RXP 101: Air-volume adding relay

How energy efficiency is improved
For the reliable and demand-led control of air in laboratories.

Areas of application
Synchronisation of room air in laboratories, can also be used in Zone 1 potentially explosive areas.

Features
- Maximum of 4 inputs for actual values
- Easy adjustment of exact partial air volumes using adjusters
- ATEX certification for use in Zone 1 potentially explosive areas
- Conformity tested as per EN 13463-1 and EN 1127-1 (Ex II 2 G T6)
- Compressed-air connections with Rp 1/8" female thread

Technical description
- Supply pressure 1.3 bar ± 0.1
- Four inputs for:
  - room return air
- One output for:
  - command variable signal for supply-air controller
- Setpoint adjuster for weighting partial volumes and setpoint adjustment ΔV

Y03186

Type	Function	Air capacity	Air consumption [1]	Weight kg
RXP 101 F001	addition of 4 air volumes	400 l_n/h	40 l_n/h	0,7

Supply pressure [2]	1,3 bar $\pm$ 0,1	Permissible amb. temp.	0...55 °C	
Input pressures	0,2...1,0 bar			
Output pressure	0,2...1,0 bar	Connection diagram	A03187	
Setpoint shift $\Delta \dot{V}$	3...20% $\dot{V}$	Dimension drawing	M297100	
Control action	A	Fitting instructions	MV 505207	

[1] Without transducer; air consumption for transducer connections 3, 4, 5 and 6 is 33 l_n/h each
[2] See Section 60 on regulations concerning the quality of supply air, especially at low ambient temperatures

Operation
Using the adjustment knobs (x3, x4, x5 and x6), the pressure at each of the connections 3, 4, 5 and 6 (e.g. output pressure of an RLP controller) is weighted and then added together with the others. Each of the partial air volumes can, therefore, be multiplied by a certain factor (percentage share of the total volume flow) and then, in the addition unit, be united in correct proportion to the total volume flow. Using the $\Delta \dot{V}$ adjuster (for setpoint shift), the room supply-air rate can be reduced with respect to the room exhaust-air rate, thereby affecting the under-pressure in the room. If more than four air volumes have to be converged, then a second unit can be connected. If less than four volume flows are cumulated, then the spare connections should not be closed off.

Connection diagram

Software
A calculation program is available for working out the values to be entered on the adding unit.

Dimension drawing

A calculation program is available for working out the values to be entered on the adding unit.

Example of use

Volume of return air controlled in proportion to the opening of the fume cupboard's sliding door; with sash sensor, alarm and operating unit and adding relay.

geschlossener Raum
enclosed Room
local étanche

B03837g
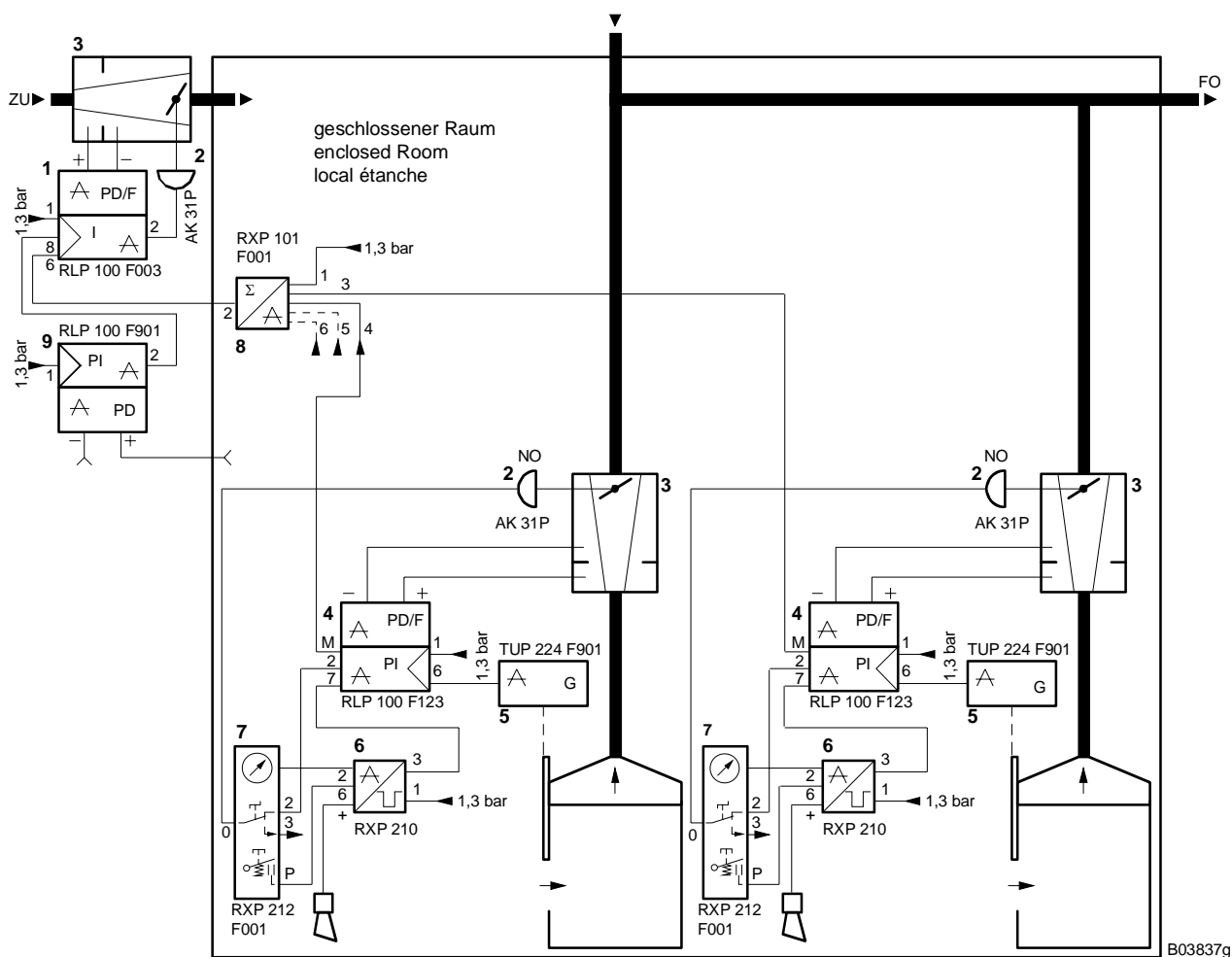
1	Volume-flow controller	7	Operating unit
2	Damper drive NO	8	Air-volume adding relay
3	Reducing box	9	Pressure controller
4	VAV return-air controller for fume cupboards	FO	EA (exhaust air)
5	Path-measuring transmitter	ZU	SA (supply air)
6	Alarm unit	NO = normally open	

Sauter Components