sylvac

Smart metrology for optimized productivity

NEW !

LEVER PROBE

LPD SMART



Lever probes with direct digital output or integrated Bluetooth® technology

Quickly and easily check the linear and circular geometry of your parts with our lever probes with direct digital output to USB, M8, OPEN or via Bluetooth® technology.

SWISS MADE

µm

High resolution

0.01 micron

Built-in Bluetooth

Direct digital output

USB, M8, OPEN or Bluetooth® technology

Contact point

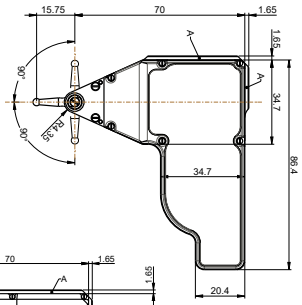
Ø3mm tungsten carbide ball, swivelling and interchangeable

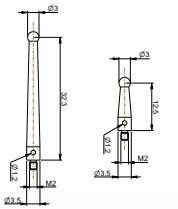
Sylvac SA - Avenue des Sciences 19, 1400 Yverdon-les-Bains (CH)
Tel. +41 21 637 67 57 - Email. info@sylvac.ch - Web. www.sylvac.ch

sylvac

Smart metrology for optimized productivity

- Lever probe with direct digital output
- Instrument for checking linear and circular geometry
- M2 stylus with Ø 3 mm tungsten carbide ball, swivelling and interchangeable
- Available in 4 versions :
  - Model with direct output USB
  - Model with direct output M8
  - Model with direct output OPEN
  - Model with Bluetooth® technology





DATA

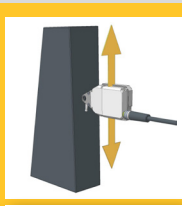
	801-3012	801-3212	801-3412	801-3006
Measuring range mm	+ 0.6 / +1.3 [1]			
Type	LPD USB	LPD M8	LPD OPEN	LPD Smart
Force cN	4 to 19 cN ±20% / 2 to 9 cN ±20% [1]			
Weight g	92 [3]			112
Resolution µm	0.01			
Max. error µm	0.8 / 2 [1]			
Local max. error µm	0.3 / 0.7 [1] [2]			
Repeatability µm	0.07 / 0.15 [1]			
Max. hysteresis (Fu) µm	0.5 / 1 [1]			
Output data	USB	M8	OPEN	Bluetooth®

[1] with stylus 32.3 mm, reference 801-8004, option
[2] max. local error over 50 µm, unidirectional
[3] cable-free instrument with standard stylus

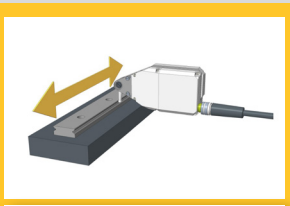
EXAMPLES



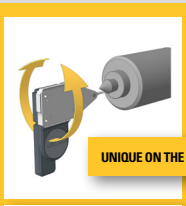
CIRCULAR GEOMETRY MEASUREMENT ON ROTARY TABLE



MEASURING LINEAR GEOMETRY AND PERPENDICULARITY



LINEAR GEOMETRY AND PARALLELISM MEASUREMENT



CIRCULAR GEOMETRY AND LOCATION MEASUREMENT ON LATHE COUNTERSPINDLE



CIRCULAR GEOMETRY MEASUREMENT AND LOCALIZATION ON MILLING MACHINES

New LPD lever probe : *easy and quick measurement*

sylvac

SWISS MADE

S_Probe LPD

Smart



Instruction manual

Description

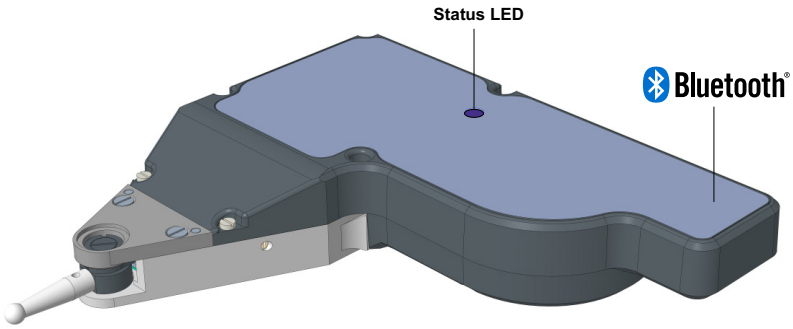
The LPD Smart probe is a high-precision inductive measurement lever probe with built-in Bluetooth® wireless technology. The rugged design and wireless connectivity allow the probe to be used in harsh conditions and hard-to-reach locations.

Connection

Bluetooth®

The probe only transmits data via a Bluetooth® Low Energy wireless connection (Bluetooth® 4.0 or higher). The device starts advertising as soon as the battery is installed. Please use Sylcom, Vmux or Sylvac Anywhere (mobile application) to communicate with your probe through the Sylvac Metrology SIMPLE profile (PAIR profile available through Sylcom, HID profile not available).

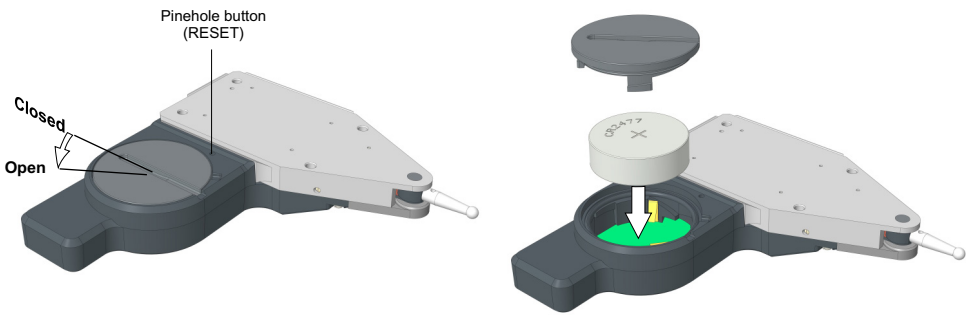
Interface



Battery

If the LED is flashing red, this indicates a low battery (see Status LED). Replace the battery as soon as possible to avoid any issues.

1. Open the battery cover
2. Replace the battery (Lithium CR2477 type)
3. Check the rubber protection position
4. Close the battery cover



Reset button

The reset button is located on the same side as the battery cover. Use a small tool such as a paper clip to press it.

Bluetooth® reset

A short press on the reset button (< 1s) will reset the Bluetooth® connection.

Instrument reset

A long press on the reset button (> 1s) will apply a factory reset of the instrument (Bluetooth® name and profile selection are preserved).

Status LED

A Light Emitting Diode (LED) is used to indicate the status of the probe. The following table gives an overview of the possible codes and their meanings.

LED status	Description
Blue LED on for 3s	A Bluetooth® connection has been established
Blue LED flashing at 1Hz	Device is advertising for a connection / reconnection
Blue LED flashing once in 7s	Device is advertising for a reconnection
Green LED flashing once in 5s	Device is active and connected
Red LED flashing once in 5s	Low battery, replace battery
Red LED flashing at 1Hz	General error. Perform a reset

Main commands

The following table lists the main commands that can be used with the probe. Every command must be terminated by a carriage return character (0x0D).

Command	Description
?	Get current position
CFG PRB?	Get active probe length
CFG PRB [+]xx.xxx	Set user probe length
CLE	Clear MIN, MAX and DELTA values
DIR?	Get measuring direction
DIR + / DIR -	Change measuring direction
ECO1/0	Enables economical mode, else back to normal running mod
ID?	Get the device identifier
MAC?	Get Bluetooth® MAC address
MIN / MAX / DEL / NOR	Select MIN, MAX, DELTA or Normal mode
MM / IN	Set measuring unit to millimeters / inches
MOD?	Get active mode (MIN/MAX/DEL/NOR)
PERF1/0	Enables performance mode, else back to normal running mode
RST	Re-initialize the probe
SBY xx	Set delay until standby (default is 10 min), 0 disables standby mode
SET	Set origin (zero) at the current position
SN?	Get serial number
UNI?	Get current measuring unit
VER?	Get firmware version

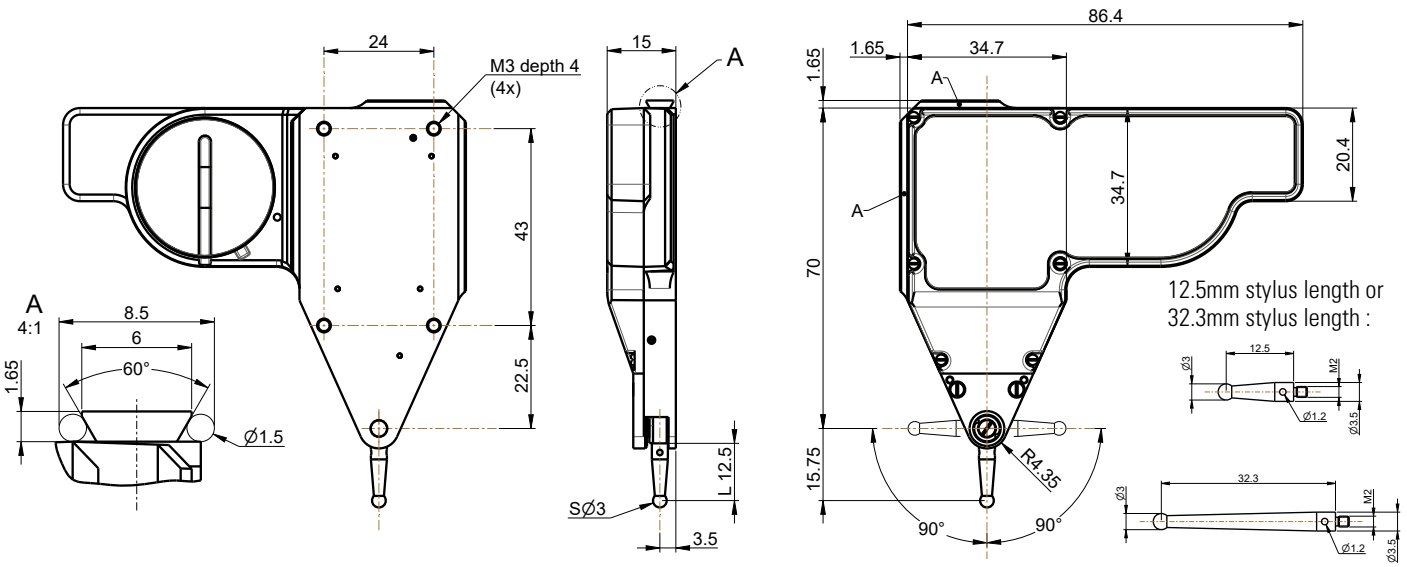
Specifications

Specifications	**801-3006**
Type	LPD Smart
Force	4 - 19 cN ±20% / 2 - 9 cN ±20% [1]
Measuring range	± 0.6 / ± 1.3mm [1]
Resolution	0.01µm
Stylus length	12.5 / 32.3mm [1]
Max error.	0.8 / 2µm [1]
Local max. error	0.3 / 0.7µm [1] [2]
Repeatability	0.07 / 0.15µm [1]
Max. hysteresis (Fu)	0.5 / 1µm [1]
Operating temperature (storage)	+5 à +40°C (-10° à +60°C)
IP Rating	IP54
Weight	110g (battery included)
Power supply	3.0V Lithium CR2477
Battery life	Up to 5500h 3.0V battery, 1000mAh [3]
Connection	Bluetooth®
Data rate	Standard mode 8d/s (default) - ECO mode 6d/s - PERF [4] mode 50d/s

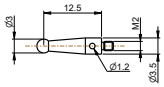
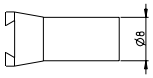
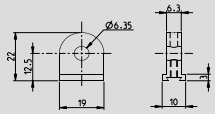
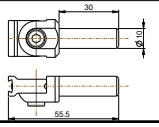
[1] with stylus 32.3mm, reference 801-8004, option
[2] max. local error over 50 µm, unidirectional
[3] 8/24h, 5/7d connected, otherwise standby advertising (Disconnected, master side switched OFF)
[4] For demanding applications, requires custom software not available from Sylvac

Dimensions

Mechanical drawing (all dimensions in millimeters) :

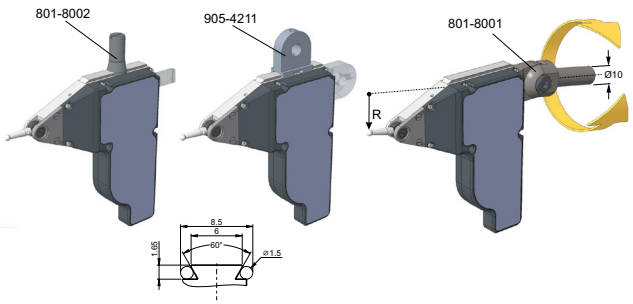


Accessories

Order number	Drawing	Description
801-8003		Stylus M2 Ø3mm, length 12.5mm
801-8004		Stylus M2 Ø3mm, length 32.3mm
801-8002		Clamping stem Ø8 (not for rotational use)
905-4211		Center lug back
801-8001		Adjustable clamping stem Ø10

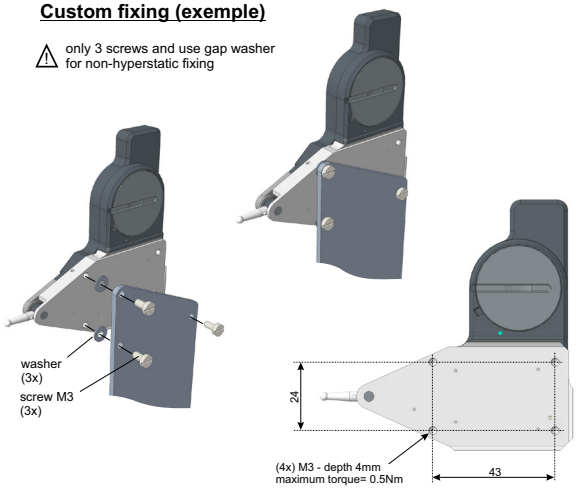
See general catalogue (available on www.sylvac.ch) for dimensions and more accessories.

Accessories for fixing

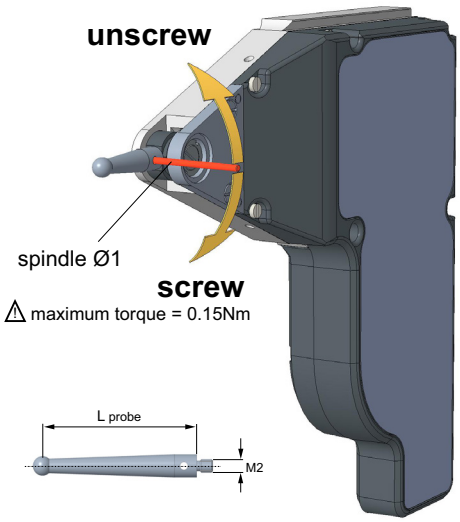


Custom fixing (exemple)

⚠ only 3 screws and use gap washer for non-hyperstatic fixing



Probe change



Note: When replacing with a probe of a different length, you must activate the specific probe length using the command:CFG PRB xx.xxx

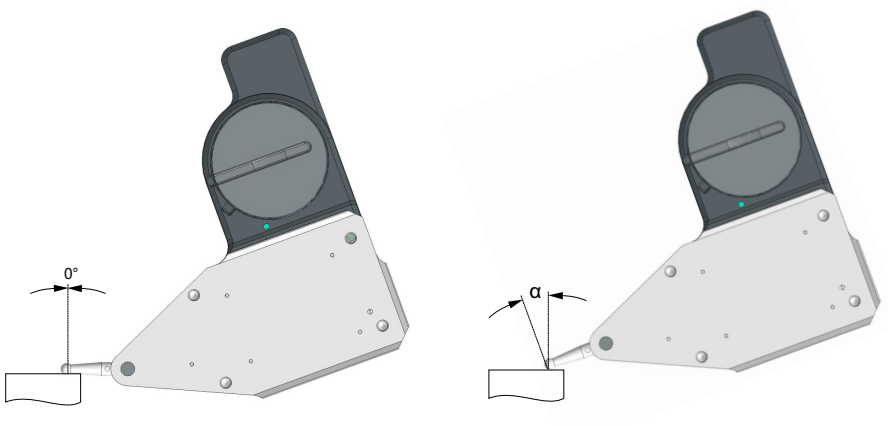
Example: probe L = 32.3 mm → CFG PRB 32.300

Probe orientation

Note: The measurement is accurate if the probe tip is parallel to the surface being measured. If not, the values read must be multiplied by a factor corresponding to the cosine of the contact angle.

Correction factor = **cos *α***

α Angle	Correction factor
0°	1.000
10°	0.985
20°	0.940
30°	0.866
40°	0.766
50°	0.643



Maintenance

Carefully dry all mechanical parts of the instrument after contact with liquids to ensure correct operation and avoid corrosion. Do not use aggressive products (alcohol, trichloroethylene, etc.) to clean plastic parts. Do not expose the instrument to direct sunlight, heat or moisture.

Calibration

CALIBRATION CERTIFICATE

Because our instruments are manufactured in batches, you may find that your calibration certificate appears to be out of date. Please be assured that your instruments are certified at the point of manufacture and then stored in our warehouse in accordance with our ISO 9001 Quality Management System. The recalibration cycle should start from the date of receipt.

Conformity

CERTIFICATE OF CONFORMITY

We certify that this instrument has been manufactured in accordance with our quality standard and tested with reference to masters of certified traceability by the Federal Institute of Metrology.

Bluetooth® radio

U.S./Canada certification

Sylvac
m.n : S_Probe LPD Smart

FCC ID: 2AAQS-ISP1807
IC: 11306A-ISP1807

NOTICE :
Changes or modifications made to this equipment not expressly approved by Sylvac may void the FCC authorization to operate this equipment.

NOTICE :
This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada. Operation is subject to the following two conditions.
(1) this device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE :
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Radiofrequency radiation exposure Information :
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Brazil certification

Description:
The module ISP1807 is based on Nordic Semiconductor nRF52840 Bluetooth LE system on chip. The nRF52840 is a Bluetooth 5.x SoC that integrates a 64 MHz Arm Cortex-M4 CPU with ultra-low power consumption and Flash/RAM memory.

ANATEL

MODELO : ISP1807
04057-23-14043

Este equipamento opera em caráter secondário, isto é, não tem direito à proteção contra interferência prejudicial, mesmo de estações do mesmo tipo e não pode causar interferência a sistemas operando em caráter primário.

Korea South certification

R-C-iNs-ISP1807

Class A Equipment (Industrial Use)

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Japan certification

R 020-200037

Taiwan certification

CCAJ23Y10060T5

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低功率射頻電機之使用不得影響飛航安全及干擾合法通信;經發現有干擾現象時,應立即停用,並改善至無干擾時方得繼續使用。
前項合法通信,指依電信法規定作業之無線電通信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

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www.sylvac.ch

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