QSS
SENSORS AND COMPONENTS

solartron metrology

AMETEK®
ULTRA PRECISION TECHNOLOGIES

orbitACS

SI100

A new Digital system from the Solartron Orbit stable! The SI 100 is an economical, single channel solution with integral display that can be output to a PLC via ModBus, the most widely used network in the Industrial world. The SI 100 is part of Orbit ACS, a new line of Digital systems specially built for automation and process control.

▶ Modbus communication or Solartron ASCII Serial outputs

▶ High accuracy with Solartron's Real time Orbit error mapping

▶ 0.1 µm display resolution

▶ High sampling speed 5 ms per reading

▶ Eliminated loses due to analogue to digital conversion via PLC connection

▶ User defined keypad functions

▶ Colour display LCD screen

▶ Discrete I/O

▶ Available with large number of integral transducers

▶ Mathematical Functions

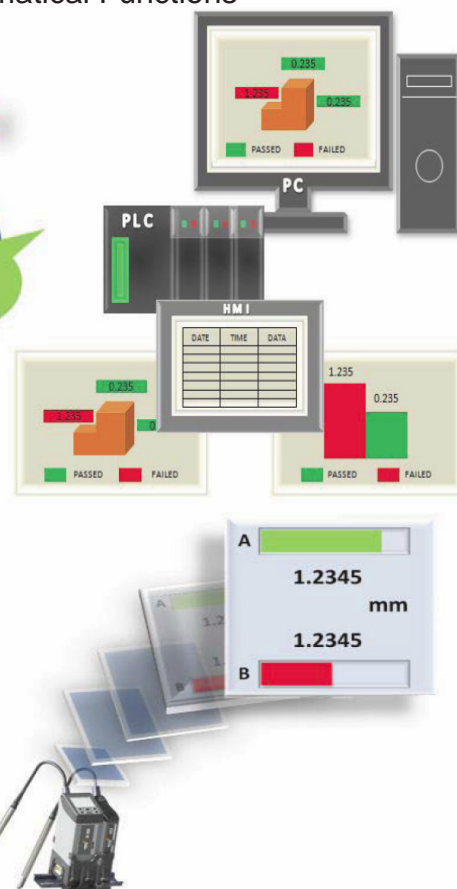*simply* **Modbus**

Solartron Metrology, the world leader in digital gauging probe innovation, introduces a new single channel digital probe with integral display. Powered by a 24 VDC supply, the module can communicate using the industrial standard Modbus RTU (or ASCII) protocol, providing a simple connection to most PLCs Discrete Input and Output lines are also provided for simple interfacing and control.

The SI100 naturally comes with all of the standard metrology functions such as zero, preset and TIR. The unit can also be programmed to provide limit information.

For a dual channel solution see the SI200.

Typical Application

FROM MEASUREMENT SI100 to PLC via MODBUS

FROM MEASUREMENT SI100 to PLC USING PRINT INPUT AND RS-232 SERIAL PORT

Interfacing to the SI100

12	Input 4: Spare
11	Input 3: Print
10	Input 2: Preset
9	Input 1: Zero
8	Output supply In
7	Output 3
6	Output 2
5	Ouptut 1
4	RS232RX MODBUS B
3	RS232TX MODBUS A
2	0V Power In Return
1	18 - 32 V Power In

Input Pins can be set Active Hi or Active Lo

Output Pins can be Active Hi or Lo and set To NPN, PNP or logic

DIN Rail Mount

Interfacing the SI100 is simple using the terminal connections on the rear of the module.

Serial Output Options

The SI100 provides a standard Modbus interface, it can be user configured via the menu screens to use pins 3 and 4 as an RS232 interface. Once configured in RS232 Mode the user can select several different protocols offering compatibility with Solartron's SI3000, SI1500 and C55. This is for retrofit/replacement applications.

Accessories

+24 VDC Power Block and Mains Lead (2 m).
Spare Mounting Modules.
Firmware Upgrade Cable. (USB A to Mini B)
Upgrade kit SI100 to SI200.

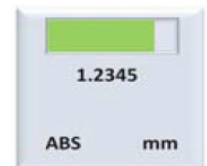For 3D drawings please contact sales.solartronmetrology@ametek.com

Technical Specification

Performance	
Mathematics	Absolute Measurement
	MAX-MIN
Accuracy	See Table

Keypad (5 keys)	
Navigation	▲Up, ▼Down, ◄Left ►Right ■Enter
Functions	Print, Zero, Preset, and set up via menu
Type	Sealed membrane

Inputs and Outputs	
Serial	RS232 or RS485 Serial communications MODBUS RTU or ASCII
3 Discrete Outputs	HI, OK or LO Alerts (programmable)
Output Types	NPN, PNP or Logic
3 Discrete Inputs	Print, Zero, Preset,
1 Discrete Input	Configurable

Analogue Display	
Single Bar	Analogue representation of reading
Scale	Programmable

Digital LCD Display	mm	inches
Digital Measuring Range 1	0 to ±99.9999	0 to ±9.99999
Digital Measuring Range 2	0 to ±999.999	±99.9999
Digital Resolution range 1	0.0001	0.00001
Digital Resolution range 2	0.001	0.0001

Environmental	
Input Voltage	18 to 32 V
Input Current (@24 V)	<50 mA
Sealing: Transducer	IP65 to Fully Sealed Dependent on Type
Sealing: Electronics	IP41 (top and front), (IP20 rear)
Operating Temperature	+5 to +70 ºC
Storage Temperature	-20 to +80 ºC
Electrical Immunity	EN61000-6-2
Electrical Emissions	EN61000-6-3

Mechanical	
Standard Cable length	2 m (others available on request)
Mounting	DIN rail
Weight	260 g (nominal)

SI100 with Standard Digital Gauging Probes

Axial cable Outlet (probe)	SI100P/1	SI100P/2	SI100P/5	SI100P/10	SI100P/20
Radial Cable Outlet (probe)	SI100PR/1	SI100PR/2	SI100PR/5	SI100PR/10	SI100PR/20
Measurement Range (mm)	1	2	5	10	20
Probe Body Diameter			8h6		
Pre Travel (mm)			0.15		
Post travel			0.85		
Accuracy (% reading)	0.05	0.05	0.05	0.06	0.07
Repeatability			<0.15		
Resolution			<0.1		
Tip Force (N) at centre range			0.7±20%		

Note:
Display can be rotated to accommodate different Mounting orientations

The SI100 is available with many other Solartron transducers, such as mini probes and displacement sensors. Please contact your local sales representative or distributor.

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SI200

A new Digital system from the Solartron Orbit stable! The SI 200 is an economical, dual channel solution with integral display that can be output to a PLC via ModBus, the most widely used network in the Industrial world. The SI 200 is part of Orbit ACS, a new line of Digital systems specially built for automation and process control.

▶ Modbus communication or Solartron ASCII Serial outputs

▶ High accuracy with Solartron's Real time Orbit error mapping

▶ 0.1 μm display resolution

▶ High sampling speed 5 ms per reading

▶ Eliminated loses due to analogue to digital conversion via PLC connection

▶ User defined keypad functions

▶ Colour display LCD screen

▶ Discrete I/O

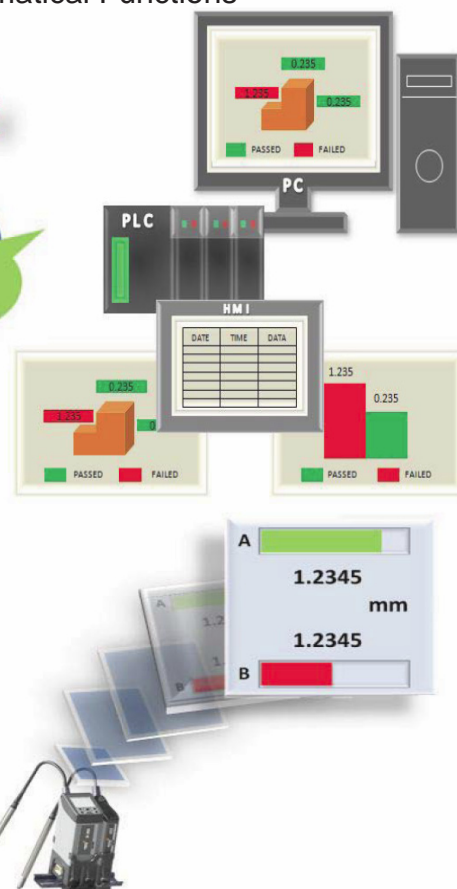▶ Available with large number of integral transducers
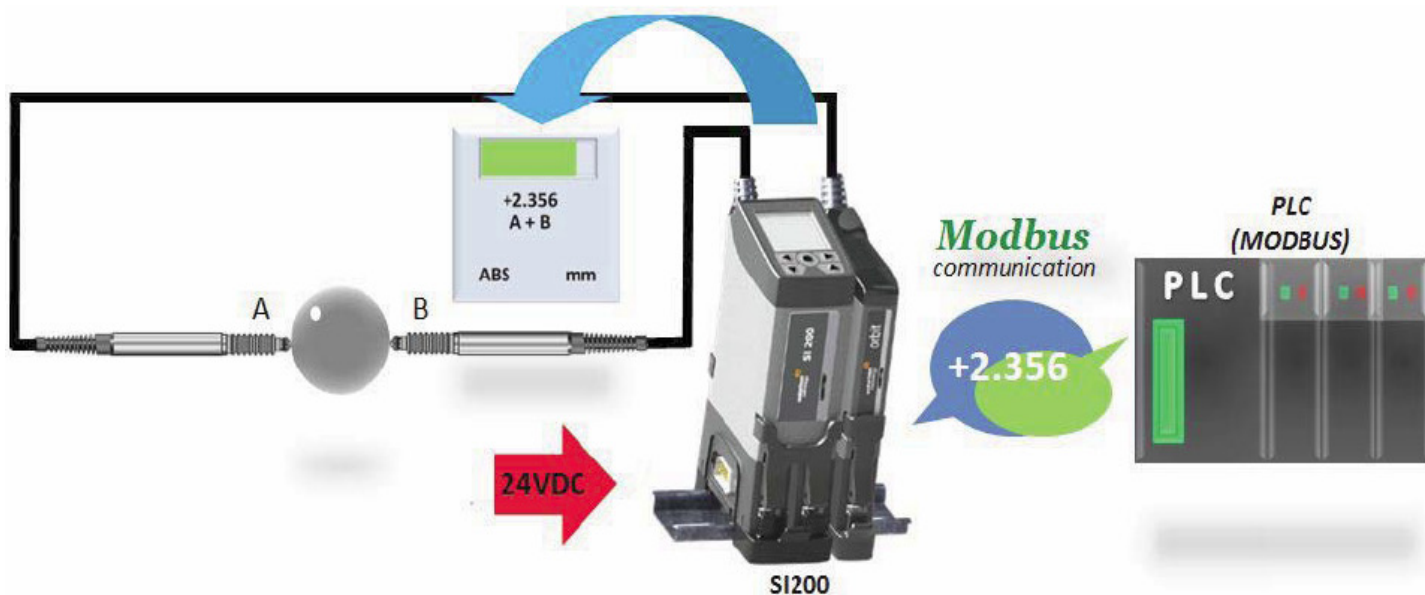
▶ Mathematical Functions

CE

simply **Modbus**

Solartron Metrology, the world leader in digital gauging probe innovation, introduces a new dual channel digital probe with integral display. which can be connected to any Solartron Digital probe to provie a two probe measurement system. Powered by a 24 VDC supply, the SI200 module can communicate using the industrial standard Modbus RTU (or ASCII) protocol, providing a simple connection to most PLCs Discrete Input and Output lines are also provided for simple interfacing and control.

The SI200 naturally comes with all of the standard metrology functions such as zero, preset and TIR. The unit can also be programmed to provide limit information.

The SI200 can perform standard mathematical functions such as A+B or A-B and show the result on the dual channel display.

Typical Application

FROM MEASUREMENT SI100 to PLC via MODBUS

FROM MEASUREMENT SI100 to PLC USING PRINT INPUT AND RS-232 SERIAL PORT

Interfacing to the SI200

12	Input 4: Spare
11	Input 3: Print
10	Input 2: Preset
9	Input 1: Zero
8	Output supply In
7	Output 3
6	Output 2
5	Ouptut 1
4	RS232RX MODBUS B
3	RS232TX MODBUS A
2	0V Power In Return
1	18 - 32 V Power In

Input Pins can be set Active Hi or Active Lo

Output Pins can be Active Hi or Lo and set To NPN, PNP or logic

DIN Rail Mount

Interfacing the SI200 is simple using the terminal connections on the rear of the module.

Serial Output Options

The SI200 provides a standard Modbus interface, it can be user configured via the menu screens to use pins 3 and 4 as an RS232 interface. Once configured in RS232 Mode the user can select several different protocols offering compatibility with Solartron's SI3000, SI1500 and C55. This is for retrofit/replacement applications.

Accessories

+24 VDC Power Block and Mains Lead (2 m).
Spare Mounting Modules.
Firmware Upgrade Cable. (USB A to Mini B)

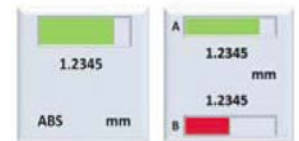For 3D drawings please contact sales.solartronmetrology@ametek.com

Technical Specification

Performance	
Mathematics	MAXA-MINA, MAX B-MINB A+B, (A+B)/2 , A-B, (A-B)/2
Accuracy	See Table

Keypad (5 keys)	
Navigation	▲Up, ▼Down, ◄Left ►Right ■Enter
Functions	Print, Zero, Preset, and set up via menu
Type	Sealed membrane

Inputs and Outputs	
Serial	RS232 or RS485 Serial communications RS485 MODBUS RTU or ASCII
3 Discrete Outputs	HI, OK or LO Alerts (programmable)
Output Types	NPN, PNP or Logic
3 Discrete Inputs	Print, Zero, Preset,
1 Discrete Input	Configurable

Analogue Display One or Two channels	
Single Bar	Analogue representation of reading
Scale	Programmable

Note 1: A refers to the measurment made by the SI200
B refers to the measurment made by the attached Digital probe

Digital LCD Display One or Two channels	mm	inches
Digital Measuring Range 1	0 to ±99.9999	0 to ±9.99999
Digital Measuring Range 2	0 to ±999.999	±99.9999
Digital Resolution range 1	0.0001	0.00001
Digital Resolution range 2	0.001	0.0001

Environmental	
Input Voltage	18 to 32 V
Input Current (@24 V)	<70 mA
Sealing: Transducer	IP65 to Fully Sealed Dependent on Type
Sealing: Electronics	IP41 (top and front), (IP20 rear)
Operating Temperature	+5 to +70 ºC
Storage Temperature	-20 to +80 ºC
Electrical Immunity	EN61000-6-2 and EN61326
Electrical Emissions	EN61000-6-3 and EN61326

Mechanical	
Standard Cable length	2 m (others available on request)
Mounting	DIN rail
Weight	300 g (nominal)

SI200 with Standard Digital Gauging Probes

Axial Cable Outlet (probe) Radial Cable Outlet (probe)	SI200P/1 SI200PR/1	SI200P/2 SI200PR/2	SI200P/5 SI200PR/5	SI200P/10 SI200PR/10	SI200P/20 SI200PR/20
Measurement Range (mm)	1	2	5	10	20
Probe Body Diameter			8h6		
Pre Travel (mm)			0.15		
Post travel			0.85		
Accuracy (% reading)	0.05	0.05	0.05	0.06	0.07
Repeatability			<0.15		
Resolution			<0.1		
Tip Force (N) at centre range			0.7±20%		

Note:
Display can be rotated to accommodate different Mounting orientations

The SI200 is available with many other Solartron transducers, such as mini probes and displacement sensors. Please contact your local sales representative or distributor.

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