

FCM2630-C01 - Pre-calibrated Module for Refrigerant Gases R-32

Features:

- * Factory calibrated
- * Temperature compensation circuit
- * Resistant to interference gases
- * Analog output
- * Meets IEC60335-2-40 and JRA4068 requirements

Applications:

- * Refrigerant gas leak detection in air conditioning/refrigeration systems

FCM2630-C01* is an embedded type module using the semiconductor gas sensor TGS2630 which is optimized to detect A2L refrigerant gas R-32.

This module enables users to easily build a reliable gas leakage detection system by eliminating electronic circuit design for temperature compensation and the calibration process. In addition, a connector allows easy replacement of the gas sensor module for periodic maintenance.

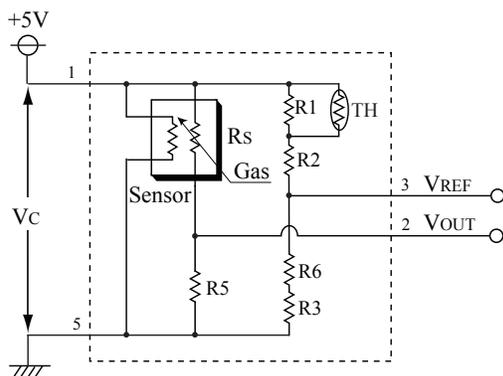
The TGS2630 gas sensor has a built-in filter to reduce the influence of alcohol and other interference gases, resulting in high selectivity to R-32. For more detailed information on the gas sensor, including sensitivity characteristics, see *TGS2630 Product Information*.

FCM2630-C01 is capable of satisfying the IEC60335-2-40 Edition 6.0 Annex LL and the JRA4068:2021 (Performance 3) standards. The applicable standards are both limited to refrigerant gas type R-32.

* FCM Series is the model name of refrigerant gas sensor modules supplied by Figaro Engineering Inc.



Circuit Diagram



Vc: Circuit voltage
VOUT: Output voltage
VREF: Reference voltage

Pin Connections

Pin No.	Name	Description
1	Vc	Circuit voltage
2	VOUT	Output voltage
3	VREF	Reference voltage
4	-	-
5	GND	Common ground

Connector model: S05B-PASK-2 (made by JST)

Recommended receptacle for connector: PAP-05V-S (made by JST)

Specifications

Model No.		FCM2630-C01
Gas sensor		TGS2630
Target gases		Refrigerant gas R-32
Circuit voltage	V _c	5.0±0.2V DC
Output voltage	V _{OUT}	3.50V typical in 5000ppm R-32 Malfunction condition: V _{OUT} < 0.05V or V _{OUT} > 4.95V (V _c = 5.00V)
Reference voltage	V _{REF}	3.50±0.10V at 20°C Malfunction condition: V _{REF} < 2.50V or V _{REF} > 3.70V (V _c = 5.00V)
Initial alarm accuracy		2800~7000ppm R-32 (under standard test conditions) Alarm state: V _{OUT} ≥ V _{REF} Normal state: V _{OUT} < V _{REF}
Warm-up time		≤60 seconds (time before V _{OUT} < V _{REF} after power is turned on in a clean atmosphere)
Operating conditions		-10°~+50°C, 20~95%RH (avoid condensation)
Power consumption		approx. 0.3W
Weight		approx. 4g
Dimensions		25 x 25 x 16mm
Standard test conditions	Test gas conditions	20°±2°C, 65±5%RH
	Circuit conditions	V _c = 5.00±0.05V DC
	Conditioning period prior to test	≥1 day

NOTE 1:

Sensor module performance may be affected if exposed to a high concentration of gas during an operating or storage period. Replace the gas sensor module if it is exposed to gas equivalent to 10,000ppm or more of R-32.

NOTE 2:

If the internal temperature near the gas sensor module becomes higher than the external ambient temperature by 10°C or more due to heat generated by electronic components in a device into which this gas sensor module is incorporated, the set alarm threshold may drift. Please consult with Figaro if there is difficulty in designing a device so as to keep the temperature rise inside the device within 10°C.

All sensor characteristics shown in this brochure represent typical characteristics. Actual characteristics vary from sensor to sensor. The only characteristics warranted are those in the Specification table above.

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Structure and Dimensions