

## FSM-10Y-01 Pre-calibrated Module for Combustible Gas

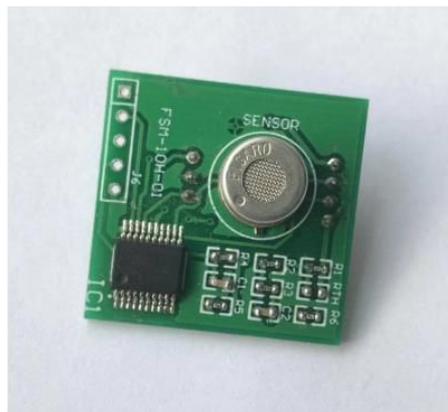
### Features:

- \* PWM、USART digital output proportionate to gas concentration
- \* Maintenance free
- \* Compact size
- \* RoHS compliance

The FSM-10Y-01 is a pre-calibrated module for combustible gas equipped with Figaro's semi-conductive sensor TGS2610-D00, which is durable and stable. the module provides PWM output proportionate to the concentration of detected gas (the module has a built-in memory with pre-calibrated data written in it), and detect disconnection and shortcut failure in the sensor. This module is able to operate under a wide range of temperature. Also, it has low cross sensitivity to VOC and high endurance to silicon compound, making it suitable for harsh environment.

### Applications:

- \* Combustible gas leakage detection
- \* Combustible gas leakage detector
- \* Detector for industrial use



### Output characteristics:

The module gives a linear output in PWM or USART digital signal according to the concentration of the target gas in the air.

1. PWM output (frequency: 2kHz)  $V_O = V \times \text{DUTY}_2$   
(in which  $V_O$  refers to effective output voltage,  $V$  is input Voltage, DUTY is duty ratio.

2. USART digital output

The module sends a set of data per 100ms (verification not added yet, can be changed on request).

01 H	03H	00 H 01 H	concentration (2bytes)	CRC check
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### Pin connection:

Pin	Name	Description
1	NC	
2	NC	
3	SDA	USART data output
4	+5V	Input voltage
5	PWM	Pulse width modulation
6	GND	Public GND
7	F	Failure output

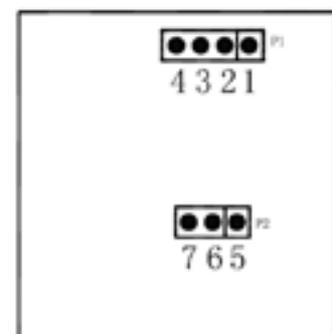
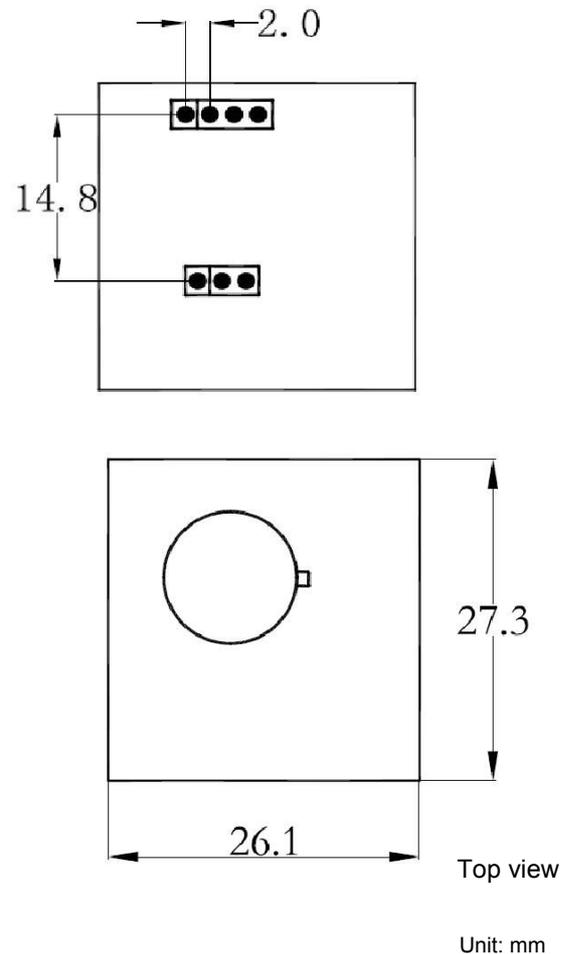
FSM-10Y-01 pin connection:

(Connection mode: single row pin with 2.0 interval)

**IMPORTANT NOTE:** OPERATING CONDITIONS IN WHICH FIGARO SENSORS ARE USED WILL VARY WITH EACH CUSTOMER ' S SPECIFIC APPLICATIONS. FIGARO STRONGLY RECOMMENDS CONSULTING OUR TECHNICAL STAFF BEFORE DEPLOYING FIGARO SENSORS IN YOUR APPLICATION AND, IN PARTICULAR, WHEN CUSTOMER ' S TARGET GASES ARE NOT LISTED HEREIN. FIGARO CANNOT ASSUME ANY RESPONSIBILITY FOR ANY USE OF ITS SENSORS IN A PRODUCT OR APPLICATION FOR WHICH SENSOR HAS NOT BEEN SPECIFICALLY TESTED BY FIGARO.

Specifications:

Name of item	Pre-calibrated module for combustible gas	
Type model	FSM-10Y-01	
Gas sensor	TGS2610-D00 (semi-conductive )	
Gas to be detected	Propane	
Detection range	0 ~ 20% LEL	
Alarm point	10% LEL	
Alarm point error	± 3% LEL	
Voltage output	PWM output (2kHz)	
	Failure	failure: H, monitor: L
Response time (T <sub>90</sub> )	≤30 s	
Working conditions	-40°C ~+70°C, 20~95%RH (non-condensing)	
Storage conditions	-10°C ~+80°C, 20~95%RH	
Input conditions (V <sub>IN</sub> )	5.0±0.2V DC	
Power consumption	≤1.5W	
Net weight	<15g	
Size	26×27 mm	
Standard test conditions	Environment conditions	20±2°C, 65±5%RH
	Circuit conditions	5.0±0.2V
	Debugging before tests	≥10 min

Structure and dimensions:

- Note:1. For applications involving detection of other combustible gas and alarm points for various measurement range, please consult with Figaro.
2. Detection error can be different due to the difference of target gas and measurement range.
3. The module is not explosion-proofing. If it is needed to be used in such applications, please refer to the relevant requirements in standards including GB3836.1-2010, GB3836.2-2010, GB3836.4-2010 and GB3836.15-2000.

Information shown in this data sheet are the basic features of the module. Actual features of sensors differ from each other by products, so please refer to the corresponding data sheets or relevant materials of each sensor for details. Modifications made to improve product performance are subject to change without notice.

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