

Lufft IRS31Pro-UMB – Intelligent Passive Road Sensor

Passive road sensor IRS31Pro-UMB is flush-mounted in the road. The two part housing design allows the combined sensor/electronics unit to be removed for maintenance or calibration at any time.

The following variables are recorded:

- Road surface temperature
- Water film height up to 4mm
- Freezing temperature for different de-icing materials (NaCl, MgCl, CaCl)
- Road condition (dry/damp/wet/ice or snow/residual salt/freezing rain)
- Friction (Grip)
- Ice Percentage

Optional:

- 2 additional depth temperatures, e.g. at 5cm and 30cm

The sensors are addressable and can be networked.

The measurement data is available for further processing in the form of a standard protocol (Lufft UMB protocol).



Lufft IRS31-UMB Intelligent Road Sensor		Order No.
IRS31Pro-UMB 50m cable length		8910.U050
IRS31Pro-UMB 50m cable length, 1 depth temperature sensor		8910.U051
IRS31Pro-UMB 50m cable length, 2 depth temperature sensors		8910.U052
IRS31Pro-UMB 100m cable length		8910.U100
IRS31Pro-UMB 100m cable length, 1 depth temperature sensor		8910.U101
IRS31Pro-UMB 100m cable length, 2 depth temperature sensors		8910.U102
Technical data	Dimensions	Ø 120mm, height 50mm
	Weight	Approx. 800g without cable
	Detectable road conditions	Dry/moist/wet/moist with salt/wet with salt/ice
	Storage temperature	-40 ... 80 °C
	Rated current	< 200 mA
	Interface	RS485, Baudrate: 2400 ... 38400 bit/s (Standard: 19200)
	Protection	IP68
	Op. power consumption	9 ... 14VDC, typical 12V
	Plug	Cable 0.5mm ²
	Op. temperature range	-40 ... 80 °C
	Operating humidity range	0 ... 100% RH
	Road dampness	Unit: dry/damp/wet
	Slippery road conditions	Unit: no ice/snow, snow, freezing rain, ice
Road surface temp./below-ground temp.	Principle	NTC
	Measuring range	-40 ... 80 °C
	Accuracy	±0.1 °C (-20 ... 20 °C), else ±0.2 °C
	Resolution	0.1
Freezing point	Measuring range	-30 ... 0 °C
	Accuracy	±0.5°C (0...-2.5°C), else ±20% from average value (at de-icing agent NaCl)
	Resolution	0.1
Water film height	Principle	Radar
	Measuring range	0 ... 4mm
	Accuracy	0.2mm to 3mm: better than ±30%
	Resolution	0.001mm
Friction (Grip)	Measuring range	0...1 (slippery...dry)
Ice Percentage	Measuring range	0...100%
Accessories	UMB Interface converter ISOCON-UMB	8160.UISO
	Spare part cap IRS31Pro-UMB	8910.DEC
	Surge protection	8379.USP
	Digital-analog-converter DACON8-UMB	8160.UDAC
	Power supply	8366.USV1



Replaceable sensor electronics

Polling via RS485 interface

Low energy consumption (solar operation)

Radar principle to measure water film

Analogue outputs in combination with 8160.UDAC