

RWX62...

Universal Controller for HVAC Installations



Description Fully autonomous electronic universal controller with up to three configurable controllers as sequence controllers with P, PI, PID response or as digital controllers with P-response.

- Features**
- Universal inputs for analog or binary signals.
 - Separate outputs for analog or binary signals.
 - 24 Vac operating voltage.
 - Direct entry and setting of all data on the controller
 - No extra tools required.

Product Numbers

Table 1.

Product Numbers	Inputs		Outputs	
	Analog/Binary	Binary	Analog	Binary
RWX62.5030	3	2	3	0
RWX62.7032	5	2	3	2
RWX62.7034	5	2	3	4
RWX62.7036	5	2	3	6

Warning/Caution Notations

WARNING:		Personal injury/loss of life may occur if a procedure is not performed as specified.
CAUTION:		Equipment damage may occur if the user does not follow a procedure as specified.

Application

The universal controller is primarily intended for comfort ventilating and air conditioning installations. However, the controller can also be used in comfort heating installation.

Controlled Variables

The following variables can be controlled:

- Temperature -31 — 266°F (-35 — 130°C)
 - Relative humidity 0 — 100%
 - Absolute humidity 0 — 20 g/kg
 - Pressure 0 — 480 psi (0 — 40 bar)
 - Pressure differential in liquid media 0 — 145 psi (0 — 10 bar)
 - Pressure differential in gaseous media 0 — 3.75 mmHg or 0 — 22.5 mmHg (0 — 500 Pa or 0 — 3.00 kPa)
 - Volumetric air flow 0 — 850 m³/s or m³/h or l/h
 - Indoor air quality 0 — 2000 ppm CO₂ (0 — 200 display)
-

Application Functions

- Controller:
 - 1 to 3 sequence controllers with auxiliary functions and analog and digital (two-position) outputs or
 - 1 to 3 digital controllers with digital (two-position) outputs
 - Auxiliary functions:
 - Operating mode changeover
 - Set point compensation
 - Switching function based on outside temperature
 - Cascade control
 - Minimum and maximum limitation
 - Frost protection function
 - Message on excessive control deviation
 - Maximum priority for cooling/dehumidifying
 - Reversal of operating action of the positioning signal
-

Ordering

When ordering, specify quantity, product number and description.

Replacement Parts

Flush Panel Mounting Frame ARG62.10

Customized Units

Siemens Building Technologies supplies customized units on large orders; these units differ as follows from standard units with regard to configuration and/or design:

- Pre-configured applications within the standard options range
- Preset, adjustable parameters within the standard options range
- Unit with customer logo and customized type reference

Please contact the Siemens Building Technologies branch or representative in your area for customized units.

Equipment Combinations

The following Siemens Building Technologies sensors, actuators and signal converters can be connected to the POLYGYR universal controllers RWX62...:

Unit

- Sensor with LGNi 1000 Ω temperature sensing element
- Sensor with DC 0...10 V measuring signal
- Frost sensor QAF63... and frost monitor QAF64...
- Room temperature sensor with set point adjuster QAA25
- Remote set point adjusters FZA21.11 + FZA61.11
- Air damper actuators with 0 — 10 Vdc input
- Valve actuators with 0 — 10 Vdc input
- Control valves
- Various signal converters

Combinations using third-party units are possible, provided they correspond to the input and output specifications of the POLYGYR RWX62....

Functions

The RWX62... Universal Controller executes main and auxiliary functions. You can specify the desired effect by entering configurations and setting parameters. Each input is based on a function code. In the data sheet, the [function code] is printed in brackets.

Controller Types

The universal controller can alternately be used as either a sequence or digital controller.

Sequence Controller

[SEQREG] with up to three mutually independent P, PI or PID controllers.

Digital Controller

[DIGREG] with up to three mutually independent P-controllers.

Main Functions Sequence Controllers

A sequence controller may comprise a maximum of four sequences (sequence.1 to 4) combined as follows:

One sequence: sequence 1 or sequence 3

Two sequences: sequence 1+2 or sequence 1+3 or sequence 3+4

Three sequences: sequence 1+2+3 or sequence 1+3+4

Four sequences: sequence 1+2+3+4

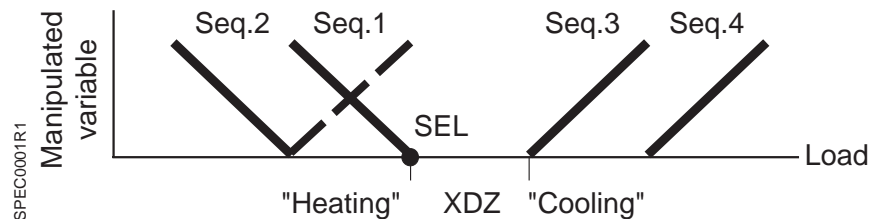


Figure 1. Controller Sequence Combinations.

<p>Operating Action</p>	<p>The "Heating" set point [SEL] is allocated to the interdependent sequences 1 and 2. Their output signal acts in reverse to the load (input variable), e.g., heating.</p> <p>NOTE: Sequence 1 can be set to act directly on the load, e.g. cooling.</p> <p>The "Cooling" set point is allocated to the interdependent sequences 3 and 4. Their output signal acts directly to the load (input variable), e.g., cooling.</p>
<p>Zero Energy Band</p>	<p>The zero energy band (XDZ dead zone) lies between the "Heating" and "Cooling" set point, i.e., between sequences 1 and 3.</p> <p>The "Heating" set point and the dead zone can be changed by the user within adjustable limits for standard operation.</p>
<p>Controller Outputs</p>	<p>One analog output (Y1...3) and/or 1...6 binary outputs (Q1...6) can be allocated to each sequence; these outputs then act in the operating action of the sequence as follows:</p>
<p>Analog Outputs</p>	<ul style="list-style-type: none"> • Modulating output (Y...) to control positioning units with a 0 — 10 Vdc positioning signal input. • Modulating output (Y...) combined with binary outputs (Q...) to switch installation elements based on the Y-signal (e.g., pump switching based on the valve position).
<p>Binary Outputs</p>	<ul style="list-style-type: none"> • One binary output Q..) for single-step switching • Linear step switch with 2 to 6 steps, i.e., 2...6Q • Binary step switch with 2 to 4 Q (2Q= 3-step, 3Q= 7-step, 4Q= 15-step) • Step switch (Q...) combined with Y... for modulating output control between the individual steps
<p>Example</p> <p>Ventilating plant with room temperature control</p> <p>B1 = Room temperature</p> <p>Sequence 1 = Heat recovery, acting directly or reversed depending on the system</p> <p>Sequence 2 = Heating, reverse action</p> <p>Sequence 3 = Cooling, direct action</p> <p>Sequence 4 = Unused</p>	<p style="text-align: center;">Figure 2.</p>

Auxiliary Functions Sequence Controller

The following section shows all possible optionally selectable sequence controller auxiliary functions based on typical ventilating/air conditioning applications. The individual auxiliary functions can be configured by selecting the associated [function code or symbol].

Operating Mode
Changeover

[NIGHT] and/or [STNDBY]

E1 = "Night" operation (NIGHT) input
signal
E2 = "Standby" operation (STNDBY) input
signal

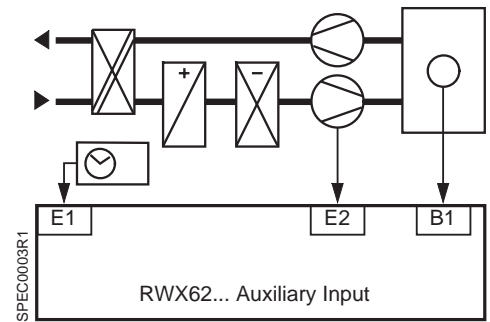


Figure 3.

"Night" Operation: [☾ NIGHT]

On switching an AC 24 V signal (e.g., via a timer) to a binary input **E1**, the control loop is switched to the "Night" set point(s). (see Parameterization Tables).

"Standby" Operation: [⏻ STNDBY]. On switching an 24 Vac signal (e.g., fan OFF message) to binary input **E2**, the control loop is switched to a zero output state excepting the frost protection function.

For each controller, an E1 and E2 binary input is available for all active sequence control loops. Their influence on each operating mode and each control loop can be enabled or disabled.

Set Point Actual Value
Deviation Alarm

[DEVALM]

Q... = Deviation Alarm

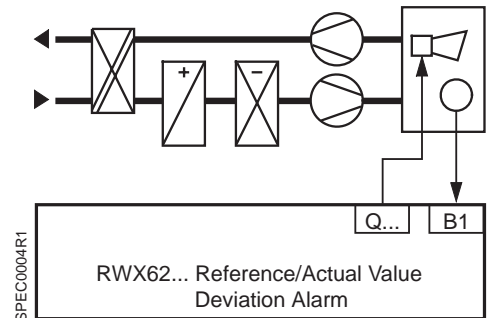


Figure 4.

On long-term actual value deviations (adjustable time) outside of the set tolerance limit, a de-energized open **alarm contact Q...** is closed (e.g., to actuate a separate alarm siren). At the same time, the deviation alarm is indicated on the LCD. After returning to the accepted actual value deviations, the deviation alarm is deactivated automatically.

For each controller, one common deviation alarm contact is available for all active sequence control loops. The alarm function can be deactivated by entering an extreme setting for the corresponding DEVALM set points.

Remote Set Point
 Presetting

[TELSEL]

B... = Remote set point

The **standard or "Day" operation set point** can be set via a separate remote set point potentiometer B... (separate potentiometer or potentiometer integrated in the room temperature sensor). The remote set point setting range can be limited in the controller. A dead zone [XDZ] can also be set between the set points "Heating" and "Cooling". Possible "Night" set point(s) are not influenced by the remote set point. The remote set point function is not available for control loops with a compensated set point.

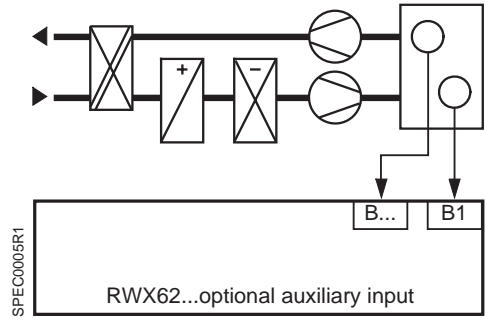


Figure 5.

Set Point Compensation

[MULFUN] and [COMP] set point
 compensation
 [CONST] constant set point

B2 = Compensation variable [MULFUN]
 B1 = Compensated variable [SEQREG]

With the so-called **"multifunction"** measured variable, the controller set point, for instance, can be compensated to the outside temperature. For each controller, one common multifunction measured value is available for all active sequence control loops. Their influence on the controller set point can be enabled or disabled for each operating mode or control loop.

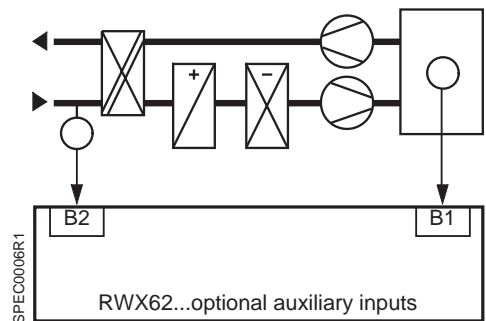


Figure 6.

You can set summer and/or winter compensation. The set point is compensated via the value of input MULFUN as follows:

Summer **and** winter compensation \Rightarrow SEL3 \neq SEL2

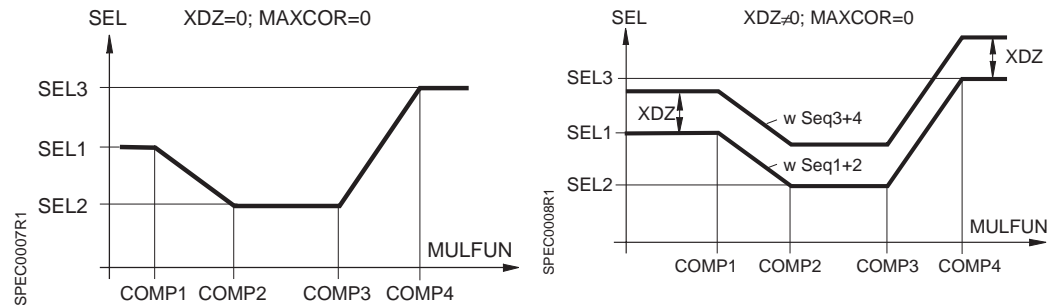


Figure 7. Summer and Winter Compensation.

You can select different set points for sequence 1 + 2 and sequence 3 + 4.

Cascade Control PI/PI

[LIM + CASC ACTIV]

B... Supply air temperature sensor

You can select the **PI/PI room/supply air temperature cascade control function** in addition to the limiter function. In this case, the virtual PI room temperature controller determines the set point within the limiter set points for the PI supply air temperature controller.

Minimum Limitation PI for Sequence 1

[LIMSPE]

B... = Temperature sensor to detect risk of icing on the air side (e.g., in the exhaust air heat exchanger of a system connected to the control loop used to acquire the water / glycol inlet temperature).

The minimum limitation for sequence 1 allows for implementing **icing protection** for PI exhaust air heat recovery.

When the value drops below the limiter set point, the PI limiter function overrides the standard control function sequence 1 to maintain the limiter set point.

Other typical applications include maintenance of the water inlet temperature in a corrosion-prone heating boiler.

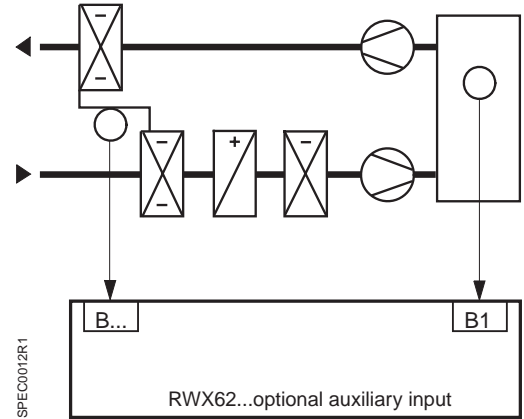


Figure 10.

Maximum Limitation PI for Sequence 3

[LIMMAX]

B... = Room humidity sensor

Maximum PI room humidity limiter for cooling output control (= dehumidification) of sequence 3.

When the value exceeds the limiter set point, the PI limiter function overrides the standard control function sequence 3 to maintain the limiter set point.

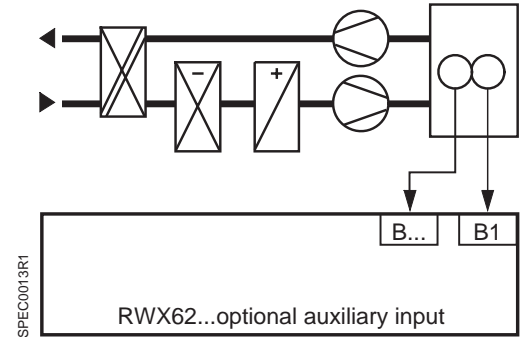


Figure 11.

The resulting undercooling of the supply air/room temperature is corrected by the room temperature sequence controller via increased (re)heating.

Maximum Priority Control
for Sequence 3

[MAXPRI]

B... = Dehumidifying signal 0 — 10 Vdc from a separate room humidity control loop (poss. with additional humidifying control outputs).

Priority cooling/dehumidifying in sequence 3:

The dehumidification signal is sent to input B... [MAXPRI]. For output sequence 3, a maximum selection of the dehumidifying signal and of the cooling output demanded by the sequence controller is formed.

The resulting undercooling of the supply air/room temperature is corrected by the room temperature sequence controller via increased (re)heating

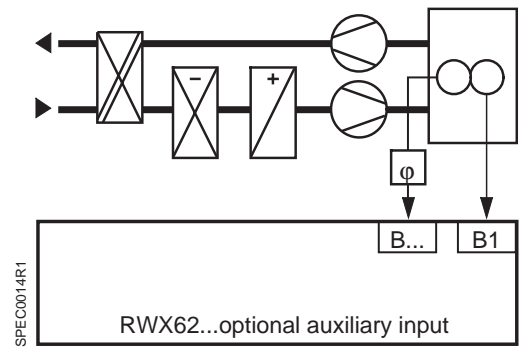


Figure 12.

Frost Monitor

[*PROT]

B... = 24 Vac of the frost protection thermostat

Two-position frost protection for water/heating coil:

On interruption of the signal on input B...:

- Sequence 1+2 with Y outputs move to 100% heating output
- All other sequences move to zero output
- Signal level limitations are ineffective
- The LCD indicates a frost alarm

After the 24 Vac signal returns to input B... (i.e., danger of frost no longer exists), the sequence controller resumes standard control operation.

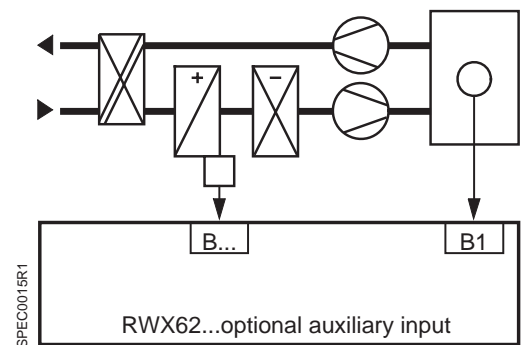


Figure 13.



CAUTION:

During "Standby", all frost protection functions remain active. When control operation is disabled, all frost protection functions are also disabled. When frost protection is active, but the heating output is insufficient (e.g., no heating water), the frost protection function cannot protect the plant from frost damage.

Super Frost Protection PI
 Limiter

[S[❄]PROT]

B... = Correctly placed temperature sensor
 on the water / heating coil.

Q1= Frost alarm changeover contact
 Normally open contact Q14: Fans, etc.
 locking.

Normally closed contact Q12: External
 alarm (e.g., siren).

K1 External plant switching command 0/1

2-phase, modulating/2-position frost
 protection limitation function for water /
 heating coils with frost protection alarm
 contact (Q1).

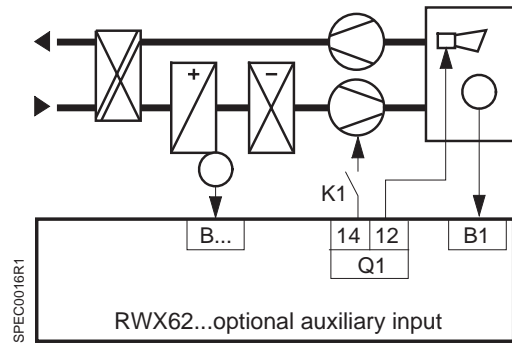


Figure 14.

The super frost protection function works in two phases:

Modulating super frost protection PI limiter phase:

When the value drops below the current limiter set point, the modulating PI limiter function overrides the current sequence controller function to maintain the limit value. In this case, the Y-signal level limitations temporarily are rendered ineffective (fresh air dampers are completely closed for 100% heat recovery).

- In control operation:
 - The limiter set point is permanently set to 7K above the alarm set point
 - Limitation acts on all active sequences 1 to 4
- In Standby mode:
 - The limiter set point is adjustable, but must be at least 7K above the alarm set point
 - The limitation acts only on the reverse acting sequences 1+2 with Y; defined Y-signal limitations are ineffective

Two-position super frost alarm phase:

This phase is active only when the frost protection temperature drops below the specified super frost alarm set point despite the previous modulating super frost PI limiter phase. This triggers the following responses:

- Ventilation is deactivated via alarm contact Q1 and the external alarm is activated.
- Sequences 1+2 with Y outputs move to 100 % heating output. Signal level limitations are ineffective.
- All other sequences move to zero output.
- The LCD indicates a frost alarm.

After the temperature again exceeds the alarm set point, the sequence controller resumes operation as soon as the frost alarm has been acknowledged.

The following alternative alarm acknowledgement methods are available:
 Automatic acknowledgement on temperature increase [AUTO].

- Manual acknowledgement (press button on controller) of each alarm [MANUAL].
- Manual acknowledgement (press button on controller) of every third consecutive alarm sent within 30 minutes [MANU3].

Super Frost Protection PI
Limiter, Continued



CAUTION:

During Standby operation, the super frost protection functions remain active. When control operation is disabled, all super frost protection functions are also disabled. The super frost alarm contact then moves to the alarm position. On failure of the super frost temperature input, the super frost protection function moves to the alarm state. When the super frost protection function is active, but heating output is insufficient (e.g., no heating water), the super frost protection function cannot protect the plant from frost damage.

Control Based on Outside
Temperature

[MULFUN] and [RELEAS ACTIV]
Multifunction-dependent switching of Q...with Y...:

B2 = Multi-function measured value (here: outside
temperature)

Additional outside temperature-dependent activation of the hot
water circulation pump Q...:

This, for example, keeps the hot water circulation pump active
(also during Standby mode) in combination with super frost
protection monitoring for as long as the outside temperature is
below the associated set point (e.g., <2 °C; adjustable).

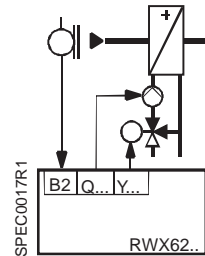


Figure 15.

Operating Action Reversal
Sequence 1

[MULFUN] and/or [ALTDIR]

The operating action for sequence 1 can be reversed. Reversal depends on whether
the sequence was configured to [REVERS] (\ \ _ / /) or [DIRECT] (\ / _ / /) during
standard operation.

The following changeover actions are possible:

Changeover from external via digital signal 24 Vac [DIG]

This signal must be configured to input [ALTDIR] with [DIG] .

Changeover in the case of an adjustable value [ABS]

The following measured values are used:

If only MULFUN is configured:	Input [MULFUN]
If MULFUN and ALTDIR are configured:	Input [ALTDIR]
If only ALTDIR is configured:	Input [ALTDIR]

**Changeover in the case of an adjustable difference between two measured values
(ΔB...-B...)**



CAUTION:

This changeover is possible only if both B are configured as temperature
sensors (1xNi; 2xNi or VOLT °C).

The following measured value differences are possible:

If only MULFUN is configured:	[ΔB... MULFUN – B... SEQREG]
If MULFUN and ALTDIR are configured:	[ΔB... MULFUN – B... [ALTDIR]

Locking Sequences Based on Outside Temperature

[MULFUN] and [LOCK]

The [LOCK] function allows for locking individual sequences in dependence of the input variable on [MULFUN] (e.g., outside air temperature).

The cooling sequences can be locked on low and the heating sequences on high outside air temperatures. This ensures that, among other things, heating is not active in summer and cooling is not active in winter for compensated set points that are based on outside air temperature.

The [LOCK] function can be activated for sequences 1+2 and/or sequences 3+4. This function is active also during Night operation.

Sequence Controller Function Priorities

The previously described sequence controller functions have the following priorities in the sequence control loop (1= highest priority)

Control Operation

- 1: "OFF" via E2 [STNDBY]
- 2: "Night" operation via E1 [NIGHT]
- 3: "Day" or standard [MODE]

Limiter and Priority Functions

1. Delay times [T1 and T2]
2. Frost protection [* PROT] or [S * PROT]
3. Activation of Qs via MULFUN [RELEAS]
4. Maximum selection sequence 3 [MAXPRI]
5. Auxiliary controllers sequence 1 and sequence 3 [LIMSPE] and [LIMMAX]
6. General limiter [LIM]
7. Locking sequences via MULFUN [LOCK]
8. Sequence controller [SEQREG]

Main Functions Digital Controller

For single- or multi-step P-control of the control variable acting on one or several two-position output elements.

[DIGREG]

The digital controller has 1 to 6 binary outputs (Q1 to 6) with adjustable set point per switch-on and switch-off point for each binary output (see Parameterization Tables). Example, see *Figure 16*.

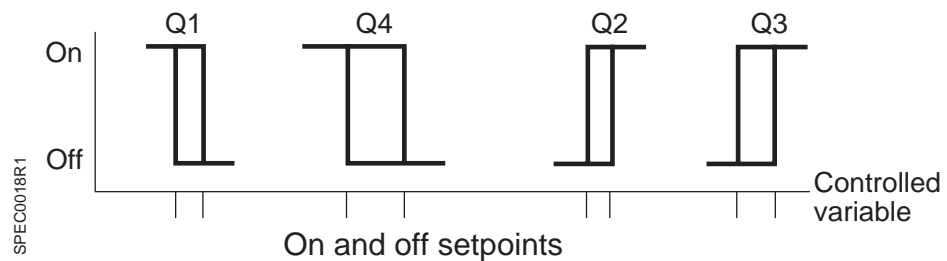


Figure 16. Digital Controller with Four Binary Outputs.

Auxiliary Functions Digital Controller

[STNDBY]

By switching an AC 24 V signal (e.g., via a timer) to input E2, the digital controller is switched to the zero energy (Standby) state. At the same time, all Q-outputs are deactivated.

For each controller, one common E2 binary input is available for all active digital control loops. Its influence on each operating mode and each control loop can be enabled or disabled.

Technical Design

Operational Safety

1 x NI °F (°C) and
2 x NI°F (°C)

The automatic control operation is secured against measured value range violations or universal input (B) errors by means of the following responses:

Measured value < -58°F (-50°C) or >302°F (150°C) means short-circuit or interruption. This results in the following:

- ERROR replaces the associated actual value on the LCD.
- For sequence or digital controller input: controller outputs switch to 0% output. Frost protection functions remain active.
- For super frost protection input: changeover to super frost alarm.
- Other inputs: the associated function is ineffective.

Remote Set Point

Measured value > 1200 Ω stands for an interruption and has the following effect:

- ERROR appears on the LCD.
- Sequence controller without night operation: outputs switch to 0% output. Frost protection functions remain active.
- Sequence controller with night operation: changeover to night operation with night set point(s).

0 – 10 Vdc

Measured value < -1.4 V or > 11.4 V has the following effect:

- Flashing actual value display of the associated range end value.
- Indication of the associated control or auxiliary function by including the range end value.

Mechanical Design

Housing

Mounting Options

The RWX62... Universal Controller is a compact unit enclosed in a plastic housing with the following features:

The following mounting options exist for control cabinet mounting:

- Mounting in a standard cabinet as per DIN 43 880.
- Wall mounting on an existing top-hat rail (EN 50 022-35x7.5).
- Wall mounting using two mounting screws.
- Flush panel mounting with ARG62.10 mounting frame.

Connection Terminals

Plug-in screw terminals. The terminals for G, G0 are orange for clear recognition.

Operating and Display Elements

Operate the RWX62... by actuating the operating elements on its front panel. No auxiliary tools such as PC tool, etc. are required.

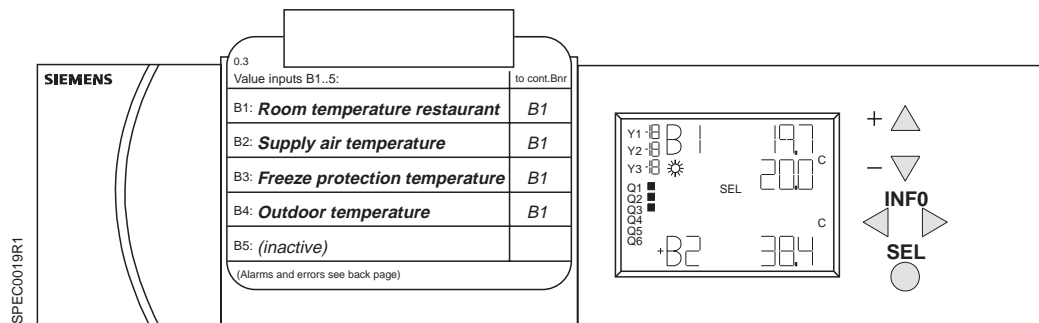


Figure 17. RW62... Front Panel.

Transparent Compartment

The transparent compartment contains the application-specific operating instructions (operating cards).

LCD

The following information is indicated on the LCD:

- The current operating values (maximum 3 digits)
- The functional code and the symbols

Operating Buttons

The operating buttons have the following functions:

INFO

Press the INFO operating buttons to select the information picture (function code). Press the left arrow button (<) to select the previous picture and the right (>) for the next one. Press the right arrow (>) to acknowledge a flashing display and simultaneously proceed to the next picture.

SEL

Press the SEL button to enable changes or acceptance of the settings. Flashing displays mean: the data can be changed.

+ / -

Press the + and the - buttons to increase or decrease the flashing data values.

Operation

You can choose different operating modes:

Controller Operating Mode

Operation of the configured control loops with general access.

- Display of all current input and output states on the LCD.
- Option to modify the standard ("Day") operating set point for each configured sequence controller. Settings are possible within the limits defined in the parameterization mode (MINSEL...MAXSEL or + / - MAXCOR).
- Manual acknowledgement of possible super frost alarms.

Configuration Mode Parameterization Mode Simulation Mode

These modes are accessible only to authorized personnel to protect the settings; see *Engineering Notes*.

Engineering Notes See *Description* and *Applications* for guidelines on the proper use of this unit. Observe all conditions and restrictions imposed in this section and in *Specifications*.

Intended Use

Technical Design

To engineer HVAC control loops, HVAC experts must first define the following for the desired application:

- Controller type (sequence controller or digital controller).
- Controlled variable (e.g., room temperature or room humidity).
- Type of set point (e.g., constant set point or compensated set point, day/night set point changeover).
- Type and sequential positioning of the control elements (e.g., modulating heating valve or multi-step electric heating).
- Additional functions (e.g., remote set point and or limitation and/or reference variable).

Configuration Mode 2

[CO2] Configuration starting point. This is where you allocate the inputs and outputs to the control loops. After quitting configuration mode 2, the function configurations and the input and output terminal designations are all defined. The optimal unit type is also defined.

Configuration Mode 1

[CO1] Fine tuning of the configuration data, such as °C/K or °F display, P/PI or PID mode, cascade function inactive, active.

Parameterization Mode 2

[PA2] Setting of all fine-tuning parameters such as P-bands, integral action time, measured value corrections, actual value limitations, delay times.

Parameterization Mode 1

[PA1] Setting of all set points for both sequence controllers and associated auxiliary controllers.

Simulation Mode

[SI] In the simulation mode, you can check the configured functions by entering simulated power values (sequence controller) or simulated actual values (digital controller). The sequence diagram (sequence controller only) and the output values appear on the LCD. This allows you to check both switching points and plant wiring.

Installation Notes

For DIN rail (top-hat rail) mounting, no additional components are required (*Figure 18*).

Two #6 screws are necessary for screw mounting (*Figure 19*).

For flush panel mounting, the ARG62.10 mounting frame is necessary (*Figure 20*).

The plug-in terminals can be connected to the litz wire before or after flush panel mounting. (Use litz wire for reasons of moveability.)

Installation Notes, Continued

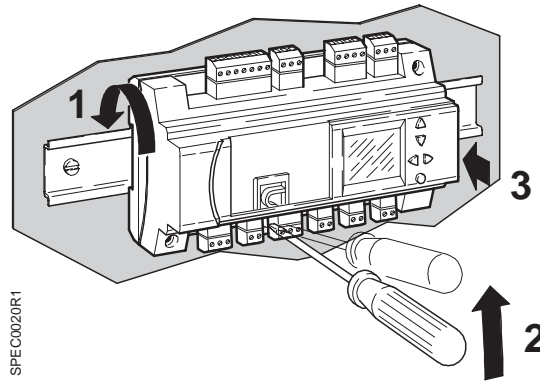


Figure 18. DIN Rail Mounting.

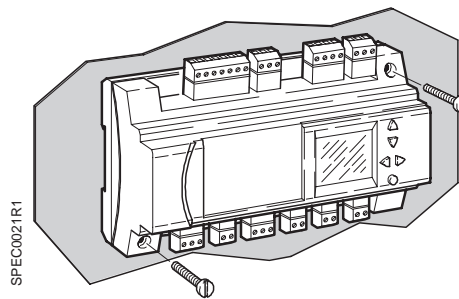


Figure 19. Wall Mounting.

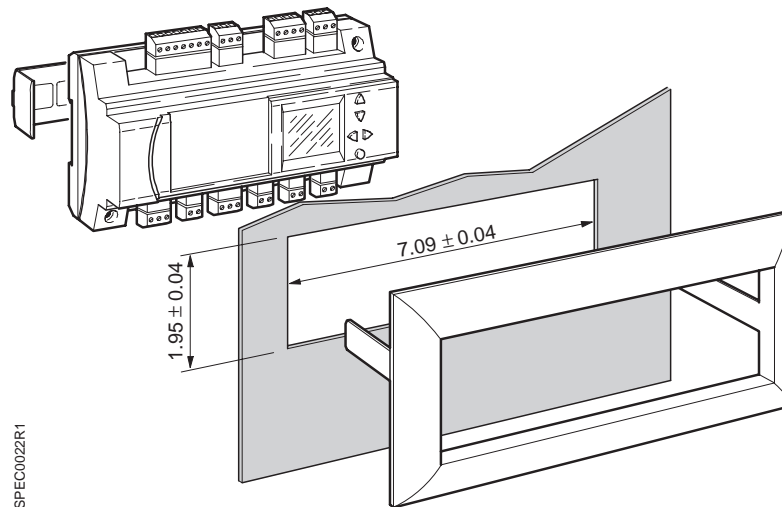


Figure 20. Flush Panel Mounting.

Electrical Installation

You can use normal cables for wiring the POLYGYR system. However, when mounting in an extremely impaired EMC environment, use only shielded cables.

The operating voltage must comply with the requirements for Class 2 voltage.

Use safety insulating transformers with double insulation designed for 100% duty.

When using several transformers in one system, the connection terminals G0 must be galvanically connected. The POLYGYR RWX62...units are designed for operation of 24 Vac maximum 10 A Class 2 voltage and are short-circuit-proof.



WARNING:

Supplying voltages above 24 Vac to low voltage connections may damage or destroy the controller or any other connected devices. Additionally, connections to voltages exceeding 42V endanger personnel safety.

Connect only mains voltages of up to maximum 250 Vac to the potential-free contacts Q.

Commissioning Notes

Required Reference Documentation

The following documentation is necessary for commissioning:

- The installation and commissioning instructions supplied with the universal controller.
- Commissioning protocol with project-specific entries.
- Plant wiring diagram as well as further control documentation stored in the control cabinet or with the plant manager.

Configuring and Parameterizing

Only HVAC experts may program and configure the controllers for installation-specific operation.

Observe the following:

- The unit must be connected and 24 Vac must be supplied.
- The values and settings specified in the unit remain in memory even on power failure.
- Data entries made to the commissioning protocol during engineering must be transferred to the unit. See the *POLYGYR User's Guide* for detailed procedures. The User's Guide provides blank tables in the appendix.
- Manually record the application-specific data on the operating cards supplied with the unit and store them in the controller's transparent compartment.

Specifications

Power Supply

Operating voltage	24 Vac ±20% Q1 to Q6, 24 — 230 Vac)
Frequency	Class 2 low voltage 50 Hz / 60 Hz

Power Consumption

7 VA

Prompting Speed

Output renewal speed	1 second
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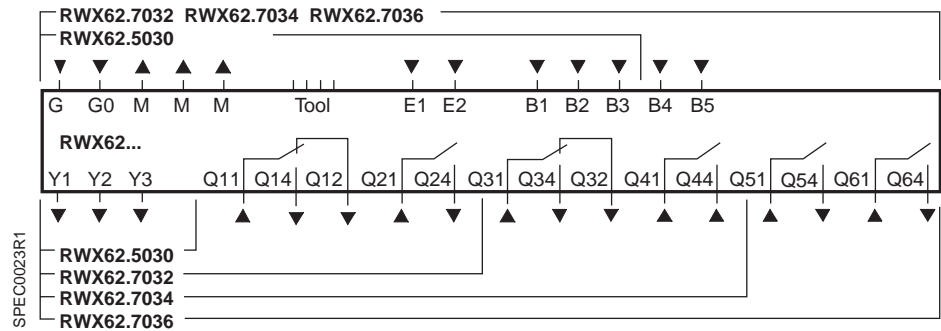
Displays (LCD)

Actual values and set points	3-digit
Resolution of values <100	0.1
Resolution of values >100	1
Resolution of ranges <10	0.01
Analog outputs (-1 — 11V)	2-digit, resolution 1 Volt / 10%
Binary switching outputs	OFF/ON

Environmental Conditions	Transport	
	Temperature range	-13 — 158°F (-25 — 70°C)
	Humidity	<95% RH
	Operation	
Temperature range	32 — 122°F (0 — 50°C)	
Humidity	<95% RH	
Agency Approvals	Energy management equipment	UL 916
Safety		Meets UL requirements
Connection Terminals	Plug-in screw terminals	14 AWG
Tool Connection	Connector plug for POLYCOPY	4-pin
Weight Without Packaging	RWX62.5030	0.8 lb.
	RWX62.7032	0.9 lb.
	RWX62.7034	1.0 lb.
	RWX62.7036	1.0 lb.
Dimensions		See <i>Figure 22</i>
Universal Inputs B1 —5 Temperature Sensors (LG Ni 1000 / 32°F [0°C])	Range	-31 — 266°F (-35 — 130°C)
	Under- and overrange	-58 — 302°F (-50 — 150°C)
	Resolution	<0.09°F @ 32°F (<0.05 K at 0°C)
	RWX62... accuracy	-0.9°F — 0.9°F (-0.5K — 0.5 K)
	Measuring voltage	5.0 Vdc
	Measured current	2.6 — 3.4 mA
	Maximum permissible cable length for 22 AWG	maximum 980 ft. (300 m) (4.5Ω total line resistance corresponds to approx. 1.8°F error)
Temperature Sensors LG Ni 1000 (2 x LG Ni1000 / 32°F [0°C] parallel)	Range	-31 — 266°F (-35 — 130°C)
	Under- and overrange	-58 — 302°F (-50 — 150°C)
	Resolution	<0.2°F / 32°F (< 0.1K / 0°C)
	RWX62... accuracy	-1.8°F — 1.8°F (-1K — 1K)
	Measuring voltage	maximum 5.0 Vdc
	Measured current	3.1.—3.9 mA
	Maximum permissible cable length for 22 AWG	maximum 980 ft. (300 m) (2.25 Ω total line resistance corresponds to approx. 1.8°F error)
Analog Voltages (for Measured Variables in °F [°C], % Without Unit)	Range	0 — 10 Vdc
	Under- and overrange	-1.4 — 11.4 Vdc
	Resolution	1.0 mV
	RWX62... accuracy	-0.1 — 0.1 V at 0 V -0.25 — 0.25 V at 10 V
	Maximum current consumption	0.11 mA
	Internal resistance R _i	≥ 100 kΩ
	Maximum permissible cable length for 22 AWG	maximum 980 ft. (300 m); also see <i>information for connected unit</i>
Remote Set Points B2 to 5	Range	0 — 1000Ω
	Overreach	1200Ω
	Offset unit	0.15Ω
	RWX62... accuracy	-2.5Ω — 2.5Ω at 1000Ω -5Ω — 5Ω at 0Ω
	Measured voltage	maximum 5 Vdc
	Measured current	2.9 — 4.4 mA
	Max. permissible cable length for 22 AWG	maximum 980 ft. (300 m) (10Ω total line resistance corresponds to 1% error)

Binary Voltage Inputs	Voltage	24 Vac
	Current consumption	≤8 mA
	log. 0	≤5 Vac eff.
	log. 1	≥ 15 Vac eff.
Binary Control Inputs E1, E2	Polling voltage for control commands	24 Vac
	Current consumption	≤8 mA
	Maximum permissible cable length for 22 AWG	maximum 980 ft. (300 m)
Analog Outputs Y1 to Y3	Range	0.—.10 Vdc
	Under- and overrange	-1.4.—.11.4 Vdc
	Resolution	15 mV
	Working voltage	maximum ±1 mA
Binary Switching Outputs Q1 to Q6	Switching output of the relay contacts Q1 to Q6	
	AC voltage	24 — 230 Vac, 4 A res., 3 A ind.
	DC voltage	maximum 50 Vdc, maximum 40 W, maximum 5 A
	Minimum contact rating for main voltage	230 Vac / 5 mA
	for low voltage	24 Vdc / 10 mA
	Maximum switch-on current	10 A (1 second)
	Life of the relay contacts	
	Alternating voltage at 0.1 A res.	2×10^7 cycles
	at 0.5 A res.	2×10^6 cycles
	at 3 A res.	2×10^5 cycles
	Red. factor for ind. loading (cos. phi = 0.8)	0.85
	Direct voltage	2×10^5 cycles
	External fuse on input side	maximum 10 A
Changeover switch	Q1 and Q3	
ON/OFF-switch	Q2, Q4 to Q6	

Wiring Diagram



- G-G0: 24 Vac supply
- M: Ground (G0) for signals, universal inputs, analog outputs
- B: Universal input
- E: Binary input
- Y: Analog output
- Q: Binary output, various voltages permissible
- Tool: Connection for POLYCOPY

Figure 21.

Dimensions

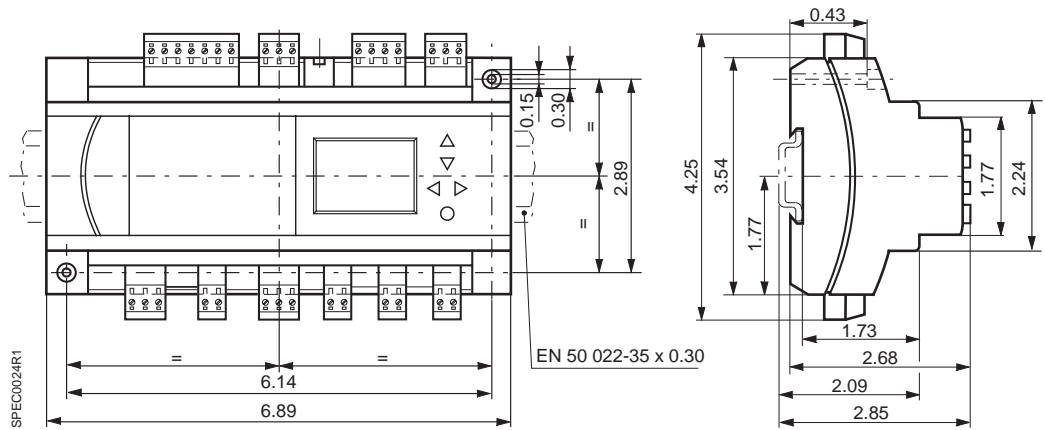


Figure 22. Dimensions in Inches.

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