www.mipex-tech.com

mipex®
TECHNOLOGY
Micro power IR gas sensors

MIPEX-02 series IR gas sensors

Unique features for mining and above ground applications

Applied to all industrial safety segments,
including Chemistry & Petrochemistry,
Power/Utility & Water/Wastewater,
Oil & Gas extraction & refineries,
Mining & Fire/Hazmat,
Biogas and more

ISO 9001
BUREAU VERITAS
Certification

Products manufactured to the highest technical standards with quality management system approved by ISO 9001 certificate

UNITRONIC

UNITRONIC GmbH
Hellersbergstraße 10a
41460 Neuss

Telefon 0211 / 95 110
Telefax 0211 / 95 11 111
info@unitronic.de

PART OF
LAGERCRANTZ GROUP

MIPEX-02 IR GAS SENSORS FOR METHANE/HYDROCARBONS/CARBON DIOXIDE

Having more the 15 years of design and manufacturing experience we can fairly announce that we have created excellent product – MIPEX infrared gas sensors. MIPEX series sensors carried out a revolution in combustible gas detection market.

Based on optical technology MIPEX-02 sensors consume less than 5mW average which brings completely new sense to design cutting edge products for hydrocarbons and carbon dioxide detection. Using MIPEX sensors in your devices you can make your ever bold wishes come true.

MIPEX-02 is the second-generation of MIPEX infrared gas sensors with NDIR operating principle. The sensor contains LED with optimized spectrum and signal processing algorithm, an optical system, specially designed photo diodes, an imbedded temperature sensor and electronics to process the signals. Communications with instrument electronics is provided via digital UART interface.

MIPEX-02 sensors are battle tested sensors have been used in both portable and fixed combustible gas detectors applied for mining and above ground applications. Now you have a core part you can completely rely on.

MIPEX-02 sensors for mining

MIPEX-02 sensors dramatically change mining safety market landscape nowadays. One of the most serious barriers for further penetration of optical sensors in mines comparing to catalytic bead sensors was reaction on micro-condensations. MIPEX-02 sensors have minimal reaction to dust and micro-condensation of water inside gas chambers due to the mirrors applied to optical scheme. That practically allows to avoid drifts and measurement errors comparing to conventional optical sensors and pellistors.

MIPEX-02 sensors have solid state emitter and detector and are strongly stable in harsh vibration environment which is essential for underground coal and hard rock mines.

MIPEX-02 sensors have minimized cross sensitivity to ethane matching the requirements of IEC 60079-29-1.

And finally ultralow power consumption along with attractive price provides great opportunity to use very compact batteries in any equipment with MIPEX-02 sensors for effective integration with remote data loggers, implanting them in battery operated devices and using instead of pellistors in portable gas detectors.

www.mipex-tech.com

UNITRONIC

UNITRONIC GmbH
Hellersbergstraße 10a
41460 Neuss

Telefon 0211 / 95 110
Telefax 0211 / 95 11 111
info@unitronic.de

PART OF
LAGERCRANTZ GROUP

mipex®
TECHNOLOGY
Micro power IR gas sensors

GENERAL INFORMATION

- Ultra low power consumption - less than 5 mW
- Measurement range up to 100% vol. methane
- Performance under CSA requirements (optional)
- Low humidity influence - practically no reaction on high humidity level up to 98% RH non-condensed
- Long term stability and easy calibration
- Microcontroller inside and digital UART interface
- Tolerance to catalytic bead sensors "poisoning" gases
- Highest level of intrinsically safe explosion protection "ia"
- Sinters free

For evaluation and testing purposes we offer to apply friendly Evaluation Kit - MIPEX EVK which operates through PC together with our special MIPEX Evaluation Software - MIPEX ETS. MIPEX EVK provides enhanced capability for evaluation and testing MIPEX sensors and enables users to customize certain parameters within the MIPEX sensor in order to suit their particular requirements. There is optionally available specially designed calibrating adapter which perfectly suites MIPEX or any sensors Ø20mm and makes calibration the easiest way.

How to order

MIPEX-02 sensors have a number of different options such as set of detected gases, housing type, calibration range etc. To ease your searching for the right product please visit our website **www.mipex-tech.com** where you can quickly address to the products the most suitable for your application or contact us via email **info@mipex-tech.com**

MIPEX-02 sensors for above ground applications

The technology used in MIPEX-02 sensors allows reaching combination of low power consumption (up to 100 times more effective than competitive analogues) and high metrology performance. Moreover the technology helps to avoid the basic problems natural for both catalytic bead sensors and conventional optical NDIR sensors. That makes MIPEX an ideal sensor for use in H_2S or other poisonous environments.

Due to its unique features MIPEX sensors offer opportunities for significant expansion of the scope of the existing markets and create the new ones from scratch:

-expansion of the boundaries of fixed gas detectors and systems;
-the formation of a number of wireless solutions and systems;
-creating a market for disposable portable combustible gas detectors.

We offer MIPEX-02 sensors in standard metal housing which is suitable to all industrial safety segments. For fixed application with high speed-of-response requirements we create MIPEX-02 sensor with specially designed stainless steel "Fast response" housing providing T90 < 6 sec. MIPEX-02 in plastic housing can be applied for price sensitive applications. There are available more than 35 modifications of MIPEX-02 sensor now.

UNITRONIC

UNITRONIC GmbH
Hellersbergstraße 10a
41460 Neuss

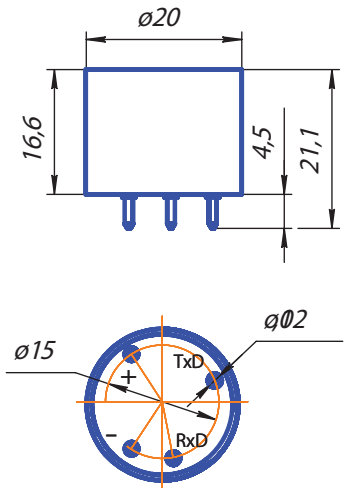
Telefon 0211 / 95 110
Telefax 0211 / 95 11 111
info@unitronic.de

PART OF
LAGERCRANTZ GROUP

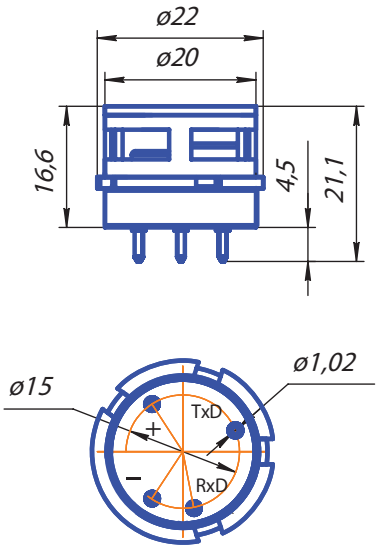
mipex® TECHNOLOGY
Micro power IR gas sensors

GENERAL SPECIFICATION OF MIPEX-02 IR GAS SENSORS

Drawing of MIPEX-02 sensor in metal housing



Drawing of MIPEX-02 sensor in "fast response" housing



General	
Gas sampling method:	Diffusion
Operating principle:	Non-Dispersive Infra-Red (NDIR)
Target gas	CH_4
	CH_4 (Reduced cross sensitivity to ethane)
	C_nH_m calibrated to C_3H_8
	$C0_2$
Operating conditions:	
Relative humidity	up to 98%
Atmospheric pressure	80-120 kPa
Temperature range	-10 to +40 °C (group I)
	-40 to +60 °C (group II)
Overall dimensions	ø20x16.6 mm without pins
Weight	Stainless steel (standard) - 16,6 g
	Stainless steel (fast version) - 15,5 g
	Polycarbonate - 5,5 g
MTBF	10 years
Measurement	
Measurement range	up to 100% vol. CH_4; 100% LEL C_nH_m
Accuracy	±0.1 % vol. or ±5 % of indication CH4
	±3 % LEL or ±5% of indication C_3H_8
Response time, T90	<10s (fast version)
	<30s
Electrical	
Supply Voltage Range:	3.0 – 5.0 VDC
Output signal	digital, UART
Power consumption:	<5mW
Warm-up time:	not more than ≤ 1 min
Marking and standards compliance	
Ex ia I Ma/Ex ia IIC Ga. acc. to IEC60079-0, IEC60079-11, IEC60079-26. -55° ≤ Ta ≤ +60 °C	
IM 1/II 1 G Ex ia I Ma / Ex ia IIC Ga. acc. to EN60079-0, EN60079-11, EN60079-26. -55° ≤ Ta ≤ +60 °C	
Class I , Division 1 , Group A,B,C,D , T5 acc. to UL913 7th Edition, CAN/CSA-C22.2 No. 157-92	

UNITRONIC

UNITRONIC GmbH
Hellersbergstraße 10a
41460 Neuss

Telefon 0211 / 95 110
Telefax 0211 / 95 11 111
info@unitronic.de

PART OF
LAGERCRANTZ GROUP