



Snow Depth Sensor SHM 30

A compact laser sensor for determining snow depths



Optional housing color: white

Compact, reliable and cost-efficient

The SHM 30 snow depth sensor reliably determines snow depths up to 15 meter within seconds and with millimeter precision.

Based on an opto-electronic distance sensor emitting visible eye-safe laser light, the SHM 30 allows probing distances up to 50 ft to detect the surface level.

Unlike snow depth sensors using ultrasonic methods, the laser distance measuring technique is independent of temperature changes.

Even if the measuring process is impaired by precipitation or animals, the SHM 30 finds the snow surface by extending the measuring time and by filtering short period results.

Further evaluation of the transmitted signal strength allows discrimination between snow and grass.

Benefits

- Determination of snow depth over long distances using opto-electronic measuring technique
- Reliable and cost-effective operation
- Very compact and weatherproof housing
- Efficient background light suppression
- Allows discrimination between snow and grass

Applications

- Weather service
- Traffic and aviation safety, road surveillance
- Winter sport areas
- Water & energy related applications

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Specifications

Measuring parameter: Snow depth

Snow depth	0 ... 15 m (0 ... 50 ft)
Measuring accuracy ¹	< ± 5 mm
Programmable measuring interval	10 ... 600 s
Time to measure	6 s

Measuring parameter: Distance to hard targets

Distance range ²	0.1 ... 15 m
Time to measure	0.16 ... 6 s

Interfaces

Data interfaces	RS232, analog output
Interface modes	RS232 analog 2.4 ... 38.4 kBaud, 8N1 format 3mA and 4 ... 20 mA
Operating modes	Polling, automatic telegram
Client software	Any terminal program

¹) 95% statistical spread ²) on natural diffuse reflecting surfaces

Exemplary Data telegram for snow depth measurement

Example:	>001.321 008.742 +27 17 Ę<	Structure:	>eee.eee sss.sss TTT EE C<
Snow depth:	1.321 m	e:	snow depth
Signal:	8.742	s:	signal strength
Temperature:	27 °C	T:	internal temperature
Error:	E17	EE:	error code
Check byte:	Ę	C:	check byte

Electrical parameters

Power consumption	0.5 ... 1 W (without heating) < 12 W (with heating, @ -40° C)
Power supply	10 ... 30 VDC (without heating) 15 ... 24 VDC (with heating)

Safety parameters

Laser classification	Laser Class 2 (EN 60825-1:2007)
Environmental conditions	ISO 10109-11
Internal protection	IP 65
EMC	EN 61326-1

Operating parameters

Temperature range	-40 °C ... +50 °C
Relative humidity	0 % ... 100 %
Heating activity	< 0 °C (programmable)

Dimensions and weight (housing & mounting parts, without cable)

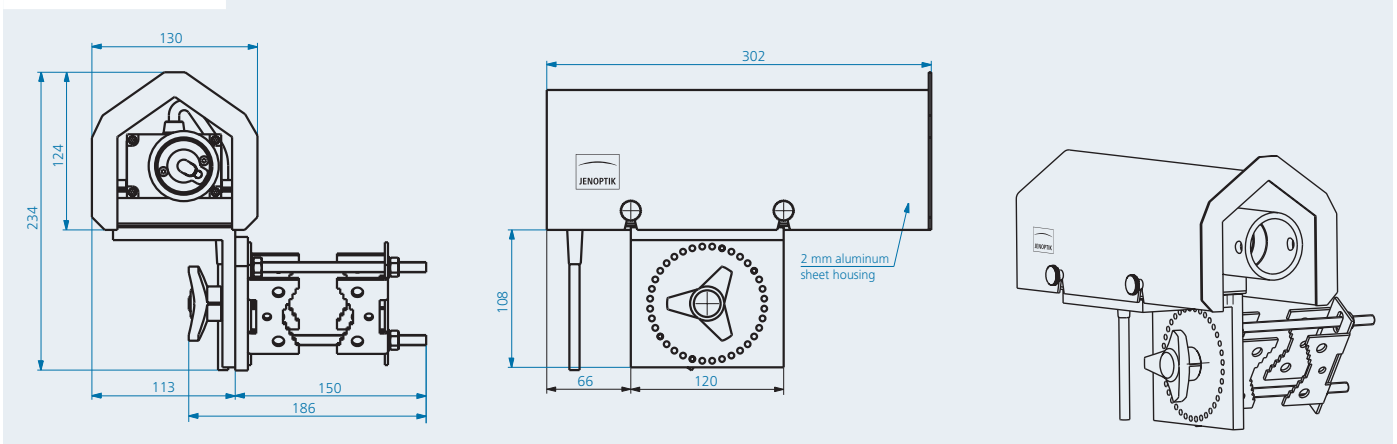
Dimensions (L x W x H)	302 mm x 130 mm x 234 mm
Weight	approx. 3.3 kg

Options

Optional accessories	Cable extensions
Optional signal interface	RS422
Optional signal input	Heater off

Specifications status: July 2009

Dimensions SHM 30



It is our policy to constantly improve the design and specifications. Accordingly, the details represented herein cannot be regarded as final and binding.



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