



IT-Sens

**Intelligent passive pavement sensor
for winter service systems**

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Technical data

MEASUREMENTS	TCS <i>(Traffic Control Support)</i>	WSS basic <i>(Winter Service Support)</i>	WSS evolution <i>(Winter Service Support)</i>
Surface condition	Dry, moist, wet, streaming water, slippery (according to EN 15518-3)		
Surface temperature	-40...+75°C		
Accuracy	from -15°C to +10°C: ±0.2°C (according to EN 15518-3) otherwise: ±0.8°C		
Resolution	0.1°C		
Water film thickness	0... 10 mm		
Accuracy	±30%	±15%	
Resolution	0.01 mm		
Freezing point temperature	-	-30... 0°C	
Accuracy	-	-2.5°C to 0°C: ±0.5°C otherwise: ±20%	-5°C to 0°C: ±0.5°C otherwise: ±15%
Resolution	-	0.1°C	
Salt / De-icer types	Sodium Chloride (NaCl), Calcium Chloride (CaCl₂), Magnesium Chloride (MgCl₂), Potassium Acetate (C₂H₃KO₂), Potassium Formate (CHKO₂)		
Residual Salt	-	0... 100%	
Accuracy	-	±15%	
Resolution	-	1%	
Salt Quantity	-	0... 100 g/m²	
Accuracy	-	±15%	
Resolution	-	1 g/m²	
Underground temp. 1x or 2x (optional)	-30... +75°C		
Accuracy	±0.1°C		
Resolution	0.1°C		
Depth	max. 430 mm (longer on demand)		
Alarms generated by the sensor	-	A1 - Winter conditions	
	-	A2 - Decision alarm	
	-	A3 - Critical alarm	

Communication

Interface	RS485
Protocol	Boschung proprietary or open text protocol using ASCII codes

CASING	Stand-alone	Econ case (road application)	Rectangle case (airport application)
			
Integrated cable	Standard: 30 m, longer on demand		-
Cable type	specific: one pair 1.5 mm ² (power supply) + one pair 0.5 mm ² (RS485)		
Cable splicing	up to 600 m		
RS485 extension cable (recommended)	twisted pair, shielded, ϕ 0.53 mm		
Dimensions	ϕ 90 mm x 42 mm	ϕ 135 mm x 51 mm	330 x 154 x 43.2 mm
Weight (with standard cable)	3.6 kg	4.0 kg	7.8 kg

→ Electrical characteristics:

- Power supply: 12 to 48 VDC
- Consumption: < 0.5 W @12 VDC

→ International standards:

- EMC compatibility:
 - EN 61000-6-1 (immunity / residential environment)
 - EN 61000-6-2 (immunity / industrial environment)
 - EN 61000-6-2 (immunity / industrial environment)
 - ESD: EN 61000-4-2 with \pm 25 kV (instead of 8 kV)
 - Burst: EN 61000-4-4 with \pm 4 kV (instead of 1 kV)
 - Surge: EN 61000-4-5 with \pm 2 kV (instead of 1 kV)
 - EN 61000-6-3 (emission / residential environment)
 - EN 61000-6-4 (emission / industrial environment)

→ Environmental characteristics:

- Operating temperature: -40... +80°C
- Enclosure rating: IP68
- MTBF: > 60'000 h
- Chemical resistance: Excellent resistance to chemical agents