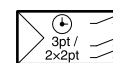


NRT 107: Room- and supply-temperature controller, equiflex



NRT107F0**



How energy efficiency is improved

Analogue input for shifting the setpoint depending on the outside temperature, and integrated timer for the individual programming of the changeover between normal mode and the mode with reduced temperature

Features

- Room temperature-based control (heating, cooling, heating/cooling) of individual rooms in 2- or 4-pipe systems
- Activation of actuators, pumps and fans
- Optionally P control, PI control or P-PI cascade control with 2-point, pulse-pause or floating point outputs for 2- or 4-pipe systems
- Choice of 8 basic control models for various application options
- Inputs for dew-point monitoring, for c/o signal, for shifting the room temperature setpoint and for the supply temperature
- Programmable input, e.g. for presence/absence detector, window contacts, fault indicator and for cooling lock
- Measurement of room temperature by either integrated or external temperature sensor
- Easy to use with frontal keys and large LCD
- Integrated timer for weekly and calendar switching programmes with 3 temperature levels
- Automatic summertime/wintertime change-over
- Outputs for control units, pump and pilot timer
- Frost-protection, protection against overheating, anti-jamming function for pumps and valves
- Electronics in attachable housing

Technical data

Power supply

Power supply	24 V~/110...230 V~
Tolerance in power supply	±15%, 50...60 Hz
Power consumption	< 1.5 VA

Parameters

	Setting range	8...38 °C
	Control characteristics	P, PI, P+PI
	Operating modes	Normal/Reduced/Off
	Running time of valve	30...300 s
Temperature sensor, internal	Time constant	22 min
PI controller	P band X_p	2...100 K
	Integral action time	$t_i = 15...6000$ s
P controller	P band X_p	1...20 K
	Period	4...30 min

Ambient conditions

Admissible ambient temperature	0...50 °C
Admissible ambient humidity	5...95% rh, no condensation
Storage and transport temperature	-25...65 °C

Inputs/Outputs

Number of inputs	1 digital, 2 analogue, 1 universal
Digital input	Switching current approx. 1 mA
Analogue inputs	2 Ni1000
Universal inputs	Digital or 0...10 V
Number of outputs	1 relay, 2 triacs (see type list for data)

Function

Timer	Accuracy	±1 s/d at 20 °C
	Back-up power supply	> 8 h (super cap, 20 °C) after 1 h charge time



Weekly switching programme	Number of switching commands	Max. 42
	Min. switching interval	10 min
Calendar switching programme	Number of switching commands	Max. 6
	Min. switching interval	1 d

Construction

Weight	0.28 kg
Housing	Pure white (RAL 9010)
Housing material	Fire-retardant thermoplastic
Cable feed	At rear
Screw terminals	For wires of up to 2.5 mm ²
Fitting	Wall/recessed junction box

Standards and directives

Type of protection	IP 30 (EN 60529)
Protection class	II (IEC 60730)
Software class A	EN 60730

CE conformity according to	EMC directive 2004/108/EC	61000-6-1, 61000-6-2, 61000-6-3, 61000-6-4
	Low-voltage directive 2006/95/EC	EN 60730-1

Overview of types

Type	Power supply	Load on Triac	Min. load on Triac	Relay load
NRT107F031	110...230 V~	230 V~, 0,3 (0,5) A	10 mA	230 V~, 5 (2) A
NRT107F041	24 V~	24 V~, 0,3 (0,5) A	40 mA	50 V~/=, 5 (2) A

💡 *Triac 0.3 A: equates to operation of six AXT with NRT107F031 and three AXT with NRT107F041 with internal temperature sensor*

💡 *Triac 0.5 A: equates to operation of eight AXT with NRT107F031 and five AXT with NRT107F041 with inactive internal temperature sensor*

Accessories

Type	Description
AVF***	Motorised valve actuator (see product data sheet)
AVM***	Motorised valve actuator (see product data sheet)
AXM***	Motorised valve actuator (see product data sheet)
AXT2**	Thermal valve actuators (see product data sheet)
EGT***	External temperature sensor Ni1000 (see product data sheet)
0303124000	Recessed junction box
0386273001	Plug-in power unit, input 230 V~, output 21 V~ (0.34 A), length of cable 1.8 m, IP 30
7000986001	Operating manual, German
7000986002	Operating manual, French
7000986003	Operating manual, English

Description of operation

The temperatures are measured with precision temperature sensors and compared with the current setpoint. Depending on the control offset and the control characteristic, the relay contacts and the Triac are switched. The heating is then increased or decreased in the room as required. In this way, the required room temperature is kept constant.

The adjustable weekly switching programme is used to select an individual temperature profile for each day to provide the optimal comfort level with the minimum energy consumption.

For different temperature requirements, the temporary, time-limited and time-unlimited operating modes are available for using the absence and party functions. Energy savings can be made during longer absences such as holidays by using the calendar programme in advance. The operating status of the system is shown on the display (LCD) with visual symbols and a numerical field.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section.

All related product documents must also be adhered to. Changing or converting the product is not admissible.

Engineering and fitting notes

The device must be supplied with power all year round due to the integrated timer, frost-protection, anti-overheating and pump and valve anti-jamming functions! Place of installation approx. 1.5 metres above the ground. The unit should be fitted so that it is protected from direct sunlight, draughts and sources of heat and cold.

Control models

	Type of installation	Application	Control	Controlled variable	Valve output
Control model 1	2-pipe	Cooling	PI	Room temperature	3-pt.
Control model 2	2-pipe	Heating/cooling	PI	Room temperature	3-pt.
Control model 3	2-pipe	Cooling	P	Room temperature	2-pt., pulse-pause
Control model 4	2-pipe	Heating/cooling	P	Room temperature	2-pt., pulse-pause
Control model 5	2-pipe	Cooling	P + PI	Supply temperature	3-pt.
Control model 6	2-pipe	Heating/cooling	P + PI	Supply temperature	3-pt.
Control model 7	4-pipe	Heating/cooling	P	Room temperature	2 × 2-pt., pulse-pause
Control model 8	4-pipe	Heating/cooling	P + PI	Supply temperature	3- and 2-pt.

Abbreviations/symbols

T_F	= supply temperature	T_R	= room temperature
T_{Rmin}	= minimum limitation setting range T_R	T_{Rmax}	= maximum limitation setting range T_R
X_t	= dead zone	X_p	= proportional band
w	= shift of the setpoint T_{Rs}	X_{sh}	= neutral zone
H/C	= heating/cooling	☀	= heating
MOD	= control model	☁	= dew-point monitoring
⊖	= factory setting		
Indexes:		Example:	
X_s	= setpoint	T_{Rs}	= room-temperature setpoint
X_i	= actual value	T_{Fi}	= actual value of the supply temperature
n	= normal	X_{tn}	= dead zone in normal mode
r	= reduced	X_{tr}	= dead zone in reduced mode
max	= maximum	T_{Fsmax}	= maximum supply setpoint
min	= minimum	T_{Rmin}	= minimum room setpoint







Parameter

Characteristic (setpoint)	Depending on the control model set, the controlling is based on various characteristics. (See page 6)
Universal input (w-c/o)	Can be used as a digital input for C/O signal or as an analogue input for shifting the room-temperature setpoint. Parameterisation performed in SERVICE mode Observe the jumper setting! (See fitting instructions) Binary input: Current across the contacts approx. 1 mA; voltage < 0.7 V is interpreted as closed contact, voltage > 1.4 V as open contact Analogue input: 0...10 V; input impedance: 100 kΩ
Digital input (PROG)	The digital input PROG can be programmed in SERVICE mode for various input signals. If the voltage between the input and GND is less than 0.4 V, the contact is interpreted as closed. If the voltage is greater than 0.6 V, the contact is interpreted as open. The current across the contacts is approx. 1 mA. Table 1 shows the possible operating modes and the influence options for the operating modes when the input is active. If the contact is not active, the controller operates based on the switching programme.

Special functions


Switching programmes	A weekly switching programme with a maximum of 42 switching commands and a calendar switching programme with a maximum of 6 switching commands are available. An operating mode from the weekly and calendar switching programmes with a higher priority is regulated. The reduced mode has a higher priority than the normal mode, and the OFF operating mode has a higher priority than the reduced mode. An "empty" switching programme is interpreted as the normal mode. On the LCD, the clock symbol is displayed without index 1 or 2. The calendar switching programme can be (de)activated in the SERVICE mode. In the factory setting, the calendar switching programme is not active.
Summer-/wintertime changeover	Automatic with the calendar programme. The changeover is performed on the programmed date, as long as it is a Sunday. Otherwise on the following Sunday. The time of the changeover is 2.00 a.m. or 3.00 a.m. Can be (de)activated in the SERVICE mode. Factory setting: active with changeover dates 25 October and 25 March.
Reset	The NRT 107 is reset by pressing the reset button. After this, the time and date must be entered again. The parameters set in the SERVICE mode and the switching programme remain unchanged. For more options for resetting the NRT 107, see SERVICE – parameter P04.
Frost-protection and anti-overheating functions	The frost-protection and anti-overheating functions become active if the NRT 107 is in automatic mode and the OFF mode is active. Additionally, the temperature must be below the anti-frost limit or above the overheating limit. The anti-frost limit is 8 °C and the overheating limit is 38 °C for the room temperature. The frost-protection and anti-overheating functions are disabled again when the room temperature rises above 9°C and falls below 37 °C respectively. When the frost-protection or anti-overheating function becomes active, a room-temperature setpoint corresponding to the relevant limit value is used for the controlling. The frost-protection and anti-overheating functions can be (de)activated in the SERVICE mode. The factory setting is active.
Anti-jamming function for pump/fan and valve	If the circulation pump/fan or valve has a downtime greater than 168 h, the outputs are activated sequentially on the following Sunday at midnight. Can be (de)activated in the SERVICE mode; factory setting not active.
Limitation of supply temperature	The maximum and minimum values for the supply temperature are limited for control models 5, 6, 8. The values for the upper and lower limits can be changed. If a setpoint is calculated for the supply temperature that is outside these limits, the relevant limit temperature is regulated. In OFF mode and manual mode, the supply-temperature limitation is not active.
Dew-point monitoring	An input is available for the binary signal of dew-point monitoring. When a signal is received from the connected dew-point monitor, the cooling valve is closed and the cooling stopped. A flashing cooling symbol appears in the display.
Changeover (C/O)	Signal for the changeover between heating and cooling. Active input corresponds to cooling. Is parameterised in the SERVICE mode with P14 or P15. Simultaneous parameterisation with P14 and P15 not possible. In the factory setting, the function is enabled using SERVICE parameter P14.
Cooling lock	If the C/O signal is being used, the outputs can be "locked" for cooling. In the process, the cooling valve is closed. Can be (de)activated in the SERVICE mode. Factory setting is not active. See SERVICE parameter P15.
Shift w	An input is available for analogue signal 0...10 V. The room-temperature setpoint is increased with respect to the current setpoint for the room temperature with an influence of 1 K/V or 1.6 K/V. A shift is performed for a voltage greater than 0.5 V. Can be (de)activated in the SERVICE mode. Factory setting is not active. See SERVICE parameter P14.
Manual mode	In manual mode, the pump/fan and the valve outputs can be activated separately. With MOD 7, you also select between the valve for heating or cooling. The settings are performed in a menu if manual mode has been enabled. Manual mode is enabled in the SERVICE mode. In the factory setting, manual mode is not enabled.
Pilot timer	The relay output can be configured as a pilot timer signal. Here the OFF and REDUCED operating modes close the relay contact. The NORMAL operating mode opens the contact. The configuration is performed in the SERVICE mode. In the SERVICE mode, the influence of the absence/presence and the PROG function on the pilot timer signal can also be defined. The factory setting for the relay output is used to activate a pump or a fan for heating and cooling.

Table 1: Functions for an active binary input (PROG)

Function PROG – input	Value of SERV Parameter	Changes in operating modes In automatic mode ¹⁾	Possible influence	Symbol
Absence, ext. clock	0	Normal → reduced	+ or – ²⁾ ;  ³⁾	
Presence	1	Reduced → normal	+ or –; 	
Window contact	2	Normal → reduced	+ or –; 	

¹⁾ When the contact is not active, all the operating modes are controlled according to the switching programme

²⁾) + or – causes temperature setpoint to change

³⁾  causes time-(un)limited change of operating mode












Function PROG – input	Value of SERV Parameter	Changes in operating modes In automatic mode ¹⁾	Possible influence	Symbol
Remote switching	3	Reduced → OFF, Normal → OFF	+ or –; 	
Fault indication	4	–	+ or –; 	
Keys locked	5	–	+ or –; 	
C/O	6	–	+ or –; 	
C/O with cooling lock	7	–	+ or –; 	

Table 2: List of SERVICE parameters

Num- ber		Description	Range	Step size
P01	0Y.xx	Software version (Y = 1: series version, xx = sequential number)		
P02	0	Current device status • 0 = OK; for error codes, see operating instructions 7000986	0...5119	1
P03	0	No meaning	0...1	1
P04	0	Software reset • 0 = function not active • 1 = reset SERV parameters (SAUTER or OEM factory setting) • 2 = reset switching programmes (SAUTER factory setting) • 3 = reset SERV parameters (SAUTER or OEM factory setting) and re- set switching programmes (SAUTER factory setting) Afterwards, the parameter is reset to 0	0...3	1
P05	0	Manual mode menu • 0 = manual mode not enabled • 5...100 = manual mode enabled with a maximum valve opening of 5%...100%	0...100	5
P06	0	Control model MOD • 0 = control not active (contacts open) • 1 = PI – room-temperature controller, cooling / 2–pipe / 3-pt • 2 = PI – room-temperature controller, H/C / 2–pipe / 3-pt • 3 = P – room-temperature controller, cooling / 2–pipe / 2-pt pulse- pause • 4 = P – room-temperature controller, H/C / 2–pipe / 2-pt pulse-pause • 5 = P+PI supply-temperature controller (cascade), cooling / 2–pipe / 3- pt • 6 = P+PI supply-temperature controller (cascade), H/C / 2–pipe / 3-pt • 7 = P – room-temperature controller, H/C / 4–pipe / 2 × 2-pt pulse- pause • 8 = P+PI supply-temperature controller (cascade), H/C / 4–pipe / 3-pt and 2-pt	0...8	1
P07	0	Language • 0 = German • 1 = French • 2 = English • 3 = Italian • 4 = Spanish • 5 = Czech • 6 = 1...7	0...6	1
P08	0	Temperature unit • 0 = °C/K • 1 = °F/R	0...1	1
P09	8	Minimum limitation setting range for room-temperature setpoint T_{Rmin}	8 °C ... 36 °C	1K
P10	38	Maximum limitation setting range for room-temperature setpoint T_{Rmax}	10 °C ... 38 °C	1K

¹⁾ When the contact is not active, all the operating modes are controlled according to the switching programme

Number	☉	Description	Range	Step size
P11	0	Room-temperature measurement <ul style="list-style-type: none"> • 0 = room-temperature measurement via internal NTC sensor, possibly with additional dew-point monitoring • 1 = room-temperature measurement via external Ni1000 sensor • 2 = internal NTC and external Ni1000 sensor and room-temperature measurement with averaging 	0...2	1
P12	0.0	Influence of wall in room-temperature measurement with internal NTC sensor	-6.0K...6.0K	0.1K
P13	0.0	Influence of wall in room-temperature measurement with external Ni1000 sensor	-6.0K ... +6.0K	0.1K
P14	1	Function of input w – C/O <ul style="list-style-type: none"> • 0 = function not active • 1 = changeover • 2 = changeover with cooling lock • 3 = shift w with 1 K/V; additional change of jumper connection required (see MV 505782 or MV 505783)! • 4 = shift w with 1.6 K/V; additional change of jumper connection required (see MV 505782 or MV 505783)! 	0...4	1
P15	0	Function of input PROG (see also table 1) <ul style="list-style-type: none"> • 0 = absence • 1 = presence • 2 = window contacts • 3 = remote switching • 4 = fault indication • 5 = keys locked • 6 = changeover • 7 = changeover with cooling lock 	0...7	1
P16	0	Direction of operation of input PROG <ul style="list-style-type: none"> • 0 = active, closed • 1 = active, open 	0...1	1
P17	2.0	2 K proportional band of P-controller for MOD 3, 4, 5, 6, 7, 8 (see P06)	1.0 K... 20.0 K	0.1 K
P18	4	4 minute period of P-controller for MOD 3, 4, 7 (see P06)	4 min...30 min	1
P19	10	10% minimum switch-on time of P-controller for MOD 3, 4, 7 (see P06)	0%...50%	5%
P20	40	40 K proportional band of PI-controller for MOD 1, 2, 5, 6, 8 (see P06)	2 K...100 K	1 K
P21	240	240 seconds reset time of PI-controller for MOD 1, 2, 5, 6, 8 (see P06)	15 s...6000 s	5 s
P22	120	120 seconds running time of valve for MOD 1, 2, 5, 6, 8 (see P06)	30 s...300 s	5 s
P23	10	10 °C minimum limitation of supply temperature for MOD 5, 6, 8 (see P06)	5 °C ... 100 °C	1 K
P24	50	50 °C maximum limitation of supply temperature for MOD 5, 6, 8 (see P06)	20 °C ... 130 °C	1 K
P25	1.0	1.0 K dead zone Xtn in normal mode for MOD 2, 4, 6, 7, 8 (see P06)	0.2 K...10.0 K	0.2 K
P26	10.0	10.0 K dead zone Xtr in reduced mode for MOD 2, 4, 6, 7, 8 (see P06)	0.4 K...20.0 K	0.2 K
P27	0	REDUCED operating mode <ul style="list-style-type: none"> • 0 = valid for heating and cooling • 1 = only valid for heating • 2 = only valid for cooling 	0...2	1
P28	1	Frost-protection and anti-overheating functions <ul style="list-style-type: none"> • 0 = not active • 1 = frost-protection function active • 2 = anti-overheating function active • 3 = frost-protection and anti-overheating functions active 	0...3	1

Number		Description	Range	Step size
P29	3	Function of relay output (abbreviations: pilot timer: PU; pump/fan: P/G; changeover heating/cooling: H/C) <ul style="list-style-type: none"> • 0 = relay has no function • 1 = P/G for heating • 2 = P/G for cooling • 3 = P/G for heating and cooling • 4 = PU controlled by weekly and calendar switching programmes • 5 = same as 4 with additional consideration of presence/absence • 6 = same as 5 with additional consideration of input PROG • 7 = output H/C (contact open means heating) 	0...7	1
P30	0	Valve and pump/fan anti-jamming functions <ul style="list-style-type: none"> • 0 = not active • 1 = active at Triac outputs (valve) • 2 = active at relay output (pump/fan) • 3 = active at relay and Triac outputs (pump/fan and valve) 	0...3	1
P31	0	Display / [10 hours] total duration of closed relay contacts (cannot be deleted)	0...9999	1
P32	0	Calendar switching programme <ul style="list-style-type: none"> • 0 = not active • 1 = active • 2 = active, switching commands are deleted after execution • 3 = active, switching commands are taken over for next year after execution 	0...3	1
P33	10.25	25 October summer-/wintertime changeover	00.01...12.31	00.01
P34	3.25	25 March winter-/summertime changeover; if P36 = P37: no summer-/wintertime or winter-/summertime changeover	00.01...12.31	00.01
P35	38.5	Display of actual value of supply temperature, e.g. 38.5 °C for MOD 5, 6, 8 (see P06)	0 °C ... 140 °C	0.1 K
P36	42.1	Display of supply-temperature setpoint, e.g. 42.1 °C for MOD 5, 6, 8 (see P06)	0 °C ... 130 °C	0.1 K
P37	5.0	Display shift w of setpoint, e.g. 5 K	0/0.5 K ... 10 (16) K	0.1 K

Additional technical data

Time-(un)limited changing of operating mode	Possible in automatic mode. Change of 3 hours to 19 days possible. The display shows the remaining time for the change. Termination of change possible.
Room-temperature measurement	Internal NTC and/or external Ni1000 sensor
Zero-point correction, influence of wall	Up to ±6 K possible
Input for supply-temperature sensor	Ni1000
Measuring accuracy	±0.3 K at 20 °C and a Triac current < 0.3 A
Setpoint range for room temperature	8...38 °C
Granularity of setpoint for room temperature	0.5 K
Time constant for processing of measured values	< 10 s for Ni1000 sensor; < 25 s for NTC sensor, < 10 s for 0...10 V
Setting limit for room-temperature setpoint	The SERVICE level can be used to limit/extend minimum and maximum setpoints (TRsmin, TRsmax) for the room temperature. Factory setting 8 °C...38 °C, corresponds to maximum range
Keys locked	Locked and unlocked using defined key sequence; locking shown in display.
Valve outputs (terminal 3, 4)	Triac (with indication of switching status)
Output for pump/fan (terminal 5)	Relay (with indication of switching status)
Switching frequency, mechanical	> 5 million switching cycles
Mode of operation	According to EN 60730: Type 1C
Hours-run meter	Counts when relay contacts closed; can be queried in SERVICE mode but not deleted
Maximum valve opening	Opening time of valve = 1.5 × running time of the valve

Neutral zone Xsh	±1.5 K for P-PI control (MOD 5, 6, 8) ±0.2 K for PI control (MOD 1, 2) < 0.1 K for P control (MOD 3, 4, 7)
Pump follow-on time	When operated with MOD 1...7, the pump follows on with 1.7 times the running time of the valve when the valve is completely closed.

Error

ERR	If errors occur, they are indicated in the display with "ERR". In SERVICE mode, the device status can be queried. Errors are coded in the device status. For a detailed description, see operating instructions 7 000986.
U U U	The temperature sensor used to detect the variable shown in the display has an interruption
C C C	The temperature sensor used to detect the variable shown in the display has a short circuit
--- (line in the middle)	Parameter not required or measured value not yet calculated (line in the middle)
--- (line at the top)	The measured value from the sensor used to detect the variable shown in the display is too high (measured value is in range 2 - see table 3)
--- (line at the bottom)	The measured value from the sensor used to detect the variable shown in the display is too low (measured value is in range 2 - see table 3)

Depending on the range in which the recorded temperature measurements lie, action is carried out with regard to the valve and pump/fan control. A distinction is made between the following ranges: The relevant measures are carried out.

Range 1

- Control mode, no additional measures with regard to pump/fan and valve control

Range 2

- Control mode based on the last recorded value in range 1

Range 3

- Valve is closed taking 1.5 times the running time of the valve into account; pump is switched off after 1.7 times the running time of the valve.

Table 3 lists the individual ranges of the different types of sensor.

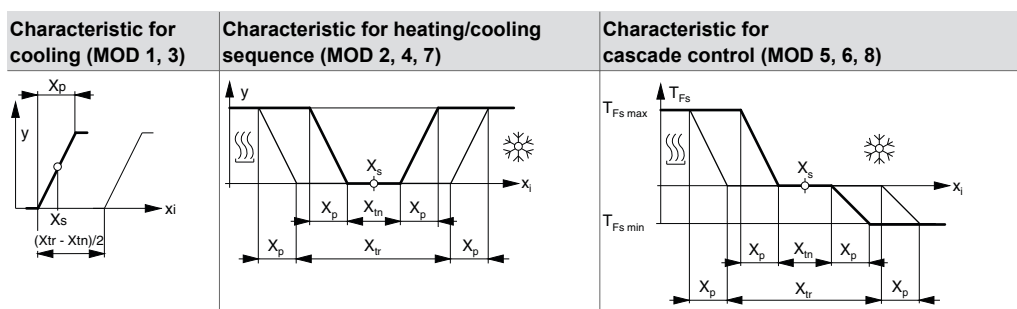
Table 3: Ranges of measured temperatures

Sensor (Ni1000)	Range 1	Range 2	Range 3
Supply temperature	0.0...140.0 °C	-50.0...0.0 °C; 140.0...200.0 °C	< -50.0 °C, > 200.0 °C
External room temperature	-5.0...45.0 °C	-50.0... -5.0 °C; 45.0...200.0 °C	< -50.0 °C; > 200.0 °C
Internal room temperature	-5.0...45.0 °C	< -5.0 °C, > 45.0 °C	Not defined

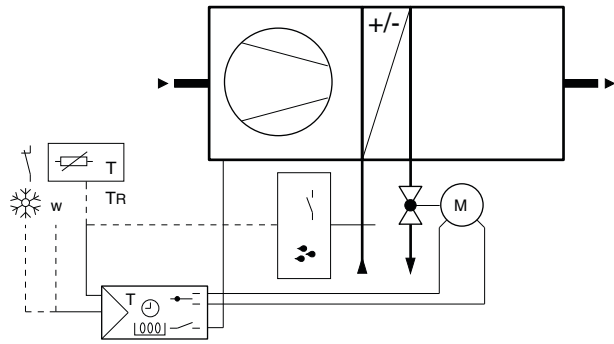
Disposal

When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.



Example applications

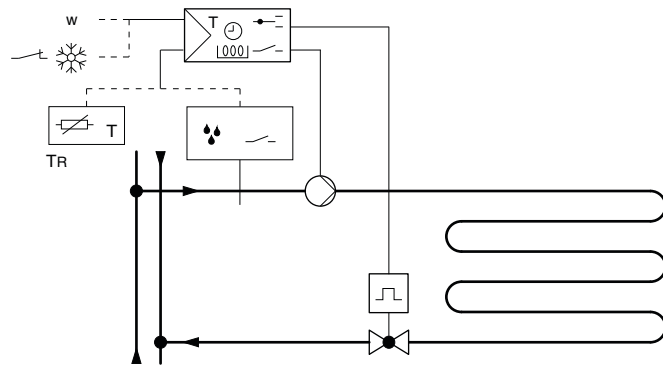


MOD 1; room control for cooling in

- 2-pipe system with internal temperature sensor and dew-point monitoring or outside-temperature sensor; shift for room-temperature setpoint; floating point output

MOD 2; room control for H/C in

- 2-pipe system with internal temperature sensor and dew-point monitoring or outside-temperature sensor; C/O signal or shift for room-temperature setpoint; floating point output

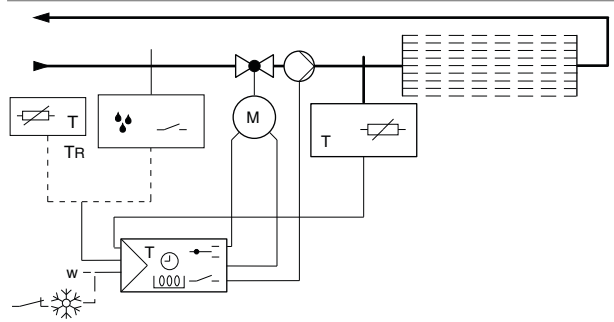


MOD 3; room control for cooling in

- 2-pipe system with internal temperature sensor and dew-point monitoring or outside-temperature sensor; shift for room-temperature setpoint; 2-point output

MOD 4; room control for H/C in

- 2-pipe system with internal temperature sensor and dew-point monitoring or outside-temperature sensor; C/O signal or shift for room-temperature setpoint; 2-point output

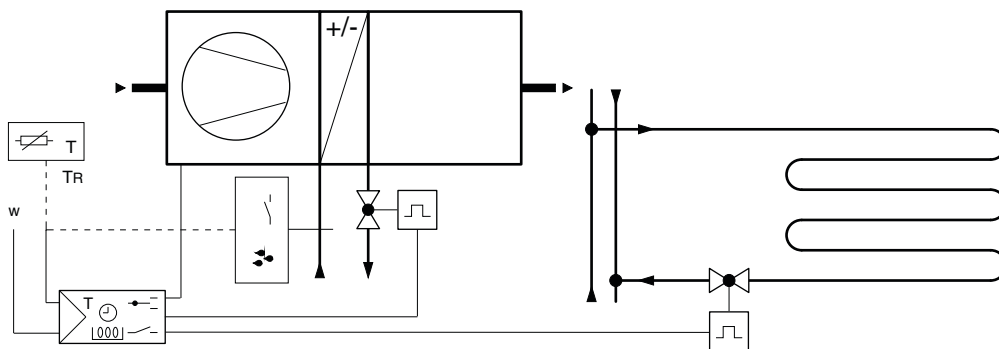


MOD 5; supply-temperature control (cascade) for cooling, e.g.

- chilled ceiling with internal temperature sensor and dew-point monitoring or outside-temperature sensor; shift for room-temperature setpoint; floating-point output

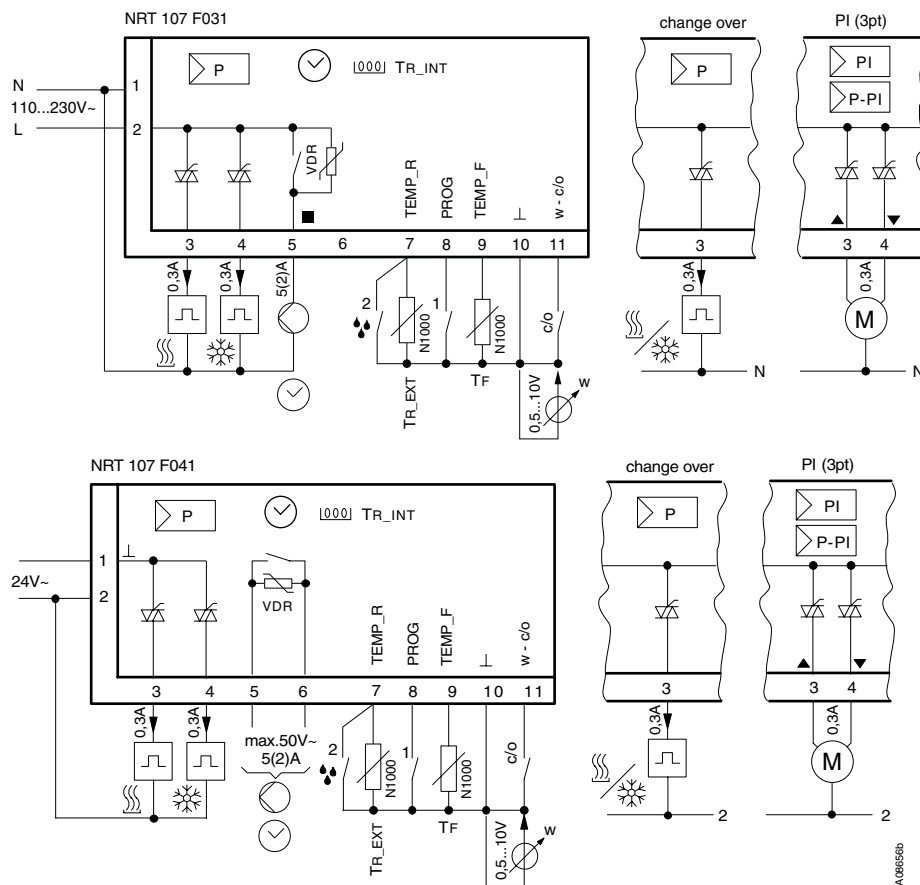
MOD 6; supply-temperature control (cascade) for H/C, e.g.

- chilled ceiling with internal temperature sensor and dew-point monitoring or outside-temperature sensor; C/O signal or shift for room-temperature setpoint; floating point output

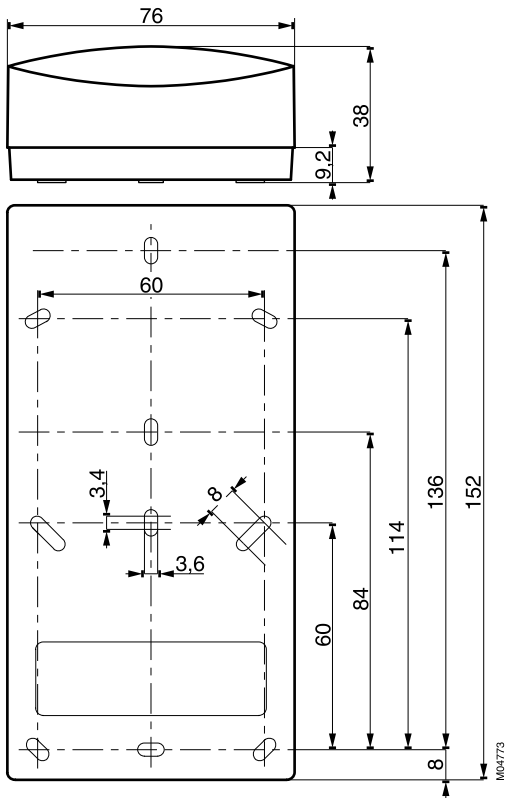


MOD 7; room control for H/C in 4-pipe systems with internal temperature sensor and dew-point monitoring or outside-temperature sensor; shift for room-temperature setpoint; 2 × 2-point output for valves and relay output for fan or pump

Connection diagram

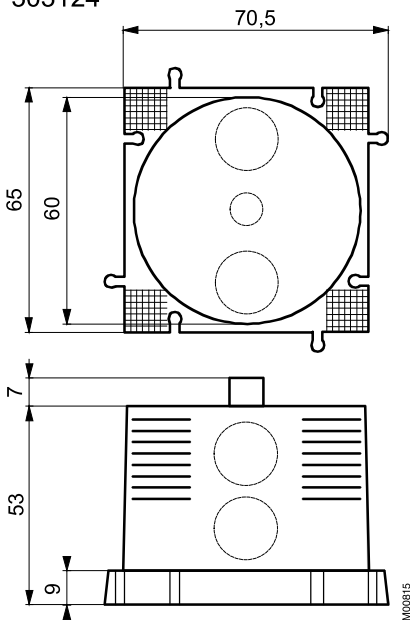


Dimension drawing



Accessories

303124



386273

