AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

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®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®3 probe for a two channel reading.

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 laser with gauging probe or displacement sensor.

24V DC Power Supply

Modbus

Precision. Quality. Reliability

www.solartronmetrology.com • sales.solartronmetrology@ametek.com

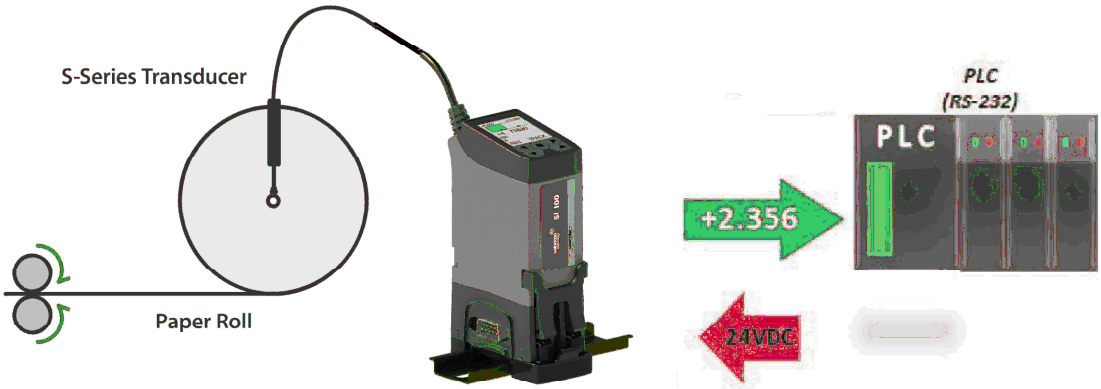
AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

SI 100 Applications

Simple height check measurement to PLC via MODBUS

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



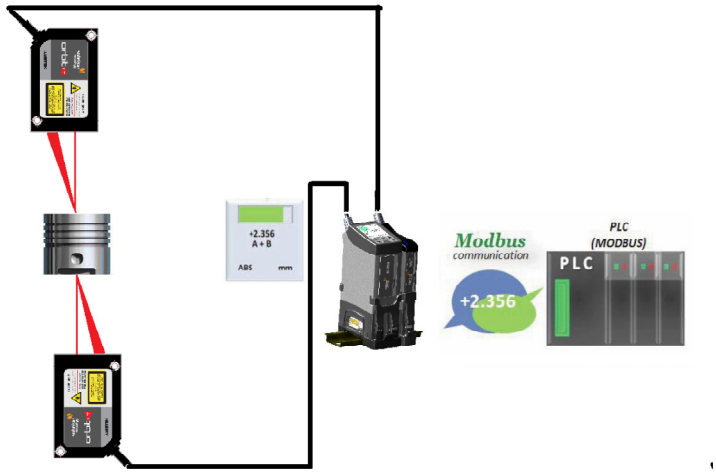
AMETEK®
ULTRA PRECISION TECHNOLOGIES

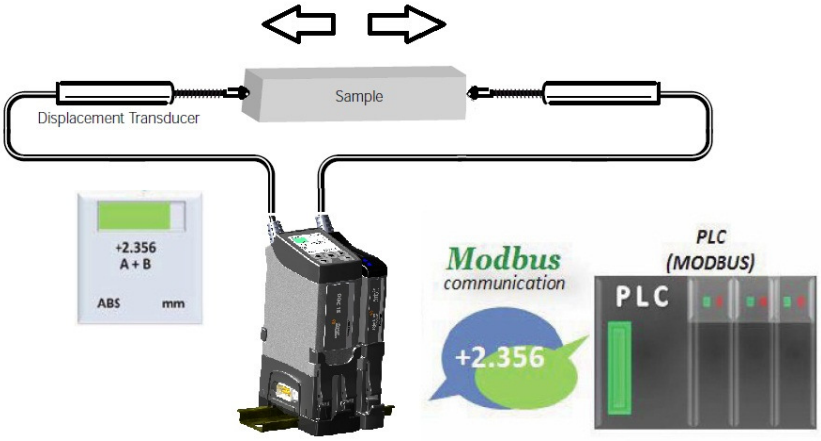
Solartron Metrology
Precision Driven

SI 200 Applications

Simple diameter check

Use 2 Orbit LT Lasers for piston height check





Use 2 S-Series Transducers to monitor a sample under strain

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)**

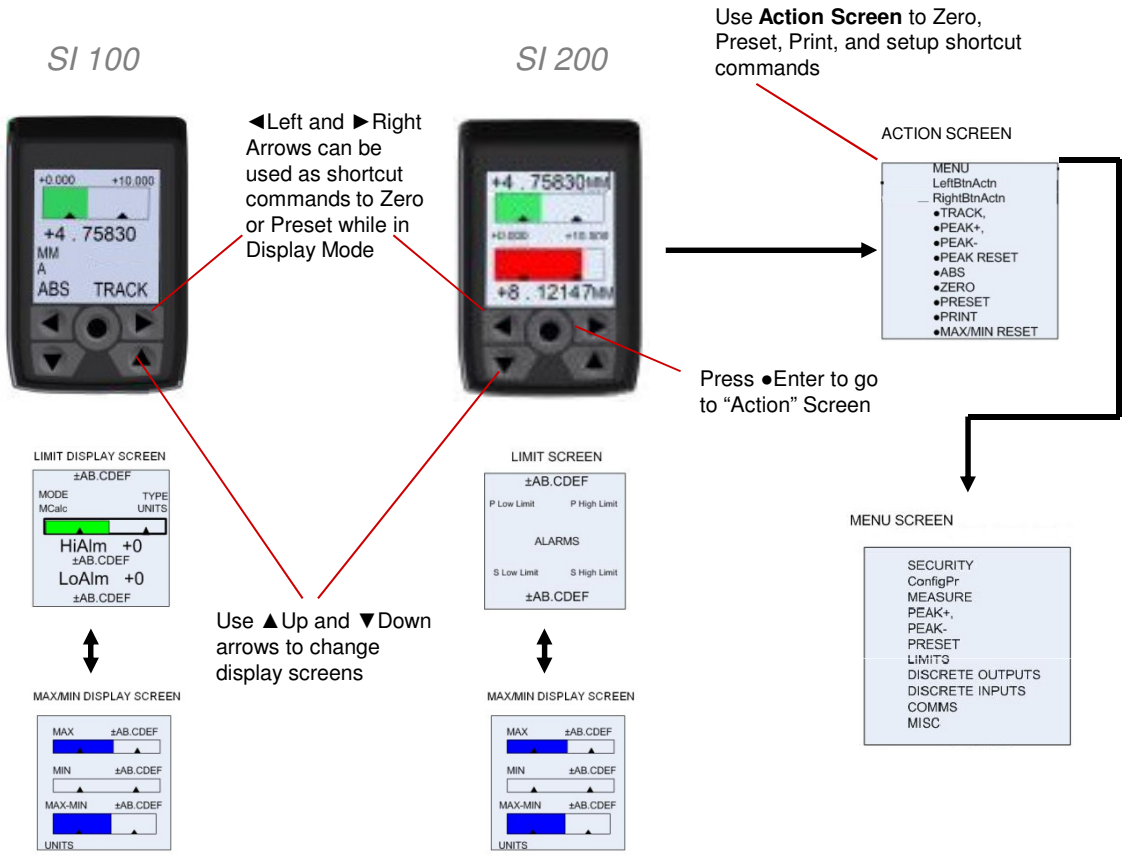
Serial Output Options

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

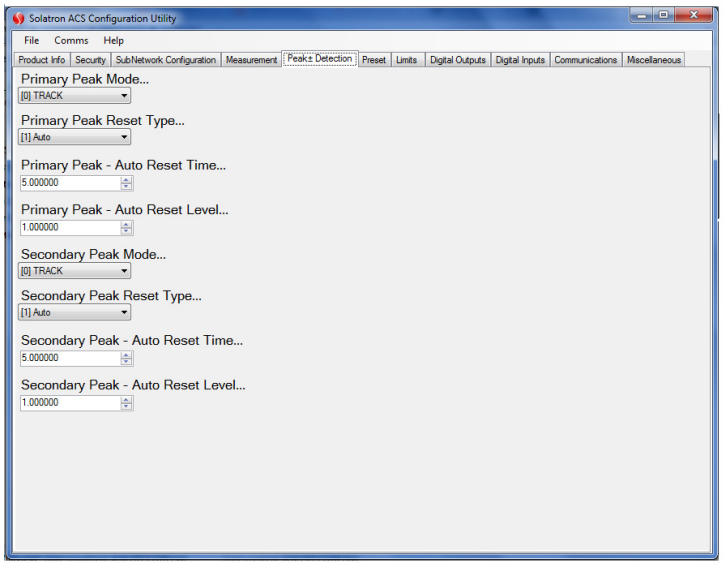
+24V Power Block with Mains Leads. Available with UK, EU, and US plugs
Spare T-con Mounts
USB to Mini-USB cable for PC connection

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!



AMETEK®
ULTRA PRECISION TECHNOLOGIES

Solartron Metrology
Precision Driven

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

Product

Spring Push Axial Cable	SIxxxP/1/S	SIxxxP/2/S	SIxxxP/5/S	SIxxxP/10/S	SIxxxP/20/S	SIxxx6P/2/S
Spring Push Radial Cable	SIxxxPR/1/S	SIxxxPR/2/S	SIxxxPR/5/S	SIxxxPR/10/S	SIxxxPR/20/S	N/A
Pneumatic Axial Cable	N/A	SIxxxP/2/P	SIxxxP/5/P	SIxxxP/10/P	SIxxxP/20/P	N/A
Pneumatic Radial Cable	N/A	SIxxxPR/2/P	SIxxxPR/5/P	SIxxxPR/10/P	SIxxxPR/20/P	N/A
Measuring Range (mm)	1	2	5	10	20	2
Body Diameter	8h6					6h6

Note SIxxx can be either SI100 or SI200

Performance

Accuracy (% of Reading)[1]	0.2		0.15			0.2
Repeatability µm[2]	0.15					
Resolution µm -user selectable	<0.01		<0.05		<0.1	<0.01
Alarm Outputs - selectable High, OK, Low	3 outputs either NPN, PNP, logic Programable 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 Tavel (mm)	0.35	0.85				0.35
Tip Force (N) at Middle of Range ±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 (ºC)	-20 to +70
Probe Operating Temperature with Gaiter (ºC)	+5 to +80
Probe Operating Temperature without Gaiter (ºC)	-10 to +80
Electronics Operating Temperature (ºC)	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 0.1µm 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 measurment outside of limits

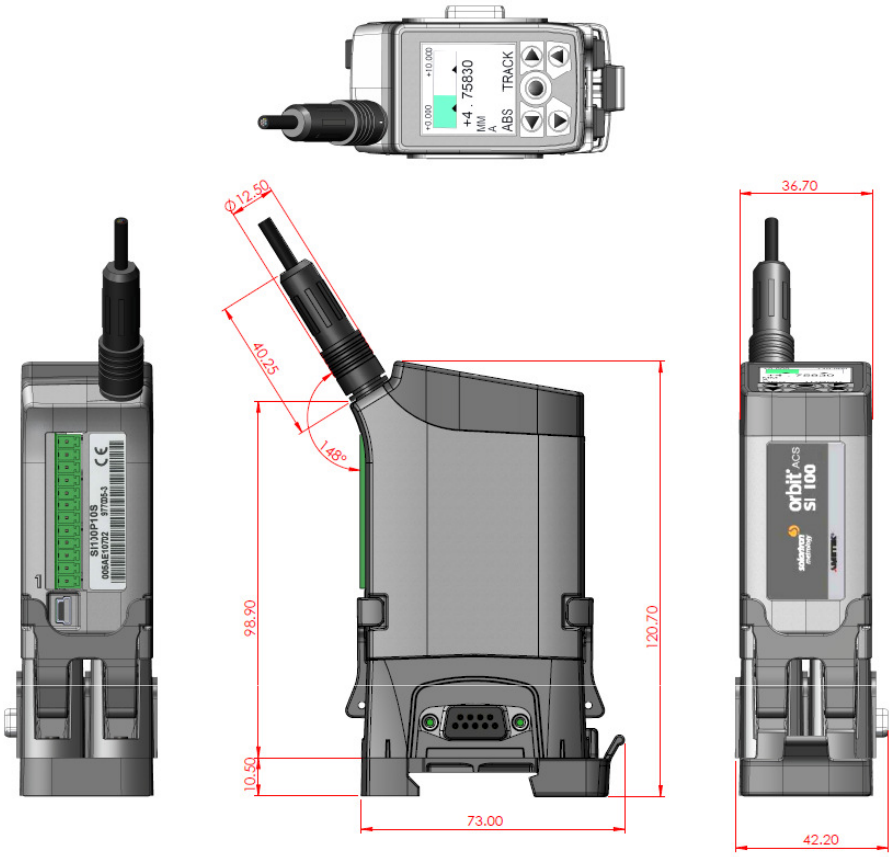
Keypad	
Type	Sealed Membrane

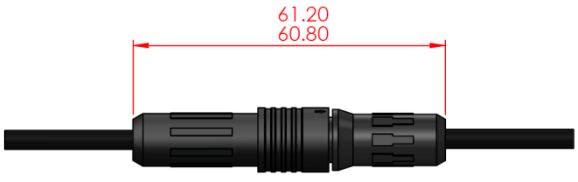
The SI 100 and SI 200 can also be ordered connected directly to the digital gauging probe for higher accuracy.

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





DP IN LINE CONNECTORS - ASSEMBLED

For 3D drawings, please contact sales.solartronmetrology@ametek.co.uk

United Kingdom - Head Office
Solartron Metrology
Steyning Way
Bognor Regis
West Sussex
PO22 9ST
Tel: +44 (0) 1243 833333
Fax: +44 (0) 1243 833322
Sales.solartronmetrology@ametek.com

France
Solartron Metrology
Rond-point de l'Espine des Champs
Buroplus - Bat. D
Elancourt 78990
Tel: +33 (0)1 30 68 89 50
Fax: +33 (0)1 30 68 89 59
france.solartronmetrology@ametek.com

Germany
Ametek GmbH
Solartron Metrology Division
Rudolf-Diesel-Strasse 16
40670 Meerbusch
Tel: +49 (0) 2159 9136 500
Fax: +49 (0) 2159 9136 505
vertrieb.solartron@ametek.de

Brazil
Ametek do Brasil, Ltda
Rod. Eng Ermenio de Oliveira Penteado, Km 57, SP75
Bairro Tombadouro
13337-300, Indaiatuba, SP, Brazil
Tel: +55 19 2107 4126

India
Ametek Instruments India Private Limited
1st Floor, Left Wing
Prestige Featherlite Tech Park
Plot #148, EPIP II Phase
Whitefield, Bengaluru 560 066
Karnataka, India
Tel: +91 80 6782 3200
Fax: +91 80 6782 3232

USA
Solartron Metrology
USA Central Sales Office
915 N.New Hope Road, Suite C
Gastonia, NC 28054
Tel: +1 800 873 5838
Fax: +1 704 868 8466
usasales.solartronmetrology@ametek.com

China
AMETEK Commercial Enterprise (Shanghai) Co. Ltd
No. 1 AMETEK Road
Ju Ting Economic Development Zone
Shanghai 201615
Tel: +86 21 5763 2509
Fax: +86 21 5866 0969 Ext. 261/262
china.solartronmetrology@ametek.com

Solartron Metrology

Precision Driven

Offices worldwide
Agent and distributor details
available at
www.solartronmetrology.com

Q 09540

AMETEK®
ULTRA PRECISION TECHNOLOGIES

Precision. Quality. Reliability

www.solartronmetrology.com • sales.solartronmetrology@ametek.com