Programmable Smart Graphics Display

OM-SGD-43-A, 4.3" smart graphics display shown smaller than actual size.

OM-SGD-43-A

1 YEAR WARRANTY   CE   RoHS

✔ **4.3" Capacitive Touchscreen**
✔ **Low Profile Panel Mount Display**
✔ **Accepts Four Bipolar Analog Inputs up to ±40V**
✔ **Eight Digital I/O**
✔ **Two Alarm Outputs**
✔ **Four 8-Bit PWM Outputs**

The OM-SGD-43-A is a 4.3" capacitive touchscreen display designed for use with the Design Studio software, a free drag-and-drop style software package for rapid development of advanced user interfaces and panel meters. The Design Studio software allows the user to create of anything from simple meters and dials, through to advanced user interfaces with control elements. The OM-SGD-43-A can be powered from the USB port of a computer or from an external 5 to 30 V supply.

Design Studio—Making Industrial User Interface Design Simple

The Design Studio 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, analog style meters, touchscreen navigation elements and even complex logic statements. 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. 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 analog inputs, define alarm triggers, behaviors 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's inputs and outputs, allowing users to test their projects prior to upload. Projects are uploaded to the OM-SGD-43-A via a mini USB port. The Design Studio software is compatible with Windows® XP (SP3), Vista, 7 and 8 and can be downloaded free online at OMEGA.
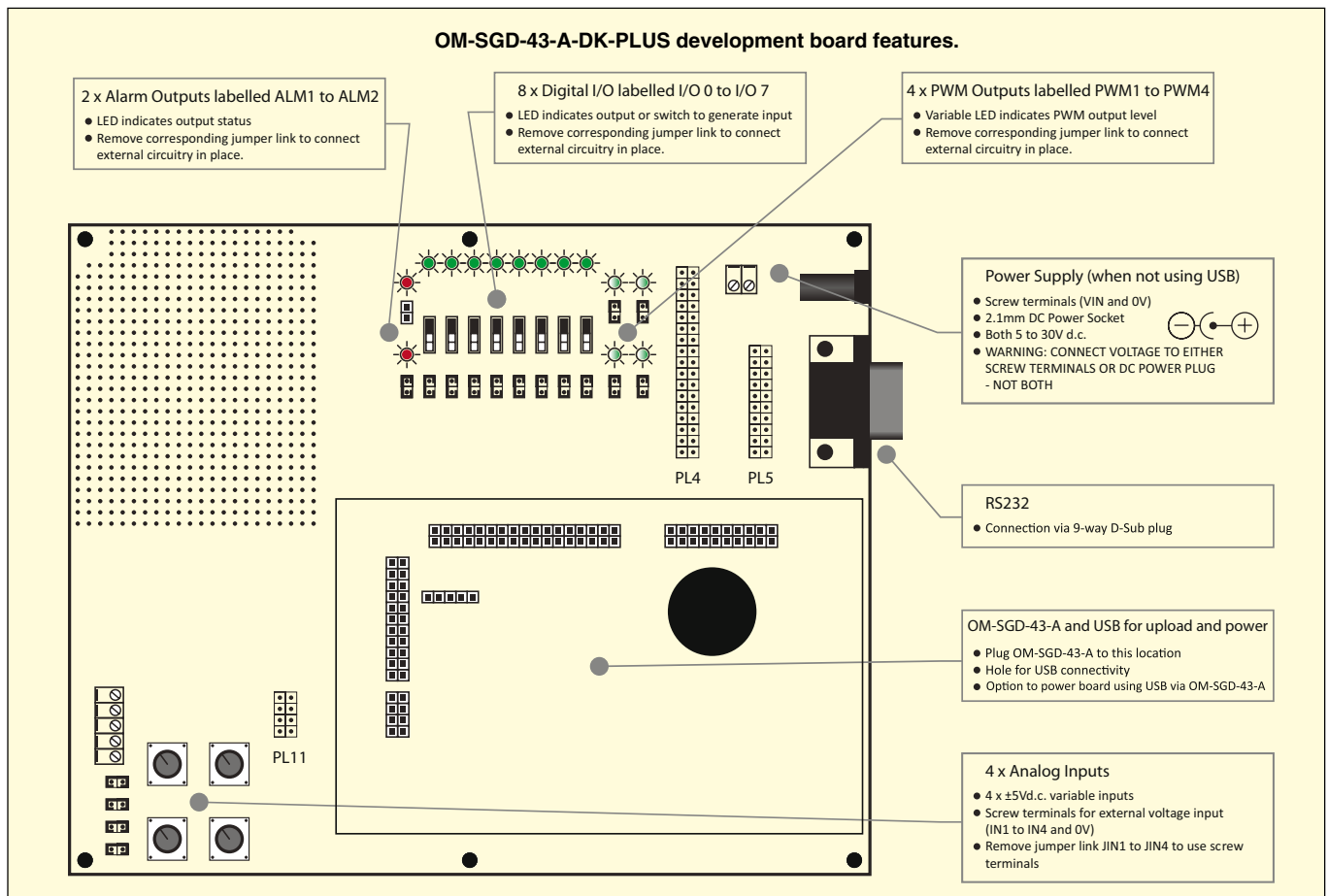

Test your project prior to upload with the software's "Preview in Emulator" function.

The OM-SGD-43-A-PLUS is a development kit that include the OM-SGD-43-A display, a USB cable and a development board which provides connections to all of the input/output functionality of the display. This includes LEDs and switches for digital I/O's, four potentiometers to generate analog 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 which will be made available for use in a future software update. The development board can be powered directly by connecting the USB cable to the back of the display that is plugged into it (USB interface provides power to both the display as well as the development board).

OM-SGD-43-A display shown connected to development board. Shown smaller than actual size.

OM-SGD-43-A-DK-PLUS development board features.

2 x Alarm Outputs labelled ALM1 to ALM2
- LED indicates output status
- Remove corresponding jumper link to connect external circuitry in place.

8 x Digital I/O labelled I/O 0 to I/O 7
- LED indicates output or switch to generate input
- Remove corresponding jumper link to connect external circuitry in place.

4 x PWM Outputs labelled PWM1 to PWM4
- Variable LED indicates PWM output level
- Remove corresponding jumper link to connect external circuitry in place.

Power Supply (when not using USB)
- Screw terminals (VIN and 0V)
- 2.1mm DC Power Socket
- Both 5 to 30V d.c.
- WARNING: CONNECT VOLTAGE TO EITHER SCREW TERMINALS OR DC POWER PLUG - NOT BOTH

RS232
- Connection via 9-way D-Sub plug

OM-SGD-43-A and USB for upload and power
- Plug OM-SGD-43-A to this location
- Hole for USB connectivity
- Option to power board using USB via OM-SGD-43-A

4 x Analog Inputs
- 4 x ±5Vd.c. variable inputs
- Screw terminals for external voltage input (IN1 to IN4 and 0V)
- Remove jumper link JIN1 to JIN4 to use screw terminals

PL4   PL5

PL11

2

Specifications
OM-SGD-43-A (PROGRAMMABLE SMART GRAPHICS DISPLAY)
GENERAL

Display: 4.3" TFT capacitive touchscreen with 262K colors, 480 x 272 pixel

Processor: Freescale i.MX283 (454 MHz, 32 bit, ARM 9)

Memory: 1 Gbit DDR2 SDRAM and 2 GB SD card

Software: Windows XP SP3/Vista/7/8

Power: 5 to 30 Vdc (300 mA typical at 5 Vdc)

Operating Temperature: 0 to 40°C (32 to 104°F)

Outside Dimensions: 79.8 H x 119.3 W x 20 mm D (3.1 x 4.7 x 0.8")

Panel Cutout: 78 H x 117 mm W (4.6 x 3.07 x 4.6")

Weight: 0.23 kg (0.5 lb)

ANALOG INPUTS

No. of Inputs: 4 voltage inputs up to ±40V or 4 current inputs of 4 to 20 mA

ADC: 16-bit

Accuracy: 0.05% ±1 mV typical (for measurements up to ±10V)

VOLTAGE INPUT

Voltage Range (V)	Resolution (mV)
±1.25	0.04
±2.5	0.08
±5	0.16
±10	0.33
±20	0.66
±40	1.3

CURRENT INPUT

Range: 4 to 20 mA

ALARM OUTPUTS

No. of Outputs: 2

Type: Open-collector (sink up to 10 mA max each)

DIGITAL I/O

No. of Digital I/O: 8

Input Voltage (High): 3.3V max, 2V min

Input Voltage (Low): 0.8V max, 0V min

Output Voltage (High): 3.3V max, 2.6V min

Output Voltage (Low): 0.4V max, 0V min

Output Source Current: -11.4 mA min

Output Sink Current: 9.0 mA min

PWM OUTPUTS

No. of PWM Outputs: 4 (8-bit)

Voltage: 3.3V max

Output Source Current (PWM): -9.5 mA

Output Sink Current (PWM): 7.7 mA min

COMMUNICATIONS

Modes: RS232, SPI (Serial Peripheral Interface Bus), I2C (Inter-Integrated Circuit), RS485, Ethernet (hardware capability–will be made available for use in a future software update)

OM-SGD-43-A-DK-PLUS (DEVELOPMENT KIT)

Analog Inputs: 4; each with ±5V analog dial and screw terminals for external input

Digital I/O: 8; each with input switch, status LED and pin headers to connect external circuitry

PWM Outputs: 4; each with LED indication and pin headers to connect external circuitry
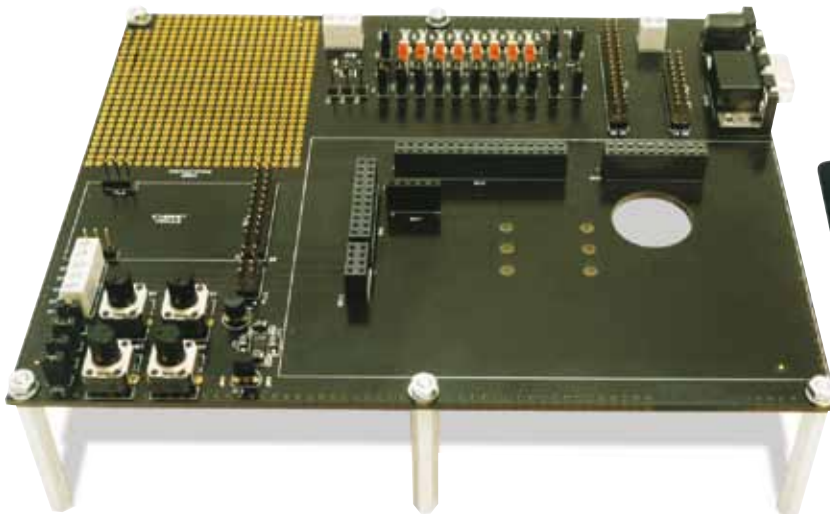
Alarm Outputs: 2; each with status LED and pin headers to connect external circuitry

Serial Bus Connections: RS232 serial connector and pin headers for SPI and I2C bus

Power: 5 to 30V (300 mA typical at 5V)

Dimensions (Development Board with Standoffs and Display Connected): 147 H x 181 W x 64 mm D (5.79 x 7.13 x 2.52")

Weight (Development Board and Display): 0.6 kg (1.3 lbs)
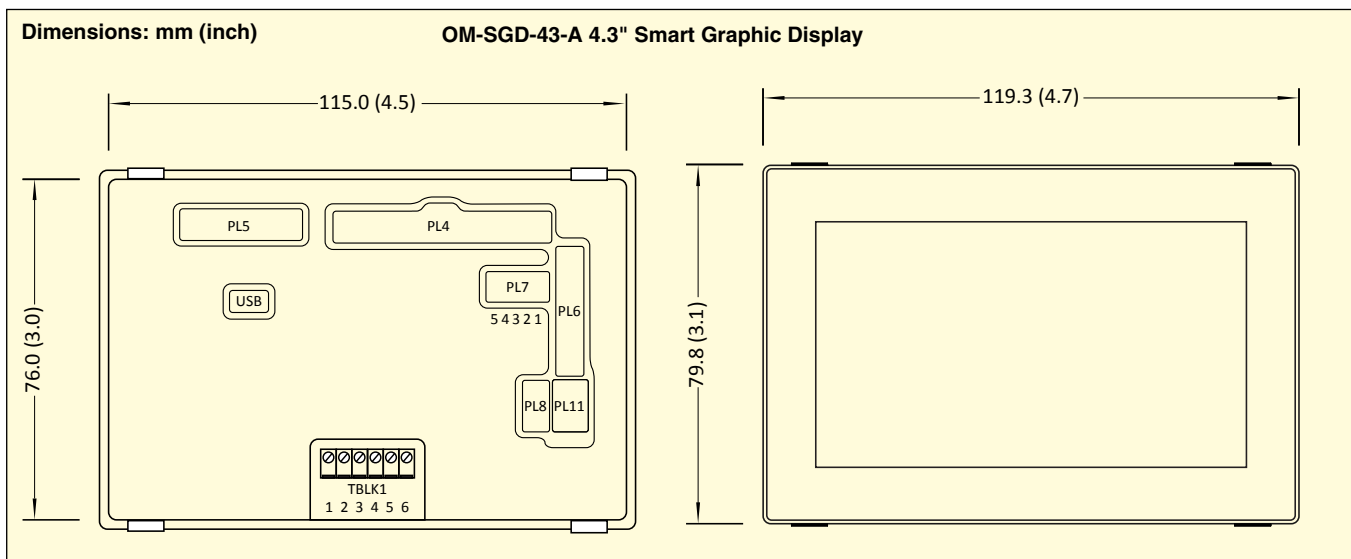

Development board

OM-SGD-43-A display

OM-SGD-43-A-DK-PLUS development kit (includes development board and OM-SGD-43-A display), shown smaller than actual size.

OM-SGD-43-A, 4.3" smart graphics display shown with laptop (not included) running Design Studio software.

All models shown smaller than actual size.

Dimensions: mm (inch) — **OM-SGD-43-A 4.3" Smart Graphic Display**

115.0 (4.5) | 119.3 (4.7)

PL5 PL4 USB PL7 PL6 5 4 3 2 1 PL8 PL11

TBLK1
1 2 3 4 5 6

76.0 (3.0) 79.8 (3.1)

OMEGACARE^SM extended warranty program is available for models shown on this page. Ask your sales representative for full details when placing an order. OMEGACARE^SM covers parts, labor and equivalent loaners.

To Order

Model No.	Description
OM-SGD-43-A	4.3" programmable smart graphics display
OM-SGD-43-A-DK-PLUS	Development kit (includes development board and 4.3" programmable smart graphics display)

*Comes complete with quick start manual, panel mount bracket and 0.45 m (1.5') USB cable. **OM-SGD-43-A-DK-PLUS** includes all of the above plus development board with standoffs.*

***Ordering Example: OM-SGD-43-A-DK-PLUS** development kit and **OCW-1**, OMEGACARE^SM extends standard 1-year warranty to a total of 2 years.*