



Zone room unit for RRV... controllers

QAW850

2 wire bus connection

Digital zone control unit for installer and end-user interface with RRV... controllers.

Use

Use

Room unit in combination with an RRV... controller for HVAC plants in:

- Residential apartments
- Residential single house
- Autonomous light commercial applications

Application

For use with RRV... controllers in air based plants including heating, cooling and ventilation (HVAC) equipment. Only suitable for Duo-zone and Multi-zone applications.

Functions

Primary functions

- Zone control and monitoring in combination with an RRV... controller
- Zone addressing by installer
- Room temperature measurement

Operator functions

- Local zone control and monitoring
- Temporary setpoint adjustment
- Zone comfort, energy saving, auto timer and off selection
- Display of operating mode and zone temperature.

Type summary

<i>ASN</i>	<i>Type reference</i>	<i>Compatible with</i>
QAW850	Zone room unit	RRV852, RRV856, QAX850

Note Not usable with Desigo RX range of controllers.

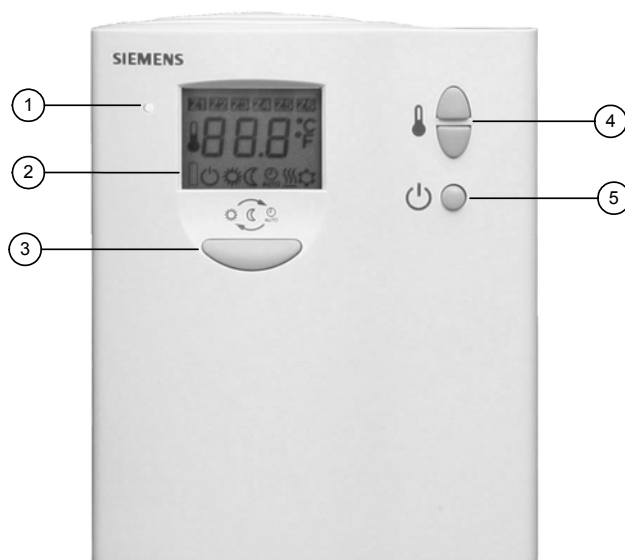
Mechanical design

Type of unit The QAW850 is the end-user zone MMI for RRV controllers.

The unit consists of the following components:

- Room unit with integrated electronics and operating elements
- Internal temperature sensor
- Base for wall mounting with the connection terminals
- Digital input for zone off – window contact (only when connected to RRV856)
- Operator interface buttons

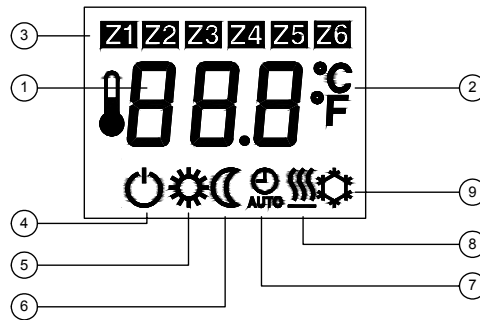
Operating elements



Legend

- 1 LED for zone damper status (Main heat/cool output status for RRV852)
- 2 LCD display with EL backlight for control and monitoring of modes, setpoints, zone conditions etc
- 3 Operating mode selection – Comfort, energy saving and auto timer (RRV852 day/night zone selection for Duo-zone application)
- 4 Temporary setpoint adjustment
- 5 Zone off (System off for RRV852)

LCD display



Legend

- 1 Actual temperature
- 2 Fahrenheit/Celsius
- 3 Zone identification
- 4 Zone off
- 5 Comfort mode (Day zone in Duo-zone application)
- 6 Energy saving mode (Night zone in Duo-zone application)
- 7 Auto timer mode
- 8 Heating mode
- 9 Cooling mode

Commissioning notes

Response on start-up

When powering up, the QAW850 will display all LCD icons for approximately 3 seconds. It will then revert to normal display. There will be a delay before operation commences due to polling of all values.

Sensor calibration

Generally there is no need to calibrate sensor; however the displayed room temperature on the LCD can be calibrated if there is any discrepancy from the actual temperature measured with a certified thermometer. Calibration function can be accessed by pressing the \blacktriangle and \blacktriangledown buttons simultaneously for 5 seconds. Displayed value can then be adjusted via the same buttons in 0.1K steps. Range is +/- 3K.

Commissioning

Initial HVAC equipment application set-up is made by the setting of dip switch positions on the RRV controller. Dip switches are located on the top of the RRV controller. Further settings can be made via the QAX850 by modifying installer level parameters.

The window contact digital input default condition is normally closed (NC) and a link is included across terminals D1 - M. This input is only applicable when connected to the RRV856 controller. The default condition can be changed to normally open (NO) via installer level parameter P16.

The QAW850 includes dip switches for zone addressing. Up to 6 zones can be connected to an RRV856 controller. The master room unit QAX850 is normally zone 1 although a QAW850 can be addressed as zone 1 if required. In this case the QAX850 would serve as a master control unit only.

Dip switches



Dip switches on the back of QAW850.

They allow setting the address in cases where several room units are connected to one RRV856 controller. The room units are delivered with default positions = zone 2 (address = 3).

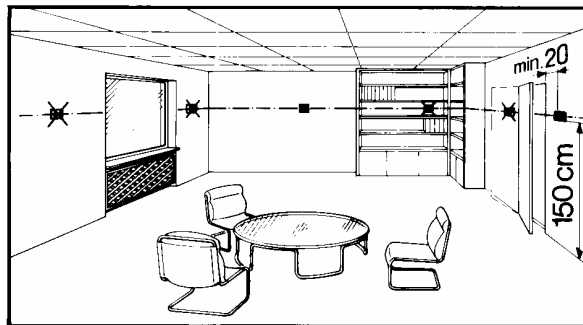
No dip switch changes are needed for duo-zone RRV852 connection. Room unit default position as zone 2 is needed for duo-zone application.

Dip No.	Function	Pos.3	Pos. 2	Pos. 1	Zone	Address
1-3	Zone Definition	OFF	OFF	OFF	1	2
		OFF	OFF	ON	2	3
		OFF	ON	OFF	3	4
		OFF	ON	ON	4	5
		ON	OFF	OFF	5	6
		ON	OFF	ON	6	7

BOLD = Default setting

Mounting and installation notes

The QAW850 should be mounted in a location where the air temperature can be measured as accurately as possible without getting adversely affected by direct solar radiation or other heating/cooling sources.



- Mounting height is about 1.5 m above the floor.
- QAW850 must not be located in the direct path of air conditioning air flow.
- The unit can be fitted to a recessed conduit box.
- The specified ambient conditions must be complied with.
- Only authorized staff may disconnect the QAW850 unit from base plate.
- Do not mount in recesses, shelves, behind curtains or doors.
- Refer to mounting instructions included in packaging box.



When mounting the unit, fix the base-plate first and then make the electrical connections. To avoid any damage during construction works only install QAW850 unit when all construction works have been completed. The QAW850 must be mounted on a flat surface and in compliance with local regulations.

Local installation regulations must be observed.

 **Note!**

The room unit is not protected against connection to AC 230 V.

Technical data

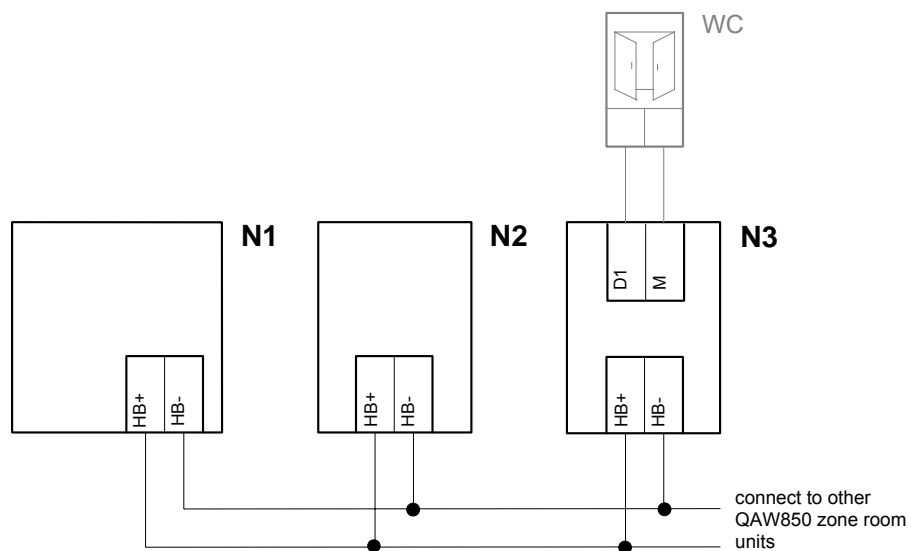
Interfaces	HCC bus	Proprietary
	Baud rate	9.6 kbit/s
	Permissible cable length	Max. 60m where $A \geq 0.5\text{mm}^2$
		Max. 100m where $A \geq 1\text{mm}^2$
	Cable type	2-wire standard installation cable (unshielded)
Note: Twisted pair (unshielded) is recommended for enhanced immunity to external electromagnetic interference, for example, in the vicinity of radio transmitters or frequency inverters		
Protection	Safety class	III to EN 60730 (when mounted correctly)
	Degree of protection	IP 30 to EN 60529
Environmental conditions	Operation	IEC 721-3-3 class 3K 5
	Temperature	0...50 °C
	Humidity	< 85 % r.h. (non condensing)
	Transport	IEC 721-3-2 class 2K 3
	Temperature	-25...60 °C
	Humidity	< 95 % r.h. (non condensing)
	Storage	IEC 721-3-1 class 1K 3
	Temperature	-25...60 °C
	Humidity	< 95 % r.h. (non condensing)
Standards	 -conformity	
	EMC directive	89/336/EEC
	Immunity and Emissions	EN 60730-1, EN 50081-1, EN 61000-6-2
	Low-voltage directive	73/23/EEC
	Electrical safety	EN 60730-1, EN 60730-2-9
	 conformity to	
Australian EMC Framework	Radio communication act 1992	
Radio Interference Emission Standard	AS/NZS 4251.1	
Room temperature measurement	Measuring range	0...49 °C
	Setpoint range	5...35 °C
	Maximum power	2VA
	Accuracy at 20°C	± 0.5K max.
	Temperature calibration range	± 3.0K max in step of 0.1K.
	Room temperature display resolution	0.5K
Other features	Software class	A to EN 60 730
	Weight	Approx. 0.1 Kg

Notes

Product liability

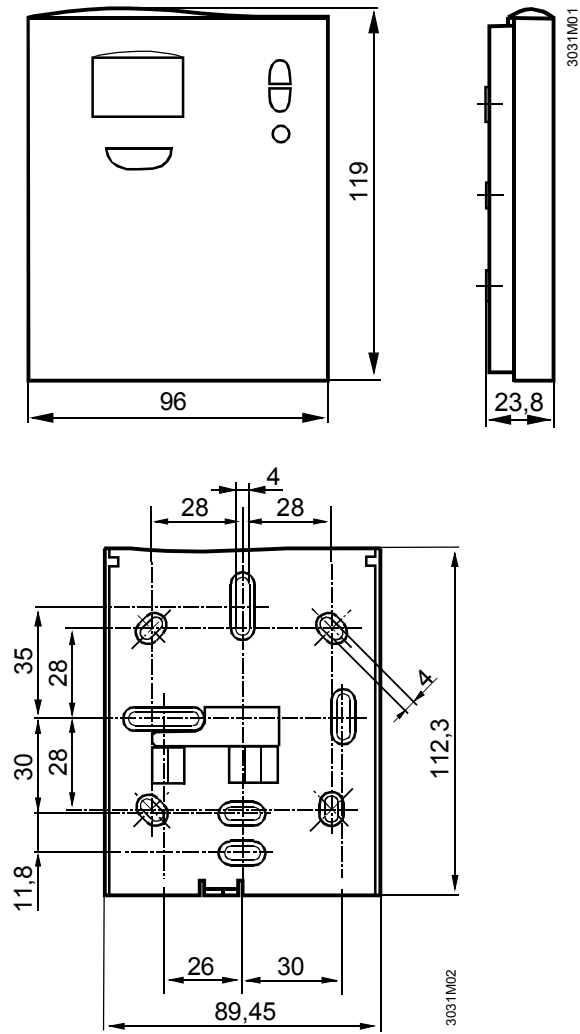
- The products may only be used in building services plant and applications as described above.
- When using the products, all requirements specified under "Technical data" must be observed.
- The local regulations for electrical installation must be complied with.

Connection diagram



N1	RRV... controller
N2	QAX850 master room unit
N3	QAW850 zone room unit
WC	Optional window contact switch (only applicable when connecting to RRV856)
HB+ HB-	Communication bus

Dimensions



Dimensions in mm