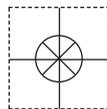


1 YEAR
WARRANTY



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OM-SGD-28-M-420
Current Loop Indicator Smart Graphics Display



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OM-SGD-28-M-420

Current Loop Indicator Smart Graphics Display

ORDERING INFORMATION

Standard Display
(Panel meter, fixing kit,
quick start guide) OM-SGD-28-M-420

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

FEATURES

- 2.8" color TFT screen
- Use PanelPilot software, to setup and customize the display
- Compatible with Windows XP, 2000, Vista and Windows 7
- 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 current from 4-20mA.
- Digital hold



The OM-SGD-28-M-420 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 and Windows 7), users are able to choose from an ever-increasing number of configurations (six voltmeters at launch) which can then be customised to their needs.

Colors, text labels, splash screen and input scaling can all be customised by the user through the software and then uploaded to the OM-SGD-28-M-420 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.

Note: Requires fully floating PSU with respect to current loop

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.
Supply current **	35		190	mA
Measurement range	0	4-20	50	mA
Loop volt drop	0	0.4-2.0	5.0	V

* Depending on user calibration settings

** Voltage dependent. See graph on Page 2.

www.omega.com

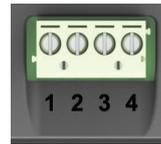
OM-SGD-28-M-420

Current Loop Indicator Smart Graphics Display

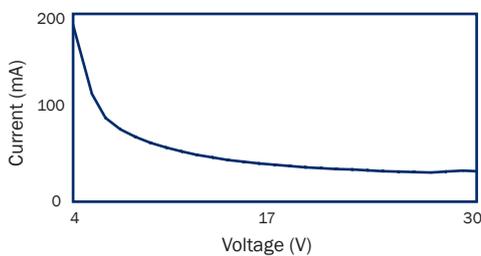
HARDWARE

Screw Terminal Functions

- 1 NC Do not connect
- 2 I+ Positive connection from current loop
- 3 I- Negative connection to current loop, and 0V power supply return
- 4 V+ Positive power supply connection (4V – 30V d.c.)



Typical Supply Current



USB connection

A 'Type A to Mini-B' USB cable is required to program and customise the OM-SGD-28-M-420. 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-420 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.

A USB power supply is available - OM-EL-WIFI-ADAPTOR-UK (UK plug format) or OM-EL-WIFI-ADAPTOR (USA plug format). This may be used as a convenient means to provide a fully floating power supply for the loop indicator.

Display

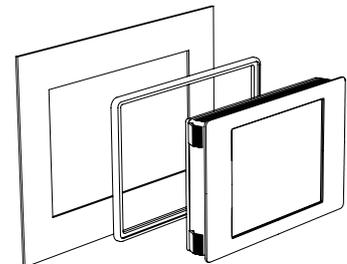
The display is a 2.8" TFT panel, with a resolution of 320 x 240 pixels and a 16-bit color depth. Any graphics that are uploaded to the meter are automatically converted to this specification. A resistive touchscreen is fitted, for use with supporting applications. Clean the screen with a damp, soft,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

Panel Mounting

The OM-SGD-28-M-420 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.

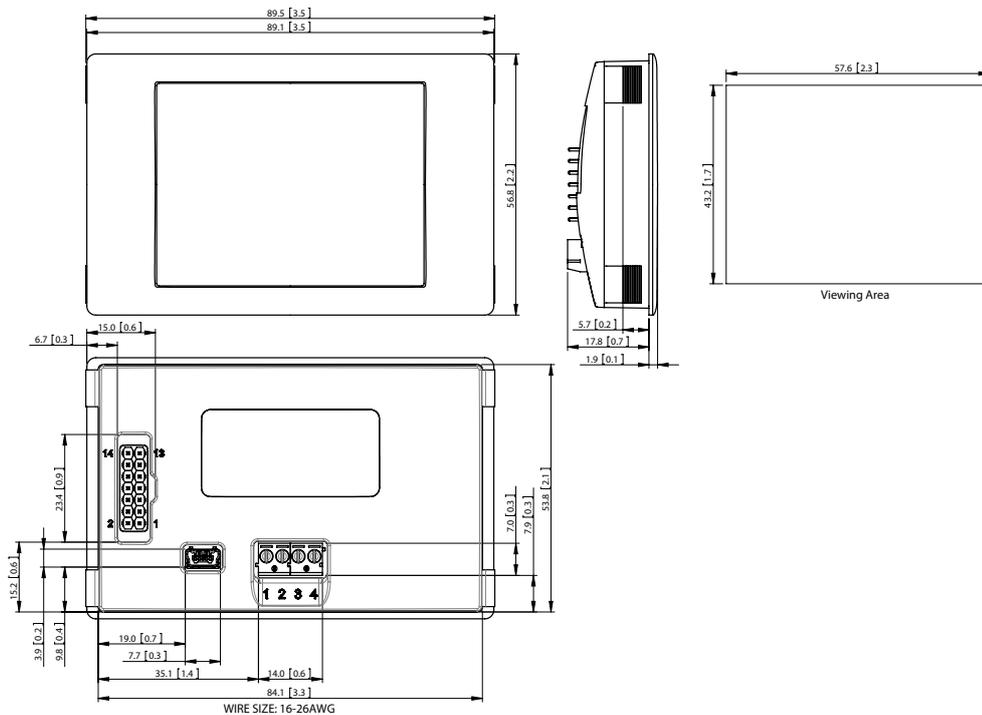


OM-SGD-28-M-420

Current Loop Indicator Smart Graphics Display

DIMENSIONS

All dimensions in mm (inches)



PANELPILOT SOFTWARE

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

Multiple types of meter are supplied with the software. Additional types will be made available to download - see www.PanelPilot.com for details of available meters.

N.B. Do not select any dual channel meters - as these are incompatible with current loop monitoring.

The software allows the following parameters to be configured:

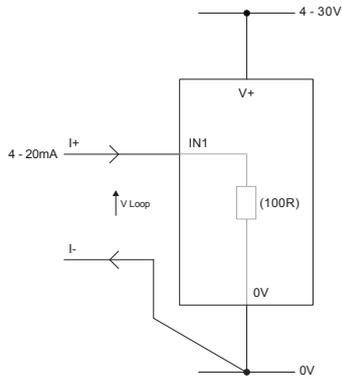
- Meter type
- Text labels (including units and graph labels)
- Background, graph segment and text colors
- Decimal points (entered during scaling)
- Splashscreen image selection (to display a user image, such as a logo, when the meter is powered up)
- Input scaling / calibration (at two points) - fixed for 4-20mA applications

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OM-SGD-28-M-420

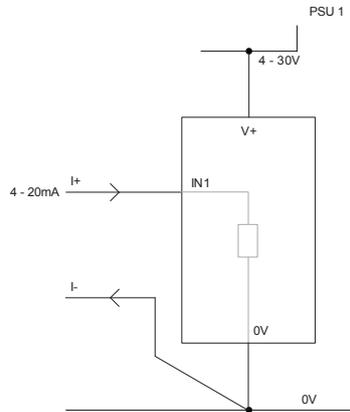
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VARIOUS OPERATING MODES



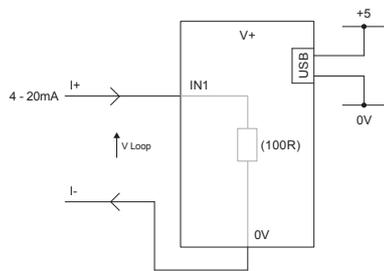
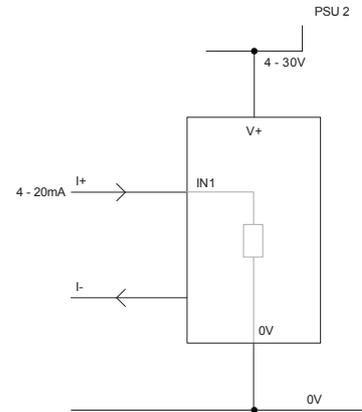
MEASURING 4-20mA

Power supply to meter must be fully floating (isolated from the 4-20mA current loop)

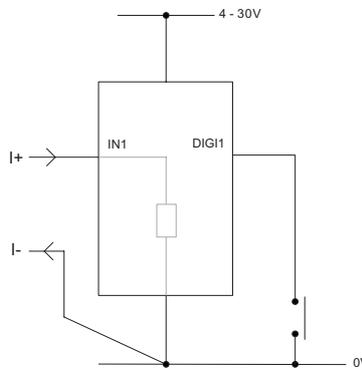


USING TWO OM-SGD DISPLAYS IN SAME INSTALLATION

Each OM-SGD must be powered from a separate, fully floating, power supply

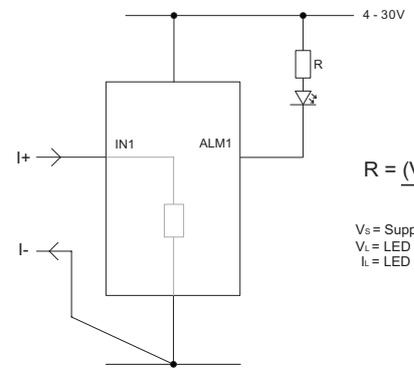


MEASURING 4-20mA USING A USB POWER SUPPLY



DIGITAL HOLD

DIGI1 will hold the display



ALARM OUTPUT

Applications that feature an alarm can be connected as above. ALM1 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

OM-SGD-28-M-420

Current Loop Indicator Smart Graphics Display

CURRENT LOOP

Internally the OM-SGD-28-M-420 uses a Programmable Gain Amplifier (PGA) to make the best use of available resolution (theoretically there are eight different ranges available to the SGD. However for the 4-20mA application, this is effectively restricted to the 0-2.5 range.

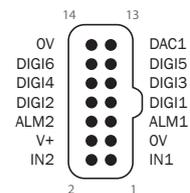
Voltage Range (V)	Resolution (mV)
0 - 1.25	0.3
0 - 2.5	0.6 (4-20mA)
0 - 4	1.0
0 - 5	1.2
0 - 8	2.0
0 - 10	2.4
0 - 20	4.9
0 - 40	9.8

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.

Note: I+ and I- share a common ground (i.e. not floating or isolated from each other).

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 for information on which features are currently supported.



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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Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

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.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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