Flat Sensato

KNX Humidity and Temperature sensor for flush mounting

ZS-FSEN **TECHNICAL DOCUMENTATION**

FEATURES

- Indoor temperature and relative humidity measurement.
- Temperature, relative humidity and condensation alarms.
- Dew point temperature measurement.
- Relative humidity notification through color LED
- Logic functions.
- 2 inputs configurable as binary input, temperature probe or motion detector.
- Integrated KNX BCU.
- Dimensions 81 x 81 x 28mm.
- Flush-mounted in mechanism box.
- Conformity with the CE directives (CE mark on the back side).

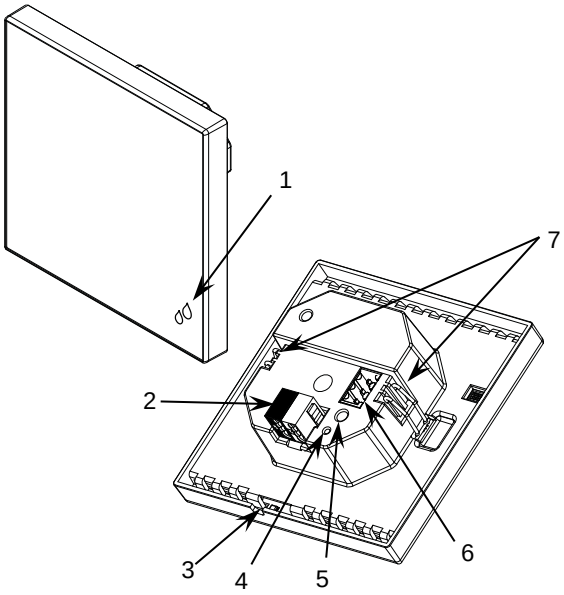


Figure 1: Flat Sensato

1. Humidity notification LED	2. KNX connector	3. Temperature and humidity sensor with protection membrane		
4. Programming LED	5. Programming Button	6. Inputs connector	7. Fixing clips	

Programming button: short press to set programming mode. If this button is held while plugging the device into the KNX bus, it enters the safe mode.

Programming LED: programming mode indicator (red). When the device enters the safe mode, it blinks (red) every half second. During the start-up (reset or after KNX bus failure) and if the device is not in safe mode, it emits a red flash.

GENERAL SPECIFICATIONS				
CONCEPT			**DESCRIPTION**	
Type of device			Electric operation control device	
KNX supply	Voltage (typical)		29VDC SELV	
	Voltage range		21..31VDC	
	Maximum consumption	Voltage	mA	mW
		29VDC (typical)	7	203
		24VDC[1]	10	240
	Connection type		Typical TP1 bus connector for 0.80mm Ø rigid cable	
External power supply			Not required	
Operation temperature			0°C .. +55°C	
Storage temperature			-20°C .. +55°C	
Operation humidity			5 .. 95%	
Storage humidity			5 .. 95%	
Complementary characteristics			Class B	
Protection class			III	
Operation type			Continuous operation	
Device action type			Type 1	
Electrical stress period			Long	
Degree of protection			IP20, clean environment	
Installation			Flush mount on mechanism box.	
Minimum clearances			Not required	
Response on KNX bus failure			Data saving according to parameterization	
Response on KNX bus restart			Data recovery according to parameterization	
Operation indicator			The programming LED indicates programming mode (red). The LED can be parameterized to indicate a relative humidity ranges with a comfort, extreme or very extreme value, represented by a green, yellow or red light, respectively.	
Weight			81g	
PCB CTI index			175V	
Housing material			PC+ABS FR V0 halogen free	

[1] Maximum consumption in the worst-case scenario (KNX Fan-In model)

INTEGRATED SENSOR SPECIFICATIONS	
CONCEPT	**DESCRIPTION**
Temperature measurement range	-40°C to 80°C
Temperature resolution / accuracy	0.1°C / ±0.5°C (@ 25°C)
Humidity measurement range	0% to 100% RH
Humidity response time	1s
Humidity resolution / accuracy	1% / ±3% RH
Humidity drift	±0.5% RH per year in normal air

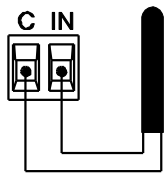
INPUTS SPECIFICATIONS AND CONNECTIONS	
CONCEPT	**DESCRIPTION**
Number of inputs	2
Inputs per common	2
Operation voltage	+3.3VDC in the common
Operation current	1mA @ 3.3VDC (per input)
Switching type	Dry voltage contacts between input and common
Connection method	Pluggable screw terminal block
Cable cross-section	0.2-1.5mm² (IEC) / 28-14AWG (UL)
Maximum cable length	30m
NTC probe length	1.5m (up to 30m)
NTC accuracy (@ 25°C) [2]	±0.5°C
Temperature resolution	0.1°C
Maximum response time	10ms

[2] For Zennio temperature probes.

INPUTS CONNECTION

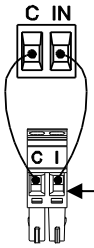
Any combination of the next accessories is allowed on the inputs:

Temperature Probe



Zennio temperature probe.

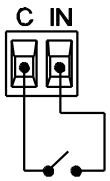
Motion Sensor



Up to two motion sensors can be plugged into the same device input (parallel wiring)

Screw terminal for connecting Zennio motion sensors*

Switch/Sensor/ Push button

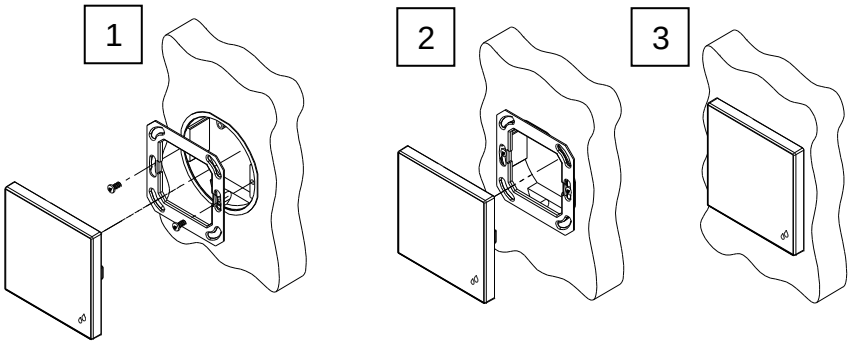


* In case of using ZN1IO-DETEC-P sensor, its micro switch number 2 must be in **Type B position**.

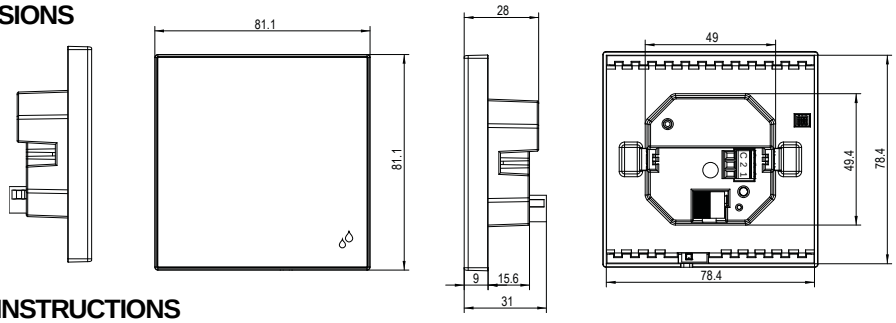
INSTALLATION INSTRUCTIONS

⚠ IMPORTANT:

1. The flush-mounted box must be completely sealed once the cables are inside it. Polyurethane foam, silicon rubber or similar non-breathable construction materials can be used.
2. The mounting location must not be exposed to airflows or direct sun radiation.
3. The temperature and humidity sensor is protected against dust by a membrane which must not be removed.



DIMENSIONS



SAFETY INSTRUCTIONS

- Installation should only be performed by qualified professionals according to the laws and regulations applicable in each country.
- Do not connect the mains voltage nor any other external voltage to any point of the KNX bus; it would represent a risk for the entire KNX system. The facility must have enough insulation between the mains (or auxiliary) voltage and the KNX bus or the wires of other accessories, in case of being installed.
- Keep the device away from water (condensation over the device included) and do not cover it with clothes, paper or any other material while in use.
- The WEEE logo means that this device contains electronic parts and it must be properly disposed of by following the instructions at http://zennio.com/weee-regulation.
- This device contains software subject to specific licences. For details, please refer to http://zennio.com/licenses.