



Synco™700

Twin Pump Module

RMZ786



- Extension module for use with universal controllers RMU7... and heating controller RMH760
- 4 digital inputs for feedback
- 4 potential-free relay outputs for the control of 2 twin pumps
- Automatic changeover in the event of fault

Use

For use in heating, ventilation, air conditioning and chilled water plants. The twin pump module can control 2 twin pumps (4 single-speed pumps).

Functions

Operating modes

- Selection of operating mode: Auto
- Selection of priority: Auto, pump 1, pump 2

Control, switching and supervisory functions

- Pump control with
 - automatic changeover in the event of fault
 - manual changeover
- Supervision of 2 fault status messages

Process signals

- Generation of fault status messages
- Pump kick

Ordering

When ordering, please give name and type reference. If required, the module connector listed under "Accessories" must be ordered as a separate item.

Equipment combinations

The twin pump module must always be used in connection with a controller type RMU7... or RMH760.

For choice of equipment combinations, refer to Data Sheet N3110 "Product Range Overview Synco™700", or to the document covering the selected application.

Product documentation

<i>Name</i>	<i>Ordering number</i>
Mounting Instructions M3110	74 319 0353 0
Data Sheet "Product Range Overview Synco™700"	CE1N3110en
Basic Documentation, detailed description of all functions	CE1P3140en
Application Catalog for Synco™700 "Ventilation / air conditioning plants"	
Data Sheet on universal controllers	CE1N3144en
Data Sheet on heating controller	CE1N3131en
Declaration of Conformity (CE)	CE1T3110
Environmental Declaration	CE1E3110en02

Technical design

The twin pump module RMZ786 complements the range of universal controllers RMU7... and the heating controller RMH760. It cannot operate autonomously.

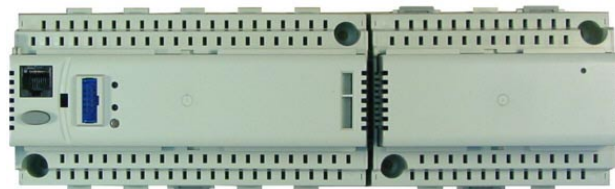
The module is incorporated into the controller by selecting the required plant type or basic type. All settings associated with the twin pump module are to be made on the controller.

The signals from sensors, setting units, etc., are delivered to the controller and then handled. The control signals and commands generated by the controller are fed to the twin pump module from where they are passed on to the connected actuating devices. The module is powered via the controller. It is automatically identified and monitored by the controller.

Mechanical design

Basic design

The module consists of terminal base and insert and – in terms of mechanical design – is identical to the universal controllers RMU7... and the heating controller RMH760. It is accommodated in a plastic housing with an integrated printed circuit board system, 2 connection terminal levels, and the connecting elements (electrical and mechanical) to the controller and other extension modules. The module can be fitted to a top hat rail (EN 60 715-TH35-7.5) or directly on a wall.

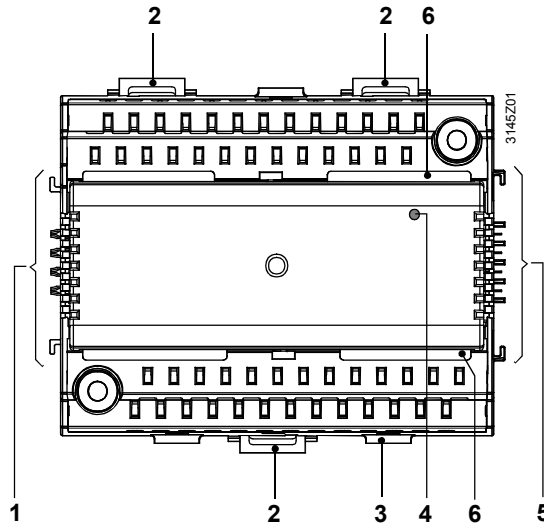


Controller with attached RMZ78... module

Operation

The module has no setting and operating elements. Operation takes place with the operator unit RMZ790 or RMZ791. The module has an LED to indicate the module's state with regard to power supply and addressing.

Operating, display and connecting elements



Legend

- 1 Connecting elements (electrical and mechanical) for the controller or another module
- 2 Catch for fitting the module to a top hat rail
- 3 Fixing facility for a cable tie (cable strain relief)
- 4 LED (RUN) for indication of power supply and addressing:
 LED lit: Power on, addressing o.k.
 LED flashes: Power on, but not yet addressed by the controller
 LED dark: No power
- 5 Connecting elements (electrical and mechanical) for another module
- 6 Rest for the terminal cover

Accessories

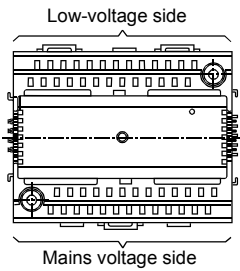
Name	Type reference	Data Sheet
Module connector for detached modules	RMZ780	N3138

Engineering notes

- Fuses, switches, wiring and earthing must be in compliance with local safety regulations
- Sensor cables should not be run parallel to mains-carrying cables powering loads such as fans, actuators and pumps

Mounting and installation notes

- The module is designed for:
 - Mounting in a standard cabinet as per DIN 43 880
 - Wall mounting on an existing tophat rail (EN 50 022-35x7.5)
 - Wall mounting using two fixing screws
 - Flush panel mounting
- Not permitted are wet or damp spaces; the permissible ambient temperatures must be observed
- Disconnected the system from the power supply prior to mounting and installation the module
- **The module insert may not be removed from the terminal base!**
- The module must be fitted to the right of the controller in the correct order, in accordance with the internal configuration
- The extension modules need not be wired between themselves or to the controller. The electrical connections are made automatically when plugging the modules. If it is not possible to arrange all extension modules side by side, the first of the detached modules must be connected to the previous module or the controller by using the RMZ780 module connector. In that case, the cumulated cable length may not exceed 10 meters



- The connection terminals for protective extra low-voltage are located in the upper half of the module, those for mains voltage (actuators and pumps) at the bottom
- Only one solid or stranded wire may be connected to each terminal (spring cage terminals). For fixing the wires, the cables must be stripped by 7 to 8 mm. To introduce the wires into the spring cage terminals, or to remove them, a screw driver size 0 or 1 is required. Cable strain relief can be ensured with the help of the lugs for cable ties
- The module mounted on the top hat rail together with other modules can only be removed from the rail after the 3 catches have been brought into their release-and-hold position (audible "click"). After removal, the catches must be pushed back into their snap-on position
- The module is supplied complete with Mounting Instructions


Commissioning notes



During the commissioning process, the outputs are in a defined off state.

Disposal notes

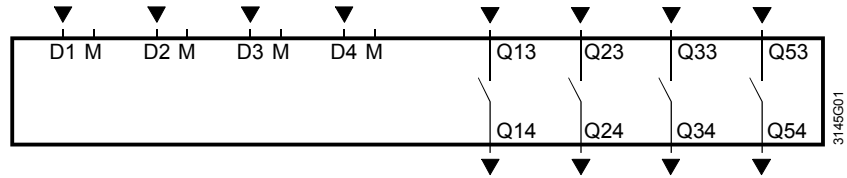
Larger plastic parts carry material identifications to ISO/DIS 11 469 to facilitate environment-compatible disposal.

Technical data

Power supply (via the controller)	Rated voltage	AC 24 V \pm 20 %
	Power consumption	3 VA
Inputs Digital inputs (D...)	Number	4
	Contact sensing	
	Voltage	DC 15 V
	Current	5 mA
	Requirements for the status and impulse contacts	
	Signal coupling	potential-free
	Type of contact	maintained or impulse contacts
	Insulating strength against mains potential	AC 3750 V to EN 60 730
	Perm. resistance	
	Contacts closed	max. 200 Ω
Contacts open	min. 50 k Ω	
Cable length	max. 300 m	
Outputs  Switching outputs AC 230 V (Q...)	Number of switching outputs (N.O. contacts)	4
	External supply line fusing	
	Non-renewable fuse (slow)	max. 10 A
	Automatic line cutout	max. 13 A
	Release characteristic	B, C, D to EN 60 898
	Cable length	max. 300 m
	Relay contact data	
	Switching voltage	max. AC 265 V min. AC 19 V
	AC current	max. 4 A res., 3 A ind. (cos ϕ = 0.6)
	At 250 V	min. 5 mA
At 19 V	min. 20 mA	
Switch-on current	max. 10 A (1 s)	
Contact life at AC250 V	guide values:	
At 0.1 A res.	2 x 10 ⁷ cycles	
At 0.5 A res.	4 x 10 ⁶ cycles (N.O.)	
	2 x 10 ⁶ cycles (changeover)	
At 4 A res.	3 x 10 ⁵ cycles (N.O.)	
	1 x 10 ⁵ cycles (changeover)	
Red. factor at ind. (cos ϕ = 0.6)	0.85	

	Insulating strength	
	Between relay contacts and system electronics (reinforced insulation)	AC 3750 V, to EN 60 730-1
	Between neighboring relay contacts (operational insulation) Q1↔Q2; Q3↔Q5	AC 1250 V, to EN 60 730-1
	Between relay groups (reinforced insulation) (Q1, Q2) ↔ (Q3, Q5)	AC 3750 V, to EN 60 730-1
Interfaces	Extension bus Connector specification	4 contacts SELV/PELV
Electrical connections	Connections terminals For solid wires For stranded wires without ferrules For stranded wires with ferrules	spring cage terminals 0.6 mm dia... 2.5 mm ² 0.25...2.5 mm ² 0.25...1.5 mm ²
Degrees of protection	Degree of protection of housing to IEC 60 529 Safety class to EN 60 730	IP 20 (when mounted) device suited for use with equipment of safety class II
Environmental conditions	Operation to Climatic conditions Temperature (housing with electronics) Humidity Mechanical conditions	IEC 60 721-3-3 class 3K5 0...50 °C 5...95 % r. h. (non-condensing) class 3M2
	Transport to Climatic conditions Temperature Humidity Mechanical conditions	IEC 60 721-3-2 class 2K3 -25...+70 °C <95 % r.h. class 2M2
Classifications to EN 60 730	Mode of operation, automatic controls Degree of contamination, controls' environment Software class Rated surge voltage Temperature for ball-pressure test of housing	type 1B 2 A 4000 V 125 °C
Materials and colors	Terminal base Module insert Packaging	Polycarbonate, RAL 7035 (light-grey) Polycarbonate, RAL 7035 (light-grey) corrugated cardboard
Norms and standards	Product safety Automatic electrical controls for household and similar use Special requirements for energy controllers	EN 60 730-1 EN 60 730-2-11
	Electromagnetic compatibility Immunity industrial sector Emissions domestic sector, light industry	EN 61 000-6-2 EN 61 000-6-3
	 conformity to EMV directive Low-voltage directive	89/336/EEC 73/23/EEC
	 conformity to Australian EMC Framework Radio Interference Emission Standard	Radio communication act 1992 AS/NZS 3548
Weight	Excl. packaging	0.30 kg

Internal diagrams



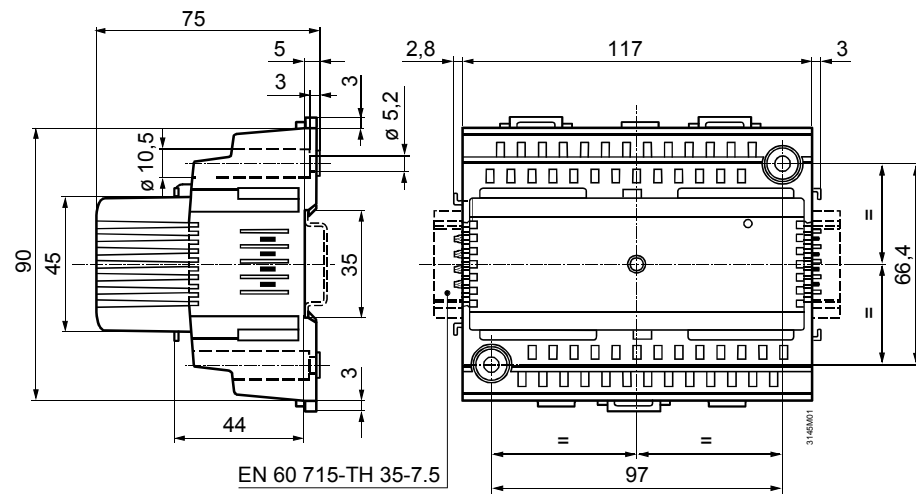
Legend

M	Measuring neutral for signal input
G0	System neutral for signal output
D1...D4	Status input for potential-free contact sensing
Q13/Q14	Potential-free relay output (N.O.) for AC 24...230 V "Pump 1A"
Q23/Q24	Potential-free relay output (N.O.) for AC 24...230 V "Pump 1B"
Q33/Q34	Potential-free relay output (N.O.) for AC 24...230 V "Pump 2A"
Q53/Q54	Potential-free relay output (N.O.) for AC 24...230 V "Pump 2B"

Notes

Each terminal (spring cage terminal) can accommodate only one solid wire or one stranded wire.
 Double terminals are internally interconnected.

Dimensions



Dimensions in mm