Series 430
i/p Converter Module Type 6112

Application
Electropneumatic converter unit for installation into Type 3430 Pneumatic Controllers

The electropneumatic converter modules convert electric input signals into a pneumatic 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 3430 Pneumatic Controllers

Input
Load-independent direct current signal 4 to 20 mA or 0 to 20 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}. Only in conjunction with Type 3433 Controller Module.

Type 6112-22 · i/p converter module like Type 6112-02, but with Ex II 2G EEx ia IIC T6 explosion protection according to ATEX.

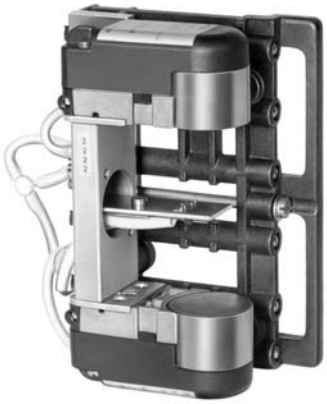

Fig. 1 · Type 6112-02 i/p Converter Module with i/p converters for controlled variable x and external reference variable w_{ext}

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
Output 0.2 to 1 bar/3 to 15 psi
Supply pressure 1.4 bar/20 psi

Associated Information Sheet T 7030 EN
Associated Data Sheets T 7032 EN to T 7038 EN
Edition March 2007

Data Sheet **T 7045 EN**

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

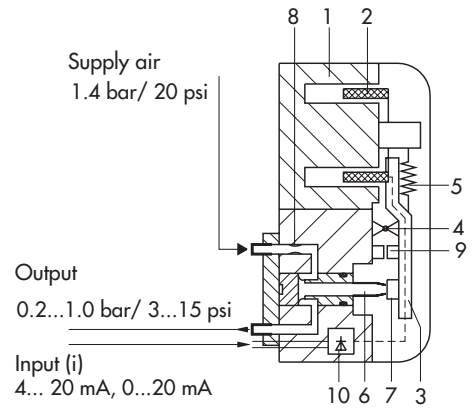

Fig. 2 · Type 6112-02 i/p Converter Module, functional diagram

Table 1 · Technical data

i/p Converter Module		
Type 6112-02	Without explosion protection	Input impedance 200 Ω and ~ 5.9 mH
Type 6112-22	With explosion protection	Intrinsically safe input current circuit [1] · Input impedance 200 Ω and ~ 0 mH [1]
Explosion protection		Ex II 2G EEx ia IIC T6
Input		4 to 20 mA or 0 to 20 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_n^3/h
Characteristic Effects		Output linear to input Hysteresis ≤ 0.3 % · Deviation from terminal-based conformity ≤ 0.1 % (fixed set point)
	Supply air	0.1 %/0.1 bar
	Ambient temperature	< 0.03 %/°C
Permissible ambient temperature		–20 to +60 °C [1]

[1] For details (e.g. on permissible temperatures, effective internal capacitance and inductance) refer to EC type examination certificate

Table 2 · Certificates

List of 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 2G EEx ia IIC T6

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

Specifications subject to change without notice.

SAMSON AG · MESS- UND REGELTECHNIK
Weismüllerstraße 3 · 60314 Frankfurt am Main · Germany
Phone: +49 69 4009-0 · Fax: +49 69 4009-1507
Internet: http://www.samson.de