sylvac

BLUETOOTH® INDICATOR WITH 0.1µm RESOLUTION

The new **S_Dial WORK** Analog Nano Bluetooth® :
New smart indicator combining high resolution and accuracy, analog scale and built-in Bluetooth® transceiver; All in one!





Bluetooth® SMART

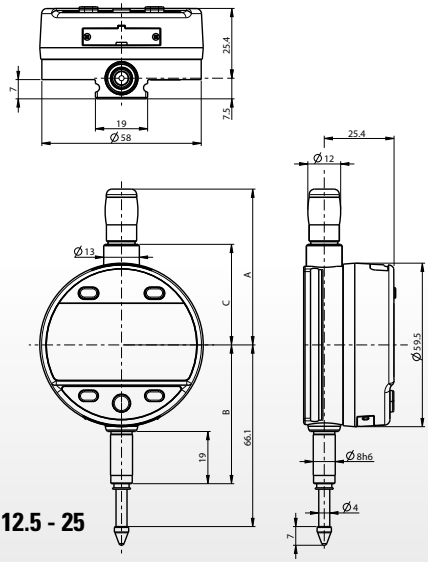
S_Dial WORK Analog Nano Bluetooth®

- **Built-in Bluetooth® 4.0**
- Resolution 0.1 µm
- **Broad choice of functions**
- Maximum error of 1.8 µm
- **Adaptative analog display**
- Automatic wake-up and sleeping mode

SWISS MADE

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S_Dial WORK Analog Nano Bluetooth®



S 12.5 - 25



TECHNICAL SPECIFICATIONS

Specifications	805.6307	805.6507
Measuring range	12.5 mm	25 mm
Resolution	0.0001 mm	
Max. error fe	1.8 µm	2.2 µm
Repeatability	0.5 µm	
Model type**	S	
A	56.6 mm	69.3 mm
B	66.1 mm	79 mm
C	36.6 mm	49.4 mm
Standard measuring force	0.65 - 0.90 N	0.65 - 1.15 N
Connection	USB / RS232 / Bluetooth® 4.0*	
Programmable by pc	●	
Standard functions (customizable by pc)	mm/inch, preset (max 99.9999), min/max/delta, tolerances, resolution, measuring direction, multiplier, automatic/manual extinction, keylock	

**S = Standard

*** Up to 8 instruments connected per dongle #981.7100**
More informations on How to use Bluetooth® leaflet SYL_1401_EN_BT

SWISS MADE

Available on the App Store

Google play

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INSTRUCTIONS

MODE D'EMPLOI

BEDIENUNGSANLEITUNG

MANUALE D'USO

MODO DE EMPLEO

DIAL GAUGE **E**

COMPARATEUR **F**

MESSUHR **D**

COMPARATORE **I**

COMPARADOR **S**

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1 . Operating features of the instrument

- MODE The instrument has two operating modes: First level functions (direct access) and Second level functions. In addition to the configuration functions, available access to the MIN, MAX and DELTA (TIR) mode, or display of tolerances (see chaps. 3 and 4)

- The «favourite» key gives direct access to the function used most often (see chap. 10)

- SET Sets a Preset value, reset the MIN/MAX mode, verifies a selection, and controls switching off the instrument. By default, SIS mode enables automatic switch-off with no loss of origin (see chap. 11).

- With the «Left and Right» buttons, the user may change the extent of the analogue scale as well as enter the values of the nominal dimension and tolerance limits. (see chap. 6.2)

- Personalising the functions

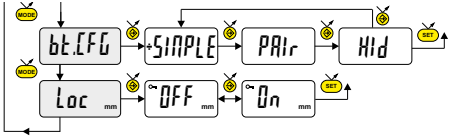
It is possible to activate or de-activate certain functions of the instrument via RS232 (see chap. 13)

- Data transmission parameters

4800Bds, 7 bits, even parity, 2 stop bits

2. Start

Press a button. (For a *Bluetooth*® connection, see chap 9.)



Bluetooth® profile selection (depending on model, see chap. 6 for details). The + sign indicates the currently active profile.

Keypad lock, Only the DATA and CLR functions of the favorite key remains actives. (to unlock the keypad, press SET for 5 sec.

5. Work in MINIMUM, MAXIMUM and DELTA (TIR) modes :

In this operating mode, the digital display stores the MIN, MAX or DELTA value. On the other hand, the analogue scale always indicates the current measured value.

- A short press on SET resets the MIN/MAX stored value (CLEAr)

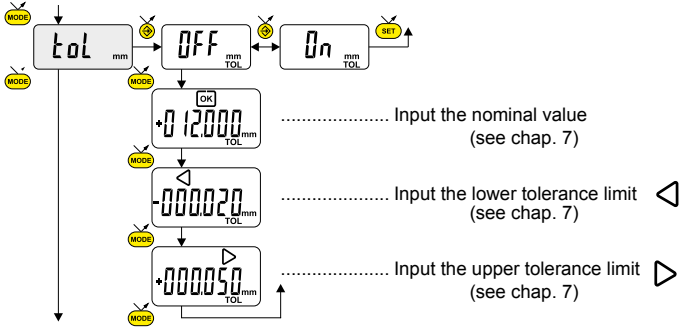
- A long press (>2s) on SET assigns the Preset value to the position of current measurement.

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6. Inputting (or modifying) tolerance limits

The tolerance limits are defined by introducing lower and upper intervals, compared to the nominal rating.
Two methods are available:

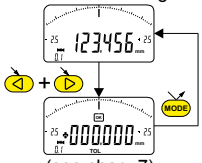
6.1 Using the TOL mode



6.2 Use of the buttons ◁ and ▷ :

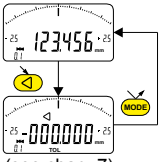
It is also possible to enter or modify the nominal value or the tolerance limits by prolongedly pressing (>2s) the ◁ and/ or ▷ button :

Enter the nominal rating



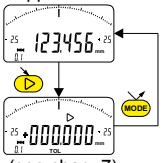
(see chap. 7)

Enter the lower interval



(see chap. 7)

Enter the upper interval



(see chap. 7)

Note :

- It is also possible to display the tolerance limits when the instrument is operating in MIN, MAX or DELTA (TIR) mode.

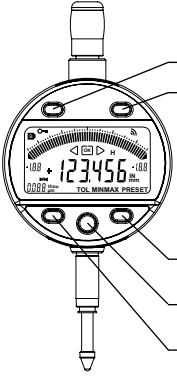
- If no tolerance limits have been defined by the user, the instrument will only display the tolerance limit indicators but will not turn on the indicator lights (red - green - yellow).

- In case of measuring internal ratings, you can cross the indicators (red and yellow) by reversing the order of entering the tolerance intervals (upper interval < lower interval).

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7 Entering a numeric value

To enter or modify a numeric value (Preset, nominal ratings, tolerance intervals or multiplication factor), you can proceed in two ways:



7.1 Increases / decrases the current value:

◁ Decreases the current value

▷ Increases the current value

Note: - the scanning speed increases with a long press on the button
- save the value with one of the three lower buttons

7.2 Entering digit by digit:

SET Increase of the selected digit

Selection of the next digit

MODE Save the value

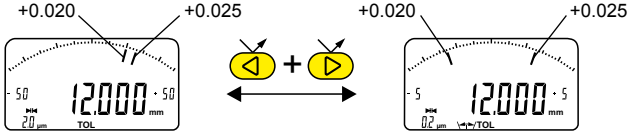
8. Scale the analog display

The user may change the analogue display's scale value by shortly pressing  or  .

8.1 Centring function of the analogue scale

When the tolerance limits are asymmetric with respect to the nominal ratings, it is possible to realign them to the analogue scale, by a short simultaneous press on  and 

Example: $12.000\ ^{+0.025}_{+0.020}$



Asymmetric tolerance limits

Realigned tolerance limits

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9. *Bluetooth*® configuration (depending on model)

The connection procedure has been designed to be simple and is signalled by the following three states:
Symbol ✱ off ..... disconnected mode
Symbol ✱ blinking..... advertising mode
Symbol ✱ on..... connected mode

The following options can be selected to control the *Bluetooth*® module.
On .....Enable *Bluetooth*® module (start advertising mode).
OFF .....Disable *Bluetooth*® module (terminate active connection).
rESEt .....Clear pairing information.
MAC .....Display the MAC (Media Access Control) address.

Three *Bluetooth*® profiles are available.
SIMPLE.....Profile without pairing (default).
PAIr.....Paired and secured profile.
HId.....Virtual keyboard mode (compatible with recent equipement without driver installation).

Note:
- *Bluetooth*® pairing information is cleared when the profile is changed.

Connection :

1° Activate *Bluetooth*® compatible software and hardware (Master : PC, Display Unit).
2° Start the instrument. By default the *Bluetooth*® module is active and the instrument is available for connection (advertising mode).
3° If no connnection is established during the advertisement period reactivate the *Bluetooth*® module using the bt / On menu.
4° Instrument is ready to communicate (connected mode.)

Only with paired profile :

Pairing with master is automatically done at first connection.
To connect the instrument to a new master (new pairing), pairing information on the instrument must be cleared using the btI rESEt menu.

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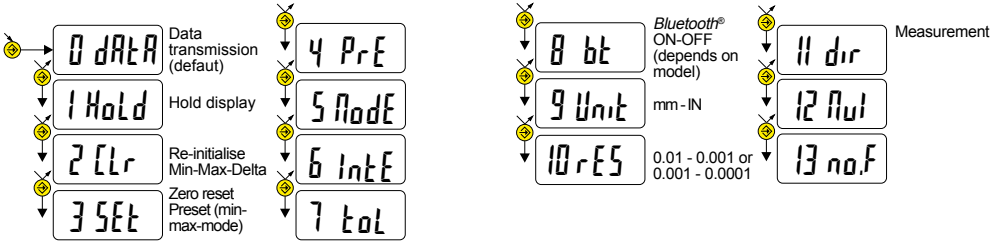
9.1 *Bluetooth*® specifications

Frequency Band	2.4GHz (2.402 - 2.480GHz)
Modulation	GFSK (Gaussian Frequency Shift Keying)
Max Output Power	Class 3: 1mW (0dBm)
Range	Open space: up to 15m Industrial environment: 1-5m
Battery life	Continuous : up to 2 months (Always connected with 4 values /sec) Saver : up to 5 months (The instrument sends value only when the position has changed) Blind/Push : up to 7 months (Value is sent from the instrument (button) or requested from the computer)

Other specifications on the manufacturer's website

10. Favourite key

The «favourite» key gives direct access to a predefined function, and can be configured according to the needs of the user. In order to assign a function to the «favourite» key, give a prolonged press on , and then select the required function :



Validation of selection: By a prolonged press on or a short press on MODE or SET

Note : a function can also be assigned via RS232 using the command <FCT + Function No.>
example : Change of Unit = **<FCT9>**, reverse the measurement direction = **<FCTB>**

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11. Adjustment and use of InTE dynamic measuring mode

Certain applications need to adjust the instrument to the MIN (or MAX) measured value. In this case, proceed as follows :

11.1 Adjustment of the instrument

- Enter a Preset value corresponding to the actual size of the standard (see chap. 3)
- In the InTE menu, select the mode -AMIN (automatic selection of DIR- and mode MIN) or+AMIN (automatic selection of DIR+ and mode MIN) or +AMAX (automatic selection of DIR+ and mode MAX) depending on application
- Make a standard measurement (going through the turnaround point)
- Adjust the instrument by selecting the SEt mode and pressing on the button  (see chap. 3)
- The instrument is adjusted and ready to measure.

11.2 Measure

- Make the measurements going through the turnaround point. The digital display stores and displays the MIN (or MAX) measured value.
- Before each new measurement, reset the measured value by a short press on 

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12. Switching off

The dial gauge goes automatically into stand-by if not used for 10 minutes, unless Auto OFF mode has been turned off (see Chap. 4, Second level functions)

Stand-by mode can be forced by a prolonged press (> 2 sec) on SET :



In stand-by mode, the value of the origin is retained by the sensor (SIS mode), and the instrument automatically restarts with any movement of the measurement probe, RS command, *Bluetooth*® request or press of a button.

The instrument can be switched off completely for a long period of non-use, but this will necessitate a zero reset on restart (the origin will be lost):

- Prolonged press (>4 sec) on SET :



13. Re-initialising the instrument

The initial instrument settings can be restored at any time by a prolonged press (>4 sec) simultaneously on MODE and SET until the message rESEt is displayed.

14. Personalising the instrument

Access to the functions of your instrument can be personalised, for more information see manufacturer's website (requires you to connect your instrument via a Proximity or Power RS / USB cable).

Possibilities:

- Enable or disable the required functions
- Modify access to the Second level functions (direct access)

15. Connecting the instrument

The instrument can be connected to a peripheral via a Proximity (RS or USB), Power (RS or USB) cable, or *Bluetooth*®.
See page 2 for connecting the Power cable.
Measured values can be transmitted and the instrument driven using predefined retro-commands (see chap. 16 for a list of the main commands)

Note:
In Tolerance mode, the tolerance limit lights remain lit only for a few seconds while the measurement stabilises. On the other hand, they will remain lit continuously if the instrument is connected to, and powered by, the Power RS (USB) cable.

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16. List of the main commands

Selection and configuration

CHA+ / CHA-	Change measurement direction
FCT0 ...9...A...F	Assign «favourite» function
MM / IN	Change measurement unit
KEY0 / KEY1	Lock / unlock keypad
MUL [+/-]xx.xxxx	Modification of the multiplier
PRE [+/-]xxx.xxx	Modify preset value
STO1 / STO0	Activate / de-activate HOLD
TOL1 / TOL0	Activate / de-activate tolerances
ECO1 / ECO 0	Activate / de-activate economic mode
INTE1 / INTE0	2 points measurement mode
LCAL dd.mm.yy	Modify last calibration date
NCAL dd.mm.yy	Modify next calibration date
NUM x...x (up to 20 chars)	Modify the instrument number
TOL +/-xxx.xxx +/-yyy.yyy +/-zzz.zzz	Inputting nominal and current tolerance limits
MIN /MAX /DEL /NOR	Selecting MIN, MAX, Delta, Normal mode
CLE	Re-initialisation of MIN, MAX or Delta
UNI1 / UNI0	Activate / de-activate change of units
OUT1 /OUT0	Activate / de-activate contin. data transmission
PRE ON / PRE OFF	Activate / de-activate Preset function
PRE	Recall Preset
SET	Zero reset
RES1 / RES2 / RES3	Change of resolution
AOFF	Activates/deactivates the automatic switch-off
CFGBAR NOR MAX	Keep Bargraph on Max value
SBY xx	xx number of minutes before stand-by

Bluetooth®

BT0/BT1	Activate/de-activate *Bluetooth*® module
BTRST	Reset pairing information

Interrogation

CHA?	Measurement sense?
FCT?	«favourite» function active?
UNI?	Measurement unit active?
KEY?	Keypad locked?
MUL?	Multiplier value
PRE?	Preset value?
STO?	Status of HOLD function?
TOL?	Current tolerance limit values?
ECO?	Current economic mode
INTE ?	2 points mode ?
LCAL?	Date of last calibration?
NCAL?	Date of next calibration?
NUM?	Instrument number?
?	Current value (mode Tol, value followed by <=>)
MOD?	Active mode (MIN, MAX, Delta or Normal)?
SET?	Main instrument parameters?
ID?	Instrument identification code?

Maintenance functions

BAT?	Battery status (BAT1 = OK, BAT0 = low battery)
OFF	Switch-off (wake up using a button or RS)
RST	Re-initialisation of the instrument
SBY	Put instrument in stand-by (SIS)
VER?	Version No. and date of firmware
CFGBAR?	Bargraph configuration
MAC?	*Bluetooth*® MAC address?

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 National Office of Metrology.

CERTIFICAT DE CONFORMITE
Nous certifions que cet instrument a été fabriqué et contrôlé selon nos normes de qualité et en référence avec des étalons dont la traçabilité est reconnue par l'office national de métrologie.

QUALITÄTSZEUGNIS
Wir bestätigen, dass dieses Gerät gemäss unseren internen Qualitätsnormen hergestellt wurde und mittels Normalen mit anerkannter Rückverfolgbarkeit, kalibriert durch das Nationalamt für Metrologie, geprüft worden ist.

CERTIFICATO DI CONFORMITÀ
Con il presente si certifica che questo strumento è stato prodotto secondo il nostro standard sulla qualità e controllato rispetto a campioni di riferibilità riconosciuta dall'ufficio nazionale di metrologia

CERTIFICADO DE CONFORMIDAD
Certificamos que este instrumento ha sido fabricado conforme a nuestras normas de calidad y ha sido controlado en relación con patrónes de trazabilidad reconocida por la oficina nacional de metrología.

The *Bluetooth*® word mark and logos are registered trademarks owned by the *Bluetooth*® SIG, Inc. and any use of such marks by Sylvac is under license. Other trademarks and trade names are those of their respective owners.

U.S./Canada Certification

Sylvac

m.n.: S_Dial WORK

This device contains
FCC ID: 2AAQS-ISP091201
IC: 11306A-ISP091201

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:

This module is based on Nordic Semiconductor nRF8001 µBlue *Bluetooth*® Low Energy Platform. The nRF8001 is a single chip transceiver with an embedded baseband protocol engine, suitable for ultra-low power wireless applications conforming to the *Bluetooth*® Low Energy Specification contained within v4.0 of the overall *Bluetooth*® specification. The nRF8001, used in the current revision of ISP091201, is a production product using a RoM for the baseband protocol engine.

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.



Mexico certification

Contiene modulo inalámbrico
Marca: Sylvac
Modelo: ISP091201D
IFT: RCPSYIS14-0655

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

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Email admin@sylvac.ch
www.sylvac.ch

EU DECLARATION OF CONFORMITY (DoC)

We, Sylvac SA, hereby declare under our sole responsibility that the product

Name	S_Dial WORK Analog Nano BT
Description	Digital Indicator Analog Nano with Bluetooth® wireless technology
Part Numbers	805.6307, 805.6507

has been submitted to a conformity assessment and fulfils the essential requirements of the following European directives

2001/95/EC	General product safety
2014/30/EU	EMC
2011/65/EU & 2015/863/EU	RoHS
2014/53/EU	Radio Equipment Directive (RED)

and complies with the following harmonized standards or other normative documents

EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use – EMC requirements
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances
EN 300 328 V1.7.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems

Person authorized to compile the technical file and issue the declaration of conformity: Eric Schnyder

Place and date of issue	Yverdon-Les-Bains, September 12, 2019
Name (position)	Eric Schnyder (CEO)
Signature	

