

SD1 universal sensor display

The sensor display unit **SD1** was especially developed for industrial use. The robust aluminium case with rubber shock protection as well as a high protection class allow usage in rough manufacturing environment. The display is rotatable, a numeric display shows the measuring values with high resolution and an analogue display with coloured LEDs presents clearly the tolerance status of the component.

The sensor display SD1 features a large scope of operation and can be configured freely for the particular application as required by a windows software. Thereby functions can be removed or activated and settings can be preset.

Image : Front panel

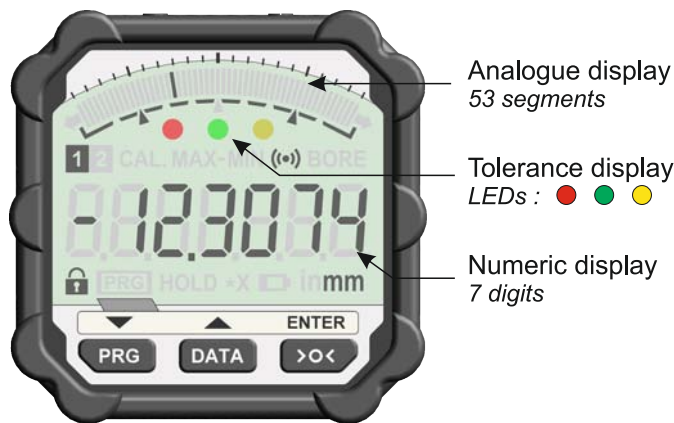
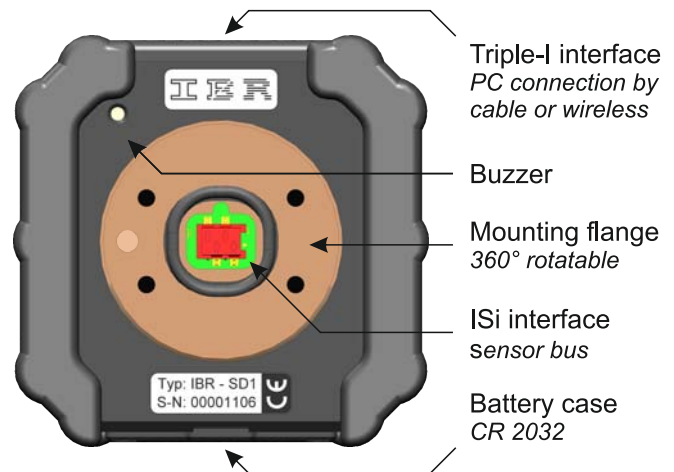


Image : Back panel



Technical data :

Mechanical characteristics	
Case	Aluminium, rubber shock protection
Front plane	Acryl glass (scratch-proof coated)
Dimensions / Weight	(WxHxD) 60 x 59.5 x 21.7 mm / 95 g
Electrical characteristics	
Power supply	Battery (CR2032)
Battery lifetime	approx. 8000 h (SD1 incl. probe)
Measuring rate	adjustable, 2 ... 20 values / sec
LCD display	
Display type	Liquid crystal display, reflective
Numeric display	7 digits (10.5 mm)
Analogue display	53 segments
LEDs / Acoustical output	
Tolerance display	3 LEDs : 1x red, 1x green, 1x yellow
Buzzer	Piezo
Connections	
ISi interface	Bus connection for sensors, hand / foot switch, tolerance adapter, ...
Triple-I interface	Connection for IBR radio modules or cable with USB / RS232 interface
Measuring systems	
Measuring range, resolution, precision, ... are defined by the connected measuring probe or sensor. Example : Measuring probe IMS-5S → Range 5mm, Resolution 0.1µm	
Environmental conditions	
Operation / Storage temp.	+41 ... +113 °F / -4 ... +158 °F
Protection class	IP65 (CEI / IEC 529)
EMC according to EN50081 - 2 and EN50082 - 2	

Software functions :

Basic functions	
Unit / Measuring direction	mm, inch / positive, negative
Resolution	0.001 / 0.0001 / optional 0.00001 mm
Measuring inputs	
Number	2
Combination by factors	±0.001 ... ±59.999 per measuring input
Measuring mode	
Static measurement	Yes / optional Hold mode
Dynamic measurement	Min, Max, TIR, Mean, Bore
Calibration	
Zero adjustment / Preset	with one master
Calibration	with two masters (gain & offset)
Forced calibration	by temperature change or elapsed time
Tolerance limits / Grading	
Tolerance type	Absolute tolerance limits or nominal size with relative tolerances
Number of grades	2 ... 30
Handling and communication	
Favorite buttons	freely definable for each button
Hand / foot switch	send measuring value, calibrate, ...
Tolerance adapter	output tolerance status / grade
Triple-I interface	measuring value output, programming
Password protection	for programming / for calibration
Configuration of analogue display	
Display mode	Bargraph / Single segment
Bargraph origin	Left / Center / Right
Special features	
Windows software for configuration of sensor display SD1	

SD1 short operating instruction :



← Key function in programming menu

← Key function in measuring mode



Key function in :	Measuring mode	Programming menu
PRG	Call programming menu	▼ Decrease flashing display (- 1)
> 2 sec.	Freely programmable favorite key	Exit programming menu
DATA	Data transfer Start / Stop dynamic measurement	▲ Increase flashing display (+ 1)
> 2 sec.	Freely programmable favorite key	- - -
>O<	Zero adjustment	ENTER Confirm flashing display
> 2 sec.	Freely programmable favorite key	Exit menu item

Windows configuration software SD1_Win.exe

Menu view on SD1 LCD display

Manufacturer configuration of SD1 functions (Level 1)

Basic functions	Selection of Unit <input checked="" type="checkbox"/> Selection of Resolution <input checked="" type="checkbox"/> Selection of measuring direction <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 mm 0.0001 positive	OK Cancel Help
Calibration	Zeroadjustment / Preset <input checked="" type="checkbox"/> 2-Master calibration <input checked="" type="checkbox"/> Temperature forced calibration <input checked="" type="checkbox"/> Timer forced calibration <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 20.0000 Preset -0.0500 Min- Master 0.0500 Max- Master 3.0 °C Off	
Measuring inputs	Measuring input A <input checked="" type="checkbox"/> Measuring input B <input type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 <input checked="" type="checkbox"/> + A <input type="checkbox"/> + B	
Measuring modes	<input checked="" type="checkbox"/> Static <input checked="" type="checkbox"/> Mean (Max + Min)/2 <input checked="" type="checkbox"/> Min <input checked="" type="checkbox"/> TIR (Max- Min) <input checked="" type="checkbox"/> Max <input checked="" type="checkbox"/> Bore (2 point bore mea.)	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 Static	
Grading mode	Number of grades <input checked="" type="checkbox"/> Display value on numeric display <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 Off Measuring value	
Tolerance limits	<input checked="" type="radio"/> Nominal size with relative tolerance limits (e.g. 20 mm +0.02 / -0.01) <input type="radio"/> Absolute tolerance limits (e.g. 20.02 mm / 19.99 mm)	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 20.0000 Nominal size <input checked="" type="checkbox"/> 0.0500 UT (+ Tolerance) -0.0500 LT (- Tolerance)	
Tolerance LEDs	Display colour <input checked="" type="checkbox"/> Display output time <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 Red Exceeding UT Red Undercutting LT 2 seconds	
Analogue display	Mode of analogue display <input checked="" type="checkbox"/> Origin of analogue display <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 Bargraph Center	
Display control	Freeze display on static measurement (hold) <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 Off	
Favorite buttons in measuring mode (button pressed for 2 sec)	Display switchover : <input checked="" type="checkbox"/> Dyn. mode (Min, Max, ...) <input checked="" type="checkbox"/> Mea. value / grade <input checked="" type="checkbox"/> Mea. value / nom. size variation <input checked="" type="checkbox"/> Mea. value / temperature <input checked="" type="checkbox"/> Mea. value / battery voltage <input checked="" type="checkbox"/> Unit <input checked="" type="checkbox"/> Resolution	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 'PRG' button Delete zeroadjustment / cal. 'DATA' button Autom. data output on changing of mea. value (on / off) '>O<' button Switch gauge off	
ISI hand / foot switch	Assign function <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 No function	
Passcodes	Passcode for programming menu (4 digits) <input checked="" type="checkbox"/> Passcode for calibration (4 digits) <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 <input type="checkbox"/> Off <input type="checkbox"/> Off	
Special parameters	Auto-Power-Off time <input checked="" type="checkbox"/> Measuring rate <input checked="" type="checkbox"/> Button tone <input checked="" type="checkbox"/> Output time of error messages on numeric display <input checked="" type="checkbox"/> Data output over Triple-I interface <input checked="" type="checkbox"/>	Programmable : <input checked="" type="checkbox"/> Factory settings in SD1 10 minutes 10 values / second On 1600 msec <input checked="" type="checkbox"/> Display value <input type="checkbox"/> Min <input type="checkbox"/> Max <input type="checkbox"/> Grade	

- Unit
- rESoL.
- dir.
- PrESEt
- 2-CAL.
- dt.-CAL.
- tF.-CAL.
- FACTOR / ProBES
- SEt. OP.
- GrAdinG
- SEt. Pnt.
- SEt. toL.
- toL. LED
- CoL. diS.
- hoLd
- but. PRG.
- but. dAtA.
- but. CAL.
- FootS.
- P.C. ProG.
- P.C. CAL.
- Auto.oFF
- SA.rAtE
- BEEP

High precision dial gauge SD1 - IB5

The SD1-IB5 is a high precision dial gauge with a free of clearance ball bearing and a linearized, inductive absolute measuring system. The dial gauge was specially designed for industrial use in rough manufacturing environment.

Type	Article
SD1-IB5	High precision dial gauge, spring pushed
SD1-IB5P	High precision dial gauge, pneumatically pushed
SD1-IB5V	High precision dial gauge with vacuum lifting

Technical data : SD1-IB5

Mechanical characteristics	
Case	Aluminium, rubber shock protection
Front plane	Acryl glass (scratch-proof coated)
Dimensions / Weight	(WxHxD) 58 x 111 x 35,5 mm / 192 g
Electrical characteristics	
Power supply	Battery (CR2032)
Battery lifetime	approx. 8000 h
Metrological characteristics	
Measuring range	5 mm
Resolution	0.1 μm , optional 0.01 μm
Accuracy	< 1 μm
Measuring rate	adjustable, 2 ... 20 values / sec
Measuring force	0.7 N (optional 0.4 ... 2.0 N)
Environmental conditions	
Operation / Storage temp.	+41 ... +113 °F / -4 ... +158 °F
Protection class	IP65 (CEI / IEC 529)

EMC according to EN50081 - 2 and EN50082 - 2



Note :
The IB5 measuring sensor is fixed with 4 screws on the display and is to exchange.

Modular dial gauge SD1 - PH1

The SD1-PH1 is a modular dial gauge designed to work with IMS measuring probes.

Type	Article
SD1-PH1	Modular dial gauge with changeable IMS measuring probe (spring pushed)

Technical data : SD1-PH1

Mechanical characteristics	
Case	Aluminium, rubber shock protection
Front plane	Acryl glass (scratch-proof coated)
Dimensions / Weight	(WxHxD) 58 x 111 x 35,9 mm / 165 g
Electrical characteristics	
Power supply	Battery (CR2032)
Battery lifetime	approx. 8000 h
Measuring rate	adjustable, 2 ... 20 values / sec
Measuring system	
Measuring range, resolution, accuracy, ... are defined by the connected measuring probe or sensor. Example : Measuring probe IMS-5S → Range 5mm, Resolution 0.1 μm	
Environmental conditions	
Operation / Storage temp.	+41 ... +113 °F / -4 ... +158 °F
Protection class	IP65 (CEI / IEC 529)

EMC according to EN50081 - 2 and EN50082 - 2



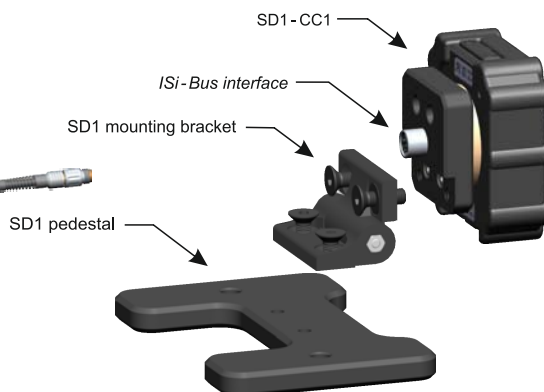
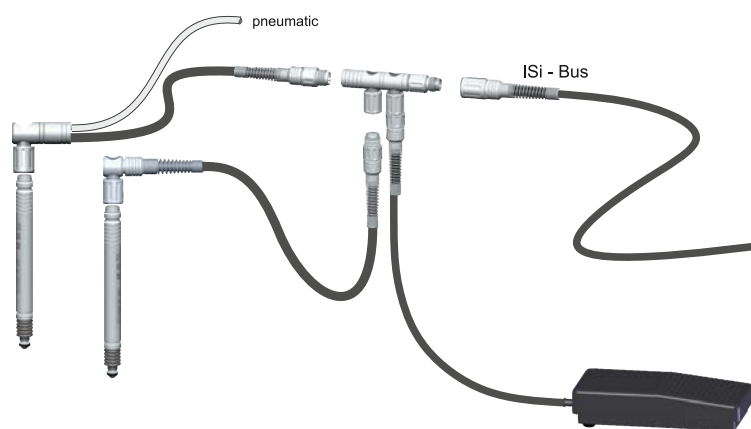
Compact display SD1 - CC1

The SD1-CC1 is a very efficient, powerful display with ISi-Bus interface. Due to the ISi bus, several sensors, foot and hand switches and tolerance adapters can be connected.

Technical data : SD1-CC1

Mechanical characteristics	
Case	Aluminium, rubber shock protection
Front plane	Acryl glass (scratch-proof coated)
Dimensions / Weight	(WxHxD) 58 x 58 x 32,8 mm / 149 g
Electrical characteristics	
Power supply	Battery (CR2032)
Battery lifetime	approx. 6000 h (incl. 2 probes)
Measuring rate	adjustable, 2 ... 20 values / sec
Connections	
ISi interface	Bus connection for sensors, hand / foot switch, tolerance adapter, ...
Triple-I interface	Connection for IBR radio modules or cable with USB / RS232 interface
Environmental conditions	
Operation / Storage temp.	+41 ... +113 °F / -4 ... +158 °F
Protection class	IP65 (CEI / IEC 529)
EMC according to EN50081 - 2 and EN50082 - 2	

Type	Article
SD1-CC1	Compact display with ISi-Bus interface
SD1-mounting bracket	Slewable mounting bracket
SD1-pedestal	Pedestal for compact display



Accessories for SD1 dial gauges and displays

Type	Article
3i-USB	Triple -I connection cable for USB interface
3i-232	Triple -I connection cable for RS232 interface
ISM-3i	Triple -I radio module for ISM band
BLE-3i	Triple -I radio module for bluetooth BLE

