Catalogue

Sensors

European Products Catalogue

Johnson Controls

The power behind **your mission**

Comprehensive linecard

Carbon Dioxide

CD-xxx	CD-2xx	CD-3xx

SCD-100-E00-01	SCD-301-E00-01	SCD-2x0-E00-00	SCD-2x1-E00-00	SCD-310-E00-00	SCD-311-E00-00

CD-xMx	CD-xBx	CD-Px0xx	CD-PxM00	CD-PxBx

SCD-xM0-E00-00	SCD-xBx-Ex0-0x	SCD-Px0xx-00-00	SCD-PxM0-00-00	SCD-PxB0-00-00

Dew Point

HX-9100

SHX-9120-9324	HX-9100-9x24

Differential Pressure

DP TRANSMITTERS	DP TRANSMITTERS M	DP TRANSMITTERS B

SDP2500-xx	SDP2500-xx-D	SDPxxxx-xx	SDPxxxx-xx-D	SDPxxxx-M	SDPxxxx-D-M	SDPxxxx-B

Differential Pressure Transmitter

SPT0000

SPT0000

Differential Pressure Switch

SDS0000

SDS0000

Comprehensive linecard

Plant Humidity

HT-1300 Duct	HT-1300 Outdoor	HT-130M Duct	HT-130M Outdoor	HT-130B
SHT-xx-130x-UDx	SHT-1301-UO	SHT-130M-UDx	SHT-130M-UO	SHT-130B-UD

Plant Temperature

TS-6300

TS-6300

STS-6300

Duct / Immersion Sensor	Cable Sensor	Outdoor Sensor	Strap-on Sensor	Ceiling Sensor	Frost protection

Leakege Sensor	Average Temperature Sensor

TS-63M0

Duct / Immersion Sensor	Cable Sensor	Outdoor Sensor

STS-63B0

STS-63B0

Comprehensive linecard

Pressure

PT-5217

PT-5217

Pressure Transmitter

SPT0000

SPT0000

Room Humidity

HT-1000	HT-100M	HT-100B

SHT-1301-UR   SHT-1306-UR

SHT-130M-UR

SHT-130B-UR

Analog Sensors

RS-1100	RS-7000	TM-1100

RS-1100

RS-7000

TM-1100

TM-2100	TM-3100	TM-11xM

TM-2100

TM-3100

TM-11xM

Comprehensive linecard

Network Sensors

NS8000	NSA-7000
NS8000	NSA-7000

Wireless Sensors

WRZ
WRZ

Motion

SM-0001	SM-0003
SM-0001	SM-0003

Content

Carbon Dioxide

Dew Point

Differential Pressure

Differential Pressure Transmitter

Differential Pressure Switch

Content

Plant Humidity

Plant Temperature

Pressure

Pressure Transmitter

Room Humidity

Content

Analog Sensors

Network Sensors

Wireless Sensors

Motion

Carbon Dioxide

CD–xxx
Movable Indoor Air Quality Detection

The CO_2 concentration in meeting and classrooms as well as in kindergardens, offices or other rooms with large crowds of people often increase quickly as a result of inadequate ventilation. During winter months, ventilating a room through windows is obviously not the most comfortable way due to low outside temperatures. Hence, critical CO_2 levels are reached even faster. The consequences can be fatigue, deep breathing, headache, increased blood pressure and pulse and reduced concentration.

As a remedial measure, the CO_2 traffic light is used to detect the CO_2 content in the air with a range of 0..5000 ppm. The CO_2 traffic light indicates, when it is time to ventilate! The CO_2 concentration is indicated with LED´s. The CO_2 threshold values 750 ppm and 1250 ppm are preset from factory. With the desk display and power supply attached, the traffic light is ideal for mobile applications.

Features

Simple commissioning: unpack > place > plug in (plug'n play)
▪ The practical desk display and the connected power supply unit make it possible to use the lndoor Air Quality devices as a "plug & play" solution – flexible to move to other localtions.

Easy to use
▪ Indication of the measured room CO_2 values via LEDs (green / yellow / red). Optional integrated display showing temperature, humidity and CO_2 content

Ready to start
▪ The threshold values for the traffic light function are preset as follows: **green:** < 750 ppm, **yellow:** between 750 and 1250 ppm, **red:** > 1250 ppm.
That provides no additional adjustments or value set up on side.

Ordering information

Codes	Description
SCD-100-E00-01	Air quality detection with RGB LED for indication of CO_2
SCD-301-E01-01	Air quality detection with RGB LED for indication of CO_2 and LCD for displaying CO_2, Temperature and humidity value

Note

The CO_2 device is a mobile and standalone solution without any communication capability. This solution is suited for spaces not equipped by air conditioning system since the CO_2 sensor is not connected to any BAS / HAVC System.

Johnson Controls

CD-2xx

Wall Mount - CO_2 + Temperature Transmitter

Johnson Controls offers a Carbon Dioxide (CO_2) and temperature wall mount transmitter for measuring the CO_2 levels and the relevant temperature. Optional with humidity measurement (CD-3xx-E00-00).

Typical applications are schools, office buildings, hotels, cinemas or similar. This new CO_2 transmitter is easy to install and requires no maintenance or field calibration.

The CD-xxx Series incorporates a single beam dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly. The SCD Transmitter is available with up to 3 x 0-10 V outputs (CO_2, Temperature and relative Humidity).

Features

- Power Supply 15..35 V = or 19..29 V ~ SELV

- Model: active, 2 x 0..10 V or 2x 4..20 mA, temperature + CO_2 / active, 3 x 0..10V, CO_2 + temperature + relative humidity

- Measuring range: CO_2: 0..2000 ppm

- Accuracy CO_2: ±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)

- Connection electrical: tool-free mountable spring terminal, max. 1,5 mm²

- Calibration: self-calibration, Dual Channel

- Optional with LCD Display

Dimensions (in mm)
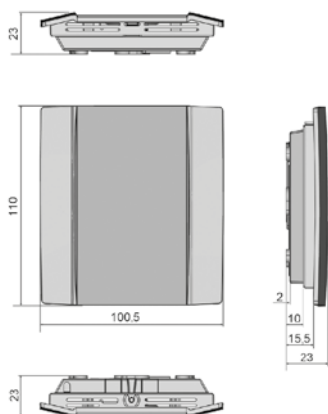
SCD-200-E00-00 / SCD-220-E00-00
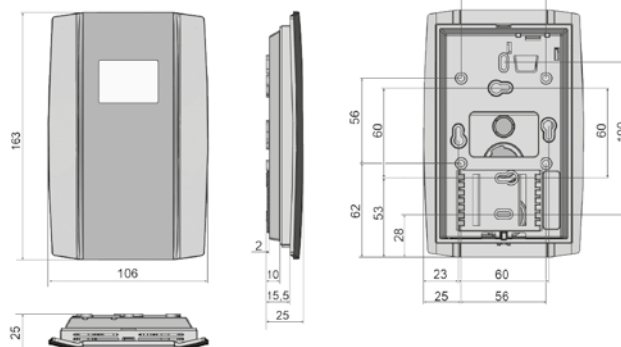
SCD-201-E00-00 / SCD-221-E00-00

CD-2xx

Wall Mount – CO_2 + Temperature Transmitter

Ordering information

Room Sensors, CO_2 + Temperature, IP20 according to EN 60529

Codes	Display	Accuracy CO_2	Accuracy Temperature	Power Supply	Analogue Output
SCD-200-E00-00	--	±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)	±0,5K (typ. at 21 °C)	15..35 V = or 19..29 V ~ SELV	2x 0..10 V, min. load 10 kΩ
SCD-201-E00-00	LCD 29x35 mm with RGB backlight				
SCD-220-E00-00	--			15..35 V = SELV	2x 4..20 mA, max load 500 Ω
SCD-221-E00-00	LCD 29x35 mm with RGB backlight				

Johnson Controls

Solution Navigator

CD-3xx
Wall Mount – CO$_2$ + Temperature + Relative Humidity Transmitter

Johnson Controls offers a Carbon Dioxide (CO$_2$) and temperature wall mount transmitter for measuring the CO$_2$ levels, relevant temperature and humidity.

Typical applications are schools, office buildings, hotels, cinemas or similar. This new CO$_2$ transmitter is easy to install and requires no maintenance or field calibration.

The CD-cxx Series incorporates a single beam dual wavelength NDIR CO$_2$ sensor, which compensates for ageing effects, is highly The SCD Transmitter is available with up to 3 0-10 V outputs (CO$_2$, Temperature and rel. humidity).

Features

▪ Power Supply 15..35 V = or 19..29 V ~ SELV

▪ Model: active, 2x 0..10V, temperature + CO$_2$ / active, 3 x 0..10V, CO$_2$ + temperature + relative humidity

▪ Measuring range CO$_2$: 0..2000 ppm

▪ Accuracy CO$_2$: ±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)

▪ Connection electrical: tool-free mountable spring terminal, max. 1,5 mm²

▪ Calibration: self-calibration, Dual Channel

▪ Optional with LCD Display

Dimensions (in mm)

SCD-310-E00-00

SCD-311-E00-00

Johnson Controls
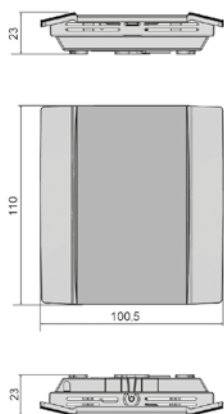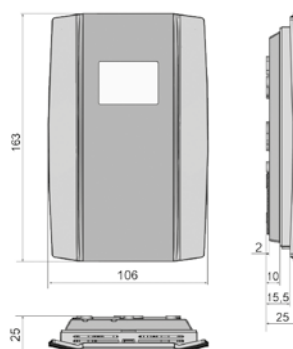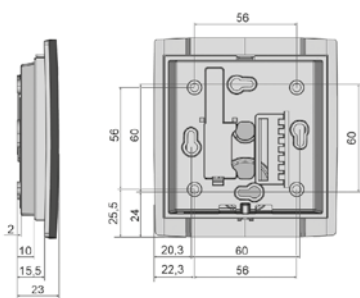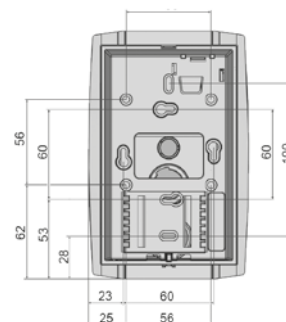
CD-3xx

Wall Mount – CO_2 + Temperature + Relative Humidity Transmitter

Ordering information

Room Sensors, CO_2 + temperature + relative humidity, IP20 according to EN 60529

Codes	Display	Accuracy CO_2	Accuracy Temperature	Accuracy Humidity	Power Supply	Analogue Output
SCD-310-E00-00	--	±50 ppm +3% of measured value (typ. @ 21 °C, 50% rH)	±0,5K (typ. at 21 °C)	±2% between 10..90% RH (typ. at 21 °C)	15..35 V = or 19..29 V ~ SELV	3x 0..10 V, min. load 10 kΩ
SCD-311-E00-00	LCD 29x35 mm with RGB backlight					

Johnson Controls

CD-xMx

Wall Mount Sensor for Air Quality – MODBUS

Johnson Controls offers a Carbon Dioxide (CO_2) and temperature wall mount transmitter for measuring the CO_2 levels and the relevant temperature. Optional with humidity measurement.

Typical applications are schools, office buildings, hotels, cinemas or similar. This new CO_2 transmitter is easy to install and requires no maintenance or field calibration.

The SCD series incorporates a single beam dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability.

The SCD-xM0 series with RS485 Modbus interface is available with up to 4 measuring values (CO_2, VOC, Temperature and relative Humidity).

Features

Support demand control ventilation
▪ Offer potential for 10 to 70% energy savings

Power Supply 15..35 VDC or 19..29 VAC
▪ Flexible application

Flexible applications
▪ CO_2, VOC, Temperature and humidity output suitable for a wider range of applications

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

Outstanding long-term stability
▪ No maintenance is required.

Single beam dual wavelength NDIR CO_2 sensor
▪ Highly insensitive to pollution and outstanding long term stability

Dimensions (in mm)

Johnson Controls
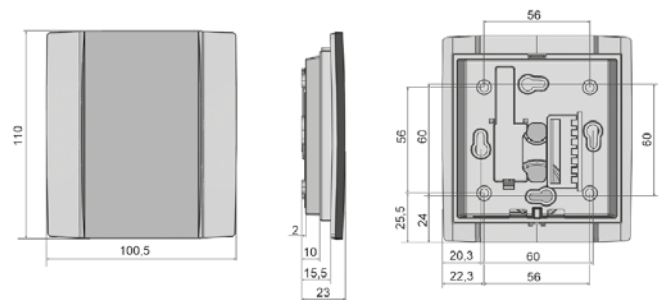
CD-xMx
Wall Mount Sensor for Air Quality – MODBUS

Ordering information

Room Sensor, RS485 Modbus Network technology, IP20 according to DIN EN 60529

Codes	Measuring	Accuracy CO_2	Accuracy Temperature	Accuracy RH	Power Supply	Sensor	VOC Sensor
SCD-3M0-E00-00	Temperature+ relative humidity + CO_2	±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)	±0,5K (typ. at 21 °C)	±2% between 10..90% RH (typ. at 21 °C)	15..35 V = / 19..29 V ~ SELV	NDIR (non-dispersive, infrared) with self-calibration, Dual Channel	---
SCD-4M0-E00-00	Temperature+ relative humidity + CO_2 + VOC						VOC sensor (heated metal oxide semiconductor)
SCD-5M0-E00-00	CO_2 + VOC						

Johnson Controls

Solution Navigator

CD-xBx
Carbon Dioxide Room Sensors - BACnet

The Johnson Controls SCD-xB0 room humidity sensors with BACnet interface provides active sensing of CO_2, relative humidity and temperature in HVAC applications. The humidity sensing element provides within either ±2% accuracy a voltage output signal proportional 0 to 100% relative humidity. The maintenance-free sensor creates the conditions for a pleasant indoor climate and well-being. Typical applications are schools, office buildings, hotels, cinemas or similar.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
- Flexible application

Self-calibrating NDIR-CO_2 Sensor
- ±50 ppm +3% of reading

Humidity Accuracy 2% RH from 10 to 90% RH
- More accurate humidity control and energy savings

Additional temperature output
- Suitable for a wider range of applications

Snap-on Enclosure
- Allows a quick and easy mounting of the device and saves installation costs

Modern and attractive cover with mounting base
- Blends in with room decor. Easy installation.

Polymer humidity sensing element is integrated onto a chip
- Provides stability, repeatability and linear response

Dimensions (in mm)

Johnson Controls

CD–xBx

Carbon Dioxide Room Sensors – BACnet

Ordering information

Codes	Measuring	Accuracy CO_2	Accuracy Temperature	Accuracy RH	Power Supply	Sensor
SCD-1B0-E00-00	CO_2 + Temperature	±50 ppm +3% of reading (typ. at 21 °C, 50% rH, 1015 hPa)	±0,5K (typ. at 21 °C)	±2% between 10..90% RH (typ. at 21 °C)	15..35 V = / 19..29 V ~ SELV	NDIR (non-dispersive, infrared), self-calibration dual channel
SCD-1B0-E10-01	CO_2 + Temperature, Button + LED					
SCD-3B0-E00-00	CO_2 + Temperature + Humidity					
SCD-3B1-E10-01	CO_2 + Temperature + Humidity, Button + LED					

Johnson Controls

CD-Px0xx
Duct Sensor for Air Quality

Carbon dioxide gas (CO_2) is a component of the earth's atmosphere. Although carbon dioxide is invisible and odorless, an increased CO_2 content in the indoor air leads to fatigue and reduced concentration for humans.

In rooms with high occupancy, such as conference rooms and theatres, the negative effects on humans becomes all the more evident.

The SCD-P series duct mount transmitters are designed for the measurement of Carbon Dioxide (CO_2) in Heating Ventilating and Air Conditioning applications where Demand Control Ventilation (DCV), fresh air and indoor Air Quality (IAQ), and rooftop air handling economizer control systems are often required.

The SCD-Pxxxx sensors incorporate the a dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability.

The SCD-Pxxxx Transmitter is available with CO_2 output 0-10 V or 2 x 0..10 V (CO_2 + temperature), optional with passive temperature sensor.
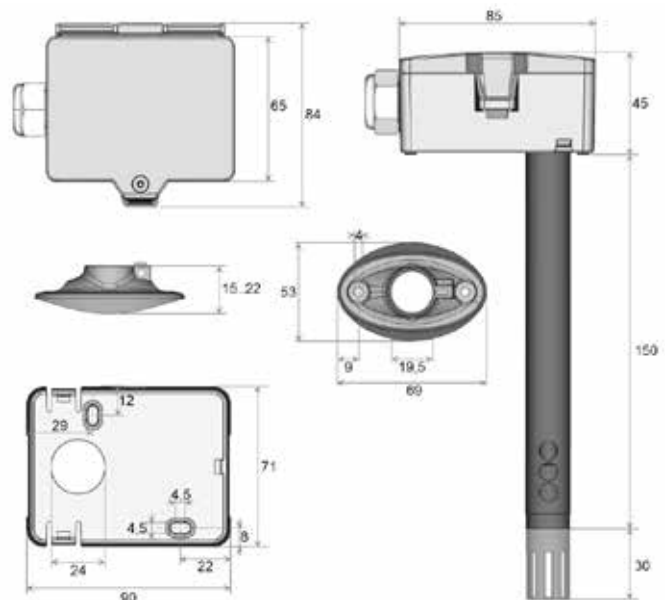
Features

- Dual wavelength non-dispersive infrared technology (NDIR)

- Measuring range 0...2000 ppm

- Accuracy CO_2: ±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)

- Air Speed min. 0,3 m/s, max. 12 m/s

- Power Supply: 15..35 V = or 19..29 V ~ SELV

- Enclosure: PC, pure white, UV resistant

- Protection class enclosure: IP65 according to EN 60529

- Ambient condition: 0..+50 °C, max. 85%, short term condensation

Dimensions (in mm)

CD-Px0xx
Duct Sensor for Air Quality

Ordering information

Duct Sensors, IP65 according to EN 60529

Codes	Measuring	Element	Accuracy CO_2	Accuracy Temperature	Power Supply	Analogue Output	CO_2 Sensor
SCD-P1000-00-00	CO_2	---	±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)	---	15..35 V = or 19..29 V ~ SELV	1x 0..10 V, min. load 10 kΩ	NDIR (non-dispersive, infrared) with self-calibration, Dual Channel
SCD-P2010-00-00	CO_2 + temperature	---		±0,5 K (typ. at 21 °C)		2x 0..10 V, min. load 10 kΩ	
SCD-P2016-00-00		PT1000		±0,3 °C / 0 °C acc. IEC 751 | EN 60751 Class B			
SCD-P2017-00-00		NTC 10k		±0,22 °C / 25 °C			

Johnson Controls

CD-PxM00

Duct Sensor for Air Quality - MODBUS

Carbon dioxide gas (CO_2) is a component of the earth's atmosphere. Although carbon dioxide is invisible and odorless, an increased CO_2 content in the indoor air leads to fatigue and reduced concentration for humans.

In rooms with high occupancy, such as conference rooms and theatres, the negative effects on humans becomes all the more evident.

The SCD-P series duct mount transmitters are designed for the measurement of Carbon Dioxide (CO_2) in Heating Ventilating and Air Conditioning applications where Demand Control Ventilation (DCV), fresh air and indoor Air Quality (IAQ), and rooftop air handling economizer control systems are often required.

The SCD-Pxxxx sensors incorporate the a dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability.

The SCD-PxM0 transducer with Modbus interface has 2 additional analogue 0..10 V outputs. Depending on the type, CO_2, VOC, temperature and relative humidity are available as measured variables.

Features

Support demand control ventilation
▪ Offer potential for 10 to 70% energy savings

Single beam dual wavelength NDIR CO_2 sensor
▪ Highly insensitive to pollution and outstanding long term stability

Easy mounting and service
▪ No expertise required, the hinged lid housing, the removable cable entry and the removable plug-in terminal reduce installation time and costs

High protection grade
▪ The IP65 enclosure make it suitable for several environments

Dimensions (in mm)

CD-PxM00

Duct Sensor for Air Quality – MODBUS

Ordering information

Duct Sensor, RS485 Modbus, IP65 according to EN 60529

Codes	Measuring	Accuracy CO_2	Accuracy Temperature	Accuracy RH	Power Supply	CO_2 Sensor	VOC Sensor
SCD-P2M0-00-00	CO_2, Temperature	±50 ppm +3% of measured value (typ. @ 21 °C, 50% RH)	±0,5 K (typ. at 21 °C)	---	15..35 V = / 19..29 V ~ SELV	NDIR (non-dispersive, infrared) with self-calibration, Dual Channel	---
SCD-P3M0-00-00	CO_2, Temperature, relative humidity			±2% between 10..90% RH (typ. at 21 °C)			
SCD-P4M0-00-00	CO_2, VOC		--	---			VOC sensor (heated metal oxide semiconductor)
SCD-P5M0-00-00	CO_2, VOC, Temperature, relative humidity		±0,5 K (typ. at 21 °C)	±2% between 10..90% RH (typ. at 21 °C)			

Johnson Controls

CD-PxBx

Carbon Dioxide Duct Sensors - BACnet

Carbon dioxide gas (CO_2) is a component of the earth's atmosphere. Although carbon dioxide is invisible and odourless, an increased CO_2 content in the indoor air leads to fatigue and reduced concentration for humans.

In rooms with high occupancy, such as conference rooms and theatres, the negative effects on humans becomes all the more evident.

The SCD-P series duct mount transmitters are designed for the measurement of Carbon Dioxide (CO_2) in Heating Ventilating and Air Conditioning applications where Demand Control Ventilation (DCV), fresh air and indoor Air Quality (IAQ), and rooftop air handling economizer control systems are often required.

The SCD-PxB0 sensors incorporate the a dual wavelength NDIR CO_2 sensor, which compensates for ageing effects, is highly insensitive to pollution and offers outstanding long term stability.

The SCD-PxB0 transducer with BACnet interface has 2 additional analogue 0..10 V outputs. Depending on the type, CO_2, VOC, temperature and relative humidity are available as measured variables.

Features

- Support demand control ventilation

- Offer potential for 10 to 70% energy savings

- Single beam dual wavelength NDIR CO_2 sensor

- Highly insensitive to pollution and outstanding long term stability

- Easy mounting and service

- No expertise required, the hinged lid housing, the removable cable entry and the removable plug-in terminal

- Reduce installation time and costs

- High protection grade

- The IP65 enclosure make it suitable for several environments

Dimensions (in mm)
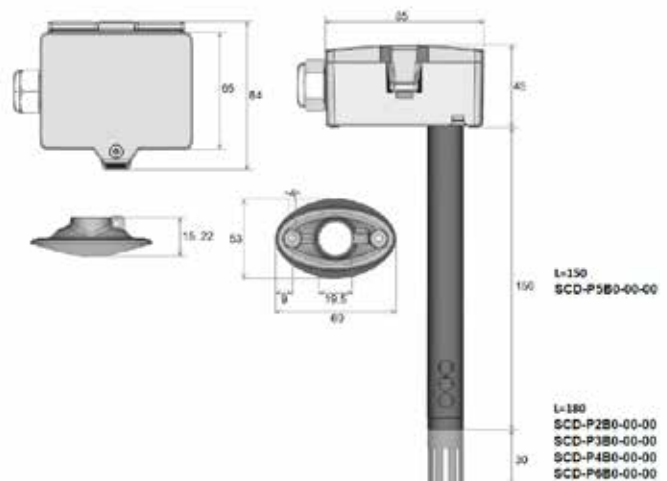
CD-PxBx

Carbon Dioxide Duct Sensors – BACnet

Ordering information

Codes	Measuring	Accuracy CO$_2$	Accuracy Temperature	Accuracy RH	Power Supply	VOC Sensor
SCD-P2B0-00-00	CO$_2$, Temperature	±(50 ppm +3% of measured value) (typ. @ 21 °C, 50% rH)	±0,5 K (typ. at 21 °C)	±2% between 10..90% rH (typ. at 21 °C)	15..35 V = / 19..29 V ~ SELV	---
SCD-P3B0-00-00	CO$_2$, Temperature, rH					
SCD-P4B0-00-00	CO$_2$, VOC, Temperature, rH					VOC sensor (heated metal oxide semiconductor)
SCD-P5B0-00-00	CO$_2$, VOC					
SCD-P6B0-00-00	CO$_2$, VOC, Temperature					

Johnson Controls

Dew Point

HX-9100

Dew Point Sensor

The HX-9100 dew point sensor provides warning signal in case of condensation on surfaces such as cold water pipes, cool ceilings and windows.

The HX-9100 can be powered at 15 VDC or 24 VAC, it detects the dew point condition providing an on/off signal to an analog or a digital input of the controller that will override functions in order to prevent the condensation on cooled surfaces.

Features

- Supply voltage: 15 VDC ±10% or 24 VAC ±15%
- Action: 0 to 10 VDC or ON/OFF
- Hysteresis: 1%
- Output: 0.5 VDC max @ RH >90%
- Protection class: IP44

Dimensions (in mm)

SHX-9120-9324
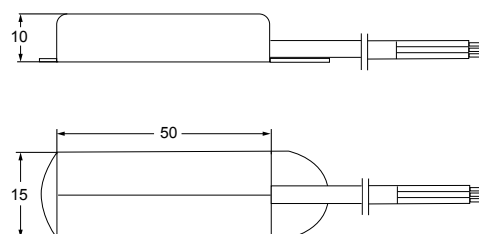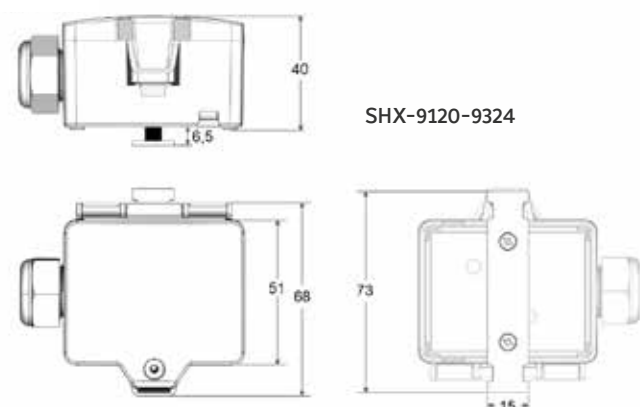
HX-9100-9024 / HX-9100-9A24:
Cable Lenght 1.5 m
HX-9100-9324:
Cable Lenght 3 m

Ordering information

Codes	Action	Output at Condensation	Cable Lenght	Power Supply
HX-9100-9A24	0...10 VDC	≤+0.5 VDC @ RH >90%	1.5 m	15 VDC ±10% or 24 VAC ±15% 24 VDC ±15%
HX-9100-9024	ON/OFF	Open collector closed, 0.5 VDC max @ RH >90%	1.5 m	
HX-9100-9324	ON/OFF	Open collector closed, 0.5 VDC max @ RH >90%	3 m	
SHX-9120-9324	ON/OFF	Condensation detector with LED signal, 24V, IP65	---	15..24 V = (±10%) or 24 V ~ (±10%)

Johnson Controls

Differential Pressure

Solution Navigator

DP TRANSMITTERS

Field Adjustable, Multi-Range Differential Pressure Transmitters

The Delta Pressure transmitter Series of Johnson Controls, with its models SDP7000, SDP2500 and SDP2050, offers an accurate and cost-effective solution to monitor the pressure of the air, or non-aggressive gases, in the HVAC applications.

For the best accuracy, each SDP device has field selectable pressure setting within its full range. The pressure measured by the device can be transmitted to the HVAC controller through a proportional output signal.

Features

- Eight field selectable measurement range settings

- Optional display, with field selectable units

- Voltage output signals (0–10 V) or two Proportional output signals, in voltage (0–10 V) or current (4–20 mA)

- Zero calibration, manual or automatic

- Response time setting

- Prepared for mounting on DIN rail TS35 (35 x 7,5 mm) according to EN 60715

- Protection class: IP65

- Factory Calibration Certificate available on request

Dimensions (in mm)
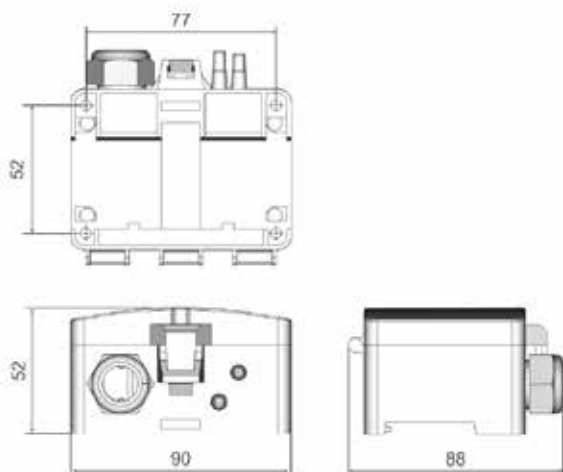
SDP2500-xx-xx-x
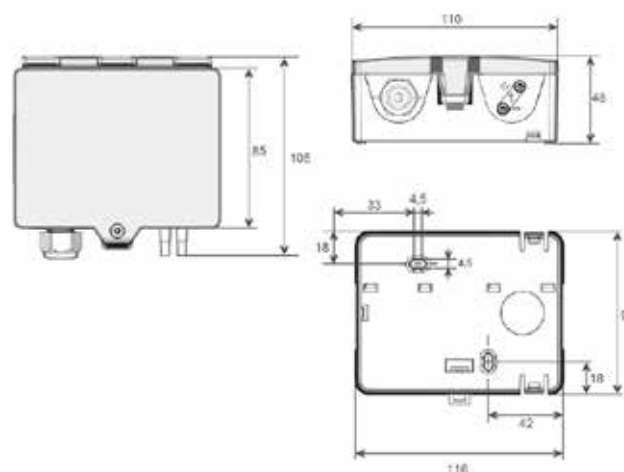
SDP0250-xx-xx-x / SDP7000-xx-xx-x

Johnson Controls

DP TRANSMITTERS

Field Adjustable, Multi-Range Differential Pressure Transmitters

Ordering information

Automatic zero-point calibration

Codes	Calibration Certificate	Measuring Range Pressure	Analogue Output	Accuracy Pressure	Display
SDP0250-C2-AZ-D	0, +25, +50 Pa	0..+25 | 0..+50 | 0..+100 | 0..+250 | -25..+25 | -50..+50 | -100..+100 | -150..+150 Pa	1x 0..5 V/0..10 V, min. load 10 kΩ, 1x 4..20 mA, max. load 500 Ω	Deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	LCD 37,5x31,6 mm, measured values: Pa
SDP0250-C3-AZ-D	0, +50, +100 Pa				
SDP0250-C4-AZ-D	0, +125, +250 Pa				
SDP0250-C5-AZ-D	-25, 0, +25 Pa				
SDP0250-C6-AZ-D	-50, 0, +50 Pa				
SDP0250-C7-AZ-D	-100, 0, +100 Pa				
SDP2500-C4-AZ-D	0, +250, +500 Pa	-100..+100 | 0..+100 | 0..+250 | 0..+500 | 0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 Pa	1x 0..10 V, min. load 10 Ω	Deviation compared to the reference device measuring range ≤500 Pa: ±5 Pa, measuring range >500 Pa: ±10 Pa	LCD 37,5x31,6 mm, measured values: Pa
SDP2500-C5-AZ	0, +500, +1000 Pa				---
SDP2500-C5-AZ-D	0, +500, +1000 Pa				LCD 37,5x31,6 mm, measured values: Pa
SDP2500-C6-AZ-D	0, +750, +1000 Pa				
SDP2500-C8-AZ	0, +1250, +2500 Pa				---
SDP7000-C8-AZ	0, +3500, +7000 Pa	0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 | 0..+3000 | 0..+4000 | 0..+5000 | 0..+7000 Pa	1x 0..5 V/0..10 V, min. load 10 kΩ, 1x 4..20 mA, max. load 500 Ω	Deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	---

Johnson Controls

DP TRANSMITTERS

Field Adjustable, Multi-Range Differential Pressure Transmitters

Ordering information

No calibration certificate

Codes	Measuring range Pressure	Analogue Output	Accuracy Pressure	Calibration	Display
SDP0250-R8-AZ	0..+25 | 0..+50 | 0..+100 | 0..+250 | -25..+25 | -50..+50 | -100..+100 | -150..+150 Pa	1x 0..5 V/0..10 V, min. load 10 kΩ, 1x 4..20 mA, max. load 500	Deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	Automatic zero-point calibration	---
SDP0250-R8-AZ-D					LCD 37,5x31,6 mm, measured values: Pa
SDP2500-R8	-100..+100 | 0..+100 | 0..+250 | 0..+500 | 0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 Pa (default) 0..+2000 | 0..+2500 Pa	1x 0..10 V, min. load 10 kΩ	Deviation compared to the reference device measuring range ≤500 Pa: ±5 Pa, measuring range >500 Pa: ±10 Pa	---	---
SDP2500-R8-AZ				Automatic zero-point calibration	
SDP2500-R8-AZ-D					LCD 37,5x31,6 mm, measured values: Pa
SDP2500-VA-AZ		1x 0..5 V/0..10 V, min. load 10 kΩ, 1x 4..20 mA, max. load 500			---
SDP2500-R8-D		1x 0..10 V, min. load 10 kΩ	Deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	---	LCD 37,5x31,6 mm, measured values: Pa
SDP2500-R8-VA					---
SDP2500-AZ-VA-D				Automatic zero-point calibration	LCD 37,5x31,6 mm, measured values: Pa
SDP7000-R8	0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 | 0..+3000 | 0..+4000 | 0..+5000 | 0..+7000 Pa	1x 0..5 V/0..10 V, min. load 10 kΩ, 1x 4..20 mA, max. load 500		---	---
SDP7000-R8-AZ				Automatic zero-point calibration	
SDP7000-R8-AZ-D					LCD 37,5x31,6 mm, measured values: Pa
SDP7000-R8-D				---	

Accessory (included)

· 2 plastic duct flanges
· 4 mounting screws 4x20
· 2 m PVC connection tube

Johnson Controls

Solution Navigator

DP TRANSMITTERS M

Differential Pressure Transmitter - MODBUS

The Delta Pressure modbus transmitter series of Johnson Controls, with its models SDP7000, SDP2500 and SDP2050, offers an accurate and cost-effective solution to monitor the pressure of the air, or non-aggressive gases, in the HVAC applications.

The DP series devices can measure pressure from -150 Pa up to 7000 Pa. For the best accuracy, each SDP device has field selectable pressure setting within its full range. The pressure measured by the device, either in differential or static mode, can be transmitted to the HVAC controller through a proportional output signal.

Features

Eight field selectable measurement ranges in one device
▪ Allow the selection of best measurement range for the application during the commissioning and servicing.

Optional backlit display with field selectable pressure units
▪ Shows measured pressure for clear local indication in Pa or inchWC.

AZ option for automatic zero point calibration
▪ Ensure long term accuracy eliminating the need for periodic manual zeroing.

Response time selectable
▪ Covers customer applications where fast response is required.

Easy mounting and service
▪ No expertise required, the accessory mounting kits and the field selectable options reduce time and cost.

High protection grade
▪ IP65 make it suitable for several environments

▪ Protection class: IP65

▪ Factory Calibration Certificate available on request

Dimensions (in mm)

Johnson Controls
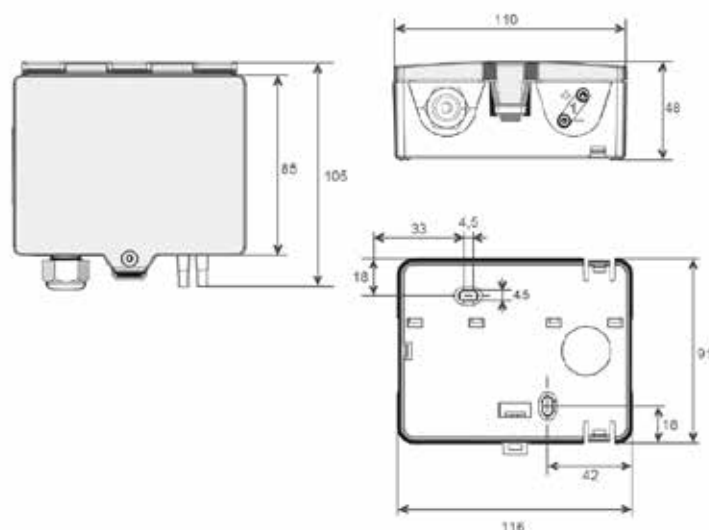
DP TRANSMITTERS M

Differential Pressure Transmitter – MODBUS

Ordering information

Duct Sensor, Modbus Network Technology

Codes	Measuring Range Pressure	Analogue Output	Accuracy Pressure	Calibration	Display
SDP0250-AZ-D-M	0..+25 | 0..+50 | 0..+100 | 0..+250 | -25..+25 | -50..+50 | - 100..+100 | -150..+150 Pa	2x 0..5 V / 0..10 V, min. load 10 kΩ	Deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	Automatic	LCD 37,5x31,6 mm, measured values: Pa
SDP0250-AZ-M					---
SDP0250-M				---	
SDP2500-AZ-DM	-100..+100 | 0..+100 | 0..+250 | 0..+500 | 0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 Pa			Automatic	LCD 37,5x31,6 mm, measured values: Pa
SDP2500-AZ-M					---
SDP2500-M				---	
SDP7000-AZ-D-M	0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 | 0..+3000 | 0..+4000 | 0..+5000 | 0..+7000 Pa			Automatic	LCD 37,5x31,6 mm, measured values: Pa
SDP7000-AZ-M					---
SDP7000-M				---	

Johnson Controls

DP TRANSMITTERS B
Differential Pressure Transmitter - BACnet

The Delta Pressure BACnet transmitter Serie of Johnson Controls, with its models SDP7000, SDP2500 and SDP0250, offers an accurate and cost-effective solution to monitor the pressure of the air, or non-aggressive gases, in the HVAC applications.

The DP Series devices can measure pressure from -150 Pa up to 7000 Pa. For the best accuracy, each SDP device has field selectable pressure setting within its full range. The pressure measured by the device, either in differential or static mode, can be transmitted to the HVAC controller through a proportional output signal.
A number of options make Commissioning and Servicing flexible and easy. Each SDP model includes:

· Eight field selectable measurement range settings

· Optional display, with field selectable units

· Zero calibration, manual or automatic

· Response time setting

The SDP Series can be can be provided with a Factory Calibration Certificate.
The DP transmitters are typically used in HVAC applications to control: fan, blower, dampers, filter condition, monitoring air flow in the distribution system and pressure in cleanrooms.

Features

▪ Eight field selectable measurement ranges in one device

▪ Allow the selection of best measurement range for the application during the commissioning and servicing

▪ Optional backlit display with field selectable pressure units

▪ Shows measured pressure for clear local indication in Pa or inchWC.

▪ AZ option for automatic zero point calibration

▪ Ensure long term accuracy eliminating the need for periodic manual zeroing.

▪ Response time selectable

▪ Covers customer applications where fast response is required.

Dimensions (in mm)

▪ Easy mounting and service

▪ No expertise required, the accessory mounting kits and the field selectable options reduce time and cost.

▪ High protection grade

▪ IP65 make it suitable for several environments

DP TRANSMITTERS B

Differential Pressure Transmitter – BACnet

Ordering information

Codes	Measuring Range Pressure	Analogue Output	Accuracy Pressure	Calibration	Display
SDP0250-B	0..+25 | 0..+50 | 0..+100 | 0..+250 | −25..+25 | −50..+50 | −100..+100 | −150..+150 Pa	2x 0..5 V/0..10 V, min. load 10 kΩ	deviation compared to the reference device ±1 Pa at range <250 Pa measuring range ≤500 Pa: ±5 Pa, measuring range 500..2000 Pa: ±10 Pa ±25 Pa at range >2000 Pa	---	---
SDP0250-AZ-B				Automatic	
SDP2500-B	−100..+100 | 0..+100 | 0..+250 | 0..+500 | 0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 Pa			---	
SDP2500-AZ-B				Automatic	
SDP7000-B	0..+1000 | 0..+1500 | 0..+2000 | 0..+2500 | 0..+3000 | 0..+4000 | 0..+5000 | 0..+7000 Pa			---	
SDP7000-AZ-B				Automatic	

Johnson Controls

Differential Pressure Transmitter

Solution Navigator

SPT0000
Differential Pressure Transmitter

The SPT-00xx-L010 detects the differential pressure (static and dynamic) in liquid media. Typical areas of application include supply and return liquid flows in heating systems as well as the monitoring of filters and compressors.

Dimensions (in mm)

M4

10

26

Cable max. ⌀ 10
Wire max. ⌀ 10

93,3

55

25

67

G 1/4

13,5

30
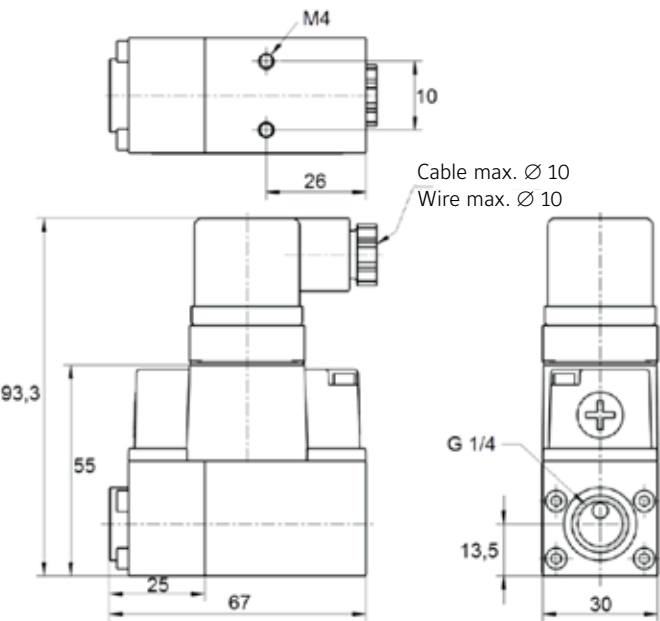
Accessories

SPT0000-Lx0x

Ordering information

Codes	Measuring Range Pressure	Max working Overpressure	Mechanical Connection	Power Supply	Protection
SPT0001-L010	0..+1 bar	6 bar	G 1/4"		
SPT0002-L010	0..+2,5 bar	6 bar	G 1/4"	15..24 V = or 15..24 V ~ SELV	IP54 according to EN60529
SPT0004-L010	0..+4 bar	16 bar	G 1/4"		
SPT0006-L010	0..+6 bar	16 bar	G 1/4"		

Accessories (optional)

Codes	Description
SPT0000-L306	Screw connection set, ⌀ = 6 mm, Stainless steel (2 pieces)
SPT0000-L308	Screw connection set, ⌀ = 8 mm, Stainless steel (2 pieces)
SPT0000-L206	Screw connection set, ⌀ = 6 mm, Brass (2 pieces)
SPT0000-L208	Screw connection set, ⌀ = 8 mm, Brass (2 pieces)

Johnson Controls

Differential Pressure Switch

SDS0000
Differential Pressure Switch

Adjustable differential pressure switch PS for monitoring differential pressure of air and other non-flammable and non-aggressive gases.

Possible applications: Monitoring of air filters, fans, industrial cooling air cycles, flows in ventilation ducts.

Dimensions (in mm)
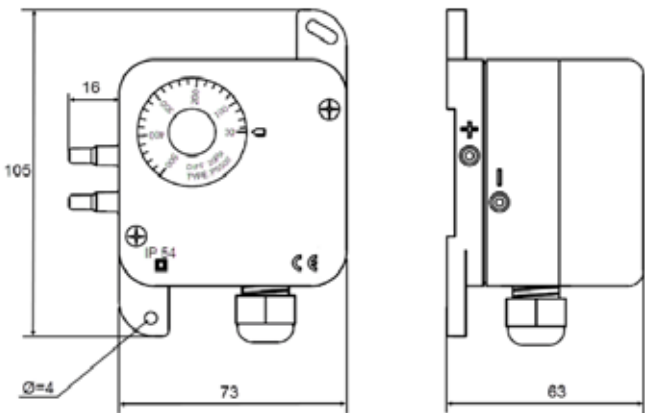
Ordering information

Codes	Output Switch Contact NO/NC, switching difference	Measuring Range Pressure	Accuracy Pressure	Max working Overpressure	Switching Load	Switching Capacity	Protection
SDS0300-A	20 Pa	30..300 Pa	typ. ±5 Pa	50 kPa	max. 250 V	3 A resistive load, 2 A inductive load, service life: >1.000.000 switching operations	IP54 according to EN60529
SDS0500-A		30..500 Pa					
SDS1500-A	80 Pa	100..1500 Pa	typ. ±10 Pa				

Johnson Controls

Plant Humidity

HT-1300 Duct
Duct Humidity and Temperature Sensor

Specifically designed for HVAC application, the SHT-130x-UD1 sensor is a highly accurate and reliable for measuring relative air humidity and temperature.

The enclosure minimizes installation cost and provides outstanding protection against contamination and condensation, thus ensuring flawless operation. The SHT-130x-UD1 employs the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants. Long term performance is granted by the stainless steel wire mesh fitted in the protection cap, suitable for most common HVAC applications. In combination with a long calibration experience, the HT-130x-UDx provides a humidity measurement accuracy of ±2%

Features

- Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
- Humidity Accuracy 2% RH from 10 to 90% RH
- Additional temperature output + optional passive
- Snap-on Enclosure
- SHT-130x-UD1 Duct probes length 140 mm
- SHT-130x-UD1 Protection Class IP65

Accessories

SHT-1300-CAP-SG

Dimensions (in mm)

HT–1300 Duct

Duct Humidity and Temperature Sensor

Ordering information

Codes	Analogue Outputs	Accuracy RH	Temperature working Range	Passive	Supply Voltage	Probe Lenght (mm)
SHT-1301-UD1	2 x 0..10 V (Temperature +RH)	±2% between 10..90% RH	–20..+70 °C	---	15..24 V = (±10%) or 24 V ~ (±10%)	140
SHT-1303-UD1				NTC2,252k		
SHT-1305-UD1				PT100		
SHT-1306-UD1				PT1000		
SHT-1301-UD2				---		270
SHT-1301-UD4				---		400

Model with calibration certificate (C1)

Codes	Description	Passive	Calibration Points Humidity	Calibration Point Temperature
SHT-C1-1301-UD1	Duct Mount Humidity Sensor	---	30% rH, 76% RH	(0..10 V): 23 °C
SHT-C1-1303-UD1		NTC2,252k		
SHT-C1-1305-UD1		PT100		
SHT-C1-1306-UD1		PT1000		

Accessories

Codes	Description
SHT-1300-CAP-SG	Protective cap + stainless steel wire mesh

Johnson Controls

HT-1300 Outdoor

Outdoor Humidity and Temperature Sensor

The SHT-1301-UO sensor is a highly accurate and reliable sensor for measuring relative humidity and temperature outdoors.

The housing minimises installation costs and provides excellent protection against dirt and condensation, ensuring flawless operation.

The SHT-1301-UO uses the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants. Long-term performance is ensured by the stainless steel wire mesh incorporated into the protective cap, which is suitable for most common HVAC applications.

Combined with long calibration experience, the SHT-1301-UO provides humidity measurement accuracy of ±2%.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Humidity Accuracy 2% RH from 10 to 90% RH
▪ Suitable for a wider range of applications

Additional temperature output
▪ Suitable for any field controllers

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

▪ Protection Class IP65

▪ It can be mounted in several environments

Dimensions (in mm)

Ordering information

Codes	Analogue Outputs	Accuracy Humidity	Accuracy Temperature	Temperature working Range
SHT-1301-UO	2x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ, humidity output configurable to: · relative humidity · enthalpy · absolute humidity · dew point	±2% between 10..90% RH (typ. at 21 °C)	±0,5 K (typ. at 21 °C within default measuring range)	default setting: -20..+80 °C adjustable at the transducer: -20..+80 | 0..+50 | -40..+60 | -15..+35 °C

Johnson Controls

Solution Navigator

HT-130M Duct

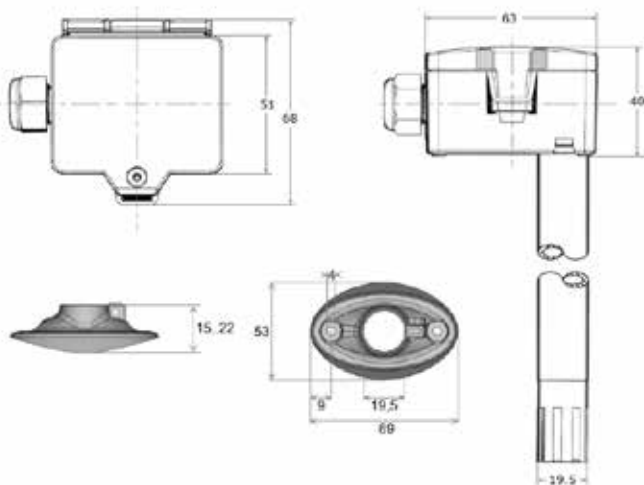## Duct Humidity and Temperature Sensor - MODBUS

Specifically designed for HVAC application, the SHT-130M-UDx Modbus sensor is a highly accurate and reliable for measuring relative air humidity and temperature.

The enclosure minimizes installation cost and provides outstanding protection against contamination and condensation, thus ensuring flawless operation. The SHT-130M-UDx employs the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants.

Long term performance is granted by the stainless steel wire mesh fitted in the protection cap, suitable for most common HVAC applications. In combination with a long calibration experience, the SHT-130x-UDx provides a humidity measurement accuracy of ±2%.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Humidity Accuracy 2% RH from 10 to 90% RH
▪ Suitable for a wider range of applications

Additional temperature output
▪ Suitable for any field controllers

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

HT-130M-UDx Duct probes length 140/270 mm
▪ Easy to install. No expert required

HT-130M-UDx Protection Class IP65
▪ It can be mounted in several environments

Dimensions (in mm)

Johnson Controls
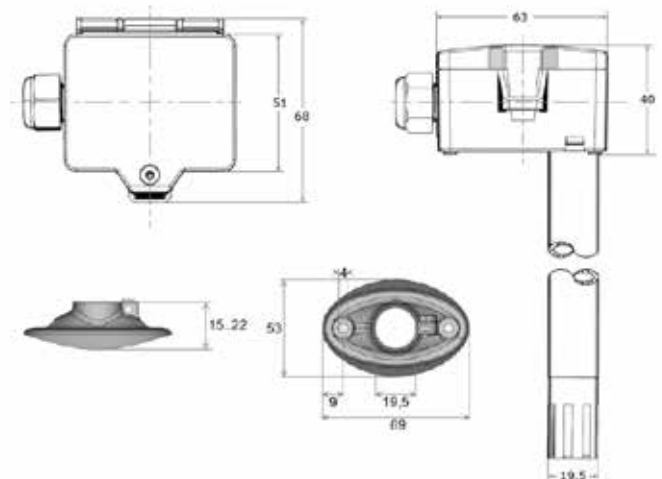
HT-130M Duct

Duct Humidity and Temperature Sensor - MODBUS

Ordering information

Duct Sensor, RS485-Modbus Network Technology

Codes	Type	Analogue	Accuracy Humidity	Accuracy Temperature	Temperature working Range
SHT-130M-UD1	Pipe length 140 mm	2x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ, humidity output configurable to: · relative humidity · enthalpy · absolute humidity · dew point	±2% between 10..90% RH (typ. at 21 °C)	±0,5 K (typ. at 21 °C within default measuring range)	Default setting: –20..+80 °C, adjustable via Modbus
SHT-130M-UD2	Pipe length 270 mm				

Johnson Controls

HT–130M Outdoor

Outdoor Humidity and Temperature Sensor – MODBUS

The SHT-130M-UO sensor with Modbus interface is a highly accurate and reliable sensor for measuring relative humidity and temperature outdoors.

The housing minimises installation costs and provides excellent protection against dirt and condensation, ensuring flawless operation.

The SHT-130M-UO uses the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants. Long-term performance is ensured by the stainless steel wire mesh incorporated into the protective cap, which is suitable for most common HVAC applications.

Combined with long calibration experience, the SHT-130M-UO provides humidity measurement accuracy of ±2%.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Humidity Accuracy 2% RH from 10 to 90% RH
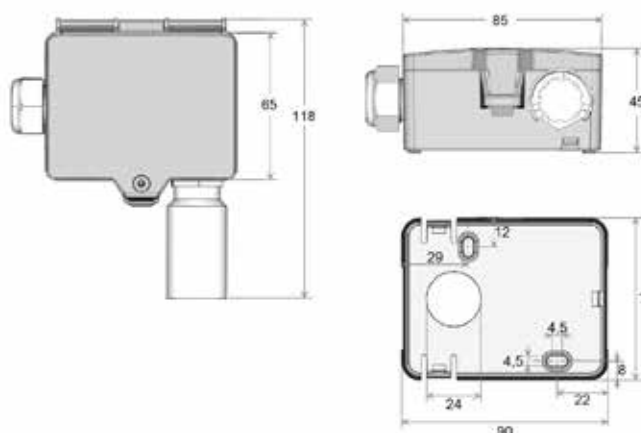▪ Suitable for a wider range of applications

Additional temperature output
▪ Suitable for any field controllers

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

SHT-130M Protection Class IP65
▪ It can be mounted in several environments

Dimensions (in mm)
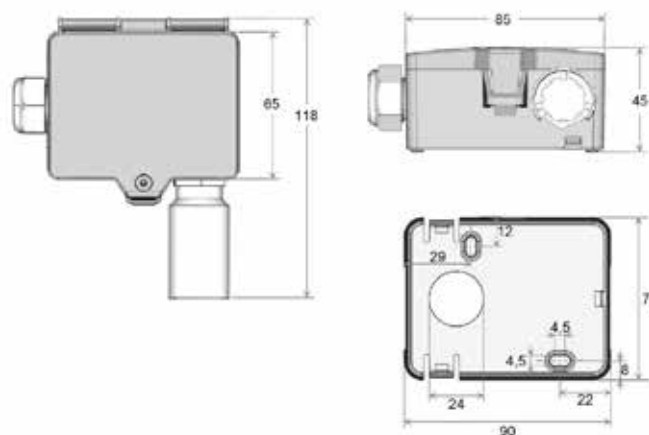
Ordering information

Outdoor Sensor, RS485-Modbus Network Technology

Codes	Analogue Outputs	Accuracy Humidity	Accuracy Temperature	Temperature working Range
SHT-130M-UO	2x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ, humidity output configurable to: · relative humidity · enthalpy · absolute humidity · dew point	±2% between 10..90% RH (typ. at 21 °C)	±0,5 K (typ. at 21 °C within default measuring range)	default setting: −20..+80 °C, adjustable via Modbus

Johnson Controls

HT-130B

Duct Humidity and Temperature Sensor - BACnet

Specifically designed for HVAC application, the SHT-130B-UDx BACnet sensor is a highly accurate and reliable for measuring relative air humidity and temperature. The enclosure minimizes installation cost and provides outstanding protection againstcontamination and condensation, thus ensuring flawless operation.

The SHT-130B-UDx employs the new humidity/temperature sensor with excellent long-term stability and resistance to pollutants. Long term performance is granted by the stainless steel wire mesh fitted in the protection cap, suitable for most common HVAC applications. In combination with a long calibration experience, the SHT-130x-UDx provides a humidity measurement accuracy of ±2%.

Features

- Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)

- Flexible application

- Humidity Accuracy 2% RH from 10 to 90% RH

- Suitable for a wider range of applications

- Additional temperature output

- Suitable for any field controllers

- Snap-on Enclosure

- Allows a quick and easy mounting of the device and saves installation costs

- SHT-130B-UDx Duct probes length 140/270 mm

- Easy to install. No expert required

- SHT-130B-UDx Protection Class IP65

- It can be mounted in several environments

Dimensions (in mm)

Johnson Controls
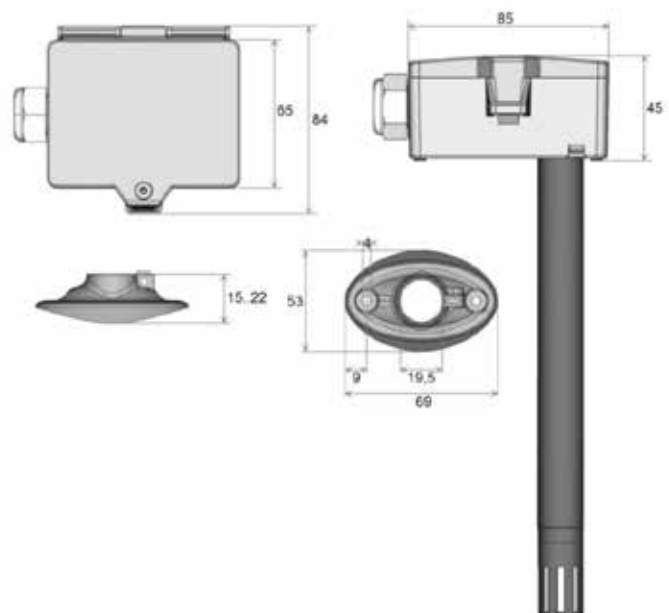
HT–130B

Duct Humidity and Temperature Sensor - BACnet

Ordering information

Codes	Type	Analogue	Accuracy Humidity	Accuracy Temperature	Temperature working Range
SHT–130B–UD1	Pipe length 140 mm	2x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ, via BACnet humidity output configurable to: · relative humidity · enthalpy · absolute humidity · dew point	±2% between 10..90% RH (typ. at 21 °C)	±0,5 K (typ. at 21 °C within default measuring range)	default setting: –20..+80 °C, adjustable via BACnet
SHT–130B–UD2	Pipe length 270 mm				

Johnson Controls

Plant Temperature

TS-6300

Plant Temperature Sensor

The TS-6300 Serie temperature sensors provide a passive signal that corresponds to the air or water temperature Heating, Ventilation and Air Conditioning (HVAC) applications.

They are passive resistive signal NTC K2, NTC K10, PT100 or PT1000 related to the sensed temperature.

The TS-6300 temperature sensor Series has been designed to work as a part of any HVAC control system.

Features

▪ Wide range of mounting types and signal outputs

▪ Different length of tubes and wells for duct and immersion applications

▪ Bayonet mounting system

▪ For immersion applications, well can be mounted before duct sensor is mounted

▪ IP54 ingress protection (except cable sensor)

▪ IP67 ingress protection for cable sensor

Dimensions (in mm)

L = For this dimensions please refer to the "Ordering information" (next page)

Duct and ceiling

Strap-on

Outdoor

Remote

Cable
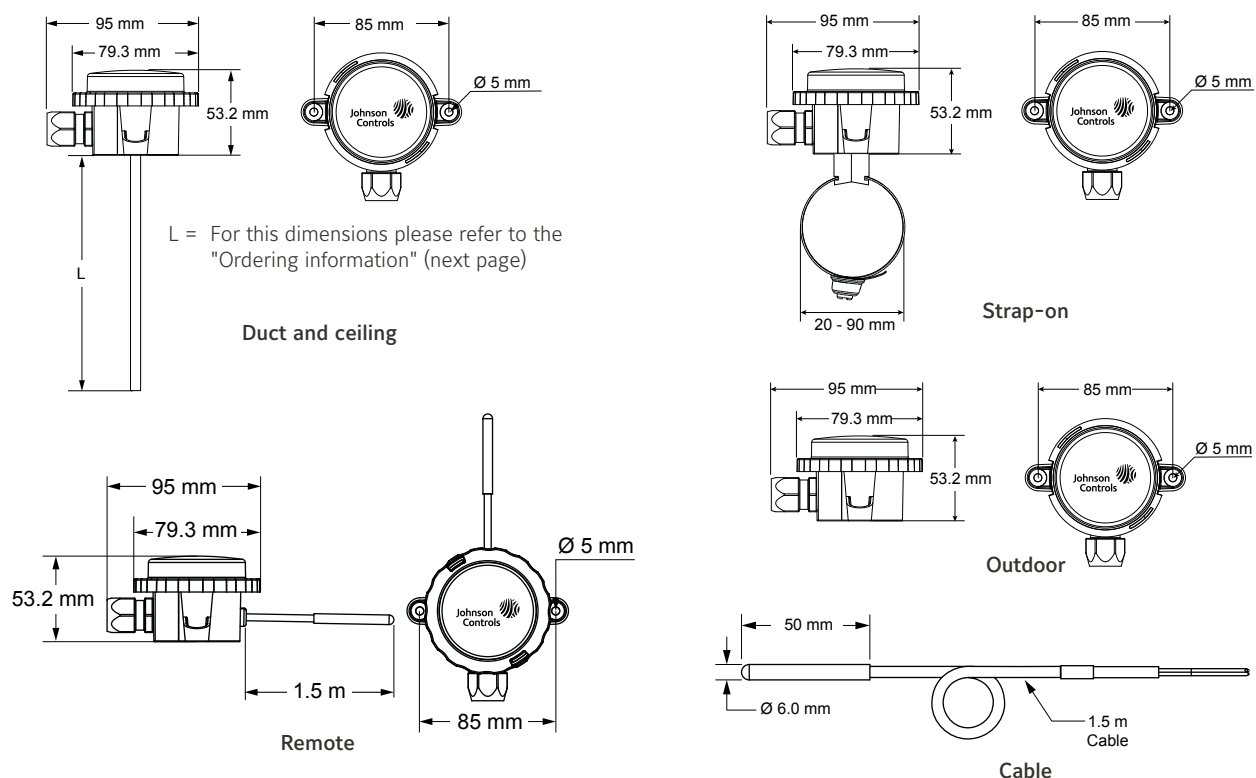
TS-6300

Plant Temperature Sensor

Ordering information

Duct / Immersion Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6370D-A11	0...10 VDC	−40 to 50 °C	138
TS-6370D-B11			192
TS-6370D-C11			290
TS-6370D-D11			446
TS-6370D-A12		−20 to 40 °C	138
TS-6370D-B12			192
TS-6370D-C12			290
TS-6370D-D12			446
TS-6370D-A13		0 to 40 °C	138
TS-6370D-B13			192
TS-6370D-C13			290
TS-6370D-D13			446
TS-6370D-A14		0 to 100 °C	138
TS-6370D-B14			192
TS-6370D-C14			290
TS-6370D-D14			446
TS-6330D-A10	2K2 NTC	−40 to 120 °C	138
TS-6330D-B10			192
TS-6330D-C10			290
TS-6330D-D10			446
TS-6340D-A10	10K NTC		138
TS-6340D-B10			192
TS-6340D-C10			290
TS-6340D-D10			446
TS-6350D-A10	PT100		138
TS-6350D-B10			192
TS-6350D-C10			290
TS-6350D-D10			446
TS-6360D-A10	PT1000		138
TS-6360D-B10			192
TS-6360D-C10			290
TS-6360D-D10			446

Remote Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6370R-F01	0...10 VDC	−40 to 50 °C	1.5 m cable lenght
TS-6370R-F03		0 to 40 °C	
TS-6370R-F04		0 to 100 °C	

Cable Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6330K-F00	2K2 NTC	−40 to 100 °C	1.5 m cable lenght
TS-6340K-F00	10K NTC		
TS-6360K-F00	PT1000		

Outdoor Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6370E-001	0...10 VDC	−40 to 50 °C	---
TS-6370E-002		−20 to 40 °C	
TS-6330E-000	2K2 NTC	−40 to 70 °C	
TS-6340E-000	10K NTC		
TS-6350E-000	PT100		
TS-6360E-000	PT1000		

Strap-on Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6370S-002	0...10 VDC	−20 to 40 °C	---
TS-6370S-004	0...10 VDC	0 to 100 °C	
TS-6330S-000	2K2 NTC	−40 to 100 °C	
TS-6340S-000	10K NTC		
TS-6350S-000	PT100		
TS-6360S-000	PT1000		

Ceiling Sensor

Codes	Output	Temperature Range	Lenght (mm)
TS-6370C-E13	0...10 VDC	0 to 40 °C	36
TS-6330C-E10	2K2 NTC	−40 to 70 °C	
TS-6340C-E10	10K NTC		
TS-6350C-E10	PT100		
TS-6360C-E10	PT1000		

Outdoor Sensor Grey

Codes	Output	Mounting Type	Operating Range
TS-6330E-050	2K2 NTC	Outdoor grey enclosure	−40 to 70 °C
TS-6340E-050	10K NTC		
TS-6350E-050	PT100		
TS-6360E-050	PT1000		
TS-6370E-051	0...10 VDC		−40 to 50 °C
TS-6370E-052			−20 to 40 °C

Johnson Controls

TS-6300

Plant Temperature Sensor

Ordering information

Accessories

Brass/Copper, PN16

Codes	Lenght (mm)	Mounting Thread
TS-6300W-E200	50[1]	
TS-6300W-D200	80	
TS-6300W-F200	120	R 1/2"
TS-6300W-G200	150	
TS-6300W-H200	200	
TS-6300W-I200	260	

Stainless Steel, PN25

Codes	Lenght (mm)	Mounting Thread
TS-6300W-E300	50[1]	
TS-6300W-D300	80	
TS-6300W-F300	120	R 1/2"
TS-6300W-G300	150	
TS-6300W-H300	200	
TS-6300W-I300	260	
TS-6300W-E400	50[1]	
TS-6300W-D400	80	
TS-6300W-F400	120	G 1/2"
TS-6300W-G400	150	
TS-6300W-H400	200	
TS-6300W-I400	260	

TS-6300D-000	Duct flange kit
TS-6300W-900	Retrofitting thermowell adapter kit

Note

1 For cable sensor only

Johnson Controls

STS-6300

Plant Temperature Sensor

The STS-6300 Series temperature sensors provide a passive signal that corresponds to the air or water temperature Heating, Ventilation and Air Conditioning (HVAC) applications.

They are passive resistive signal NTC K2, NTC K10, PT100 or PT1000 related to the sensed temperature.

The series consists of:

- **Duct/Immersion sensor** for measurement of air temperature and other gaseous media for HVAC applications (e.g. supply and exhaust ducts).

- **Cable sensor** for temperature measurement in HVAC applications. In conjunction with a thermowell pocket suitable for temperature measurement in duct applications. Designed for control and monitoring applications.

- **Outdoor temperature sensors** for measuring temperature in outdoor areas, in cold stores and greenhouses, production plants and warehouses. Designed for connecting to control and display systems.

- **Cable temperature sensors:** Sensor with hinged cover enclosure for temperature measurement of pipes and round surfaces. Spring loaded brass contact sensor.
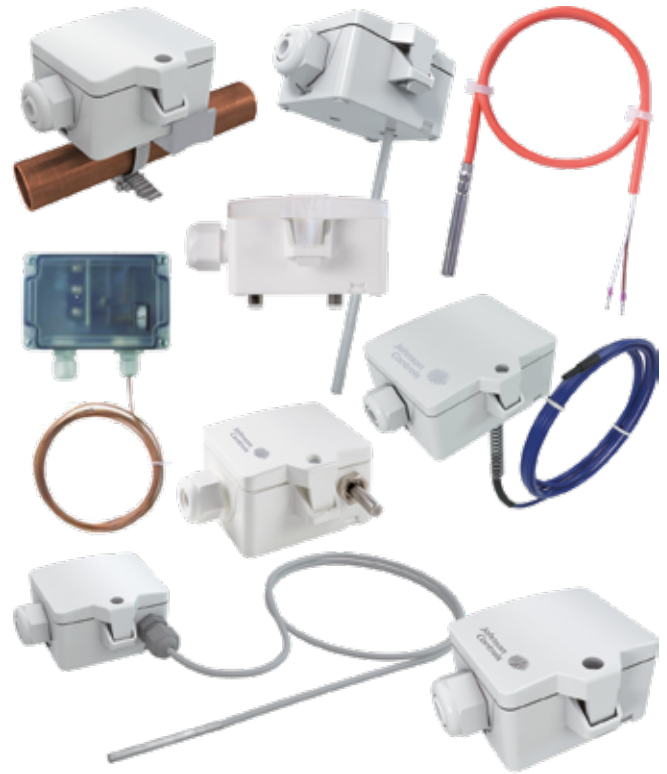
Features

- Wide range of mounting types and signal outputs

- Different length of tubes and wells for duct and immersion applications

- Bayonet mounting system

- For immersion applications, well can be mounted before duct sensor is mounted

- IP54 ingress protection (except cable sensor)

- IP67 ingress protection for cable sensor

Accessories

Brass / Copper

Stainless steel

Johnson Controls

STS-6300

Plant Temperature Sensor

Dimensions (in mm)

Duct/Immersion & Ceiling Sensor

STS-6370R-F01

STS-6330x0K-F00

Cable Sensor
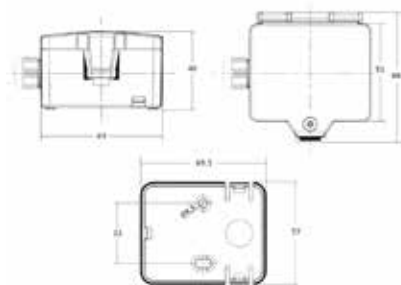
Outdoor Sensor
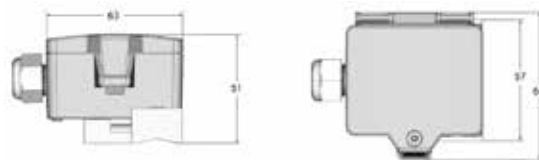
Strap-on Sensor
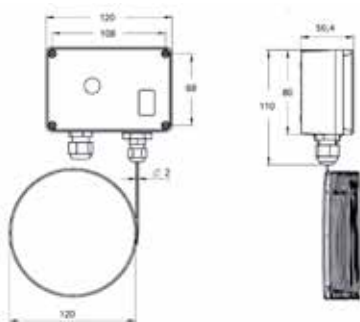
Frost Protection Thermostat
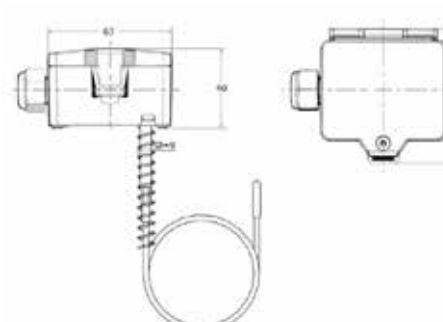
Average Temperature Sensor
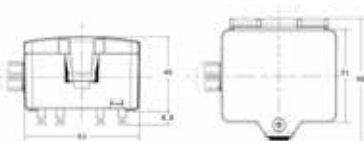
Leakage Sensor

Johnson Controls

STS-6300

Plant Temperature Sensor

Ordering information

Duct / Immersion Sensors

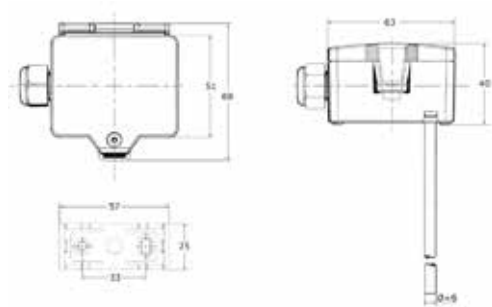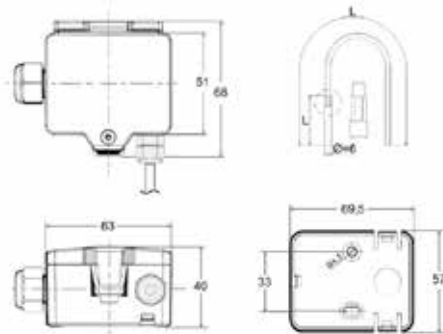| Codes	Output	Lenght (mm)	Temperature Range
STS-6370C-E13	0..10 V or 0..5 V, configurable via jumper, min. load 5 kΩ	50	default setting: 0..+160 °C selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250°C, adjustable at the transducer
STS-6350D-E10	PT100	100	−50..+150 °C
STS-6350D-G10	PT100		
STS-6360D-G10	PT1000		
STS-6370D-A11	0...10 VDC	150	default setting: 0..+160 °C selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer
STS-6330D-A10	2K2 NTC		−50..+150 °C
STS-6340D-A10	10K NTC		
STS-6350D-A10	PT100		
STS-6360D-A10	PT1000		
STS-6370D-B11	0...10 VDC	200	default setting: 0..+160 °C selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250°C, adjustable at the transducer
STS-6340D-B10	10K NTC		−50..+150 °C
STS-6350D-B10	PT100		
STS-6360D-B10	PT1000		
STS-6350D-H10	PT100	250	
STS-6360D-H10	PT1000		
STS-6370D-C11	0...10 VDC	300	default setting: 0..+160 °C selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250°C, adjustable at the transducer
STS-6330D-B10	2K2 NTC		−50..+150 °C
STS-6340D-C10	10K NTC		
STS-6350D-C10	PT100		
STS-6360D-C10	PT1000		
STS-6370D-D11	0...10 VDC	450	default setting: 0..+160 °C selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer
STS-6330D-D10	2K2 NTC		−50..+150 °C
STS-6340D-D10	10K NTC		
STS-6350D-D10	PT100		
STS-6360D-D10	PT1000		

Johnson Controls

STS-6300

Plant Temperature Sensor

Ordering information

Cable Sensors

Codes	Output	Lenght (mm)	Temperature Range
STS-6370R-F01	00..10 V or 0..5 V, configurable via jumper, min. load 5 kΩ	1.5 m cable lenght	default setting: 0..+160 °C, selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer
STS-6330K-F00	2K2 NTC	2 m cable lenght	−35..+100 °C
STS-6340K-F00	10K NTC		
STS-6360K-F00	PT1000	1.5 m cable lenght	

Outdoor Sensors

STS-6370E-001	0..10 V or 0..5 V, configurable via jumper, min. load 5 kΩ	---	default setting: −50..+50 °C, selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer
STS-6330E-000	2K2 NTC		−35 to +90 °C
STS-6340E-000	10K NTC		
STS-6350E-000	PT100		
STS-6360E-000	PT1000		

Strap-on Sensors

STS-6370S-002	0..10 V or 0..5 V, configurable via jumper, min. load 5 kΩ	---	default setting: 0..+100 °C, selectable from 8 temperature ranges −50..+50 | −20..+80 | −15..+35 | −10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer
STS-6320S-002	Ni1000TK5000		−35..+120 °C
STS-6330S-000	2K2 NTC		
STS-6340S-000	10K NTC		
STS-6350S-000	PT100		
STS-6360S-000	PT1000		

Ceiling Sensors

STS-6340C-E10	10K NTC	50	−50..+15 °C
STS-6360C-E10	PT1000		

Johnson Controls

STS-6300

Plant Temperature Sensor

Ordering information

Frost protection Thermostat

Codes	Output	Lenght (m)	Temperature Range
STS-6301F-030	Single pole change over, contact rating max. 10 A	3	Copper with tube filling R 507, 3 m, 6 m, 12 m, sensor operating length approx. 600 mm, contact material Ag/Ni (90%/10%), gold plated (3 µm)
STS-6301F-060		6	
STS-6301F-120		12	

Leakage Sensor

Codes	Output	Protection	Power Supply
STS-6301L-024	Changeover contact, 24 V: max. 24 V / 1,0 A	IP65	15..24 V = (±10%) or 24 V ~ (±10%) SELV

Average Temperature Sensor

Codes	Output	Lenght (m)	Measuring Range Temperature
STS-6320A-311	Ni1000TK5000	3	-50..+80 °C
STS-6320A-611		6	
STS-6360A-311	PT1000	3	
STS-6360A-611		6	
STS-6370A-311	0...10V	3	default setting: 0..+160 °C selectable from 8 temperature ranges -50..+50	-20..+80	-15..+35	-10..+120	0..+50	0..+100	0..+160	0..+250 °C, adjustable at the transducer
STS-6370A-611		6	

Codes	Network Technology	Lenght (m)	Measuring Range Temperature
STS-63B0A-311	BACnet	3	-20..+80 °C (default setting), adjustable via BACnet
STS-63B0A-611		6	

STS-6300

Plant Temperature Sensor

Accessories

Brass / Copper, PN16

Codes	Lenght (mm)	Mounting Thread
STS-6300W-E200	50	R 1/2"
STS-6300W-D200	100	
STS-6300W-G200	150	
STS-6300W-H200	200	
STS-6300W-I200	300	
STS-6300W-J200	450	

Stainless steel, PN40

STS-6300W-E400	50	G 1/2"
STS-6300W-D400	100	G 1/2"
STS-6300W-G400	150	G 1/2"
STS-6300W-H400	200	G 1/2"
STS-6300W-I400	300	G 1/2"

STS-6300D-000	Duct Flange Kit for TS-63xx sensors
STS-6300T-001	Tension clamp for pipes up to 110 mm with contact fluid

Johnson Controls

TS-63M0

Plant Temperature Sensor - MODBUS

The STS-63M0 sensor with Modbus interface has been specially developed for HVAC applications and is a highly accurate and reliable sensor for measuring temperature.

The housing minimises installation costs and provides excellent protection against dirt and condensation, ensuring flawless operation. The STS Series temperature sensors provide an active signal corresponding to the air or water temperature in heating, ventilation and air conditioning applications.

Features

- Different length of tubes and wells for duct and immersion applications

- Bayonet mounting system

- For immersion applications, well can be mounted before duct sensor is mounted

- IP54 ingress protection (except cable sensor)

- IP67 ingress protection for cable sensor
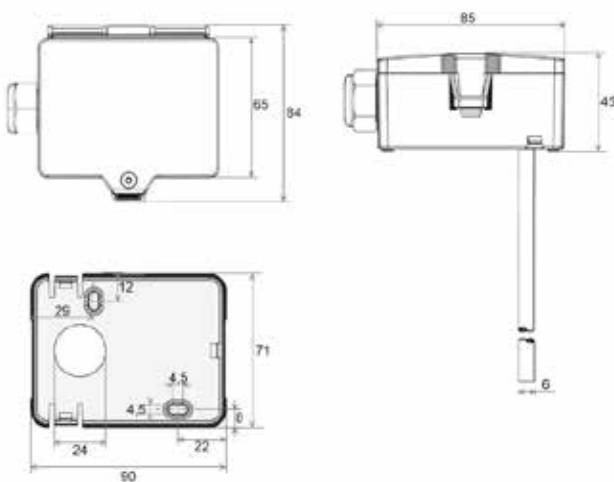
Dimensions (in mm)

STS-63M0D

STS-63M0K-F00

Johnson Controls
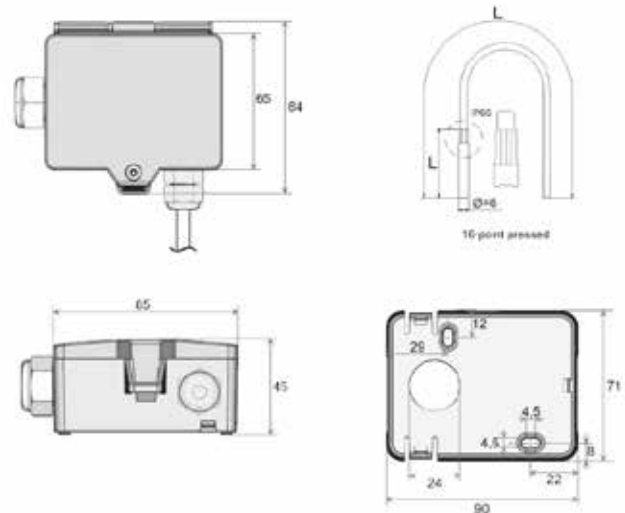
TS-63M0

Plant Temperature Sensor - MODBUS

Dimensions (in mm)
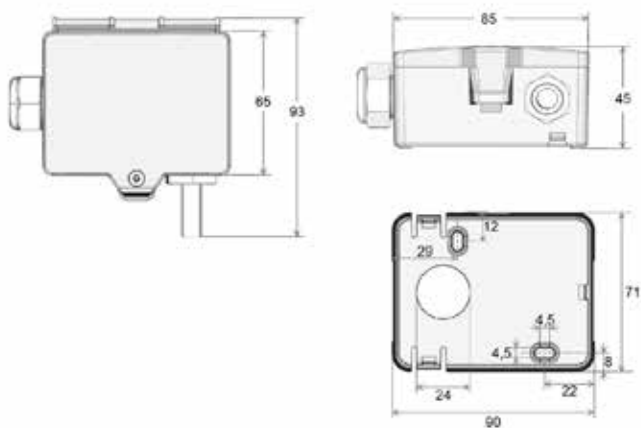
STS-63M0E-050

Ordering information

Duct / Immersion Sensors, Modbus Network Technology

Codes	Analog Output	Lenght (mm)	Temperature Range
STS-63M0D-E10		50	
STS-63M0D-F10		100	
STS-63M0D-A10		150	
STS-63M0D-B10	1x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ	200	−35..+70 °C
STS-63M0D-G10		250	
STS-63M0D-C10		300	
STS-63M0D-D10		450	

Outdoor Sensor, Modbus Network Technology

STS-63M0E-050	0..10 V / 0..5 V, configurable via jumper, min. load 10 kΩ	---	−35..+70 °C

Cable Sensor, Modbus Network Technology

STS-63M0K-F00	1x 0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ	cable length 2 m	−50..+160 °C

Johnson Controls

STS-63B0

Plant Temperature Sensor - BACnet

The STS-63B0D-x10 sensor with BACnet interface has been specially developed for HVAC applications and is a highly accurate and reliable sensor for measuring temperature. The housing minimises installation costs and provides excellent protection against dirt and condensation, ensuring flawless operation. The STS Series temperature sensors provide an active signal corresponding to the air or water temperature in heating, ventilation and air conditioning applications.

Features

- Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
- Snap-on Enclosure
- Allows a quick and easy mounting of the device and saves installation costs
- Wide range of mounting types and signal outputs
- Allows more flexibility in sensor selection
- Different length of probes for duct and immersion applications
- Senses the temperature at the desired location
- STS-63B0D-x10 Protection Class IP65
- It can be mounted in several environments

Dimensions (in mm)
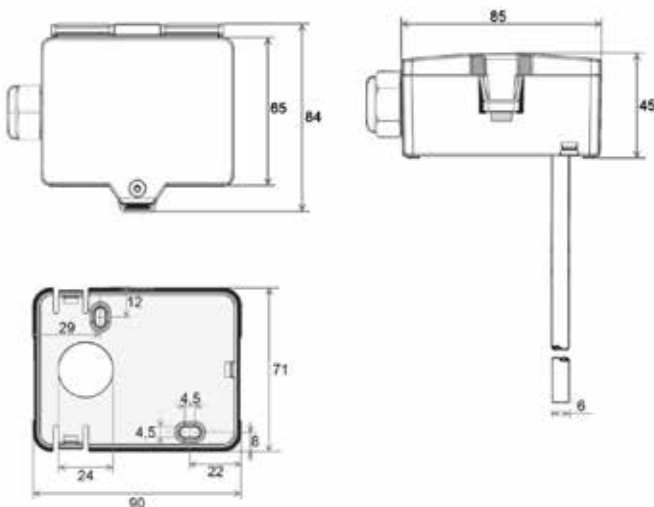
STS-63B0

Plant Temperature Sensor – BACnet

Ordering information

Codes	Analog Output	Lenght (mm)	Temperature Range
STS-63B0D-E10		50	
STS-63B0D-F10		100	
STS-63B0D-A10		150	
STS-63B0D-B10	0..10 V / 0..5 V, configurable via jumper, min. load 5 kΩ	200	–35..+70 °C
STS-63B0D-G10		250	
STS-63B0D-C10		300	
STS-63B0D-D10		450	

Johnson Controls

Pressure

PT–5217

Liquid or Air Pressure Transmitter

The PT–5217 pressure transmitter accurately measures pressure and converts the measurement into a standard proportional 0...10 V signal.

The PT–5217 is especially adapted to measure relative and absolute pressure of liquid and gases.

The pressure transmitter consists of a piezoresistive ceramic measuring cell with a diaphragm, installed in a stainless steel housing.

Features

- Compact, rugged construction
- Negligible temperature influence on accuracy
- Low hysteresis
- High accuracy
- Direct mounting, 1.5 m cable included
- Splash proof enclosure

Dimensions (in mm)

Mounting holes
Ø 5,4 mm
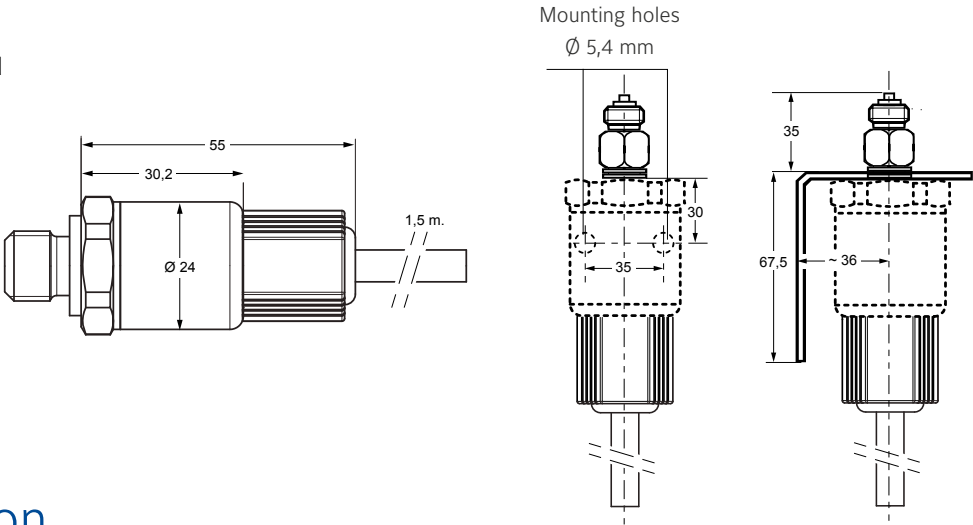
Ordering Information

Codes	Operating Range	Enclosure	Supply Voltage
PT-5217-7011	0...100 kPa	IP67	24 VAC +15% / −15%, 50/60 Hz or 12...33 VDC, <7 mA
PT-5217-7101	0...1000 kPa	IP67	24 VAC +15% / −15%, 50/60 Hz or 12...33 VDC, <7 mA

Accessory (order separately)

Codes	Description
EQ-6056-7000	Mounting kit for plastic hose 4 x 6 mm

Johnson Controls

Pressure Transmitter

SPT0000

Pressure Transmitter

The SPT-00xx-A010 is transmitter for pressure detection in liquid mediums for air conditioning, heating and water application. Suitable for plants with refrigerant.

Dimensions (in mm)
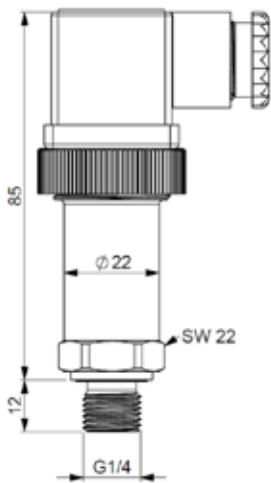
Ordering information

Codes	Measuring Pressure Range	Accuracy Pressure	Output Voltage	Power Supply	Protection
SPT0004-A010	0..4 bar				
SPT0006-A010	0..6 bar	±0,5% (typ. at +21 °C)	0..10 V, min. load 5 kΩ	15..24 V = (±10%) or 24 V ~ (±10%) SELV	IP65 according to EN 60529
SPT0010-A010	0..10 bar				
SPT0016-A010	0..16 bar				

Accessory (order separately)

Codes	Description
SPT0000-A001	Connection adapter G1/4" to G1/2"

Johnson Controls

Room Humidity

HT-1000
Wall Mount

Room sensor for recording indoor climate (Temperature + Humidity). The maintenance-free sensor creates the conditions for a pleasant indoor climate and well-being.

Typical applications are schools, office buildings, hotels, cinemas or similar.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Humidity Accuracy 2% RH from 10 to 90% RH
▪ More accurate humidity control and energy savings

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

Modern and attractive cover with mounting base
▪ Blends in with room decor. Easy installation.

Dimensions (in mm)
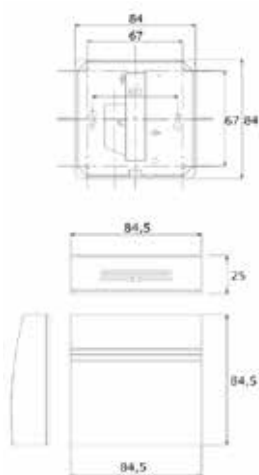
SHT-1306-UR
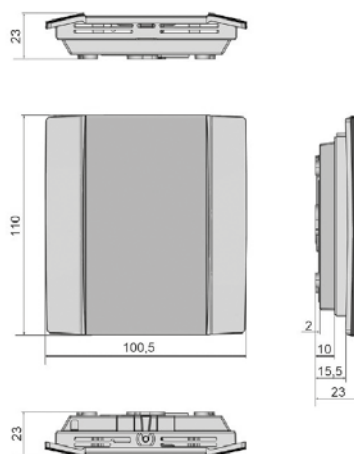
SHT-1301-UR

Ordering information

Codes	Humidity Range	Humidity Accuracy	Temperature Range	Temperature Output	Supply Voltage
SHT-1301-UR	0..100% RH non-condensing	±2% between 10..90% RH (typ. at 21 °C)	0..+50 °C	2x 0...10V	15..24 V = (±10%) or 24 V ~ (±10%) SELV
SHT-1306-UR				2x 0..10V + PT1000	

Johnson Controls

Solution Navigator

HT-100M

Wall Mount - MODBUS

The Johnson Controls SHT-130M-UR room humidity sensors with Modbus interface provides active sensing of relative humidity and temperature in HVAC applications. The humidity sensing element provides within either ±2% accuracy a voltage output signal proportional 0 to 100% relative humidity. The maintenance-free sensor creates the conditions for a pleasant indoor climate and well-being. Typical applications are schools, office buildings, hotels, cinemas or similar.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Humidity Accuracy 2% RH from 10 to 90% RH
▪ More accurate humidity control and energy savings

Additional temperature output
▪ Suitable for a wider range of applications

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

Modern and attractive cover with mounting base
▪ Blends in with room decor. Easy installation.

Polymer humidity sensing element is integrated onto a chip
▪ Provides stability, repeatability and linear response.

Dimensions (in mm)

Ordering information

Codes	Humidity Range	Humidity Accuracy	Temperature Range	Network Technology	Supply Voltage
SHT-130M-UR	0..100% non-condensing	±2% between 10..90% RH (typ. at 21 °C)	0..+50 °C	RS485 Modbus	15..35 V = / 19..29 V ~ SELV

Johnson Controls

HT-100B

Wall Mount - BACnet

The Johnson Controls SHT-130B-UR room humidity sensors with BACnet interface provides active sensing of relative humidity and temperature in HVAC applications. The humidity sensing element provides within either ±2% accuracy a voltage output signal proportional 0 to 100% relative humidity. The maintenance-free sensor creates the conditions for a pleasant indoor climate and well-being. Typical applications are schools, office buildings, hotels, cinemas or similar.

Features

- Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)

- Flexible application

- Humidity Accuracy 2% RH from 10 to 90% RH

- More accurate humidity control and energy savings

- Additional temperature output

- Suitable for a wider range of applications

- Snap-on Enclosure

- Allows a quick and easy mounting of the device and saves installation costs

- Modern and attractive cover with mounting base

- Blends in with room decor. Easy installation.

- Polymer humidity sensing element is integrated onto a chip

- Provides stability, repeatability and linear response

Dimensions (in mm)

Ordering information

Codes	Humidity Range	Humidity Accuracy	Temperature Range	Network Technology	Supply Voltage
SHT-130B-UR	0..100% non-condensing	±2% between 10..90% rH (typ. at 21 °C)	0..+50 °C	RS485 BACnet	15..35 V = / 19..29 V ~ SELV

Johnson Controls

Analog Sensors

Solution Navigator

RS-1100

0...10V Temperature Room Command Module

The RS-1100 room command modules are designed for use with any type of Johnson Controls or third party HVAC controllers that can accept a 0...10 V signal directly proportional to the sensed temperature.

Models are available with and without LCD display, room temperature setpoint adjustment dial, temporary occupied override function and fan speed button.

Features

▪ Power supply:
  15 VDC (all models)
  24 VAC / VDC (only models with display)

▪ 0...10 VDC temperature output

▪ Remote temperature setpoint adjustment

▪ Occupancy override function (models with or without display)

▪ Room enclosures 80 x 80 mm

▪ Protection class: IP30

▪ Fan speed button

Dimensions (in mm)

Comfort / Stand-by button

Mode LED

LCD display with back-light

Dial for Temperature setpoint adjustment

Fan speed override

RS-1140-0000   RS-1160-0005   RS-1180-0000

Johnson Controls
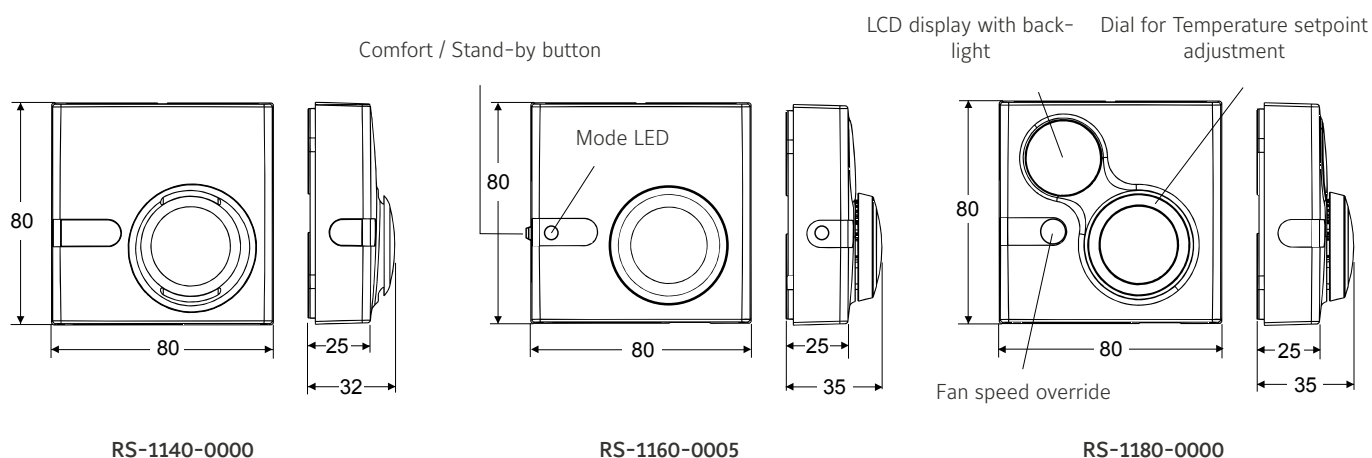
RS-1100

0...10V Temperature Room Command Module

Ordering information

Codes	Temperature Output	LCD Display	Setpoint Dial Scale	Temporary Occupancy Ovveride Function	Fan Speed Override
RS-1140-0000	0...10 VDC				
RS-1160-0000	0...10 VDC		12...28 °C	Pushbutton	
RS-1160-0005	0...10 VDC		+/–	Pushbutton	
RS-1180-0000	0...10 VDC	■	12...28 °C	Integrated	
RS-1180-0005	0...10 VDC	■	+/–	Integrated	
RS-1190-0000	0...10 VDC		12...28 °C		
RS-1190-0005	0...10 VDC		+/–		
RS-1180-0002	0...10 VDC	■	12...28 °C	Integrated	■
RS-1180-0007	0...10 VDC	■	+/–	Integrated	■

Accessories (order separately)

Codes	Description
TM-1100-8931	Plastic surface mounting kit
TM-9100-8900	Special tool for opening enclosure

Johnson Controls

RS-7000

Analog Sensors

The Flush Mount RS-7000 Analog Sensors Series with LCD is an electronic room command module designed to work with Johnson Controls® controllers in heating, ventilating and air conditioning (HVAC) systems. Models in this series monitor the zone temperature and humidity, and transmit data to a field controller using up to three analog outputs.

RS-7060-0000 can toggle between temperature and RH on the display, depending on desired default display.

The temperature only model RS-7080-0002 includes Fan mode push button to set the desired fan speed (OFF-LOW-MED-HIGH-AUTO). Both models with display have occupancy button, which allows user to select when the zone is occupied, to set the comfort mode only when is necessary.

The model without display RS-7040-0000 provides a combined measurement of the zone temperature and humidity.

Installation is quite easy, given the possibility to configure the Setpoint Mode and temperature limits during installation.

Features

Temperature sensor with combined humidity for best comfort
▪ RS-7000 range offers fan speed control or combined humidity sensor for best comfort

Configurable options reduce stock need
▪ The setpoint mode adjust or warmer/cooler can be configured during the installation

Large backlit display in a low profile enclosure
▪ Provides a modern looking and clear user interface

Customizable display helps to meet building policy
▪ RS-7000 can show actual values or setpoint only

Keypad lockable in public space
▪ The RS-7000 sensor buttons can be locked against misuse in public space

Flush mount installation
▪ Suitable for various installation boxes, offers low profile enclosure

Johnson Controls

RS-7000

Analog Sensors

Dimensions (in mm)

14.20

87.75

39.20

60.00

87.75
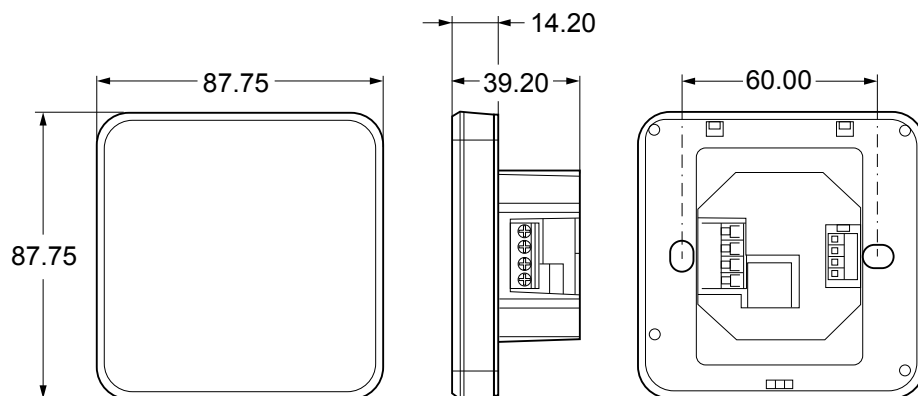
Ordering information

Codes	Color [1]	LCD	Temperature	Humidity [2]	Fan Control	Temperature Adjustment [3]	°F/°C Scale Toggle	Occupancy Override
RS-7040-0000	White		■	■ (±3%)				
RS-7060-0000	White	■	■	■ (±3%)		Adj/WC	■	■
RS-7080-0002	White	■	■		■	Adj/WC	■	■

Notes

1 Device color white only.

2 For models with humidity sensor, the humidity value can be displayed in LCD too.

3 Adj/WC, Setpoint Adjust 12 to 28 °C (Default) / WC (Warmer/Cooler) Setpoint ±3 °C mode.

Johnson Controls

TM-1100
TCx designed Room Command Modules

The TM-1100 Series of room command modules are designed for use with the TC-9102, TC-9109 and TCU Series of DDC terminal unit controllers.

The setpoint dial enables the room occupant to adjust the working set point of the controller within the range of 12 to 28 °C or -3 to +3 °C, according to the model number.

The occupancy button enables the occupant to switch the mode of operation of the controller between COMFORT and STANDBY or to request a temporary COMFORT mode during NIGHT operation.

A LED indicator shows the current operating mode. For TC-9102 and TCU fan coil unit controllers, a room command module with a 3-speed fan override is available. Models without a temperature sensing element are provided for application where the temperature sensor is mounted inside the fan coil unit.

Features

▪ Passive sensor

▪ NTC K2 temperature output

▪ Remote temperature setpoint adjustment

▪ 3-speed fan override

▪ Occupancy override button

▪ Room enclosures 80 x 80 mm

▪ Protection class: IP30

Dimensions (in mm)
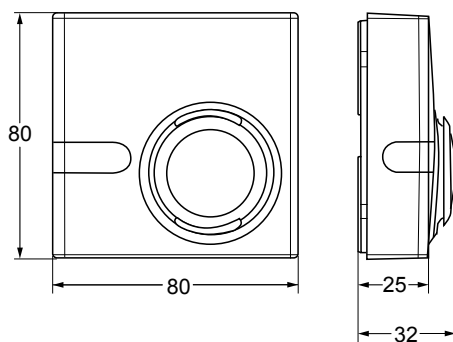
TM-1140-0000

TM-1160-0007 and TM-1170-0007

Johnson Controls

TM-1100
TCx designed Room Command Modules

Ordering information

Codes	Built-in Sensing Element	Temperature Setpoint Dial Scale	Fan Speed Override	Occupancy Button
TM-1140-0000	NTC K2			
TM-1150-0000	NTC K2			■
TM-1160-0000	NTC K2	12 to 28 °C		■
TM-1160-0005	NTC K2	+/-		■
TM-1160-0002	NTC K2	12 to 28 °C	3-speed fan override	■
TM-1160-0007	NTC K2	+/-	3-speed fan override	■
TM-1170-0005	Without	+/-		■
TM-1170-0007	Without	+/-	3-speed fan override	■
TM-1190-0000	NTC K2	12 to 28 °C		
TM-1190-0005	NTC K2	+/-		

Accessories (order separately)

Codes	Description
TM-1100-8931	Plastic base for surface mount
TE-9100-8501	Unit mount NTC K2 temperature sensor (1.5 m cable)
TM-9100-8900	Special tool for opening enclosure

Johnson Controls

TM-2100

FCC and Facility Explorer designed Room Command Modules

The TM-2100 Series of room command modules are designed for use with the FCC and Facility Explorer Series of DDC terminal unit controllers. The setpoint dial enables the room occupant to adjust the working set point of the controller within the range of 12 to 28 °C or -3 to +3 °C, according to the model number.

The occupancy button enables the occupant to switch the mode of operation of the controller between COMFORT and STANDBY or to request a temporary COMFORT mode during NIGHT operation.

A LED indicator shows the current operating mode. A Room Command Module with a 3-speed fan override adjuster is available.
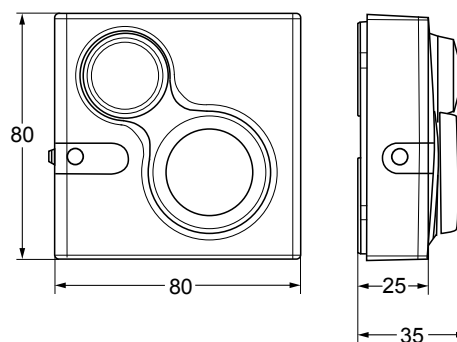
Features

- Passive sensor
- NTC 10K temperature output
- Remote temperature setpoint adjustment
- 3-speed fan override
- Occupancy override button
- Room enclosures 80 x 80 mm
- Protection class: IP30

Dimensions (in mm)

80
80
25
32

TM-2140-0000

80
80
25
35
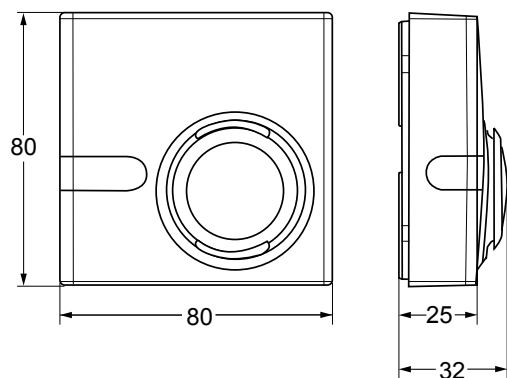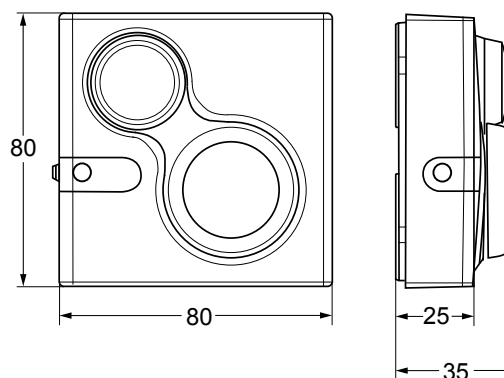
TM-2160-0007 and TM-2170-0007

Johnson Controls

TM-2100

FCC and Facility Explorer designed Room Command Modules

Ordering information

Codes	Built-in Sensing Element	Temperature Setpoint Dial Scale	Fan Speed Override	Occupancy Button
TM-2140-0000	NTC 10K			
TM-2150-0000	NTC 10K			∎
TM-2160-0000	NTC 10K	12-28 °C		∎
TM-2160-0005	NTC 10K	+/-		∎
TM-2160-0002	NTC 10K	12-28 °C	3-speed fan override	∎
TM-2160-0007	NTC 10K	+/-	3-speed fan override	∎
TM-2190-0000	NTC 10K	12-28 °C		
TM-2190-0005	NTC 10K	+/-		

Accessories (order separately)

Codes	Description
TM-1100-8931	Plastic base for surface mount
TE-9100-8502	Unit mount NTC K10 temperature sensor (1.5 m cable)
TM-9100-8900	Special tool for opening enclosure

Johnson Controls

Solution Navigator

TM-3100

Passive Sensing Temperature Room Command Modules

The TM-3100 Series room temperature sensor provide passive sensing of temperature in HVAC application.

The TM-3100 is equipped with a PT1000 class A sensing element and provides an output proportional signal to the measured ambient temperature.

The TM-3100 Series room temperature sensor is designed for use with the Facility Explorer Series and with the Field Equipment controller Series.

Features

▪ Passive sensor

▪ PT1000

▪ Room enclosure: 80 x 80 mm

▪ Protection Class: IP30
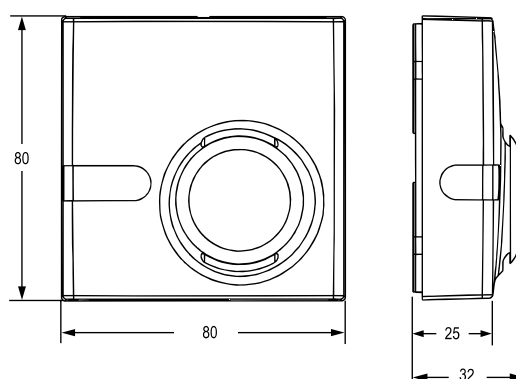
Dimensions (in mm)

Ordering information

Codes	Built-in Sensing Element	Temperature Setpoint Dial Scale	Fan Speed Override	Occupancy Button
TM-3140-0000	Pt 1000	---	---	---

Accessories (order separately)

Codes	Description
TM-1100-8931	Plastic base for surface mount
TM-9100-8900	Special tool for opening enclosure

Johnson Controls

Solution Navigator

TM–11xM
Wall Mount – MODBUS

The Johnson Controls STM room temperature sensors with Modbus interface provides active sensing of temperature in HVAC applications. The temperature sensing element provides within either ±0,5 K accuracy (typ. at 21 °C) a voltage output signal proportional 0 to 50 °C (configurable via Modbus).

The maintenance–free sensor creates the conditions for a pleasant indoor climate and well–being. Typical applications are schools, office buildings, hotels, cinemas or similar.

Features

Power Supply 15..24 VDC (±10%) or 24 VAC (±10%)
▪ Flexible application

Snap-on Enclosure
▪ Allows a quick and easy mounting of the device and saves installation costs

Modern and attractive cover with mounting base
▪ Blends in with room decor. Easy installation.

Ordering information

Codes	Description
STM-115M-0000	Temperature Output Only

Dimensions (in mm)

Johnson Controls

Network Sensors

NS8000

Series Network Sensors

The NS Series Network Sensors function directly with Metasys® system Field Equipment Controllers (FECs), Metasys Network and Control Engines (NCEs), Advanced Application Field Equipment Controller (FACs), Metasys VAV Box Equipment Controllers (CVM) 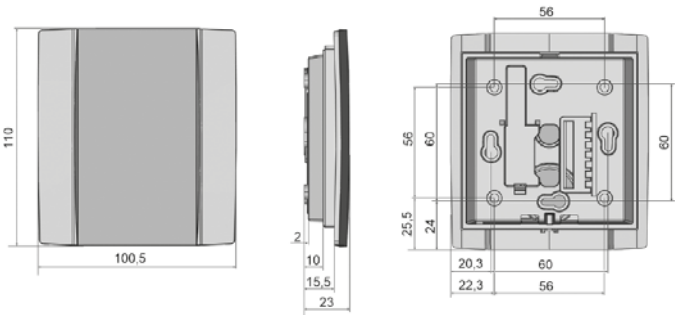and General Purpose Application Controllers (CGM), VAV Modular Assembly (VMA16) Controllers, and Facility Explorer™ FX-PC Series Programmable Controllers (FX-PCGs, FX-PCVs, and FX-PCXs). The sensors are also compatible with Verasys® and Johnson Controls® Smart Equipment.

The NS Series Network Sensors monitor zone temperature, relative humidity (RH), carbon dioxide (CO_2), motion, and local temperature setpoint adjustments. The sensor transmits this data to a controller on the Sensor/Actuator (SA) bus.

Some NS Series Network Sensors models include an onboard passive infrared (PIR) occupancy sensor that detects motion to determine if a space is occupied. This feature maximizes up to 30% energy savings in high-energy usage environments such as schools, dormitories, offices, hospitals, and hotels by adjusting the temperature of the space based on the occupancy status. In addition, the PIR occupancy sensor facilitates trending of floor space usage in these environments.

The full color graphical LCD models use the graphical user interface to set a unique BACnet® address for applications that require multiple sensors.

Features

BACnet MS/TP protocol communication
- Provides compatibility with Metasys system field controllers, Facility Explorer programmable controllers as well as Verasys and Johnson Controls Smart Equipment in a proven communication network.

Single and multifunctional sensors
- Choose temperature, RH, CO_2, and occupancy sensing depending on HVAC needs.

Large backlit LCD fixed segment display or LCD full color graphical display on some models
- Provides real-time status of the environment with backlighting activated during user interaction.

Simple temperature setpoint adjustment or Warmer/Cooler mode available on display models

- Configure simple setpoint adjustment or Warmer/Cooler mode.

Onboard occupancy sensor available on PIR models
- Maximizes up to 30% energy savings in high-energy usage environments, and facilitates trending of floor space usage.

Temporary occupancy included on all display and Warmer/Cooler models
- Provides a timed override command, which initiates a temporary occupancy state.

Field-selectable default display setting on display models
- Toggle between temperature, RH or temperature setpoint on the display, and set the desired default for continuous viewing.

Fahrenheit/Celsius (°F/°C) selectable on display models
- Display temperature in degrees Fahrenheit or degrees Celsius.

All display models meet California Energy Code (Title 24)
- Displays the required State of California Title 24 economizer fault conditions.

All display models include a screen lockout
- Prevents sensor tampering.

Serialized sensors and calibration certificates
- Obtain factory calibration certificates for all models.

Johnson Controls

NS8000

Series Network Sensors

Ordering information

Temperature, Humidity, and CO_2 Models (3% RH)

Codes	JCI logo	Color	PIR Occupancy Sensor
No Display			
NSB8BHC040-0	■	White	
NSB8BHC041-0		White	
NSB8BHC042-0	■	Black	
NSB8BHC043-0		Black	
NSB8MHC040-0	■	White	■
NSB8MHC041-0		White	■
NSB8MHC042-0	■	Black	■
NSB8MHC043-0		Black	■
Fixed Segment Display			
NSB8BHC240-0	■	White	
NSB8BHC241-0		White	
NSB8BHC242-0	■	Black	
NSB8BHC243-0		Black	
NSB8MHC240-0	■	White	■
NSB8MHC241-0		White	■
NSB8MHC242-0	■	Black	■
NSB8MHC243-0		Black	■
Graphical User Interface			
NSB8BHC340-0	■	White	
NSB8BHC341-0		White	
Warmer/Cooler Interface			
NSB8BHC140-0	■	White	
NSB8BHC141-0		White	

Temperature and Humidity Models (3% RH)

Codes	JCI logo	Color	PIR Occupancy Sensor
Fixed Segment Display			
NSB8BHN240-0	■	White	
NSB8BHN241-0		White	
NSB8BHN242-0	■	Black	
NSB8BHN243-0		Black	
NSB8MHN240-0	■	White	■
NSB8MHN241-0		White	■
NSB8MHN242-0	■	Black	■
NSB8MHN243-0		Black	■
No Display			
NSB8BHN040-0	■	White	
NSB8BHN041-0		White	
NSB8BHN042-0	■	Black	
NSB8BHN043-0		Black	
NSB8MHN040-0	■	White	■
NSB8MHN041-0		White	■
NSB8MHN042-0	■	Black	■
NSB8MHN043-0		Black	■
Warmer / Cooler Interface			
NSB8BHN140-0	■	White	
NSB8BHN141-0		White	
NSB8BHN142-0	■	Black	
NSB8BHN143-0		Black	
Graphical User Interface			
NSB8BHN340-0	■	White	
NSB8BHN341-0		White	

Johnson Controls

NS8000

Series Network Sensors

Ordering information

Temperature and CO$_2$ Models

Codes	JCI logo	Color	PIR Occupancy Sensor
No Display			
NSB8BTC040-0	■	White	
NSB8BTC041-0		White	
NSB8BTC042-0	■	Black	
NSB8BTC043-0		Black	
NSB8MTC040-0	■	White	■
NSB8MTC041-0		White	■
NSB8MTC042-0	■	Black	■
NSB8MTC043-0		Black	■
Fixed Segment Display			
NSB8BTC240-0	■	White	
NSB8BTC241-0		White	
NSB8BTC242-0	■	Black	
NSB8BTC243-0		Black	
NSB8MTC240-0	■	White	■
NSB8MTC241-0		White	■
NSB8MTC242-0	■	Black	■
NSB8MTC243-0		Black	■
Graphical User Interface			
NSB8BTC340-0	■	White	
NSB8BTC341-0		White	

Temperature only Models

Codes	JCI logo	Color	PIR Occupancy Sensor
Fixed Segment Display			
NSB8BTN240-0	■	White	
NSB8BTN241-0		White	
NSB8BTN242-0	■	Black	
NSB8BTN243-0		Black	
NSB8MTN240-0	■	White	■
NSB8MTN241-0		White	■
NSB8MTN242-0	■	Black	■
NSB8MTN243-0		Black	■
No Display			
NSB8BTN040-0	■	White	
NSB8BTN041-0		White	
NSB8BTN042-0	■	Black	
NSB8BTN043-0		Black	
NSB8MTN040-0	■	White	■
NSB8MTN041-0		White	■
NSB8MTN042-0	■	Black	■
NSB8MTN043-0		Black	■
Warmer / Cooler Interface			
NSB8BTN140-0	■	White	
NSB8BTN141-0		White	
NSB8BTN142-0	■	Black	
NSB8BTN143-0		Black	
Graphical User Interface			
NSB8BTN340-0	■	White	
NSB8BTN341-0		White	

Johnson Controls

NS8000

Series Network Sensors

Ordering information

CO_2 only Models without Display

Codes	JCI logo	Color
NSB8BNC040-0	■	White
NSB8BNC041-0		White
NSB8BNC042-0	■	Black
NSB8BNC043-0		Black

Temperature and Humidity Models (2% RH)

Codes	JCI logo	Color
Fixed segment display		
NSB8BPN240-0	■	White
NSB8BPN241-0		White
NSB8BPN242-0	■	Black
NSB8BPN243-0		Black

Dimensions (in mm)
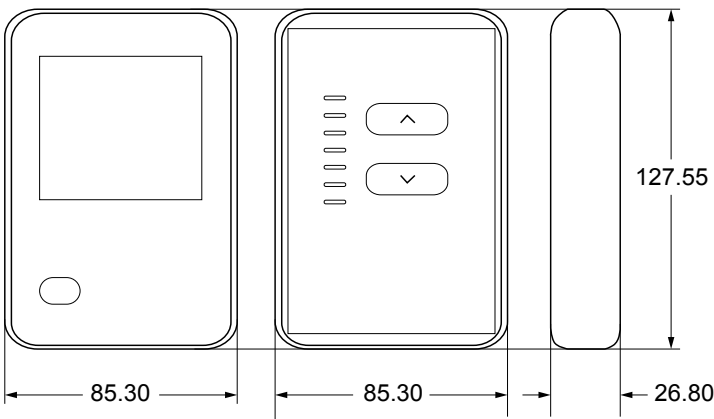
Johnson Controls

NSA-7000

Network Sensors

The Flush Mount NSA-7000 Network Sensor Series with LCD is an electronic zone sensor designed to function directly with Johnson Controls® BACnet® MS/TP digital controllers in heating, ventilating and air conditioning (HVAC) systems. Models in this series monitor the temperature set point, zone temperature and humidity and transmit this data to a field controller on the Sensor Actuator (SA) bus.

NSA-FHR71x3-0 can toggle on the display between temperature and relative humidity, depending on desired default display.

A push button is included in NSA-FTD70x3-0 to set the desired fan speed (OFF/LOW-MED-HIGH-AUTO). All models have occupancy button, which allows user to signal when the zone is occupied, to set the comfort mode only when is necessary.

The model without display NSA-FHN7001-0 has not buttons but provides an accurate measurement of the zone temperature and humidity.

For communication wiring flexibility, all models have both a modular jack and screw terminals for an easy connection to the *Metasys*® controllers.

Features

Large backlit display in a low profile enclosure
▪ Provides a modern looking clear user interface

Flush mount installation
▪ Suitable for various installation boxes, offers low profile enclosure

Programmable SA Bus Address
▪ Addressable through the display without the use of tool or screwdriver

Easy wiring
▪ NSA700 offers both type of connections: Modular Jack (MJ) and Screw terminal (ST)

Configurable options help product selection
▪ Setpoint type and limits can be configured during the installation

Customizable display helps tenants to meet building policy
▪ NSA can show actual values or setpoint only

Keypad lockable in public space
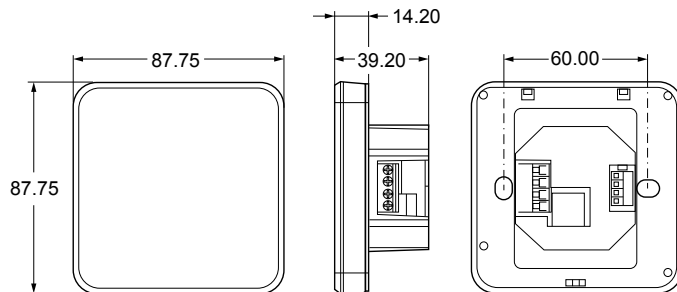▪ The NSA sensor buttons can be locked against misuse in public space

Customize colors meet customer needs
▪ The white front panel may be optionally customized in black or other colors

Johnson Controls

NSA-7000
Network Sensors

Dimensions (in mm)

Ordering information

White Standard Devices

Codes	LCD	Temperature	Humidity [1]	Fan Control	Temperature Adjustment [2]	°F/°C Scale Toggle	Occupancy Override	Screw Terminal [3]	Address Selection [4]
NSA-FHN7001-0		■	■ (±3%)					ST/MJ	
NSA-FTD7003-0	■	■		■	Adj/WC	■	■	ST/MJ	■
NSA-FTB7003-0	■	■			Adj/WC	■	■	ST/MJ	■
NSA-FHR7103-0	■	■	■ (±3%)		Adj/WC	■	■	ST/MJ	■

Black Optional Devices
There is MOQ (Minimum Order Quantity) requirement for black devices

Codes	LCD	Temperature	Humidity [1]	Fan Control	Temperature Adjustment [2]	°F/°C Scale Toggle	Occupancy Override	Screw Terminal [3]	Address Selection [4]
NSA-FHN7011-0		■	■ (±3%)					ST/MJ	
NSA-FTD7013-0	■	■		■	Adj/WC	■	■	ST/MJ	■
NSA-FTB7013-0	■	■			Adj/WC	■	■	ST/MJ	■
NSA-FHR7113-0	■	■	■ (±3%)		Adj/WC	■	■	ST/MJ	■

Notes

1 For models with humidity sensor, the humidity value also can be displayed in LCD.
2 Adj/WC, Setpoint Adjust 12 to 28 °C (Default) / WC (Warmer/Cooler) Setpoint ±3 °C mode.
3 All models equipped with both ST (Screw Terminal) and MJ (Modular Jack).
4 Default address is 199. Model without display has fixed address 199. Model with display can be configured between 199 to 215. In a mixed bus configuration 4 sensors max.

Johnson Controls

Wireless Sensors

WRZ

ZigBee Wireless Protocol

The WRZ series wireless room sensors are designed to sense room/zone temperature and transmit wireless temperature control data.
Some models also sense and transmit relative humidity.

In a ZFR1800 series wireless field bus system application, the sensors communicate with FEC16 Series, FEC26 series and VMA16 series controllers by means of the ZFR1811 router.

In wired field bus applications, the sensors communicate with a WRZ-7860 wireless receiver. The WRZ-7860 receiver transfers data to the controller by means of the Sensor Actuator (SA) communication bus. In a typical application, one WRZ series sensor reports to one WRZ-7860 receiver, but up to five WRZ series sensors can be associated with a single WRZ-7860 receiver for multi-sensor averaging or high/low temperature selection.

WRZ series sensor models are available with or without a Liquid Crystal Display (LCD). Depending on the sensor model, the WRZ series sensor can transmit sensed temperature, setpoint temperature, sensed humidity, occupancy status and PIR occupancy sensor and low battery conditions to an associated router or receiver. The WRZ series sensors are designed for indoor, intra-building applications only.

The WRZ sensors use direct-sequence, spread-spectrum RF technology, and operate on the 2.4 GHz Industrial, Scientific and Medical (ISM) band. The receiver meets the IEEE 802.15.4 standard for low power, low duty cycle RF transmitting systems.

Refer to the WRZ Series Wireless Room Sensors Product Bulletin (LIT-12011653) for important product application information.

Features

▪ Wireless RF design

▪ Integral wireless signal strength testing built into the sensor

▪ Easy installation and relocation

▪ Easily-applicable data types

▪ Simple, field adjustable DIP switches

▪ Optional, battery-powered WRZ-SST-110 wireless system survey tool

▪ High resistance to RF interference from other radio devices or RF noise sources

▪ User selectable default display for humidity models

▪ Display models

▪ Three temperature setpoint range options

Johnson Controls

WRZ
ZigBee Wireless Protocol

Dimensions (in mm)
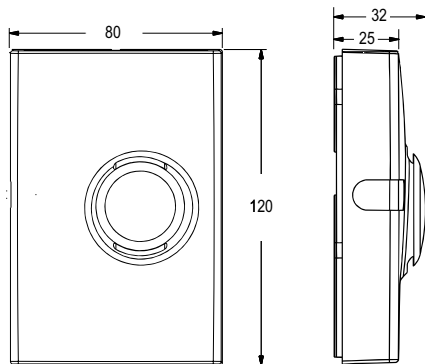
Ordering information

| Codes	Description
WRZ-MHN0100-2	Wireless room temperature and humidity sensor with passive infrared (PIR) occupancy sensor, battery level and signal strength LED, manual occupancy override button, without display
WRZ-MTJ0100-2	Wireless room temperature sensor with PIR occupancy, display, setpoint adjustment buttons for warmer/cooler (+/−) setpointadjustment or scaled setpoint adjustment: 13 °C to 29 °C (55°F to 85°F), °C/°F button, and manual occupancy override button
WRZ-RMT10K-2	Wireless room temperature sensor for remote 10K temperature probes, display, °F/°C button, and manual occupancy override button
WRZ-STR0000-2	Wireless room temperature sensor with remote 3K refrigerator/freezer temperature probe, display, °F/°C button, and manual occupancy override button
WRZ-THJ0000-2	Wireless room temperature/humidity sensor with display, setpoint adjustment buttons for warmer/cooler (+/−) setpoint adjustment or scaled setpoint adjustment: 13 °C to 29 °C (55 °F to 85 °F), °C/°F button, relative humidity (RH) button, and manual occupancy override button
WRZ-THN0000-2	Wireless room temperature and humidity sensor with battery level/signal strength LED and manual occupancy override button
WRZ-TTK0000-2	Wireless room temperature sensor with display, setpoint adjustment buttons for warmer/cooler (+/−) setpoint adjustment or scaled setpoint adjustment: 13 °C to 29 °C (55 °F to 85 °F), fan speed control button, °F/°C button, and manual occupancy override button
WRZ-TTP0000-2	Wireless room temperature sensor with warmer/cooler (+/−) setpoint dial adjustment, battery level and signal strength LED, and manual occupancy override button
WRZ-TTR0000-2	Wireless room temperature sensor with battery level and signal strength LED, manual occupancy override button, and no setpoint adjustment
WRZ-TTS0000-2	Wireless room temperature sensor with setpoint dial adjustment scale: 13 °C to 29 °C (55°F to 85°F), battery level and signal strength LED, and manual occupancy override button
WRZ-MNN0100-0	WRZ-MNN0100-0: Wireless Room Sensor, no temperature or humidity sensing, with PIR Occupancy Sensor, battery level/signal strength LED, manual occupancy override utton, without display
WRZ-SST-120	Wireless Sensing System tool: for use with an occupancy sensing WRZ Series Sensor, to function as a site survey tool for the WRZ-7860 one-to-one room temperature sensing system, or for the ZFR1800 Wireless Field Bus System

Motion

SM-0001
Brightness Motion

The SM-0001-010 is a ceiling mounted multi sensor designed for measuring light and motion in room and office spaces and typically used in lighting applications to optimize energy efficiency through lighting control and temperature reduction in unoccupied rooms. The low profile design is optimized to be integrated inconspicuous into modern buildings.

Dimensions (in mm)

Ø 47mm

7,3mm

85mm

77,3mm

Ø 90mm
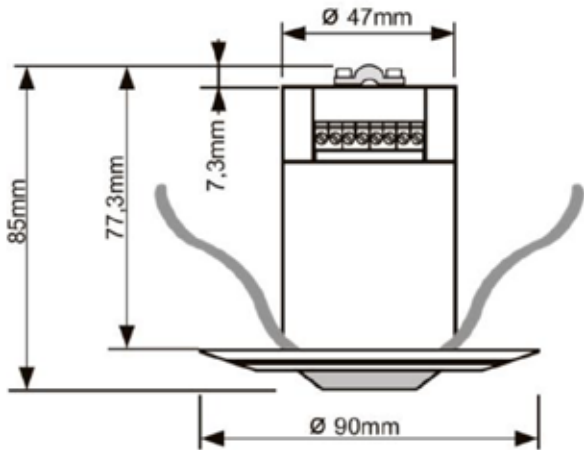
Ordering information

| Codes	Detection	Output	Measuring Range Light	Power Supply
SM-0001-010	Luminosity, Motion	0-10V	0..1000 Lux	15..24 V = (±10%) or 24 V ~ (±10%) SELV

Johnson Controls

SM-0003

Outdoor Brightness

The SM-0003-010 is an outdoor sensor to measure brightness.

The device is designed for outdoor areas, greenhouses, warehouses or industrial halls. The device has an integrated ambient light sensor with precise optical filtering adapted to the human eye. Tool-free opening, closing and wiring as well as removable cable entries ensure quick and easy installation.

Dimensions (in mm)
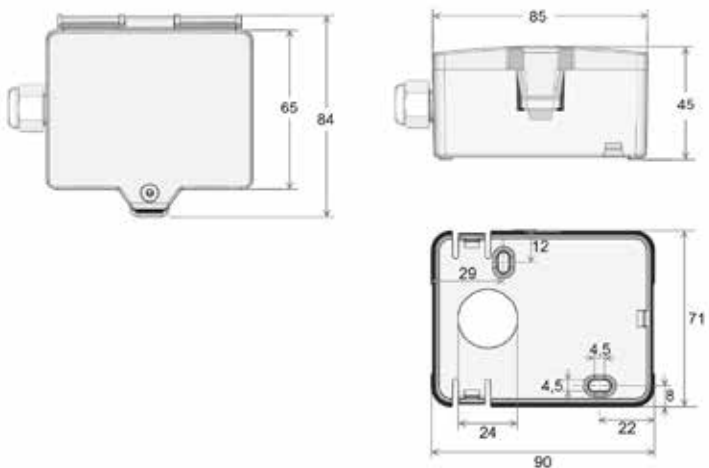
Ordering information

Codes	Description	Measuring Range	Accuracy	Protection
SM-0003-010	Active, 0..10 V, Brightness	0..200 Lux | 0..1000 Lux (default) | 0..2 kLux | 0..10 kLux | 0..20 kLux | 0..50 kLux, selectable at the device	typ. ±5% of measuring value	IP65 according to EN 60529

Johnson Controls

Overview

Network Engines

FC BUS

Field Controller

Inputs

SA BUS

SA BUS

ALL IN ONE NETWORK SENSORS

Temperature, Humidity, CO_2,
Presence and colored display

Modbus

Passive, Analog

BACnet

PLANT and ROOM SENSORS

PLANT SENSORS

Plant Temperature, Humidity, CO_2, VOC, Dew point and Delta pressure

ROOM SENSORS

Room Temperature, Humidity, CO_2, VOC
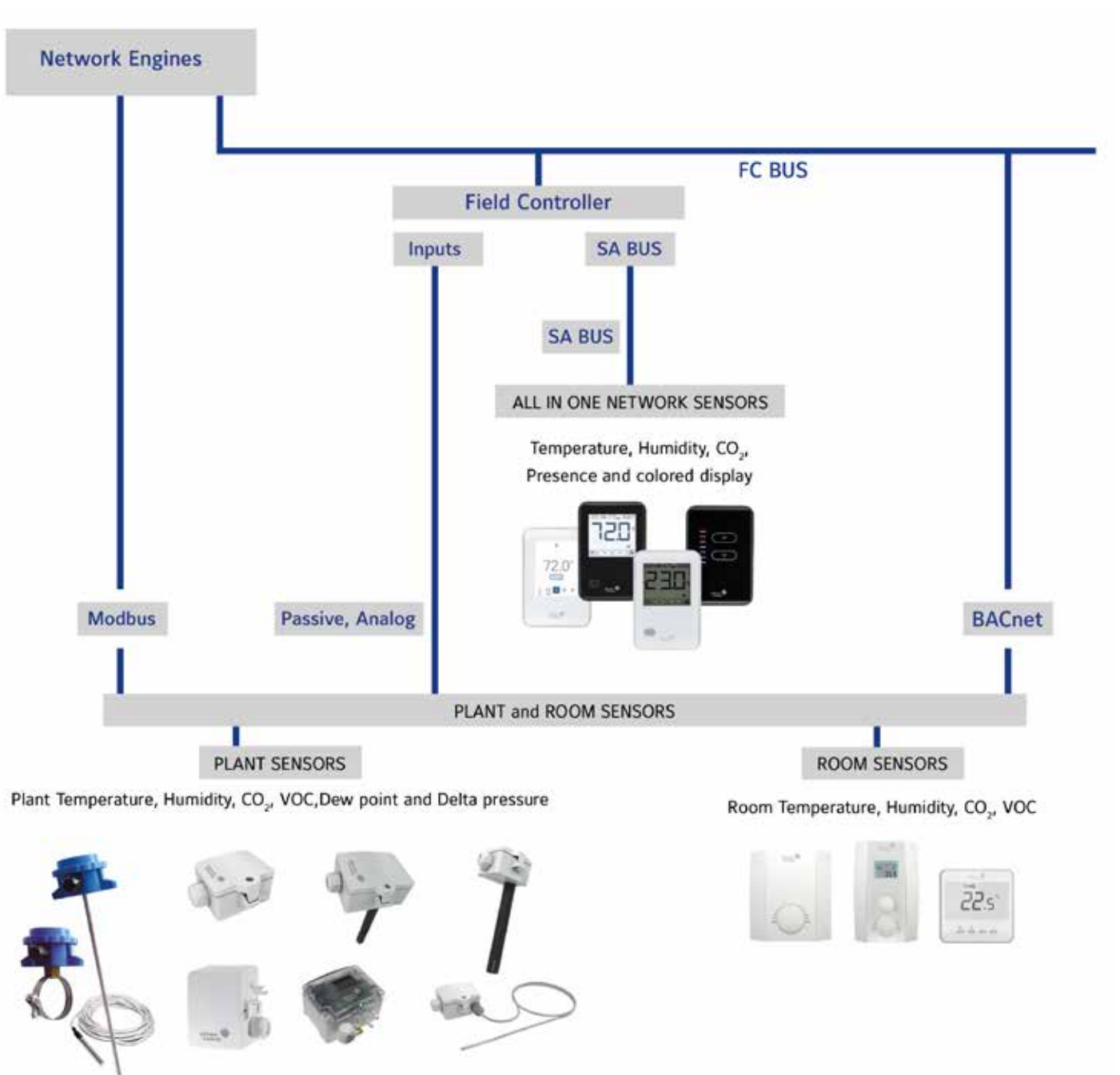
About Johnson Controls

At Johnson Controls (NYSE:JCI), we transform the environments where people live, work, learn and play. As the global leader in smart, healthy and sustainable buildings, our mission is to reimagine the performance of buildings to serve people, places and the planet.

Building on a proud history of more than 135 years of innovation, we deliver the blueprint of the future for industries such as healthcare, schools, data centers, airports, stadiums, manufacturing and beyond through OpenBlue, our comprehensive digital offering.

Today, with a global team of 100,000 experts in more than 150 countries, Johnson Controls offers the world`s largest portfolio of building technology and software as well as service solutions from some of the most trusted names in the industry.

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