

# SmartGen

MAKING CONTROL SMARTER

## SGPT110A 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/](http://www.smartgen.com.cn/)

[www.smartgen.cn/](http://www.smartgen.cn/)

Email: [sales@smartgen.cn](mailto:sales@smartgen.cn)

All rights reserved. No part of this publication may be reproduced in any material form (including photocopying or storing in any medium by electronic means or other) without the written permission of the copyright holder.

SmartGen reserves the right to change the contents of this document without prior notice.

**Table 1 Software Version**

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

**Table 2 Sign Instruction**

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

SmartGen

## CONTENTS

|  |   |
|--|---|
| 1 OVERVIEW.....                        | 5 |
| 2 PERFORMANCE AND CHARACTERISTICS..... | 5 |
| 3 SPECIFICATION.....                   | 5 |
| 4 TERMINAL CONNECTION DESCRIPTION..... | 6 |
| 5 TYPICAL APPLICATION.....             | 6 |
| 6 OVERALL AND CUTOUT DIMENSIONS .....  | 6 |
| 7 INSTALLATION STRUCTURE .....         | 6 |
| 8 PRECAUTIONS AND NOTES .....          | 7 |

SmartGen

## 1 OVERVIEW

**SGPT110A piezoresistive 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: (0~1)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                 | (0~1)MPa   |
| Overload capacity               | 200% 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

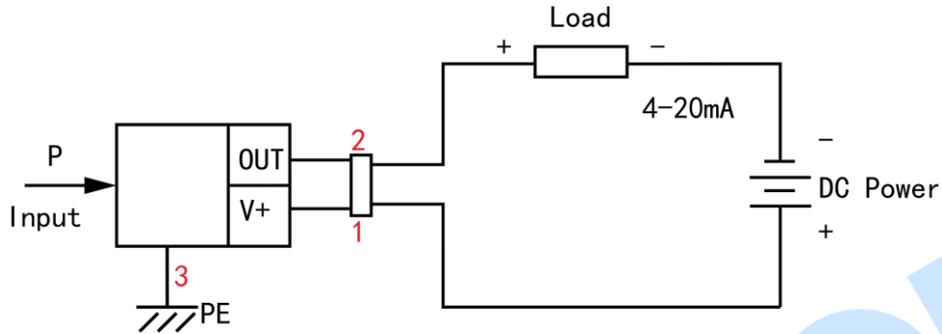


Fig.1 SGPT110A-0.4 Typical Application Diagram

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

6 OVERALL AND CUTOUT DIMENSIONS

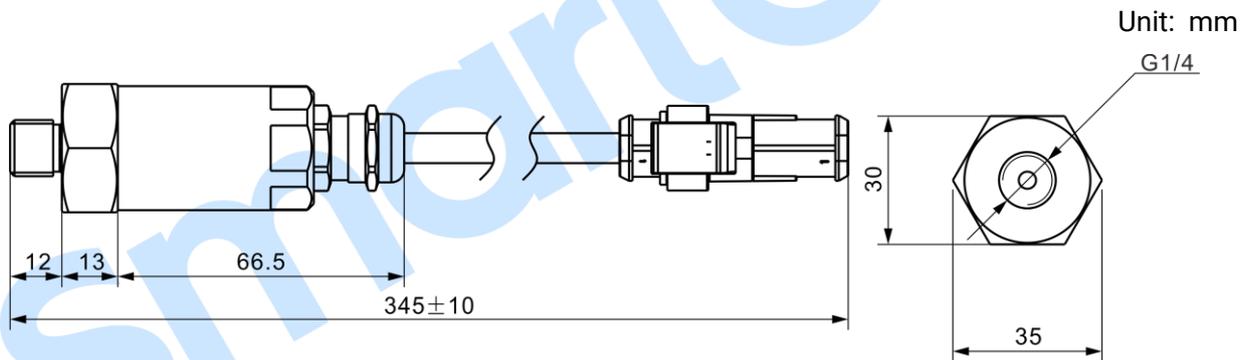


Fig.2 Overall and Cutout Dimensions

7 INSTALLATION STRUCTURE

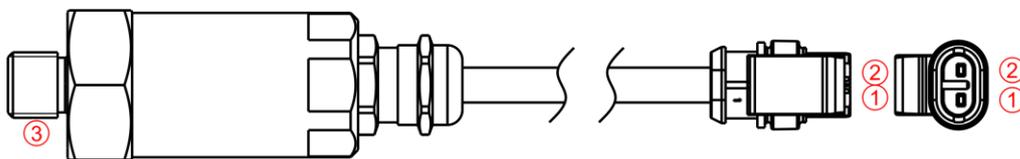


Fig.3 Installation Structure

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 tapings must be opened from the side of pipeline in order to avoid sediment slag accumulation.

---

SmartGen