SIR

IR surface temperature sensor

The SIR infrared temperature sensor supplies exact, contact- free measurements of surface temperatures. It is generally applied with other monitoring equipment on automatic weather stations and provides accurate surface temperatures for meteorology, avalanche warning, winter tourism, agriculture and research.

The IR-sensor of the SIR is mounted in a stainless steel housing, while the electronic part is contained in an external metal box.

Versions

Art	Version
18632	Snow Surface Temperature Sensor, output 4... 20mA or 0...5V, measurement range -50... +50 °C, sensor cable 15m
16677	Snow Surface Temperature Sensor, output 4... 20mA or 0...5V, measurement range -50... +50 °C, sensor cable 8m

Scope of delivery

Item
IR-sensor and control box
Radiation shield including mounting bracket
Signal cable

Accessories

Art	Accessory
-	-

Specifications

Electrical	
Power supply	8...36 VDC
Power consumption	max. 100 mA
Outputs	Channel 1: • 0-20 mA or 4-20 mA • 0-5 or 0-10 V • Thermocouple J or K • Alarm output (open collector (24 V, 50 mA) Channel 2: • Sensor temperature • 0-10 V • Alarm output (open collector (24 V, 50 mA)

Output impedance	Current: max. loop resistance 500 Ω Voltage: 100 kΩ load impedance Thermocouple: 20 Ω
Functional inputs	F1 bis F3; software programmable fort he following functions: • external emissivity adjustment • ambient temperature compensation • trigger (reset of hold functions)

Measurement	
Measurement range	-50 ... 600 °C
Spectral range	8 ... 14 µm
Optical resolution (Ratio of distance to object and measurement spot size)	15:1 (The measured object should be smaller than the measurement spot size.)
Accuracy	±1 °C or ±1 % for object T >0 °C and ambient T 23 ±5 °C (whichever is larger)
Repeatability	±0.5 °C or ±0.5 % for object T >0 °C and ambient T 23 ±5 °C (whichever is larger)
Temperature resolution	0.1 °C for object T >0 °C
Response time	150 ms (95 % signal)
Initial warm-up time	10 min
Emissivity/gain	0.100 ... 1.100 (adjustable via programming keys or software)
Transmissivity	0.100 ... 1.100 (adjustable via programming keys or software)

Physical and environmental	
Operating temperature	-20 ... 180 °C
Storage temperature	-40 ... 180 °C
Relative humidity	10 ... 95 % (non condensing)
Protection rating	IP 65
Size	Sensor: ∅14 x 28 mm, mounting thread M12x1 Controller: 89 x 70 x 30 mm
Weight	Sensor: 40 g Controller: 420 g