



munisense

CS-series indoor climate meters

The INSIGHTNOW™ CS series is an excellent solution to understand aspects of the indoor environment, energy and health risks in buildings. Thus a high quality level of the indoor climate can be maintained at a fraction of the cost of infrastructural measures.

Depending on the model, the maintenance-free wireless indoor INSIGHTNOW™ meters contain temperature and humidity sensors combined with sensors for CO₂, light, dust, sound and presence. The INSIGHTNOW™ CS-Series indoor meters are interchangeable and all use ZigBee technology. This ensures a good radio link between the meters, even under difficult circumstances.

All INSIGHTNOW™ CS-Series indoor meters send their measurements in real time to the INSIGHTNOW™ cloud platform. The data is transmitted encrypted and provided with an accurate time stamp and identification of the meter.

All information and measurement data in the INSIGHTNOW™ platform can be accessed via smartphone, tablet or web browser.

The data gives detailed insight in the indoor environment and is visualized fully optimized for the specific function and/or situation of the user.

The CS1 meters also include a simple LCD display and a LED warning indicator. The CS4 has an easy-to-operate color touch display that displays the measured values continuously.

Improve indoor air quality

Prevent health problems

**Understanding existing complaints
on the indoor climate**

Optimizing indoor climate



Specifications	CS1	CS2	CS3	CS4
CO2 measurements				
Measurement range	0-3000 ppm		0-5000 ppm	0-3000 ppm
Accuracy	+/- 30 ppm of +/- 3%		+/- 50 ppm of +/- 3%	+/- 30 ppm of +/- 3%
Method	NDIR		NDIR	NDIR
Standard	ASHRAE 189.1		ASHRAE 189.1	ASHRAE 189.1
Response time	< 3 min		< 3 min	< 3 min
Measurement interval	15-3600 s		10-3600 s	15-3600 s
Temperature measurements (T)				
Measurement range		-40..100 °C	-40..100 °C	-40..100 °C
Accuracy (5..60 °C)		+/- 0,3 °C	+/- 1 °C *	+/- 0,3 °C
Accuracy (< 5 °C or > 60 °C)		max. 1 °C	max. 2 °C	max. 1 °C
Repeatability		+/- 0,1 °C	+/- 0,2 °C	+/- 0,1 °C
Response time		< 6 min.	< 6 min.	< 6 min.
Measurement interval		15-3600 s	15-3600 s	15-3600 s
Humidity measurements (H)				
Measurement range		0-100 %	0-100%	0-100 %
Accuracy (20..80%)		+/- 3%	+/- 5% *	+/- 3%
Accuracy (< 20 % or > 80 %)		+/- 4%	+/- 6%	+/- 4%
Repeatability		+/- 0,25 %	+/- 0,5%	+/- 0,25 %
Measurement interval		15-3600 s	15-3600 s	15-3600 s
Noise measurements (N)				
Measurement range			30-110 dB(A)	
Accuracy			+/- 3 dB **	
Repeatability			+/- 1 dB	
Measurement interval			10-3600 s	
Class			none	
Light intensity (L)				
Measurement range		0-10.000 Lux	0-10.000 Lux	
Accuracy		+/- 10% **	+/- 10% **	
Repeatability		+/- 2%	+/- 2%	
Measurement interval		10-3600 s	10-3600 s	
Presence(O)				
Method			passief IR	
Detected changes			0,8-1,2 m/s	
Detection angle			100° x 82°	
Detection zones			64	
Controller interfaces				
CO2, OUT1 (0..10VDC) ***	0-2000 ppm			0-2000 ppm
Temp., OUT1 (0..10VDC) ***				0-50 °C
Humidity, OUT1 (0..10VDC) ***				0-100 %
Relais, on/off ***				1A/50VAC/24VDC
Display				
Type	LCD & 3 color LED		3 color LED	graphic, color
Configurability				via touch display
Ambient conditions				
Temperature	0..50 °C	0..50 °C	0..50 °C	0..50 °C
Humidity	0..85 %	20..95 %	20..95 %	20..95 %
Power				
Battery		2x 3,6V		
Battery life		2..3 years		
Operating voltage	12-24 VDC		5 V	12-24 VDC
Consumption	< 1 W	< 1 mW	1-2 W	0.5-0.8 W
Wireless network				
ZigBee Type	router	end device	router	router
ZigBee supported clusters (basic, power device, temp., commissioning, group)	yes	yes	yes	yes
ZigBee specific cluster	CO2	T, H	T, H, CO2	T,H,CO2, L,N,O
ZigBee, maximum distance at "line of sight" conditions	30 m	30 m	30 m	30 m
Standards and certificates				
IEC EN		55015, 55022, 61000-3-2		
RoHS		RoHS2011/65/EU		
Dimensions and weight				
Dimensions lwxhx housing (mm)	139x80x28	74x52x26	100x70x24	165x85x22
Weight (grams)	100	100	300	250
Accessories	24 V adapter	batteries	5 V adapter	24 V adapter
Optional	alarm button			

Above specifications are subject to change without notice.

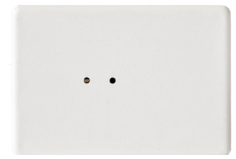
* After calibration and correct placement/mount

** Measuring at the wall is indicative

*** Configurable



Model CS1



Model CS2



Model CS3



Model CS4

About Munisense

Munisense develops, sells and manages highly innovative real-time and online measurement and control solutions for business and government. Solutions that provide immediate insight in noise, vibrations, water levels, energy use, lighting, water and air quality and that allows effective control over lighting levels, ventilation, and pump activity. Our INSIGHTNOW™ meters are connected to our INSIGHTNOW™ cloud platform where the data is stored in real-time for analysis, visualisation and reporting. The information from the platform can be viewed in a range of specific visualisations any time, any where through a web browser or using our phone or tablet apps. Our applications are developed in close cooperation with universities, governments, partners and customers.

Munisense BV
Fruitweg 36
2321 DH LEIDEN
The Netherlands

info@munisense.com
T +31 (0)71-711 4623
www.munisense.com

munisense

INSIGHTNOW™