

SyxtHsense

TOUCHSCREEN ROOM CONTROL AND INTERFACE SOLUTIONS



ROOM CONTROL AND MEASUREMENT TECHNOLOGY FOR ALL TYPES OF BUILDING

Advanced Room Controllers and Sensors Offer All-in-One Solution

SyxtSense Room Controllers and Measurement Technology are used in applications in wide variety of buildings. The devices combine modern crisp user interfaces with built-in control functionality. The on-board inputs and outputs allow the products used in most typical room control applications.

The flexibility of the design allows the product to be used as stand-alone, or they can form part of the BMS via BACnet and Modbus communication networks. The on-board inputs/outputs can be controlled via the BMS allowing them also be used as extension to the BMS, reducing both installation and running costs.



SIMPLICITY OF TOUCH



HOTELS AND
HOSPITALITY

AIRPORTS, STATIONS
AND SCHOOLS



OFFICES AND
WORKSPACES



DISTRIBUTED INPUTS
AND OUTPUTS



INTEGRATED CONTROL
FUNCTIONALITY



ROOM MEASUREMENT
TECHNOLOGY TO FIT

KEY DIFFERENTIATORS

MULTITUDE OF APPLICATIONS



ACCURACY



RICH USER EXPERIENCE



SIMPLICITY



FUNCTIONALITY



APPLICATIONS



FLEXIBILITY



ENERGY EFFICIENCY



CONNECTIVITY



SythSense Room Controllers and User Interfaces are used in most types of buildings including hotels and hospitality, offices, shopping malls, apartments and houses, hospitals and public buildings, theatres, schools and universities.

The controllers have on-board advanced control functionality allowing them to be used in wide variety of applications including 2-pipe and 4-pipe fan coil units, chilled ceilings, zone heating, fan assisted zone systems and many more. The flexible and modular design makes the customisation fast and reliable.

SHOPPING MALLS AND COMMERCIAL



APARTMENTS AND THEATERS

HOUSES AND VILLAS



HOSPITALS AND PUBLIC BUILDINGS



COMPLETE RANGE FOR ALL TYPES OF ROOM CONTROL AND MEASUREMENT APPLICATIONS

Room Controllers, Room Interfaces, Room Thermostats, Room Measurement



SRC-500 AND SRC-600 SERIES TOUCHSCREEN ROOM CONTROLLERS

- 3.5" COLOUR TOUCHSCREEN MULTI-APPLICATION ROOM AND APARTMENT CONTROLLERS
- USED FOR CLIMATE CONTROL IN HOTELS, OFFICES, SCHOOLS, APARTMENTS, VILLAS, HOSPITALITY, SHOPPING MALLS, PUBLIC BUILDINGS AND HEALTH CARE
- ADVANCED TEMPERATURE, HUMIDITY AND CO2 CONTROL APPLICATION LOGIC
- SIMPLICITY OF TOUCH WITH INTUITIVE GRAPHICAL USER INTERFACE
- FULLY INTEGRATED TO BUILDING MANAGEMENT SYSTEMS VIA MODBUS AND BACNET



SRT-50 AND SRT-60 TOUCHSCREEN NETWORKED ROOM THERMOSTATS AND THERMOSTATIC CONTROLLERS

- SRT50 ATTRACTIVE 3.5" COLOUR TOUCHSCREEN ROOM TEMPERATURE CONTROL THERMOSTATS
- SRT50 HAVE BUILT-IN CLOCK AND 7 DAY SCHEDULE FOR TARGET SETPOINT OPTIMISATION
- SRT60 ARE THERMOSTATIC CONTROLLERS FOR HOTELS WITH MULTI-ROOM TEMPERATURE CONTROL
- UNUSED INPUTS AND OUTPUTS CAN BE INTEGRATED VIA MODBUS AND BACNET TO OVERALL CONTROL
- ALL DEVICES ALLOW LIGHTING CONTROL PART OF THE STRATEGY



SRI-70/71 TOUCHSCREEN ROOM INTERFACES WITH INTEGRATED NETWORK INPUTS AND OUTPUTS

- 3.5" COLOUR TOUCHSCREEN USER INTERFACE FOR ROOM APPLICATIONS
- FLEXIBLE CONFIGURATION FOR MULTITUDE OF USER FUNCTIONS AND INDICATIONS
- AVAILABLE WITH MODBUS, BACNET OR TRADITIONAL 'HARD-WIRED' ANALOGUE VERSIONS
- INTEGRATED TEMPERATURE, HUMIDITY AND CO2 MEASUREMENTS
- INPUTS AND OUTPUTS CAN BE USED TO EXPAND CENTRAL SYSTEM FOR EFFICIENCY



DESIGNED FOR BOTH USER AND INSTALLER

- NO TOOLS REQUIRED FOR NETWORK ADDRESSING
- LARGE SYSTEM CONFIGURATION OVER THE MODBUS OR BACNET NETWORK
- DEVICE CONFIGURATION CAN BE SAVED TO A PC AND RE-UPLOADED FOR EFFICIENT INSTALLATIONS



SRC-600 Series Controllers with 3.5" Touchscreen, Modbus and BACnet Communication



COLOUR OPTIONS



ICON DESCRIPTION

- HEATING DEMAND
- COOLING DEMAND
- AT ZERO ENERGY ZONE (NO HTG/CLG)
- COMMS MESSAGE
- CLEANING MODE
- SCREEN LOCKED
- LIGHTS ON/OFF
- BLINDS STATUS
- ERROR
- SCREEN DIM ICON
- MAINTENANCE MODE
- ECO MODE
- FROST PROTECTION ACTIVE
- OFF MODE
- FAN SPEED AND MODE
- LOW/HIGH LIMIT APPLIED

The SRC-600 series controllers have been designed for climate control in room spaces, with modern slim line 3.5" colour touchscreen interface. The controllers have up to two heating and cooling temperature control stages, fan speed control, optional CO2 level and humidity control. The units can be used in various climate control applications such as Fan Coil Units, Chilled Ceiling and Zone Heating/Cooling systems. The SRC-600 controllers have 3 x analogue 0-10V outputs, two external sensors inputs and one digital input. The SRC-601(H)/603/604H controllers have three relays for fan control. The SRC-602/604H controllers have two triac outputs for heating/cooling. The SRC-603 has fourth relay for valve ON/OFF control. 6-way valve control supported. The devices provide accurate energy saving PI control and intuitive touchscreen interface. The MOD models have built-in Modbus RTU communications and the BAC models provide BACnet MS/TP communications.

Power Supply: 24Vac/dc, -10%/+15%
Touchscreen: 3.5" Backlit Touchscreen, 320 x 480 pixels, 255K colours

Analogue Outputs: SRC600: 3 x 0..10V < 5mA
SRC601(H): 2 x 0..10V < 5mA
SRC602/603: 1 x 0..10V < 5mA
SRC601/603: 3 x 230Vac 0.5A Relay
SRC601H/604H: 3 x 230Vac 7A Relay
SRC602/604H: 2 x 24Vac Triacs, max. 0.5A

Relay Outputs: Note: Only available with 24Vac supply
Digital Outputs: SRC600/602/603/604: 2 x External NTC10K3 / Digital Input
SRC601: 1 x External NTC10K3 / DI
1 x Volt-Free Input < 1kOhm

Built-In Sensor: Resistive/Digital
Inputs: SRC600/602/603/604: 2 x External NTC10K3 / Digital Input
SRC601: 1 x External NTC10K3 / DI
1 x Volt-Free Input < 1kOhm

Digital Inputs: CO2 Sensor: Range: 0...5000ppm CO2
Accuracy: ± 50ppm + 3% of the reading @ 25°C (@77°F)
±2% rH (within 20..80% rh)

Humidity Sensor (RH Option): Power Supply and Analogue Output
Terminals: Solid and Stranded Cable
Maximum Size: Solid; 0.05-2.5mm2, Stranded: 0.05-1.50mm2
Comms and Input Terminals: Solid and Stranded Cable; 90° Angle
Maximum Size: 0.05 to 1.5mm2 (EN ISO) / 14 to 30 AWG (UL)
Rising Clamp: Size 2.5 x 1.9mm

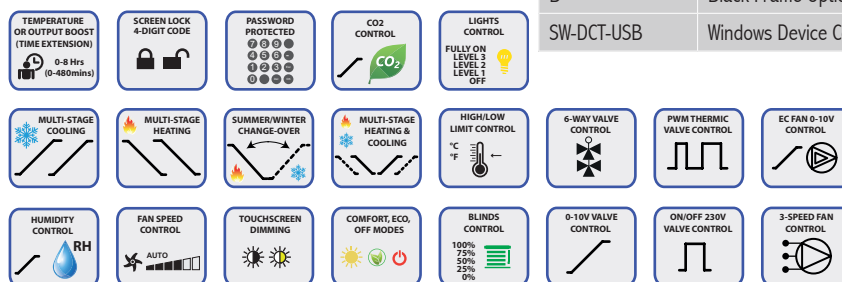
Operating Humidity: 0..95% rH Non-Condensing
Communication: Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)

Address Range: Modbus: 1..247 via Touchscreen
BACnet: 1..127 via Touchscreen

Baud Rate: Modbus; 9k6, 19k2, 38k4, 57k6, 76k8

Colour: Standard Enclosure: Black RAL8022 with Chrome Edge
Frame & Enclosure: White RAL9010
Dimensions: Frame & Enclosure: Black (RAL8022) W88 x H112 x D43 mm (non-CO2)
Flush: W88 x H112 x D14.5 mm
Flush: W88 x H112 x D23 mm (CO2)

CONTROL FUNCTIONS:-



PART NO	DESCRIPTION
SRC-600-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3AO
SRC-600-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3AO
SRC-600-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Built-In Sensor, 2RI, 1DI, 3AO
SRC-600-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, Built-In Sensor, 2RI, 1DI, 3AO
SRC-601-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (0.5A)
SRC-601-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (0.5A)
SRC-601-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 1RI, 1DI, 2AO, 3RO (0.5A)
SRC-601-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, 24Vac/dc Power Supply, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (0.5A)
SRC-601H-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (7A)
SRC-601H-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (7A)
SRC-601H-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 1RI, 1DI, 2AO, 3RO (7A)
SRC-601H-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, 24Vac/dc Power Supply, Built-In Sensor, 1RI, 1DI, 2AO, 3RO (7A)
SRC-602-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 1AO, 2DO
SRC-602-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 1AO, 2DO
SRC-602-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 1AO, 2DO
SRC-602-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 1AO, 2DO
SRC-603-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 1AO, 4RO
SRC-603-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 1AO, 4RO
SRC-603-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 1AO, 4RO
SRC-603-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 1AO, 4RO
SRC-604H-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3RO (7A), 2DO
SRC-604H-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3RO (7A), 2DO
SRC-604H-CO2-MOD	Modbus 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 3RO (7A), 2DO
SRC-604H-CO2-BAC	BACnet 3.5" Touchscreen Room Controller with CO2 Sensor, Sensor, 2RI, 1DI, 3RO (7A), 2DO
RH	Relative Humidity Option, 2%rH Accurate
AI	2 x Analogue 0-10VInput Monitoring (Replaces RI1 and RI2)
CE	Control Extension Option (Enables Boost, Lights and Blinds Functions)
W	White Frame Option (RAL9010)
B	Black Frame Option (RAL8022)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable ¹

¹ SW-DCT-USB Tool can be used to save the device configuration to the PC. Subsequently the configuration can be downloaded to other devices speeding up the commissioning process. The settings can also be configured over the Modbus / BACnet network.

Fan Coil Unit Control Examples for Hospitality, Hotels and Commercial Applications

The SRC-600 controllers can be used for 2-pipe, 4-pipe fan coil unit applications, underfloor heating applications and chilled ceiling applications.

The SRC600 series controllers can support both 1/2/3-speed and EC fans (depends on the model). The touchscreen shows the current fan speed on the display and the user can override the fan speed by touching the fan icon.

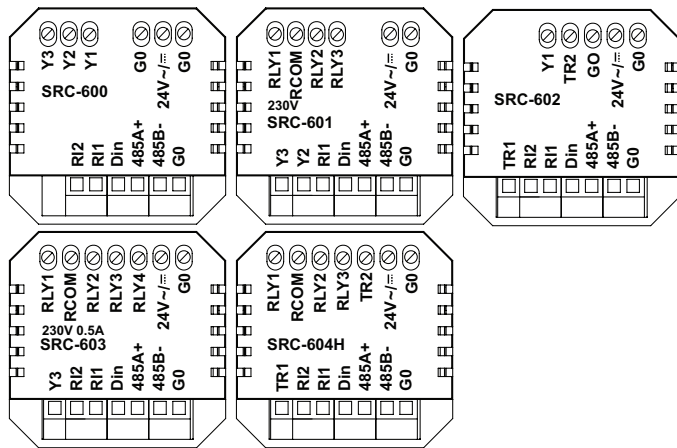
The SRC-600 controller can be wired to 0-10Vdc proportional actuators and control 6-way valves. The SRC-602 controllers can be wired to PWM actuators. The EC fan logic provides accurate fan speed control with minimum fan speed and maximum fan speed settings.

The internal CO₂ sensor (CO₂ models) can monitor and control the room space in case of high level of CO₂ concentration. For example, the SRC-600 can automatically increase the fan speed or open the ventilation damper when the CO₂ concentration increases.

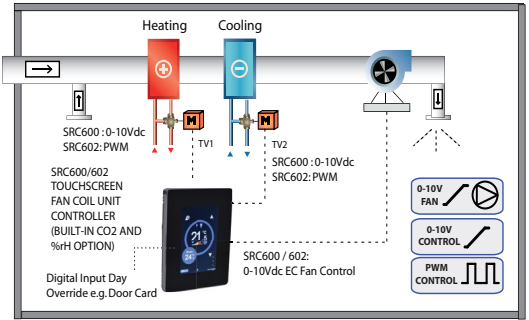
Humidity sensor models allow also room space humidity control.

In PI-control mode the controller can operate within the deadzone in zero-energy mode allowing the outputs to modulate to off position saving energy.

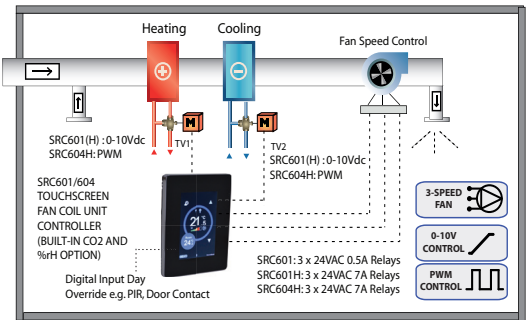
SRC-600 SERIES WIRING DIAGRAMS:-



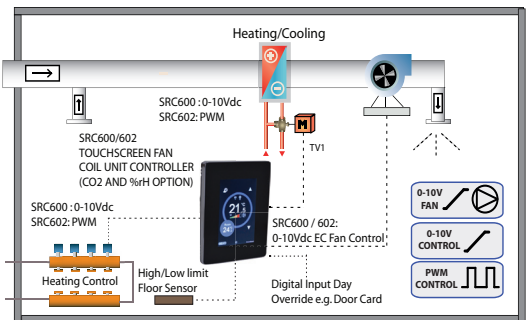
4-PIPE FAN COIL UNIT CONTROL WITH MODULATING EC FAN



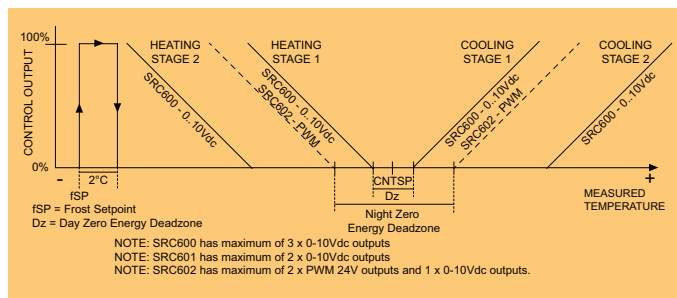
4-PIPE FAN COIL UNIT CONTROL WITH 3-SPEED FAN



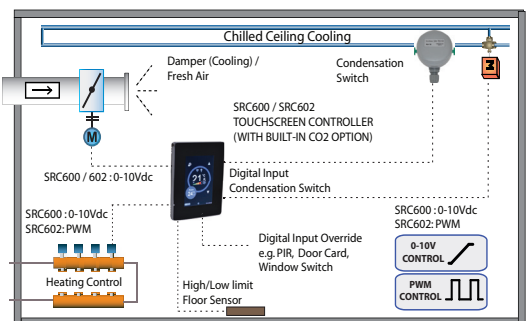
2-PIPE FAN COIL UNIT CONTROL WITH MODULATING EC FAN, ZONE HEATING



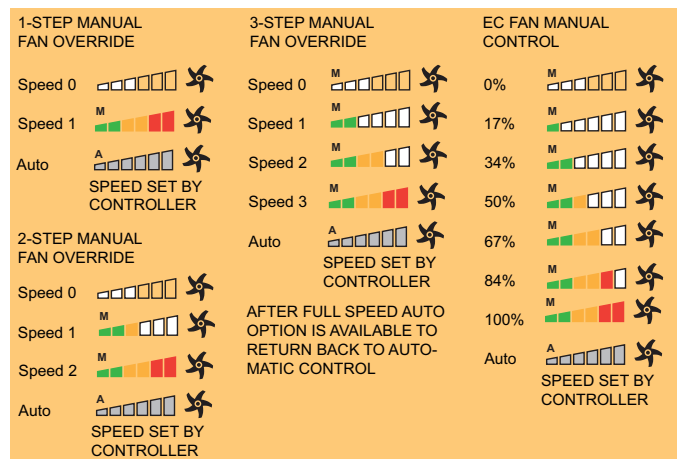
OPERATION DIAGRAM - 4-STAGE TEMPERATURE CONTROL:-



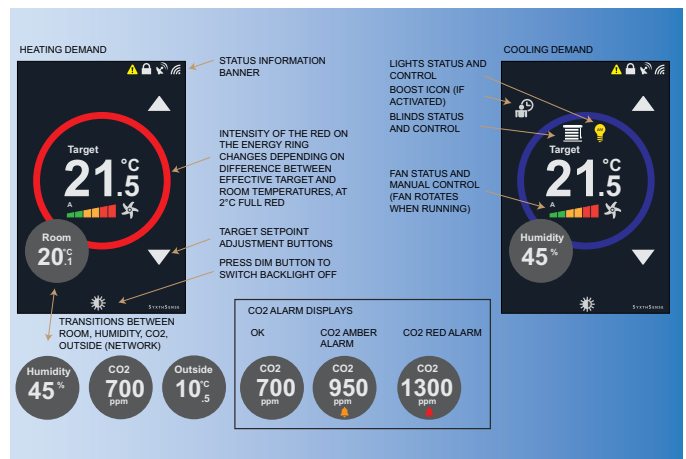
CHILLED CEILING AND ZONE HEATING APPLICATION WITH VAV COOLING



MANUAL FAN SPEED OVERRIDE:-



SRC600 SCREEN FUNCTIONS OVERVIEW:-



SRC-500 Series Apartment Controllers with 3.5" Touchscreen , Modbus and BACnet Communication



COLOUR OPTIONS



ICON DESCRIPTION

- HEATING DEMAND
- COOLING DEMAND
- AT ZERO ENERGY ZONE (NO HTG/CLG)
- COMMS MESSAGE
- CLEANING MODE
- SCREEN LOCKED
- LIGHTS STATUS
- ERROR
- SCREEN DIM ICON
- MAINTENANCE MODE
- ECO MODE
- HOME ICON
- AWAY ICON
- BOOST ICON
- LOW/HIGH LIMIT APPLIED

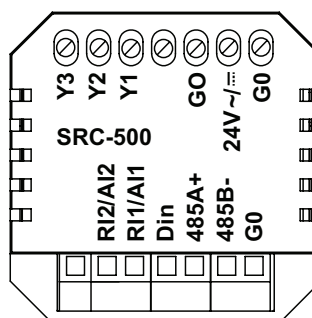
The SRC-500 series controllers have been designed for apartment control and have modern sharp slim line 3.5" colour touchscreen interface. The controllers have heating and/or cooling control with summer / winter change-over. The SRC500 series have also Home / Away / Boost operation button allowing the apartment conditions to be set to required state with a simple press of a button. The SRC500 series can control the apartment supply and extract flow together with the extractor fans allowing the correct pressurised conditions to be achieved in all operating conditions. The SRC-500 controllers have 3 x analogue 0-10V outputs, two external sensors inputs (resistive or analogue) and one digital input. The devices are available with both Modbus RTU and BACnet MS/TP communication.

Power Supply: 24Vac/dc, -10%/+15%
Touchscreen: 3.5" Backlit Touchscreen, 320 x 480 pixels, 255K colours
Analogue Outputs: 3 x 0..10V < 5mA
Built-In Sensor: 0..50°C; Accuracy $\pm 0.5^{\circ}\text{C}$ @ 25°C
Resistive Inputs: 2 x External NTC10K3
Digital Inputs: 1 x Volt-Free Input < 1kOhm
CO2 Sensor Option: Range: 0..5000ppm CO2 Accuracy: $\pm 50\text{ppm} + 3\%$ of the reading @ 25°C (@ 77°F) $\pm 2\%$ rH (within 20..80% rh)

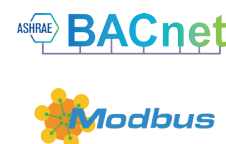
Humidity Sensor Option:
Power Supply and Analogue Output Terminals: Solid and Stranded Cable Maximum Size: Solid: 0.05-2.5mm², Stranded: 0.05-1.50mm²
Comms and Input Terminals: Solid and Stranded Cable; 90° Angle Maximum Size: 0.05 to 1.5mm² (EN ISO) / 14 to 30 AWG (UL) Rising Clamp: Size 2.5 x 1.9mm
Operating Humidity: 0..95% rH Non-Condensing
Communication: Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)
Address Range: Modbus: 1..247 via Touchscreen BACnet: 1..127 via Touchscreen
Baud Rate: Modbus: 9k6, 19k2, 38k4, 57k6, 76k8
Colour: Standard Enclosure: Black RAL8022 with Chrome Edge Frame & Enclosure: White RAL9010 Frame & Enclosure: Black (RAL8022)
Dimensions: W88 x H112 x D43 mm (non-CO2) Flush: W88 x H112 x D14.5 mm Flush: W88 x H112 x D23 mm (CO2)

PART NO	DESCRIPTION
SRC-500-MOD	Modbus 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3AO
SRC-500-BAC	BACnet 3.5" Touchscreen Room Controller, Built-In Sensor, 2RI, 1DI, 3AO
RH	Relative Humidity Option, 2%rH Accurate
AI	2 x Analogue 0-10V Input Monitoring (Replaces RI1 and RI2)
CO2	CO2 Option, Range 0..5000ppm
W	White Frame Option (RAL9010)
B	Black Frame Option (RAL8022)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable ¹

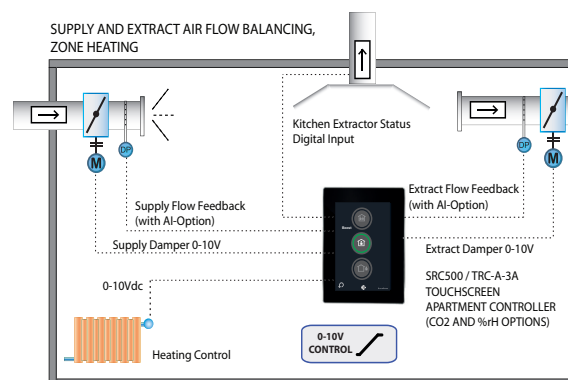
WIRING DIAGRAM:-



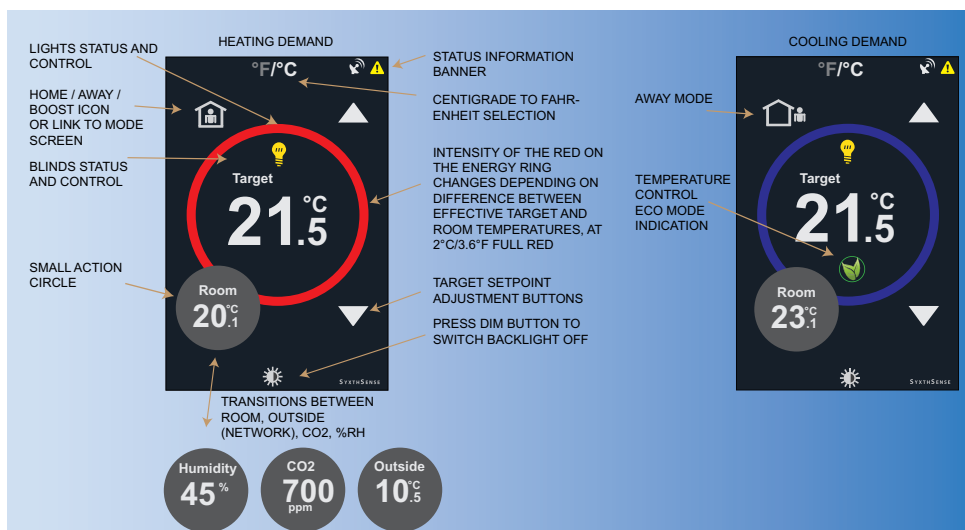
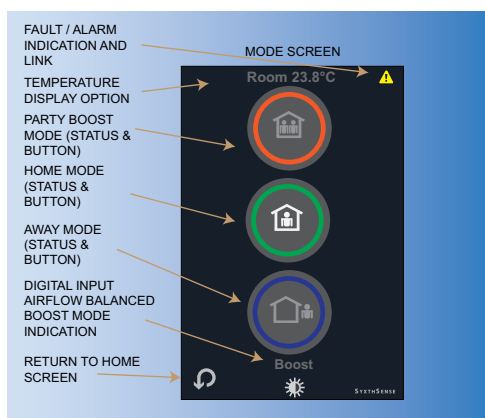
¹ SW-DCT-USB Tool can be used to save the device configuration to the PC. Subsequently the configuration can be downloaded to other devices speeding up the commissioning process. The settings can also be configured over the Modbus / BACnet network.



APPLICATIONS EXAMPLE:-



SRC500 SCREEN FUNCTIONS EXAMPLES:-



SRT-60 Series 3.5" Touchscreen Thermostatic Controllers, Modbus and BACnet



The SRT-60 series thermostatic controllers offer a modern flush mounted slim design look for the heating and cooling control with two control zones (main space and bathroom). The units are ideal for hotel room applications, or other applications where two zones are required. The controllers have two relay outputs and two 24Vac triac outputs suitable for pulse width modulation control.

The 60 series devices have 3.5" backlit colour touchscreen. The devices have also integrated lighting and/or A/C ventilation enable control.

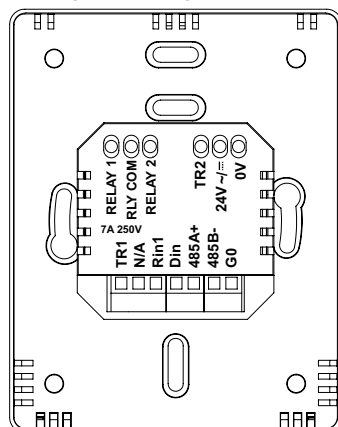
The MOD models have built-in Modbus RTU communications and the BAC models provide BACnet MS/TP communications.

Technical Data

Power Supply:	24Vac/dc, -10%/+15%
Touchscreen:	3.5" Backlit Touchscreen, 320 x 480 pixels, 255K colours
Relay Outputs:	2 x 7A (res) 230Vac Relay, SPST
Digital Outputs:	2 x 24Vac Triacs, max. 0.5A
Built-In Temperature Sensor:	0..50°C; Accuracy $\pm 0.5^\circ\text{C}$ @ 25°C
Resistive Inputs:	1 x External NTC10K3
Digital Inputs:	1 x Volt-Free Input < 1kOhm
Humidity Sensor (RH Option):	Range: 0..100%rH Accuracy: $\pm 2\%\text{rH}$ (within 20..80%rH)
Operating Humidity:	0..95% rH Non-Condensing
Communication:	Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)
Address Range:	Modbus: 1..247 via Touchscreen BACnet: 1..127 via Touchscreen
Baud Rate:	Modbus: 9k6, 19k2, 38k4, 57k6, 76k8
Mounting:	Wall Mounting, IP20
Dimensions:	W88 x H112 x D43 mm Flush: W88 x H112 x D14.5 mm

WIRING DIAGRAM:-

24V MODEL WIRING

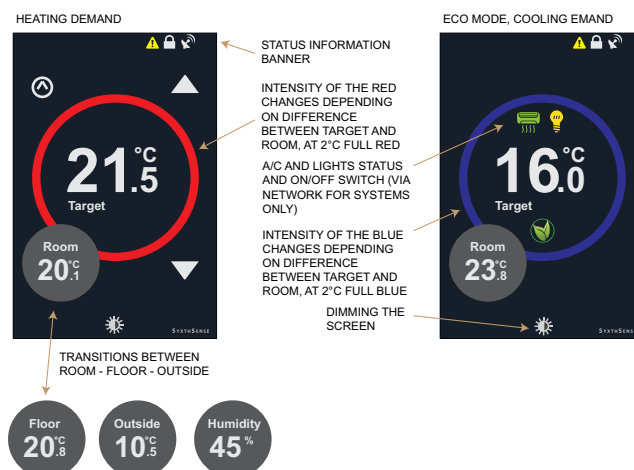


Selection Guide

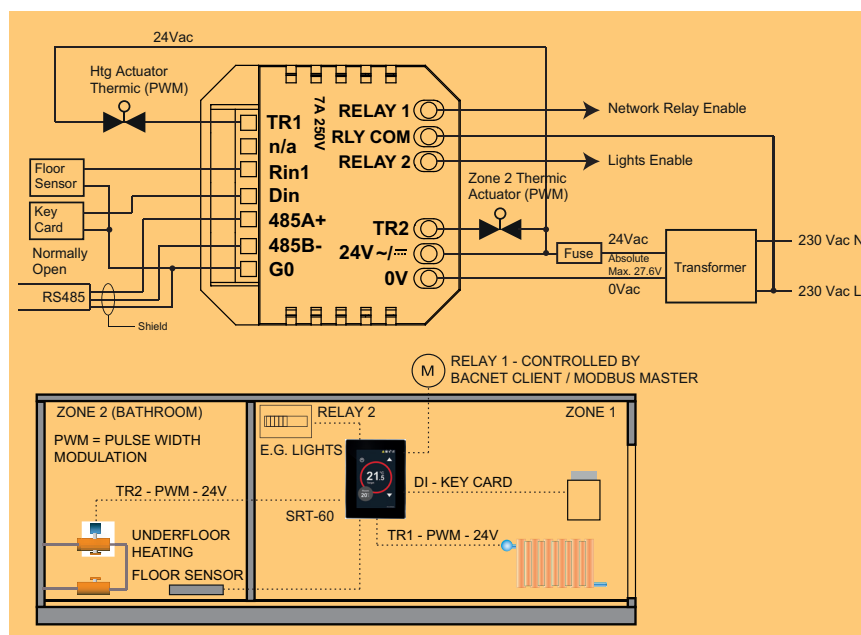
PART NO	DESCRIPTION
SRT-60-MOD-24	3.5" Touchscreen Thermostatic Controller for Hotels etc, 24Vac/dc Power Supply, Modbus
SRT-60-BAC-24	3.5" Touchscreen Thermostatic Controller for Hotels etc, 24Vac/dc Power, BACnet MS/TP
RH	Relative Humidity Option



¹ TRT-H-2R2T can also operate as a Humidistat for humidity control.



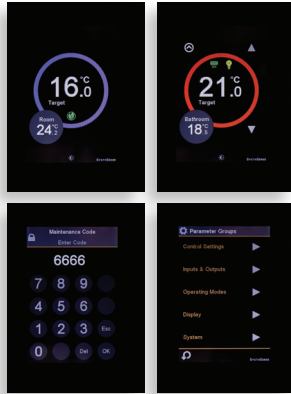
Application Example



SRT-50 Series 3.5" Advanced Room Thermostats, Modbus and BACnet Options

Selection Guide

PART NO	DESCRIPTION	OPTION PART	DESCRIPTION (OPTIONS)
SRT-50-12	3.5" Touchscreen Thermostat, 12Vdc Power Supply	SRT-P50-M	3.5" Touchscreen Programmable Thermostat, 90..250Vac Power
SRT-50-24	3.5" Touchscreen Thermostat, 24Vac/dc Power Supply	SRT-P50-MOD-12	3.5" Touchscreen Programmable Thermostat, 12Vdc Power, Modbus
SRT-50-M	3.5" Touchscreen Thermostat, 90..250Vac Power Supply	SRT-P50-MOD-24	3.5" Touchscreen Programmable Thermostat, 24Vac/dc Power, Modbus
SRT-50-MOD-12	3.5" Touchscreen Thermostat, 12Vdc Power Supply, Modbus RTU	SRT-P50-MOD-M	3.5" Touchscreen Programmable Thermostat, 90..250Vac Power, Modbus
SRT-50-MOD-24	3.5" Touchscreen Thermostat, 24Vac/dc Power Supply, Modbus	SRT-P50-BAC-12	3.5" Touchscreen Programmable Thermostat, 12Vdc Power, BACnet
SRT-50-MOD-M	3.5" Touchscreen Thermostat, 90..250Vac Power Supply, Modbus	SRT-P50-BAC-24	3.5" Touchscreen Programmable Thermostat, 24Vac/dc, BACnet
SRT-50-BAC-12	3.5" Touchscreen Thermostat, 12Vdc Power BACnet MS/TP	SRT-P50-BAC-M	3.5" Touchscreen Programmable Thermostat, 90..250Vac Power, BACnet
SRT-50-BAC-24	3.5" Touchscreen Thermostat, 24Vac/dc Power, BACnet MS/TP	RH	Relative Humidity Option
SRT-50-BAC-M	3.5" Touchscreen Thermostat, 90..250Vac Power, BACnet MS/TP	W	White Frame Option (RAL9010)
SRT-P50-12	3.5" Touchscreen Programmable Thermostat, 12Vdc Power	B	Black Frame Option (RAL8022)
SRT-P50-24	3.5" Touchscreen Programmable Thermostat, 24Vac/dc Power		



The SRT-50 series smart thermostats offer a modern flush mounted slim design look for heating or cooling control. The thermostats can be used for various zone or underfloor heating/cooling control applications. All SRT-50 series thermostats have 3.5" backlit colour touchscreen.

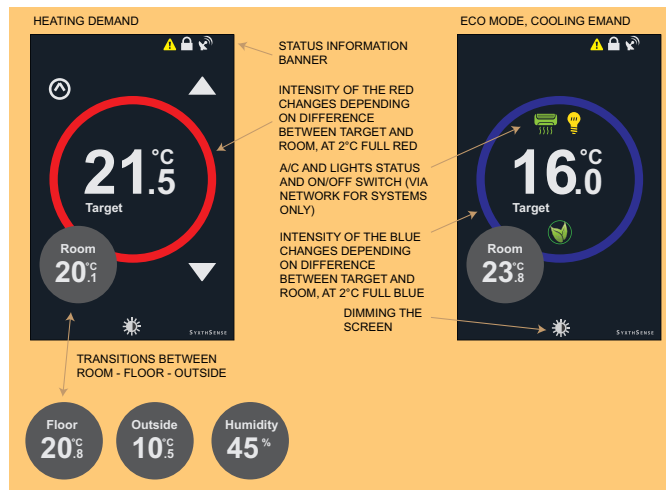
The SRT family covers a wide range of power options.

The MOD models have built-in Modbus RTU communications and the BAC models provide BACnet MS/TP communications. The thermostats can also be configured to be used as a lighting and/or air conditioning interface.



Technical Data

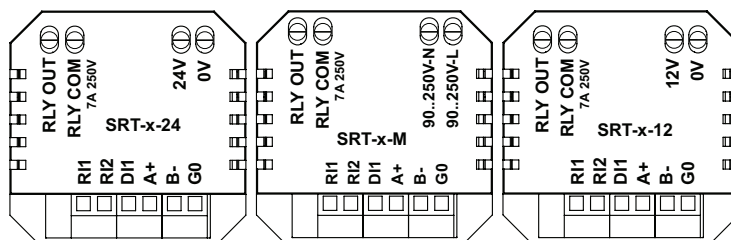
Power Supply:	Models -12: 12Vdc, -5%/+15% Models -24: 24Vac/dc, -10%/+15% Models -M: 90..250Vac/dc, 50/60Hz
Touchscreen:	3.5" Backlit Touchscreen, 320 x 480 pixels, 255K colours
Relay Output:	1 x 7A (res) 230Vac Relay, SPST
Built-In Sensor:	0..50°C; Accuracy $\pm 0.5^\circ\text{C}$ @ 25°C
Resistive Inputs:	2 x External NTC10K3
Digital Inputs:	1 x Volt-Free Input < 1kOhm
Humidity Sensor (RH Option):	Range: 0..100%rH Accuracy: $\pm 2\%$ rH (within 20..80%rH)
Real-Time Clock:	P-Models: For Scheduling
Battery:	P-Models: CR1220 3V
Operating Humidity:	0..95% rH Non-Condensing
Communication:	Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)
Address Range:	Modbus: 1..247 via Touchscreen BACnet: 1..127 via Touchscreen
Baud Rate:	Modbus: 9k6, 19k2, 38k4, 57k6, 76k8
Mounting:	Wall Mounting, IP20
Dimensions:	W88 x H112 x D43 mm Flush: W88 x H112 x D14.5 mm



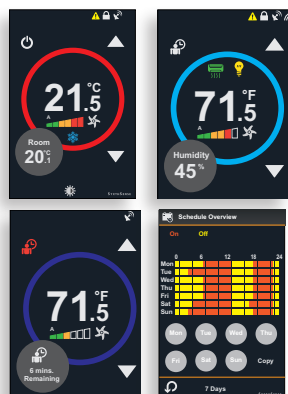
- HEATING DEMAND
- COOLING DEMAND
- NO DEMAND (NO HTG/CLG)
- ⬇ COMMS MESSAGE
- ⬇ HOLIDAY MODE
- ⬇ CLEANING MODE
- ⬇ SCREEN LOCKED
- 💡 LIGHTS ON
- 🌿 AIR/CON ON
- ⚠ ERROR
- ⏻ OFF MODE
- 🌡 LOW/HIGH LIMIT APPLIED
- ⚙ MAINTENANCE MODE
- ⬆ BOOST MODE
- 🌿 ECO MODE
- ❄ FROST PROTECTION ACTIVE



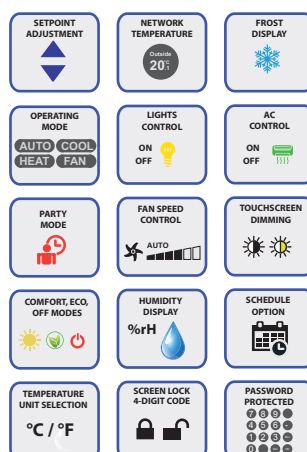
WIRING DIAGRAMS:-



SRI-70/71 Room Interfaces with 3.5" Touchscreen, Modbus and BACnet Communication



FUNCTIONS:-



COLOUR OPTIONS



The SRI-70/71 series touchscreen room interfaces provide attractive user interface for room control applications. The devices are linked to BMS / controllers via Modbus and BACnet communication interfaces.

The SRI-70 series have 320 x 480 pixel 255 colour touchscreen that displays the plant and control status information on the modern intuitive user interface. SyxthSense has especially paid attention to the design of the unit to with to the modern decor of the buildings. The user experience is enhanced by the crisp easy to read display indicating the status of the system. The users can use the touchscreen to change the control settings such as the setpoint, fan speed and operation mode. They can switch lights and AC units on/off, or activate the Party Mode for extending or boosting periods.

SRI-71 models have 3 x analogue outputs that can be configured for e.g. temperature, setpoint and fan speed. This allows the unit to be integrated to 'traditional' controllers using 'hard-wiring'.

Technical Data

Power Supply: Models -12: 12Vdc, -5%/+15%

Models -24: 24Vac/dc, -10%/+15%

Touchscreen: 3.5" Backlit Touchscreen, 320 x 480 pixels, 255K colours

Built-In Sensor: 0..50°C; Accuracy $\pm 0.5^\circ\text{C}$ @ 25°C

Resistive Inputs: 2 x External NTC10K3 Sensors

Digital Inputs: 1 x Volt-Free Input < 1kOhm

Digital Output (SRI-70): 1 x 230Vac 7A(2A) SPST Relay

Analogue Outputs (SRI-71): 3 x 0..10V max 5mA (temp/setpoint/fan/CO2/humidity)

Humidity Sensor (RH Option): $\pm 2\%$ rH (within 20..80% rh)

CO2 Option (-CO2): Range: 0..5,000ppm $\pm 50\text{ppm} + 3\%$

Power Supply and Analogue Output Terminals: Solid and Stranded Cable

Maximum Size: Solid; 0.05-2.5mm², Stranded: 0.05-1.50mm²

Comms and Input Terminals: Solid and Stranded Cable; 90° Angle

Maximum Size: 0.05 to 1.5mm² (EN ISO) / 14 to 30 AWG (UL)

Operating Humidity: 0..95% rH Non-Condensing

Real-Time Clock: P-Models: For Scheduling

Battery: P-Models: CR1220 3V

Communication: Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)

Address Range: Modbus: 1..247 via Touchscreen

BACnet: 1..127 via Touchscreen

Baud Rate: Modbus; 9k6, 19k2, 38k4, 57k6, 76k8, 115k2

Mounting: Wall Mounting, IP20

Colour: Standard Enclosure: Black RAL8022 with Chrome Edge

Frame & Enclosure: White RAL9010

Dimensions: W88 x H112 x D43 mm (non-CO2)

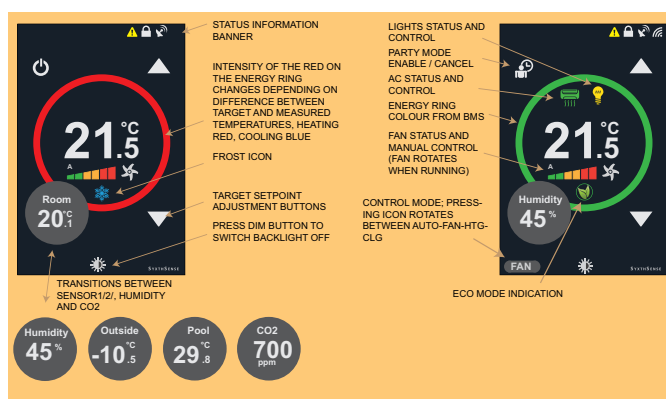
Flush: W88 x H112 x D14.5 mm

Flush: W88 x H112 x D23 mm (CO2)

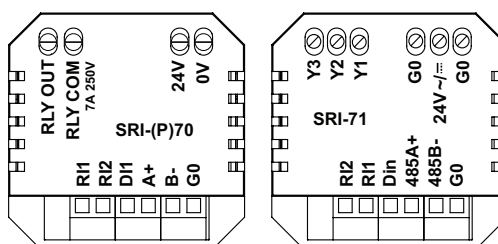


Selection Guide

PART NO	DESCRIPTION
SRI-70-MOD-24	Modbus 3.5" Touchscreen Room Interface, 24Vac/dc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-70-MOD-12	Modbus 3.5" Touchscreen Room Interface, 12Vdc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-70-BAC-24	BACnet 3.5" Touchscreen Room Room Interface, 24Vac/dc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-70-BAC-12	BACnet 3.5" Touchscreen Room Room Interface, 12Vdc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-P70-MOD-24	Modbus 3.5" Touchscreen Room Interface with Schedule, 24Vac/dc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-P70-BAC-24	BACnet 3.5" Touchscreen Room Room Interface with Schedule, 24Vac/dc Power Supply, Built-In Sensor, 2RI, 1DI, 1RO
SRI-71-24	Modbus 3.5" Touchscreen Room Interface, 24Vac/dc Power Supply, Built-In Sensor, 3AO (Temp/Setpoint/Fan), 2RI (Ext Sensor), 1DI
SRI-71-MOD-24	Modbus 3.5" Touchscreen Room Interface, 24Vac/dc Power Supply, Built-In Sensor, 3AO (Temp/Setpoint/Fan), 2RI (Ext Sensor), 1DI
SRI-71-BAC-24	BACnet 3.5" Touchscreen Room Room Interface, 24Vac/dc Power Supply, Built-In Sensor, 3AO (Temp/Setpoint/Fan), 2RI, 1DI
RH	Relative Humidity Option, 2%rH Accurate
CO2	CO2 Option, Range 0..5000ppm
W	White Frame Option (RAL9010)
B	Black Frame Option (RAL8022)



WIRING DIAGRAM:-



ICON DESCRIPTION

- RED RING
- BLUE RING
- WHITE RING
- COMMS MESSAGE
- CLEANING MODE
- SCREEN LOCKED
- LIGHTS ON
- AIR/CON ON
- ERROR
- OFF MODE
- MAINTENANCE MODE
- PARTY MODE
- ECO MODE
- FROST ICON
- SET TIME AND DATE
- SET TIME PROGRAMS

SyxtHsense

ROOM CONTROL AND MEASUREMENT SOLUTIONS

CLASSIC RANGE



ROOM CONTROL AND MEASUREMENT TECHNOLOGY FOR ALL TYPES OF BUILDING

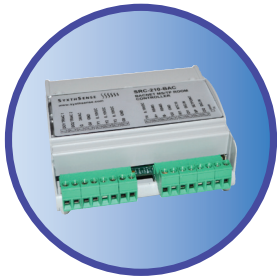
Advanced Room Controllers and Sensors Offer All-in-One Solution

SyxtSense Room Controllers and Measurement Technology combine modern crisp user interfaces with built-in control functionality. The on-board inputs and outputs allow the products used in most typical room control applications. The flexibility of the design allows the product to be used as stand-alone, or they can form part of the BMS via BACnet and Modbus communication networks. The on-board inputs/outputs can be controlled via the BMS allowing them also be used as extension to the BMS, reducing both installation and running costs.



SRC-100 AND SRC-200/202 FLEXIBLE MULTI-APPLICATION ROOM CONTROLLERS

- SRC100 FOR HEATING AND COOLING TEMPERATURE CONTROL WITH MODULATING AND PWM ACTUATORS
- SRC200 MULTI-APPLICATION CONTROLLER FOR CLIMATE CONTROL
- SRC200 MULTI-STAGE TEMPERATURE CONTROL, HUMIDITY CONTROL AND CO2 CONTROL
- USER INTERFACE CUSTOMISABLE, ROTARY KNOB SETPOINT OR BUTTONS, MULTIPLE PUSH BUTTON OPTIONS
- BUILT-IN OCCUPANCY SENSOR ALLOWS INTELLIGENT ENERGY SAVINGS LOGIC
- MODBUS AND BACNET COMMUNICATION ALLOWS SEAMLESS INTEGRATION



SRC-210 SERIES CEILING DIN-RAIL MOUNTED ROOM CONTROLLERS

- CEILING MOUNTED ROOM TEMPERATURE CONTROLLERS (DIN-RAIL)
- FAN COIL UNIT CONTROL, ZONE HEATING AND CHILLED BEAM CONTROL APPLICATIONS
- CLASSIC ROOM SENSORS FOR TEMPERATURE AND SETPOINT
- MODBUS AND BACNET CONNECTIVITY TO BUILDING MANAGEMENT SYSTEMS
- UTILISE THE UNUSED INPUTS AND OUTPUTS AS NETWORK POINTS FOR BMS



MULTITUDE OF OPTIONS



HOTELS AND HOSPITALITY



OFFICES AND WORKSPACES



AIRPORTS, STATIONS AND SCHOOLS





**DISTRIBUTED INPUTS
AND OUTPUTS**



**INTEGRATED CONTROL
FUNCTIONALITY**

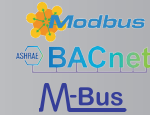


**ROOM MEASUREMENT
TECHNOLOGY TO FIT**



**TER, RHR, CDR AND LLR MULTI-SENSOR RANGE; ROOM
TEMPERATURE, HUMIDITY, CO2, LIGHT AND OCCUPANCY SENSORS
WITH MULTITUDE OF USER INTERFACE OPTIONS**

- MULT-SENSOR PLATFORM FOR TEMPERATURE, HUMIDITY, CO2, LUX AND OCCUPANCY MEASUREMENT
- USER INTERFACE CONFIGURABLE WITH SETPOINTS, BUTTONS AND BACKLIT LCD
- ALARM INDICATION THROUGH LCD AND LEDS
- SINGLE STAGE CONTROL LOGIC INCLUDED PART OF THE DEVICE (CONTROLLER)
- CONNECTIVITY VIA MODBUS, BACNET AND M-BUS
- UTILISE ALSO AS A NETWORK INPUT/OUTPUT MODULE FOR INSTALLATION EFFICIENCY



BAC-IO AND MOD-IO MODBUS AND BACNET INPUT/OUTPUT MODULES

- BACNET INPUT/OUTPUT MODULES, WALL AND DIN-RAIL MOUNTED
- SUPPORT FOR STANDARD BACNET OBJECTS AND FOR DEVICE DISCOVERY
- MODBUS INPUT/OUTPUT MODULES WITH FLEXIBLE MODBUS NETWORK POINTS
- WALL AND DIN-RAIL MOUNTED MODELS



BAC-RI AND MOD-RI ROOM INTERFACE MODULES

- CLASSIC ROOM INTERFACE MODULES FOR USE WITH ZONE CONTROLLERS AND SYSTEMS
- MODBUS RS-485 AND BACNET MS/TP COMMUNICATION OPTIONS
- BACKLIT LCD DISPLAY AND 2,3 OR 4 USER BUTTONS BASED ON REQUIRED FUNCTIONALITY
- INTEGRATED TEMPERATURE, HUMIDITY AND CO2 MEASUREMENT OPTIONS
- UNUSED INPUTS/OUTPUTS CAN BE USED FOR EXTENDING THE NETWORKED SYSTEM



SyxtSense Room Controllers and User Interfaces are used in most types of buildings including hotels and hospitality, offices, shopping malls, apartments and houses, hospitals and public buildings, theatres, schools and universities.

The controllers have on-board advanced control functionality allowing them to be used in wide variety of applications including 2-pipe and 4-pipe fan coil units, chilled ceilings, zone heating, fan assisted zone systems and many more. The flexible and modular design makes the customisation fast and reliable.

**SHOPPING MALLS
AND COMMERCIAL**



**APARTMENTS
AND THEATERS**



**HOUSES AND
VILLAS**



**HOSPITALS AND
PUBLIC BUILDINGS**



SRC-100 Room Temperature Controllers, Stand-Alone, Modbus or BACnet

Selection Guide

PART NO	DESCRIPTION
SRC-100	Room Temperature Controller with LEDs
SRC-100-LCD	Room Temperature Controller with Backlit LCD
SRC-100-MOD	Room Temperature Controller with Modbus RS485 Communication and LEDs
SRC-100-LCD-MOD	Room Temperature Controller with Modbus RS485 Communication and Backlight LCD
SRC-100-BAC	Room Temperature Controller with BACnet MS/TP Communication and LEDs
SRC-100-LCD-BAC	Room Temperature Controller with BACnet MS/TP Communication and Backlit LCD
SRC-LCD	Configuration LCD for SRC-100 (for non-display model)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable
GR	Grey Anthracite Enclosure (RAL7015)

SRC-100 are wall mounted room and zone temperature controllers. The controllers have up to 2 heating and up to 2 cooling stages. The heating stage can be reversed for cooling in summer via digital input/network. The controllers can be switched to night or the cooling can be disabled via a digital input. With an external sensor low and high limit control is available for underfloor applications. The controller can use 0..10Vdc, 3-point, PWM thermic or on/off actuators. The device is configured via the display or via Windows DCT device configuration tool software.

FUNCTIONS:-



APPLICATIONS:-

- FAN COIL UNITS; 4-PIPE, 2-PIPE, AIR-SIDE
- ZONE HEATING AND COOLING
- CHILLED CEILINGS AND BEAMS

Technical Data

Power Supply:	24Vac/dc, -10%/+15%
LEDs (SRC-100):	2 x Status LEDs (Red and Blue)
LCD (SRC-100-LCD):	Backlit LCD Display for Htg/Clg Mode, Temperature, Setpoint, Valve Position, Night Mode
Setpoint:	Via Rotary Knob (range adjustable; default 18°C to 24°C)
Analogue Outputs:	3 x 0..10Vdc < 5mA
Digital Outputs:	2 x 24Vac Triac; requires 24Vac
Built-In Sensor:	0..50°C; Accuracy ±0.3°C @ 25°C
Resistive Input:	1 x External NTC10 Sensor (Ext Sensor, Low/High Limit Sensor)
Digital Input:	1 x Digital Input (Night or Clg Disable, or Summer/Winter Change-Over)
Operating Humidity:	0..95% rH Non-Condensing
Mounting:	Wall Mounting, IP20
Dimensions:	W86 x H120 x D29 mm

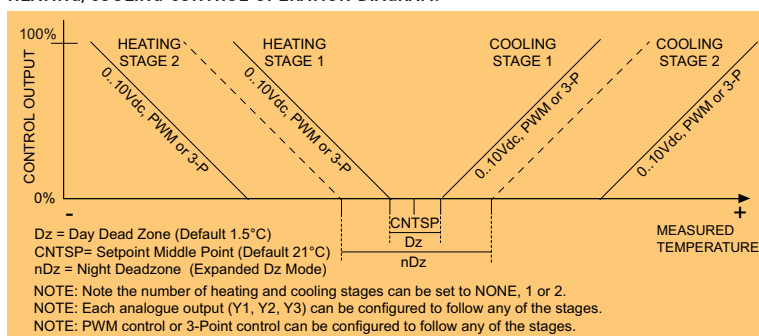
MODBUS COMMUNICATION (-MOD MODELS)

Communication:	Modbus RTU, Baud Rate 9k6/19k2/38k4/57k6
Address Range:	Via bit switch: 0..63; Via network/tool: 0..247
Baud Rate:	Via bit switch: 9k6, 19k2, 38k4, 57k6

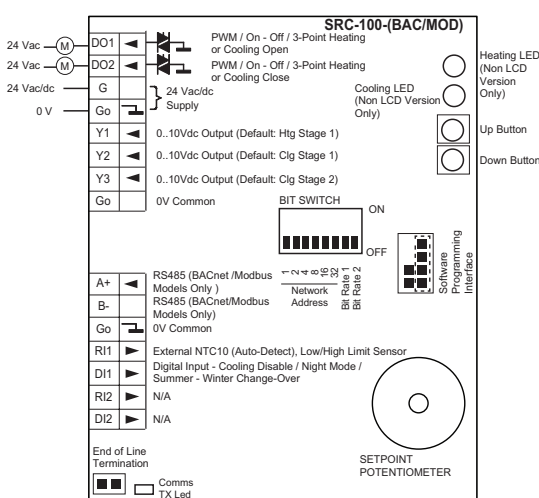
BACNET COMMUNICATION (-BAC MODELS):

Communication:	BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8
MAC Address Range:	Via bit switch: 0..63; Via network/tool: 0..127
Baud Rate:	Via bit switch: 9k6, 19k2, 38k4, 76k8

HEATING/COOLING CONTROL OPERATION DIAGRAM:-



WIRING DIAGRAM:-



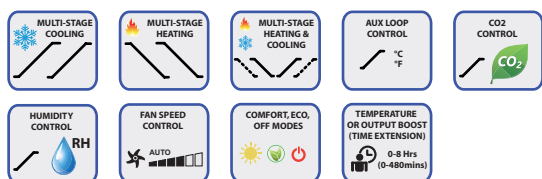
BACNET OBJECTS	INSTANCE ASSIGNMENTS
Analogue Inputs	AI(0) - Built-In Temp Sensor A(1) - External Temp Sensor AI(2) - Calculated Setpoint
Analogue Outputs	AO(0) - Y1 Output AO(1) - Y2 Output AO(2) - Y3 Output AO(3) - Thermic1 Position AO(4) - Thermic2 Position AO(5) - ThreePoint Position
Analogue Value	AV(0) - Temperature Setpoint AV(1) - LCD Brightness
Binary Input	BI(0) - DI1 Status
Binary Output	BO(0) - DO1 Output Status BO(1) - DO2 Output Status BO(2) - Night Mode Override BO(3) - Summer/Winter Change-Over BO(4) - Cooling Disable

SRC-200 Room Climate Controllers, Modbus or BACnet

Selection Guide

PART NO	DESCRIPTION	OPTION PART	DESCRIPTION (OPTIONS)
SRC-200-MOD	Room Climate Controller with Modbus	PB	Backlit Push Button Option
SRC-200-CO2-MOD	Room Temperature Controller with Built-In CO2 Measurement, Modbus RTU	SPB	Push Button Setpoint Option (replaces knob)
SRC-200-RH-MOD	Room Temperature Controller with Built-In %RH Measurement, Modbus RTU	NPB	Night Mode Push Button
SRC-200-CO2RH-MOD	Room Temperature Controller with Built-In CO2 and %RH Measurement, Modbus RTU	LL	Light Level and Occupancy Option
SRC-200-BAC	Room Climate Controller with BACnet MS/TP	RI2	Extra NTC10 Sensor for Network
SRC-200-CO2-BAC	Room Temperature Controller with Built-In CO2 Measurement, BACnet MS/TP	AI	2x Analogue 0-10V Input Option; Replaces RI1 and RI2 Standard Resistive Inputs, Supplied with SPB (Setpoint Buttons)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable	TP	No User Setpoint (setpoint via network)
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo	BL	Blank Cover, No Display or User Setpoint
CUS-LOGO	Custom Logo (Charcoal Grey)	RA	Alternative Bit Switch Operation (Addressing 1..127)
		ND	No Display Fitted
		GR	Grey Anthracite Enclosure (RAL7015)

The SRC-200 series controllers have been designed for climate control in room spaces. The controllers have up to two heating and cooling temperature control stages, fan speed control, optional CO2 level and humidity control. These units can be used in various climate control applications including VAV, fan coil units and natural ventilation systems. The controllers have 4 analogue 0..10Vdc outputs and two digital outputs that can be configured for heating, cooling, CO2, humidity, maximum VAV demand or maximum fan demand control. The controllers can operate as Proportional Only or as Proportional + Integral Controllers. An additional auxiliary heating/cooling PI-control loop is available for use e.g. with re-heat coils.



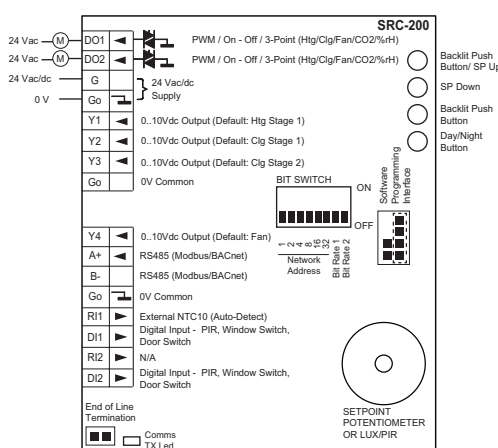
SRC200: All-in-One Solution for Room Controls



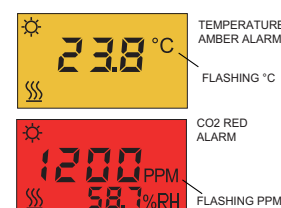
Technical Data

- Power Supply:** 24Vac/dc, -10%/+15%
- LCD:** Backlit LCD Display for Showing Plant Status, Heating/Cooling Mode, Current Temperature, CO2, Humidity, Setpoint, Valve Position, Fan Speed, Day/Night Mode, Amber/Red Alarms
- Setpoint:** Via Rotary Knob or Push Buttons (range adj.; default 18°C to 24°C)
- Analogue Outputs:** 4 x 0..10Vdc < 5mA
- Digital Outputs:** 2 x 24Vac Triac; requires 24Vac
- Built-In Temperature Sensor:** 0..50°C; Accuracy ±0.3°C @ 25°C
- CO2 Option:** Range: 0..5000ppm; Auto-Calibration
- Humidity Option:** Range: 0..100% rH; Accuracy 2%rH
- Occupancy and LUX Option:** Range: 0..3000lux; Occupancy Status via Infrared Detection
- Resistive Input:** 2 x External NTC10 Sensor (auto-detect, or for aux control loop)
- Digital Inputs:** 2 x Volt-Free Inputs (Night and Day Mode Activation, Condensation Switch)
- Operating Humidity:** 0..95% rH Non-Condensing
- Communication:** Modbus RTU (MOD-Models), BACnet MS/TP (BAC-Models)
- Address Range:** Via bit switch: 0..63
Via bit Switch 0..127 (-RA models)
Modbus via network/tool: 0..247
BACnet via network/tool: 1..127
- Baud Rate (Via bit switch):** Modbus: 9k6, 19k2, 38k4, 57k6; BACnet 9k6, 19k2, 38k4, 76k8
- Mounting:** Wall Mounting, IP20
- Dimensions:** W86 x H120 x D29 mm

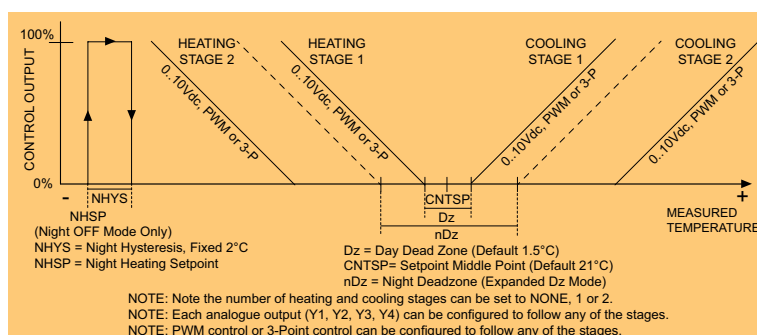
WIRING DIAGRAM:-



The SRC-200 controllers can be configured for CO₂, temperature and humidity alarming. Both high and low limit alarms are available.



OPERATION DIAGRAM - 4-STAGE TEMPERATURE CONTROL:-



SRC200 Controller Fan Coil Unit Control Applications

The SRC-200 controllers can be used for 2-pipe, 4-pipe and air-side fan coil unit applications. An optional electric heater or DX cooling can be linked to the digital outputs. The controllers can support both 3-speed and EC fans. The user can override the fan speed via a button (PB option).

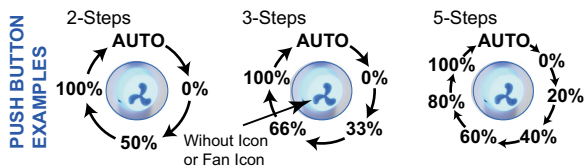
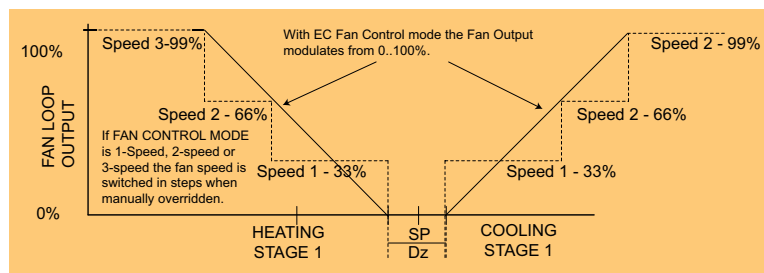
The controller can be wired to 0-10Vdc proportional, 3-point, PWM pulse-width modulating and On/Off actuators. The EC fan logic provides accurate fan speed control with minimum fan speed and maximum fan speed settings.

The internal CO₂ sensor (CO₂ models) can monitor and control the room space in case of high level of CO₂ concentration. For example, the SRC-200 can automatically increase the fan speed or open the ventilation damper when the CO₂ concentration increases.

Humidity sensor models allow also room space humidity control.

In PI-control mode the controller can operate within the deadzone in zero-energy mode allowing the outputs to modulate to off position saving energy.

OPERATION DIAGRAM - EC AND 3-SPEED FAN CONTROL:-



The push button can be configured to operated in number of different steps depending on the application e.g. for fan control typically 3-steps are used.

Chilled Ceiling and Zone Heating Control Applications

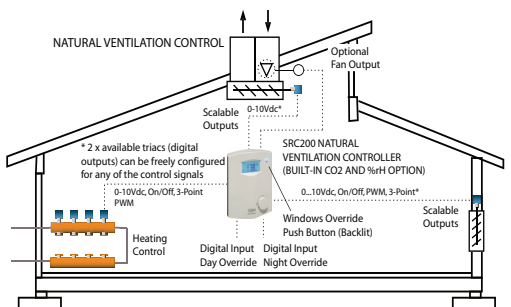
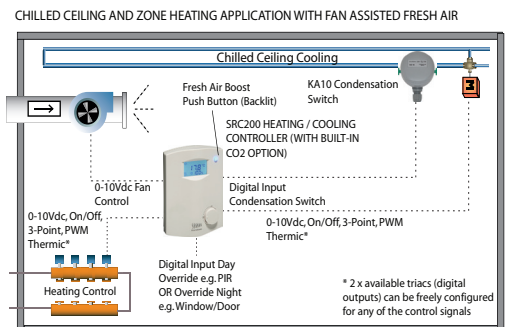
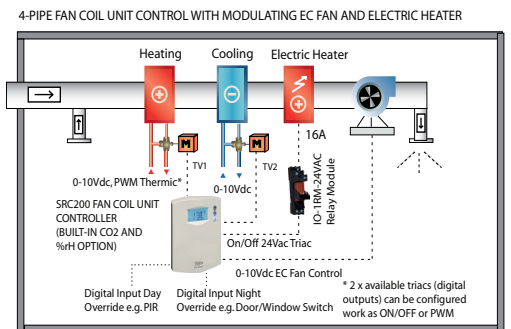
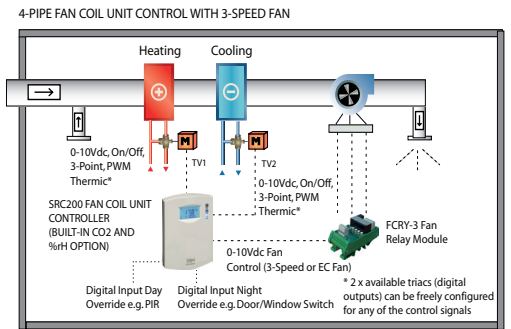
The SRC-200 controllers can be used in chilled ceiling/beam and zone heating applications. The controller controls heating and cooling according to the room temperature, and additional fan speed control can be added e.g. to boost the ventilation in case of high CO₂ concentration.

The controller can be linked to condensation switch preventing condensation when temperature drops below the dew point. In this mode the controller will automatically shut down the cooling valve.

Natural Ventilation Control Applications

The SRC-200 controllers support natural ventilation applications. The controller will automatically open ventilation when cooling or fresh air is required and modulate the heating system when heating is required. It is possible to set minimum fresh air limits.

The user can manually override the ventilation dampers or windows just by pressing the push button on the controller. In summer and winter times the controller can be configured to operate with different window openings to prevent cold air draft. When connected to system the controller outputs can be overridden in case of rain or when night cooling is required for the building fabric.



SRC202 Modbus/BACnet Climate Controllers with EC Fan/3-Speed Fan, External CO2 and Temperature

SRC-202-xxx-SPB



SRC-202-xxx-SPB-PB



SRC-202-xxx-SPB-PB-NPB



SRC-202-xxx-SPB-PB-NPB-GR



The SRC-202 series controllers have been designed for climate control in room spaces, and are one of the most versatile controllers in its class. The controllers have up to two heating and cooling temperature control stages, fan speed control, CO2 control and optional humidity control. These units can be in various climate control applications including VAV, fan coil units and natural ventilation systems.

The controllers have 2 analogue 0..10Vdc inputs for temperature and CO2 measurement. These can be used, for example, with Duct CO2 sensors.

The controllers have 4 analogue 0..10Vdc outputs and two digital outputs that can be configured for heating, cooling, CO2, humidity, maximum VAV demand or maximum fan demand control. The controllers can operate as Proportional Only or as Proportional + Integral Controllers. The controllers have multitude of options including built-in Occupancy Sensor for Day/Night operation.

Power Supply: 24Vac/dc, -10%/+15%
LCD: Backlight LCD Display for Showing Plant Status, Heating/Cooling Mode, Current Temperature, CO2, Humidity, Setpoint, Valve Position, Fan Speed, Day/Night Mode, Amber/Red Alarms
Setpoint: Two Backlit Push Buttons to Adjust the Setpoint (Default 18°C to 24°C)

Analogue Outputs: 4 x 0..10Vdc < 5mA

Digital Outputs: 2 x 24Vac Triac; requires 24Vac Power Supply

Built-In Temperature Sensor: 0..50°C; Accuracy $\pm 0.3^\circ\text{C}$ @ 25°C
Set by activating 'AUX Loop'

Temperature Input: 0..10Vdc = 0..50°C

CO2 Input: 0..10Vdc = 0..2000ppm

Humidity Option: Range: 0..100% rH; Accuracy 2%rH
Digital Inputs: 2 x Volt-Free Inputs (Night and Day Mode Activation, Condensation Switch, Boost), Impedance <1kOhm

Occupancy Sensor (LL-Option) Built-In Occupancy Sensor

Operating Humidity: 0..95% rH Non-Condensing
Mounting: Wall Mounting, IP20

Dimensions: W86 x H120 x D29 mm

MODBUS COMMUNICATION (-MOD MODELS)

Communication: Modbus RTU, Baud Rate 9k6/19k2/38k4/57k6

Address Range: Via bit switch: 0..63
Via network/tool: 0..247

Baud Rate: Via bit switch: 9k6, 19k2, 38k4, 57k6

BACNET COMMUNICATION (-BAC MODELS):

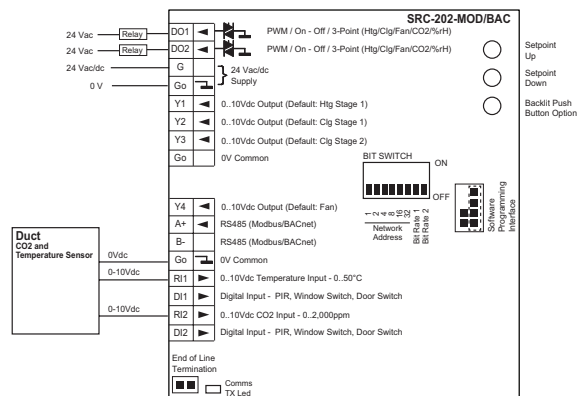
Communication: BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8

MAC Address Range: Via bit switch: 0..63
Via network/tool: 0..247

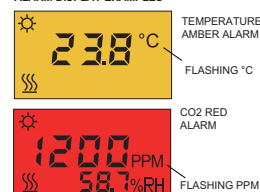
Baud Rate: Via bit switch: 9k6, 19k2, 38k4, 76k8

PART NO	DESCRIPTION
SRC-202-MOD-SPB	Room Climate Controller with Modbus, 0-10Vdc Inputs for Temperature and CO2
SRC-202-BAC-SPB	Room Climate Controller with BACnet MS/TP, 0-10Vdc Inputs for Temperature and CO2
PB	Backlit Push Button Option
NPB	Night Mode Push Button
RH	Relative Humidity Option
TP	Tamperproof Option, User Setpoint Pontetiometer Hidden behind the Cover
BL	Blank Option, Controller Supplied without Setpoint Buttons and Display
RA	Alternative Bit Switch Operation (Addressing 1..127)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
CUS-LOGO	Custom Logo (Charcoal Grey)
GR	Grey Anthracite Enclosure (RAL7015)

WIRING DIAGRAM:-



ALARM DISPLAY EXAMPLES



SRC-210 DIN-Rail Room Temperature Controllers, Modbus or BACnet



SRC-210 are DIN-rail mounted room and zone temperature controllers with EC fan and 3-speed fan control. The controllers have up to 2 heating and up to 2 coolings stages. The controllers can be switched off or the cooling can be disabled via a digital input. The controller can use 0..10Vdc, 3-point, PWM thermic or on/off actuators. The device is configured via the PC device configuration tool software or via Modbus network.

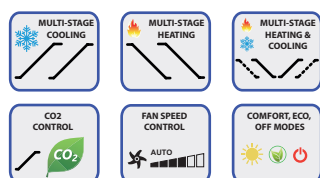
APPLICATIONS:-

- FAN COIL UNITS; 4-PIPE, 2-PIPE, AIR-SIDE WITH FAN SPEED
- ZONE HEATING AND COOLING
- CHILLED CEILINGS AND BEAMS

Selection Guide

PART NO	DESCRIPTION
SRC-210-MOD	DIN-Rail Room Controller, 1 x RI, 1 x SP, Modbus RS485
SRC-210-BAC	DIN-Rail Room Controller, 1 x RI, 1 x SP, BACnet MS/TP
SRC-211-MOD	DIN-Rail Room Controller, 2 x RI, Modbus RS485
SRC-211-BAC	DIN-Rail Room Controller, 2 x RI, BACnet MS/TP
SRC-212-MOD	DIN-Rail Room Controller, 2 x 0-10Vdc (Temperature & CO2 e.g HDK), 1, Modbus RS485
SRC-212-BAC	DIN-Rail Room Controller, 2 x 0-10Vdc (Temperature & CO2 e.g HDK), BACnet MS/TP

OPTIONS PART	DESCRIPTION
RA	Alternative Bit Switch Operation (Address 0..127)
TER-NTC10K3	Room Temperature Sensor for SRC-210
TER-NTC10K3-SPR	Room Temperature Sensor with Setpoint Adjustment for SRC-210
TEKY-NTC10	Flying Lead Temperature Sensor for SRC-210, 2m Cable
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable



Technical Data

Power Supply: 24Vac/dc, -10%/+15%

Analogue Outputs: 4 x 0..10Vdc < 5mA

Digital Outputs: 2 x 24Vac Triac; requires 24Vac Power Supply

Resistive Inputs (SRC-210): 1 x External NTC10K3 Sensor e.g. TERP-NTC10K3 or TEKY-NTC10
1 x 0..10kOhm Setpoint e.g. TERP-NTC10K3-SPR

Resistive Inputs (SRC-211): 1 x External NTC10K3 Sensor e.g. TERP-NTC10K3 or TEKY-NTC10
1 x External NTC10K3 Sensor for Network Measurement

Analogue Inputs (SRC-212): 2 x 0..10Vdc Inputs e.g. for Duct CO2 and Temperature Sensor

Digital Inputs: 2 x Volt-Free Inputs (Night and Day Mode Activation, Condensation Switch)

Operating Humidity: 0..95% rH Non-Condensing

Mounting: DIN-Rail Mounting

Dimensions: W106 x H97 x D38 mm

MODBUS COMMUNICATION (-MOD MODELS)

Communication: Modbus RTU, Baud Rate 9k6/19k2/38k4/57k6

Address Range: Via bit switch: 0..63 (0..127 RA-models)
Via network/tool: 0..247

Baud Rate: Via bit switch: 9k6, 19k2, 38k4, 57k6

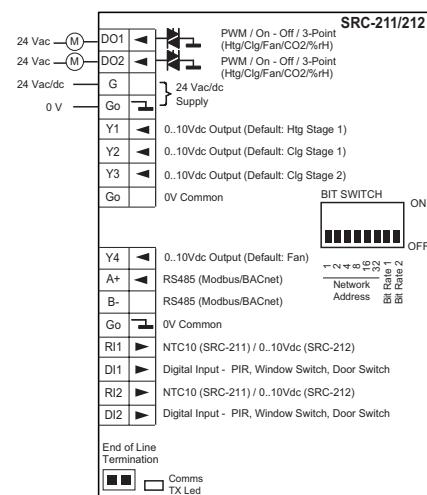
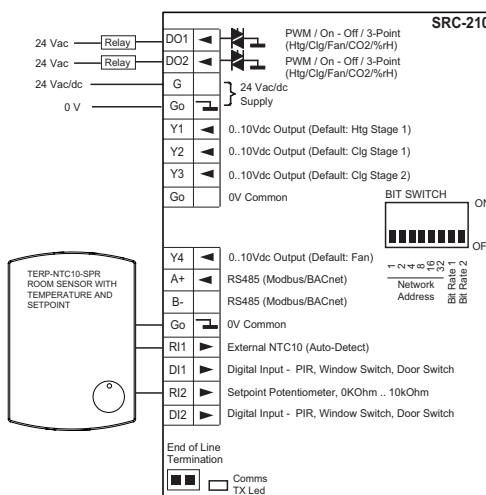
BACNET COMMUNICATION (-BAC MODELS):

Communication: BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8

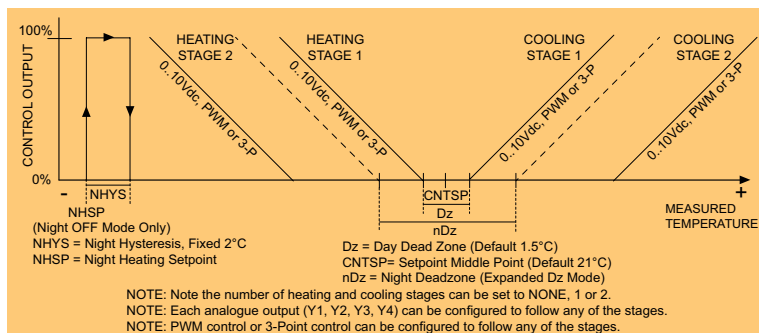
MAC Address Range: Via bit switch: 0..63 (0..127 RA-models)
Via network/tool: 0..127

Baud Rate: Via bit switch: 9k6, 19k2, 38k4, 76k8

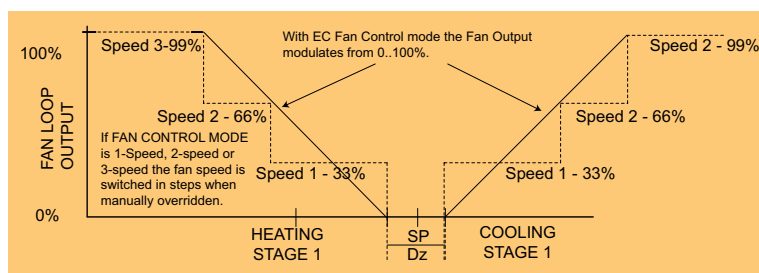
WIRING DIAGRAM:-



OPERATION DIAGRAM - 4-STAGE TEMPERATURE CONTROL:-



OPERATION DIAGRAM - EC AND 3-SPEED FAN CONTROL:-



CDR / CDR-RH / CDR-AL / CDR-AL-LCD Room CO₂, Temperature, Humidity and LUX Sensors

Selection Guide

PART NO	DESCRIPTION
CDR	Room CO ₂ and Temperature Sensor, 0..10Vdc Outputs
CDRC	Room CO ₂ and Temperature Sensor, 4..20mA Outputs
CDR-RH	Room CO ₂ , Temperature and Humidity Sensor, 0..10Vdc Outputs
CDRC-RH	Room CO ₂ , Temperature and Humidity Sensor, 4..20mA Outputs
CDR-AL	Room CO ₂ Alarm Unit with Temperature Measurement, Traffic Light LEDs, 0..10Vdc Outputs
CDRC-AL	Room CO ₂ Alarm Unit with Temperature Measurement, Traffic Light LEDs, 4..20mA Outputs
CDR-AL-LCD	Room CO ₂ Alarm Unit with Temperature Measurement, LCD Alarm Display, 0..10Vdc Outputs
CDRC-AL-LCD	Room CO ₂ Alarm Unit with Temperature Measurement, LCD Alarm Display, 4..20mA Outputs
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable
GR	Grey Anthracite Enclosure (RAL7015)

OPTION PART	DESCRIPTION (OPTIONS)
LCD	LCD Display Option for the CDR / CDR-RH
DO	Digital Output Option for the CDR / CDR-RH (2 DOs)
SP	Active Setpoint Option (for CO ₂ /temperature/LUX control setpoint adjustment) ^{Note 1,2}
SPR	Passive Setpoint Option for the CDR / CDR-RH (10kOhm Potentiometer) ^{Note 1,2}
LL	Light Level Measurement and Occupancy Detection Option for the CDR / CDR-RH (DO-option Included) ^{Note 1}
PB	Push Button (Timed, DO-option Included, LED Backlight)
TE-NTC10K3	Passive Temperature Sensor Option, NCT10K3
RH	Relative Humidity Option for CDR-AL sensors; 0..100%rH, 2%rH Accuracy
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
CUS-LOGO	Custom Logo (Charcoal Grey)



CDR sensors are designed to detect carbon dioxide concentration and temperature in the room spaces. The CDR-RH sensors are designed to detect also relative humidity. The CO₂ sensor automatically calibrates its measurement. The CDR sensors have linear 0..10V signals outputs relating to measurements. The CDRC sensors have two 4..20mA outputs. The CDR sensors come with a number of options such as display, active setpoint, passive setpoint, digital output, occupancy detection, lux level measurement and passive resistive sensor elements.

The CDR sensors can also operate as CO₂, temperature or light level controllers modulating analogue outputs, or switching the digital output on based on the setpoints (if Digital Output option has been selected). CDR-RH sensors can in addition act as humidity controllers.

CDR-AL sensors provide alarm indication on high level of CO₂. CDR-AL has traffic light LEDs (green, amber and red LED) and CDR-AL-LCD has amber and red backlight in case of alarm conditions. The CDR-AL sensors can have relative humidity option in addition to the options listed for CDR sensors.

Technical Data

Power Supply:	24Vac/dc -10/+15%
CO ₂ Range:	0..5000ppm
Temperature Range:	0..+50°C
Accuracy:	CO ₂ : ±50ppm +3% of measurement Temperature: ±0.3°C @ 25°C Humidity: ±2%rH @ 50%rH
Outputs (CDR):	3 x 0..10Vdc < 5mA
Outputs (CDRC):	2 x 4..20mA up to 400 Ohm
Operating Temp:	0..50°C
Operating Humidity:	0..95% rH Non-Condensing
Mounting:	Wall Mounting, IP20
Enclosure	Pure White RAL9010 Plastics, Self-Extinguishing; Grey Colour Option
Dimensions:	W86 x H120 x D29 mm
Country of Origin:	United Kingdom

RELATIVE HUMIDITY VERSIONS (CDR-RH & RH-OPTION)

Humidity Range:	Humidity: 0..100%rH
Output:	0..10Vdc (Y3 - Configurable)

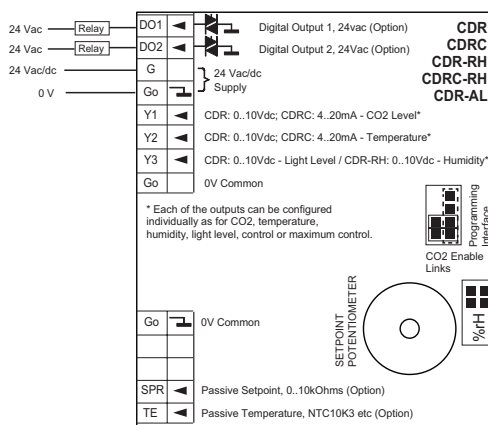
ALARM DISPLAY VERSIONS (CDR-AL & CDR-AL-LCD)

Alarm LEDs (CDR-AL):	Green, Amber, Red (alarm limits 750 and 1250ppm, adjustable)
Alarm Display (CDR-AL-LCD):	LCD Display Showing CO ₂ , Humidity, Temperature or Light Level LCD backlight (white, amber, red) with adjustable alarm limits

ADDITIONAL OPTIONS

Light Level Range (LL Option):	Light Level: 0..3,000Lux
Output (DO/LL/PB Options):	2 x 24Vac Triacs; requires 24Vac Power Supply
Display (LCD Option):	LCD Display Showing CO ₂ , Temperature, Light Level and with CDR-RH Humidity
Push Button (PB Option):	Backlit Push Button with Timer; Up to 120 minutes
Setpoint Active (SP Option):	Control Setpoint Adjustment (CO ₂ , Temperature, LUX, Humidity)
Setpoint Passive (SPR Option):	10kOhm Potentiometer for External Termination

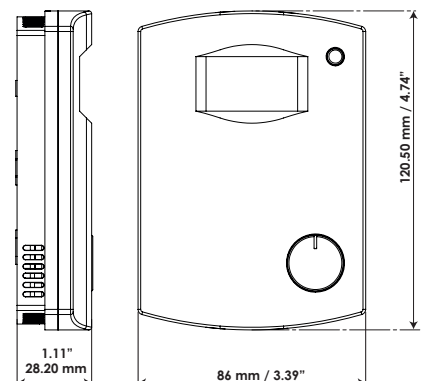
WIRING DIAGRAM:-



GREY COLOUR OPTION EXAMPLES:-



DIMENSIONS:-



NOTE 1: If -SP/-SPR Option is selected the -LL options are no longer available (and vice versa).

NOTE 2: SP and SPR options cannot be fitted at the same time.

CDR-MOD/CDR-BAC/CDR-MBUS Modbus, BACnet and M-Bus CO₂, Temperature and Humidity Sensors



CDR-BAC sensors are designed to detect carbon dioxide concentration and temperature in the room spaces and have built-in BACnet MS/TP communication interface. CDR-MOD models have built-in Modbus RS485 communication. CDR-MBUS have M-Bus EN1434-3 communication bus capability. The CO₂ sensor automatically calibrates its measurement. The sensors have programmable linear 0..10V signals outputs. The CDR-BAC/MOD have also a built-in digital and a resistive input (e.g. for external temperature measurement), and two digital outputs as standard. The CDR sensors can be installed on wall surface or on a wall mounting box in dry indoor environment.

The CDR sensors come with a number of additional options such as display, active setpoint, occupancy detection, lux level measurement, push button(s) and additional digital and resistive inputs, or two 0-10Vdc analogue inputs. The CDR-BAC sensors can also operate as CO₂, temperature, humidity or light level controllers modulating analogue outputs, or switching the digital output on based on the setpoints.

Selection Guide

PART NO	DESCRIPTION
CDR-MOD	Room CO ₂ , Temperature and Humidity Sensor with Modbus RS485 Communication, 1DI, 1RI, 3AO, 2DO
CDR-BAC	Room CO ₂ , Temperature and Humidity Sensor with BACnet MS/TP Communication, 1DI, 1RI, 3AO, 2DO
CDR-MBUS	Room CO ₂ , Temperature and Humidity Sensor with M-Bus EN1434-3 Communication, 1DI, 1RI, 3AO, 2DO
SW-DCT-USB	Device Config Tool with 1.8m USB Cable
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
CUS-LOGO	Custom Logo (Charcoal Grey)
GR	Grey Anthracite Enclosure (RAL7015)

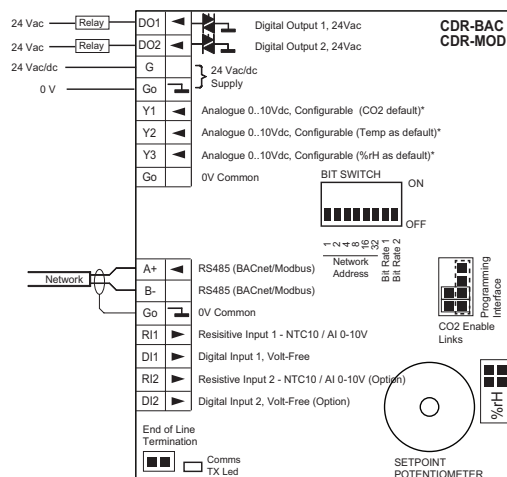
OPTION PART	DESCRIPTION (OPTIONS)
LCD	LCD Display Option (Temperature, CO ₂ , Humidity, Light Level, Alarm Backlight, Setpoint)
RH	Relative Humidity Option, 2% rH Accuracy
AL	Alarm LED Option (Green, Amber, Red) for the CDR ^{Note 1}
SP	Active Setpoint Option for the CDR (BACnet Value)
SPB	Push Button Setpoint Option (Requires LCD to be fitted as well)
LL	Light Level Measurement and Occupancy Detection Option for the CDR (BACnet)
PB	Push Button Option for the CDR (LED Backlight)
PB2	2 Push Button Option for the CDR (LED Backlight)
DI2	Extra Digital Input for the CDR (BACnet) - Total 2 Digital Inputs
RI2	Extra Resistive Input for the CDR (BACnet) - Total 2 Resistive Inputs
AI	2 x Analogue 0-10V Inputs Option; Replaces RI1 and RI2

Technical Data

Power Supply:	24Vac/dc -10/+15%
Measurement Range:	CO ₂ : 0..5000ppm Temperature: 0..+50°C
Humidity Range (RH Option):	Humidity: 0..100%rH
Light Level Range (LL Option) ^{Note 2}:	Light Level: 0..3,000Lux
Accuracy:	CO ₂ : ±50ppm +3% of measurement Temperature: ±0.3°C Humidity: ±2% rH
Outputs (Built-In):	3 x 0..10Vdc < 5mA
Inputs (Built-In):	1 x Resistive Input, 0..50kOhms ^{Note 5} 1 x Digital Input, Volt-Free
Outputs (Built-In):	2 x 24Vac Triac; requires 24Vac Power Supply
Input Options:	Additional Resistive Input, 0..50kOhm
(-RI2/-DI2/-AI) ^{Note 5}	Additional Digital Input, Volt-Free 2 x 0-10Vdc Inputs
Display Option:	LCD Display Showing CO ₂ , Temperature, Humidity or Light Level (Depending on the configuration)
(-LCD) ^{Note 1}	
Push Button Options:	1 or 2 Momentary Backlit Push Buttons; assignable to DOs or Network
(-PB/-PB2):	
Alarm LED Option:	Green, Amber, Red (alarm limits 750 and 1250ppm, adjustable)
(AL Option) ^{Note 1}	
Setpoint Option:	Adjustable Min and Max Values. Readable over the network, or used for control setpoint
(-SP) ^{Note 3}	
Push Button Setpoint Option (-SPB):	Adjustable Min/Max values. User adjustable over network. Requires -LCD option.

Communication (CDR-MOD):	Modbus RTU RS485, None/Odd/Even, Baud 9k6/19k2/38k4/57k6
Communication (CDR-BAC):	BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8
Communication (CDR-MBUS):	M-Bus EN1434-4, Baud Rate 300/2400/9600, Isolated M-Bus Interface, Single 1.5mA Load
Address Range:	Via bit switch: 1..63 Modbus via network/tool: 1..247 BACnet via tool/network: 1..127
Operating Humidity:	0..95% rH Non-Condensing
Mounting:	Wall Mounting, IP20
Dimensions:	W86 x H120 x D29 mm

WIRING DIAGRAM:-



GREY COLOUR OPTION EXAMPLES:-



NOTE 1: Alarm LED and LCD options are exclusive. Both cannot be mounted at the same time. But LCD can be used for alarm function by changing the backlight colour between white, amber and red.

NOTE 2: If -LL option is selected the resistive input 1 measurement is no longer available. -LL option is not available with M-Bus models.

NOTE 3: RI2 option is not available if -SP option is selected. -SP option is not available with M-Bus models.

NOTE 4: Option -LL and SP cannot be fitted at the same time.

NOTE 5: Resistive inputs measure as default to NTC10 sensor, can be configured for resistance 0-50kOhms. AI analogue input option replaces RI1 and RI2 (no resistive inputs).

NOTE 6: Digital inputs can be used for pulse counting, up to 25Hz, min. pulse length 20ms. Counter value showed on network variable (volatile, no battery back-up).

NOTE 7: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dwg, *.dxf). Custom logo is provided as single colour - charcoal grey.

RHR Room Humidity and Temperature Sensors (Controllers)

Selection Guide

PART NO	DESCRIPTION	OPTION PART	DESCRIPTION (OPTIONS)
RHR	Room Humidity and Temperature Sensor, 2% rH Accuracy, 0..10Vdc Outputs	LCD	LCD Display Option for the RHR
RHRC	Room Humidity and Temperature Sensor, 2% rH Accuracy, 4..20mA Outputs	DO	Digital Output Option for the RHR (2DOs)
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable	SP	Active Setpoint Option (for temperature/humidity/LUX control setpoint adjustment) ^{Note 1,2}
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo	SPB	Push Button Setpoint Option (Requires LCD to be fitted as well)
CUS-LOGO	Custom Logo (Charcoal Grey)	SPR	Passive Setpoint Option for the TER (10kOhm Potentiometer) ^{Note 1,2}
GR	Grey Anthracite Enclosure (RAL7015)	LL	Light Level Measurement and Occupancy Detection Option (DO-option Included) ^{Note 1}
		PB	Push Button (Timed, DO-option Included, LED Backlight)
		TE-NTC10K3	Passive Temperature Sensor Option, NCT10K3



RHR sensors are designed to detect relative humidity and temperature in the room spaces. The RHR sensors have linear 0..10V signals outputs relating to humidity and temperature, and for optional light level. The RHRC sensors have 4..20mA outputs.

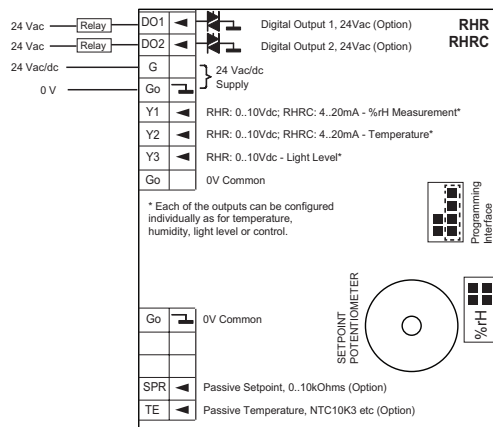
The RHR sensors come with a number of options such as display, active setpoint (knob or push buttons), passive setpoint, occupancy detection and lux level measurement.

The RHR sensors can also operate as humidity, temperature or light level controllers. If fitted with setpoint option (SP or SPB), the user can adjust the required target setpoint.

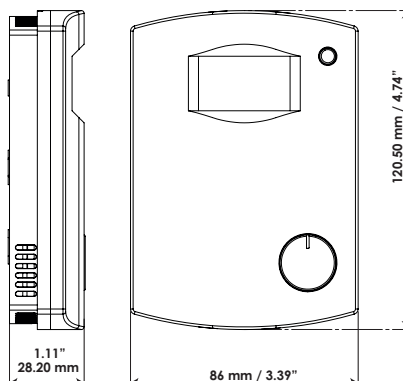
Technical Data

Power Supply:	24Vac/dc -10/+15%
Measurement	Humidity: 0..100%rH
Ranges:	Temperature: 0..+50°C
Light Level Range:	Light Level: 0..3,000Lux (LL-Option)
Accuracy:	Humidity: $\pm 2\%$ rH @ 50% rH Temperature: $\pm 0.3^\circ\text{C}$ @ 25°C
Outputs (RHR):	3 x 0..10Vdc < 5mA
Outputs (RHRC):	2 x 4..20mA up to 400 Ohms
Output (DO/LL/PB Options):	2 x 24Vac Triacs; requires 24Vac Power Supply
Display (LCD Option):	LCD Display Showing Humidity, Temperature or Light Level
Push Button (PB Option)	Backlit Push Button with Timer; Up to 120 minutes
Setpoint Active (SP Option):	Control Setpoint Adjustment (Temperature, Humidity, LUX)
Push Button Setpoint Option (-SPB):	Adjustable Min/Max values. Requires -LCD option. Control Setpoint Adjustment (Temperature, LUX)
Setpoint Passive (SPR Option):	10kOhm Potentiometer for External Termination
Mounting:	Wall Mounting, IP20
Operating Humidity:	0..95% rH Non-Condensing
Mounting:	Wall Mounting, IP20
Dimensions:	W86 x H120 x D29 mm
Humidity Range:	Humidity: 0..100%rH

WIRING DIAGRAM:-



DIMENSIONS:-



NOTE 1: If -SP/-SPR Option is selected the -LL options are no longer available (and vice versa).
NOTE 2: SP and SPR options cannot be fitted at the same time.
NOTE 3: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dwg, *.dxf). Custom logo is provided as single colour - charcoal grey.

RHR-MOD / RHR-BAC / RHR-M-BUS Room Humidity and Temperature Sensors/Controllers



RHR-MOD/RHR-BAC sensors are designed to detect relative humidity and temperature and have configurable 0..10V output signals. The units also have digital and resistive input and two digital outputs. The RHR-MOD sensors have RS485 Modbus communication. The RHR-BAC sensors have BACnet MS/TP auto discovery comms. RHR-MBUS have M-Bus EN1434-3 communication bus capability.

The RHR sensors come with a number of options such as display, active setpoint, occupancy detection, lux level measurement, push button and additional digital/resistive input. The RHR sensors can also operate as humidity, temperature or light level controllers modulating analogue outputs of the sensor.

Selection Guide

PART NO	DESCRIPTION
RHR-MOD	Room Humidity and Temperature Sensor with Modbus RS485 Communication, 1DI, 1RI, 3AO, 2DO
RHR-BAC	Room Humidity and Temperature Sensor with BACnet MS/TP Communication, 1DI, 1RI, 3AO, 2DO
RHR-MBUS	Room Humidity and Temperature Transmitter with M-Bus EN1434-3 Communication, 1DI, 1RI, 3AO, 2DO
SW-DCT-USB	Device Config Tool with 1.8m USB Cable
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
CUS-LOGO	Custom Logo (Charcoal Grey)
GR	Grey Anthracite Enclosure (RAL7015)

OPTION PART	DESCRIPTION (OPTIONS)
LCD	LCD Display Option (Temperature, Humidity Light Level, Alarm Backlight, Setpoint)
SP	Active Setpoint Option for the TER or for the Controller (Modbus Value) ^{Note 2,3}
SPB	Push Button Setpoint Option (Requires LCD to be fitted as well)
LL	Light Level Measurement and Occupancy Detection Option for the TER (Modbus) ^{Note 1,3}
PB	Momentary Push Button Option with Timer (LED backlight)
PB2	2 Momentary Push Buttons with Timers (LED backlight)
DI2	Extra Digital Input Option for the RHR (Modbus) - Total 2 Digital Inputs
RI2	Extra Resistive Input Option for the RHR (Modbus) - Total 2 Resistive Inputs

M-Bus

Modbus

ASHRAE BACnet™

Technical Data

Power Supply: 24Vac/dc -10/+15%

Measurement Range: Humidity: 0..100%RH = 0..10Vdc
Temperature: 0..+50°C = 0..10Vdc
Light Level: 0..3,000Lux = 0..10Vdc

Light Level Range (LL Option)^{Note 1}: Occupancy Detection

Accuracy: Humidity: ±2% rH @ 50%rH
Temperature: ±0.3°C @ 25°C

Outputs (Built-In): 3 x 0..10Vdc < 5mA

Outputs (Built-In): 2 x 24Vac Triac; requires 24Vac

Inputs (Built-In): 1 x Resistive/NTC10 Input, 0..50kOhm

Inputs (Built-In): 1 x Digital Input, Volt-Free

Inputs (DI2 Option): 1 x Resistive/NTC10 Input, 0..50kOhm

Inputs (RI2 Option): 2 x Digital Input, Volt-Free (total)

Display (LCD Option): LCD Display Showing Temperature, Humidity, Light Level, Setpoint and Alarm Backlight (Depending on the configuration)

Setpoint^{Note 2} (SP or SPB Option) : Adjustable Min and Max Values. Read over network, or use for control. SPB requires -LCD option.

Push Button (PB/-PB2 Options): 1 or 2 Backlit Momentary Push Buttons; assignable to digital outputs or status read over the network, Timer Delay up to 120 Minutes

NOTE 1: If -LL option is selected the resistive input 1 measurement is no longer available. -LL option is not available with M-Bus models.

NOTE 2: -RI2 option is not available if -SP option is selected. -SP option is not available with M-Bus models.

NOTE 3: Option -LL and SP cannot be fitted at the same time.

NOTE 4: Resistive inputs can be configured to measure resistance or connected to NTC10 sensor (temperature).

NOTE 5: Digital inputs can be used for pulse counting, up to 25Hz, min. pulse length 20ms. Counter value showed on network variable (volatile, no battery back-up).

NOTE 6: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dmg, *.dxf). Custom logo is provided as single colour - charcoal grey.

Communication (RHR-MOD): Modbus RTU RS485, None/Odd/Even, Baud 9k6/19k2/38k4/57k6

Communication (RHR-BAC): BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8

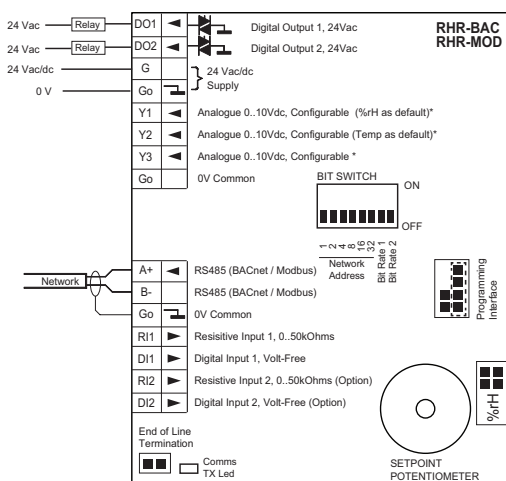
Communication (RHR-MBUS): M-Bus EN1434-4, Baud Rate 300/2400/9600, Isolated M-Bus Interface, Single 1.5mA Load

Address Range: Via bit switch: 1..63
Modbus via network/tool: 1..247
BACnet via tool/network: 1..127

Mounting: Wall Mounting, IP20

Dimensions: W86 x H120 x D29 mm

WIRING DIAGRAM:-



GREY COLOUR OPTION EXAMPLES:-



* Each of the outputs can be configured individually as for temperature, humidity, light level control, maximum control or as a network value.

TER Active Room Temperature Sensors (Controllers)

Selection Guide

PART NO	DESCRIPTION	OPTION PART	DESCRIPTION (OPTIONS)
TER	Room Temperature Transmitters, 0..10Vdc Outputs	LCD	LCD Display Option for the TER
TERC	Room Temperature Transmitters, 4..20mA Outputs	SP	Active Setpoint Option (for temperature/LUX control setpoint adjustment) ^{Note 1}
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable	SPB	Push Button Setpoint Option (Requires LCD to be fitted as well)
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo	SPR	Passive Setpoint Option for the TER (10kOhm Potentiometer) ^{Note 1,2}
CUS-LOGO	Custom Logo (Charcoal Grey)	LL	Light Level Measurement and Occupancy Detection Option for the CDR (DO-option Fitted) ^{Note 1}
GR	Grey Anthracite Enclosure (RAL7015)	PB	Push Button (Timed, DO-option Included, LED Backlight)



TER active temperature sensors are designed to detect temperature in the room spaces. The TER sensors have linear 0-10V signals outputs relating to the temperature, and for the optional light level. The TERC sensors have 4..20mA outputs.

TER active sensors can be installed on wall surface or on a wall mounting box in dry indoor environment. The TER active sensors come with a number of options such as display, active setpoint (knob or push buttons), passive setpoint, occupancy detection and lux level measurement.

TER/TERC active sensors can also operate as temperature controllers. If fitted with the setpoint then user can adjust the target setpoint.

GREY COLOUR OPTION EXAMPLES:-



Technical Data

Power Supply: 24Vac/dc -10/+15%
Measurement Range: Temperature: 0..+50°C
Light Level Range (LL Option): Light Level: 0..3,000Lux
Accuracy: Temperature: $\pm 0.3^\circ\text{C}$
Outputs (TER): 3 x 0..10Vdc < 5mA
Outputs (TERC): 2 x 4..20mA up to 400 Ohms
Outputs (LL/PB Opt): 2 x 24Vac Triacs; requires 24Vac
Display (LCD Option): LCD Display Showing Temperature or Light Level
Push Button (PB Option): Backlit Push Button with Timer; Up to 120 minutes
Setpoint Active (SP Option): Control Setpoint Adjustment (Temperature, LUX)
Setpoint Option: (-SP) Adjustable Min and Max Values. Control Setpoint Adjustment (Temperature, LUX) or Setpoint to 0-10Vdc Output^{Note 2}

Push Button Setpoint Option (-SPB): Adjustable Min/Max values. Requires -LCD option. Control Setpoint Adjustment (Temperature, LUX)

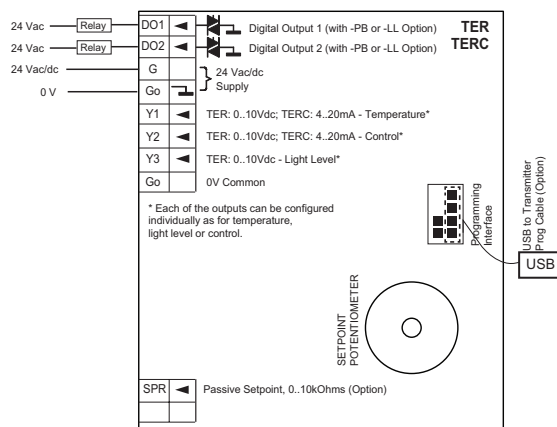
Setpoint Passive (SPR Option): 10kOhm Potentiometer for External Termination
Operating Humidity: 0..95% rH Non-Condensing
Mounting: Wall Mounting, IP20
Dimensions: W86 x H120 x D29 mm
Humidity Range: Humidity: 0..100%rH

NOTE 1: If -SP/-SPR Option is selected the -LL options are no longer available (and vice versa).

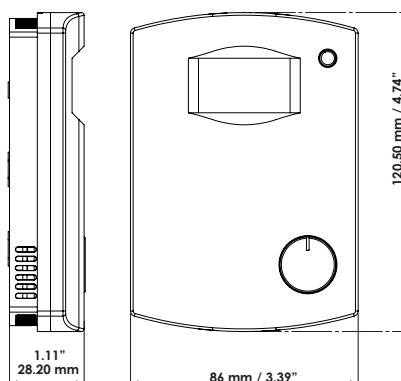
NOTE 2: SP and SPR options cannot be fitted at the same time.

NOTE 3: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dwg, *.dxf). Custom logo is provided as single colour - charcoal grey.

WIRING DIAGRAM:-



DIMENSIONS:-



TER-MOD / TER-BAC / TER-MBUS Communicating Room Temperature Sensors/Controllers



TER temperature transmitters are designed to detect temperature in the room spaces. The sensors have configurable 0-10V signals outputs.

TER-MOD has Modbus RTU RS485 communication and TER-BAC has BACnet MS/TP communication. TER-MBUS have M-Bus EN1434-3 communication bus capability. TER sensors have also a digital input, a resistive input and two digital outputs.

The TER sensors come with a number of options such as display, active setpoint (knob or push buttons), occupancy detection, lux level measurement, push button(s) and additional digital/resistive input. The TER sensors can also operate as temperature controllers modulating analogue output of the sensor. The setpoint is supplied either via the network or from the setpoint potentiometer (if -SP option fitted).

Selection Guide

PART NO	DESCRIPTION
TER-MOD	Room Temperature Transmitter with Modbus RS485 Communication, 1DI, 1RI, 3AO, 2DO
TER-BAC	Room Temperature Transmitter with BACnet MS/TP Communication, 1DI, 1RI, 3AO, 2DO
TER-MBUS	Room Temperature Transmitter with M-Bus EN1434-3 Communication, 1DI, 1RI, 3AO, 2DO
SW-DCT-USB	Device Config Tool with 1.8m USB Cable
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
CUS-LOGO	Custom Logo (Charcoal Grey)
GR	Grey Anthracite Enclosure (RAL7015)

OPTION PART	DESCRIPTION (OPTIONS)
LCD	LCD Display Option for the TER (Temperature, Light Level, Alarm Backlight, Setpoint)
SP	Active Setpoint Option for the TER or for the Controller (Modbus Value) ^{Note 2,3}
SPB	Push Button Setpoint Option (Requires LCD to be fitted as well)
LL	Light Level Measurement and Occupancy Detection Option for the TER (Modbus) ^{Note 1,3}
PB	Momentary Push Button Option with Timer
PB2	2 Momentary Push Buttons with Timers
DI2	Extra Digital Input Option for the RHR (Modbus) - Total 2 Digital Inputs
RI2	Extra Resistive Input Option for the RHR (Modbus) - Total 2 Resistive Inputs

M-Bus

Modbus

ASHRAE BACnet™

Technical Data

Power Supply: 24Vac/dc -10/+15%

Measurement Range: Temperature: 0..+50°C = 0..10Vdc

Light Level Range (LL Option): Light Level: 0..3,000Lux = 0..10Vdc

Accuracy: Temperature: $\pm 0.3^\circ\text{C}$ @ 25°C

Outputs (Built-In): 3 x 0..10Vdc < 5mA

Outputs (Built-In): 2 x 24Vac Triac; requires 24Vac

Inputs (Built-In): 1 x NTC10 Input (0..50kOhm)

Inputs (Built-In): 1 x Digital Input, Volt-Free

Inputs (RI2 Option): 1 x NTC10 Input (0..50kOhm)

Inputs (DI2 Option): 1 x Digital Input, Volt-Free (additional)

Display (LCD Option): LCD Display Showing Temperature, Light Level, Setpoint and Alarm Backlight (Configurable)

Push Button (PB/PB2 Options): 1 or 2 Momentary Backlit Push Buttons; assignable to digital outputs or network, Timer Delay up to 120 mins.

Setpoint^{Note 2} (SP or SPB Option): Adjustable Min and Max Values. Read over network, or use for control. SPB requires LCD option.

NOTE 1: If -LL option is selected the resistive input 1 measurement is no longer available.

-LL option is not available with M-Bus models.

NOTE 2: -RI2 option is not available if -SP option is selected. -SP option is not available with M-Bus models.

NOTE 3: Option -LL and SP cannot be fitted at the same time.

NOTE 4: Resistive inputs can be configured to measure resistance or connected to NTC10 sensor (temperature).

NOTE 5: Digital inputs can be used for pulse counting, up to 25Hz, min. pulse length 20ms. Counter value showed on network variable (volatile, no battery back-up).

NOTE 6: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dwg, *.dxf). Custom logo is provided as single colour - charcoal grey.

Communication (TER-MOD): Modbus RTU RS485, Baud Rate 96k/19k2/38k4/57k6 via Bit Switch

Communication (TER-BAC): BACnet MS/TP, Baud Rate 96k/19k2/38k4/76k8 via Bit Switch

Communication (TER-MBUS): M-Bus EN1434-4, Baud Rate 300/2400/9600, Isolated M-Bus Interface, Single 1.5mA Load

Address Range: Via bit switch: 1..63
Modbus via network/tool: 1..247
BACnet via tool/network: 1..127

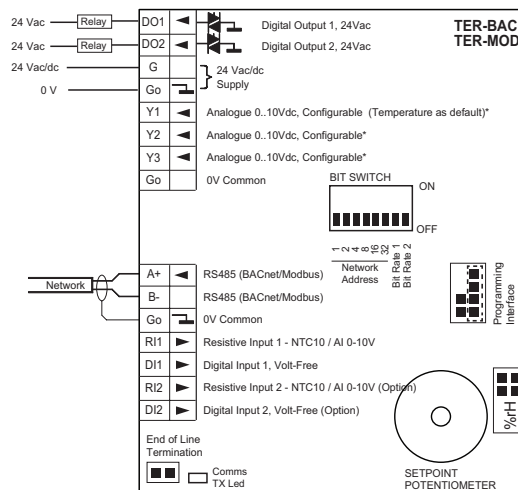
Parity: None, Odd, Even

Operating Humidity: 0..95% rH Non-Condensing

Mounting: Wall Mounting, IP20

Dimensions: W86 x H120 x D29 mm

WIRING DIAGRAM:-



GREY COLOUR OPTION EXAMPLES:-



* Each of the outputs can be configured individually as for temperature, light level, control or as a network value.

TERP Passive Room Temperature Sensors

Selection Guide

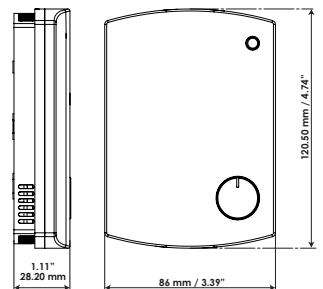
PART NO	DESCRIPTION	OPTION PART	DESCRIPTION
TERP-KP10	Room Temperature Transmitters, KP10 Element	SPR	Passive Setpoint Option for the TER (10kOhm Potentiometer)
TERP-NI1000-LG	Room Temperature Transmitters, NI1000-LG Element	PBM	Momentary Push Button
TERP-NTC1800	Room Temperature Transmitters, NTC1k8 Element	LED	24V LED (Green)
TERP-NTC10K3	Room Temperature Transmitters, NTC10K3A1 Element	S5	5-Position Rotary Switch
TERP-NTC10K4	Room Temperature Transmitters, NTC10K4A1 Element	S5R	5-Position Rotary Switch with Resistance
TERP-NTC10-KB	Room Temperature Transmitters, NTC10K-KB Satchwell D-Type Element	CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
TERP-NTC20K6	Room Temperature Transmitters, NTC20K6 Element	CUS-LOGO	Custom Logo (Charcoal Grey)
TERP-PT100	Room Temperature Transmitters, PT100 Element EN60751/B	GR	Grey Anthracite Enclosure (RAL7015)
TERP-PT1000	Room Temperature Transmitters, PT1000 Element EN60751/B		

TERP passive sensors are designed to measure room air temperature. TERP sensors are available with wide range of passive measurement types and can have optional set-point adjustment potentiometer, 24V powered LED for indication, momentary push button and 5-position switch.

The potentiometer is as default 10kOhms, optional 1kOhm potentiometer is also available. The 5-position switch can be volt-free contact, or switch a resistance.

NOTE 1: SPR and S5/S5R options cannot be fitted at the same time.
NOTE 2: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dwg, *.dxf).
Custom logo is provided as single colour - charcoal grey.

DIMENSIONS:-



Technical Data

Sensor Element and Accuracy:

For detailed sensor characteristics see Sensor Table Section.

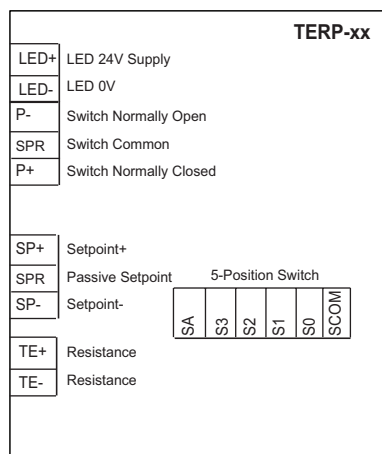
Element	Nominal Resistance	Accuracy
Pt100	100Ω @ 0°C	±0.3°C @ 0°C
Pt1000	1,000Ω @ 0°C	±0.3°C @ 0°C
NTC10k3A1	10kΩ @ 25°C	±0.2°C @ 25°C
NTC10k4A1	10kΩ @ 25°C	±0.2°C @ 25°C
NTC10k3A1-KB	5025Ω @ 25°C	±0.5°C @ 25°C
NTC1.8k	1800Ω @ 25°C	±0.2°C @ 25°C
NTC20k6A1	20kΩ @ 25°C	±0.2°C @ 25°C
Ni1000-LG	1,000Ω @ 0°C	±0.5°C @ 0°C
KP10	-	±0.5°C @ 25°C

Range: 0...+50°C

Mounting: Wall Mounting, IP20

Dimensions: W86 x H120 x D29 mm

WIRING DIAGRAM:-



TEMPERATURE RESISTANCE TABLE:-

Temp °C	PT100	PT1000	NTC10k3A1	NTC20k6A1	Ni1000-LG/Ω	NTC10-KB/Ω	NTC10k4A	NTC1800	KP10
	Resistance (Ohms, Ω)								Voltage Volt
120	146.06	1460.6	389	609	1616.4	466	483	114	3.93
100	138.5	1385.0	680	1114	1500.0	721	817	182	3.73
90	134.7	1347.0	918	1541	1444.4	921	1084		3.63
80	130.89	1308.9	1258	2166	1390.1	1193	1458	304	3.53
75	128.98	1289.8	1480	2585	1363.5	1364	1700		3.48
70	127.07	1270.7	1752	3099	1337.1	1563	1990	403	3.43
65	125.16	1251.6	2082	3732	1311.1	1792	2339		3.38
60	123.24	1232.4	2488	4517	1285.4	2056	2760	542	3.33
55	121.32	1213.2	2968	5494	1260.1	2358	3271	634	3.28
50	119.4	1194.0	3603	6718	1235.0	2702	3893	744	3.23
45	117.47	1174.7	4368	8259	1210.2	3089	4656	878	3.18
40	115.54	1155.4	5327	10211	1185.7	3518	5594	1042	3.13
35	113.61	1136.1	6532	12698	1161.5	3987	6754	1243	3.08
30	111.67	1116.7	8057	15887	1137.6	4492	8197	1491	3.03
25	109.73	1097.3	10000	20000	1114.0	5025	10000	1800	2.98
20	107.79	1077.9	12490	25350	1090.7	5573	12268	2187	2.93
15	105.85	1058.5	15710	32346	1067.6	6125	15136	2675	2.88
10	103.9	1039.0	19900	41567	1044.8	6667	18787	3295	2.83
5	101.95	1019.5	25400	53812	1022.3	7152	23462	4090	2.78
0	100	1000.0	32650	70203	1000.0	7661	29490	5117	2.73
-5	98.04	980.4	42340	92322	978.0	8093	37316		2.68
-10	96.09	960.9	55330	122431	956.2	8472	47549		2.63
-15	94.1	941.0	72980	163777	934.7	8796	61030		2.58
-20	92.16	921.6	97070	221088	913.5	9067	78930		2.53
-25	90.94	909.4	130400	301297	892.5	9288	102890		
-30	88.22	882.2	177000	414698	871.7	9465	135233		
-40	84.27	842.7	336500	810861	830.8	9711	239831		

LLR Occupancy and Light Level Sensors (Controllers), Wall Mounted, Modbus and BACnet



LLR are wall mounted occupancy and light level sensors with Modbus or BACnet communications. The sensors have 2 x 24Vac triacs for the occupancy detection and 3 x 0..10Vdc analogue outputs for light level and temperature (configurable for control).

LLR-MOD and LLR-BAC devices provide network interface to the occupancy and light level detection.

If you require Light Level/Movement Sensor with CO₂, please refer to CDR.
If you require Light Level/Movement Sensor with %RH relative humidity, please refer to RHR.

Selection Guide

PART NO	DESCRIPTION	OPTION PART	DESCRIPTION (OPTIONS)
LLR-MOD	Wall Mounted Occupancy and Light Level Sensor with Temperature, 2DOs, 3AOs, 1RI, 2DI, Modbus RTU RS485 Communication	LCD	LCD Display Option for the LLR (also provides alarm backlight)
		PB	Push Button Option for the LLR
LLR-BAC	Wall Mounted Occupancy and Light Level Sensor with Temperature, 2DOs, 3AOs, 1RI, 2DI, BACnet MS/TP Communication	PB2	2 Push Button Option for the LLR
		TE	Active Temperature Sensor Option, 0..10Vdc Output
SW-DCT-USB	Windows Device Configuration Tool with 1.8m USB Cable	TE-NTC10K3	NTC10K3 Sensor Option (only available for LLR - non communicating models)
CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo		
CUS-LOGO	Custom Logo (Charcoal Grey)		
GR	Grey Anthracite Enclosure (RAL7015)		



Technical Data

Power Supply: 24Vac/dc -10/+15% <30mA
PIR Range: Up to 12m
Delay Time (OFF): 20..7,200 sec
Light Level Range: 0..3,000Lux
Inputs: 1 x Resistive Input, 0..50kOhms
 2 x Digital Inputs, Volt-Free
 3 x 0..10Vdc < 5mA
Outputs: 2 x 24Vac Triac; requires 24Vac
Mounting: Wall Mounting, IP20
Operating Temp: 0..50°C
Operating Humidity: 0..95% rH Non-Condensing
Dimensions: W86 x H120 x D29 mm
Country of Origin: United Kingdom

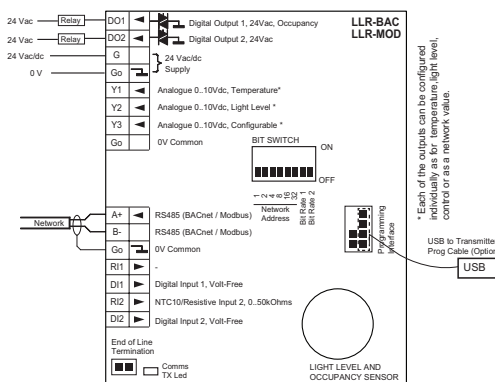
MODBUS AND BACNET VERSIONS

Modbus/BACnet: BACnet MS/TP; 9k6/19k2/38k4/76k8
Communication: Modbus RTU; 9k6/19k2/38k4/57k6
BACnet (MAC) Address Range: Via bit switch: 0..63
Modbus Address Range: Via bit switch: 0..63
Modbus Address Range: Via network/tool: 0..247

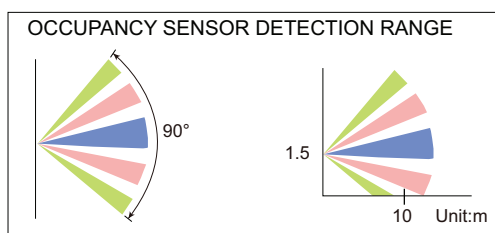
OPTIONS

LCD Display Option: LCD Display Showing Light Level and Temperature
PB/PB2 Push Button Options: 1 or 2 Momentary Backlit Push Buttons; assignable to DOs or Network
TE Option: Temperature Measurement: 0..+50°C, Accuracy ±0.3°C
TE-NTC10K Option: Passive NTC10K3 Sensor

WIRING DIAGRAM:-



DETECTION RANGE:-



NOTE 1: Custom logo is required to be supplied in vector format (*.ai, *.eps, *.dmg, *.dxf).
 Custom logo is provided as single colour - charcoal grey.

BAC-DIO4/IO9 BACnet and MOD-DIO4/IO9 Modbus Multi I/O-Modules, Wall/DIN-Rail Mounted

Selection Guide

PART NO	DESCRIPTION	PART NO	DESCRIPTION
MOD-DIO4	Modbus Digital Input & Output Module, 2DI, 2DO, RS485	MOD-DIO4-DIN	Modbus Digital Input & Output Module, 2DI, 2DO, RS485
MOD-IO9	Modbus Input/Output Module, 2RI, 2DI, 3AO, 2DO, RS485, RS485	MOD-IO10-DIN	Modbus Input/Output Module, 2RI, 2DI, 4AO, 2DO, RS485
MOD-IO9-AI	Modbus Input/Output Module, 2AI, 2DI, 3AO, 2DO, RS485, RS485	MOD-IO10-AI	Modbus Input/Output Module, 2AI, 2DI, 4AO, 2DO, RS485
BAC-DIO4	BACnet MS/TP Digital Input & Output Module, 2DI, 2DO	BAC-DIO4-DIN	BACnet MS/TP Digital Input & Output Module, 2DI, 2DO
BAC-IO9	BACnet MS/TP Input/Output Module, 2RI, 2DI, 3AO, 2DO, RS485	BAC-IO10-DIN	BACnet MS/TP Input/Output Module, 2RI, 2DI, 4AO, 2DO
BAC-IO9-AI	BACnet MS/TP Input/Output Module, 2AI, 2DI, 3AO, 2DO, RS485	BAC-IO10-DIN-AI	BACnet MS/TP Input/Output Module, 2AI, 2DI, 4AO, 2DO



MOD-IO9/DIO4 are Modbus RTU RS-485 input and output modules. BAC-IO9/DIO4 are BACnet multi-I/O input and output modules with device discovery. The modules are wall mounted.

MOD/BAC-IO10-DIN and MOD/BAC-DIO4-DIN modules are mounted on the standard top hat DIN-rail, and are suitable for panel installations.



BACNET STANDARD OBJECTS	INSTANCE ASSIGNMENTS
Analogue Inputs	AI(3) - NTC10/RI1 (IO9/IO10) AI(4) - NTC10/RI2 (IO9/IO10) AI(5) - AI1 (AI-models) AI(6) - AI2 (AI-models)
Analogue Outputs	AO(0) - Y1 Output AO(1) - Y2 Output AO(2) - Y3 Output AO(3) - Y4 Output (IO10 only)
Analogue Value	AV(4) - DI1 Pulse Count AV(5) - DI2 Pulse Count
Binary Input	BI(0) - DI1 Input BI(1) - DI2 Input BI(7) - DI3 (RI1 as digital input) BI(8) - DI4 (RI2 as digital input)
Binary Output	BO(0) - DO1 Output Status BO(1) - DO2 Output Status

Technical Data

Power Supply: 24Vac/dc -10/+15%

Digital Inputs: 2 x Digital Input, Volt-Free; Pulse Counting Capable up to 25Hz, min. Pulse Length 20ms^{Note 1}

Analogue Inputs (MOD-IO9/IO10 and BAC-IO9/IO10): 2 x NTC10K Input, 0..50kOhm, Temperature

Analogue Inputs (AI-Models): 2 x 0-10Vdc Input

Digital Outputs: 2 x 24Vac Triac; requires 24Vac

Analogue Outputs (MOD-IO9/BAC-IO9): 3 x 0..10Vdc < 2mA

Analogue Outputs (MOD-IO10/BAC-IO10): 4 x 0..10Vdc < 2mA

Communication (MOD-modules): Modbus RTU RS485, None/Odd/Even, Baud 9k6/19k2/38k4/57k6 via Bit Switch

Communication (BAC-modules): BACnet MS/TP, Baud 9k6 /19k2/38k4/ 76k8 via Bit Switch

Address Range: Via bit switch: 1..63
Via network: Modbus Range 1..247
BACnet Range 1..127

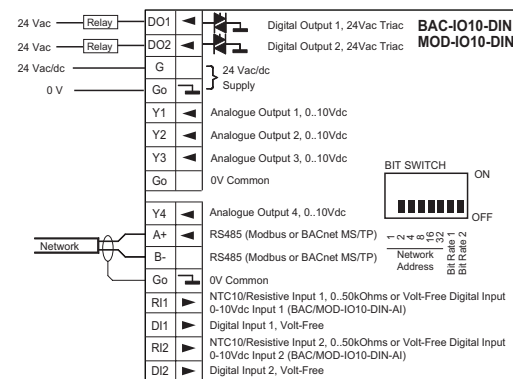
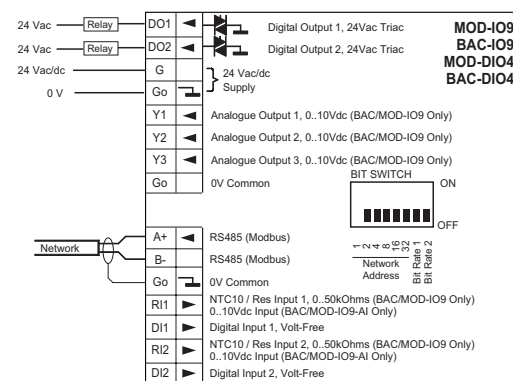
Operating Temp: 0..50°C

Operating Humidity: 0..95% rH Non-Condensing

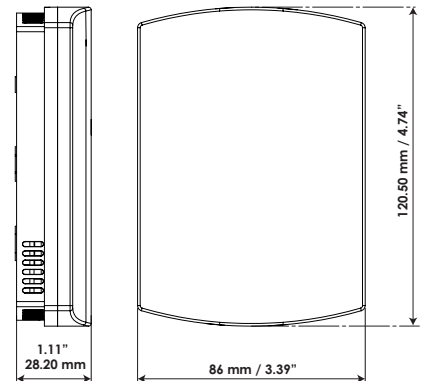
Mounting: Wall Mounting, IP20

Dimensions: W86 x H120 x D29 mm

WIRING DIAGRAM:-



DIMENSIONS (WALL MOUNTING):-



BAC-RI and MOD-RI Modbus Room Interface Modules



BAC-RI and MOD-RI are room interface modules to provide room control interface to the BMS systems. The MOD-RI modules provide Modbus RTU RS485 interface. The BAC-RI modules offer BACnet MS/TP networking. All modules come with attractive backlit display with indication for temperature, setpoint, night/day mode, fan speed, heating or cooling and for open/close. Number of push button versions are available for user adjustments.



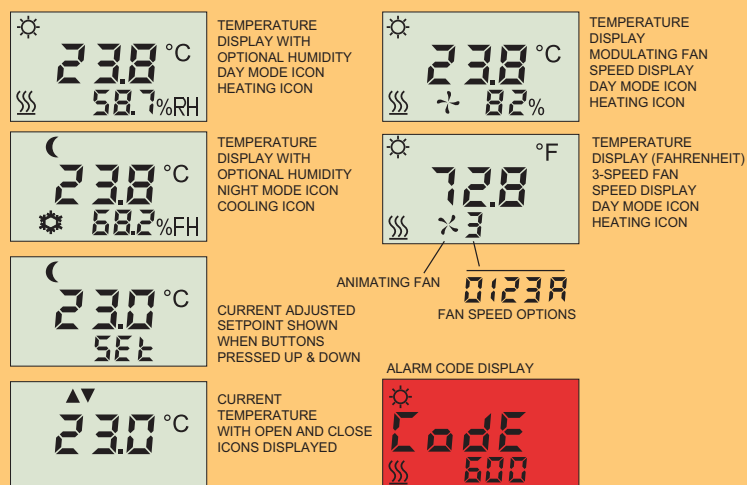
Technical Data

Power Supply:	24Vac/dc -10/+15%
Inputs:	1 x Digital Input, Volt-Free 1 x Resistive Input, 0..50 kOhms
Outputs:	1 x 0..10Vdc Network Signal 2 x 24Vac Triacs, require 24Vac
Measurement:	Built-In Temperature Sensor, Accuracy $\pm 0.5^{\circ}\text{C}$
Relative Humidity	Range: 0..100%rH
Option (-RH):	Humidity: $\pm 2\%$ rH @ 50%rH
CO2 Option (-CO2)	Range: 0..5,000ppm Accuracy: $\pm 50\text{ppm} + 3\%$ of measurement
LCD Display:	Temperature, Setpoint, Heating Icon, Cooling Icon, Day Icon, Night Icon, Open Icon, Close Icon, Animating Fan Speed, Alarm Indication
Fan Speed Options:	Modulating 0..100%, 0-1-2-A, 0-1-2-3-A
Alarm Display:	Alarm Code Display with Permanent/Flashing Amber or Red Backlight
2B Versions:	Two Buttons - Setpoint Adjustment
3B Versions:	Three Buttons - Setpoint Adjustment, Fan Speed Adjustment
4B Versions:	Four Buttons - Setpoint Adjustment, Fan Speed Adjustment, Day/Night Mode
Communication (MOD-RI):	Modbus RTU RS485, None/Odd/Even, Baud 9k6/19k2/38k4/57k6 via Bit Switch
Communication (BAC-RI):	BACnet MS/TP, Baud Rate 9k6/19k2/38k4/76k8 via Bit Switch
Address Range:	Via bit switch: 1..63 Via network: Address Range 1..127
Operating Temp:	0..50°C
Operating Humidity:	0..95% rH Non-Condensing
Mounting:	Wall Mounting, IP20
Dimensions:	W86 x H120 x D29 mm

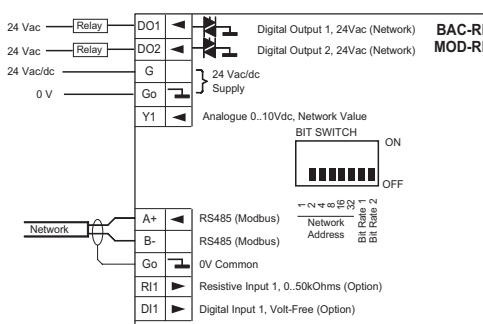
Selection Guide

PART NO	DESCRIPTION	PART NO	DESCRIPTION
MOD-RI	Modbus Room Interface Module, LCD, Built-In Temperature, 1 DI, 1RI, 1AO, 2DO	BAC-RI	BACnet Room Interface Module, LCD, Built-In Temperature, 1 DI, 1RI, 1AO, 2DO
MOD-RI-2B	Modbus Room Interface Module, LCD, Built-In Temperature, Setpoint Buttons, 1 DI, 1RI, 1AO, 2DO	BAC-RI-2B	BACnet Room Interface Module, LCD, Built-In Temperature, Setpoint Buttons, 1 DI, 1RI, 1AO, 2DO
MOD-RI-3B	Modbus Room Interface Module, LCD, Built-In Temperature, Setpoint and Fan Speed Buttons, 1 DI, 1RI, 1AO, 2DO	BAC-RI-3B	BACnet Room Interface Module, LCD, Built-In Temperature, Setpoint and Fan Speed Buttons, 1 DI, 1RI, 1AO, 2DO
MOD-RI-4B	Modbus Room Interface Module, LCD, Built-In Temperature, Setpoint Buttons, Fan Speed Button, Operating Mode Button, 1 DI, 1RI, 1AO, 2DO	BAC-RI-4B	BACnet Room Interface Module, LCD, Built-In Temperature, Setpoint Buttons, Fan Speed Button, Operating Mode Button, 1 DI, 1RI, 1AO, 2DO
GR	Grey Anthracite Enclosure (RAL7015)	RH	$\pm 2\%$ Relative Humidity Option
		CO2	CO2 Measurement Option, 0..5,000ppm
		CUS-LOGO-SETUP	Setup Charge for Custom Cover Logo
		CUS-LOGO	Custom Logo (Charcoal Grey)

DISPLAY EXAMPLES



WIRING DIAGRAM:-



BACNET STANDARD OBJECTS	INSTANCE ASSIGNMENTS
Analogue Inputs	AI(0) - Temperature Sensor AI(1) - Setpoint Adjust AI(2) - Humidity Sensor AI(3) - Resistive Input 1 AI(4) - User Fan Speed AI(5) - CO2 Sensor
Analogue Outputs	AO(0) - Y1 Output
Analogue Value	AV(0) - Temperature Setpoint AV(1) - Fan Speed AV(2) - Alarm Code
Binary Input	BI(0) - DI1 Status BI(1) - Day/Night Mode Status
Binary Output	BO(0) - DO1 Output Status BO(1) - DO2 Output Status BO(2) - Heating Symbol BO(3) - Cooling Symbol BO(4) - Open Arrow Symbol BO(5) - Close Arrow Symbol BO(6) - Day/Night Mode BO(7) - SPA Reset

ROOM MEASUREMENT TECHNOLOGY AND CONTROL WITH BACNET/MODBUS

Advanced Room Controllers and Sensors Offer Easy Integration to most BMS Systems

SyxtSense Room Controllers and Sensors are available with Modbus RTU and BACnet MS/TP communication options. These allow any BACnet MS/TP client or Modbus Master to interrogate the data over the RS485 communications network, offering effective integration path to most building management systems.

When using a BACnet client that provides device/point discovery functionality, such as SyxtSense SDC-20G+/32G+, FG20+/FG32+/FS32, the SDC room controller integration is fast and simple. The SRC room controllers have comprehensive Modbus parameter list allowing both run-time monitoring as well as controller configuration over the Modbus network.

For further advice and help please contact SyxtSense Sales.

Features of BACnet Communication:-

- BACnet MS/TP Support
- Support Who-Is and Who-Has commands; allows devices to be discovered
- Easy points discovery; fast and effective engineering
- Supports Analogue Input, Analogue Output, Analogue Value, Binary Input, Binary Output, Multi-State Input
- Easy to configure baud rate and addressing

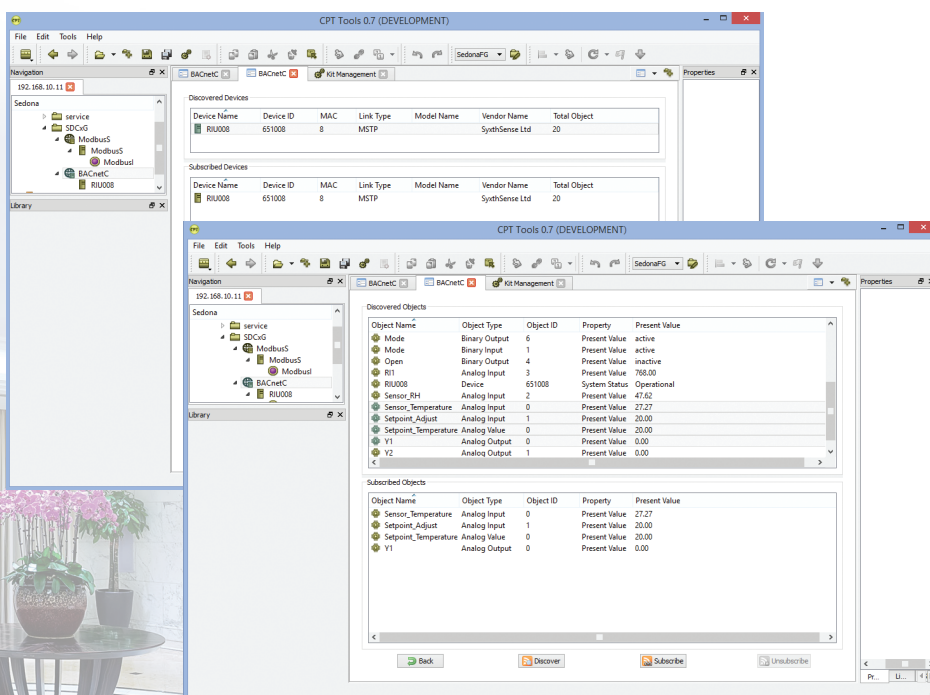
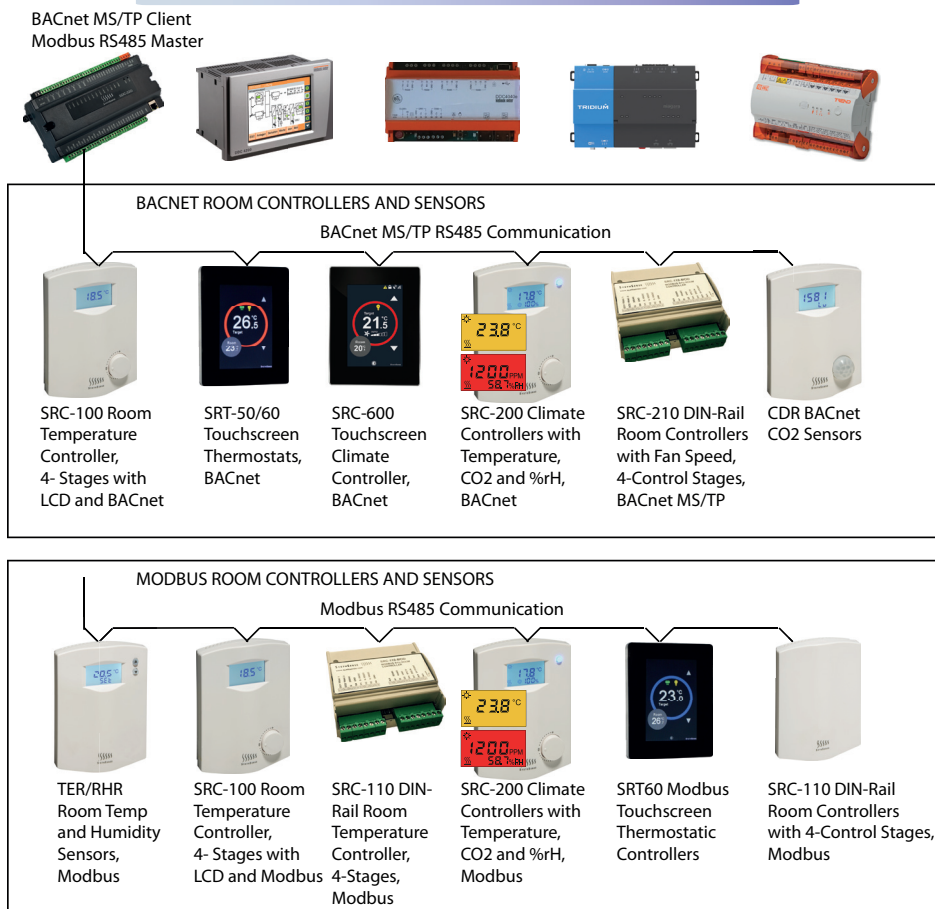
Features of Modbus Communication:-

- Modbus RTU RS485 Support
- Extensive list of Modbus parameters for both Runtime operation as well as for System Configuration
- Supports Coils, Discrete Inputs, Input Registers and Holding Registers
- Easy to configure baud rate and addressing via bit switch, touchscreen or over the network

BACnet Discovery:-

- BACnet discovery lists the devices on the MS/TP network (on compatible BACnet clients)
- By Subscribing to Device; the points from the devices can be discovered
- The point list shows the available points (in plain English)
- Subscribe to the required BACnet points and start using them in your application
- BACnet Discovery is fast and simple method to find the network points on the BACnet MS/TP devices

SYXTSENSE BACNET MSTP/MODBUS RTU ROOM SOLUTIONS - NETWORK EXAMPLE



Advanced Tehcnology, Open Connectivity, Long-term Return on Investment

SyxtSense solutions are based on the latest technological innovations, use the ARM core based microprocessors, and are suitable for both commercial and home automation systems. Our products have been designed and manufactured in the UK by SyxtSense, and our design team works constantly to provide the most innovative, easy-to-use, products that complement any building and room control strategies. 100% of our products are tested with automated production test equipment to ensure reliability, quality, long-term performance and traceability.

Our products include open connectivity using BACnet and Modbus protocols, providing seamless integration to most building management and home automation systems. The designs embed our decades of experience in designing networked solutions catering the specifics required for succesful completion of integrated solutions.



M-Bus



TECHNICAL SUPPORT



24HR ON-LINE ORDERING



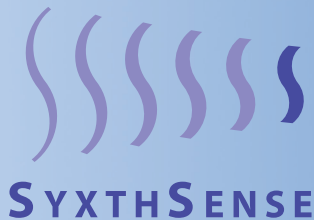
PRODUCT DESIGN



MANUFACTURING



SOLUTIONS



SyxtSense Ltd
3 Topsham Units
Dart Business Park
Topsham Exeter
EX3 0QH
United Kingdom

Tel: +44 (0)1392 875 414
Tel: +44 (0)844 840 3100
Fax: +44 (0)844 840 3200
Email: sales@syxtsense.com
www.syxtsense.com



ROOM

