ARS31

Intelligent Active Road / Runway Sensor

The embedded active road weather sensor ARS31 detects freezing temperatures independently from de-icing materials and is easy to maintain through its two parted housing.

- Easy maintenance / re-calibration
- Freezing point determined independently from de-icing material
- Low energy consumption
- Simulation of critical surface conditions in a very near future

The active road sensor ARS31 is installed flush with the road/runway surface and calculates the freezing temperature by means of active cooling and heating of the sensor surface. The freezing temperature measurement is independent of mixture. The two-section housing design allows the combined sensor/electronics unit to be removed for maintenance purposes at any time, in just a few minutes. In conjunction with interface converter 8160.UISO, the sensor can be built into new and existing networks. Passive sensor IRS31 and active sensor ARS31 can be combined without difficulty, in fact this is recommended. The sensors are addressable and hence can be networked.

Parameters measured

- Freezing point

Measurement technology

- Active cooling and heating (Peltier element)

Interfaces

- RS-485

Technical specifications

General

Dimensions	Ø 120 mm, height 50 mm
Weight	approximately 900 g
Storage temperature	–40 °C to +80 °C
Protection type	IP 68
Power supply	24 V DC ±10%

Connector	CAGE CLAMP, WAGO (cross section < 0.5 mm²)
Operating temperature	–40 °C to +80 °C
Operating relative humidity	0 to 100 %RH
Power consumption	approximately 30 W
Interface	• RS-485 • baud rate: 2,400 to 38,400 bit/s (default: 19,200)
Cable length	50 m

Freezing point

Measuring range	–40 °C to 0 °C
Unit	°C
Accuracy	±0.5°C RMS for freezing temperature > -15 °C, or ±1.5°C RMS for freezing temperature < -15 °C (with NaCl)
Resolution	0.1