SIEMENS

Fan coil room thermostat (Modbus RTU server)

RDQ411MB

For 2-pipe and 4-pipe fan coil units

- Support of communication protocol ‘Modbus RTU server’
- One multi-functional input (X1) for keycard contact or external sensor
- LCD backlit display and keylock function
- Operating mode button: Comfort, Protection, and Economy (3-second long-press in Comfort)
- ‘M’ button:
  - For 2-pipe applications: Heating, cooling, ventilation
  - For 4-pipe applications (auto): Automatic heating/cooling changeover, ventilation
  - For 4-pipe applications (manual): Heating, cooling, ventilation
- 3-speed fan control (automatic or manual) via fan button
- Display of either room temperature, setpoint or bus temperature
- Support of Chinese standard conduit boxes (max. 78 × 78) ≥ 45 mm (±2) deep and British metal standard conduit boxes (max. 75 × 75) ≥ 47 mm (±2) deep
- Adjustable commissioning and control parameters

Use

To control the room temperature in individual rooms and zones that are:

- Heated or cooled with 2-pipe fan coil units
- Heated and/or cooled with 4-pipe fan coil units

The thermostat controls:

- One 3-speed fan
- 2-wire or 3-wire On/Off valve actuator

Functions

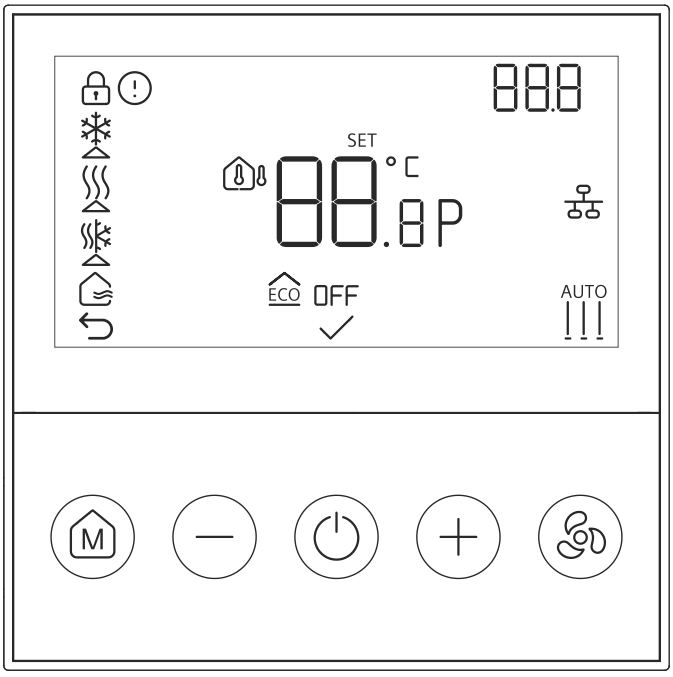
- Fan speed selection via fan button
- Fan operation selection (enable or disable) via parameter P16
- Fan operation selection in dead zone (low-speed or off) via parameter P15
- Timer with delay Off function (P28): preset or user selection
- Minimum and maximum setpoint limitation (P09 & P10)
- Return to previous operating mode, Protection or Comfort upon power failure (P27)
- Temperature sensor calibration
- Surge protection at power-up
- Maintenance of room temperature via built-in temperature sensor, external temperature sensor or bus temperature
- HVAC application selection via parameter P01
- Selectable On/Off output for 2-wire valve or 3-wire valve actuator (P01)

  Note: 3-wire valve actuator for 2-pipe fan coil application only.
- Full or partial keylock (P14)
- Factory reset via parameter P71

Mechanical design

The thermostat consists of:

- Control unit with one LCD display and five key buttons.
- Mounting bracket to fit onto a square conduit box with Chinese standard conduit boxes (max. 78 × 78) ≥ 45 mm (±2) deep and British metal standard conduit boxes (max. 75 × 75) ≥ 47 mm (±2) deep.



Symbol	Description	Symbol	Description
	Keylock		Fault warning
	Indoor temperature		Bus temperature
	Temperature range:0...50 °C	SET	Temperature setpoint adjustment
	Parameter entry		Parameter values
	Time delay timer		
	Valve On		Cooling mode
	Heating/cooling automatic changeover		Heating mode
	Return to previous level		Ventilation mode (only fan speed may change and valve actuator outputs are disabled)
	Modbus communication	P	Parameter icon
OFF	Protection mode	ECO	Economy mode
AUTO	Fan speed		• Confirm access to present option • Confirm present value

Button	Description	Button	Description
	'M' button for: • Mode change • Time delay timer • Return to previous level		Operating mode button for: • Comfort / Protection • Economy (3-second long-press in Comfort) • Confirm access to present option • Confirm present value
	• Scroll through parameter list and value • Increase Comfort setpoint • Increase delay time to enter Protection mode. See Operating mode [► 3] for more information on "timer with delay Off" mode.		• Scroll through parameter list and value • Decrease Comfort setpoint • Reduce delay time to enter Protection mode.
	Fan button for: • Fan speed selection • Screen unlock (press and hold down the button for 3 seconds)		Enter parameter setting

Operating mode

The following operating modes are available:

Comfort mode

In Comfort (ON), the thermostat displays the room temperature value, available user selection and thermostat status. It also maintains the setpoint that can be adjusted via the +/- button.

To save energy, the minimum (P09) and maximum (P10) setpoints can be set to limit the available setpoint range.

Protection mode OFF

In Protection, the thermostat is turned off and the related heating or cooling setpoint is maintained and can be adjusted via control parameters P65 and P66.

Economy mode ECO

When Economy is selected, the thermostat runs in an energy saving mode and maintains the setpoint (P11 or P12), thus saving energy.

NOTICE	
!	If P11 or P12 is set to "Off", the thermostat cannot enter Economy after a 3-second long-press on ⏻ in Comfort.

Timer with delay Off mode

In the "timer with delay Off" mode, the timer starts counting down according to the selected hour (via parameter P28) after the thermostat is activated. When the timer expires, the thermostat is deactivated automatically.

- When P28 = 0 (factory setting), the delay timer is inactive when the thermostat starts. Press and hold down the ‘M’ button for more than 3 seconds to activate "timer with delay Off" and enter the on-time.
- When P28 ≠ 0, the delay timer is active in Comfort whenever the thermostat is activated.
- Cancel "timer with delay Off" by setting the timer to 0 hours.
- See the parameter settings for "timer with delay Off" in Control parameters [► 8].

Operating mode setting upon power failure

If the thermostat is disconnected from AC 230 V and reconnected:

- If P27 = 0, the unit returns to the operating mode before power failure.
- If P27 = 1, the unit is in Protection mode.
- If P27 = 2, the unit resumes Comfort mode (On).

Type summary

Product no.	Stock no.	Operating voltage	Control outputs		Fan type	Multi-functional input		Description
			On/Off	On/Off (3-wire)	3-speed	Key card	Sensor	
RDQ411MB	S55770-T518	AC 230 V	√	√	√	√	√	Room thermostat Modbus

Ordering

When ordering, specify both product number / stock number and name: e.g., RDQ411MB / S55770-T518 Room thermostat Modbus.

Order valve actuators and external sensors separately.

Equipment combinations

On/Off actuators

Type of units		Product number	Data sheet*
Electromotive On/Off valve and actuator (only available in AP, UAE, SA and IN)		MVI.../MXI...	A6V11251892
Electromotive On/Off actuator		SFA21...	N4863
Zone valve actuator (only available in AP, UAE, SA and IN)		SUA...	A6V10446174

*) All documents can be downloaded from www.siemens.com/bt/download.

Sensors

Type of units		Product number	Data sheet*
Cable temperature sensor or changeover sensor, cable length 2.5 m NTC (3 kΩ at 25 °C)		QAH11.1	N1840
Room temperature sensor NTC (3 kΩ at 25 °C)		QAA32	CE1N1747

*) All documents can be downloaded from www.siemens.com/bt/download.

Product documentation

Title	Document ID
Mounting instructions	A6V15113831
CE declaration	A5W00769645A
UKCA declaration	A5W00769646A
RCM declaration	A5W00769647A
Environmental declarations	A5W01944065A

Related documents such as environmental declarations, CE declarations, etc., can also be downloaded at the following Internet address:

www.siemens.com/bt/download

Notes

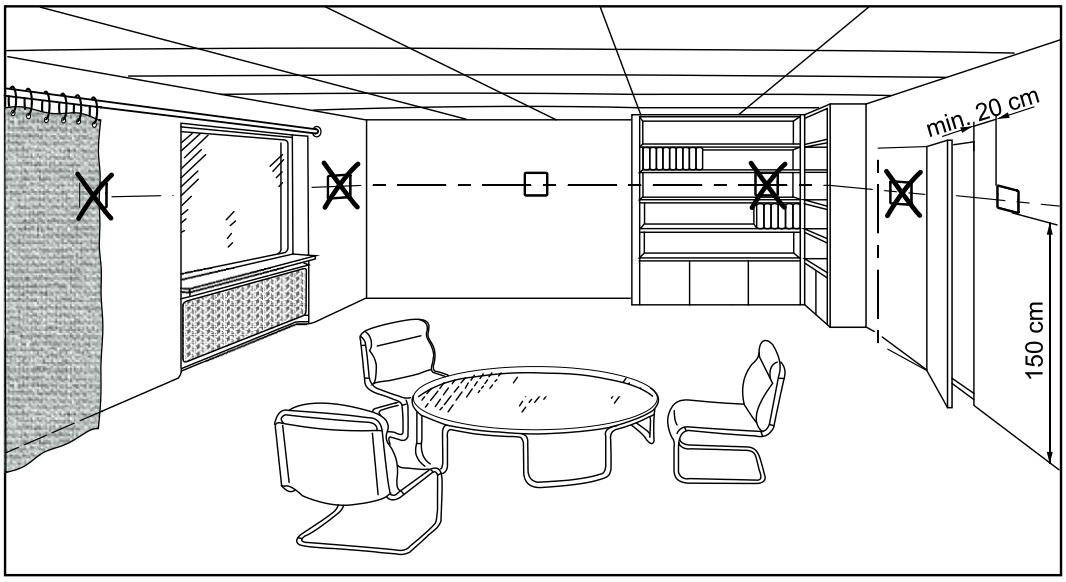
Security

⚠ CAUTION	
	**National safety regulations** Failure to comply with national safety regulations may result in personal injury and property damage ● Observe any national provisions and comply with the appropriate safety regulations.

Mounting and installation

Do not wall-mount in niches or bookshelves, behind curtains, above or near heat sources, wind outlets or inlets, and do not expose to direct solar radiation. Mount about 1.5 m above the floor.

Mounting



A mounting bracket is provided for fitting onto a square conduit box with 60 mm fixing centers.

A conduit box of at least 50 mm in depth to accommodate all wire connections is recommended.

After installing the mounting bracket, wire all terminals of the thermostat. Secure the unit to the mounting bracket as described in the mounting instructions (Document ID: A6V15113831) enclosed with the thermostat.

⚠ WARNING	
	**Device damage** Carefully read all wiring diagrams prior to installation to avoid damage to the device caused by incorrect wiring of high or low voltages.

⚠ WARNING	
	**Wire, protect and earth in compliance with local regulations.** Risk of fire and injury due to short-circuits! ● Adapt the line diameters to the rated value of the installed overcurrent protection device as per local regulations. ● The AC 230 V mains supply line must have an external circuit breaker with a rated current of no more than 10 A. ● The maximum current loading (including fan and valves) is 5 A. ● Use only valve actuators rated for AC 230 V. ● Isolate the cables of all SELV terminals (X1, M, MB+, MB- and Ref) from AC 230 V. ● Disconnect from power supply before removing the unit from its mounting bracket. ● Do not connect more than one fan coil unit to the Q1, Q2 and Q3 outputs of the thermostat. ● Do not connect terminals Y1 and Y2 to either L or N. ● Do not use terminal Y1 or Y2 as AC 230 V power supply.

Commissioning

After power-up, the thermostat resets and all LCD segments light up for about 3 seconds.

Wizard

After the first power-up, the device enters wizard mode and all commissioning parameters can be changed. After closing the wizard, the room temperature is displayed (factory setting).

Surge protection at power-up

When the thermostat is started up, the LCD display and key buttons work normally except all valve and fan outputs, e.g., Q1, Q2, Q3, Y1, and Y2.

The thermostat outputs start up at random to protect mains against overload. It may take a while before all outputs work properly.

Sensor calibration

The thermostat is equipped with an internal sensor for accurate temperature display. If the temperature display is influenced by its mounting location, calibrate the sensor via parameter P05 to adjust the readings.

Setpoint and range limitation

For comfort and to save energy, we suggest reviewing the setpoints (P11, P12, P65 and P66) and setpoint range (parameters P09 and P10) and change them as needed.

Other control parameters

The thermostat's control parameters can be adjusted to ensure optimum performance of the entire system (see “Control parameters [▶ 8]”).

Error handling

Temperature out of range

When the room temperature is out of range, i.e. above 50 °C or below 0 °C, the temperature displays and flashes at “0 °C” or “50 °C”. The thermostat continues to work.

Sensor error

When the internal sensor is not working properly, ⓘ is displayed. The thermostat enters Protection mode.

When P30 is set to 1 but the external sensor is broken or not connected, ⓘ is displayed, and the thermostat continues to work on the internal sensor.

Note: See D00 for error information, but in the case of multiple errors, only the error type of the highest priority is displayed.

Control parameters

Parameter settings

Use the local HMI to adjust control parameters and optimize control performance. All control parameter settings are retained after power failure.

Proceed as follows to adjust the control parameters:

1. Press and hold down  and  at the same time for more than 3 seconds.
2. Press  or  within 2 seconds.
   ⇨ P01's serial number flashes on the screen.
3. Press  or  to select a desired parameter for adjustment, and then press  to confirm selection.
   ⇨ Once a desired parameter is selected, the parameter's value begins to flash on the screen.
4. Press  or  to select a desired parameter value, and then press  to confirm selection.
5. Repeat the above two steps to adjust other parameters.
6. Press  to exit parameter setting adjustment.

Control parameters

Parameter	Description	Factory setting	Setting range
P01	Application	1	0 = 2-pipe, 2-wire valve, heating only
			1 = 2-pipe, 2-wire valve, cooling only
			2 = 2-pipe, 2-wire valve, heating/cooling changeover manual
			3 = 2-pipe, 3-wire valve, heating only
			4 = 2-pipe, 3-wire valve, cooling only
			5 = 2-pipe, 3-wire valve, heating/cooling changeover manual
			6 = 4-pipe, 2-wire valve, heating/cooling changeover manual
			7 = 4-pipe, 2-wire valve, heating/cooling changeover auto
P05	Sensor calibration	0 K	-5...+5 K (resolution 0.5 K)
P06	Standard temperature display	0	0 = Room temperature (via built-in or X1 sensor)
			1 = Setpoint
			2 = Bus temperature
P09	Minimum setpoint in Comfort	5 °C	5 °C...P10 (not included)
P10	Maximum setpoint in Comfort	35 °C	P09 (not included) ...40 °C
P11	Heating setpoint in Economy	15 °C	Off, 5 °C...WcoolEco

Parameter	Description	Factory setting	Setting range
	(WheatEco)		
P12	Cooling setpoint in Economy (WcoolEco)	30 °C	Off, WheatEco...40 °C
P14	Keylock function	0	0 = No lock
			1 = Full lock (only the button is unlocked)
			2 = Full lock (all buttons are locked)
			3 = Partial lock (setpoints are allowed to change via the +/- button; the button is unlocked)
P15	Fan control deadzone in Comfort	0	0 = Fan off
			1 = Fan speed 1
P16	Fan operations	1	0 = Disable
			1 = Enable
P27	Operating mode settings upon power failure	0	0 = Return to previous operating mode
			1 = Protection
			2 = Comfort
P28	Timer with delay Off	0	0 = Users to set on-time period
			1 to 23 = Preset with a fixed on-time in hours (resolution: 1 H)
P30	Multi-functional input (X1) function	0	0 = Disable
			1 = External sensor (NTC 3k)
			2 = Keycard contact (normally open)
			3 = Keycard contact (normally close)
P65	Protection heating setpoint	8 °C	Off, 5 °C...P66 or 40°C (when P66 = Off)
P66	Protection cooling setpoint	OFF	Off, P65 or 5 °C (when P65 = Off)...40 °C
P71	Reload factory setting	OFF	Off = Disable
			On = Reload start “---” is displayed for 3 seconds while reloading
P91	Device address	1	1...247
P92	Baud rate	2	0 = 4800 bps
			1 = 9600 bps
			2 = 19200 bps
			3 = 38400 bps
P93	Parity	1	0 = Odd
			1 = Even

Parameter	Description	Factory setting	Setting range
			2 = No parity
D00	Fault information		1 = No fault
			2 = Communication
			3 = Internal sensor
			4 = Input X1
D01	Hardware version		xxx is displayed
D02	Software version		xxx is displayed

Operation

Temperature control

The thermostat acquires the room temperature via its built-in sensor and maintains the setpoint by delivering 2-position valve control commands.

The switching differential is 1 K in both heating and cooling modes.

- If an external temperature sensor is connected and configured, the temperature detected by the external sensor is used for display and temperature control.
- If a bus temperature is configured (P06), the temperature from the bus is used for display and temperature control.

Setpoint adjustment and limitations

The Comfort setpoint can be adjusted via the +/- button. For comfort and to save energy, limit the setpoint range between the minimum (P09) and maximum (P10) values.

Multi-functional input

Freely selectable, multi-functional input (P30) for:

- External room temperature or return air temperature sensor: Sensor input for external room temperature sensor or return air temperature sensor to acquire the current room temperature. (NTC 3k)
- Operating mode changeover contact: The hotel keycard input changes the operating mode to Economy with HMI locked when the room is unoccupied and returns to the previous operating mode when the room is occupied. (keycard)

Keylock and unlock

Keylock can be activated or deactivated via parameter P14. See “Control parameters [► 8]” for details.

If the screen is locked, press and hold down  for 3 seconds to unlock the screen. The thermostat remains unlocked (P14 is reset to "0") afterwards.

Disposal

	This symbol or any other national label indicate that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national legislation. For additional details, refer to Siemens information on disposal.

Open source software (OSS)

Software license overview

The device uses Open Source Software (OSS). All Open Source Software components used in the product (including copyrights and licensing agreement) are available at http://siemens.com/bt/download

OSS document ID	Device
A6V15299914	RDQ411MB

Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit:

https://www.siemens.com/global/en/products/automation/topic-areas/industrial-cybersecurity.html

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, here:

https://www.siemens.com/cert/ => 'Siemens Security Advisories'

Warranty

Technical data on specific applications are valid only together with Siemens products listed under "Equipment combinations". Siemens rejects any and all warranties in the event that third-party products are used.

Technical data

Power supply	
Operating voltage	AC 230 V (+10 %, -15 %)
Frequency	50/60 Hz
Power consumption (without load)	Max. 5 VA / 3 W

Internal fuse*	
Fuse type	Slow blow fuses
Voltage rating	AC 230 V
Current rating	1 A
External preliminary protection with max. 10 A circuit breaker in the supply line required under all circumstances.	

*) Internal fuse only protects internal circuit.

Modbus interface	
Type	RS485
Transmit mode	RTU
Connection	Up to 32 devices
Baud rate	4800, 9600, 19200 (default), 38400
Device address	1...247, 1 (default)
Cable length	Max. 1200 meters
Identity	Server
Start bit	1
Data bits	8
Parity	0 = Odd 1 = Even (default) 2 = No parity
Stop bit	1

Outputs	
Valve output Y1 (N.O.) /Y2 (N.O.) Rating	AC 230 V 5 mA...4(2) A
Fan output (3-speed fan) Q1, Q2, Q3 Rating	AC 230 V 5 mA...4(2) A

Operational data	
Switching differential - Heating mode - Cooling mode	 1 K 1 K
Setpoint setting range* - Comfort mode - Economy mode - Protection mode	 5...40 °C Off, 5...40 °C Off, 5...40 °C
Built-in room temperature sensor - Measuring range - Accuracy at 25 °C - Temperature calibration range	 0...50 °C < ±0.5 K - 5.0...+5.0 K
Resolution of settings and display - Temperature setpoints - Current temperature value displayed	 0.5 °C 0.5 °C

*) The standard range is 5...40 °C. Customization is available upon request (e.g. 0...50 °C).

Ambient conditions and protection classification	
Classification of protection against electric shock	Device suited for use with equipment of protection class II.
Degree of protection of housing to EN 60529 (after mounting in position)	IP30
Classification as per EN 60730	
Function of automatic control devices	Type 1
Degree of pollution	2
Overvoltage category	III
Operation altitude	Max. 3,000 m above sea level
Climatic ambient conditions	
Storage as per EN 60721-3-1	• Temperature: -5...+50 °C • Ambient humidity: 5...95 % r.h. (non-condensing)
Transport (packaged for transport) as per EN 60721-3-2	• Temperature: -25...+70 °C • Ambient humidity: 5...95 % r.h. (non-

Ambient conditions and protection classification	
	condensing)
Operation as per EN 60721-3-3*	• Temperature: 0...50 °C • Ambient humidity: 5...95 % r.h. (non-condensing)
Mechanical ambient conditions	
Storage as per EN 60721-3-1	Class 1M2
Transport as per EN 60721-3-2	Class 2M2
Operation as per EN 60721-3-3	Class 3M2

*) No condensation is allowed.

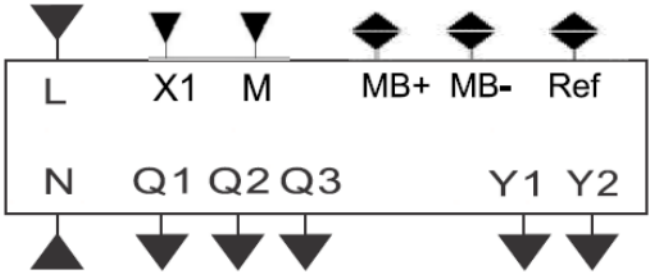
Standards, directives and approvals	
EU conformity (CE)	A5W00769645A*
UKCA declaration	A5W00769646A*
RCM declaration	A5W00769647A*
Environmental compatibility	The product environmental declaration (A5W01944065A*) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal).

*) All documentation can be downloaded from www.siemens.com/bt/download.

General	
Weight (Without box and user document)	168 g
Color of housing	White RAL9016
Connection terminals	
For solid wires	1 × 0.5...1.5 mm^2
For prepared stranded wires	2 × 0.5...1.0 mm^2

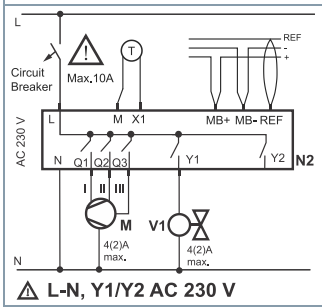
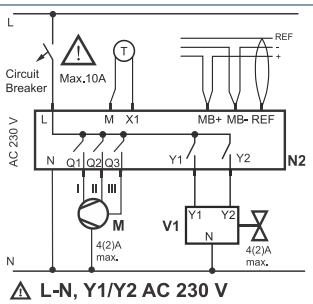
Diagrams

Connection terminals

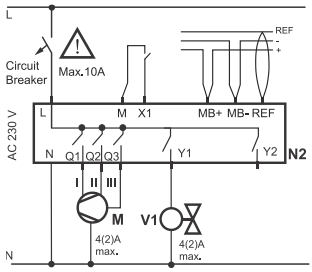
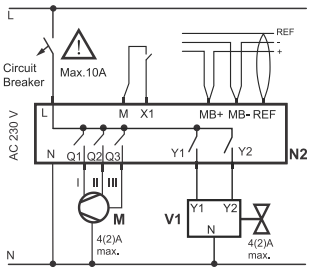


L, N	AC 230 V power supply, mains and neutral
Q1	Output, fan speed 1, AC 230 V
Q2	Output, fan speed 2, AC 230 V
Q3	Output, fan speed 3, AC 230 V
Y1	Output “Valve”, AC 230 V (NO), SPST
Y2	Output “Valve”, AC 230 V (NO), SPST
X1	Multi-functional input for temperature sensor (e.g. QAH11.1) or potential-free switch (keycard)
M	Measuring neutral for sensor and switch
MB+	RS485 Modbus connection
MB-	RS485 Modbus connection
REF	RS485 signal/common ground (differential common)

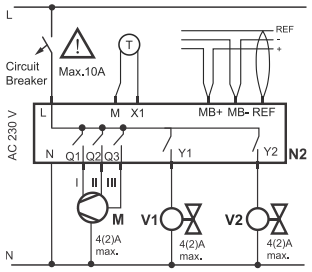
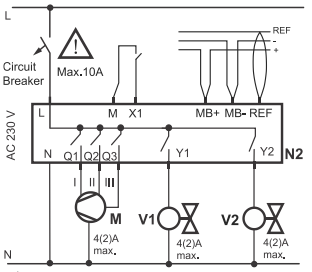
Connection diagrams

2-pipe application, X1 connects external sensor	
2-wire valve	3-wire valve
	

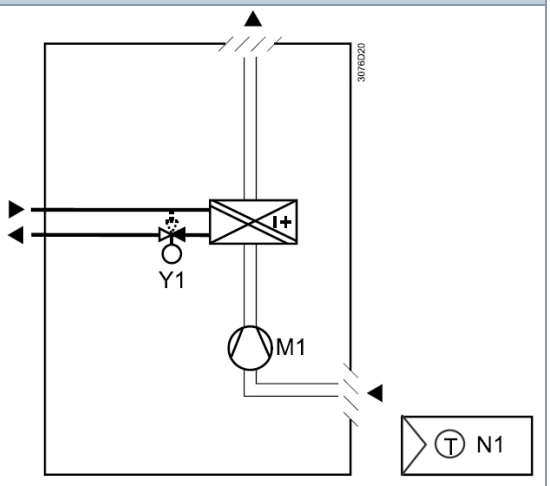
2-pipe application, X1 connects external switch

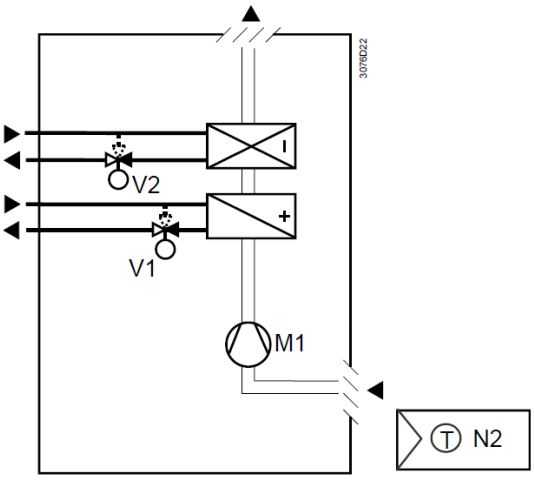
2-wire valve	3-wire valve
	
⚠ L-N, Y1/Y2 AC 230 V	⚠ L-N, Y1/Y2 AC 230 V

4-pipe application, X1 connects external sensor or keycard contact

	
⚠ L-N, Y1/Y2 AC 230 V	⚠ L-N, Y1/Y2 AC 230 V

Application examples

2-pipe fan coil units	
2-pipe fan coil unit On/Off (heating **or** cooling)	
V1	Heating/cooling valve actuator
M1	3-speed fan
N1	Thermostat

4-pipe fan coil units	
4-pipe fan coil unit On/Off (heating **and** cooling)	
V1	Heating or heating/cooling valve actuator
V2	Cooling valve actuator
M1	3-speed fan
N2	Thermostat

Description of Modbus communication objects

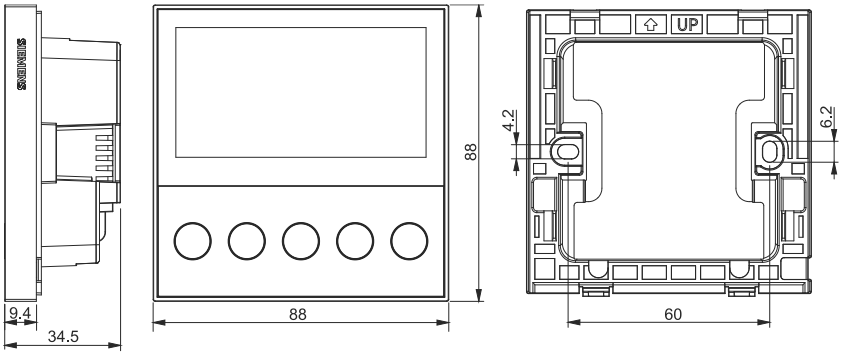
					Read	Write				
Object no.	**Object**	**Address (decimal)**	**Register length**	**Read Only (RO) or Read/ Write (R/W)**	**Function code (HEX) 0x03---Read holding registers 0x04---Read input registers 0x06---Write single register 0x10---Write multiple registers**		**Multi-bytes access group**	**Special process**	**Default**	**Data type (decimal)**
1	Software version	0001	1	RO	0x04	-	-	-	-	102 = U1.0.2
2	Hardware version	0002	1	RO	0x04	-	-	-	-	102 = U1.0.2
3	Application overview	0003	1	RO	0x04	-	-	-	-	0 = 2-pipe, 2-wire valve, heating only 1 = 2-pipe, 2-wire valve, cooling only 2 = 2-pipe, 2-wire valve, H/C changeover manual 3 = 2-pipe, 3-wire valve, heating only 4 = 2-pipe, 3-wire valve, cooling only 5 = 2-pipe, 3-wire valve, H/C changeover manual 6 = 4-pipe, 2-wire valve, H/C changeover manual 7 = 4-pipe, 2-wire valve, H/C changeover auto
4	Room operating mode: State	0004	1	RO	0x04	-	-	-	-	1 = Protection 2 = Comfort 3 = Economy
5	Room temperature (via built-in or X1 sensor)	0005	1	RO	0x04	-	-	× 50	-	-20...70 °C -100 °C = Out of service
6	Temperature setpoint	0006	1	RO	0x04	-	-	× 50	-	5...40 °C
7	Heating output	0007	1	RO	0x04	-	-	-	-	0 = Off 1 = On
8	Cooling output	0008	1	RO	0x04	-	-	-	-	0 = Off 1 = On
9	Fan operation	0009	1	RO	0x04	-	-	-	-	0 = Manual 1 = Automatic
10	Fan output	0010	1	RO	0x04	-	-	-	-	0 = Fan off 1 = Low fan 2 = Medium fan 3 = High fan
11	X1 (AI – NTC 3k)	0011	1	RO	0x04	-	-	× 50	-	-20...70 °C -100 °C = Out of service
12	X1 (DI)	0012	1	RO	0x04	-	-	-	-	0 = Off 1 = On
13	Fault information	0013	1	RO	0x04	-	-	-	-	0: No alarm Any bit set to 1 stands for an alarm or error defined as follows Bit0: (BUS) communication error

					Read	Write				
Object no.	**Object**	**Address (decimal)**	**Register length**	**Read Only (RO) or Read/ Write (R/W)**	**Function code (HEX) 0x03---Read holding registers 0x04---Read input registers 0x06---Write single register 0x10---Write multiple registers**		**Multi-bytes access group**	**Special process**	**Default**	**Data type (decimal)**
										Bit1: (Er1) Built-in sensor error Bit2: (Er2) External input X1 error, e.g., sensor or switch is broken or removed
14	P01 / Application	0001	1	R/W	0x03	0x06	-	-	2	0 = 2-pipe, 2-wire valve, heating only 1 = 2-pipe, 2-wire valve, cooling only 2 = 2-pipe, 2-wire valve, H/C changeover manual 3 = 2-pipe, 3-wire valve, heating only 4 = 2-pipe, 3-wire valve, cooling only 5 = 2-pipe, 3-wire valve, H/C changeover manual 6 = 4-pipe, 2-wire valve, H/C changeover manual 7 = 4-pipe, 2-wire valve, H/C changeover auto
15	P05 / Sensor calibration	0002	1	R/W	0x03	0x06	-	× 50	0	-5...+5 K
16	P06 / Standard temperature display	0003	1	R/W	0x03	0x06	-	-	0	0 = Room temperature (via built-in or X1 sensor) 1 = Temperature setpoint 2 = Temperature via bus
17	P09 / Minimum Comfort setpoint	0004	1	R/W	0x03	0x06	-	× 50	5 °C	5 °C...P10 (not included)
18	P10 / Maximum Comfort setpoint	0005	1	R/W	0x03	0x06	-	× 50	35 °C	P09 (not included)...40 °C
19	P11 / Economy heating setpoint (WheatEco)	0006	1	R/W	0x03	0x06	-	× 50	15 °C	0 = Off 5 °C...P12 (WCoolEco)
20	P12 / Economy cooling setpoint (WcoolEco)	0007	1	R/W	0x03	0x06	-	× 50	30 °C	0 = Off P11 (WHeatEco)...40 °C
21	P14 / Keylock function	0008	1	R/W	0x03	0x06	-	-	0	0 = Unlock 1 = Full lock (only the button is unlocked) 2 = Full lock (all buttons are locked) 3 = Partial lock (setpoints are allowed to change via the +/- button; the button is unlocked)
22	P15 / Fan control deadzone in Comfort	0009	1	R/W	0x03	0x06	-	-	0	0 = Fan off 1 = Fan speed 1
23	P16 / Fan operations	0010	1	R/W	0x03	0x06	-	-	1	0 = Disable 1 = Enable

					Read	Write				
Object no.	**Object**	**Address (decimal)**	**Register length**	**Read Only (RO) or Read/ Write (R/W)**	**Function code (HEX) 0x03---Read holding registers 0x04---Read input registers 0x06---Write single register 0x10---Write multiple registers**		**Multi-bytes access group**	**Special process**	**Default**	**Data type (decimal)**
24	P27 / Operating mode settings upon power failure	0011	1	R/W	0x03	0x06	-	-	0	0 = Return to previous operating mode 1 = Protection 2 = Comfort
25	P28 / Timer with delay OFF	0012	1	R/W	0x03	0x06	-	-	0	0 = Users to set on-time period 1 to 23 = Preset with a fixed on-time in hours
26	P30 / Multifunctional Input (X1) function	0013	1	R/W	0x03	0x06	-	-	0	0 = Disable 1 = External room or return air temperature sensor (AI, NTC3k) 2 = Keycard contact (normally open) 3 = Keycard contact (normally close)
27	P65 / Protection heating setpoint	0014	1	R/W	0x03	0x06	-	× 50	8 °C	0 = Off 5 °C...P66 (WCoolProt); P66 = 40 °C max.
28	P66 / Protection cooling setpoint	0015	1	R/W	0x03	0x06	-	× 50	0	0 = Off P50 (WCoolProt)...40 °C; P65 = 5 °C min.
29	P71 / Reload factory setting	0016	1	R/W	0x03	0x06	-	-	0	0 = Disabled 1 = Reload start
30	Room operating mode: Preselection	0101	1	R/W	0x03	0x06	-	-	4	1 = Protection 2 = Comfort 3 = Economy 4 = Not used
31	SYS Protection (Time schedule protection)	0102	1	R/W	0x03	0x06	-	-	0	0 = Inactive 1 = Protection
32	Fan command value	0103	1	R/W	0x03	0x06	-	-	0	0 = Auto 1 = Low speed fan 2 = Medium speed fan 3 = High speed fan
33	Temperature setpoint: Comfort	0104	1	R/W	0x03	0x06	-	× 50	21	5...40 °C
34	Temperature via bus	0105	1	R/W	0x03	0x06	-	× 50	-	-20...70 °C
35	Heating/cooling/ventilation changeover	0106	1	R/W	0x03	0x06	-	-	1	0 = Heating 1 = Cooling 2 = Ventilation
36	System time	0201 0202	2	R/W	0x03	0x10	-	-	0000	hhmm h 0...23 = Hours m 0...59 = Minutes

					Read	Write				
Object no.	**Object**	**Address (decimal)**	**Register length**	**Read Only (RO) or Read/ Write (R/W)**	**Function code (HEX)** **0x03---Read holding registers** **0x04---Read input registers** **0x06---Write single register** **0x10---Write multiple registers**		**Multi-bytes access group**	**Special process**	**Default**	**Data type (decimal)**
37	Restart device	0203	1	R/W	0x03	0x06	-	-	0	0 = Off 1 = Restart
38	Reserve1	0204	1	R/W	0x03	0x06	-	-	0	-
39	Reserve2	0205	1	R/W	0x03	0x06	-	-	0	-

Dimensions (mm)



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