

## Intelligent Thermal Conductivity Sensor Gas Detector

### DESCRIPTION

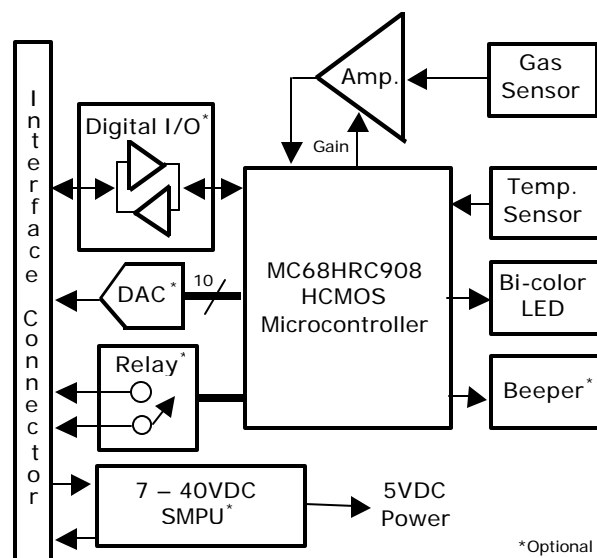
*Panterra-TCOND* is a percent volume gas detector based on thermal conductivity sensor technology. These sensors can be operated in anaerobic and no-moisture environments. They are not affected by silicones.



### TARGET GASES

- Hydrogen
- Helium

### BLOCK DIAGRAM



### SPECIFICATIONS (Preliminary and Tentative)

Parameter	Min	Typ	Max	Unit
Sensing range	-	-	0-100	% vol.
Sensing Resolution	0.4	0.2	0.1	% vol.
Accuracy	+/- 2	+/- 1	-	% vol.
Start-up time	-	10	-	Secs.
Response time (T90)	-	10	20	Secs.
Recovery time (T10)	-	10	20	Secs.
Relative humidity	0	-	99	% R.H.
Operating temperature	-40	-	+55	Deg. C.
Altitude/pressure	0.8	-	1.2	Atmos.
Atmospheric oxygen	0	-	-	% vol.
Flow rate	-	1	3	m/sec.

Note: Accuracy specification includes repeatability and linearity error.  
 Relative humidity specification refers to non-condensing environments

# Panterra-TCOND Gas Detector

## STANDARD FEATURES

Supported states:	Normal, Warning, Alarm, Error
Visual indication:	Bi-color (red/green) LED
Audio indication:	80dB at 30cm beeper (optional)
Relay:	<ul style="list-style-type: none"><li>- 100 VA sealed SPST</li><li>- NO or NC</li><li>- Auto reset or manual reset (latching)</li></ul>
Sensor sampling system:	10-bit A/D with auto-ranging analog front end
Temperature compensation:	Active compensation over entire operating range
Output signaling (one of):	
0-5VDC:	8 or 10-bit DAC (optional)
TTL:	Normally high/low – Auto/Latching (optional)
Step function:	Voltage encoded Normal, Warning, Alarm, Error (optional)
Digital communications:	PK-Port™ compliant signaling for calibration and monitoring
Input power:	
I1:	5VDC regulated
I2:	7-40VDC unregulated
I3:	7-60VDC unregulated
Mechanical:	<ul style="list-style-type: none"><li>- 2.5" x 2.0" x 1.0" form factor</li><li>- Anodized aluminum enclosure optional</li><li>- Extendable sensor: 25' cable, 1" x 1" x 1" sensor head</li></ul>
General:	<ul style="list-style-type: none"><li>- User-settable alarm/warning via <i>PK-Port™</i></li><li>- Digital FLASH-based calibration</li><li>- Each device factory pre-calibrated</li><li>- Field re-programmable firmware</li></ul>

## SPECIAL FEATURES

Error detection:	Temperature error (signal as Alarm or Error state)
Power consumption:	500mW
Sensor lifetime:	~5 years; 2 year warranty

## ORDERING OPTIONS

Gas type:	Hydrogen or Helium
Action levels:	Warning and alarm concentration as percentage of range
Output signal type:	None, 0-5VDC, TTL – norm. hi/lo – auto/latch, step function
Relay type:	None, norm. open/closed – auto/latch
Beeper:	None, included
Operating voltage:	5VDC, 7-40VDC, 7-60VDC
Enclosure:	None (open frame), anodized aluminum