

T 7511 EN

Type 3427 Manual Control Station

Series 420

Application

For panel mounting (front frame 72x144 mm)

Manual control unit for instrumentation with separate controller or other control equipment · Automation of industrial and process plants · Fixed set point, follow-up or cascade control

The manual control unit is designed for input and output signals of 0.2 to 1.0 bar and for a supply pressure of 1.4 bar. The manual control unit is suitable for connection of the Type 3423 Controller Module (▶ T 7521) with Type 3426 Control Room Housing (▶ T 7512) as well as other pneumatic standardized controllers or corresponding control equipment. It meets the special requirements of the processing industry.

Special features

- Compact design with a mounting depth of 180 mm (260 mm installation depth)
- Set point, controlled variable and system deviation are easy to read off the vertical 100 mm-long flat scale
- All adjusters, switches and displays can be adjusted from the front
- Universal version (Type 3427-1), standard with selector switch w_{int}/w_{ext}
- Use in hazardous areas

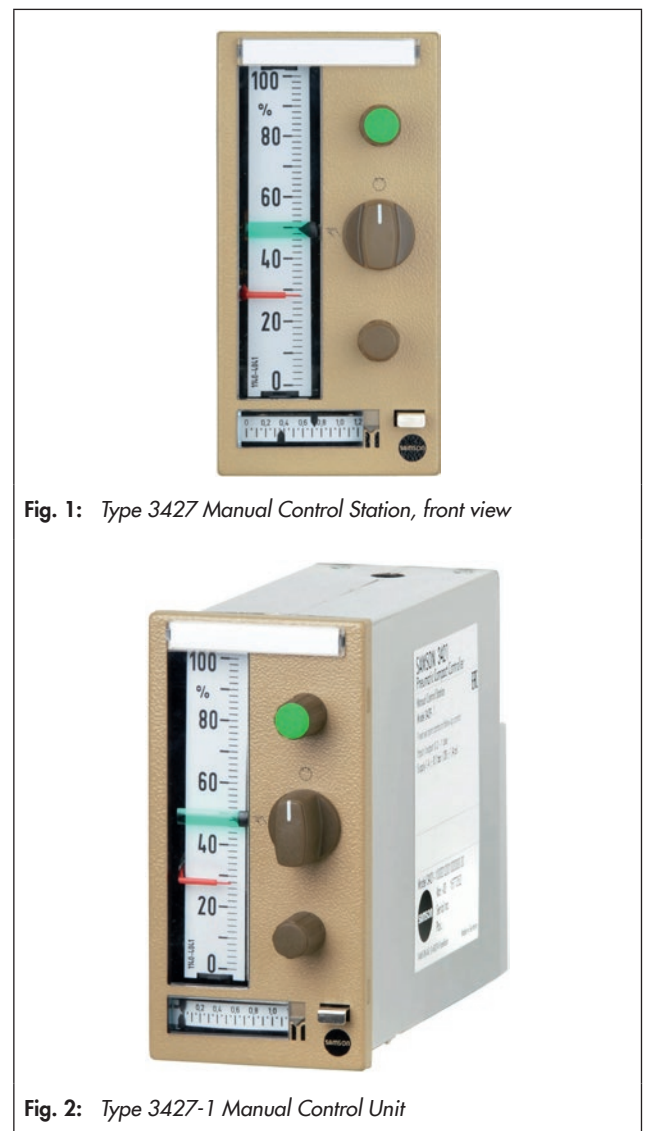


Fig. 1: Type 3427 Manual Control Station, front view

Fig. 2: Type 3427-1 Manual Control Unit

Design and principle of operation

The Type 3427 Manual Control Unit consists of a housing, plug-in unit with displays and operating controls as well as a flexible hose harness, which connects the plug-in unit to the connecting plate.

- Fig. 3 shows the displays and operating controls.
- Fig. 4 shows the functional diagram with the pneumatic circuit.
- Fig. 5 shows the pneumatic connection.

The internal set point is adjusted at the set point adjuster (5). The external set point is input at the connection w_{ext} with an input signal of 0.2 to 1 bar. The selector switch w_{int}/w_{ext} (13) is used to select the internal or external set point. The internal set point w_{int} is selected in the delivered state. The selector switch w_{int}/w_{ext} (13) is accessible after releasing the lock (11) and pulling the plug-in unit (1.2) out of the housing (1.1). The set point can be displayed at the set point display (4) and issued at the connection w as a 0.2 to 1 bar signal. The controlled variable is supplied as a 0.2 to 1 bar input signal at the connection x and displayed at the controlled variable display (3).

Set point and controlled variable are displayed on a scale with 0 to 100 % range or physical measuring range. The manual/automatic switchover (6) is used to select the manual or automatic mode. The supply pressure in manual mode (1.4 bar) and (0 bar in automatic mode) is issued at connection S.

The manual output pressure (y_H) is set at the adjuster (7) and displayed at the display (9). The automatic output pressure (y_A) is applied to the connection y_A and displayed at the display (8). Both output pressures are shown on a scale ranging between 0 and 1.2 bar. The signal pressure is issued at the connection y . The arrow symbol (12) is used to indicate the OPEN or CLOSED valve position at 100 % signal pressure.

The device is supplied with a supply pressure of 1.4 bar at connection Z. After pulling out the plug-in unit, the supply pressure can be tested at the test connection X_{test} (21) using the yellow test connector included in the scope of delivery to connect a pressure gauge using a hose with 2 mm inside diameter.

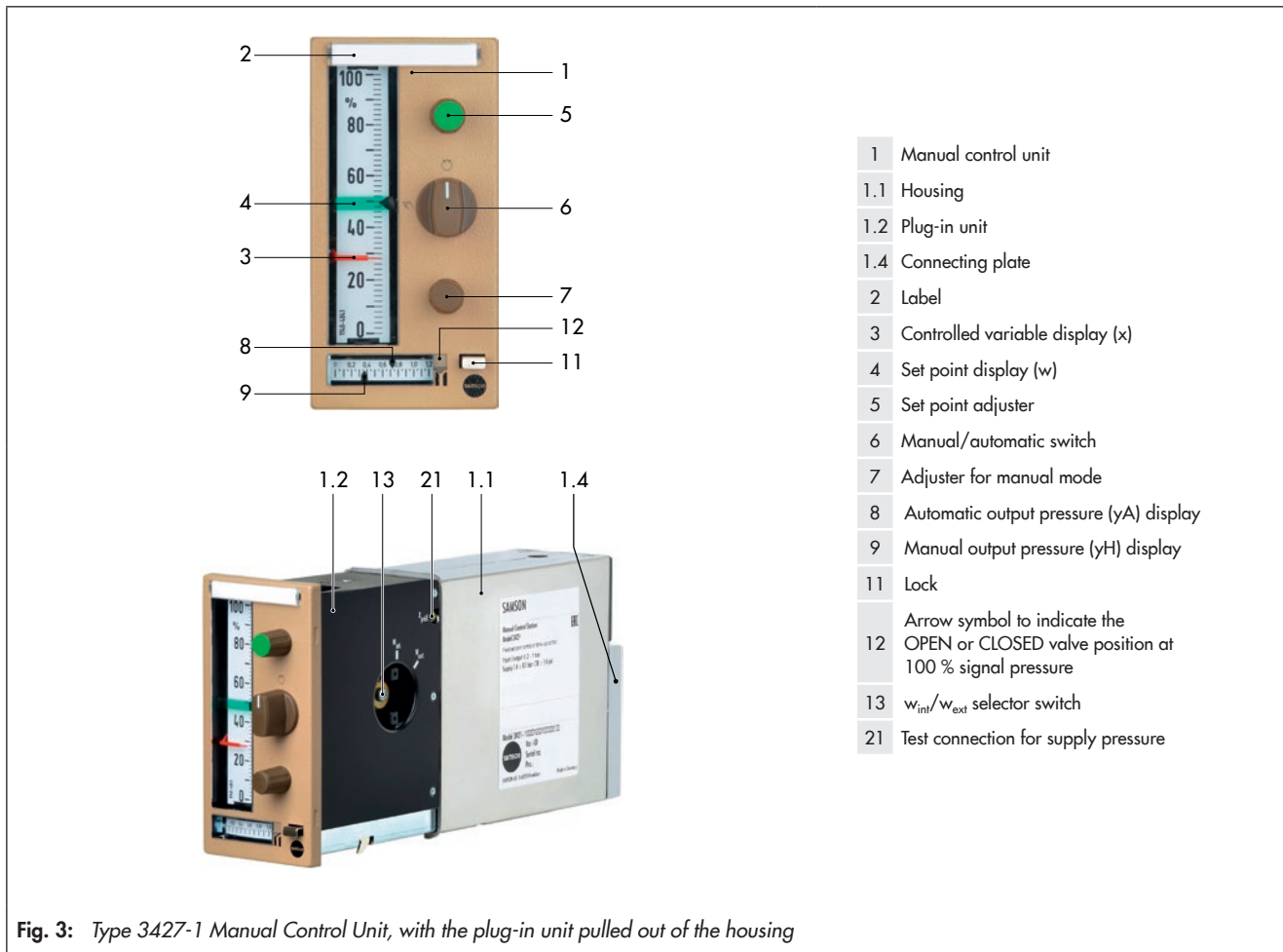
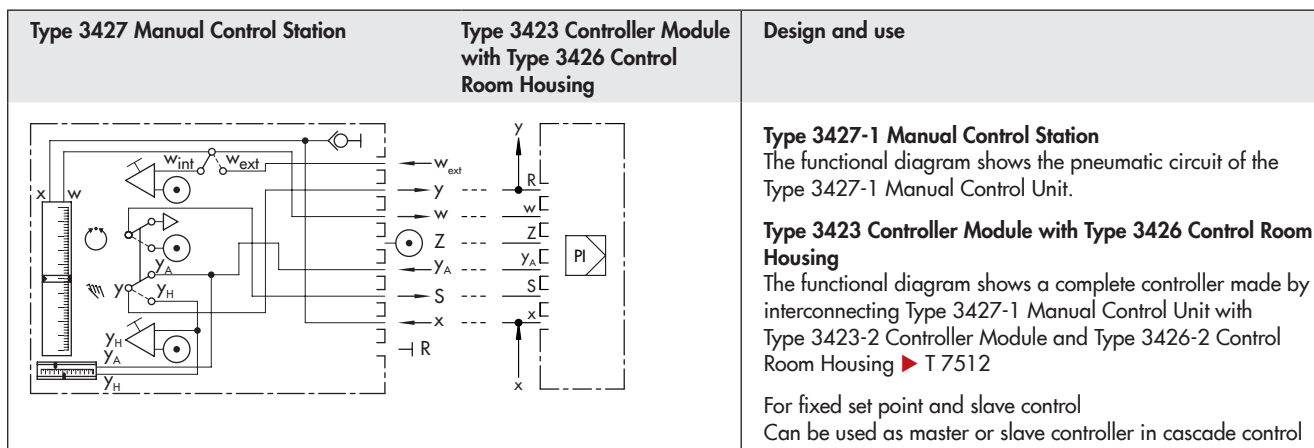


Fig. 3: Type 3427-1 Manual Control Unit, with the plug-in unit pulled out of the housing



Symbols for schematic diagram



Control circuits with Type 3427 Manual Control Unit (schematics)

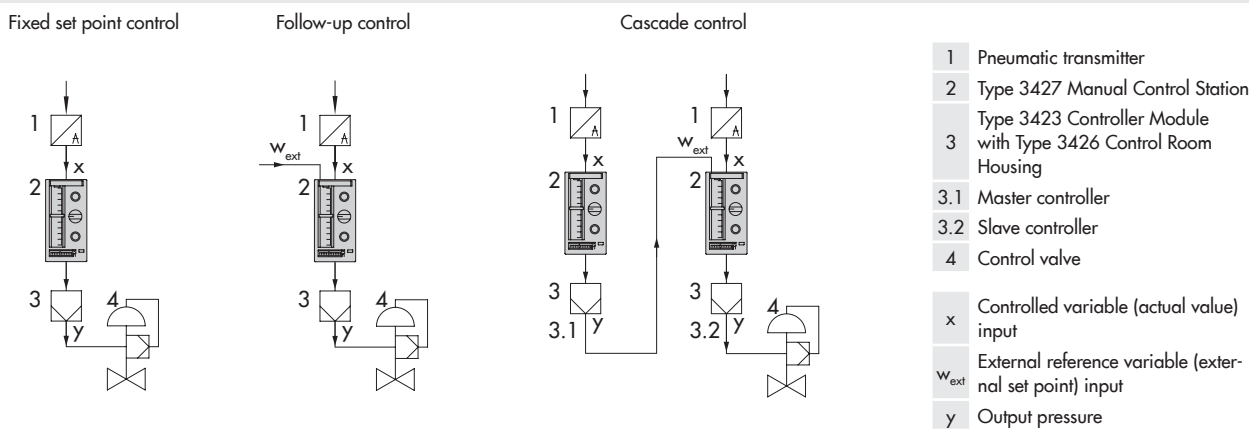


Fig. 4: Control applications

Installation and connections

Two rails are used to fasten the manual control unit in the control panel. Pneumatic line connections: threaded holes 1/8 NPT in the connecting plate

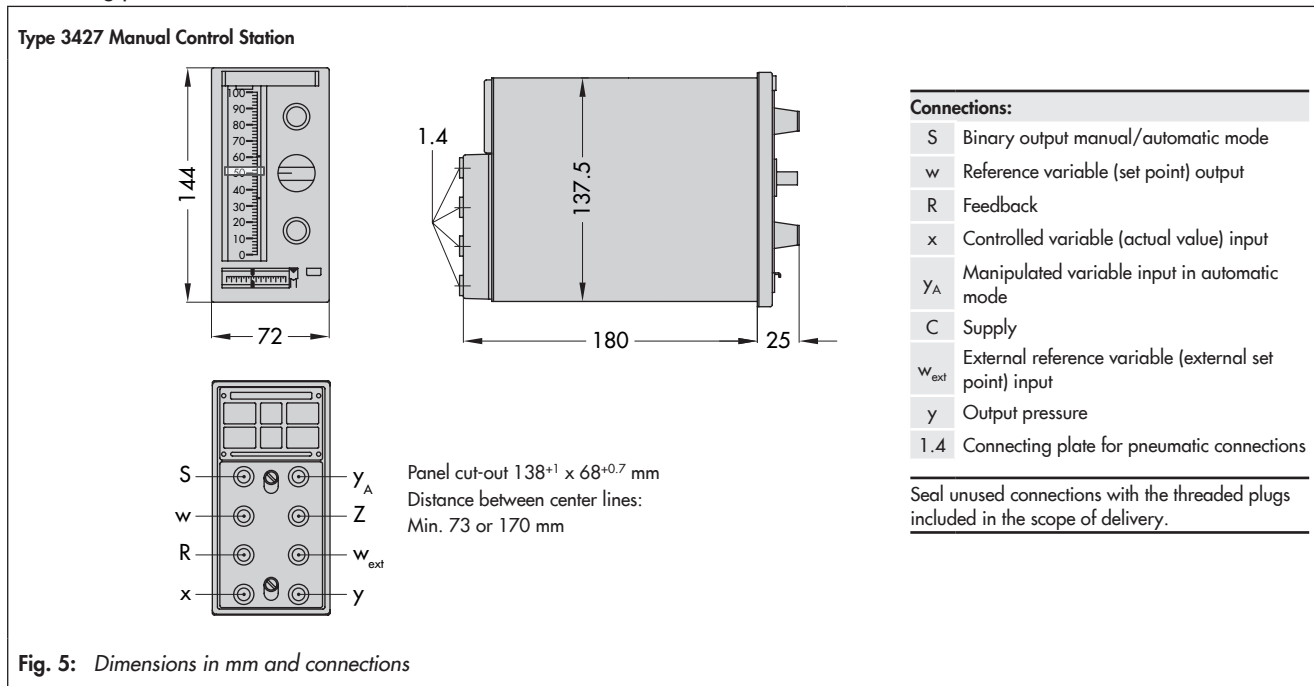



Fig. 5: Dimensions in mm and connections

Technical data

Type 3427 Manual Control Station	
Version	3427-1
Set point/controlled variable display	2 metal bellows pressure gauge, upright · Signal range: 0.2 to 1 bar · Accuracy class 1 (synchronism 0.6) Scale inscription: 0 to 100 % or special inscription with physical measuring range; length: 100 mm
Output display	2 bourdon tube pressure gauges, horizontal · Signal range: 0 to 1.2 bar · Accuracy class 2.5 Scale inscription: 0 to 1.2 bar; length: 36 mm
Adjuster for manipulated variable in manual mode	Output signal 0.2 to 1 bar · Max. 0.02 to 1.35 bar Max. air delivery $>1.5 \text{ m}_n^3/\text{h}$ · Air consumption depending on adjuster: $0.1 \text{ m}_n^3/\text{h}$
Input signal	0.2 to 1 bar
Output signal	0.2 to 1 bar · Max. 0.02 to 1.35 bar
Supply air	Supply air $1.4 \pm 0.1 \text{ bar}$ · Air consumption $<0.15 \text{ m}_n^3/\text{h}$
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 $+60 \text{ }^\circ\text{C}$
Pressure Equipment Directive	2014/68/EU, Article 4.3 (sound engineering practice)
Compliance	
Weight	Approx. 1.8 kg

Use in hazardous areas

The Type 3427 Manual Control Unit is suitable for use in hazardous areas of Zone 1 and 2 without its own EU-type examination certificate. A EU-type examination certificate according to 2014/34/EU (ATEX Directive) is not required.

Ordering text

- Type 3427 Manual Control Station
 - Type 3427-1 for 0.2 to 1 bar
 - Scale inscription: specify range and unit.