

## RCP 10 & 11: PI-controller

For universal use as a PI-controller in ventilation and air-conditioning systems or similar. Used in conjunction with the relevant transducers for controlling temperature, humidity, pressure and flow. Conforms to the regulations on pressure equipment (97/23/EG Art. 3.3).

Housing and insert of thermoplastic; front door of thermoplastic; front plate with the setting knobs and three covered openings for plug-in manometers (XMP); setpoint adjuster  $X_S$  can be set manually, with scales for all centair measuring ranges; all other settings are made using a coin and the %-scale; measuring connections M4; control action can be changed (factory setting is B); suitable for wall or panel mounting; compressed-air connections Rp 1/8 female thread; includes a bag of scales (297103).

Type	Description	Air capacity	Air consumption <sup>1)</sup>	Weight kg
<b>RCP 10 F001</b>	fixed-value PI-controller	400 l <sub>n</sub> /h	30 l <sub>n</sub> /h	0.7
<b>RCP 11 F001</b>	fixed-value + schedule PI controller	400 l <sub>n</sub> /h	30 l <sub>n</sub> /h	0.7
<b>RCP 10:</b>		<b>RCP 11:</b>		
Setpoint $X_S$	0...100%	Setpoint $X_S$	0...100%	
Remote adjust. of setpoint	0...100%	Remote adjustment of setpoint	0...100%	
P-band $X_{P4}$	0...100%	P-band $X_{P4}$	0...100%	
Reset time $T_n$	1...15 min	Reset time $T_n$	1...15 min	
		Shift starting point FF	0...100%	
		Influence E	0.25...3	
Supply pressure <sup>2)</sup>	1.3 bar ± 0,1	Connection diagram, RCP 10	<a href="#">A02690</a>	
Input pressures	0.2...1.0 bar	Connection diagram, RCP 11	<a href="#">A02691</a>	
Output pressures	0.2...1.0 bar	Dimension drawing	<a href="#">M297100</a>	
Permissible amb. temp.	0...55 °C	Fitting instructions	MV 3246	

### Accessories

**0297103 000** Additional bag of scales with 8 different scales according to the transducer used.

**0297133 000** Universal scales for setpoint adjuster  $X_S$ ; gradation 120, 80/160, 50/100, 30/60

<sup>1)</sup> Without transducer; air consumption for transducer connection 4 is 33 l<sub>n</sub>/h more.

<sup>2)</sup> See Section 60 on regulations concerning the quality of supply air, especially at low ambient temperatures.

### Operation

#### RCP 10 and RCP 11

The transducer at connection 4 converts the control variable into the pneumatic standard signal 0.2...1.0 bar (equivalent to 0...100%) within its measuring range. This actual-value signal  $x_{i4}$  is compared with the fixed setpoint  $X_S$ . If there is control deviation, the output pressure  $y$  is adjusted until the actual value is equal to the setpoint (PI-control). With a pressure of 0.2...1.0 bar at input 6, the setpoint can be set remotely from 0...100%. The internal setpoint setting then functions as a minimum limitation.

A restrictor (Ø 0.2 mm) for supplying the transducer is fitted at connection 4. The signals from the transducer and the output pressure can be checked via the M4 measuring connection or shown via the manometer.

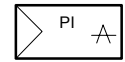
#### RCP 11: additional functions

The transducer at connection 5 converts the command variable (e.g. outside temperature) into the pneumatic standard signal 0.2...1.0 bar (equivalent to 0...100%). This signal ( $x_{i5}$ ) is fed to the command circuit which, together with the setting parameters FF and E, creates a program for the setpoint shift of the following PI-controller. The characteristic for the influence E can be placed in any of the four quadrants.

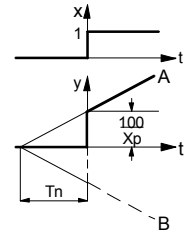
Because the outside temperature is often fed to more than one controller, the transducer at connection 5 must be supplied by a separate (Ø 0.2 mm) restrictor.



T03082



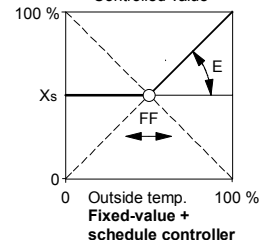
Y03248



PI-controller

B02214

Controlled value



Fixed-value + schedule controller

B03257

Additional details

RCP 10: Front plate with adjusters for setpoint, P-band and reset time.  
RCP 11: Front plate with adjusters for setpoint, P-band, reset time, influence and shift starting point.

Additional information on accessories

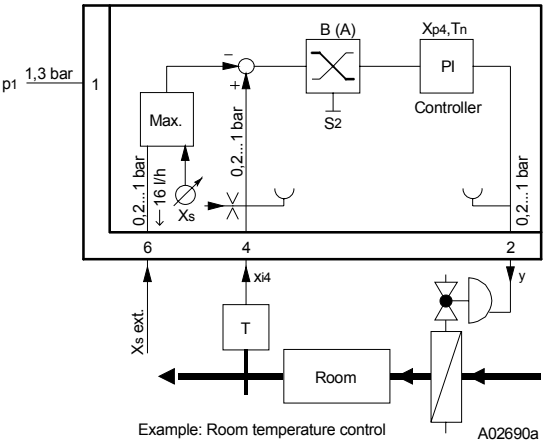
0297103 000 Additional bag of eight alternative scales  
5...35 °C      20...90 %rh  
-20...40 °C    0...5 mbar  
0...120 °C     5...10 mbar  
80...200 °C    10...15 mbar

Technical information

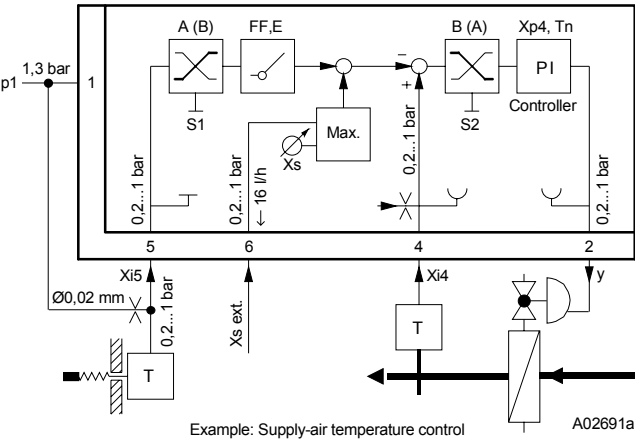
Technical manual: centair system 304991 003

Connection diagrams

RCP 10



RCP 11



1	Supply pressure	T <sub>n</sub>	Reset time	x <sub>i4</sub>	Control variable
2	Output pressure	X <sub>S</sub>	Variable setpoint	x <sub>i5</sub>	Command variable
4	Actual value for PI-controller	X <sub>P4</sub>	P-band for PI-controller	y	Output pressure
5	Command variable for fixed-value + schedule	FF	Shift starting point for fixed-value + schedule	S1	Control action for fixed-value + schedule
6	Remote setpoint adjustment	E	Influence	S2	Control action for controller

Dimension drawing

