Argus-RC-H

Room controller with hidden setpoint

Argus-RC-H is a room controller from the Argus series intended to control heating and cooling in a zone control system.

- **Awarded design**
- **Simple installation**
- **On/Off or 0...10 V control**

- **Input for occupancy detector, window contact, condensation detector and change-over function**
- **Hidden setpoint**

Argus-RC-H is a room controller from the Argus series. It does not have a communication connection.

Argus

Argus is a wide series of controllers which handle heating and cooling.

The controllers are divided into three different series; pre-programmed with communication, freely programmable controllers with communication and pre-programmed, stand-alone controllers, to which Argus-RC-H belongs.

Applications

The Argus controllers are suitable in buildings where you want optimal comfort and low energy consumption, for example offices, schools, shopping centres, airports, hotels and hospitals etc.

See application example on page 2.

Design

The controllers have a modern design. The design has been awarded the 2007 "iF product design award".

The standard colour is white, but the frame and centre can be received in a number of different colours on inquiry. The units can be combined, offering many different effects.

iF
product design award
2007

Sensor

The controller has a built-in sensor. An external Pt1000-sensor can also be used.

Actuators

Argus-RC-H can control 0...10 V DC valve actuators and/or 24 V AC thermal actuators.

Easy to install

The modular design with a separate bottom plate for wiring makes the whole Argus series easy to install and commission. The bottom plate can be put into place before the electronics are installed. Mounting is directly on the wall or on an electrical connection box.

Control states

Argus-RC-H has control state:

- Heating and cooling in sequence

The change-over function can be activated, see below.

Operating modes

There are three different operating modes: Stand-by, Occupied and Bypass. Occupied is the preset operating mode. It can be changed to Stand-by with a dipswitch. The operating modes can be activated via an occupancy detector.

Stand-by: The room is in an energy save mode and is not used at the moment. This can for example be during nights, weekends, evenings etc. The controller is prepared to change operating mode to Occupied if someone enters the room. Both heating and cooling are disconnected within a temperature interval around the applicable setpoint (heating setpoint value=-3°C, cooling setpoint=+3°C).

Occupied: The room is in use and is therefore in a comfort mode. The controller regulates the temperature around a heating setpoint (22°C) and a cooling setpoint (24°C).

Bypass: The temperature in the room is controlled in the same way as in operating mode Occupied. The output for forced ventilation is also active. Bypass is useful for example in conference rooms, where many people are present at the same time for a certain period of time.

After 10 minutes absence, the controller will automatically return to the preset operating mode (Occupied or Stand-by).

Occupancy detector

By connecting an occupancy detector, Argus-RC-H can switch between Bypass and the preset operating mode (Occupied or Stand-by). The temperature is then controlled according to requirement, which saves energy and keeps the temperature at a comfortable level.

Change-over function

Argus-RC-H has an input for change-over that automatically resets output UO1 to operate with heating or cooling function. The input can be connected to sensors of type PT1000 and have the sensor mounted so that it senses the temperature on the supply pipe to the coil.

When the temperature exceeds 22°C, the output function is set to heating and when the temperature drops below 18°C, the output is set to cooling.

As an alternative, a potential-free contact can be used. When the contact is open the controller works with the heating function and when it is closed, with the cooling function.

To ensure satisfactory functioning using sensor, the system must have continuous primary circuit circulation. When the change-over function is not used, the input must be left disconnected.

Hidden setpoint

Argus-RC-H has hidden setpoint, which is useful in schools and other buildings where unauthorised adjustment of the setpoint is to be avoided.

In Occupied mode, the controller operates from a heating setpoint (22°C) or a cooling setpoint (24°C) that can be changed locally using dipswitches.

The setpoint can be adjusted up and down (±3°C) from the back of the electronics cassette using a small screwdriver.

Switching between heating and cooling setpoints is done automatically in the controller depending on the heating and cooling requirement.

Built-in safety functions

Argus-RC-H has an input for a condensation detector which prevents condensation. The controller also has frost protection. It prevents frost damages by by ensuring that the room temperature does not drop below 8°C when the controller is in Off-mode (caused by open window).

Actuator exercise

All actuators are exercised. The exercise takes place at a 23 hours interval. An opening signal is sent to the actuator for as long time as the run time has been configured. Then a closing signal is sent for as long time and the exercise is finished.

Application example
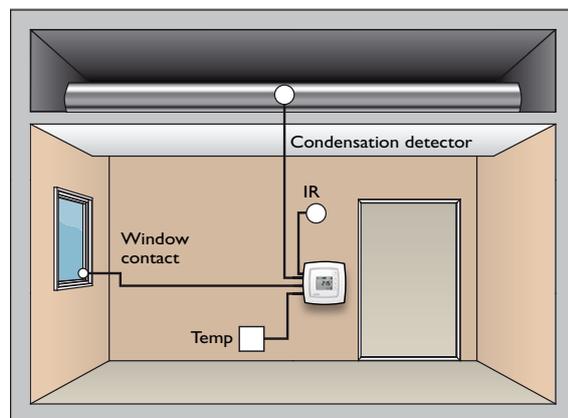
Technical data

Supply voltage	18...30 V AC, 50...60 Hz
Internal consumption	2.5 VA
Ambient temperature	0...50°C
Storage temperature	-20...+70°C
Ambient humidity	Max 90% RH
Protection class	IP20
Built-in temperature sensor	NTC type, measuring range 0...50°C, accuracy ±0.5°C at 15...30°C
Material, casing	Polycarbonate, PC
Weight	110 g
Colour	Cover: Polar white RAL9010
	Bottom plate: Light gray

CE   This product conforms with the requirements of European EMC standards CENELEC EN 61000-6-1 and EN 61000-6-3, and the requirements of European LVD standard IEC 60 730-1. It carries the CE mark.

Inputs

External room sensor	PT1000-sensor, 0…50°C. Suitable sensors are TG-R5/PT1000,TG-UH/PT1000 and TG-A1/PT1000.
Change-over alt. potential-free contact	PT1000-sensor, 0…100°C. Suitable sensor is TG-A1/PT1000.
Occupancy detector	Closing potential-free contact. Suitable occupancy detector is IR24-P.
Condensation detector alt. window contact	Condensation detector S-KG-A/1 resp. potential-free contact

Outputs

Forced ventilation	24 V AC actuator, max 0.5 A
Valve actuator alt. thermal actuator	2 outputs
Valve actuator	0…10 V DC, max 5 mA
Thermal actuator	24 V AC, max 2.0 A
Control	Heating or cooling
Actuator exercise	23 hours interval
Terminal blocks	Lift type for cable cross-section 2.1 mm^2

Basic setpoint heating, setting with dipswitches

The ON-position is marked on the dipswitch. The cooling setpoint is 2°C higher.

Basic setpoint, heating (°C)	SW1	SW2
20	OFF	OFF
22 (FS)	OFF	ON
24	ON	OFF
26	ON	ON

Other dipswitches

	ON	OFF	Comment
SW3	Stand-by	Occupied (FS)	Preset operating mode
SW4	DI, window contact. Closed contact indicates closed window.	CI, condensation detector, S-KG-A/1 (FS).	Function terminal 33, DI2/CI.
SW5	Digital output for 24 V AC thermal actuator.	Analogue output for 0...10 V DC valve actuator (FS).	Function terminal 23, UO1.
SW6	Digital output for 24 V AC thermal actuator.	Analogue output for 0...10 V DC valve actuator (FS).	Function terminal 24, UO2.
SW7	External, PT1000-sensor	Internal NTC-sensor (FS)	Temperature sensor

Wiring

Terminal	Designation	Operation
10	G	Supply voltage 24 V AC
11	G0	Supply voltage 0 V
12	DO1	Output for forced ventilation
13-14		No function
20	GDO	24 V AC out common for DO
21	G0	0 V common for UO (when 0...10 V actuator is used)
22		No function
23	UO1	Output for 0...10 V valve actuator alt. thermal actuator. Heating or cooling.
24	UO2	Output for 0...10 V valve actuator alt. thermal actuator. Heating or cooling.
30	AI1	Input for external sensor
31	UI1	Input for change-over sensor alt. potential-free contact
32	DI1	Input for occupancy detector
33	DI2/CI	Input for condensation detector S-KG-A/1 alt. window contact
40	+C	24 V DC out common for UI and DI
41	AGnd	Analogue ground
42-43		No function

Dimensions

60   68   95   28

mm
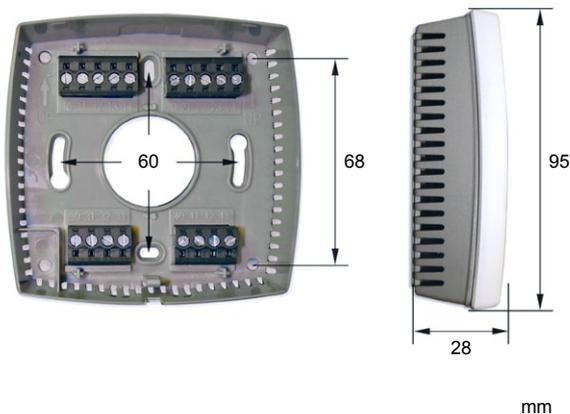
Product documentation

Document	Type
Instruction Argus-RC-H	Instruction for Argus-RC-H
Product sheet TG-R4/PT1000, TG-R5/PT... Product sheet TG-UH/PT... Product sheet TG-A1/PT...	Information about room sensors, outdoor sensors and strap-on sensors suitable for Argus-RC-H
Product sheet IR24-P	Information about occupancy detector suitable for Argus-RC-H
Instruction IR24-P	Instruction for IR24-P
Product sheet S-KG-A/1	Information about condensation detector for the Argus controllers

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