

# Ultimate-Precision Digital LBB



- High precision digital sensor system
- Drop-in replacement for Solartron ORBIT®2
- Fits on the ORBIT®2 T-Connector
- Spring or air actuated probes
- Robust cast aluminum case (electronics)
- Stackable with T-Connectors for networking
- T-Connector available separately
- USB interface available (with COM libraries)
- Up to 31 devices on USB with external power
- External power supply available

## DESCRIPTION

The **Ultimate-Precision Digital LBB** system consists of DLBB digital probes (or gage heads) daisy chained in a network, using T-Connectors (available separately) with DE-9 connectors. Each DLBB includes a highly repeatable analog AC LVDT (Linear Variable Differential Transformer) probe guided with a precision linear ball bearing, mated to an in-line digital I/O signal conditioning module. The circuitry and firmware feature digital calibration and linearity correction of the digital output position signal with extremely high accuracy.

The DLBB probes are drop-in replacements for Solartron's devices for the ORBIT®2 system and therefore do not require replacement of the Solartron T-Connector in existing applications. They are also fully compatible with ORBIT®3 systems (mechanical compatibility with the use of our T-connector). They operate in conjunction with the Solartron PCI card, USB or RS232 interface modules, as well as with our available USB interface module. Our robust dimensional gaging probes are engineered to provide highly precise and repeatable measurements in various industrial, quality assurance and metrology applications.

The system is based on an RS-485 half duplex, multi-drop network providing plug-and-play compatibility with the ORBIT® bus measurement system. The DLBB probes convert their position signal into digital data which is then transmitted by the RS-485 network using asynchronous transmission (poll/response). The devices support both standard and buffered modes. Our USB 2.0 full speed compliant interface module can be connected to this network (using a T-Connector) to communicate with and allow data transfer to a computer. When our USB module is plugged into a computer running a WINDOWS® operating system, the Device Manager (in the section "Universal Serial Bus Controllers") of the Computer Management Console displays the name "Meas-Spec Digital LBB Serial Converter", clearly identifying our DLBB device amongst others.

The available DLBB external power supply is capable of supplying 31 DLBB gaging probes (2 Amps). It features an integral T-Connector which is permanently attached to it. This special T-Connector will interrupt the bus power and switch it over to the external power supply, for all Digital LBB gaging probes connected downstream.

*Measurement Specialties acquired Schaevitz Sensors and the **Schaevitz™** trademark in 2000*

*Orbit® is a registered trademark of Solartron Metrology*

*Windows® is a registered trademark of Microsoft Corporation*

# Ultimate-Precision Digital LBB

## FEATURES

- Drop-in replacement for Solartron ORBIT<sup>®</sup>2
- Mounts into existing ORBIT<sup>®</sup>2 applications (no need for T-Connector replacement)
- Fully compatible with ORBIT<sup>®</sup>3 (with the use of our T-connector)
- High resolution 14-bit digitizing module
- Built-in digital linearity correction
- Robust probes with precision linear ball bearing
- Very easy to setup and use (Plug-and-play)
- USB bus or externally powered (both available)
- USB device name for easy WINDOWS<sup>®</sup> recognition
- RoHS and CE Mark

## APPLICATIONS

- Wobble/runout of rotating parts (i.e. rotors, axles)
- Free-form measurements (i.e. airfoils, windshields, crankshafts, camshafts)
- Factory automated inspection systems (i.e. engine pistons, bearings, etc.)
- Optics Inspection Systems (i.e. mirrors, lenses)
- Materials testing
- SPC data collection
- Metrology
- Actuation controls
- Other precision dimensional measurements

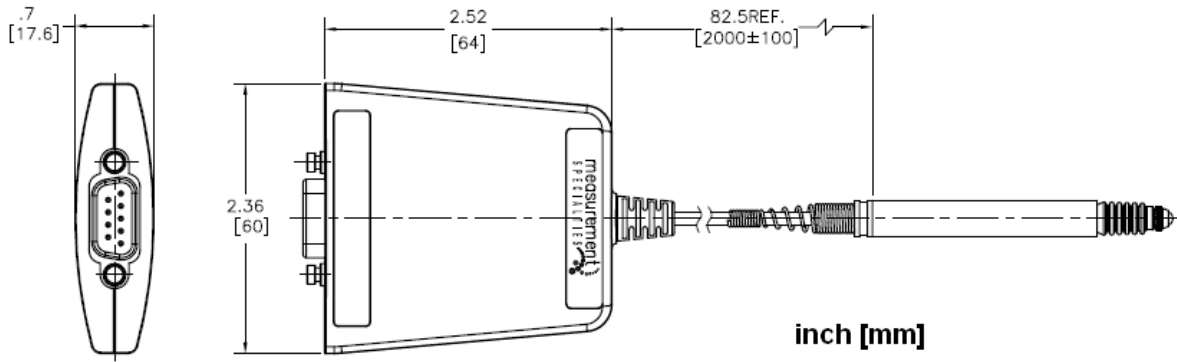
## SPECIFICATIONS

Parameter	Specification	Comment
Measurement ranges	1, 2, 5, and 10 mm	
Accuracy	0.1% of reading or 1 $\mu$ m	Whichever is greater
Repeatability	0.0065% of range or 0.15 $\mu$ m	Whichever is greater
Calibration temperature	72 $\pm$ 7°F [22 $\pm$ 4°C]	
Resolution	14 bits	
Operating voltage	5.00 $\pm$ 0.25 Volts DC	
Operating current	60mA maximum	
Operating temperature	32 to 140°F [0 to 60°C]	
Storage temperature	-4 to +158°F [-20 to +70°C]	Dry air environment
Maximum operating relative humidity	60%	Non-condensing
Standard and Buffered mode sampling rate	240 readings per second	
Buffer size	3000 Samples	
Dynamic mode sampling rate	Not supported at this time	In development
Bus format	8 Bits, 1 Stop, Odd Parity	
Bus baud rate	187.5KBd	Standard & buffered modes
Bus protocol	Proprietary device addressable	
Bus interface	RS-485	
Max number of DLBB probes on USB	4 (on computer USB bus power) 31 (on external power)	Plus USB interface module USB powered by computer USB
External power supply output current	2 Amps	Available separately
Cable length	2 meters	
Cable jacket material	Polyurethane	
Weight (device without T-Connector)	115 grams	
Weight of T-Connector	50 grams	Available separately
Weight of USB interface	115 grams	Available separately
Housing material, electronics	Aluminum, epoxy powder coated	

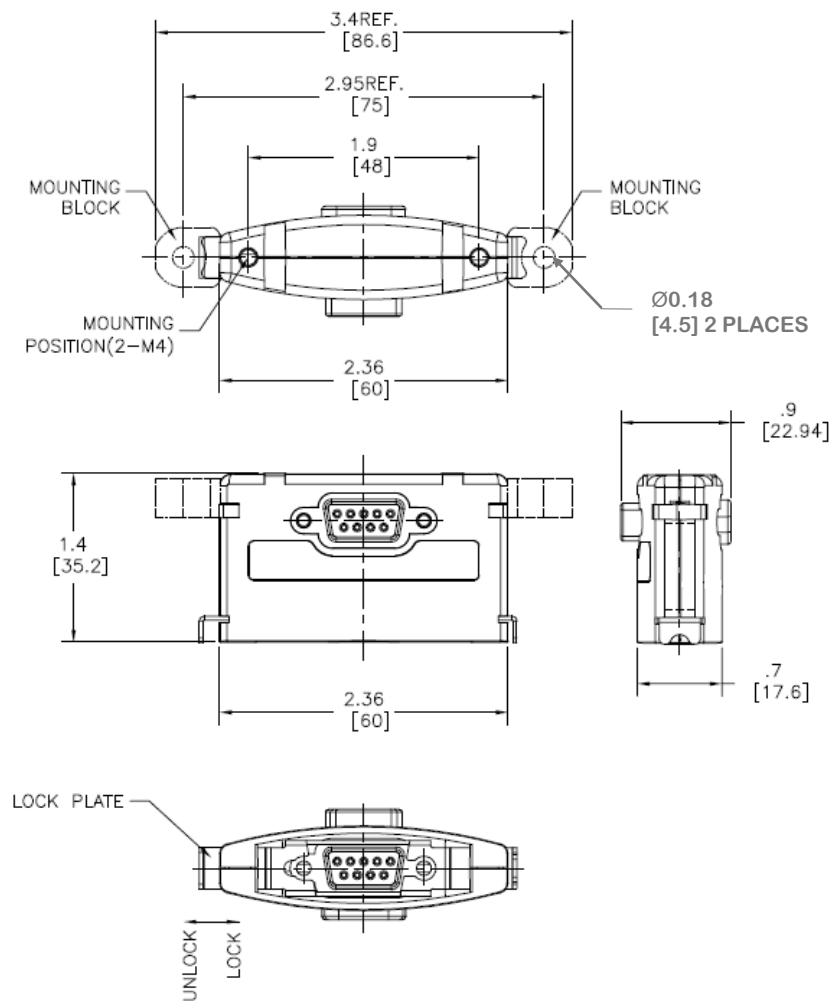
# Ultimate-Precision™ Digital LBB

## DRAWINGS AND DIMENSIONS

### DIGITAL LBB GAGING PROBE

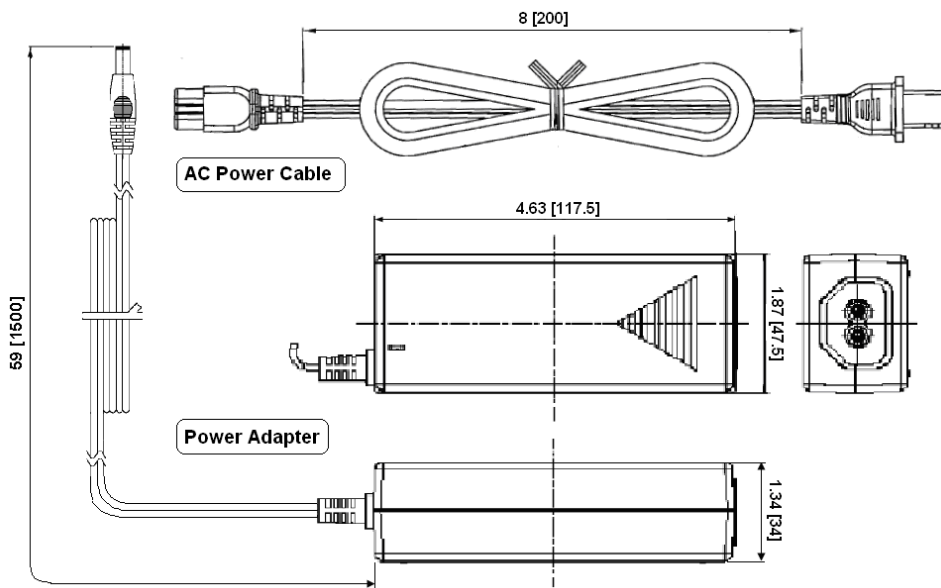
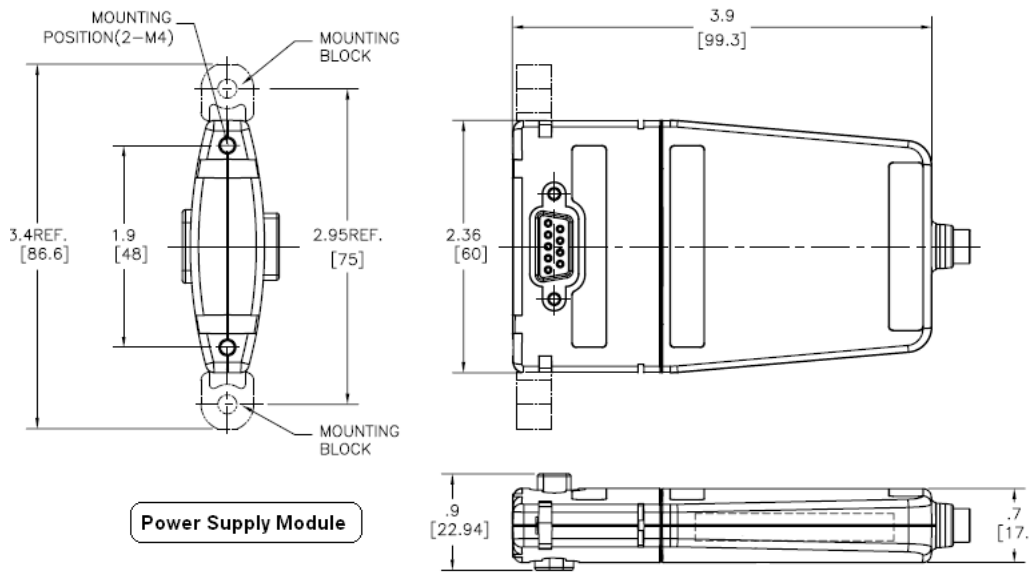


### T-CONNECTOR

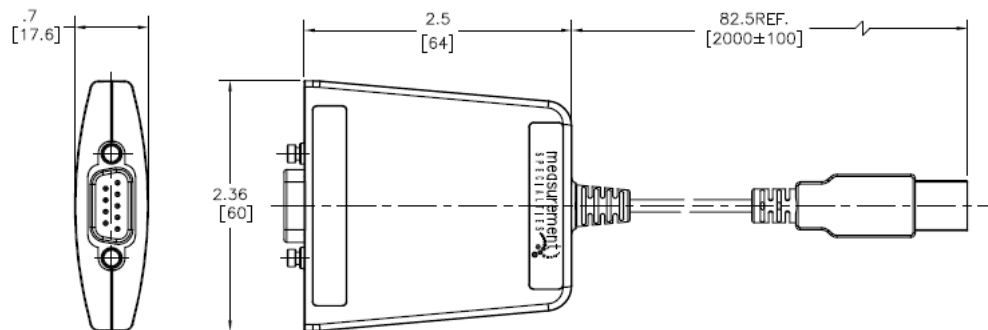


# Ultimate-Precision™ Digital LBB

## POWER SUPPLY KIT (3 COMPONENTS)



## USB INTERFACE MODULE



# Ultimate-Precision™ Digital LBB

## ORDERING INFORMATION

Description	Probe or sleeve dia.	Actuation	Model	Part Number
1mm range probe	8mm	Spring	DLBB315PA-020	72350009-000
2mm range probe	8mm	Spring	DLBB315PA-040	72350012-000
Sleeve for 2mm spring probe	3/8 inch			05350730-000
Sleeve for 2mm spring probe	3/8-40 UNS-2A threads			05350731-000
2mm range probe	8mm	Air	DLBB315PA-040A	72350024-000
Sleeve for 2mm air probe	3/8 inch			05350835-000
Sleeve for 2mm air probe	3/8-40 UNS-2A threads			05350836-000
5mm range probe	8mm	Spring	DLBB315PA-100	72350015-000
Sleeve for 5mm spring probe	3/8 inch			05350730-000
Sleeve for 5mm spring probe	3/8-40 UNS-2A threads			05350731-000
5mm range probe	8mm	Air	DLBB315PA-100A	72350021-000
Sleeve for 5mm air probe	3/8 inch			05350831-000
Sleeve for 5mm air probe	3/8-40 UNS-2A threads			05350832-000
10mm range probe	8mm	Spring	DLBB315PA-200	72350018-000
Sleeve for 10mm spring probe	3/8 inch			05350833-000
Sleeve for 10mm spring probe	3/8-40 UNS-2A threads			05350834-000
USB interface module for DLBB			DLBB USB INTERFACE	72290002-000
T-Connector for DLBB			DLBB T-CON	72290003-000
Power supply kit for DLBB (100-240VAC, 50/60Hz input; 5VDC, 2A out)			DLBB USB POWER SUPPLY	72290004-000

### Notes:

- Air actuated probes are air-extend, spring-retract
- Sleeves are used to increase the probe housing diameter or to provide bulkhead mounting threads. They can be bonded on top of the probe housings using epoxy

## 联系方式



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