



Evaluation kit

For Micro-Hybrid IR-detectors and sources

General Description

The kit is designed for Micro-Hybrid's thermopile / pyroelectric detectors and IR-sources. It provides an easy way to evaluate these parts and get started in NDIR gas analysis without developing an electrical circuit and software. The system is flexible. It optimizes the operating parameters for each specific usage. Flexibility includes easy control of the IR-source and reading / monitoring of the output data from the detectors. Evaluation of all components made easy: a fast and simple process.

Applications (for example):

- gas analysis
- contactless temperature measurement
- flame detection
- laboratory and test set-ups

Available versions

The Evaluation kit is available in different versions. The emitter board and the detector board can operate either together as a kit or in stand-alone mode. For all versions of the detector board, simultaneous monitoring of two detector channels and thermistor signal (for thermopiles) is possible. Additional channels for four channel detector monitoring available by setting jumper (J1).

The emitter board drives the IR-source in constant power mode, reducing electrical stress and eliminates aging effects of the source.



(1)



(2)



(3)

| Version | Comment |
|---|---|
| Source-Kit (1) | <ul style="list-style-type: none"> ▪ power consumption selected only by jumper ▪ 3,3V chopper signal is necessary |
| Detector-Kit (2) | <ul style="list-style-type: none"> ▪ USB interface with driver and software ▪ digital and analogue outputs |
| Full Evaluation Kit (3) (Source- and Detector-Board) | <ul style="list-style-type: none"> ▪ USB interface with driver and software ▪ source power adjustable by software ▪ plus a source, a detector and an adaptable measure chamber for NDIR gas analysis |

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Emitter board specifications

| Parameter | Min. | Typ. | Max. | Unit | Comment |
|-------------------------|-----------|-------|------|------|---|
| Supply voltage | 10 | 12 | 16 | V | |
| Current consumption | | 5 | | mA | without IR source |
| Reference voltage | 3.3 | | | V | |
| Power consumption | 0.3 – 1.7 | | | W | adjustable defined by jumper(FB) or potentiometer |
| Emitter resistance | 10 | 50 | 70 | Ohm | |
| Operating temperature | 0 | | 40 | °C | |
| Frequency range* | 0 | | 50 | Hz | |
| Output power accuracy** | | ≤ ±5% | | | |

* duty cycle discrepancy >5% at higher frequencies

** depends on used emitter resistance and power

Detector board specifications

| Parameter | Min. | Typ. | Max. | Unit | Comment |
|-----------------------|---------------------------|--------|------------|------|----------------------------|
| Supply voltage | 10 | 12 | 16 | V | |
| Current consumption | | 60 | | mA | |
| Amplification | 2 155 | - - | 55 4150 | | pyrodetector thermopile |
| Reference voltage | 1.65 | | | V | |
| Detector supply | ±1.65 / +5 | | | V | |
| Operating temperature | 0 | | 40 | °C | |
| Band Width (-3 dB) | 1 – 60 0 – 20 | | | Hz | pyrodetector thermopile |
| Signal acquisition | 12Bit, 0... 3.3V, 500Sa/s | | | | |
| Interface | USB 2.0 | | | | |

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