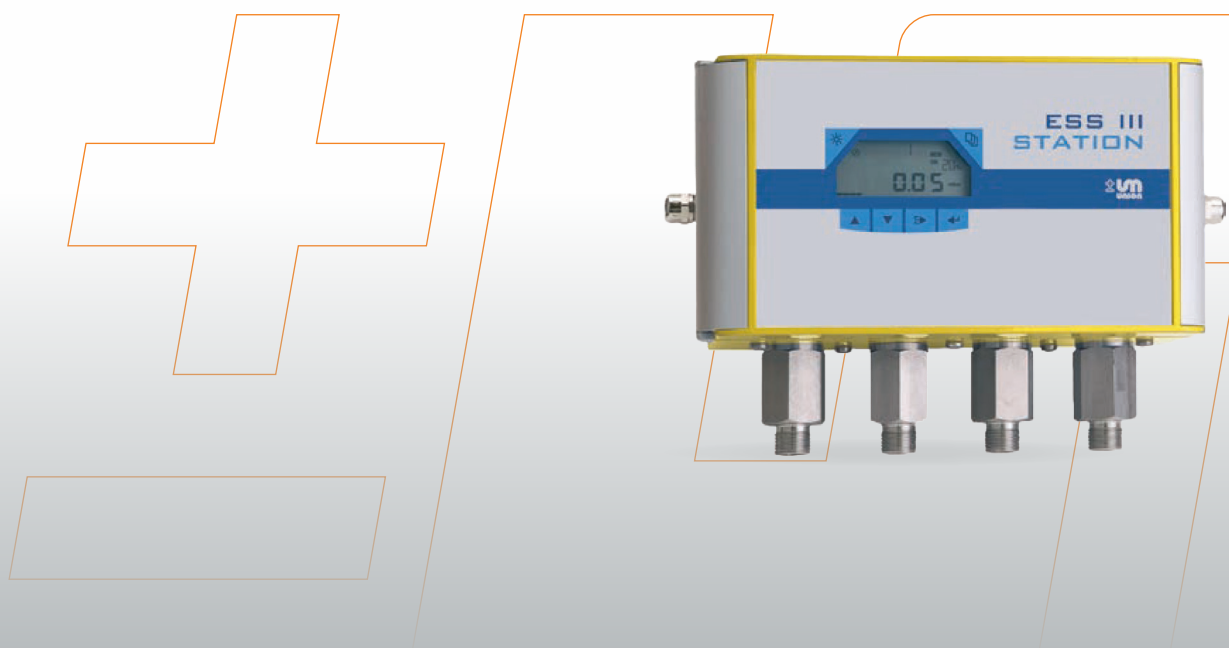


Data logger

ESS3 S4



Data logger station with four sensors

The ESS3 S4 series devices are used for recording pressure and temperature in gas pressure regulation and metering systems. They are also suitable for measurement points without a power supply, where up to four measured values need to be recorded over the long term.

The battery-powered, modular devices consist of a control unit (housing, processor, software, display), a battery, and up to four sensors. They are approved for use in explosive areas (Zones 1 and 2) and have a protection rating of IP54.

Measured values are stored in non-volatile memory and continuously displayed on the screen. Data transfer to a PC is contactless via an optical IrDA interface (USB).

A lithium battery enables operation for several years; battery status and remaining runtime are continuously monitored.

The logger can be configured, read out, and its measurement data graphically displayed using TfWin III software. Alternatively, operation is possible via buttons.

Measured parameters

- Gauge pressure
- Absolute pressure
- Differential pressure
- Barometric pressure
- Temperature
- Fault contacts (SAV, door, ...)

Applications

- Monitoring in gas pressure regulation and metering systems
- Monitoring in water pumping stations
- Stationary monitoring tasks

Application

In GDRM systems (gas pressure regulation and metering systems), the inlet and outlet pressures (as well as other measured values such as gas temperature, SAV positions, etc.) are recorded using a data logger to provide information on the operational safety of the system. Irregularities and faults can thus be detected and corrected in advance. As part of condition-based maintenance according to DVGW G495, inspection intervals can be extended. All information is immediately available on-site to maintenance personnel via the TfWin III evaluation software.

Features

- Up to four freely configurable sensors for pressure and temperature
- Up to six inputs for fault contacts (e.g., SAV, odor, door contacts, ...)
- Large data memory efficiently used via data compression, allowing data storage over several years
- Long battery life for multi-year operation without battery replacement
- Easy operation via device buttons/display
- Optical data interface to PC
- Powerful PC evaluation software
- EX protection Zone 1

Technical data ESS3 S4

Application	Measurement and recording of data (pressure and temperature) for monitoring gas pressure regulation systems
Sensor connections	Up to four sensor connections (M30) for mounting a pressure or temperature sensor. Up to six binary inputs (Reed, Namur)
Explosion protection class	Ex II 2G Ex ib IIC T4 Gb
Protection classes, housing	IP 54 W x H x D [mm]: 286 x 169 x 99 Weight [kg]: 3.5
Measuring ranges – pressure sensors	Gauge pressure: 0 ... 100/250 mbar and 0 ... 1/2.5/10/25/100 bar Differential pressure: 0 ... 100 mbar, 0 ... 1/10 bar Additional measuring ranges available on request
Measuring ranges – temperature sensors	-10 °C ... +40 °C and -30 °C ... +150 °C Additional measuring ranges available on request
Measurement interval	500 ms ... 6 h
Initial measurement accuracy	Depending on the sensor (up to 0.05 % FS)
Resolution	Up to 0.004 % FS
Communication interfaces	IrDA; display; keyboard
Operating data	Battery operation up to 10 years
Display indication	Actual value; maximum and minimum values as well as differential value, memory usage, and battery status
Settings	Time and date; upper and lower alarm limits; averaging (2 ... 600 values); resolution; measurement location name (29 characters); storage method (rolling/static)
Operation	Via menu using keyboard Via TfWin III software through IrDA interface cable
Data storage	2,000,000 date-time values / 512 kB
Typical range	2 years (with data compression)
Software	TfWin III for configuration, visualization, analysis, and archiving of data

Pressure sensor

The sensor is the metrological link to the application. Performance and user-friendliness are therefore the focus:

- Sensor replacement by the user is possible and immediately ready for operation without recalibration
- Stainless steel-encapsulated, piezoresistive sensor with high long-term stability, resistant to aggressive media
- High resolution of measured values; multiple measuring ranges possible for a single sensor
- Temperature measurement of the media
- High measurement rates due to high natural resonance frequency
- High overpressure and burst pressure resistance
- Special versions, e.g., for O₂ measurement
- Logically graduated fixed and user-selectable measuring ranges, and various accuracy classes up to ±0.05 % of FS (full-scale value)

Measuring range	Initial Accuracy % of FS ¹⁾		
	Standard ± 0,4 %	Premium ± 0,09 %	Select ± 0,05 %
0 ... 100 mbar rel.	x	x	~
0 ... 100 mbar differential pressure	x	~	~
0 ... 250 mbar rel.	x	x	~
0 ... 1 bar rel.	x	x	x
0 ... 1 bar differential pressure	x	~	~
0 ... 2,5 bar rel.	x	x	x
0 ... 2,5 bar absolute	x	x	x
0 ... 10 bar rel.	x	x	x
0 ... 10 bar absolute	x	x	x
0 ... 10 bar differential pressure	x	~	~
0 ... 25 bar absolute	x	x	x
0 ... 100 bar absolute	x	x	x
100 mbar ... 14 bar relative ²⁾	x	x	x ³⁾
2,5 bar ... 200 bar absolute ²⁾	x	x	x ³⁾
100 mbar ... 35 bar differential pressure ³⁾	x	~	~
0 ... 200 bar - 0 ... 700 bar absolute ³⁾	x	~	~
Negative pressure	x	~	~

- 1) FS: Full-scale value
2) Customer-specific measuring range; freely selectable within these limits
3) On request

Media compatibility:
All liquids and gases compatible with stainless steel 1.4301 and NBR sealing material.

Process connection:
G1/2 external thread,
G1/8 internal thread

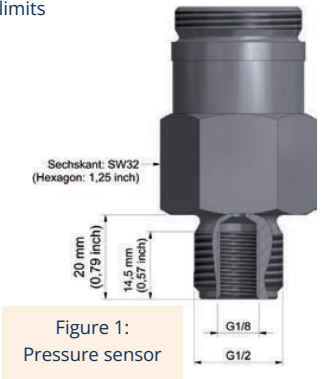


Figure 1:
Pressure sensor

Temperature sensor

The temperature sensors are suitable for installation in thermowells. Other sensors available on request.

Media compatibility: All gases and liquids compatible with stainless steel 1.4301.

Process connection: G3/4 internal thread

Measuring range	Type	Cable sensor
-10 °C ... +40 °C	Thermowell 90 mm	x
-10 °C ... +40 °C	Thermowell 140 mm	x
-30 °C ... +150 °C ¹⁾	Thermowell 90 mm	x
-30 °C ... +150 °C ¹⁾	Thermowell 140 mm	x
Initial measurement accuracy		±0,3 °C

- 1) Measuring range freely selectable within these limits

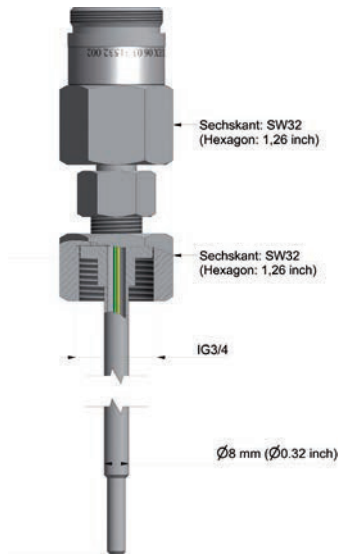


Figure 2: Thermowell



UNION Sensors GmbH
Estlandring 9, D-23560 Lübeck

Tel. +49 721 6803810
Fax +49 721 68038133
info@union-sensors.com



www.union-sensors.com

