

/S-module Internet Solar Module



Profound /S-module

The /S-module is an effective tool for geotechnical project monitoring, offering optimum flexibility in the field for small and medium sized networks with up to ten Intelligent Sensor (/S) measuring points.

An /S-sensor is equipped with a 24-bit AD converter, micro-processor, clock, network controller and memory chip. Without having to apply tedious conversion factors, an /S-sensor immediately displays the measured values in the engineering units. Various sensor types are available for measuring pore pressure, vertical displacement, load and inclination.

With the fully digital /S-module in combination with the /S-field unit you can directly set-up a geotechnical monitoring network (for up to 25 measuring points) in the field. The /S-module is the network power supply, data logger, transmitter and provides a data backup.

Wireless data transfer

Using a wireless, built-in GPRS-connection the /S-module directly uploads to a FTP server or sends the measurement data at a preset interval via email to a pc for further processing. Thus providing an excellent opportunity to monitor the project remotely.

Adaptive power management

The /S-module is powered by a Lithium battery and a built-in solar panel. The energy harvesting via the integrated solar panel ensures optimum use of the available power. The combination of both battery and solar panel enable the /S-module to efficiently operate in the field. The module can also be permanently connected to the mains, then the internal battery works as a UPS.

Note: an additional power source (external battery/mains) will be required, if a larger number of sensors is connected to the /S-module in combination with a frequent measurement or upload interval.

Technical specifications /S-module	
Measurement channels	Internal: <ul style="list-style-type: none"> Battery status Runtime Network voltage Network current Temperature Atmospheric pressure External: <ul style="list-style-type: none"> All /S sensor channels Optimised for up to 10 sensors
Protocol IS-system	CAN
Termination resistor	470 Ω
4-core cable system	Wire 1 - brown: 9V Wire 2 - black: digital Wire 3 - white: digital, inverse of wire 2 Wire 4 - blue: 0 (ground)
Internal atmospheric pressure sensor	Range 0.5...1.5 bar (absolute) Hysteresis ($0 \rightarrow P_{max} \rightarrow 0$) = $\leq 0.1\%$ Temperature compensated
Memory	1 GB (ring memory)
$t_{mail/upload}$	5, 10, 15, 20, 30 [min] 1, 2, 3, 4, 6, 8, 12, 24 [hour]
t_{sample}	1, 5, 10, 15, 20, 30 [min] 1, 2, 3, 4, 6, 8, 12, 24 [hour]
Clock stability	≤ 5 minutes/year at 25°C
Dimensions (l x w x h)	124 x 84 x 44 mm
Weight	385 grams
Protection rating	IP65 according to DIN 40 050/IEC 529
Temperature range (operating)	- 20°C to + 50°C
Module power management	Lithium-ion battery 1.1 Ah Solar panel 0.4 Wp (solar radiation AM1.5) Charger 12V 0.3A (charging time: 1 hour)
Connector	M12 female M12 male /S-network Charging Permanent external powering Programming/readout with /S-field unit
Necessary for operation	<ul style="list-style-type: none"> ISB.00351/352 /S-field unit including PC software /S-sensors e.g. BAT-sensor, /S-Liquid Level, /S-inclinometer, /S-potmeter