

**Series 430****i/p Converter Module Type 6112****Application**

Electropneumatic converter unit for Type 3431 and Type 3432 Controller Stations



The electropneumatic converter modules convert electric input signals into a pneumatic standardized signal (0.2 to 1.0 bar or 3 to 15 psi). They are designed for a supply pressure of 1.4 bar or 20 psi.

**Versions**

**Type 6112-02** (Fig. 1) · i/p converter module for installation in Type 3431 and Type 3432 Controller Stations

**Input**

Load-independent direct current signal 4 to 20 mA, 0 to 20 mA, or 1 to 5 mA

**Output**

Pneumatic standardized signal 0.2 to 1 bar (3 to 15 psi)

The i/p converter module is optionally available with an i/p converter for the controlled variable  $x$  and/or an i/p converter for the external reference variable  $w_{ext}$ . Not applicable in connection with Type 3434 Controller Station.

**Type 6112-22** · i/p converter module like Type 6112-02, but with Ex II 2G EEx ia II C T6 explosion protection

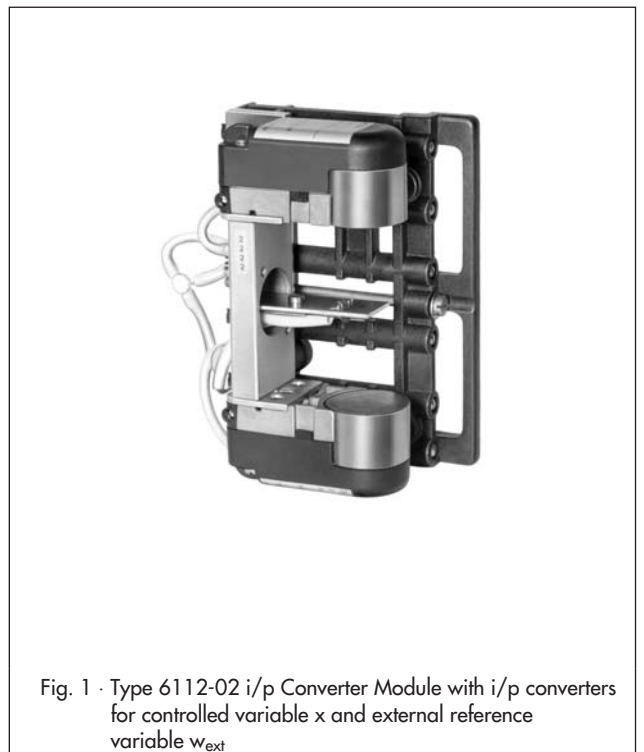


Fig. 1 · Type 6112-02 i/p Converter Module with i/p converters for controlled variable  $x$  and external reference variable  $w_{ext}$

**Ordering text****i/p Converter Module Type 6112-02/6112-22**

For controlled variables  $x$  and/or  $w_{ext}$

Input 4 to 20 mA/0 to 20 mA/1 to 5 mA

Output 0.2 to 1 bar/3 to 15 psi

Supply pressure 1.4 bar/20 psi

**Principle of operation**

**Type 6112-02 i/p Converter Module (Fig. 2)**

The input direct current  $i$  supplied over the male connector flows through a plunger coil (2) located in the field of a permanent magnet (1). A balance beam (3) is used to balance the force of the plunger coil, which is proportional to the current  $i$ , and the back pressure force produced by the jet hitting the flapper (7). The supply air flows through the restriction (8) and nozzle (6) before hitting the flapper (7).

When the input current  $i$  and thus the plunger coil force increase, the flapper (7) moves closer to the nozzle (6). As a result, the back pressure and output pressure increase as well. The back pressure continues to rise until a new equilibrium is achieved and the output pressure corresponds to the input current  $i$ .

- |   |                  |    |                   |
|---|------------------|----|-------------------|
| 1 | Permanent magnet | 6  | Nozzle            |
| 2 | Plunger coil     | 7  | Flapper           |
| 3 | Balance beam     | 8  | Restriction       |
| 4 | Universal joint  | 9  | Damper            |
| 5 | Spring           | 10 | Protective diodes |

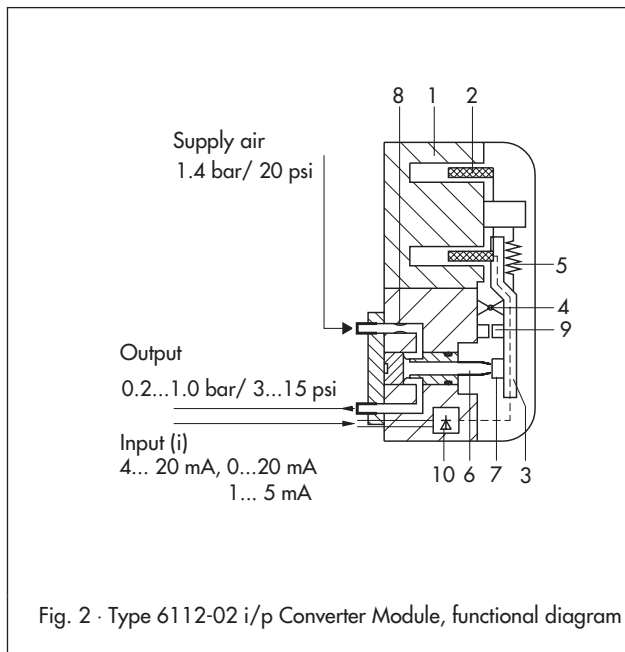


Fig. 2 · Type 6112-02 i/p Converter Module, functional diagram

**Table 1 · Technical data**

i/p Converter Module		
Type 6112-02	Without explosion protection	Input impedance 200 Ω and ~ 5.9 mH (for 1 to 5 mA input: 880 Ω and ~ 26.5 mH)
Type 6112-22	With explosion protection	Intrinsically safe input current circuit <sup>1)</sup> Input impedance 200 Ω (880 Ω for 1 to 5 mA input) and ~ 0 mH <sup>1)</sup>
Explosion protection		Ex II 2 G EEx ia II C T6
Input		4 to 20 mA, 0 to 20 mA, or 1 to 5 mA
Output		0.2 to 1 bar (max. 0.02 to 1.35 bar) or 3 to 15 psi (max. 0.3 to 18 psi)
Supply air		1.4 ± 0.1 bar (20 ± 1.5 psi), air consumption < 0.1 m <sub>n</sub> <sup>3</sup> /h
Characteristic Effects		Linear
		Hysteresis ≤ 0.1 % · Deviation from terminal-based conformity ≤ 0.3 % (fixed set point)
	Supply air	0.2 %/0.1 bar
	Ambient temperature	< 0.02 %/°C
Permissible ambient temperature		-20 to +60 °C <sup>1)</sup>

<sup>1)</sup> For details (e.g. on permissible temperatures, effective internal capacitance, and inductance) refer to EC type examination certificate

**Table 2 · Certificates**

**List of received explosion protection certificates for Type 6112 i/p Converter Module**

Certification type	Certification number	Date	Comments
EC Type Examination Certificate	PTB 00 ATEX 2021	2000-02-18	Ex II 2 G EEx ia II C T6

The certificate is included in the mounting and operating instructions or can be requested from SAMSON.

Specifications subject to change without notice.



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