



Datasheet

Intelligent Active Road Sensor ARS31Pro-UMB

The active ARS31Pro-UMB sensor is flush-mounted in the road/runway surface and measures the freezing temperature by means of active cooling and heating of the sensor surface. In addition, the ARS31Pro-UMB measures dry/wet-conditions, saline concentration and the road surface temperature; this surface temperature sensor is integrated into a second housing which is connected with the ARS31Pro-UMB.

The distance between the two housings is 50 cm. One additional measurement is carried out in order to find out critical conditions in the next few hours. This early alert message is an extra road surface condition information in addition to the road conditions which are measured 'now'.

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 the interface converter 8160.UISO, the sensor can be built into new and existing UMB networks. The sensors are addressable and can be networked

Features

- Replaceable sensor/electronics
- Simulation of critical surface conditions in the very near future
- All-in-one sensor including active measurement of freeze point temperature
- Mixture-independent measurement
- Analog outputs in combination with 8160.UDAC
- Complies with prEN15518-3:2010

DATA SUMMARY

TECHNICAL DATA ARS31Pro

- Dimensions Ø 120 mm, height 50 mm
- Weight approx. 1100 g
- Detectable road Dry/wet/critical wetness/ice alert conditions
- Storage temperature -40°C ... 70°C
- Protection type IP68
- Power supply 24 VDC ±10%
- Plug Cage clamp, Wago (<0,5mm²)
- Temperature range -40°C ... 80°C
- Humidity range 0 ... 100% RH
- Power consumption approx. 30 W
- Interface RS485, baud rate: 2,400 ...38,400 bit/s (default 19,200)

FREEZING POINT

- Measuring range -40°C ... 0°C
- Accuracy ±0,5°C for T_g > -15°C or ±1,5°C for T_g < -15°C

EXTERNAL ROAD SURFACE TEMPERATURE

- Principle NTC
- Measuring range -40°C ... 80°C
- Accuracy ±0.2°C or ±0.5°C
- Resolution 0.1

TECHNICAL DATA WST1 & WST2

- Dimensions Ø 60 mm, height 40 mm
- Weight approx. 150 g
- Storage temperature -40 ... 70°C
- Protection type IP68
- Op. temperature range -40 ... 70°C

TEMPERATURE WST1

- Measuring range -40 ... 70°C
- Accuracy ±0.3 ° C (-10...10°C) Otherwise ±1.0°C

TEMPERATURE WST2

- Measuring range -40 ... 70°C
- Accuracy ±0.1 ° C at 0°C

PASSIVE ROAD SURFACE TEMPERATURE

For accurate measurement of the temperature of the road surface the WST1 can be connected to the ARS31-Pro-UMB. The WST2 model is for use with analog signals.



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