

EST340 Ceramic Capacitive Pressure Transmitter

Product Introduction

EST340 is kind of ceramic pressure transmitter, based on the capacitive measuring principle, EST340 use dry capacitive ceramic sensor with high-purity **(99.9%) Al₂O₃ ceramic diaphragm**, the sensor substrate and the diaphragm serve as components of a capacitor.

By using a high-purity ceramic **(99.9% pure ceramic substrate)**, EST340 is both **extremely resilient and chemically resistant**, so it can be used in water applications as well as in waste water and chemical, corrosive or biogas plants.

The robust construction of EST340 means that corrosion caused by aggressive media or “careless” servicing actions can largely be avoided.

Furthermore, it offers a high level of overload capacity and can withstand possible pressure pulsations. Despite its mechanic robustness, our ceramic pressure sensor is extremely precise with high measuring sensitivity. This means that even very low filling heights (starting from 20 cm, for example) can be recorded reliably and accurately.

EST340 capacitive ceramic pressure transmitter provides either an analogue or a digital output signal with which different analogue or digital interfaces can be implemented.



Highlight Features

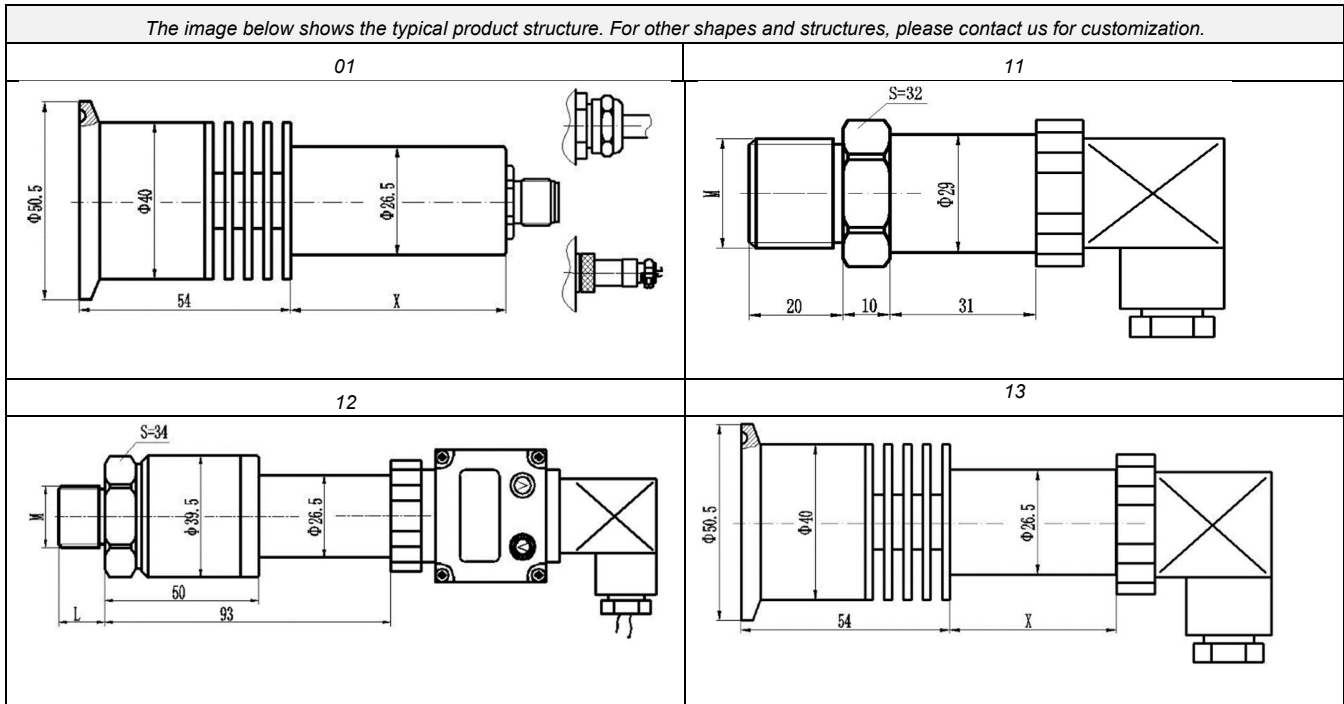
- **Pressure Range:** -1bar... 0bar~0.1bar ... 70bar
- **Electrical Connection:** DIN43650, Direct Cable
- **Accuracy:** ±0.1%/FS; ±0.25%/FS ±0.5%/FS;
- **Output:** 4mA~20mA, 0V~10VDC, I2C, RS485
- **Response Time:** ≤3ms (10%-90%)
- **Medium:** Compatible with SS304/316/Ceramic

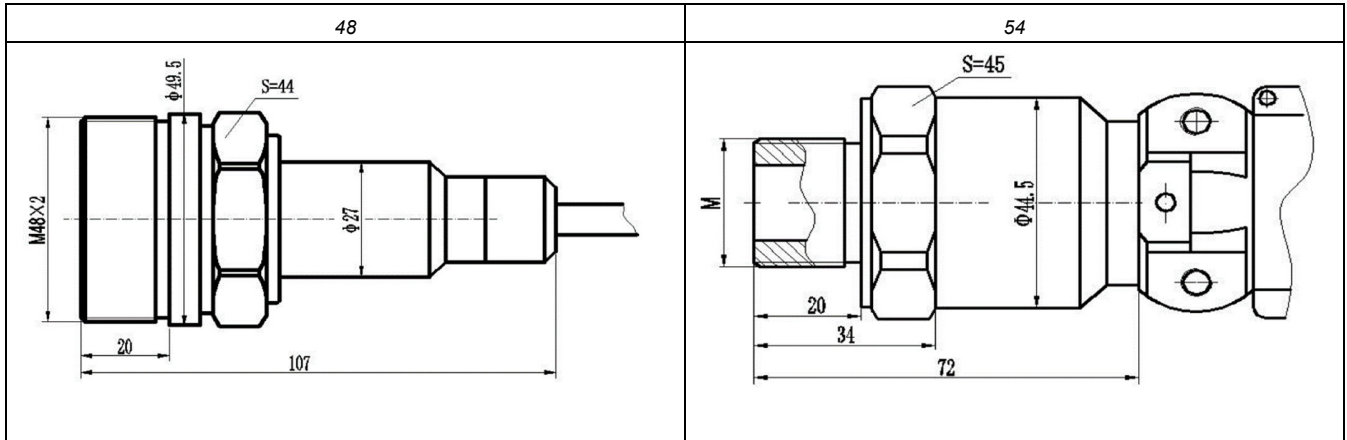
Electrical Connections and Dimensional Drawings

Electrical Specification		
Current Type(2-wire)	4-20mA	12V-30VDC
Voltage Type (3-wire)	0-5V	6V-24VDC
	0-10V	12V-30VDC
I2C(4-wire)	I2C	3.3V-5VDC
RS485 (4-wire)	RS485	5V-30VDC
Load resistance(Ω): Current type(2-wire); $R \leq (U-10)/0.02-RD$ (U: power voltage; RD: Internal resistance of cable)		
Current consumption:		


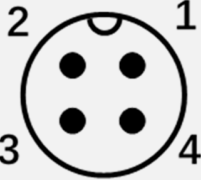
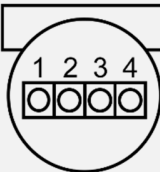

<ul style="list-style-type: none"> Current type (2-wire): < 23mA Voltage type (3-wire): < 5mA 	<ul style="list-style-type: none"> I2C (4-wire): < 1.3mA (Optional Low Consumption: < 5 μ A) RS485 (4-wire): < 5mA (low consumption 1.1mA) 		
Precision Specification			
Reference Accuracy (°C.)	0.1	0.25	0.5
Non-linearity	<=0.1%	<=0.2%	<=0.4%
Hysteresis	<=0.05%	<=0.05%	<=0.1%
Repeatability	<=0.05%	<=0.05%	<=0.1%
Long-term Stability (%FS)	<=0.1%	<=0.2%	<=0.5%
	<i>Including Linearity Hysteresis+ Repeatability from zero; Square root output accuracy=1.5X of the linear</i>		
Temperature. Drift @ Zero	<=0.01%	<=0.03%	<=0.05%
Sensitivity. Drift @ Zero	<=0.01%	<=0.03%	<=0.05%
	<i>Reference Temperature: 20~25 °C; relative humidity: 45%RH~75%RH; Voltage: 24V±0.24V; 5V±0.05V</i>		
Environment & Working Conditions			
Compensation Temperature	0°C ~ +50°C (≤200kPa) , -10°C ~ 60°C (>200kPa)		
Measuring Temperature	-20°C ~ +85°C (regular type) / -20°C ~ +150°C (with heat radiator)		
Storage Temperature	-40°C ~ +125°C		
	<i>Note: The medium under test freezing can cause irreparable damage to the product; when the pressure transmitter is working normally, the medium under test should not solidify.</i>		
Ingress Protection	IP65 (IP67)		
Atmospheric Pressure	86kPa ~ 106kPa		
Vibration	10g (@10Hz ~ 2000Hz)		
Shock	100g/11ms		
Life-Span/usage	>10 million load cycles (within the measuring range)		

Structure Size Outline Dimension (mm)





Electrical Connection

DIN43650	Terminals	Current (2-wire)	Voltage (3-wire)	IIC(4-wire)	RS485(4-wire)
	1	Vcc	Vcc	Vcc	Vcc
	2	Iout	GND	GND	GND
	3	/	Vout	SCL	RS485A
	⊕	PE	PE	SDA	RS485B
Aviation Plug	Terminals	Current (2-wire)	Voltage (3-wire)	IIC(4-wire)	RS485(4-wire)
	1	Vcc	Vcc	Vcc	Vcc
	2	Iout	GND	GND	GND
	3	PE	Vout	SCL	RS485A
	4	/	PE	SDA	RS485B
Industry Terminals Connection	Terminals	Current (2-wire)	Voltage (3-wire)	IIC(4-wire)	RS485(4-wire)
	1	PE	PE	SDA	RS485B
	2	/	Vout	SCL	RS485A
	3	Iout	GND	GND	GND
	4	Vcc	Vcc	Vcc	Vcc
Direct Cable	Colors	Current (2-wire)	Voltage (3-wire)	IIC(4-wire)	RS485(4-wire)
	Red	Vcc	Vcc	Vcc	Vcc
	Green	Iout	GND	GND	GND
	Yellow	/	Vout	SCL	RS485A
	Blue	/	/	SDA	RS485B
	Black	PE	PE	PE	PE



Ordering Procedure

EST340	Ceramic Capacitive Pressure Transmitter					
	Code	Pressure Type				
	G	Gauge Pressure				
	A	Absolute Pressure				
	S	Sealed Gauge				
	Code	Power Supply				
	P1	24VDC				
	P2	12VDC				
	P3	5VDC				
	P4	3VDC (3.3VDC)				
	P5	Others				
	Code	Output Signal				
	C	4mA~20mADC				
	V3	0VDC~10VDC				
	RS	RS485				
	H	HART®				
	IIC	I2C				
	Code	Connections				
	L1	LCD (4-digitals) with G1/4 G1/2				
	L2	LED (4-digitals) with G1/4 G1/2				
	L3	DIN43650 with G1/4 G1/2				
	L4	Direct Cable with G1/4 G1/2				
	L5	Others (please indicate)				
	Code	Dimension Structure				
	01	Customization accepted				
	11					
	12					
	13					
	48					
	54					
	Code	Options				
	Da	Explosion-Proof ExdsIIBT5				
	Fa	Intrinsically Safe ExialICT5				
	Oa	Others (please indicate)				
EST340	G	P1	C	L3	01	Fa

NOTES:

- When choosing a product, please pay attention to the compatibility between the tested medium and the casing. For media compatibility issues, you can consult our company.
- When choosing a digital display product, the working environment temperature range for the display header is -30 ℃ to 60 ℃, and the product power supply should not be less than 15VDC.
- Sealing measures are adopted at the interface connection to prevent pressurized liquid leakage, causing pollution or accidents.
- When used in flammable and explosive, and other dangerous environments, install safety isolation grills as required, and cable wiring needs to be sealed and reliable.
- Tighten the wiring box cover before powering it to ensure that the inner cavity of the wiring box is isolated from the environment.
- When cleaning and overhauling products, the transmitter must be turned off before disassembly. Live operation on-site is strictly prohibited.

Precautions

- *Before use, please read this manual carefully to ensure the correct use of the product and avoid irreparable damage to the transmitter.*
- *Changes in the installation position parallel to the diaphragm surface will not affect zero drift. If the installation position changes more than 90° from the diaphragm surface, there will be a zero-position effect within the range of <math><0.4\text{kPa}</math>. This can be corrected by adjusting the zero calibration without affecting the measurement range.*
- *When cleaning the instrument, please use a cleaning agent that will not damage the instrument surface or sealing ring. When using a pressure cleaner, do not aim the nozzle directly at the electrical connection or vent hole (atmospheric communication position).*
- *The measuring medium must be a gas or liquid that will not corrode stainless steel, otherwise, it needs to be specially customized.*
Do not press or clean the pressure hole with your hand or other hard and sharp objects to avoid damaging the chip.
- *This product is a measuring product, so it should be handled with care and not disassembled. Such damage is not covered by the warranty.*
- *The entry of viscous liquids will affect the measurement accuracy and should be avoided as much as possible.*

LIMITED WARRANTY

Seller warrants that the product hereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by Seller (Ex-works, Factory, Xi'an China. INCOTERMS); provided, however, that this warranty applies only to equipment found to be so defective within a period of 18 months from the date of manufacture by the Seller. Seller shall not be obligated under this warranty for alleged defects which examination discloses are due to tampering, misuse, neglect, improper storage, and in any case where products are disassembled by anyone other than authorized Seller's representatives. EXCEPT FOR THE LIMITED WARRANTY OF REPAIR AND REPLACEMENT STATED ABOVE, SELLER DISCLAIMS ALL WARRANTIES WHATSOEVER WITH RESPECT TO THE PRODUCT, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. specifications subject to change without notice.



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