



Type 7311 Air Control System

For use in simple control applications

Application

The Type 7311 Air Control System is suitable for use in simple control applications with one or two control loops



Fig. 1: Type 7311-02 Air Control System

Function

The Type 7311 Air Control System is suitable for use in simple control applications with one or two control loops

The Type 7311 Air Control System is used in applications in the chemical and petrochemical industries as well as for use in mechanical and plant engineering and general process engineering.

Special features

- 100 % air control system (no electric power necessary)
- PI control
- Degree of protection IP54
- Measuring ranges from 0 to 20 bar
- Temperature range from -50 to 200 °C
- Universal version as fixed set point controller
- Adjusters, switches and displays can be operated from the front
- No external set point required
- Set point input possible

Versions

The control logic is implemented by a Type 3423 Controller Module. This controller module is installed in the Type 7311 Air Control System (see ▶T 7512 and ▶T 7521).

The SAMSON Type 3812 Pneumatic Transmitter for Temperature and the SAMSON Type 3804 Pneumatic Transmitter are available for respective control tasks.

The Type 7311 Air Control System has been introduced to replace Series 420 and 430 Pneumatic Controllers.

Type 7311-01 Air Control System

- Contains one Type 3423 Controller Module
- One half of the air control system contains control components
- Version as fixed set point control for temperature or pressure control within a predefined control range

Type 7311-02 Air Control System

- Contains two identical Type 3423 Controller Modules (redundancy)
- Both halves of the air control system contain control components
- Version as fixed set point control for temperature or pressure control for each control loop within a predefined control range
- Both control loops use identical dial scales

Type 7311-03 Air Control System

Customized air control system possible. Versions:

- Special control range according to customer specifications
- External set point input/follow-up control
- Cascade control

Principle of operation

See Fig. 3

The Type 7311 Air Control System consists of one or two PI controller modules, which control the control loop based on the set point.

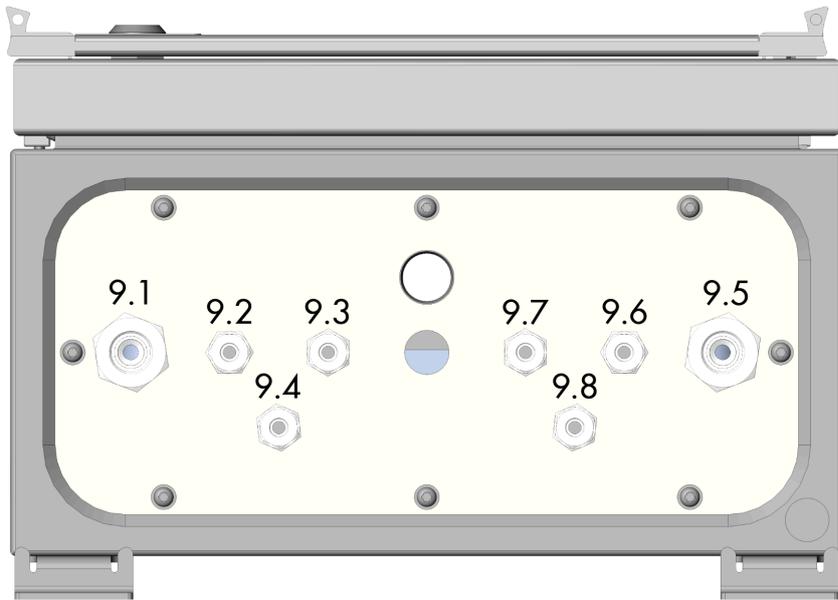
The following operating and indicating elements are used:

- The set point is adjusted at the set point adjuster (w) and its reading is displayed by a green pointer on the main display.
- The red pointer shows the actual value.
- The pneumatic control signal is read off at the yA dial.

The manual/auto switch can be used to switch to manual mode. The pneumatic control signal yH can be manually adjusted in this mode.

Table 1: Technical data

Version	7311-01	7311-02	7311-03
Quantity of Type 3423 Controller Modules	1	2	1 or 2
Set point/controlled variable display	Double Bourdon tube pressure gauge, signal range: 0.2 to 1 bar Accuracy class 1.6		
Output readings	One pressure gauge each for yH and yA: 0 to 1.6 bar Accuracy class 1.6		
Controller action	PI Fixed set point controller		PI Fixed set point, follow-up and cascade controller
Control parameters	Proportional-action coefficient $K_p = 0.2$ to 20 · Reset time $T_n = 0.03$ to 50 min.		
Input signal	0.2 to 1 bar		
Output signal	0.2 to 1 bar · Max. 0.02 to 1.35 bar		
Air output capacity	>1 Nm ³ /h		
Set point input	Local		
Supply	Supply air 6.0 bar, air consumption <0.28 Nm ³ /h	Supply air 6.0 bar, air consumption <0.56 Nm ³ /h	Supply air 6.0 bar, air consumption <0.28 Nm ³ /h per controller
Air quality acc. to ISO 8573-1	Maximum particle size and density: Class 3 · Oil content: Class 2 · Pressure dew point: Class 3 or at least 10 K below the lowest ambient temperature to be expected		
Permissible ambient temperature	-20 to 60 °C		
Degree of protection	IP54		
Dials	Standard ranges: Pressure in bar: 0 to 4, 0 to 6, 0 to 8, 0 to 10, 0 to 16, 0 to 20 Temperature in °C: -50 to +50, 0 to 100, 0 to 200		Standard ranges, special ranges on request
Set point feedback	-		Optionally with 4 to 20 mA per controller



Control loop 1	
9.1	Operating air supply
9.2	Controlled variable input
9.3	Supply air output
9.4	Output pressure
Control loop 2	
9.5	Operating air supply
9.6	Controlled variable input
9.7	Supply air output
9.8	Output pressure

Fig. 2: Connections of Type 7311

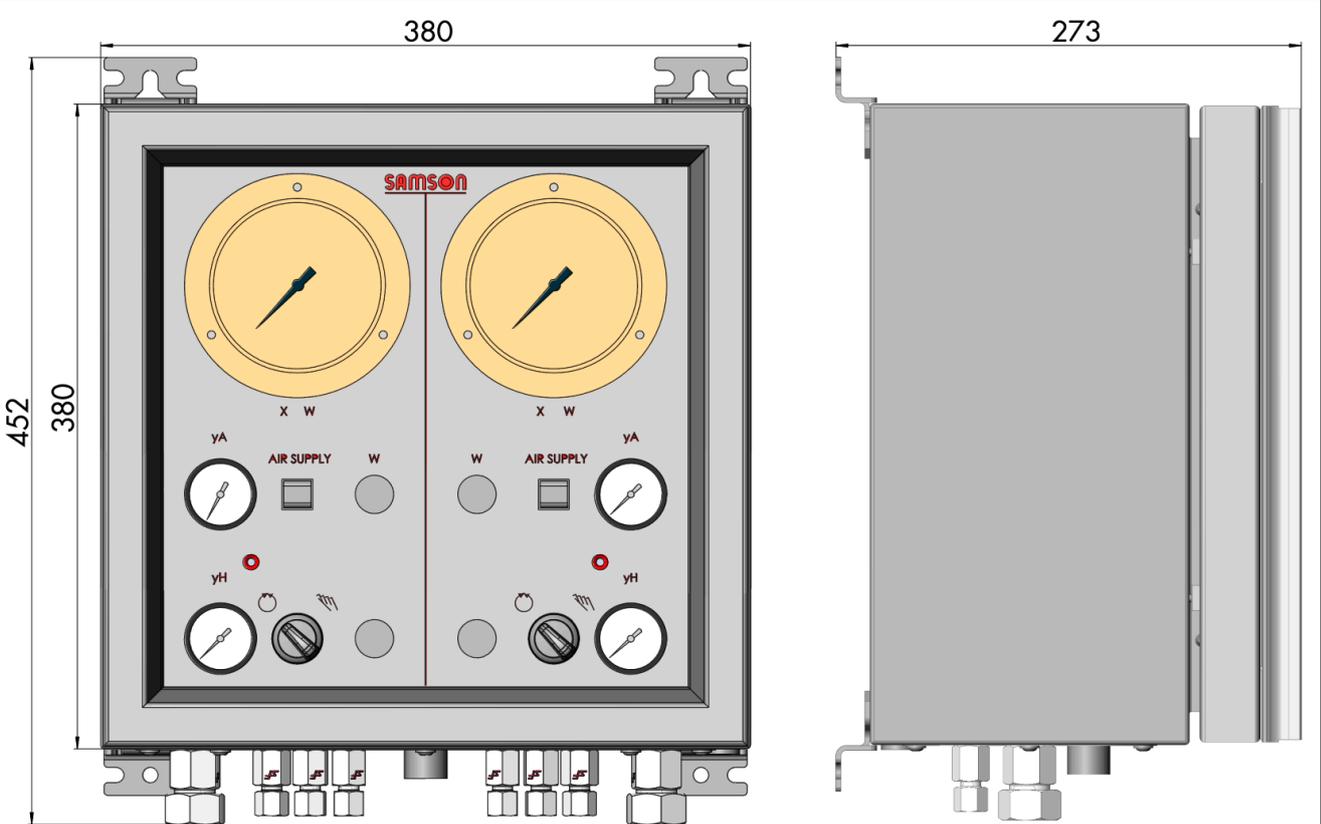


Fig. 3: Dimensions of Type 7311



RFQ Form for Type 7311 Air Control System

Customer data		
Company		
Address		
Name		
Phone number		
E-mail		
Send your inquiry to your regional SAMSON contact or e-mail it to ► systems-de@samsongroup.com.		
Version		
Type	7311-01 (one control loop) 7311-02 (two control loops) 7311-03 (according to customer specifications)	
Pressure control	Control loop 1 (for Type 7311-01)	Control loop 2 (for Type 7311-02)
	0 to 4 bar 0 to 6 bar 0 to 8 bar 0 to 10 bar 0 to 16 bar 0 to 20 bar	0 to 4 bar 0 to 6 bar 0 to 8 bar 0 to 10 bar 0 to 16 bar 0 to 20 bar
Temperature control	-50 to +50 °C 0 to 100 °C 0 to 200 °C	-50 to +50 °C 0 to 100 °C 0 to 200 °C
Selection	<div style="background-color: #cccccc; padding: 2px;">Type 7311-03</div> Fixed set point control with special scale Follow-up control (external set point input) Cascade control	
	Special scale 1 Special scale 2	
	4 to 20 mA signal (set point)	
Accessories		
Temperature transmitter	SAMSON Type 3812 (fill out RFQ form ► T 7575)	
Pressure transmitter	SAMSON Type 3804 (fill out RFQ form ► T 7540)	
Notes		