



## **ALLNET ALL4454**

### **Rauchmelder / Gassensor für ALL3418v2/3500/3692/4500/5000**

- *neues flaches Desktop- / Wandgehäuse aus Aluminium*
- *I2C Bus für den Multiplexing Einsatz*
- *wahlweise in schwarz oder in weiß erhältlich*
- *Winkelbefestigungen für die Wandmontage*

#### **Messen, steuern und regeln Sie automatisch und unabhängig**

ALLNET verfolgt bereits seit Jahren das Konzept der intelligenten Steuerung von Abläufen in der Gebäudetechnik über Netzwerk und Internet. Intelligente Gebäudetechnik bietet nicht nur mehr Komfort, sondern fördert aktiv die Einsparung von Energiekosten.

Zentral gesteuert und über Netzwerk / Internet erreichbar ermöglichen die ALLNET Homeautomation Produkte intelligente Gebäudetechnik unabhängig von Zeit und Standort.

Der ALL4454 Rauchmelder/ Sensor kann auch für Detection von Gasen verwendet werden.

**Art.-Nr. 102435(sw) / 96689(w)**



## Rauchmelder/Sensor im Desktop-/ Wandgehäuse

- meldet Rauch und Gas
- Aluminiumgehäuse mit Lasche zur Wandbefestigung
- Mehrfach Multiplexing = mehrere Multiplexing Module an einer Leitung
- Anschluss: 2x RJ45

| Element              | Spezifikation                                                                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensortyp            | Rauch-/ Gassensor                                                                                                                                                                                     |
| Meßbereich:          | 0 bis 100                                                                                                                                                                                             |
| Chip                 | ADS1100A3 „AD-Wandler“ & TGS822 Figaro „GAS-Sensor“                                                                                                                                                   |
| Anschluß:            | 2x RJ45 (I2C Bus)                                                                                                                                                                                     |
| Multiplexing:        | auf gleiche Sensortypen am Port achten! - siehe Hinweis unten                                                                                                                                         |
| LED Anzeigen:        | 1x PWR, 1x BUS                                                                                                                                                                                        |
| Gehäuse:             | Metallgehäuse                                                                                                                                                                                         |
| Umgebung:            | Temperatur Betrieb: -45 ~ 90 °C<br>Luftfeuchtigkeit Betrieb: 0% ~ 100% (nicht kondensierend)<br>Temperatur Aufbewahrung: -20 ~ 60 °C<br>Luftfeuchtigkeit Aufbewahrung: 5% ~ 90% (nicht kondensierend) |
| Kennzeichnung:       | CE, RoHS                                                                                                                                                                                              |
| Maße:                | 79 x 50 x 24 mm (Länge x Breite x Höhe)                                                                                                                                                               |
| Gewicht:             | 230 Gramm (ohne Verpackung und Zubehör)                                                                                                                                                               |
| Hersteller Garantie: | 36 Monate                                                                                                                                                                                             |
| Verpackungsinhalt:   | 1x ALL4454 Rauchmelder / Sensor<br>1x Anschlußkabel                                                                                                                                                   |

## Multiplexing - Hinweis zum Betreiben mehrerer Sensoren an einem Sensorport

Grundsätzlich ist es bei den ARM- und MIPS-basierten Systemen möglich, im Gegensatz zum ALL3000/4000, mehr als einen Sensor an einem physikalischen Port zu betreiben.

Hardwaremäßige Voraussetzung ist, daß die Sensoren über 2 RJ45-Anschlüsse verfügen, so daß das Sensorsignal zum jeweils nächsten Sensor weitergeführt werden kann. Die Gesamt-Kabellänge von 100 m erhöht sich dabei nicht.

Damit die Sensoren von den Geräten auch eindeutig identifiziert werden können, ist es erforderlich, daß diese softwareseitig unterschiedliche I2C-Chipadressen und ID's haben. Sensoren mit gleicher Chipadresse und einstellbarer ID lassen sich kombinieren. Bei Sensoren ohne einstellbarer Adresse kann nur jeweils 1 Sensortyp pro Port angeschlossen werden.

# TGS 822 - for the detection of Organic Solvent Vapors

### Features:

- \* High sensitivity to organic solvent vapors such as ethanol
- \* High stability and reliability over a long period
- \* Long life and low cost
- \* Uses simple electrical circuit

### Applications:

- \* Breath alcohol detectors
- \* Gas leak detectors/alarms
- \* Solvent detectors for factories, dry cleaners, and semiconductor

The sensing element of Figaro gas sensors is a tin dioxide ( $\text{SnO}_2$ ) semiconductor which has low conductivity in clean air. In the presence of a detectable gas, the sensor's conductivity increases depending on the gas concentration in the air. A simple electrical circuit can convert the change in conductivity to an output signal which corresponds to the gas concentration.

The **TGS 822** has high sensitivity to the vapors of organic solvents as well as other volatile vapors. It also has sensitivity to a variety of combustible gases such as carbon monoxide, making it a good general purpose sensor. Also available with a ceramic base which is highly resistant to severe environments as high as 200°C (model# TGS 823).



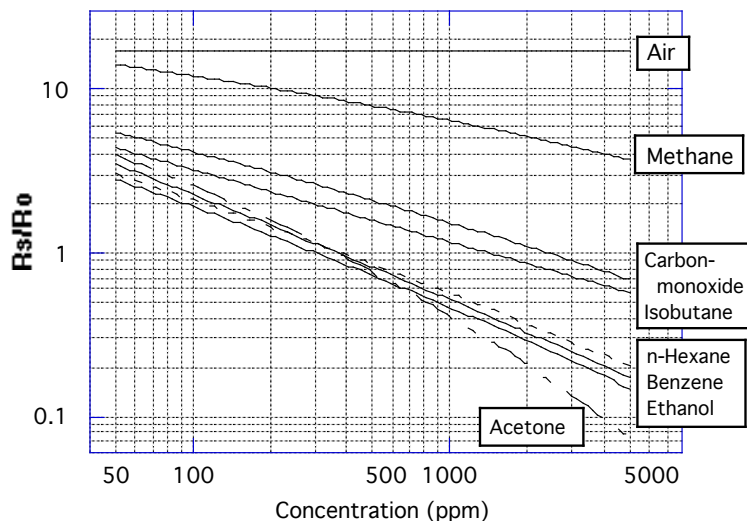
The figure below represents typical sensitivity characteristics, all data having been gathered at standard test conditions (see reverse side of this sheet). The Y-axis is indicated as sensor resistance ratio ( $R_s/R_o$ ) which is defined as follows:

$R_s$  = Sensor resistance of displayed gases at various concentrations  
 $R_o$  = Sensor resistance in 300ppm ethanol

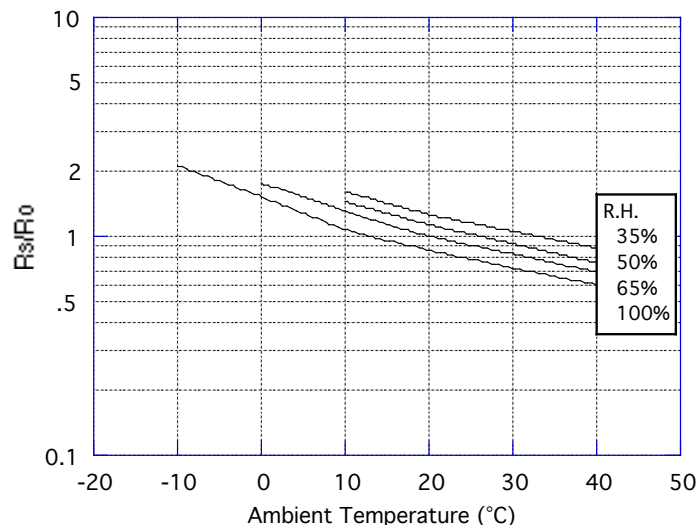
The figure below represents typical temperature and humidity dependency characteristics. Again, the Y-axis is indicated as sensor resistance ratio ( $R_s/R_o$ ), defined as follows:

$R_s$  = Sensor resistance at 300ppm of ethanol at various temperatures/humidities  
 $R_o$  = Sensor resistance at 300ppm of ethanol at 20°C and 65% R.H.

### Sensitivity Characteristics:

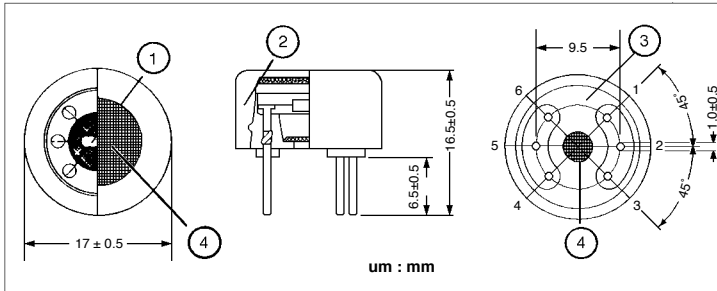


### Temperature/Humidity Dependency:



**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.

### Structure and Dimensions:

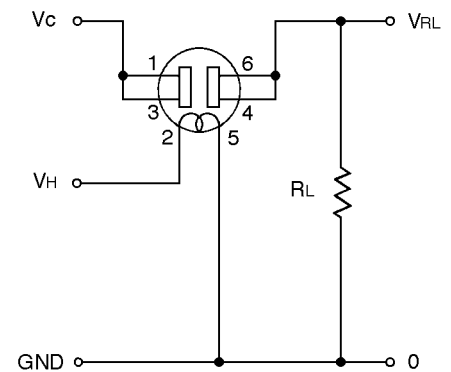


- ① Sensing Element:  
SnO<sub>2</sub> is sintered to form a thick film on the surface of an alumina ceramic tube which contains an internal heater.
- ② Cap:  
Nylon 66
- ③ Sensor Base:  
Nylon 66
- ④ Flame Arrestor:  
100 mesh SUS 316 double gauze

### Pin Connection and Basic Measuring Circuit:

The numbers shown around the sensor symbol in the circuit diagram at the right correspond with the pin numbers shown in the sensor's structure drawing (above). When the sensor is connected as shown in the basic circuit, output across the Load Resistor ( $V_{RL}$ ) increases as the sensor's resistance ( $R_s$ ) decreases, depending on gas concentration.

### Basic Measuring Circuit:



### Standard Circuit Conditions:

| Item            | Symbol | Rated Values | Remarks                    |
|-----------------|--------|--------------|----------------------------|
| Heater Voltage  | $V_H$  | 5.0±0.2V     | AC or DC                   |
| Circuit Voltage | $V_C$  | Max. 24V     | DC only<br>$P_s \leq 15mW$ |
| Load Resistance | $R_L$  | Variable     | 0.45kΩ min.                |

### Electrical Characteristics:

| Item                              | Symbol    | Condition                                                                    | Specification   |
|-----------------------------------|-----------|------------------------------------------------------------------------------|-----------------|
| Sensor Resistance                 | $R_s$     | Ethanol at 300ppm/air                                                        | 1kΩ ~ 10kΩ      |
| Change Ratio of Sensor Resistance | $R_s/R_o$ | $\frac{R_s(\text{Ethanol at 300ppm/air})}{R_s(\text{Ethanol at 50ppm/air})}$ | 0.40 ± 0.10     |
| Heater Resistance                 | $R_H$     | Room temperature                                                             | 38.0 ± 3.0Ω     |
| Heater Power Consumption          | $P_H$     | $V_H=5.0V$                                                                   | 660mW (typical) |

### Standard Test Conditions:

TGS 822 complies with the above electrical characteristics when the sensor is tested in standard conditions as specified below:

Test Gas Conditions: 20°±2°C, 65±5%R.H.  
 Circuit Conditions:  $V_C = 10.0 \pm 0.1V$  (AC or DC),  
 $V_H = 5.0 \pm 0.05V$  (AC or DC),  
 $R_L = 10.0k\Omega \pm 1\%$

Preheating period before testing: More than 7 days

Sensor Resistance ( $R_s$ ) is calculated by the following formula:

$$R_s = \left( \frac{V_C}{V_{RL}} - 1 \right) \times R_L$$

Power dissipation across sensor electrodes ( $P_s$ ) is calculated by the following formula:

$$P_s = \frac{V_C^2 \times R_s}{(R_s + R_L)^2}$$

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For information on warranty, please refer to Standard Terms and Conditions of Sale of Figaro USA Inc.