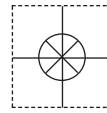


**1 YEAR**  
WARRANTY



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## **OM-SGD-28-M**

**Smart Graphics Display**



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# OM-SGD-28-M

## Smart Graphics Display

### FEATURES

- 2.8" color TFT screen
- Use PanelPilot software, to setup and customize the display
- Compatible with Windows XP, Vista, 7 and 8
- Over 40 meter templates to choose from
- New templates automatically download in PanelPilot software
- Programmable via the USB interface
- Simple panel mounting solution
- Wide operating voltage of 4V – 30V d.c.
- Measures voltage from 0 – 40V d.c.
- Digital hold



### ORDERING INFORMATION

Standard Display      OM-SGD-28-M  
(Panel meter, fixing kit,  
quick start guide)

USB Cable              OM-CABLE-USB-A-MF  
(Type A to mini-B)

The OM-SGD-28-M is a smart graphics display with a 320 x 240 pixel (QVGA) color display and USB programming interface.

Using the PanelPilot software (available for Windows XP, Vista, 7 and 8), users are able to choose from an ever-increasing number of configurations which can then be customized to their needs.

Colors, text labels, splash screen and input voltage scaling can all be customized by the user through the software and then uploaded to the OM-SGD-28-M through the USB connection.

Panel or enclosure installation of the display is simple, using a panel fixing clip to mount the display, and 4 screw terminals to connect the inputs.

### SPECIFICATIONS

	Minimum	Typical	Maximum	Unit
Accuracy		0.05	0.1	%
Linearity			±1*	Count
Sample rate		3		Samples / second
Operating temperature range	0 (+32)		+40 (+104)	°C (°F)
Supply voltage	4		30	V d.c.
Measurement voltage (single ended only)**	0		40	V d.c.
Supply current ***	35		190	mA

\* Depending on user calibration settings

\*\* The OM-SGD-28-M uses a programmable gain amplifier. There are 8 different voltage ranges, to optimise the resolution. See page 2 for details.

\*\*\* Voltage dependent. See graph on Page 2.

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# OM-SGD-28-M

## Smart Graphics Display

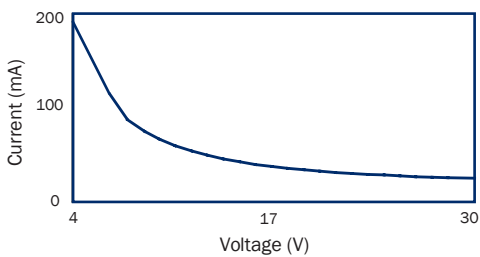
### HARDWARE

#### Screw Terminal Functions

- 1 IN2 Analog voltage input 2 (maximum of 40V d.c.)
- 2 IN1 Analog voltage input 1 (maximum of 40V d.c.)
- 3 0V 0V power supply input
- 4 V+ Positive power supply input (4V – 30V d.c.)



#### Typical Supply Current



#### Voltage Input

The OM-SGD-28-M features 2 voltage inputs, which use a Programmable Gain Amplifier (PGA) to make the best use of available resolution (the smallest voltage range offers the highest resolution). Each channel can be programmed independently, with the option of eight different input voltage ranges:

Voltage Range (V)	Resolution (mV)
0 - 1.25	0.3
0 - 2.5	0.6
0 - 4	1.0
0 - 5	1.2
0 - 8	2.0
0 - 10	2.4
0 - 20	4.9
0 - 40	9.8

The input voltage range is decided using the two voltages that the user enters in the scaling section of the Panel Pilot software. The software uses the smallest range available, which can accommodate both of the voltages entered by the user. The absolute maximum voltage input is 40V d.c.

For example:

Entering a voltage scale of 0 – 30V in the software will use the 0 – 40V range.  
Entering a voltage scale of 0 – 3V in the software will use the 0 – 4V range.  
Entering a voltage scale of 5 – 15V in the software will use the 0 – 20V range.

Note: V+, IN1 and IN2 share a common ground (i.e. not floating or isolated from each other).

#### USB connection

A 'Type A to Mini-B' USB cable is required to program and customize the OM-SGD-28-M. It typically takes 10 seconds to send a configuration, with an additional 5 seconds needed for the hardware to reset.

The OM-SGD-28-M can be powered directly from USB and is compatible with both USB 1.1 and USB 2.0. The screw terminals and advanced connector can remain connected whilst using USB, but it is not necessary for V+ to be powered.

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# OM-SGD-28-M

## Smart Graphics Display

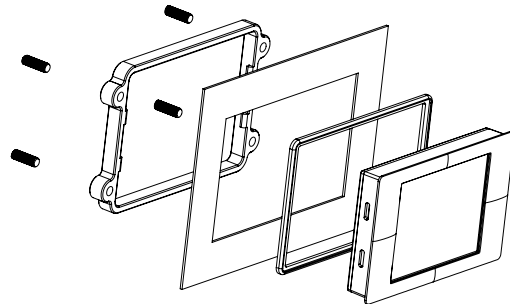
### Display

The display is a 2.8" TFT panel, with a resolution of 320 x 240 pixels and a 16-bit color depth. Any graphics that are uploaded to the meter are automatically converted to this specification. A resistive touchscreen is fitted, for use with supporting applications. Clean the screen with a damp, soft, lint free cloth.

### Panel Mounting

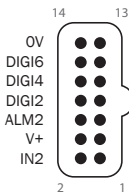
The OM-SGD-28-M can be fitted into panels 1mm - 3mm deep. A silicone seal is included to improve fitting on thin panels. The minimum panel thickness is increased to 2mm if the seal is not fitted. Panel cut-out is 87mm x 54.5mm.

NOTE: The display is NOT protected against moisture or dust.



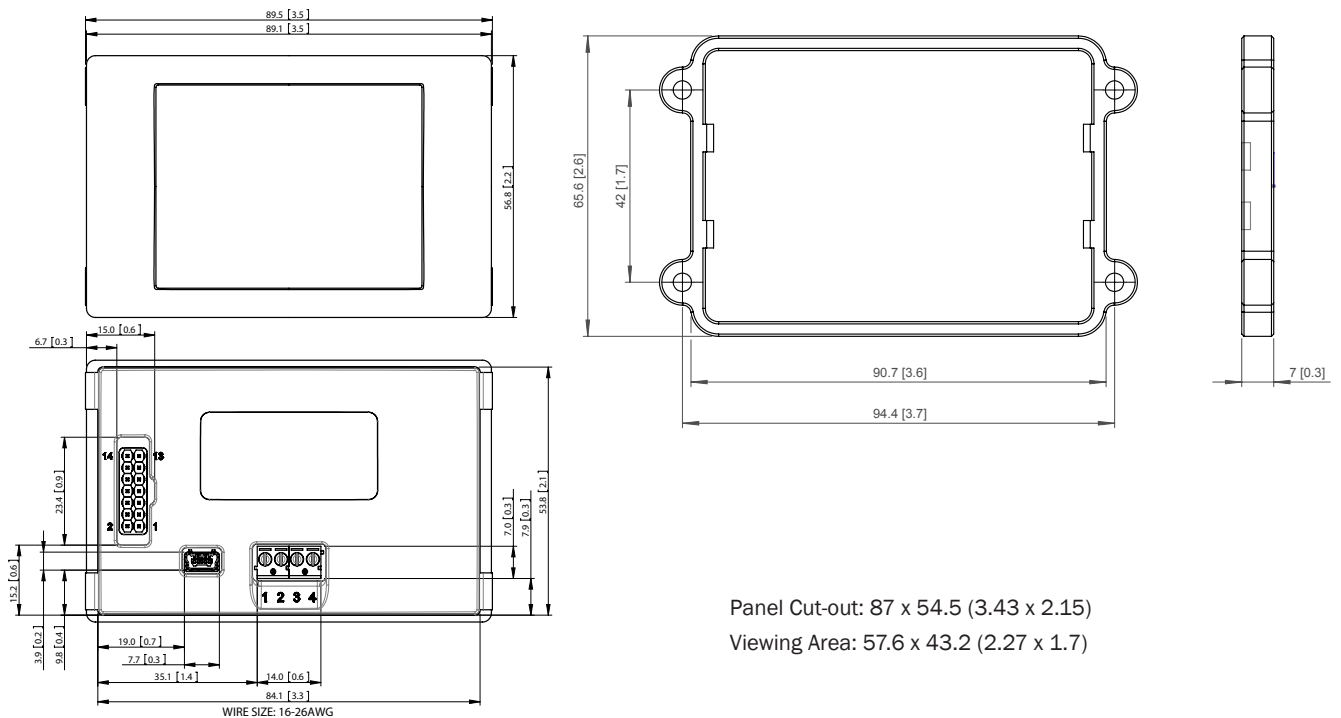
### Advanced Connector

The DIL IDC socket provides an alternative connection method to the screw-terminals (V+, 0V, IN1 and IN2 are duplicated). It also includes provision for future expansion using data buses (SPI and I2C) and alarm outputs. Some expansion options may require an additional interface board - Visit [www.omega.com](http://www.omega.com) for information on which features are currently supported.



### DIMENSIONS

All dimensions in mm (inches)



# OM-SGD-28-M

## Smart Graphics Display

### PANELPILOT SOFTWARE

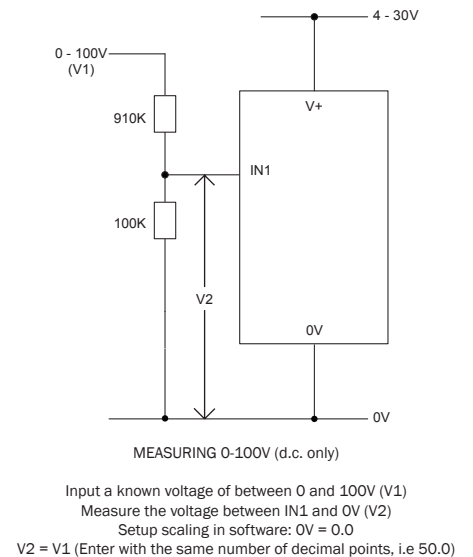
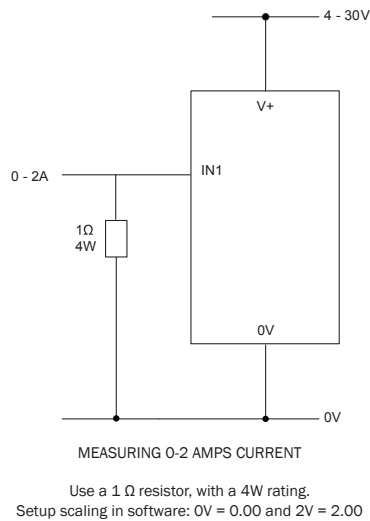
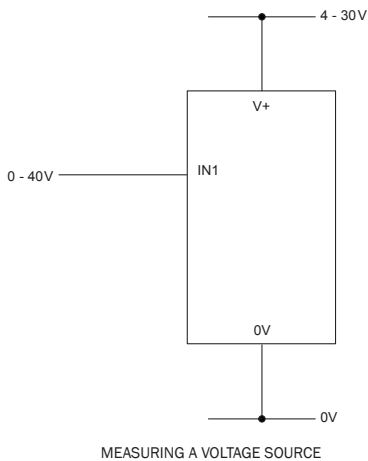
Omega's PanelPilot software is available for download free of charge from [www.omega.com](http://www.omega.com). Easy to install and use, the control software runs under Windows XP, Vista, 7 and 8. The software is used to setup the appearance and operation of the meter and then upload these settings to the meter.

Multiple types of voltmeter are supplied with the software. See the website for details of available meters.

The software allows the following parameters to be configured:

- Meter type
- Text labels (including units and graph labels)
- Background, graph segment and text colors
- Input scaling / calibration (at two points)
- Decimal points (entered during scaling)
- Splashscreen image selection (to display a user image, such as a logo, when the meter is powered up)

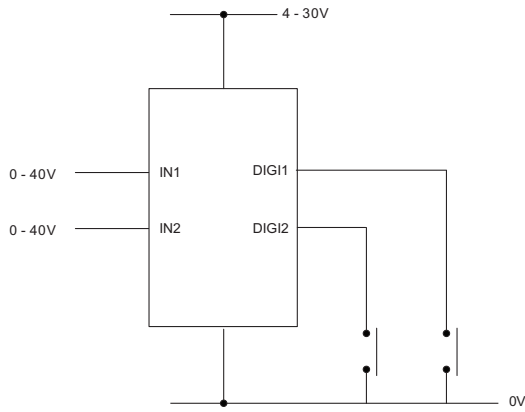
### VARIOUS OPERATING MODES



# OM-SGD-28-M

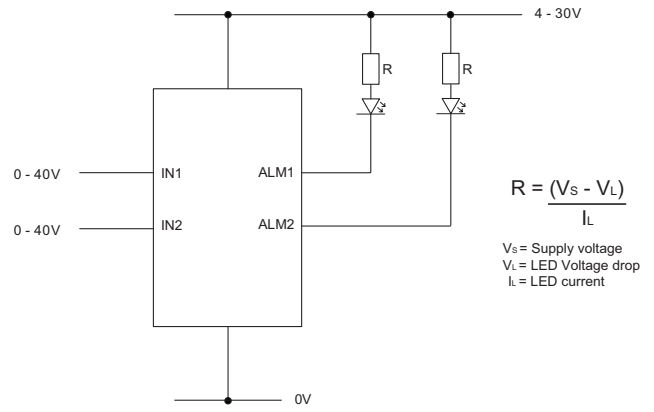
## Smart Graphics Display

### VARIOUS OPERATING MODES



DIGITAL HOLD

DIGI1 will hold the display for IN1  
DIGI2 will hold the display for IN2

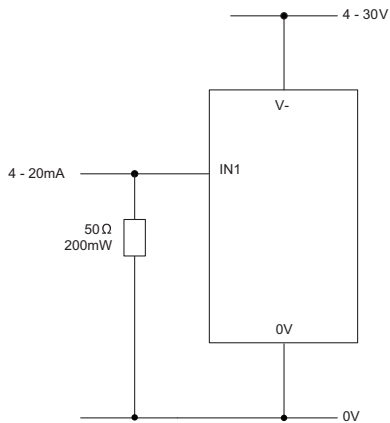


ALARM OUTPUTS

Applications that feature an alarm can be connected as above.  
ALM1 and ALM2 must not sink more than 10mA maximum each.  
If supply voltage varies, use an appropriate voltage regulator.

$$R = \frac{V_S - V_L}{I_L}$$

$V_S$  = Supply voltage  
 $V_L$  = LED Voltage drop  
 $I_L$  = LED current



MEASURING 4-20mA

Use a 50  $\Omega$  resistor with a 200mW rating.  
Setup scaling in software 0.2V=4.0 and 1V=20.0  
Cannot be loop powered. Supply must be isolated from current loop.

## WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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