



Synco™ 200

Universal Controllers

RLU2...

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- **With programmed standard applications**
 - **Freely programmable controller, for optimum adaptation to the relevant type of plant**
 - **P-, PI, or PID mode**
 - **Menu-driven operation**

Use

For use on basic to complex ventilation, air conditioning and chilled water plant. The universal controllers are designed to handle the following controlled variables: Temperature, relative/absolute humidity, pressure/differential pressure, airflow, indoor air quality and enthalpy.

Functions

Operating modes

- Selection of operating mode via status inputs: Comfort, Economy, Protection
- Display of current operating mode (Comfort, Economy, Protection)

Setpoints

- With each sequence controller: Individually adjustable heating and cooling setpoints (or maximum and minimum setpoints) for the Comfort and Economy modes
- Predefined room temperature setpoint with room unit or setpoint readjuster (passive)
- With each sequence controller: Predefined setpoint with remote setpoint adjuster (active or passive)
- Room temperature setpoint with summer and/or winter compensation
- With each sequence controller: Setpoint shift depending on sensor signal, selectable start and end points

Universal inputs

Universal inputs for:

- Passive or active analog input signals of various measured values (°C, %, ---)
- Digital input signals (potential-free contacts)

Control functions

- Universal controller (sequence controller) for 2 heating sequences (reverse acting) and 2 cooling sequences (direct acting), can be used as a controller providing P-, PI or PID mode, or as a differential controller
- Controller can be configured as a room/supply air temperature cascade controller with limitation of the supply air temperature
- Each sequence can be assigned modulating control (modulating output, step switch, mixed air damper/heat recovery equipment) and a pump. 2 sequences can act on the same modulating control (e.g. priority cooling/dehumidification)
- General limitation (minimum/maximum with PI mode per sequence controller, either as absolute limitation, e.g. for the supply air temperature or supply air humidity), or as relative temperature limitation (e.g. maximum limitation of the room/supply air temperature differential). Limitation acts on all sequences. Minimum limitation can be set to a lower setpoint while cooling is on (e.g. cooling with DX cooler battery)
- Sequence limitation with PI mode per universal controller, can be defined as minimum or maximum limitation. Limitation acts on a single sequence (e.g. heat recovery anti-icing protection or maximum limitation of the heating coil's return temperature)
- The mixed air temperature controller controls the mixed air temperature via the air dampers
- Locking of individual sequences
- Digital input (heating limit switch, from a heating controller) for changing the control strategy (room-supply air temperature cascade control), configurable

Switching and supervisory functions

- 2-stage frost protection (modulating/2-position) or frost protection thermostat (heating sequences delivering 100 % output, fault relay for switching off the fans) (with RLU220 only indication)
- Control of pumps, constantly ON at low outside temperatures, ON according to load sequence controller (not with RLU220); periodic activation of pump (pump kick)
- Control of an analog output (not with RLU202). Configurable external presetting (controller used as a pure signal converter). Minimum and maximum position, invertible.
Minimum limitation at low outside temperatures
- Control of mixed air dampers or heat recovery equipment with maximum economy changeover (not with RLU202), startup function at low outside temperatures
- Control of a multistage aggregate with a step switch, with a maximum of 6 steps and a modulating output.
The switching on/off points of each step can be adjusted. Adjustable delay times. Configurable external presetting (controller used as a pure step switch). Modulating output with minimum and maximum position, invertible (only with RLU236)
- Control of a multistage aggregate with a step switch, with a maximum of 2 steps and a modulating output.
Functions as described above (not with RLU220)
- Control of a linear multistage aggregate with a step switch, with a maximum of 6 steps and a modulating output.
Fixed assignment of switching on/off points to the load. Adjustable delay times and priority changeover. Configurable external presetting (controller used as a pure step switch). Modulating output for load assignment to the steps, with minimum and maximum position, invertible (only with RLU232 and RLU236)
- Control of a binary multistage aggregate with a step switch, with a maximum of 4 relays for 15 steps and a modulating output.
Fixed switching on/off points with binary switching logic. Adjustable delay times. Configurable external presetting (controller used as a pure step switch). Modulating output for load assignment to the steps, with minimum and maximum position, invertible (only with RLU232 and RLU236)
- Control of a modulating 3-position actuator. Configurable presetting (controller used as a pure analog/3-position converter) (only with RLU202 and RLU222)
- Delivery of a passive measuring signal as an active signal for use by other controllers

Type summary

<i>Type reference</i>	<i>Universal inputs</i>	<i>Digital inputs</i>	<i>Positioning outputs</i>	<i>Switching outputs</i>	<i>Number of control loops</i>
RLU202	4	1	0	2	1
RLU220	4	1	2	0	1
RLU222	4	1	2	2	2
RLU232	5	2	3	2	2
RLU236	5	2	3	6	2

Accessories

<i>Name</i>	<i>Type reference</i>
Mounting frame for flush panel mounting (consisting of 1 small frame, 1 large frame, 2 hexagonal spacers, 4 fixing screws, Mounting Instructions)	ARG62.201