

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/moist with salt/wet with salt)
- 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 and without external temperature sensor
	Detectable road conditions	Dry/moist/wet/moist with salt/wet with salt/ice
	Storage temperature	-40 ... 70 °C (in packing)
	Rated current	< 200 mA
	Interface	RS485, Baudrate: 2400 ... 38400 bit/s (Standard: 19200) or SDI-12
	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/moist with salt/wet with salt
	Slippery road conditions	Unit: no ice/snow, snow, 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
Freezing point*	Measuring range	-40 ... 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	0.01mm
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



*Freezing temperature output already from pre-set dry-damp threshold (e.g. 10µm according to new TLS specification).

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