

RXP 200: Dual-channel, VAV master controller

How energy efficiency is improved

Spreading the heating-cooling sequence during night mode and in the case of higher outside temperatures to save energy

Areas of application

Creating a heating-cooling sequence with adjustable zone in combination with a room temperature controller, type TSP 80A, as well as a dual-channel volume flow controller, type RLP 100 F918.

Features

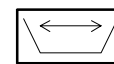
- Controller front panel is printed with circuit diagram for rapid identification of function
- Thermoplastic housing suitable for wall or top-hat rail mounting (rail EN 60715)
- Compressed-air connections with Rp 1/8" female thread
- Low-pressure connections in form of stepped nipples for flexible plastic hose (internal Ø 4 and 6 mm)
- Complies with directive 97/23/EC Art. 3.3 on pressure equipment

Technical description

- Supply pressure 1.3 bar $\pm$ 0.1
- Three inputs for:
 - outside temperature
 - room temperature
 - setpoint adjustment: 2 outputs for heating and cooling



T05181



Y05261

Type	Description	Air consumption	Weight kg
RXP 200 F001	neutral zone, expansion	40 l _n /h	0,2
Supply pressure ¹⁾	1,3 bar $\pm$ 0,1	Neutral zone NZ	0...2 K (variable)
Input pressures		Air delivery	
Connector 3 (room)	0,2...1,0 bar	Connector 2, cooling	6,5 l _n /h
with overflow	0,08...1,16 bar	Connector –, heating	none
Connector 6 (master)		Air recovery	
night expansion	at 0 bar	Connector 2, cooling	none
summer shift	at 0,6...1,3 bar	Connector –, heating	100 l _n /h
Connector +	0,2...1,0 bar	Perm. ambient temp.	0...55 °C
with overflow	0...1,3 bar		
Output pressures		Connection diagram	A05257
Connector 2, cooling	0...1,0 bar	Dimension drawing	M297240
Connector –, heating	0...1,0 bar	Fitting instructions	MV 505398

Accessories

0296936 000* Bracket for rail EN 60715, 35 $\times$ 7,5 and 35 $\times$ 15

0297354 000* Short screw-in connector R 1/8 for soft plastic tubing of internal dia. 4 mm, four pieces required

*) Dimension drawing or wiring diagram are available under the same number

1) For regulations on the quality of the air supply, especially at low ambient temperatures, see Section 60.

Operation

Together with a TSP 80A F905 controller, the master controller (P-band 10 K) forms a sequence (heating-cooling) with a variable neutral zone. The sequence is expanded (night mode and summer shift) via a command signal *w* and is fed as the setpoint to the RLP 100 F918 dual-channel VAV controller.

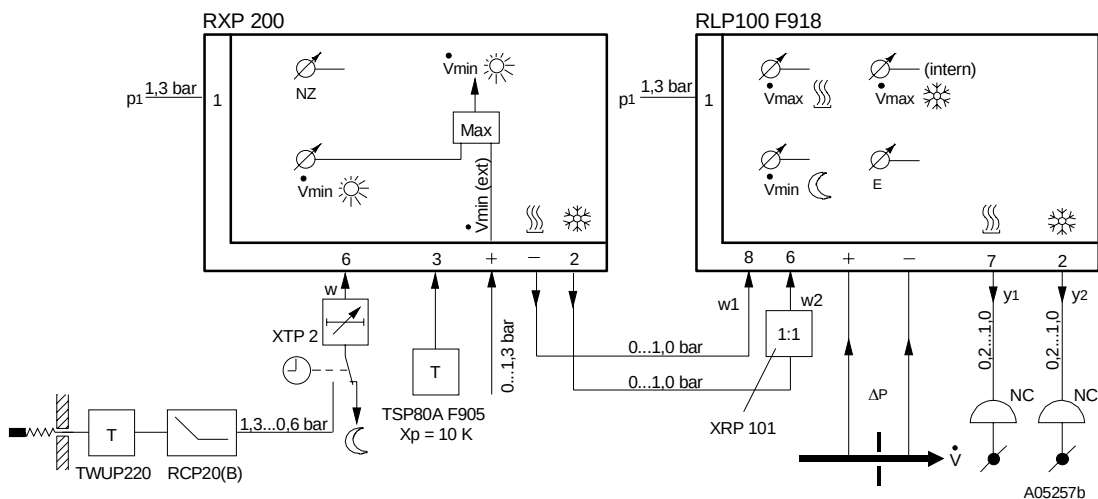
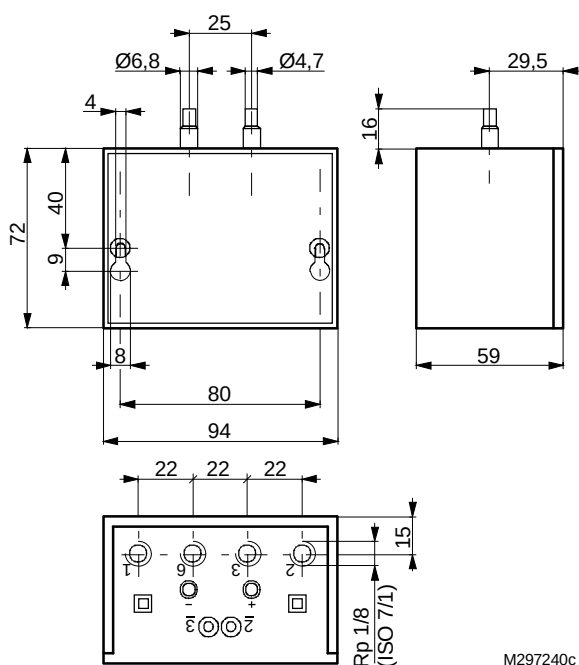
The $\dot{V}_{\min}$ adjuster allows the minimum limitation of the volume flow (day mode) to be set. When the command signal *w* at connector 6 falls to 0 bar, the minimum limitation (night mode) that has been set on the RLP comes into force. At the same time, the heating-cooling sequence is expanded. With a pressure of between 1,3 and 0,6 bar at connector 6, only the 'cooling' characteristic is shifted (summer shift in relation to the outside temperature). To prevent the change-over between daytime and nighttime modes from occurring abruptly, an XTP 2 delaying relay should be fitted to the RXP 200.

The NZ adjuster allows the neutral zone to be set. A setting of 100% produces NZ = 2 K; 90% produces NZ = 1 K; and 80% produces 0 K. Settings below 80% are inadmissible, since they would produce an overlap of heating and cooling.

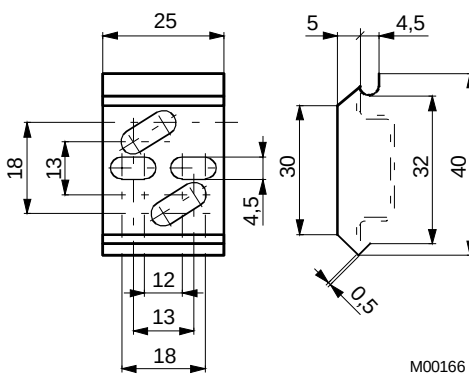
Engineering and fitting notes

The command signal (which is dependent on the outside temperature) of 1,3...0,6 bar (at connector 6) for the summer shift can be fed simultaneously to ten RXP 200 s.

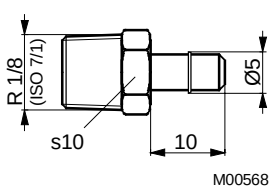
An external signal of 0...1,0 bar can be fed via the + connector; this signal lifts the set volume flow $\dot{V}_{\min}$ (day mode). With a pressure of > 1,0 bar, the volume flow is raised with priority to the value $\dot{V}_{\max}$ (cooling).

Connection diagram**Dimension drawing****Accessories**

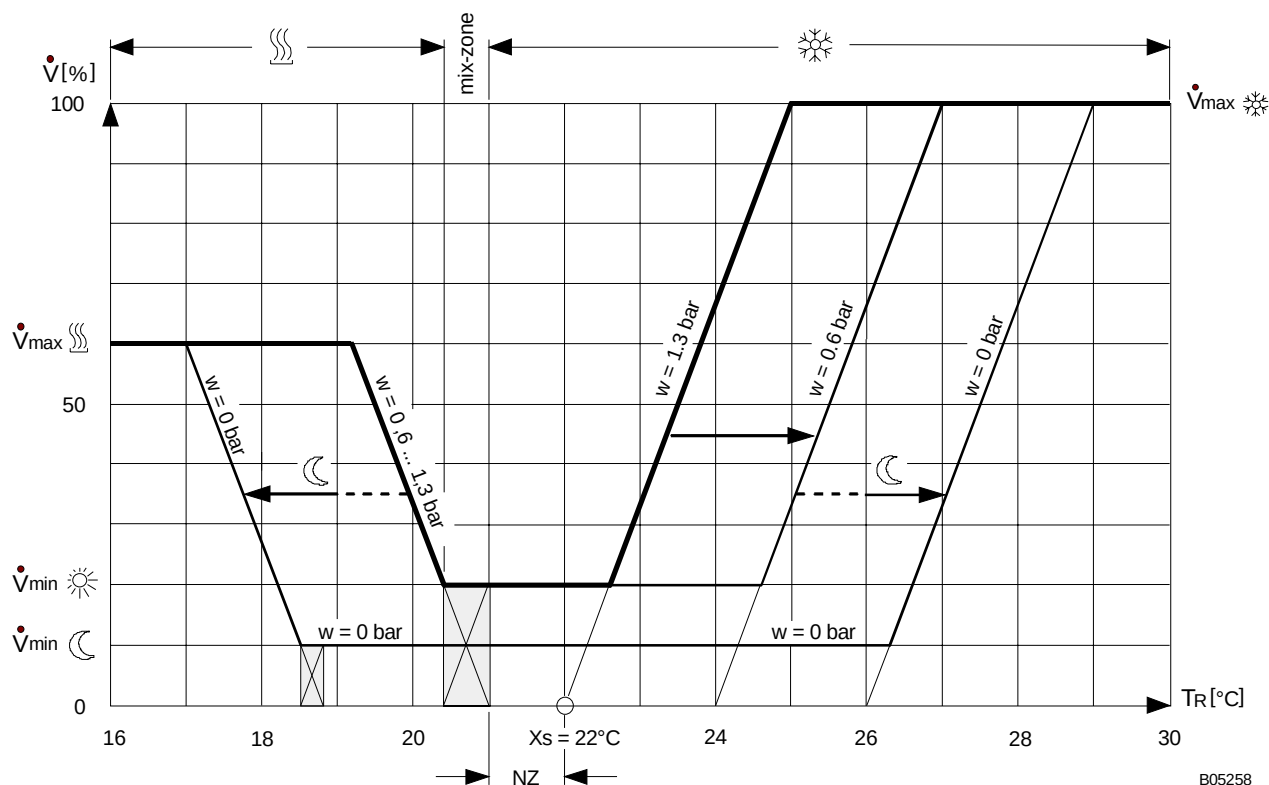
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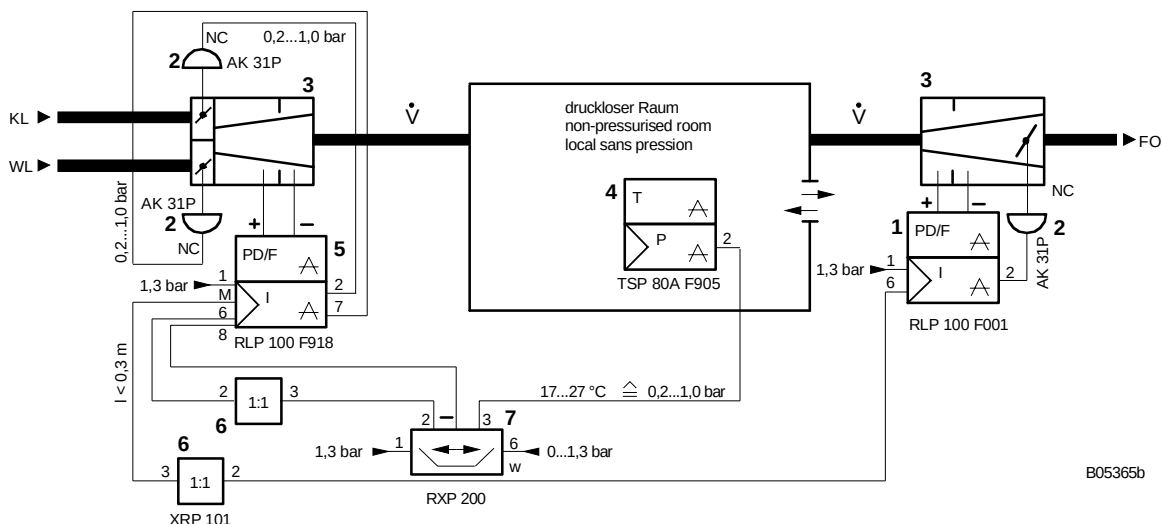
Example of use



$w = 1,3 \text{ bar}$ Normal characteristic
 $w = 1,3...0,6 \text{ bar}$ Summer shift
 $w = 0 \text{ bar}$ Night expansion
 NZ Neutral zone
 T_R Room temp.
 $\dot{V}$ Volume flow
 X_s Setpoint, room-temperature controller

Example of use

Control facility for variable air volume for dual-channel system with dual-channel VAV master controller for forming a 'heating-cooling' sequence, dual-channel VAV controller and room-temperature controller.



1	Volume-flow controller	5	Dual-channel VAV controller	KL	= cold air
2	Damper drive	6	Interface relay	WL	= warm air
3	Reducing box	7	Dual-channel master controller	FO	= EA (exhaust air)
4	Room-temperature controller				