

# orbitACS

## SI 100 & SI 200

Single and Dual Channel systems for easy connections into PLC or Automation

### Description

Solartron Metrology, the world leader in linear measurement innovation, introduces two new Orbit<sup>®</sup>3 based systems for easy, low cost connections into PLCs and process control systems. The SI 100 is a single channel, stand alone system, while the SI 200 also connects to an Orbit<sup>®</sup>3 probe for two channel measurements.

### Features

Integral Readout with colour LCD Display and keypad.

Set tolerance and process limits via keypad

Detachable probe plug on housing for easy installation  
(Gauging probes, Block Gauges & Flexures only)

Replace probe with no calibration or reprogramming

Modbus output (RTU or ASCII) over RS485 or RS232

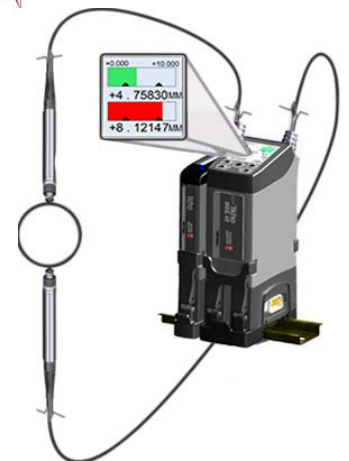
Programmable discrete I/O (4 inputs, 3 outputs)

Multiple formulas available for SI 200 (A+B, A-B, etc.)

Available with all Solartron Gauging probes, Displacement sensors, Orbit LT, and LTH

SI 200 can stack lasers, gauging probes or displacement sensors

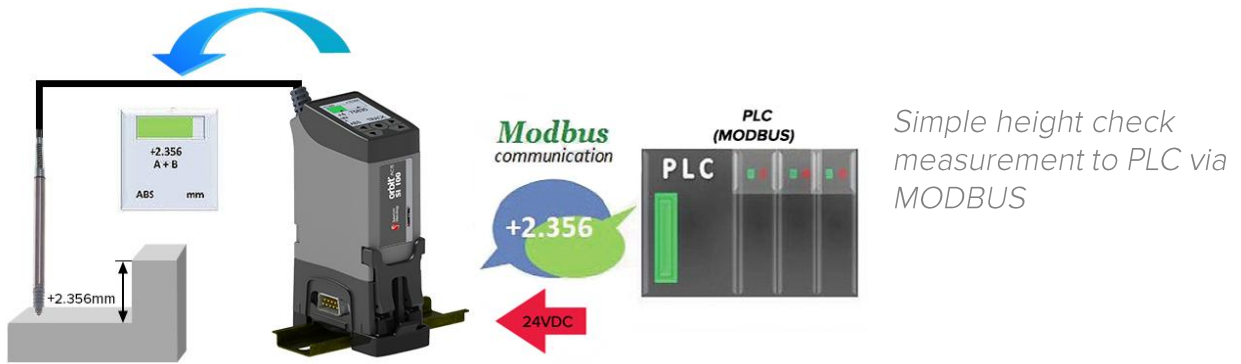
24V DC Power Supply



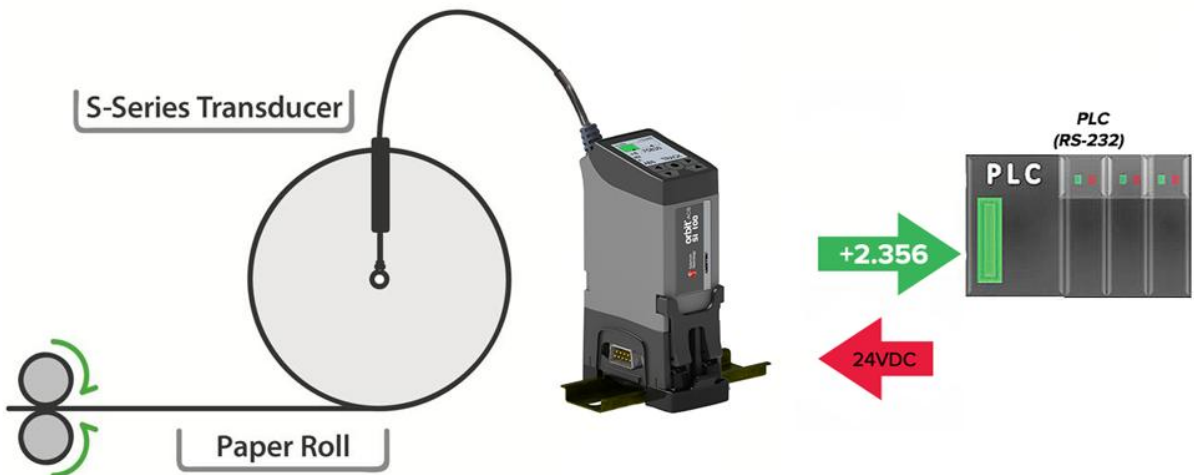
Precision. Quality. Reliability

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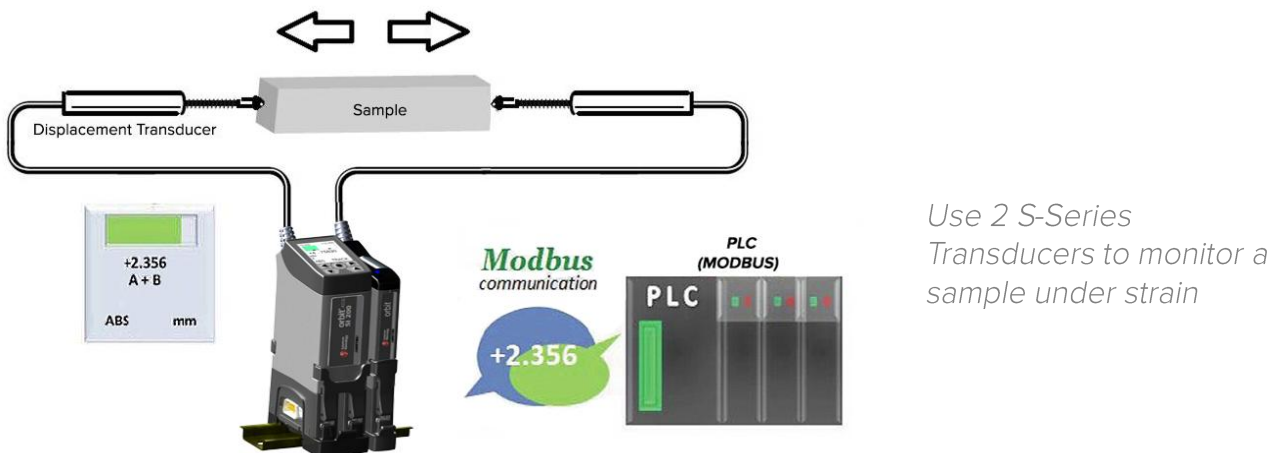
SI 100 Applications



Chip height check with Orbit LT. Measurement sent to PLC on prin command via RS232



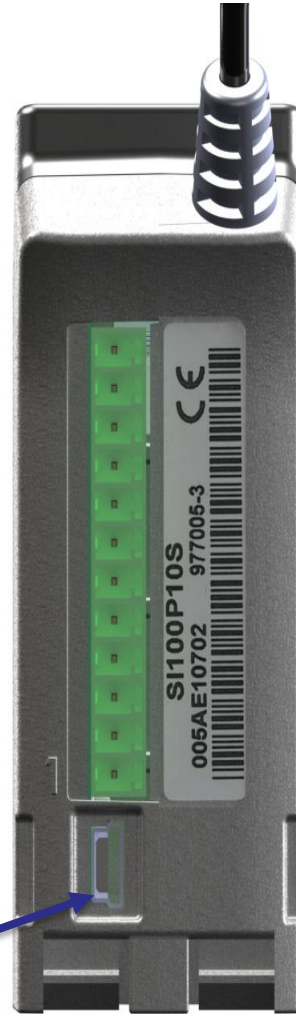
SI 200 Applications



## Pin Configuration

12	Input 4
11	Input 3
10	Input 2
9	Input 1
8	Output Supply In
7	Output 3
6	Output 2
5	Output 1
4	Modbus B (RS485 or RS232)
3	Modbus A (RS485 or RS232)
2	0V Power in Return
1	18-32 V DC Power In

Mini-USB Port for configuration via a PC and firmware updates



- Input pins can be set Active Hi or Active Lo
- Output pins can be Active Hi or Active Lo and set to NPN, PNP or Logic
- DIN Rail mount
- Input pins are programmable (typical functions: Zero, Print, Preset)

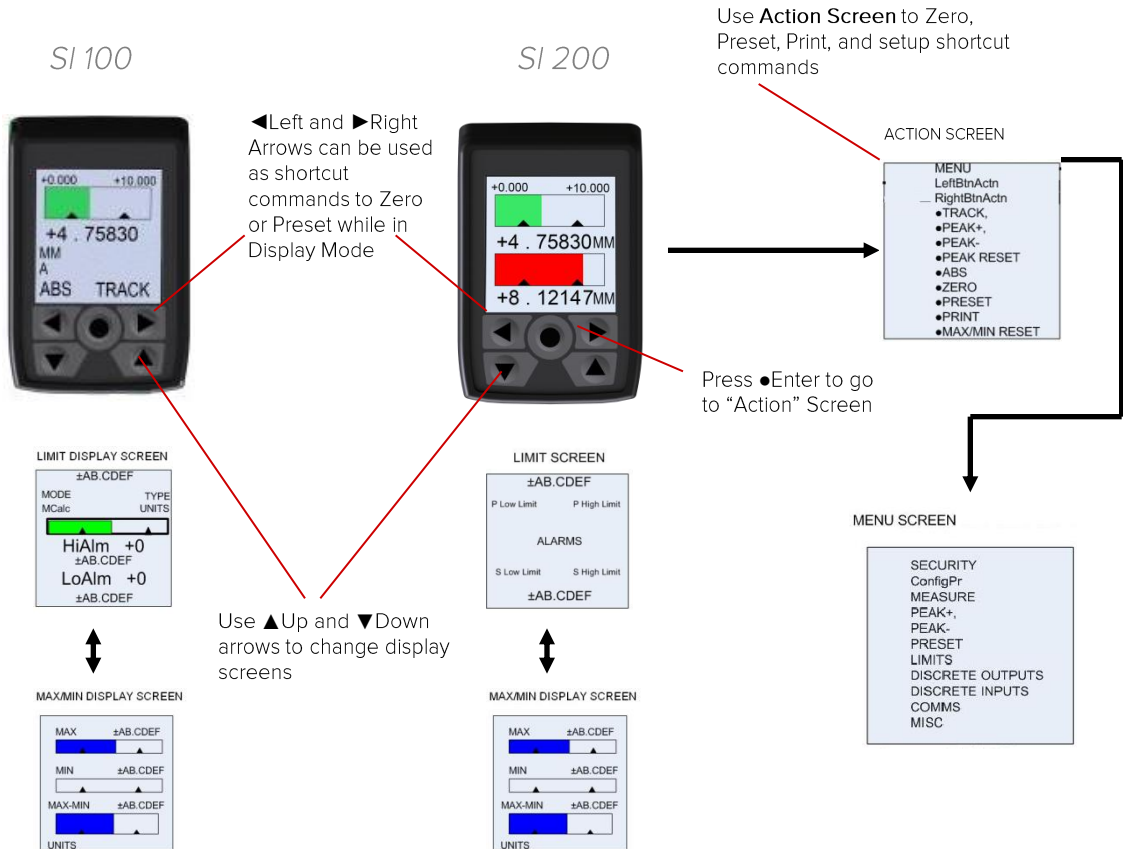
## Serial Output Options

The SI 100 and SI 200 have a standard Modbus interface (RTU or ASCII). However, pins 3 & 4 can also be configured as an ASCII Serial Interface mode, allowing the user to select from several different protocols, including compatibility with Solartron's SI 1500, SI 3500 and C55.

## Accessories

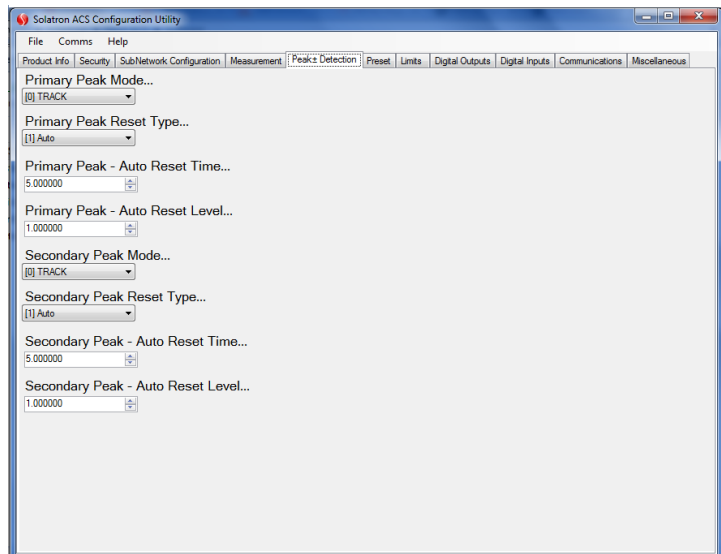
- +24V Power Block with Mains Leads. Available with UK, EU, and US plugs
- Spare T-con Mounts
- USB to Mini-USB cable for PC connection

## Display and Interface



## Configurator Software

Connect SI 100/200 to PC via Mini-USB to USB cable. Then use Solartron provided software to configure unit, and backup settings to PC file!



**Orbit ACS Digital Gauging Probes (with connector between probe and electronics module)**

**Product**

Spring Push Axial Cable	SlxxxP/1/S	SlxxxP/2/S	SlxxxP/5/S	SlxxxP/10/S	SlxxxP/20/S	SlxxxP/2/S
Spring Push Radial Cable	SlxxxPR/1/S	SlxxxPR/2/S	SlxxxPR/5/S	SlxxxPR/10/S	SlxxxPR/20/S	N/A
Pneumatic Axial Cable	N/A	SlxxxP/2/P	SlxxxP/5/P	SlxxxP/10/P	SlxxxP/20/P	N/A
Pneumatic Radial Cable	N/A	SlxxxPR/2/P	SlxxxPR/5/P	SlxxxPR/10/P	SlxxxPR/20/P	N/A
Measuring Range (mm)	1	2	5	10	20	2
Body Diameter	8h6					6h6

**Note Slxxx can be either SI100 or SI200**

**Performance**

Accuracy (% of Reading) <sup>1</sup>	0.2		0.15		0.2
Repeatability $\mu\text{m}^2$	0.15				
Resolution $\mu\text{m}$ -user selectable	<0.01	<0.05		<0.1	<0.01
Alarm Outputs - selectable High, OK, Low	3 outputs either NPN, PNP, logic Programmable Active Hi or Lo				
Discrete Inputs - user selectable	eg. Print, Zero, Preset (see manual for other options)				
Update Rate for I/O discretes (ms)	5				
Bandwidth of Electronics (Hz) - user selectable	460, 230, 115, 58, 29, 14, 7,4				
Communications Interface Protocol	MODBUS (RTU or ASCII) or Solartron Serial Formats				
Communications Interface Hardware	RS485 or RS232 (User selectable) Up to 115,200 Baud				
Update Rate for Serial Data (ms)	25				
Pre Travel (mm)	0.15				
Post Travel (mm)	0.35	0.85			0.35
Tip Force (N) at Middle of Range $\pm 20\%$					
Spring Push	0.7				
Pneumatic at 0.4 bar	N/A	0.8	0.85	0.7	N/A
Pneumatic at 1 bar	N/A	2.8		2.5	N/A

**Environmental**

Sealing for Probe	IP65 with gaiter or IP50 without gaiter
Sealing for Probe Interface Electronics	Top and Front: IP41, Rear: IP20, In line connector: IP67
Storage Temperature (°C)	-20 to +70
Probe Operating Temperature with Gaiter (°C)	+5 to +80
Probe Operating Temperature without Gaiter (°C)	-10 to +80
Electronics Operating Temperature (°C)	0 to 60
EMC	Emissions EN61000-6-3, EN61326 Immunity EN61000-6-2, EN61326
Power	18 to 32 VDC @ 0.07A typical

**Material**

Probe Body	Stainless Steel
Probe Tip (options)	Nylon, Ruby, Silicon Nitride, Tugsten Carbide
Gaiter (standard)	Fluoroelastomer
Cable	PUR
Electronics Module	ABS

[1] Accuracy 0.1 $\mu\text{m}$  or % reading, whichever greater

[2] Obtained by repeated operation against a carbide target with side load applied to bearing

**Instrumentation Functionality**

**Measurement**

Measurement Modes - SI100	A, MAX-MIN
Measurement Modes - SI200	A,B, A+B, A-B, (A+B)/2, (A-B)/2, MAXA-MINA, MAXB-MINB
Measurement Types	Track, Peak+, Peak-
Measurement Modes	Absolute, Zero (tare), Preset
Measurement Units	mm, inches or mils

**Display**

Analogue	Bar representing reading
Digital	Digital up to 5 decimal places mm (6 for inches)
Warnings	Red bar and red digital reading indicates measurement outside of limits

**Keypad**

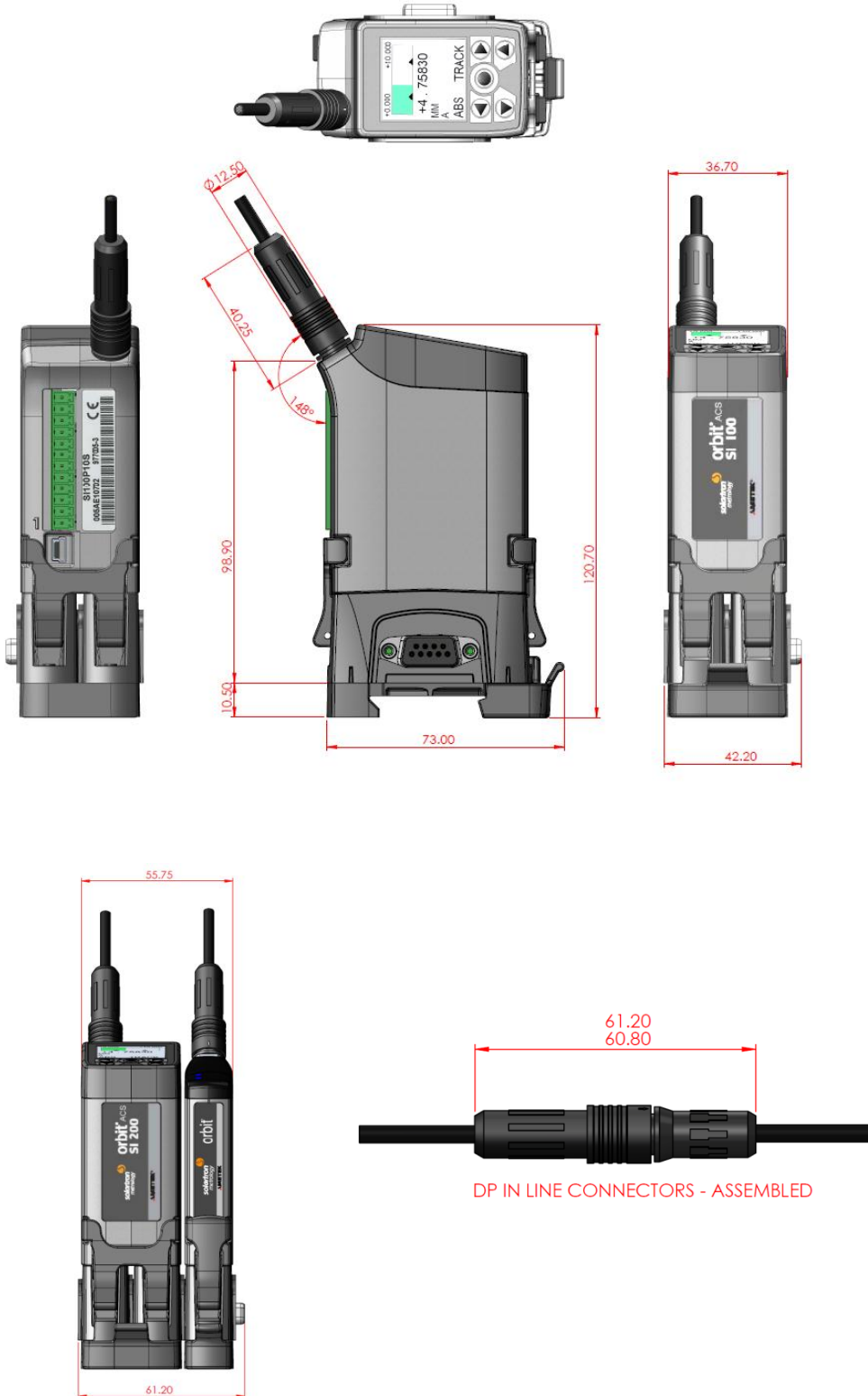
Type	Sealed Membrane
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The SI 100 and SI 200 can also be ordered connected directly to the digital gauging probe for higher accuracy.

The SI100 and SI200 can also be ordered with the connector between the digital gauging probe and the Electronics Module placed in line along the cable.

Performance specifications will vary if the SI100 or SI200 is supplied connected to other transducers or laser products – see the Solartron website or contact your local sales office/distributor for further information.

Drawing





For 3D drawings, please contact [sales.solartronmetrology@ametek.co.uk](mailto:sales.solartronmetrology@ametek.co.uk)

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Solartron pursues a policy of continuous development. Specifications in this document may therefore be changed without notice.

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