CONTROL Room

Installing CONTROL Ra

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Installation CONTROL R room application

CONTROL Room can be installed in an optional position in temperate spaces. CONTROL Room has digital flow measurement that is position independent. In ducts that must be regularly cleaned, FSR clamps should be used for connecting the CONTROL Room components to the duct system. CONTROL Room should always be installed with lengths of straight duct as shown in Figure 1-2.

Installation in false ceilings

If CONTROL Zone is installed above a false ceiling or inside a shaft, the product must be accessible via an inspection hatch.



Figure 1. A length of straight duct equivalent to 4 times the duct diameter is required upstream of the unit for disturbances other than those illustrated (such as a space bend, mixing box, etc.).



Figure 2. Requirement for lengths of straight duct in a rectangular design ahead of the unit, $A > 2 \times B$.





When CONTROL Room is installed with sound attenuators equipped with baffle elements, it must be installed with a straight section of ducting between the units. This applies to circular ducts as well as rectangular ducts and on both the inlet and outlet sides. See Figure 3.



Figure 3. Installing with a clamp (2), if a sound absorber (4) with centre baffle is used, it should be installed with a length of straight duct (3) that is 3xØD of the CONTROL Room (1).



WISE

Figure 4. Installation space requirements.

Connections

Connect the CONTROL Room to 24 V AC supply voltage and protect the circuit with a max. 6 A fuse. Wire all other connections to ModBus and other components according to wiring instructions as shown in figure 5. The controller is equipped with jack-like screw terminals, which substantially simplify installation.

Connecting SLAVE Room

Wire the slave damper that is mounted in the extract air system to the CONTROL Room controller with two separate cables: a 3-wire cable for the damper motor control system and a LINK Modbus RJ12 cable that you can wire to an optional contact in the controller or directly in the pressure sensor on the supply air damper. See the wiring diagram, Fig. 5. The 10-metre long LINK Modbus cable is included at delivery.

Requirements on wire cross-sectional areas

Supply voltage with 24V AC to (1), at max. 6 A is necessary \geq 1.0 mm². The conductors from any peripheral components connected must have a wire cross-sectional area of at least 0.5 mm².

Electrical data

Supply voltage	24 V AC - 10 % + 10 %, 50-60 Hz
Transformer sizing:	
CONTROL Ra	17 VA
CONTROL Ra with SLAVE F	Ra 26 VA
Built-in fuse	4A
Built-in relay (11)	
Ambient temperature:	
Operation	0°C – +50°C
Storage	-20°C – +50°C
Humidity	max. 90% RH, non-condensing
Inputs for	
Network protocol	Modbus RTU
Connection Modbus 2	RTU Slave
Anslutning Modbus 3.1-2	RTU Master
Transceiver (Failsafe)	EIA/TIA-485
Standard WISE	38 400 bps, 8, 1, None
BMS system bps	9 600 to 38 400
BMS system Word-length/b	pit-depth 8
BMS system Stop bits	1 or 2
BMS system parity	odd, even or none



Figure 5. CONTROL R room application FSFE. Controller, damper actuator and pressure sensor within the broken line are factory-wired.

Explanations for Figures 5 and 6

- 1. Room unit, TUNE Control, included in the supply
- 2. Window contact
- 3. Presence detector, DETECT O V110, or T360
- 4. Carbon dioxide sensor, DETECT Q 0
- 5. Condensation sensor for the cooling coil, DETECT M
- 6. Supply air temperature sensor, factory-fitted.
- 7. 24V AC voltage supply from transformer
- 8. ACTUATOR for cooling valve
- 8b. Alternative actuator for cooling valve 0-10 V DC
- 9. ACTUATOR for heating valve
- 9b. Alternative actuator for heating valve 0-10 V DC
- 10. Damper actuator and pressure sensor for supply air
- 11. Damper actuator and pressure sensor for extract air
- 12. 230V 5A relay contact under the enclosure



Figure 6. Wiring to the built-in relay. Remove the cover over the controller. Be careful not to damage the electronic components.



Connection for Modbus communication

CONTROL Room has two connections for Modbus communication. The connections are used in different ways, depending on whether or not the CONTROL Room is configured for the BMS system. For more information about network installation in the WISE system, see the separate WISE Network manual which can be downloaded at www.swegon.com.

Mb 1: Used only in the BMS mode.

Mb 2: Communication loop to zone dampers or Routers in the WISE system. The connection is Modbus Slave.

Terminations

CONTROL R has built-in termination resistors that can be activated depending on where in the system the product is located. The termination plug should be pulled out using small pliers and should be mounted in the correct position.

Mb 1: Used only in the BMS mode. If CONTROL R is last in the Modbus loop; activate the termination to position 1, and otherwise to position 3.

Mb 2: CONTROL R is always a slave and should be terminated in position 1 or 3 depending on where on the Modbus loop the product is mounted.

Terminations

Mb 1 & 2 (Modbus Slave)

First in the loop	Not Applicable
Middle of the loop	3
Last in the loop	1
Mb 3 (Modbus Master) for internal communication between pressure sensor and room units.	



Figure 7. CONTROL R Modbus connections. Explanation, 1 = Built-in jumper for the termination resistance.



Figure 8. CONTROL R Arrangement of the Modbus connections on the controller.