SmartGen

MAKING CONTROL SMARTER

SGPT110A-0.4

FRESHWATER PRESSURE TRANSMITTER

USER MANUAL

郑州众智科技股份有限公司

SMARTGEN(ZHENGZHOU)TECHNOLOGY CO.,LTD.

SmartGen Registered trademark
No. 28 Xuemei Street, Zhengzhou, Henan, China
Tel: +86-371-67988888/67981888/67992951
+86-371-67981000(overseas)
Fax: +86-371-67992952
Web: www.smartgen.com.cn/
www.smartgen.cn/
Email: sales@smartgen.cn

Table 1 Software Version

Date	Version	Content
2025-01-02	1.0	Original release.

Table 2 Sign Instruction

Sign	Instruction
NOTE	Highlights an essential element of a procedure to ensure correctness.
CAUTION!	Indicates a procedure or practice, which, if not strictly observed, could result in damage or destruction of equipment.
WARNING!	Indicates error operation may cause death, serious injury and significant property damage.

CONTENTS

1 OVERVIEW

SGPT110A-0.4 piezoresistive freshwater pressure transmitter adopts the element of silicon piezoresistive sensor based on MEMS(micro-electromechanical system) technology, which is enclosed in the stainless steel (304) casing, and the external pressure is transferred to the sensitive element through the 316L stainless steel diaphragm and the internal filling silicone oil. With premium performance of compatibility, stability, reliability and accuracy, it can be used to measure all applications with pressure media, such as gas and liquid, which is compatible with 316L stainless steel.

2 PERFORMANCE AND CHARACTERISTICS

a. Measuring range: (0~0.4)MPa;
b. Two-wire standard output: 4mA~20mA;
c. Wide working temperature range: (-40°C~+125°C), with temperature compensation and common mode rejection functions;
d. Whole stainless steel structure;
e. O-shape gasket;
f. Standard threaded pressure measurement method;
g. Pluggable connection, small in size, and low power consumption.

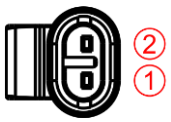
3 SPECIFICATION

Table 3 Performance Parameter

Item	Content
Measuring range	(0~0.4)MPa
Overload capacity	250% Full Scale Pressure
Pressure type	Gauge pressure
Measuring dielectric	Gas and liquid which is compatible with 316L stainless steel
Comprehensive accuracy	Class 0.5
Working temperature	-40°C~+125°C
Compensation temperature	-10°C ~+70°C
Power supply range	DC 12V~36V (DC 24V)
Signal output	4mA ~20mA
Load resistance	$R_L \leq (V_{power} - 7.5V)/20mA$
Enclosure protection	IP65
Safety and explosion prevention	EXIA II CT5
Thread and enclosure	Stainless steel 304
O-shape gasket	Fluororubber
Transmitter diaphragm	Stainless steel 316L
Weight	0.22kg

4 TERMINAL CONNECTION DESCRIPTION

Table 4 Terminal Description

	Port	Description	Color
	①	Positive of power: V+	Red
	②	4mA~20mA output: OUT	Blue

5 TYPICAL APPLICATION

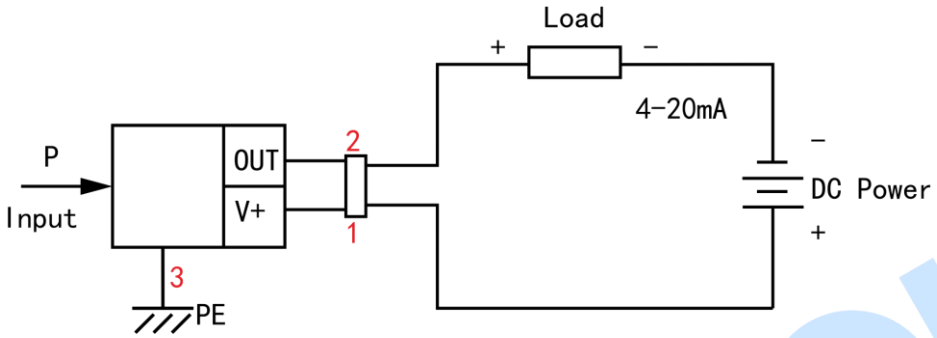


Fig.1 SGPT110A-0.4 Typical Application Diagram

NOTE: 1: Power V+, 2: 4mA~20mA output, 3: Enclosure ground.

6 OVERALL AND CUTOUT DIMENSIONS

Unit: mm

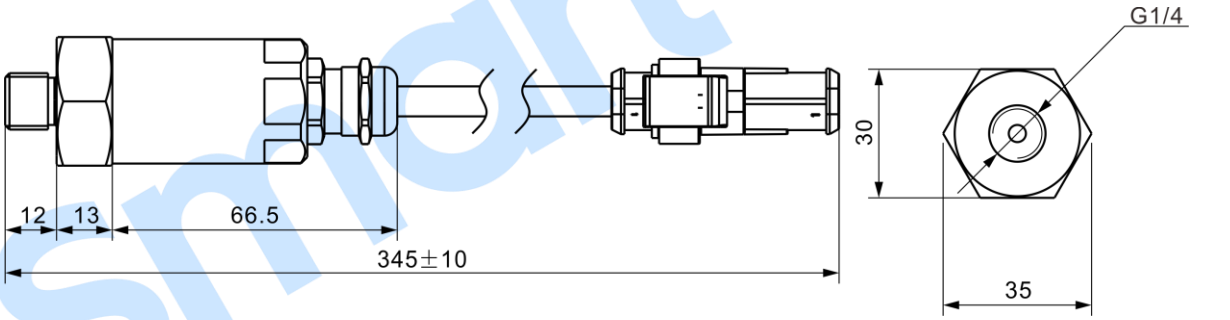


Fig.2 Overall and Cutout Dimensions

7 INSTALLATION STRUCTURE

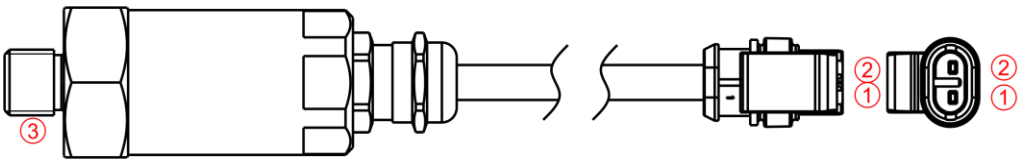


Fig.3 Installation Structure

NOTE: ①: Power V+, ②: 4mA~20mA output, ③: Enclosure ground.

8 PRECAUTIONS AND NOTES

a) During installation ensure that measuring range and wiring is correct.
b) The enclosure of the pressure transmitter should usually be connected to the ground; signal cable and power cable must not be crossed over; strong electromagnetic interference around the transmitter must be avoided.
c) Transmitter in use must be regularly calibrated according to the industry standards.
d) Do not expose the transmitter to overpressure for a long time.
e) Do not throw foreign bodies into the pressure transmitting hole, which can influence measurement results.
f) Avoid transmitter contact with over-corrosive or overheated medium.
g) During liquid pressure measurement, transmitter must not be installed to the place exposed to liquid impact (water hammer phenomenon) in order to avoid damage.
h) During liquid pressure measurement, pressure tappings must be opened from the side of pipeline in order to avoid sediment slag accumulation.