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Pressure
- hand-held instrument SL-P-GL
- full set SL-P Set

- **Water-proof and shock resistant instrument**
- **Pressure sensors**
- **Software for operation, configuration, data read-out, etc.**
- **USB adapter**
- **High-class case**
- **Calibration certificate**
- **Gratis calibration after 1 year with automatic recall from calibration laboratory**

Characteristic

The SL-P measures pressure with external changeable probes. The devices feature min-/max- value memory, HOLD, auto range, logger function with cyclic recording (10 000 data sets) or single values (1 000 data sets), analog output and a large illuminated 4 $^{1}/_{2}$ - digit display.

Pressure probes made of plastic and stainless steel for absolute and relative pressure are suitable changeable probes.
The housing, connectors and probes are water-proof.

Specifications

Instrument SL-P

Sensor connections	:	2
Sensor	:	7-pole bayonet socket
Output	:	4-pole socket for serial interface and supply, analog output 0..1 V
Suitable measuring cells:		stainless steel or plastic sensors
Measuring ranges (Resolution)	:	from -1.999..2.500 mbar (0.001 mbar) till 0..1000 bar (1 bar)
Displayed units	:	depends on measuring range selection (depending on sensor) mbar, bar, Pa, kPa, MPa, mmHg, inHg, PSI, mH_2O, or freely selectable “user”-unit
Measuring frequency	:	4 measurements / s or 1000 measurements / s
Accuracy	:	± 0.1 % FS ± 1 digit
Display	:	two 4 ½ -digit 7-segment display (15 mm and 12 mm)
Protection class	:	IP65 / IP67 (housing and connections)
Housing	:	material made of shock-resistant ABS w/ support, incl. silicone protection cover
Supply	:	2 x AAA battery (incl. in scope of supply) current consumption <2.0 mA
Battery operation	:	approx. 500 hours
Dimensions	:	160 x 86 x 37 mm (H x W x D)
Weight	:	250 g incl. battery

Functions

- **Min- / max- value memory**
  Highest and lowest value are saved
- **Hold**
  Freezing at keystroke
- **Automatic-Off function**
  Device gets automatically turned off after selected time. (0..120 min., or deactivated)
- **Status indicator for battery**
  Bargraph display, battery change indicator “BAT” display
- **Background illumination**
  Duration selectable (on / off or 5 s … 2 min)
- **User-defined display unit**
  Conversion to arbitrary unit by linear factor
- **Average value filter** selectable: 1 ... 120 s
- **Leakage-test**
  Display of pressure change rate (/s, /min, /h)
- **Air velocity / flow rate**
  Measurement via pitot tube (accessories)
- **Analog output**
  0..1 V freely scalable, connection: 4-pole bayonet socket
  Resolution: 12 bit
- **Data logger**
  Measuring value memory:
  Cyclic: 8 000 data sets, multiple recordings
  Single: 1 000 data sets (with measuring with measuring point input, 40 selectable measuring point texts or numbers)
- **Min- / max- alarm**
  Continuous monitoring of alarm boundaries,
  3 alarm conditions:
  - off: alarm function inactive
  - on: alarm notification via display, integrated buzzer, interface
  - no Sound: alarm notification via display and interface

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Product information

GHMsilverline

Pressure sensors

The set can be provided with 1 or 2 sensors depending on customers requirements.
Possible sensors:

Plastic pressure sensors:
(with connection cable)

	measuring range	(max.) overload	resolution
Relative pressure sensors			
SL-K01R	-1.999..+2.500 mbar rel.	200 mbar	0.001 mbar
SL-K02R	-19.99..+25.00 mbar rel.	300 mbar	0.01 mbar
SL-K03R	-199.9..+350.0 mbar rel.	1 bar	0.1 mbar
SL-K04R	-1000..+2000 mbar rel.	4 bar	1 mbar
SL-K05R	-1.00..+10.00 bar rel.	10,34 bar	10 mbar
Absolute pressure sensors			
SL-K01A	0..1300 mbar abs.	4 bar	1 mbar
SL-K02A	0..2000 mbar abs.	4 bar	1 mbar
SL-K03A	0.00..7.00 bar abs.	10.34 bar	10 mbar

Specifications

Sensor	:	piezoresistive pressure sensor
Pressure connection	:	2 connection pin made of nylon for tube 6 x 1 mm (6 mm outer-Ø and 4 mm inner-Ø)
Electronics	:	amplifier and data memory for sensor data (measuring range, calibration, etc.)

Accuracy (typ.)

Relative pressure sensor:		hysteresis / linearity: ± 0.15 % FS temp.influence (0..50 °C) : ± 1.0 % FS
Absolute press. sensor	:	hysteresis / linearity: ± 0.15 % FS temp.influence (0..50 °C) : ± 0.4 % FS
Working temperature	:	0..50 °C
Relative humidity	:	0..95 % RH (non condensing)
Storage temperature	:	-40..+85 °C
Housing	:	made of ABS with attachment eye
Dimensions	:	without connection pins: 68 x 32.5 x 15 mm (L x W x D), with connection pins: 68 x 32.5 x 27.5 mm(L x W x D)
Weight	:	75 g
Device connection	:	1 m PVC connection cable, screened, permanently fixed with 7-pole bayonet plug

Stainless steel pressure sensors:
(without connection cable)

	Measuring range	(max.) overload	resolution
Relative pressure sensors			
SL-E01R	-1000..+1500 mbar rel.	10 bar	1 mbar
SL-E02R	-1000..+3000 mbar rel.	17 bar	1 mbar
SL-E03R	0.0..100.0 mbar rel.	1 bar	0.1 mbar
SL-E04R	0.0..250.0 mbar rel.	2 bar	0.1 mbar
SL-E05R	0.0..400.0 mbar rel.	2 bar	0.1 mbar
SL-E06R	0..1000 mbar rel.	5 bar	1 mbar
SL-E07R	0..2500 mbar rel.	10 bar	1 mbar
SL-E08R	0..4000 mbar rel.	17 bar	1 mbar
SL-E09R	0..6000 mbar rel.	35 bar	1 mbar
SL-E10R	0.00..10.00 bar rel.	35 bar	10 mbar
SL-E11R	0.00..25.00 bar rel.	50 bar	10 mbar
SL-E12R	0.00..40.00 bar rel.	80 bar	10 mbar
SL-E13R	0.00..60.00 bar rel.	120 bar	10 mbar
SL-E14R	0.0..100.0 bar rel.	200 bar	0.1 bar
SL-E15R	0.0..160.0 bar rel.	320 bar	0.1 bar
SL-E16R	0.0..250.0 bar rel.	500 bar	0.1 bar
SL-E17R	0.0..400.0 bar rel.	800 bar	0.1 bar
SL-E18R	0.0..600.0 bar rel.	1200 bar	0.1 bar
SL-E19R	0..1000 bar rel.	1500 bar	1 bar
Absolute pressure sensors			
SL-E01A	0..1000 mbar abs.	5 bar	1 mbar
SL-E02A	0..2500 mbar abs.	10 bar	1 mbar
SL-E03A	0..4000 mbar abs.	17 bar	10 mbar
SL-E04A	0..6000 mbar abs.	35 bar	10 mbar
SL-E05A	0.00..10.00 bar abs.	35 bar	10 mbar
SL-E06A	0.00..16.00 bar abs.	80 bar	10 mbar
SL-E07A	0.00..25.00 bar abs.	50 bar	10 mbar

Specifications

Sensor	:	pressure sensor made of stainless steel (parts in contact with media), suitable for aggressive media, water, etc.
Pressure connection	:	connection thread G ½B
Electronics	:	amplifier and data memory for sensor data (measuring range, calibration, etc.), electronics encapsulated

Accuracy (typ.)

Hysteresis / linearity	:	± 0.15 % FS
TK zero point / slope	:	± 0.02 % FS / K
Measuring media temp.	:	-25..+100 °C (compensated range: 0..70 °C)
Working temperature	:	-20..+80 °C
Storage temperature	:	-40..+80 °C
Housing	:	made of CrNi-steel or Elgiloy (parts in contact with media)
Dimensions	:	88.5 mm, Ø 27 mm
Weight	:	ca. 220 g
Protection class	:	IP67 (sensor)
Cable connection	:	M16-panel plug

Connection cable for steel pressure sensors SL-EK01

PVC connection cable , screened with 7-pole bayonet plug and M16-socket, cable and bayonet plug water-proof acc. to IP 67.
Standard length: 1 m (lengths up to 10 m possible)

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Case SKK2020

High-quality case made of robust PP incl. rigid foam inlay with cut-outs for equipment.

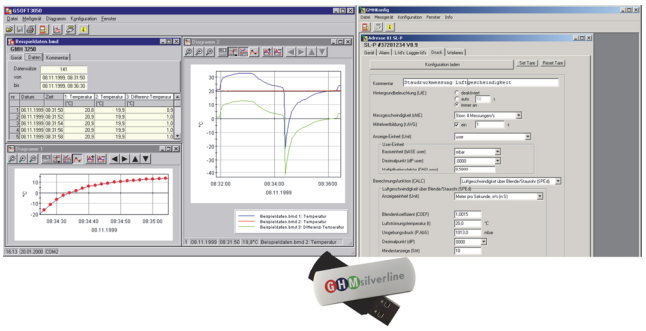
Dimensions:
450 x 360 x 140 mm (H x W x D)

Manufacturer's calibration WSD5 / WSD10

Calibration certificate

WSD5	:	**included to set and as voucher** 5 test values raising, 5 falling
WSD10	:	**optionally upon surcharge** 10 test values raising, 10 falling

Software GSOFT 3050 and GMHKonfig



GSOFT 3050
The software allows operation of the logger function of hand-held measuring devices. The logger recording can be started and stopped and the logger data can be read-out and visualized.
The multilingual software is executable with Windows 98, Me, NT, 2000, XP, Vista and 7.
The data is read-out via USB interface of a PC by means or an USB adapter and cable (included).

- Display of status information
- Setting of alarm function
- Operation of logger function
- Diagram display of logger data
- Logger data print-out
- Save logger data
- Export of logger data to ASCII (text, usable for MS Excel®)
- Memorizing of window settings

GMHKonfig
The software GMHKonfig allows the configuration of hand-held measuring instruments. It automatically detects the connected device type and provides the corresponding functions.

- Device configuration
- Set logger IDs
- Initialization of menu parameters
- etc.

Adapter and cable SL-USB

Electrically isolated interface converter with power supply via USB incl. connection for analog output

Consumables

WSD5	:	calibration certificate for 5 test points raising, 5 falling
WSD10	:	calibration certificate for 10 test points raising, 10 falling
Pressure sensors	:	all pressure sensors (plastic or stainless steel) according to table at page 2
SL-EK01	:	PVC connection cable for stainless steel sensors, standard length: 1m (lengths up to 10 m possible)

Scope of supply SL-P-GL

Device bulk:
- SL-P (pressure hand-held measuring device),
- Operating manual,
- Short manual,
- Battery 2 x AAA

Scope of supply SL-P Set

Set:
- SL-P (pressure hand-held measuring device),
- 1 pressure sensor (plastic or stainless steel),
- SKK (case incl. inlay),
- SL-USB (adapter and cable),
- Flash drive with GSOFT 3050 (software),
- WSD5 (calibration certificate),
- Voucher for 1x WSD5,
- Operating manual,
- Short manual,
- Battery 2 x AAA

Optional:
Second pressure sensor (plastic or stainless steel)

Product key

SL-P-GL (device bulk)

	1.	2.		3.	4.
SL-P Set	–		-	–	-

1.	**Pressure sensor 1**		
	K01R	-1.999..+2.500 mbar rel.	plastic sensor
	K02R	-19.99..+25.00 mbar rel.	plastic sensor
	K03R	-199.9..+350.0 mbar rel.	plastic sensor
	K04R	-1000..+2000 mbar rel.	plastic sensor
	K05R	-1.00..10.00 bar rel.	plastic sensor
	K01A	0..1300 mbar abs.	plastic sensor
	K02A	0..2000 mbar abs.	plastic sensor
	K03A	0.00..7.00 bar abs.	plastic sensor
	E01R	-1000..+1500 mbar rel.	st. steel sensor
	E02R	-1000..+3000 mbar rel.	st. steel sensor
	E03R	0.0..100.0 mbar rel.	st. steel sensor
	E04R	0.0..250.0 mbar rel.	st. steel sensor
	E05R	0.0..400.0 mbar rel.	st. steel sensor
	E06R	0..1000 mbar rel.	st. steel sensor
	E07R	0..2500 mbar rel.	st. steel sensor
	E08R	0..4000 mbar rel.	st. steel sensor
	E09R	0..6000 mbar rel.	st. steel sensor
	E10R	0.00..10.00 bar rel.	st. steel sensor
	E11R	0.00..25.00 bar rel.	st. steel sensor

	E12R	0.00..40.00 bar rel.	st. steel sensor
	E13R	0.00..60.00 bar rel.	st. steel sensor
	E14R	0.0..100.0 bar rel.	st. steel sensor
	E15R	0.0..160.0 bar rel.	st. steel sensor
	E16R	0.0..250.0 bar rel.	st. steel sensor
	E17R	0.0..400.0 bar rel.	st. steel sensor
	E18R	0.0..600.0 bar rel.	st. steel sensor
	E19R	0..1000 bar rel.	st. steel sensor
	E01A	0..1000 mbar abs.	st. steel sensor
	E02A	0..2500 mbar abs.	st. steel sensor
	E03A	0..4000 mbar abs.	st. steel sensor
	E04A	0..6000 mbar abs.	st. steel sensor
	E05A	0.00..10.00 bar abs.	st. steel sensor
	E06A	0.00..16.00 bar abs.	st. steel sensor
	E07A	0.00..25.00 bar abs.	st. steel sensor
2.	**Connection cable for stainless steel pressure sensor 1**		
	0	no connection cable (plastic sensors)	
	EK01	1 connection cable with 1m length	
	EKxx	1 connection cable with xx m length (02..10 m length possible)	

	Pressure sensor 2 (optional) incl. calibration certificate		
3.	**Pressure sensor 2**		
	0	no second pressure sensor	
	K01R	-1.999..+2.500 mbar rel.	plastic sensor
	K02R	-19.99..+25.00 mbar rel.	plastic sensor
	K03R	-199.9..+350.0 mbar rel.	plastic sensor
	K04R	-1000..+2000 mbar rel.	plastic sensor
	K05R	-1.00..10.00 bar rel.	plastic sensor
	K01A	0..1300 mbar abs.	plastic sensor
	K02A	0..2000 mbar abs.	plastic sensor
	K03A	0.00..7,00 bar abs.	plastic sensor
	E01R	-1000..+1500 mbar rel.	st. steel sensor
	E02R	-1000..+3000 mbar rel.	st. steel sensor
	E03R	0.0..100.0 mbar rel.	st. steel sensor
	E04R	0.0..250.0 mbar rel.	st. steel sensor
	E05R	0.0..400.0 mbar rel.	st. steel sensor
	E06R	0..1000 mbar rel.	st. steel sensor
	E07R	0..2500 mbar rel.	st. steel sensor
	E08R	0..4000 mbar rel.	st. steel sensor
	E09R	0..6000 mbar rel.	st. steel sensor
	E10R	0.00..10.00 bar rel.	st. steel sensor
	E11R	0.00..25.00 bar rel.	st. steel sensor
	E12R	0.00..40.00 bar rel.	st. steel sensor
	E13R	0.00..60.00 bar rel.	st. steel sensor
	E14R	0.0..100.0 bar rel.	st. steel sensor
	E15R	0.0..160.0 bar rel.	st. steel sensor
	E16R	0.0..250.0 bar rel.	st. steel sensor
	E17R	0.0..400.0 bar rel.	st. steel sensor
	E18R	0.0..600.0 bar rel.	st. steel sensor
	E19R	0..1000 bar rel.	st. steel sensor
	E01A	0..1000 mbar abs.	st. steel sensor
	E02A	0..2500 mbar abs.	st. steel sensor
	E03A	0..4000 mbar abs.	st. steel sensor
	E04A	0..6000 mbar abs.	st. steel sensor
	E05A	0.00..10.00 bar abs.	st. steel sensor
	E06A	0.00..16.00 bar abs.	st. steel sensor
	E07A	0.00..25.00 bar abs.	st. steel sensor
4.	**Connection cable for stainless steel pressure sensor 2**		
	0	no connection cable (plastic sensors)	
	EK01	1 connection cable with 1m length	
	EKxx	1 connection cable with xx m length (02..10 m length possible)	

Ordering example:
SL-P Set – K05R-0 – E07A-EK02
Set with two sensors (1x plastic sensor, 1x stainless steel sensor with 2 m connection cable)

Accessories

Prandtl-tube
for measuring of air velocity / flow rate

GDZ-01
PVC tube 6/4 (6 mm outer-Ø, 4 mm inner-Ø)
(5 bar at 23 °C)

GDZ-05
Screw connection for tube 6/4 with outside thread G ⅛

GDZ-07
Adapter reducing tube with 6 mm inner- Ø to tube 6/4

GDZ-14
Screw-in grommet for tube with 6/4 with outside thread G ⅛

GDZ-16
Screw-in grommet for tube with 6/4 with outside thread G ¼

GDZ-18
Tube clamp for tube 6/4

GDZ-20
Screw-on connection made of brass for tube 6/4 with inside thread G ¼

GDZ-21
T-piece for tube 6/4

GDZ-23
Adapter G ½ inside to G ¼ outside, made of brass