


ARS31Pro


Intelligent Active Road / Runway Sensor

The active road sensor ARS31Pro detects freezing point temperatures independently from de-icing materials and has a two-part housing for easy maintenance.







Replaceable sensor / electronics



Simulation of critical surface conditions in a very near future



Low energy consumption



Mixture-independent measurement

The active ARS31Pro sensor is flush-mounted in the road or runway surface and measures the freezing temperature by means of active cooling and heating of the sensor surface. Through this, it's independent from the de-icing material. In addition, it measures the road surface temperature. This surface temperature sensor is integrated into a second housing which is connected to the ARS31Pro. The distance between the two housings is 50 cm. One additional measurement is

carried out to find out critical conditions in the next few hours. This early alert message delivers extra road surface condition information in addition to the real time road conditions. The two-section housing design allows the combined electronics unit to be removed for maintenance purposes at any time, in just a few minutes. In conjunction with the interface converter 8160.UISO, the sensor can be built into new and existing networks. The sensors are addressable and can be networked.

Parameters measured

- Road surface temperature
- Freezing point

Interfaces

- RS-485

Measurement technology

- Active cooling and heating (Peltier element)
- NTC (road surface temperature)

Technical specifications

General

Dimensions	diameter 120 mm, height 50 mm
Weight	approximately 1100 g
Storage temperature	-40 °C to +70 °C (in packaging)

Interface	<ul style="list-style-type: none"> • RS-485 • baud rate: 2400 to 38400 bit/s (default: 19200)
Cable length	50 m
Protection type	IP 68
Power supply	24 V DC \pm 10%
Connector	CAGE CLAMP, WAGO (cross section < 0.5 mm ²)
Operating temperature	-40 °C to +80 °C
Operating relative humidity	0 to 100 %RH
Power consumption	approximately 30 W

External road surface temperature

Principle	NTC
Measuring range	-40 °C to +80 °C
Unit	°C
Accuracy	\pm 0.2 °C (-10 to 10 °C), or \pm 0.5°
Resolution	0.1 °C

Freezing point

Measuring range	-40 °C to 0 °C
Unit	°C
Accuracy > -15 °C	\pm 0.5 °C for Tg > -15 °C (with NaCl, determined according to CEN/TS15518-4)
Accuracy < -15 °C	\pm 1.5 °C for Tg < -15 °C (with NaCl, determined according to CEN/TS15518-4)