Solartron Metrology

SI8500

Quick start guide

Documentation Cross Reference

502990	Orbit®3 System Manual	Details on installation and electrical requirements for the Orbit Library compatible products.
502914	Orbit®3 Module manual	Details on installation and electrical requirements.
503094	Digital Probe, Orbit® ACS and Linear Encoder User Leaflet	Detailing the specific requirements for using the Digital Probe (DP), Orbit ACS and Linear Encoder such as mounting details
502923	Digital Mini Probe User Leaflet	Detailing the specific requirements for using the Digital Mini Probe such as mounting details
502924	Digital Block Gauge User Leaflet	Detailing the specific requirements for using the Digital Block Gauge such as mounting details
502925	Digital Lever Probe User Leaflet	Detailing the specific requirements for using the Digital Lever Probe such as mounting details

502926	Digital Flexure Gauge User Leaflet	Detailing the specific requirements for using the Digital Flexure Gauge such as mounting details
503145	Orbit® Laser Triangulation Probe (LT & LTA)	Detailing the specific requirements for using the LT & LTA Laser Probes such as product handling & configuration
503158	Orbit® high performance Laser Triangulation Probe (LTH)	Detailing the specific requirements for using the LTH Laser Probe such as product handling & configuration
503184	Strain Gauge Input Module (SGIM)	User leaflet covers the specific requirements such as product handling & configuration

Contents

General

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CONTACT INFORMATION

For updated information, troubleshooting guide and to see our full range of products, visit our website:
http://www.solartronmetrology.com

1. Introduction

This Quick Start Guide specifically caters for the SI8500 readout with Orbit® Interface. The SI8500 readout can interface up to 150 Orbit Sensors and communicates through Orbit® Serial bus. It can interface with Orbit® Digital Probes, Linear Encoders and Encoder Input Modules. The readings from the sensors are displayed on the front panel LCD display.

SI8500 includes a feature for configuring user defined formulas/expressions for each of the measurement channels. The readout can be configured by touch screen and on screen keyboard.

Four user defined buttons are provided on right hand side of the screen. Input Output is provided by discrete lines and 2 relays.

SI8500 user manual (503779).

SAFETY SUMMARY

Products with their own manuals may contain additional safety information.

WARNING Protect glass liquid crystal display from impact.

WARNING statements identify conditions or practices that could result in personal injury or loss of life. **CAUTION** statements identify conditions or practices that could result in damage to the equipment or other property **Symbols in this manual**  Indicates cautionary or other information	**Warnings and Cautions** **Warning:** Do not operate in an explosive atmosphere. **Warning:** this equipment is not intended for safety critical applications **Warning:** do not exceed maximum ratings as specified in this document. **Caution: Low Voltage** This equipment operates below the SELV and is therefore outside the scope of the Low Voltage Directive **Service and Repair**  CAUTION: This equipment contains no user serviceable parts. Return to supplier for all service and repair

All of the Orbit®3 Products are CE marked and comply with EN61000-6-3 Electrical Emissions and EN61000-6-2 Electrical Immunity

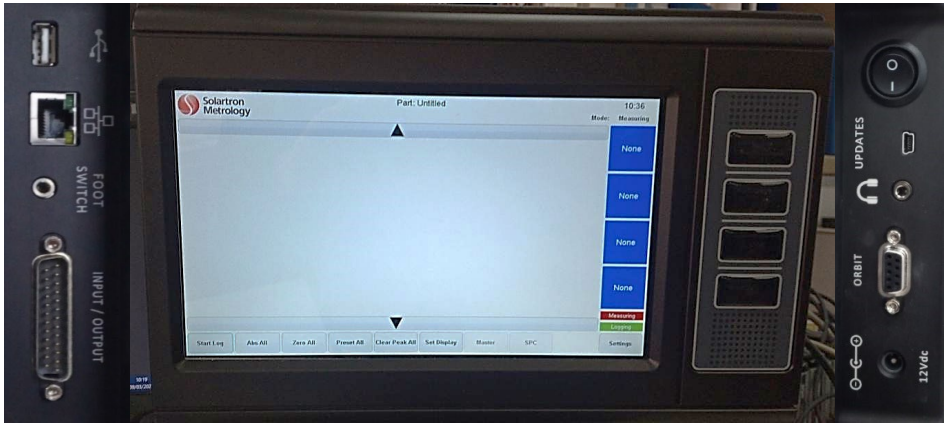
2. Electrical Installation

This section illustrates how to connect the unit.

 To use Orbit® 2 probes with the SI8500, use the adaptor cable (806867). This cable should only be used if Orbit® 2 probes or a Combination of Orbit® 2 and 3 probes are used with SI8500.

The SI8500 can power 10 digital probes (DP) (65 mA each) 650 mA. For larger systems add PSIMs as described in section 7 ORBIT3 MODULES POWER REQUIREMENTS AND ENVIRONMENT in document 502914 - Orbit3 Module Manual.

2.1 Connectors



Left hand side connectors	Right hand push buttons	Right hand side connectors
USB type A drive for saving data, setup USB should be preformatted with FAT32	Key 1	On off switch
Ethernet connection (Reserved for future expansion)	Key2	**Updates** Micro B
	Key 3	**Headphone** (reserved for future expansion)
FOOT SWITCH interface	Key 4	Orbit bus 9 way D-type
INPUT / OUTPUT Connector 25- way D-type refer to input output for Pin out details	Loudspeaker	+12V input jack

Key 1 to 4 are user configurable, Part Setting menu, to one of the following Functions:- Abs All, Zero All, Preset All, Start Logging, Stop logging, Take Sample, Reset Peak or Set Output.

FOOT SWITCH interface can be connected to up to 3 foot switches each of which can be mapped to these functions:- Abs All, Zero All, Preset All, Start Logging, Stop logging, Take Sample, Reset Peak or Set Output.

2.2 Mechanical Installation

Please see 502990 - Orbit3 System manual section 7 and 8

Mounting using (VESA) 75 x75 or 100 x 100 stand or fixing method

ACCESSORY STAND Part number 008967-00001.
Using 4 screws provided with stand fix the SI8500 to stand, do not over tighten.

2.2.1 Environmental

Indoor use; altitude up to 2 000 m; temperature 5 °C to 60 °C; maximum relative humidity 80 % for temperatures up to 31 °C decreasing linearly to 50 % non condensing.

Degree of ingress protection front (IP22) screen and speaker are splash proof; rest IP20.

2.2.2 End of life SI8500

To reduce risk of life expired products being misused due to entering unregulated, hobby markets, they must be disposed of using professional recycling companies according to local regulations.

3. Set-up Menu

Orbit	Orbit® Hardware Setting page.
Dimensions	All aspects of Dimensions, Warning , Pass Fail, SPC, Scales, resolution.
Part	Setting, Visual appearance of gauge page, key pad set up , logging.
Formula	Setting for Numerical and Logically equations.
IO	For setting up Digital inputs, outputs, Foot switch functions, relays.
Master	Set up mastering.
SPC	Set up Statistical Process Control
System	Setting for Clock setting, Storage, Operators, Security, Network, screen options, Display, Audio Settings, about page with a QR code to manual.
Gauge	This is page which displays readings from probes.

4. Setting up probes

After making the connections as explained in the Electrical Installation section, use the **Orbit®** menu for setting up the probes. Use **Find All** to see all modules on the Orbit® network.

5. Taking measurements

After setting up the probes as described in Setting up probes section

Tip to quickly set dimensions Use **Create Dimensions** (click on probe identity for each module you need a dimension).

Then use **Dimensions** to set warning, fail limits, scale setting, resolution.

Use **Part** to set horizontal, vertical, 4-, 8, 16-Channel Bar Display or Channel Text Display 4, 8, 16.

Use **Gauge** to display readings, to change display press repeatably **Set Display** to cycle through Vertical, horizontal and text readout.

5.1 Taking Measurements

Readings displayed on Gauge Page can be **Abs**olute **, Zero** on master reference part or **Preset** reset to a known initial value set up in **Dimensions** for each probe.

Alternatively for All probe the following are provided the **Abs All**, **Zero All**, **Clear Peak All**, and **Preset All.**
Note : The above operations can be performed manually or with discrete Inputs. Refer to Input/Output Menu section of SI8500 User Manual (503779) for configuration and pin details of discrete inputs.

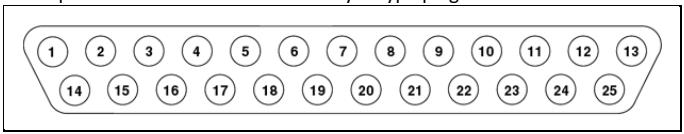
6. Important features

SI8500 is versatile unit capable of performing complex operations.
Computed measurements – to input mathematical equations.
Gauging mode – use the unit as a gauge station.
Discrete inputs/outputs – inputs to perform Zero, preset
Outputs to run external loads
Data logging – store measurement data on SI8500 USB.
Password protection – supervisor mode

Note : Refer to relevant sections of SI8500 User Manual (503779) for detailed instructions on using the above mentioned features.

6.1 Input Output Connector

The digital inputs and outputs are connected via the 25 way D-type plug.



25-way D-type female rear view.

Pin Number	Description
1	0V
2	Input 1
3	Input 2
4	Input 3
5	Input 4
6	Input 5
7	Input 6
8	Input 7

Pin Number	Description
9	Input 8
10	0V
11	+5Vout (@100mA for user circuitry)
12	0V
13	+12Vout (@100mA for user circuitry)
14	O/P Supply IN (10 to 30V) (for user PNP configured outputs)
15	Output 1
16	Output 2
17	Output 3
18	Output 4
19	0V
20	Relay 0 COM contact
21	Relay 0 N/C contact (normally closed)
22	Relay 0 N/O contact (normally open)
23	Relay 1 COM contact
24	Relay 1 N/C contact (normally closed)
25	Relay 1 N/O contact (normally open)
Screen	0V

6.2 Orbit Connector

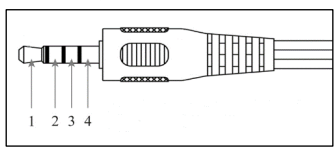
The Orbit® connection is via the 9 way D-type plug.

Pin Number	Description
1	No connection
2	RS485 A
3	RS485 B
4	No connection
5	0V
6	+5V (Orbit supply)
7	+5V (Orbit supply)
8	No connection
9	0V
Screen	0V

6.3 Footswitch Connector

This is a 4 pole 3.5mm jack socket, which requires a 4 pole jack plug as described below.
The X-Keys 3way splitter cable (XK-A-1310-TRRS)
The X-Keys XK-A-75-R (which has a mono 3.5mm plug) is used, the other inputs are pulled low.

Pin Number	Pin Description	Description
1	Tip	Footswitch 1
2	Ring 1	Footswitch 2
3	Ring 2	0V
4	Sleeve	Footswitch 3

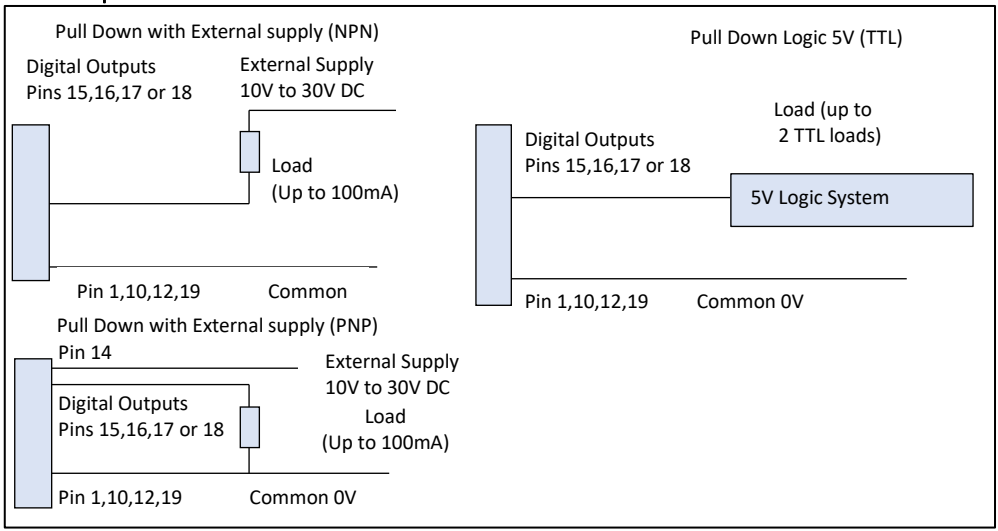


6.4 Power Connector

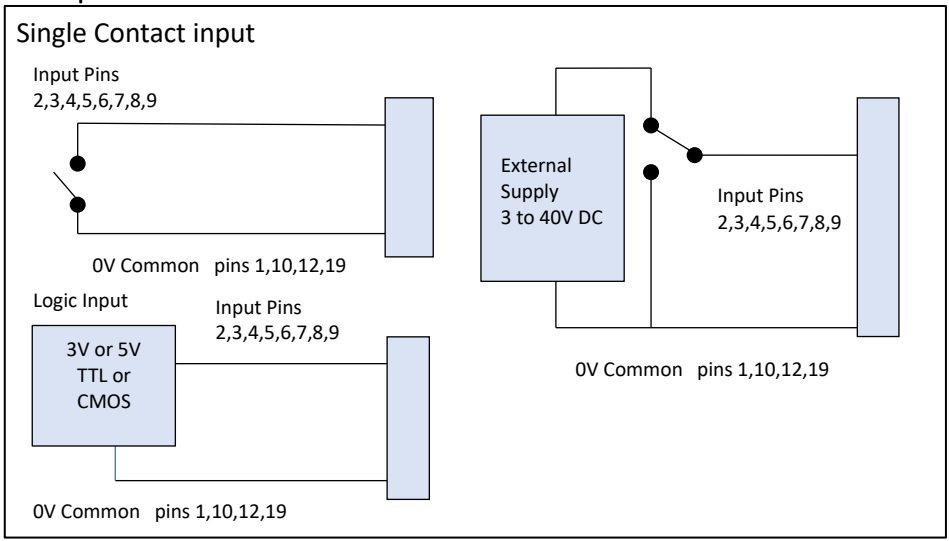
Only connect to approved, Solartron supplied, power supply.
This is a 2 pin DC socket with a 2.5mm diameter pin.
Tip +12 V, Ring (or sleeve) 0V.

Power +12VDC at 0.4A excluding Orbit® current depending on modules Connected
With 10 digital probes (DP) (65 mA each) 650 mA +12V At 0.8A

6.5 Outputs

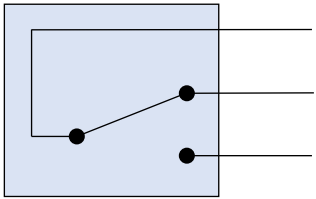

Pull Down with External supply (NPN)
Digital Outputs
Pins 15,16,17 or 18
External Supply
10V to 30V DC
Load
(Up to 100mA)
Pin 1,10,12,19
Common
Pull Down Logic 5V (TTL)
Load (up to
2 TTL loads)
Digital Outputs
Pins 15,16,17 or 18
5V Logic System
Pin 1,10,12,19
Common 0V
Pull Down with External supply (PNP)
Pin 14
External Supply
10V to 30V DC
Digital Outputs
Pins 15,16,17 or 18
Load
(Up to 100mA)
Pin 1,10,12,19
Common 0V

6.6 Inputs



Note inputs can be set active high or active low.

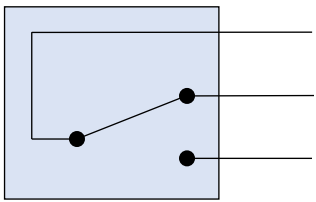
6.7 Relays



Pin 20 Relay 0 COM contact

Pin 21 Relay 0 N/C contact (normally closed)

Pin 22 Relay 0 N/O contact (normally open)



Pin 23 Relay 1 COM contact

Pin 24 Relay 1 N/C contact (normally closed)

Pin 25 Relay 1 N/O contact (normally open)

Relay contacts rated 30VDC 0.25A resistive.
Minimum switching current ~10uA ~10mV

Notes

Return of Goods

Devices returned for service/repair/calibration should be shipped prepaid to your distributor or, if purchased directly from Solartron Metrology, to the relevant Sales Office.

The shipping container should be marked:
'For the Attention of the Customer Services Department'

The following information should accompany the device(s):

1. Contact details of company/person returning device, including return shipping instructions.
2. A statement of service required.
3. Description of the device fault and the circumstances of the failure, including application environment and length of time in service.

Alternatively, there is a returns form available on our web site, follow the link to:
https://www.solartronmetrology.com/service-and-support/ukservicecenter

Please note:
A standard assessment charge is applicable on all non-warranty devices returned for repair. Customer damage and any device found, upon inspection, to have no fault will be considered non-warranty.

Please contact the Sales Office or Distributor for warranty terms, service options and standard charges.

Adherence to these procedures will expedite handling of the returned device and will prevent unnecessary additional charges for inspection and testing to determine the condition.

Solartron Metrology reserves the right to repair or replace goods returned under warranty.

All repairs are guaranteed for 3 months (unless otherwise stated).

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Return of Goods

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