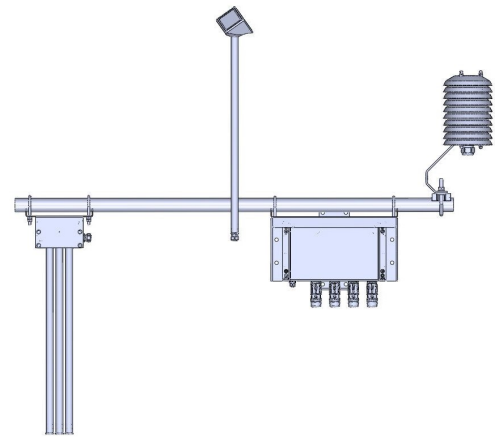


IDS-20d

Icing measurement system



During the winter season a lot of our infrastructure is affected by icing. In the transportation sector icing may not only impair the proper functioning of engines, sensors and signaling systems but may also pose serious hazards through icy runways and ice accretion on airplanes. Power generation by wind turbines solar- and hydroelectric generators may not be reliable under icy conditions and power transmission may be interrupted by heavy ice loads on power lines. Last but not least, ice on a building or other structure, e.g. antenna, may add a lot of weight and increase the surface area exposed to wind.

Reliable ice detection systems can help avoid such risks and can contribute to reduce maintenance and replacement costs. The ice detection sensor IDS-20d, in the shape of a cube or of rods, is used for the reliable and precise measurement of icing in aviation, on wind power generators, high voltage power lines, cable cars, antennas, overhead wires, roads, buildings and other structures where the formation of ice constitutes a risk.

Depending on the application the IDS-20d provides a combination of different sensor versions which can measure ice loads from 0.01 mm to 80 mm. By measuring the complex impedance in the vicinity of the sensor the IDS-20d is able to distinguish between water and ice and capable to record ice accretion rates.

A unique and valuable feature of the IDS-20d is that it additionally considers meteorological data for the purpose of a plausibility check: Parallel to the ice-sensor the IDS-20d measures the air temperature and humidity and thereof calculates the dew and frost points. The sensor system then uses these data for a plausibility check together of the measured ice values. Thus, the reliability of ice-detection is improved.

Versions

Art	Version
20845	IDS-20s Bundle for ice layers 0.1 mm to 5 mm (single sensor); monitoring of icing
20846	IDS-20s Bundle for ice layers 1 mm to 80 mm (single sensor); monitoring of total ice thickness
20848	IDS-20a Bundle for ice layers 0.1 mm to 1 mm (single sensor); continuous icing-monitoring in aviation
20847	IDS-20d Bundle for ice layers 0.1 mm to 80 mm (single sensor); monitoring of icing and total ice thickness

Scope of delivery

Name
IDS-20d controller
Cube 5 ice sensor
Rod T sensor (optionally Cube 5 sensor)
Temperature and relative humidity probe
Radiation shield
Mounting pole \varnothing 34 x 800 mm
Mounting brackets for controller, sensors and radiation shield
MAIN sensor cable
USB to RS485 isolated converter cable
Manual and Commander Software on USB stick

Accessories

Art	Accessory
20557	Heating transformer 230/24V, 160VA, IP00
20519	IDS-20 Main-cable 10 m
21150	USB to RS485 isolated converter cable

Specifications

IDS-sensors			
Sensor type	Cube sensor 5	Cube sensor 1	Rod sensor 80
Measuring range ice thickness	0.1...5 mm	0.01...1 mm	1...80 mm
Weight	0.7 kg	0.7 kg	2.3 kg
Length	560 mm	560 mm	580 mm

T/rH-sensor	
Dew point	-20...+20 °C
Frost point	-20...+20 °C
Air temperature	-40...+60 °C
Air humidity	0...100 %
Weight	0.715 kg
Size L x W x H	310 x 120 x 165

IDS-controller	
Power supply	Sensors 10...28 VDC Heating 24 VAC/DC integrated overvoltage protection
Power consumption	Active measurement 50 mA at 12 VDC Heating max. 7A at 24 VAC/DC
Output	RS-485 (Modbus) SDI-12 3x relay output, max. 0.8 A each
Operating temperature	-40...60 °C
Protection rating	IP 66
Lightning protection	Integrated Lightning Protection against indirect Lightning; discharge capacity 0,6 kW Ppp
Size L x W x H	318 x 208 x 132 mm
Weight	3.6 kg

