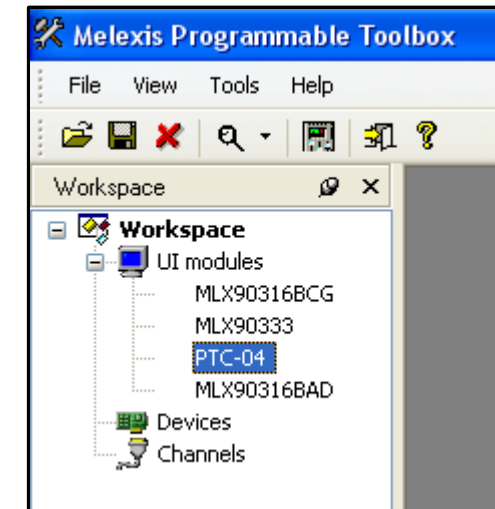
For details in usage of the software, of the libraries and for details of PTC-04 please refer to the corresponding documents on the Workshop-CD.