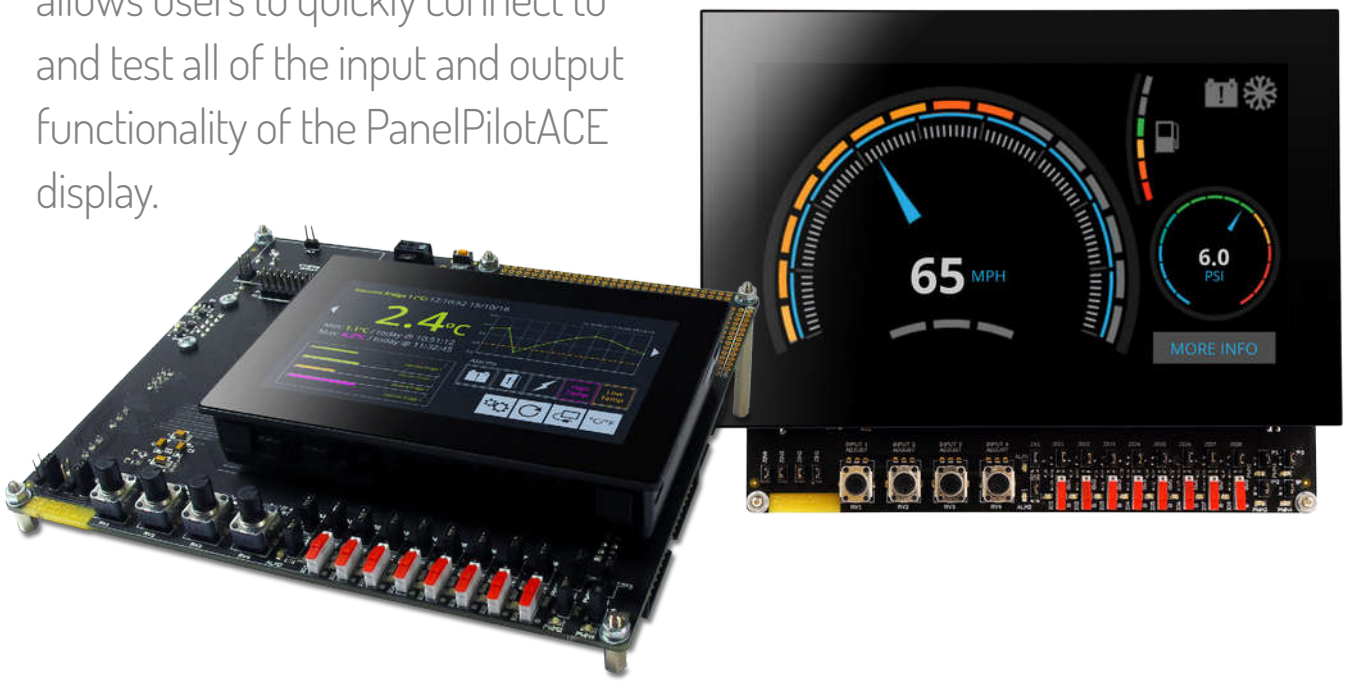
PanelPilotACE Development Kits

SGD 43-A DK+ and SGD 70-A DK+

The SGD 43-A DK+ and SGD 70-A DK+ are development kits for the 4.3" and 7" PanelPilotACE compatible displays. The development board itself allows users to quickly connect to and test all of the input and output functionality of the PanelPilotACE display.



Each kit includes a development board, a PanelPilotACE display and a USB cable*. The development board includes LED's and switches for digital I/O's, four potentiometers to generate analogue inputs, variable brightness LED's for PWM outputs and a prototyping area for testing circuitry. Connections are also available for the display's RS232, SPI and I²C functionality.

**The SGD 70-A DK+ kit also includes a power supply.*

Specifications

Analogue Inputs	4 x analogue inputs each with ±5Vd.c. analogue dial and screw terminals for external inputs
Digital Input/Outputs	8 x digital I/O's each with input switch, status LED and pin headers to connect external circuitry
PWM Outputs	4 x PWM outputs each with LED indication and pin headers to connect external circuitry
Alarm Outputs	2 x alarm outputs with status LED and pin headers to connect external circuitry
Serial Bus Connections	RS232 - 9 way D-Sub SPI and I²C - Pin Headers** RS485 - Screw Terminals**
Supply	5 to 30V d.c. (4.3": 300mA typ @ 5V, 7": 1.1A typ @ 5V)
Outside Dimensions	171 x 147x 75 mm (dimension of development board with SGD 43-A connected)

***Future software development (SPI, I²C & RS485)*

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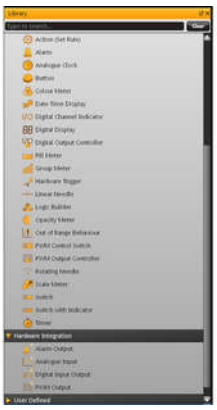
Making Industrial User Interface Design Simple







The design software provides a number of building blocks which allow users to drag-and-drop elements onto the screen to quickly create advanced user interfaces. From background images to text elements, analogue style meters, touch-screen navigation elements through to maths and logic functions, data logging and serial communications, users can build up multi-screen interfaces without needing to write a line of code.

There is a library of pre-defined elements such as meters, buttons and switches, and users can create their own content by combining elements or importing graphics in a number of formats (including jpg, png, tif, bmp and gif). The software includes support for transparency and multiple-layers.

Hardware interfacing is similarly intuitive, with hardware elements being dragged into a function builder where associations with graphical elements (such as a needle on a meter) can be defined. Here users can determine scaling for analogue inputs, define alarm triggers, behaviours for digital inputs and outputs and configure PWM outputs.

Previewing and Uploading Projects

The software includes a 'Preview in Emulator' function which emulates the hardware inputs/outputs allowing users to test their projects prior to upload. Projects are uploaded to the SGD 43-A via USB.

PanelPilotACE Design Studio is compatible with Windows 7, 8 and 10 and can be downloaded free from www.panelpilot.com.

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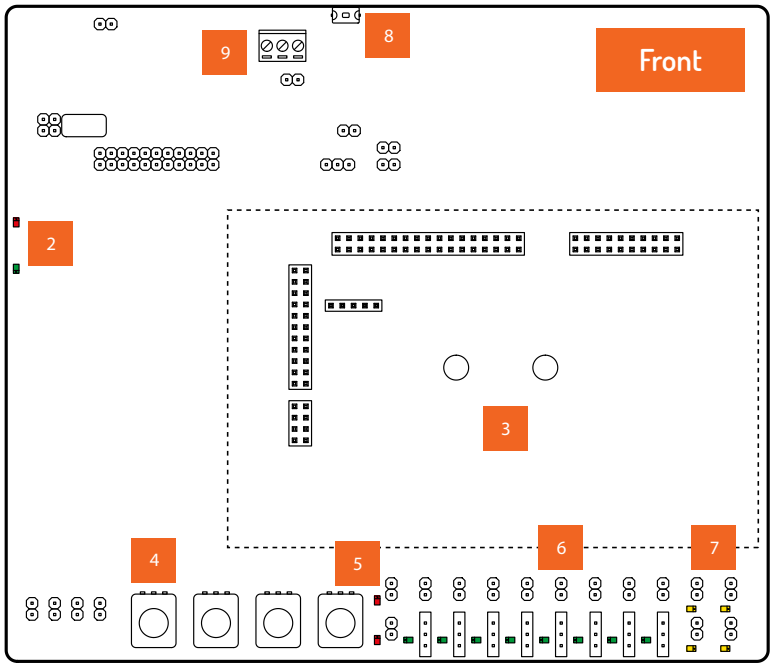
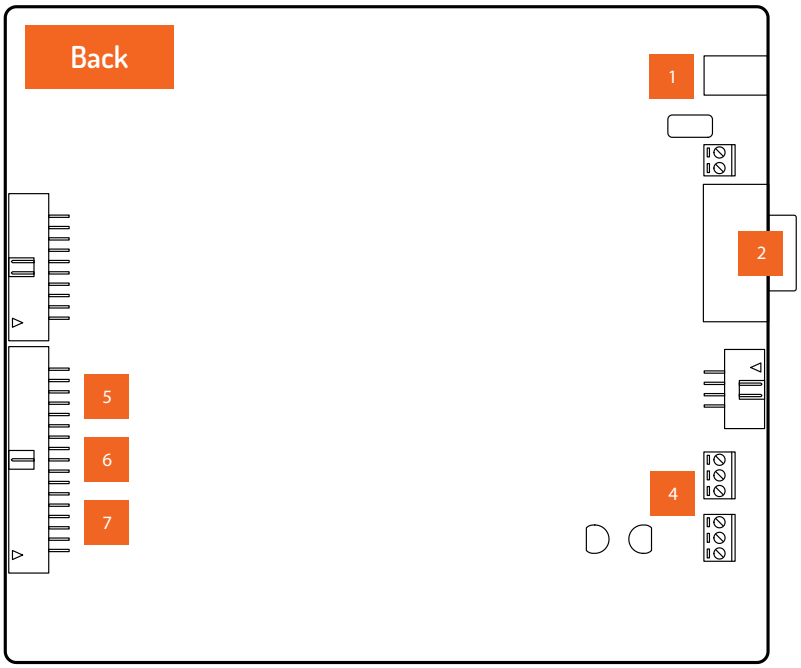
4.3" PanelPilotACE Development Kit

The lower power requirements of the 4.3" PanelPilotACE display allows it to be powered using a USB port connected to a PC, although it is recommended that the USB cable length does not exceed 0.5m.

When providing power externally, use either a DC PSU or the VIN & 0V screw terminals, not both, as this could damage one or both of these. The pin-outs for PL4, PL5 and PL11 can be found on the SGD 43-A data sheet together with further application information for connecting external circuitry via the development board.





Key:

1	**Power Supply** (when not powered from USB) Minimum 5V, 500mA Maximum 30V, 100mA Connect using either Screw Terminals (VIN & 0V) or 2.1mm DC Socket (DC IN). WARNING: ONLY USE ONE EXTERNAL POWER CONNECTION, NOT BOTH.
2	**RS232** Connection via 9-way D-sub plug. On-board data activity LEDs.
3	**Display mounting & USB for upload (+ power)** Plug SGD 43-A to this location. Hole to access USB on SGD-43A.
4	**4 x Analogue Inputs** 4 x ±5Vd.c. onboard variable inputs RV1 - RV4. When using external circuitry, remove the corresponding jumper link (JIN1 - JIN4) and connect to TB3 and TB4 as required. Alternatively, PL11 can be used.
5	**2 x Alarm Outputs labelled ALM1 to ALM2** LED indicates alarm output status. Remove the corresponding jumper link (JA1, JA2) to connect external circuitry using PL4.
6	**8 x Digital I/O labelled IO1 to IO8** LED indicates output or switch to generate input. Remove corresponding jumper link (JI01, JI02) to connect external circuitry using PL4.
7	**4 x PWM Outputs labelled PWM1 to PWM4** Variable LED brightness indicates PWM output level. Remove corresponding jumper link (JP1, JP4) to connect external circuitry using PL4.
8	**Reset Switch** Press to reset.
9	**RS485*** Connect to TB2.

**Future software development*

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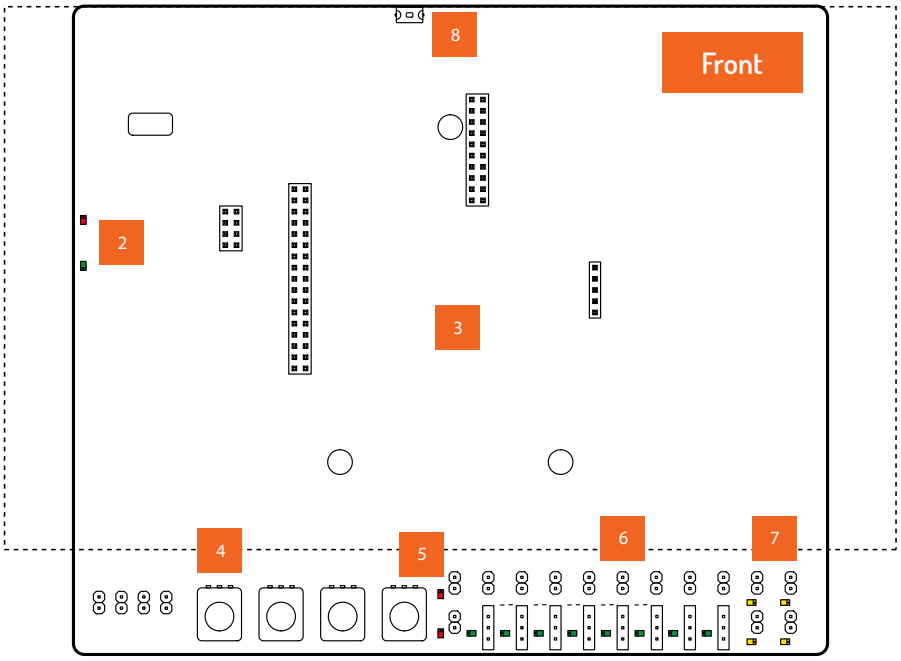
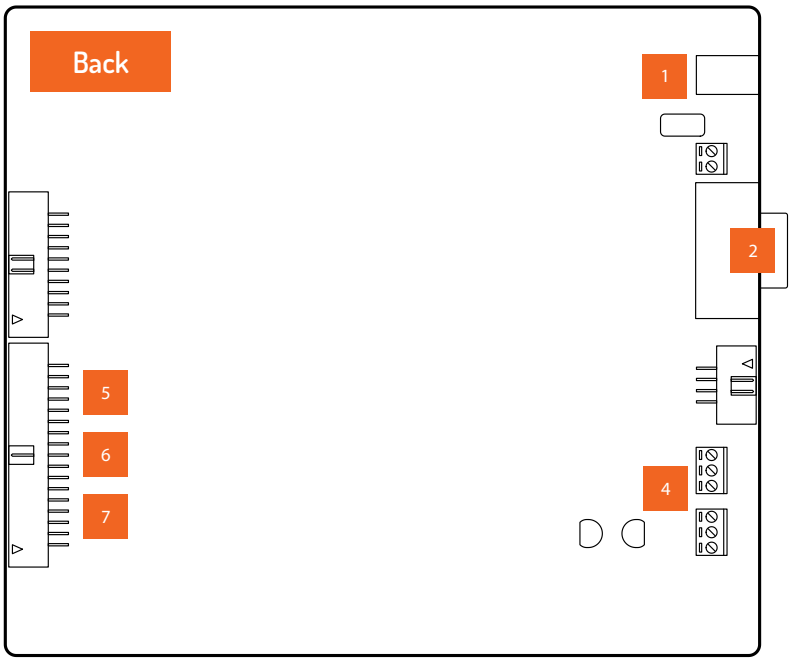
7.0" PanelPilotACE Development Kit

Due to the power requirements of the 7.0" PanelPilotACE display, an external power supply must be used.
It is recommended that either the DC PSU supplied with the kit is used.

Alternatively connect using VIN and 0V screw terminals. DO NOT connect both as this could damage one or both of these. The pin-outs for PL4, PL5 and PL11 can be found on the SGD 43-A data sheet together with further application information for connecting external circuitry via the development board.





Key:

1	**Power Supply** Minimum 5V, 1.5A Maximum 30V, 250mA Connect using either Screw Terminals (VIN & 0V) or 2.1mm DC Socket (DC IN). WARNING: ONLY USE ONE EXTERNAL POWER CONNECTION, NOT BOTH.
2	**RS232** Connection via 9-way D-sub plug. On-board data activity LEDs.
3	**Display mounting & USB for upload** Plug the SGD 70-A into this location. Hole for USB connectivity.
4	**4 x Analogue Inputs** 4 x ±5Vd.c. onboard variable inputs RV1 - RV4. When using external circuitry, remove the corresponding jumper link (JIN1 - JIN4) and connect to TB3 and TB4 as required. Alternatively, PL11 can be used.
5	**2 x Alarm Outputs labelled ALM1 to ALM2** LED indicates alarm output status. Remove the corresponding jumper link (JA1, JA2) to connect external circuitry using PL4.
6	**8 x Digital I/O labelled IO1 to IO8** LED indicates output or switch to generate input. Remove corresponding jumper link (JI01, JI02) to connect external circuitry using PL4.
7	**4 x PWM Outputs labelled PWM1 to PWM4** Variable LED brightness indicates PWM output level. Remove corresponding jumper link (JP1, JP4) to connect external circuitry using PL4.
8	**Reset Switch** Press to reset.