



Synco™ 700



Switching and Monitoring Device

RMS705

- Freely configurable unit thanks to extended configuration choices
- Additional universal inputs for indication and monitoring /alarming
- Data acquisition: Pulse counter (for display only), hours run counter, data trending, event logger (e.g. for the legionella function)
- Choice of switching and monitoring functions in combination with logic operations
- Lead / lag control of pumps, fans, motors, refrigeration machines, etc., with automatic changeover
- 3 basic universal controllers
- Unit can be extended with extension modules type RMZ785 and RMZ787
- Menu-driven operation with separate plug-in type or detached operator unit
- Konnex bus connection facility for operation and process information

Use

- Switching and monitoring of plant components in heating, ventilation or refrigeration plant
- For non-standard applications

The RMS705 offers extended configuration choices to allow free configurations within the scope of the available function blocks and, for this reason, does not provide any predefined standard applications.

As with all types of Synco™ 700 devices, once an application is created, it can be archived in the form of readable parameter sets to be reused as an adapted or identical application for other plant.

Functions

Universal inputs

8 to 28 ^{*)} universal inputs for:

- Passive or active analog input signals of various measuring variables (°C, %, g/kg, kJ/kg, W/m², bar, mbar, m/s, Pa, ppm, BTU, without unit, pulse)
- Digital input signals (potential-free contacts)

*) When using extension modules: 1 x RMZ787 + 2 x RMZ785

Additional I/Os via extension modules

Additional inputs and outputs can be provided for extending the unit's functionality.

A **maximum of 3 extension modules per RMS705** can be connected. Suited are the following types of modules:

- Maximum 2 universal modules type RMZ785 (8 UI)
- Maximum 2 universal modules type RMZ787 (4 UI, 4 DO)

As a maximum, each RMS705 has:

- 28 universal inputs (Ni1000, Pt1000, T1, DC 0...10 V, 0...1000 Ω, digital, pulses)
- 14 control output relays
- 4 modulating outputs DC 0...10 V

Data acquisition

Pulse counter (for display only, not for billing purposes)

4 counters are available for acquiring consumption values.

Pulses from gas, hot water, cold water and electricity meters can be handled.

- Pulse counting (Wh, kWh, MWh, kJ, MJ, GJ, ml, l, m³, heat cost units, BTU, without unit)

Hours run meters

There are 4 hours run meters showing:

- The total number of operating hours
- Maintenance messages (with adjustable interval)
- The number of operating hours since the last maintenance visit

Trend display of data

4 independent trend channels are available for recording measuring variables.

In addition to the local inputs of the unit, it is also possible to log room temperatures and the outside temperature delivered via the KNX bus.

Event logger (e.g. for the legionella function)

4 event loggers are available; they are used for recording events and for monitoring their scheduled occurrence.

- Logging the last 10 events per logger with time of day and date stamp when "Limit value on" and "Limit value off" are reached
- Saving the maximum or minimum value during the period of time the event occurs
- Selectable fault status message when the minimum or maximum
 - event cycle time is crossed
 - event duration is exceeded

Switching and monitoring functions

Fault status block

A fault status block is available featuring:

- 20 fault status inputs, configurable via universal inputs (analog and digital) and fault status messages delivered via the KNX bus
- Fault indication with red LED, acknowledgement via button
- 2 relay outputs, configurable as fault relays
- 1 digital input, for the external reset of fault status messages

7-day time switches

Six 7-day time switches provide the following functions:

- 6 switch-on or switch-off times per day, configurable relay output
- Yearly time switch with automatic summer- / wintertime changeover
- Operation selector (AUTO, ON, OFF), can be configured for manual control
- Configurable holiday and special day program
- From other 7-day time switches via the KNX bus as slaves (sending not possible)

Logic function blocks

10 freely configurable logic function blocks are available; they are used for handling several logically connected universal input variables.

- Configurable AND, NAND, OR, NOR, EXOR and EXNOR logic functions
- Adjustable switch-on and switch-off delays
- Adjustable minimum on and off times
- Operation selector (AUTO, ON, OFF), configurable for manual control

Comparators

2 comparators are available; they are used for comparing 2 analog input signals.

Output signal with adjustable switch-on and switch-off delays and adjustable minimum on and off times.

Universal motor blocks

6 universal motor blocks are available; they are used for controlling and monitoring motors:

- 1-speed motors (pumps, fans)
- 2-speed motors (fans)
- Twin motors (twin pumps)
- Precommand for dampers or valves installed upstream
- Adjustable times
- Motor kick and switching on at low outside temperatures
- Hours run counter per motor block

Rotary step switches

2 rotary step switches are available affording selectable step switch characteristics per block:

- Linear step switch
- Binary step switch
- Flexible step switch
- With stepwise precommand, switching and modulating outputs
- Lead / lag control of pumps, fans, motors, refrigeration machines, etc., with automatic changeover
- Adjustable times

Control functions

Universal controllers

There are 3 universal controllers as PID sequence controllers each with 2 sequence outputs (1 heating sequence and 1 cooling sequence).

- Control to an absolute variable or a differential
- Individually adjustable heating and cooling setpoints (or upper and lower setpoints)
- Adjustable control timeout

Setpoints

- Universal shift: Setpoint can be shifted depending on another variable, or it can be adapted via a remote setpoint adjuster

Bus functions

- Display of fault status messages from other devices via bus
- Output of a common fault status message of all devices on the bus to a fault relay
- Time synchronization
- Delivery and adoption of outside temperature signal

- Forwarding the yearly clock data (time of day, weekday, date, summer- / wintertime changeover) to another controller, or reception of the yearly clock data from another controller
- Reception of the 7-day program from another controller
- Forwarding the yearly program for holidays / special days to another controller or reception of the yearly program for holidays / special days from another controller
- Reception and forwarding of a demand signal (hot or chilled water) for the primary controller or the heat source or refrigeration machine
- Reception and evaluation of refrigeration demand signals if configured as a primary controller or refrigeration machine

2-pipe system for heating / cooling

If a 2-pipe system for heating / cooling is used, the heating / cooling changeover signal received via a digital input can be handled by the unit and forwarded to other bus users via the KNX bus.

Demand for heat and refrigeration

Collection, evaluation and forwarding of heat and refrigeration requests from and via the KNX bus. Also configurable are the following:

- Modulating output (e.g. for demand-dependent setpoint shift of a refrigeration machine)
- Relay output (e.g. for switching a refrigeration machine)
- Demand-dependent setpoint shift acting on the primary controller
- Adjustable setpoint boost when used in connection with a primary controller
- Outside temperature simulation
- Wiring test
- Data backup
- Display of setpoints and actual values

Service and operating functions

Type summary

Switching and Monitoring device	Type reference	Universal inputs	Positioning outputs DC 0...10 V	Switching outputs	Languages loaded
	RMS705-1	8	4	6	de, fr, it, es
	RMS705-2	8	4	6	de, fr, nl, en
	RMS705-3	8	4	6	da, fi, no, sv
	RMS705-4	8	4	6	pl, cs, hu, ru, sk
	RMS705-5	8	4	6	el, ro, sl, sr, hr

Accessories

	Description	Type reference	Data Sheet
Operator / service units	Operator unit, plug-in type	RMZ790	N3111
	Operator unit, detached	RMZ791	N3112
	Service tool	OCI700.1	N5655
Extension modules	Universal module with 8 universal inputs	RMZ785	N3146
	Universal module with 4 universal inputs and 4 relay outputs	RMZ787	N3146
	Module connector for detached extension modules	RMZ780	N3138

Ordering and delivery

When ordering, please give name and type reference of the switching and monitoring device, e.g.: Switching and monitoring device **RMS705-2**.

The products listed under "Accessories" must be ordered as separate items.