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

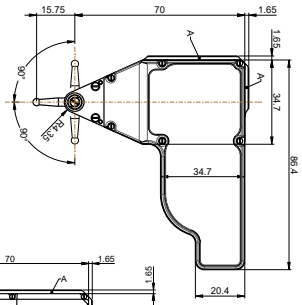
Ø3mm tungsten carbide ball, swivelling and interchangeable

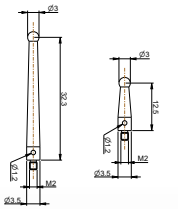
Sylvac SA - Avenue des Sciences 19, 1400 Yverdon-les-Bains (CH)
Tel. +41 21 637 67 57 - Email. info@sylvac.ch - Web. www.sylvac.ch

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

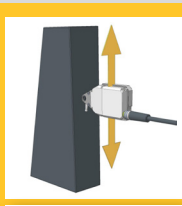
	801-3012	801-3212	801-3412	801-3006
Measuring range mm	+ 0.6 / +1.3 [1]			
Type	LPD USB	LPD M8	LPD OPEN	LPD Smart
Force cN	4 to 19 cN ±20% / 2 to 9 cN ±20% [1]			
Weight g	92 [3]			112
Resolution µm	0.01			
Max. error µm	0.8 / 2 [1]			
Local max. error µm	0.3 / 0.7 [1] [2]			
Repeatability µm	0.07 /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

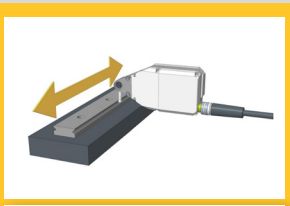
EXAMPLES



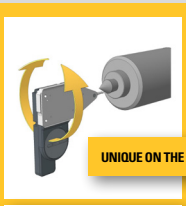
CIRCULAR GEOMETRY MEASUREMENT ON ROTARY TABLE



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

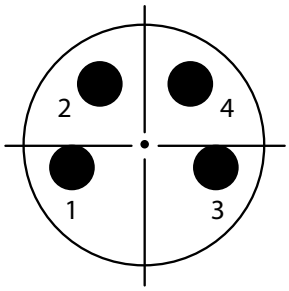
S_Probe LPD

USB, M8, OPEN



Instruction manual

Connection



M8 male connector
(front view)

Pin	X	Y	Signal	Description	Color
1	-1.70	-0.50	Power	5V power supply	Brown
2	-1.08	1.45	A	RS485 A	White
3	1.70	-0.50	Ground	0V ground	Yellow
4	1.08	1.45	B	RS485 B	Green

Use the following connection parameters :

ASCII : 128'000Bd, 8 data bits, even parity, one stop bit (128kBd, 8E1)
MBus : 187'500Bd, 8 data bits, odd parity, one stop bit (187.5kBd, 8O1)
MODBUS: 128'000Bd, 8 data bits, even parity, one stop bit (128kBd, 8E1)

The probe starts in ASCII mode at 128 kBd, 8E1. If a MODBUS command is detected, the baudrate and the protocol are fixed. If the LPD recognizes an MBus command, it switches to 187'500Bd,8O1 and stays at this baudrate and protocol as long as the power supply is not interrupted.

Compatibility

LPDs are compatible with the following Sylvac software and display units:

Master	Version min	Connection
D300S	2.35	USB
D400D	2.35 (HR: 2.5)	M8 and MB4P
Sylcom	1.3.1	USB
VMux	1.35	USB
PLC I/O	Any	Open



Main MBus commands

Command	Code	Description
OrbitGetInfo	B	Get device information
OrbitIdentify	I	Get device ID
OrbitNotify	N	Return factory ID if moving
OrbitSetAddr	S	Set temporary short address
OrbitRead2	L	Get current position

Main MODBUS commands

Word variables	Address (decimal)	Access type
Instrument position	0002	RO
Instrument slave number	8705	R/W
Instrument factory number	9600	RO

Bit variables	Address (decimal)	Access type
Configuration procedure start	9536	R/W
Measurement in inch	0065	R/W

Main ASCII commands

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
ID?	Get the device identifier
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)
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

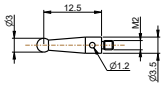
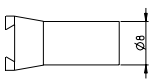
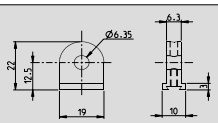
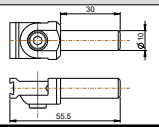
All commands must be terminated by a carriage return character (CR, 0x0D)

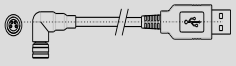
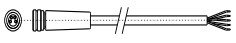
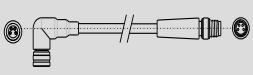
Specifications

Specifications	801-3012	801-3212	801-3412
Type	LPD USB	LPD M8	LPD OPEN
Force	4 - 19 cN ±20% / 2 - 9 cN ±20% [1]		
Measuring range	+ 0.6 / +1.3 mm [1]		
Resolution	0.01 µm		
Stylus length	12.5 / 32.3 mm [1]		
Max error.	0.8 / 2 µm [1]		
Local max. error	0.3 / 0.7 µm [1] [2]		
Max. hysteresis (Fu)	0.5 / 1 µm [1]		
Repeatability	0.07 / 0.15 µm [1]		
Connector	USB	M8	OPEN
Cable length	2m		
Operating temperature (storage)	+5 to +40°C (-10° to +60°C)		
Weight	92g (wired version, without cable)		
Power supply	5 to 24V		
Average consumption	3.2mA (@5V)		
Data rate	1500 / up to 300 (internal / nb. transmittable)		
Data bus	RS485 compatible, 1/256 unit load		

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

Accessories

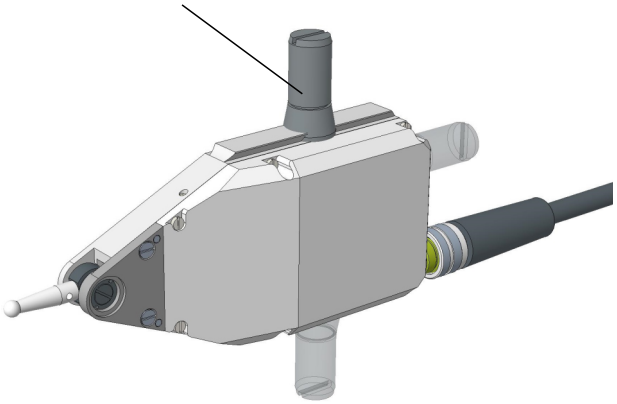
Order number	Drawing	Description
801-8003		Stylus M2 Ø3mm, length 12.5mm
801-8004		Stylus M2 Ø3mm, length 32.3mm
801-8002		Clamping stem Ø8 (not for rotational use)
905-4211		Center lug back
801-8001		Adjustable clamping stem Ø10

Order number	Drawing	Description
C310-510-100		Cable 2m M8 female to M8 male
C310-510-500		Bent cable 2m M8 to USB
C310-510-300		Cable 2m OPEN
C310-510-600		Bent cable 2m M8 female to M8 male
C310-510-200		Cable 2m USB

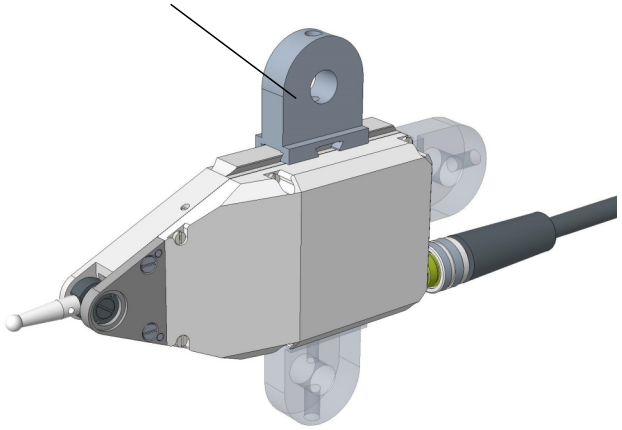
See general catalogue (available on www.sylvac.ch) for dimensions and more accessories.

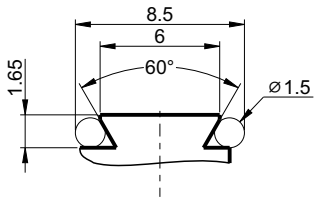
Accessories for fixing

801-8002



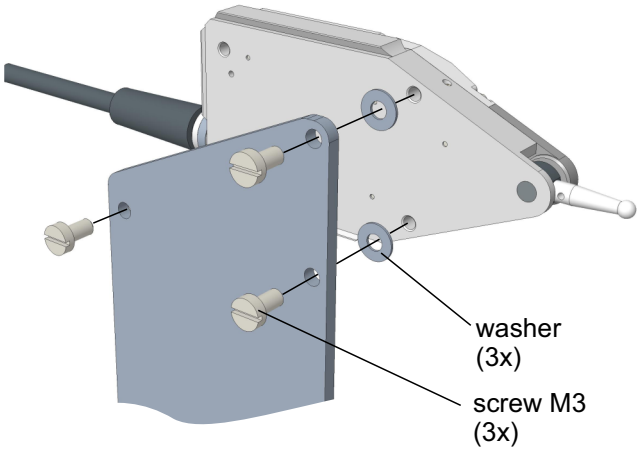
905-4211

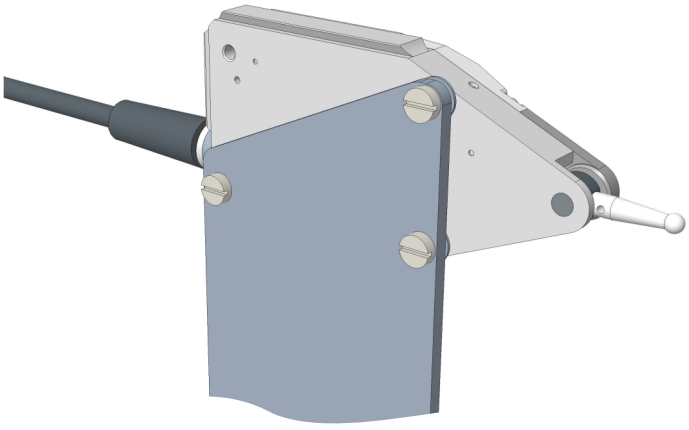


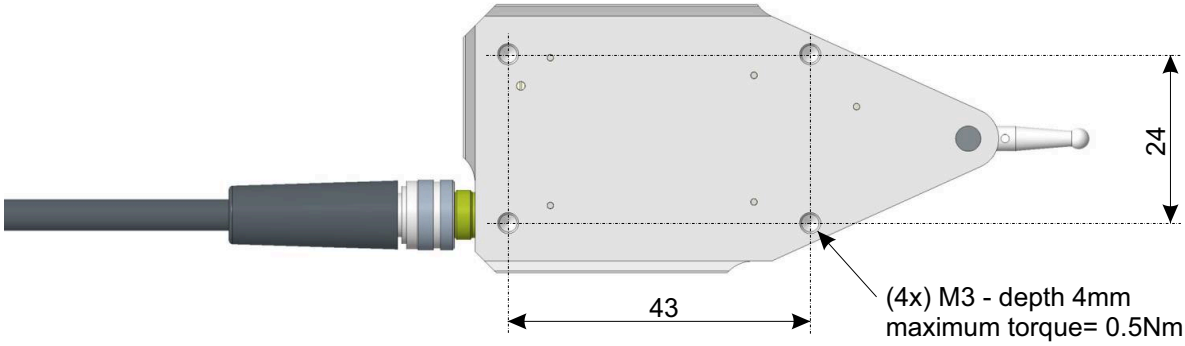


Custom fixing (example)

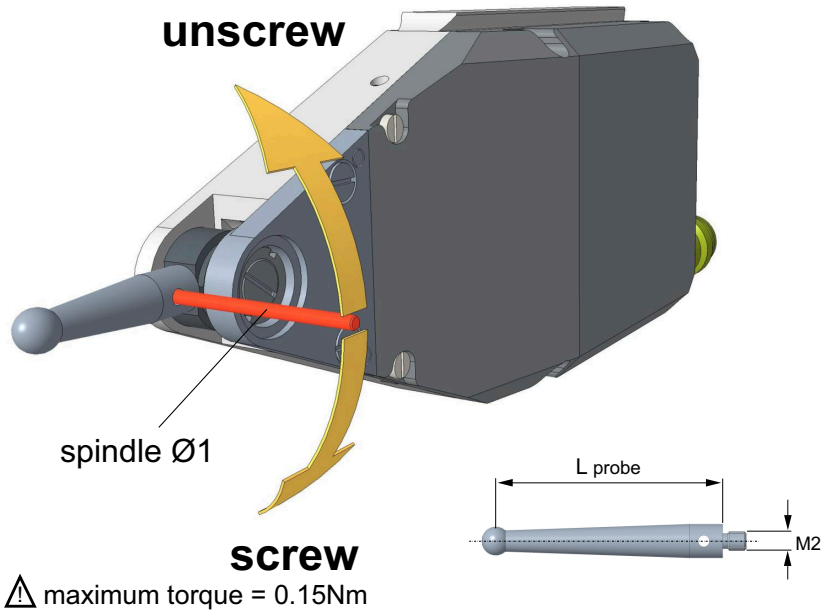
⚠ only 3 screws and use gap washer for non-hyperstatic fixing







Probe change

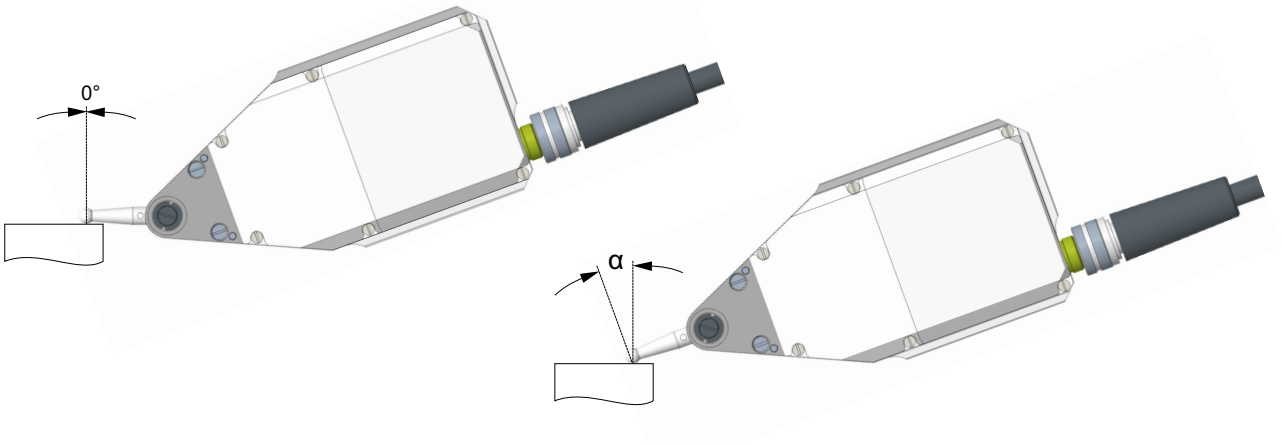


Probe orientation

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.



Changes without prior notice
Sous réserve de toute modification
Änderungen vorbehalten

www.sylvac.ch

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