Interface for Sensors IS

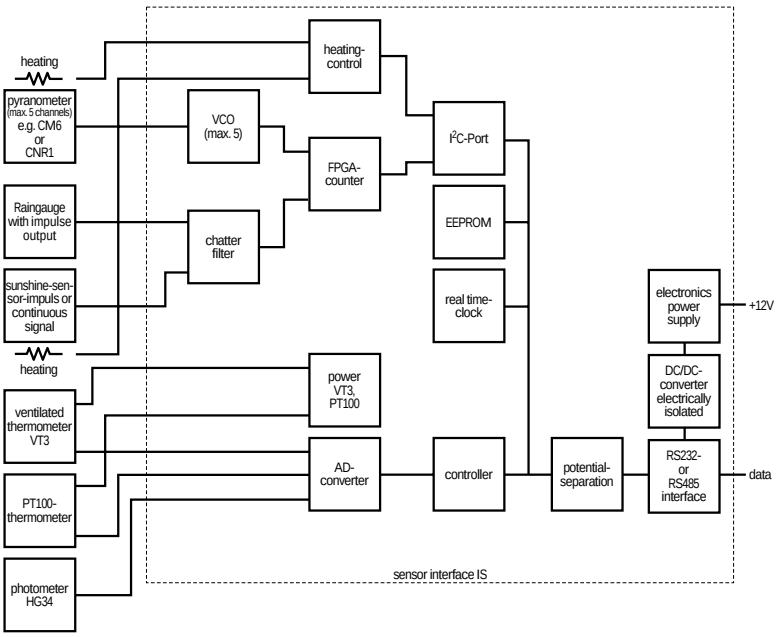
IS sensor interface

Meteorological sensors for wind speed and wind direction, illuminance, radiation, and temperature near Einsiedeln

The IS sensor interface allows the measurement of signals from simple meteorological sensors, such as rain gauges, sunshine detectors, global radiation meters and photometers, thermistor and PT100 thermometers.

The measurements are recorded in the internal data storage together with a 'time-tag'. Control of the data processing and the calling up of stored data is by means of an RS232 or an RS485 interface.

The RS485 version allows several instruments or other sensors manufactured by meteolabor ag to be driven using a sensor bus.



Operational principle

Radiation measurement

Output voltages of the pyranometer (e.g. 0... 12 mV) are amplified and used to drive a VCO (Voltage Controlled Oscillator). The number of impulses per minute emanating from the VCO are counted. This procedure is excellent for suppressing any noise on the sensor leads.

Rain gauge

The rain gauge generates an impulse each time a given amount of rain has been collected. These impulses are counted and totaled.

Sunshine duration

There are various sensors currently on the market. One type generates an impulse each second that sunshine is detected. Another type produces an output voltage of 1 volt as long as the sun is shining. Data from both types of sensors are processed using the IS sensor interface.

Temperature and brightness measurement

In the case of the PT100 sensor a holding wire current of exactly 1mA is generated. The voltage at the resistor is measured using the 4-lead technique in conjunction with a $\Delta\Sigma$-AD converter.

The voltage of the YSI thermistor (VT3) and the photometer (HG34, HG1) are also measured using $\Delta\Sigma$-AD converter.

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Technical data

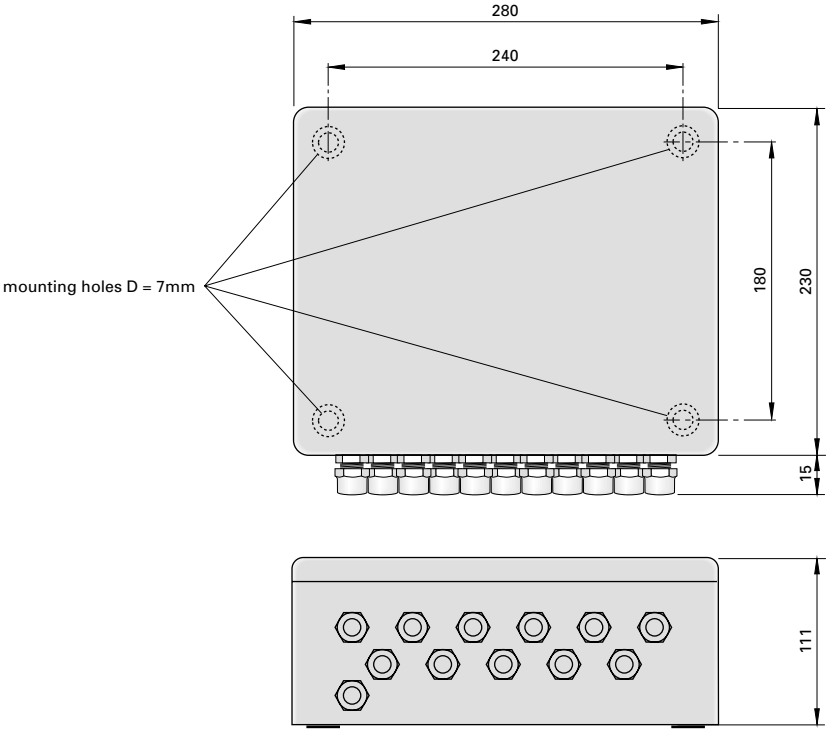
Measurement channels, pyranometers	
No. of channels:	5
Calibration factor:	for each channel
Range of measurement: (stipulate when ordering, other ranges on request)	0…10 mV 0…20 mV 0…50 mV 0…100 mV 0…1000 mV
Accuracy:	0.1%
VT3-channel	
No. of channels:	1
Sensor:	YSI thermistor
Range of measurement:	-30…+ 50°C
Resolution:	0.01°C
Accuracy over whole range:	0.2°C
PT100-channel	
No. of channels:	1
Sensor:	PT100
Range of measurement:	-20…+ 50°C
Resolution:	0.01°C
Accuracy:	0.2°C
Measuring current:	1 mA
Sunshine duration	
No. of channels:	1
Signal:	impulse or continuous signal
Resolution:	1s

Rain gauge	
No. of channels:	1
Signal:	impulse
Max. no. of impulses per minute	255 l/min
Resolution:	0.1 mm
Photometer HG34	
No. of channels:	1
Signal:	200…1000 mV
Range of measurement:	logarithmic over 8 decades approx. 10^{-3}…10^{5} Lux
Power supply	
DC:	10.5 ... 13.5 V
Current at make:	200 mA
Normal operation:	90 mA
Average current when in use:	40mA
Data storage	
Storage capacity:	60000 Byte
Interface	
Baud rate:	2400 bps (fixed)
Norm:	RS232 interface without hardware-handshake, electrically isolated or RS485 electrically isolated.
EMC	
Noise emission	EN 50081-1 living area
Interference resistance	EN 50082-2 industrial area

Special requirements

We would be pleased to discuss your individual requirements for sensors and installation of equipment, solve any special measurement problems you may have and adapt the software to suit your needs.

Dimensions



all measurements in mm

Weight: 4.3 kg

Ordering information

sensor interface IS-RS232
sensor interface IS-RS485

meteolabor reserves the right to make changes without further notice

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