TFT PANEL METERS 2.4”, 2.8”, 3.5”

TECHNICAL DATA

- 2.4”, 2.8”, 3.5”colourTFTdisplay
- 2 Analogue input channels with screw connectors
- Measured voltage 0-40V DC
- 2 alarm outputs
- Digital hold
- Easy setup with Panel pilot software
- Adjust colours, text, splash screen, input volatge scaling
- Multiple voltmeter configuration and graphic screens included
- Program the display from the USB Interface with Panel pilot software
- Easy panel mounting, using a panel fixing clip
- Operating temperature -0°C to + 40°C

ORDERING INFORMATION

Description	Part Number
2.4” Panel meter 320x240 (QVGA)	MS SGD24-M
2.8” Panel meter 320x240 (QVGA)	MS SGD28-M
3.5” Panel meter 320x240 (QVGA)	MS SGD35-M
USB Cable (Type A to mini B)	MS CABLE USB A-MF

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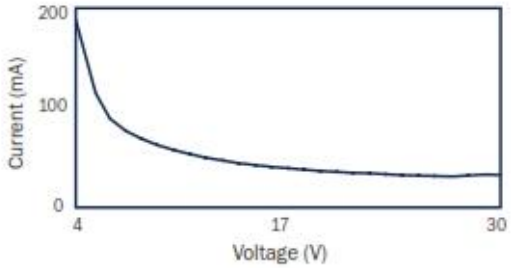
Hardware

Screw Terminal Functions

1	IN2	Analogue voltage input 2 (maximum of 40V d.c.)
2	IN1	Analogue 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 SGD 24-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 customise the SGD 24-M. It typically takes 10 seconds to send a configuration, with an additional 5 seconds needed for the hardware to reset.

The SGD 24-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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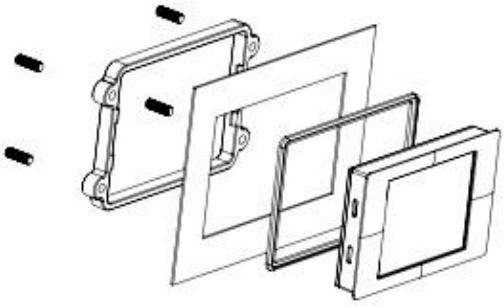
Display

The display is a 2.4” 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

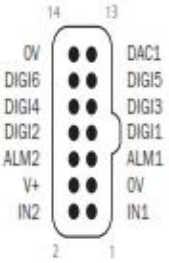
The SGD 24-M can be fitted into panels of up to 3mm deep. A silicone seal is included to improve fitting on thin panels, however the maximum panel thickness is reduced to 2mm when fitted. Panel cut-out is 74 x 46mm.

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



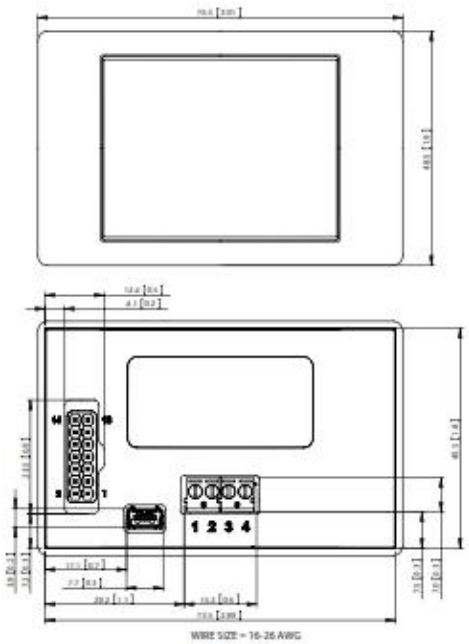
Advanced Connector

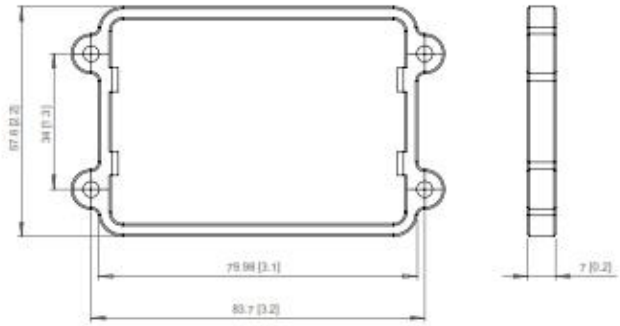
The DIL IDC socket provides an alternative connection method to the screw-teminals (V+, 0V, IN1 and IN2 are duplicated). It also includes provision for future expansion using data buses (SPI and I2C) and alarm ouputs.
Some expansion options may require an additional interface board - Visit www.panelpilot.com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



Dimensions

All dimensions in mm (inches)





Panel Cut-out: 74 x 46 (2.91 x 1.81)
Viewing Area: 49.5 x 38 (1.9 x 1.5)

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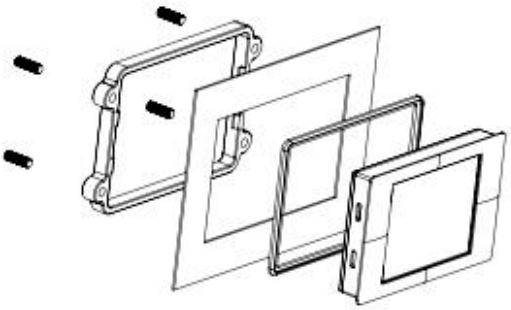
Display

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

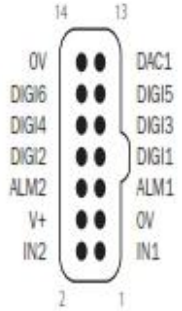
The SGD 28-M can be fitted into panels 1mm - 3mm deep. A silicone seal is included to improve fitting on thin panels. The minimum panel thickness is increased to 2mm if the seal is not fitted. Panel cut-out is 87mm x 54.5mm.

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



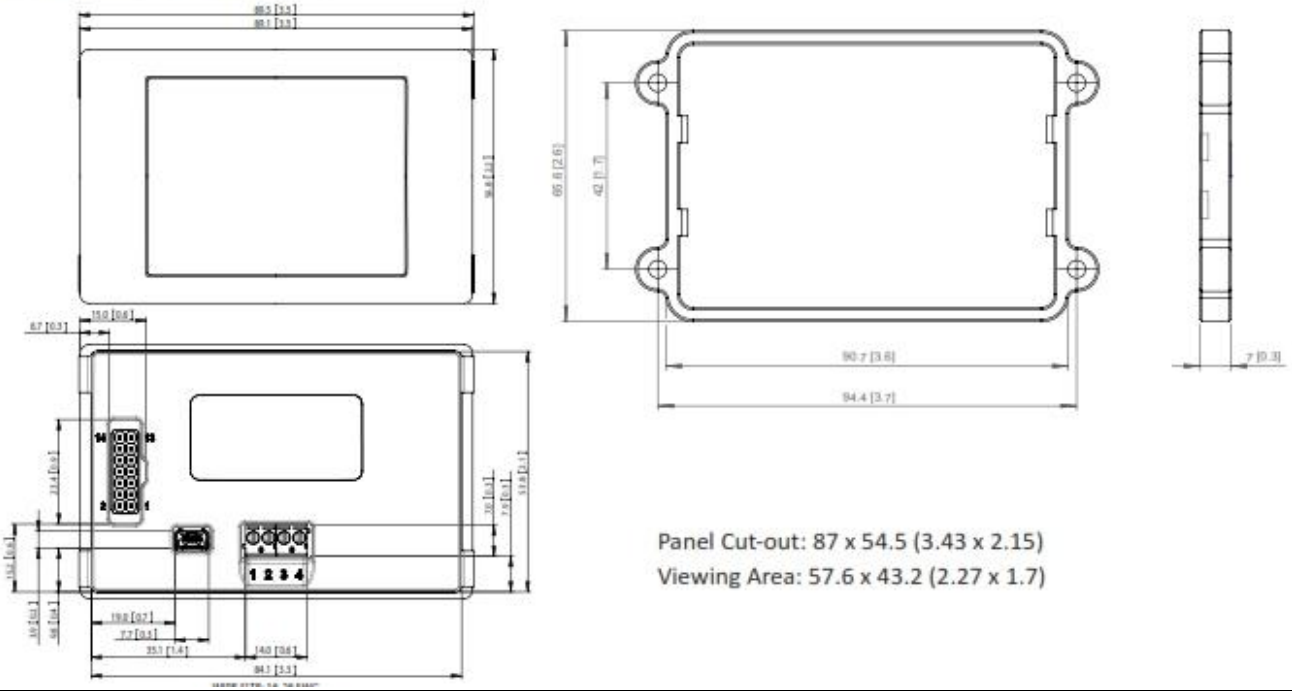
Advanced Connector

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



Dimensions

All dimensions in mm (inches)



Panel Cut-out: 87 x 54.5 (3.43 x 2.15)
Viewing Area: 57.6 x 43.2 (2.27 x 1.7)

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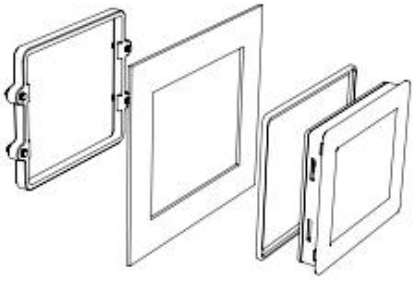
Display

The display is a 3.5” 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

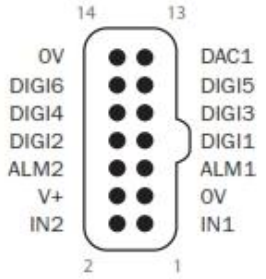
The SGD 35-M can be fitted into panels 1mm - 3mm deep.
A silicone seal is included to improve fitting on thin panels.
Panel cut-out is 92mm x 74mm.

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



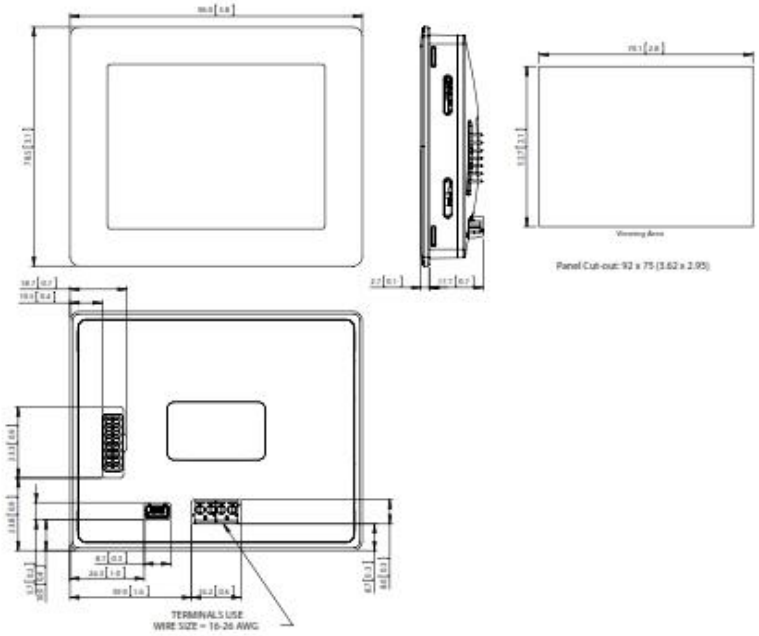
Advanced Connector

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



Dimensions

All dimensions in mm (inches)



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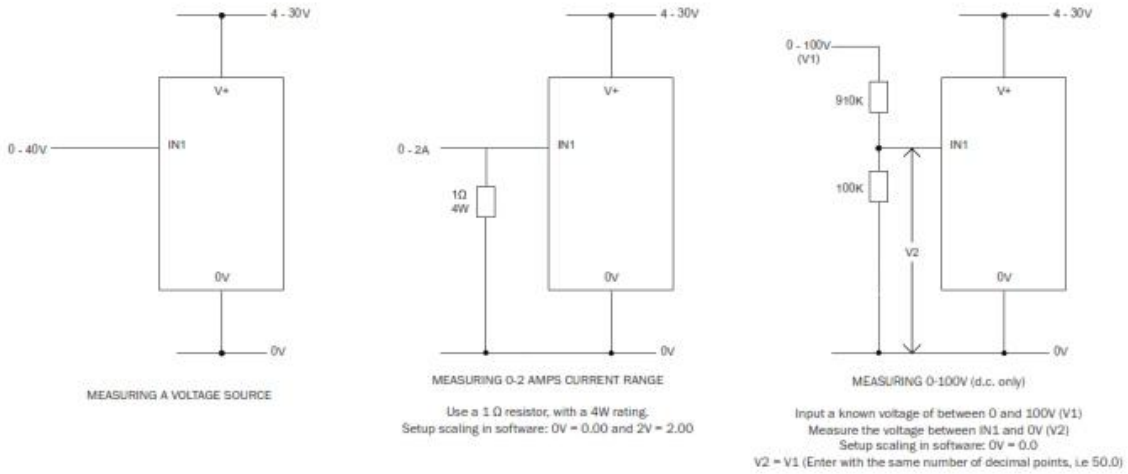
Specifications

	Min	Typ	Max
Accuracy (%)		0.05	0.1
Linearity (count)			±1*
Supply Voltage (VDC)	4		30
Supply current SGD24-M (mA)	35		190 **
Supply current SGD28-M (mA)	35		190 **
Supply current SGD35-M (mA)	50		300 **

* Depending on calibration settings

** Voltage dependent, see graph page 2

Various Operating Modes



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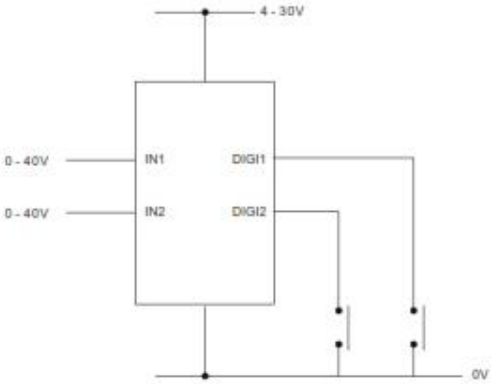
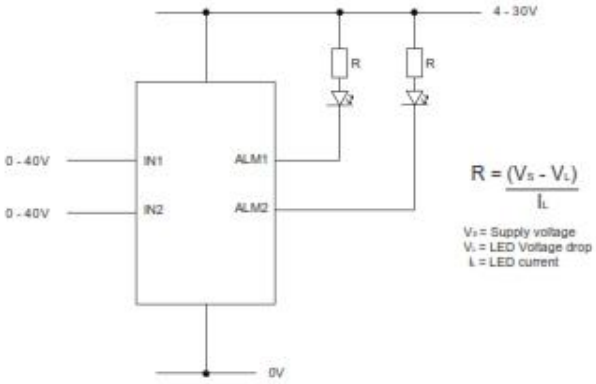


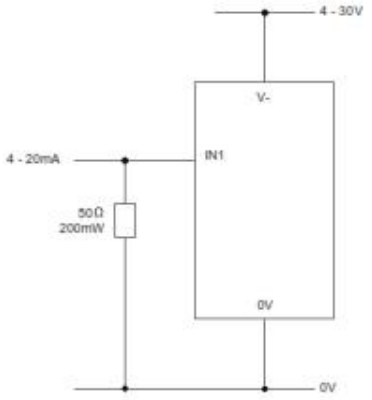
DIGITAL HOLD

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.



MEASURING 4-20mA

Use a 50 Ω 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

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