

T 7041 EN

Type 3434 Pneumatic Controller Module

Series 430

Application

Low-price controller modules for installation in Type 3430 Pneumatic Indicating Controllers

The Type 3434 Controller Modules are designed for input and output signals of 0.2 to 1 bar/3 to 15 psi and for a supply pressure of 1.4 bar/20 psi.

The connectors of the controller modules are plugged into the self-sealing sockets of the controller station and held by a fastening screw.

Versions

The controller modules feature a box-shaped comparator that operates according to the force-balance method. The proportional-action coefficient K_p can be adjusted at a restrictor within the range between 1 and 20.

Type 3434-2 (Fig. 1) · Controller module for PI control action

Details on further controller modules for P, PI, PD and PID control as well as on additional modules for special control tasks can be found in Data Sheet ► T 7040.

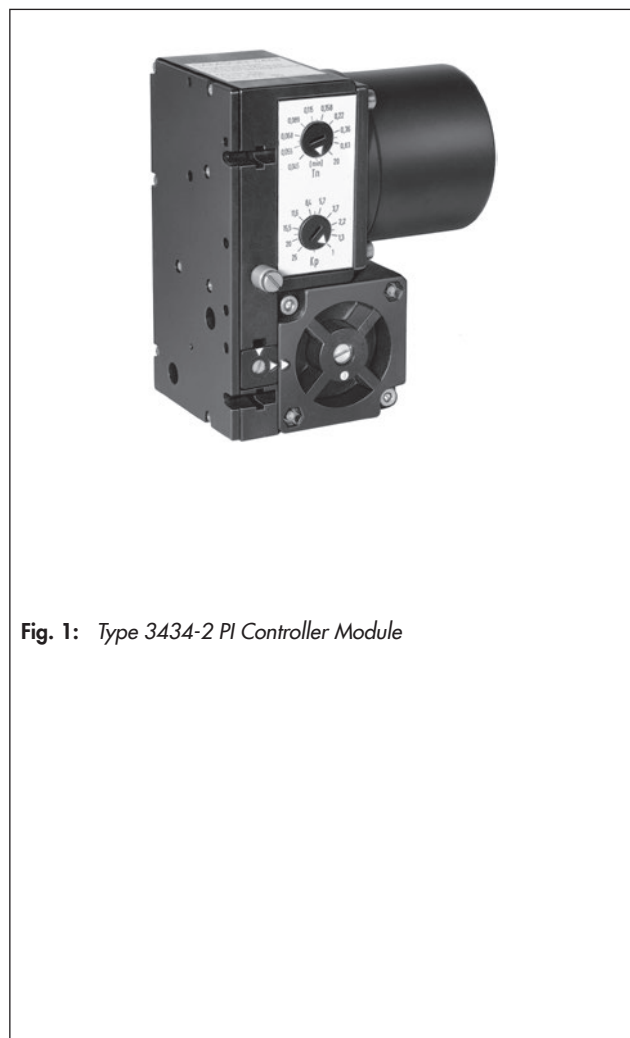


Fig. 1: Type 3434-2 PI Controller Module

Principle of operation

Type 3434-2 PI Controller Module

The controlled variable x and the reference variable w are transferred as gauge pressures between 0.2 and 1 bar/3 to 15 psi via turnboard A to the diaphragm chambers (11) and (12). When x exceeds w , the force switch (21) is lowered and opens the plug. The supply air flows into diaphragm chamber R2 and the output pressure y_A increases. The output pressure is routed over the T_n restrictor (18) into the volume of the 1:1 booster (22), whose output pressure is fed back into the diaphragm chamber. The pressures acting in the diaphragm chambers R1 and R2 equal each other. The position of the force switch changes until the controller output pressure assumes a value assigned to the controlled variable x and the adjusted proportional-action coefficient K_p , i.e. until the set point deviation is eliminated.

The proportional-action coefficient K_p is adjusted at the restrictor (14), while the reset time T_n is adjusted at the restrictor (18). The module is calibrated through zero point adjustment.

The direction of action, i.e. the output pressure increases or decreases when the controlled variable increases, is selected using turnboard A.

Ordering text

Type 3434-2 Controller Module

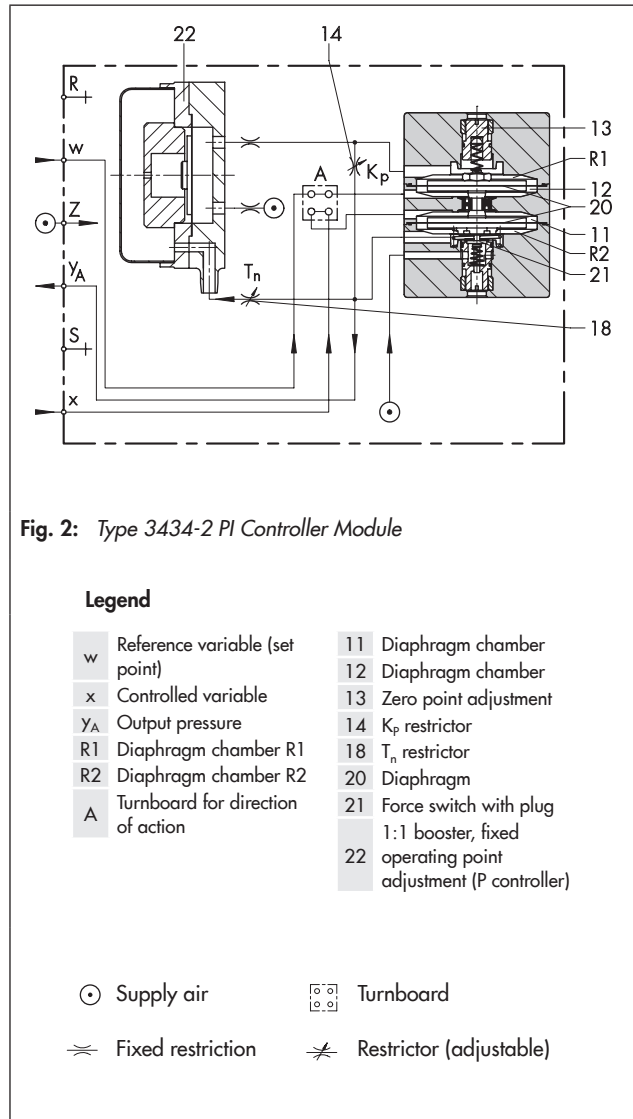


Table 1: Technical data

Controller module	Type 3434-2
Controller action	PI
Control parameters	Proportional-action coefficient $K_p = 1$ to 20 Reset time $T_n = 0.05$ to 20 min.
Input	0.2 to 1.0 bar/3 to 15 psi
Output	0.2 to 1.0 bar/3 to 15 psi · Max. 0.02 to 1.35 bar/0.3 to 19 psi
Max. air output capacity	$>1.5 \text{ m}_n^3/\text{h}$
Supply air	Supply air 1.4 bar/20 psi
Air consumption in steady state	$<0.12 \text{ m}_n^3/\text{h}$
Alignment offset	$<1 \%$
Tracking error	$<1 \%$
Dead band	$<0.01 \%$
Effect of supply air at 1.4 ± 0.1 bar	$<\pm 0.1 \%$
Effect of temperature	$<0.1 \%/^\circ\text{C}$
Permissible ambient temperature	-20 to $+60 \text{ }^\circ\text{C}$
Weight, approx.	0.7 kg