

TracXP™

INDUSTRIAL GAS SOLUTIONS
by Macurco

TracXP is the industrial products division of Macurco Gas Detection, who has been providing gas detection solutions for over 50 years. The TracXP line addresses special hazard applications including harsh industrial environments and hazardous locations with a comprehensive line of wired and wireless gas detection solutions.



TXP-FDE IR3-H2

Near Infrared Spectrum Flame Detector

The TracXP TXP-FDE IR3-H2 triple IR flame detector provides unrivaled response, high performance and reliable detection for a number of fires found in Energy Transition applications, such as hydrogen, methane, syngas, ammonia and methanol.

The detector addresses slow growing fires as well as fast eruptions of fire using improved IR3 technology. The detector operates in all weathers and light conditions. These features, along with the built-in event logger, provide additional means to study the cause and development of fire events.

Key Features

- High immunity to false alarm
- Ultra-fast detection within 40 ms for explosions
- Three relay contacts (two alarm and a fault)
- 4-20mA and Modbus RS-485 RTU outputs
- Internal tests for window clarity and operation
- Window heater to avoid condensation & icing
- Tilt mount included for two-axis adjustments
- Data / event logger - alarms, faults, etc
- Five selectable sensitivity levels
- Detects hydrogen, ammonia, methane & syngas flames using three infrared wavelengths

Applications

- Energy transition
- Oil & Gas
- Fuel storage & pump stations
- Ammonia production
- Petrochemical
- Aircraft hangars
- Maintenance facilities
- Power generation
- Metal Manufacturing
- Laboratories
- General industry



TXP-FDE IR3-H2

The TXP-FDE IR3-H2 detects fires and explosions extremely quickly allowing mitigation steps to be initiated more rapidly and limit event escalation.

TXP-FDE IR3-H2

Response Characteristics

Fuel	Size	Sensitivity	Distance ft. (m)	Average Response Time
Hydrogen	32-in Plume	Extreme	98 (30)	1.5
Hydrogen	32-in Plume	Medium	66 (20)	1.5
Hydrogen	32-in Plume	Low	33 (10)	1.4
Hydrogen	32-in Plume	Very Low	16 (5)	1.5
Methanol	1 x 1 ft.	Extreme	59 (18)	4.2
Methanol	1 x 1 ft.	Medium	30 (9)	2.9
Methanol	1 x 1 ft.	Very Low	10 (3)	4.9
Methane	32-in Plume	Extreme	66 (20)	1.7
Methane	32-in Plume	Medium	52 (16)	1.2
Methane	32-in Plume	Low	26 (8)	1.4
Methane	32-in Plume	Very Low	13 (4)	0.9
Syngas (30% CH4 & 70% H2)	32-in Plume	Extreme	82 (25)	3.0
Syngas (30% CH4 & 70% H2)	32-in Plume	Medium	55 (17)	3.0
Syngas (30% CH4 & 70% H2)	32-in Plume	Low	26 (8)	0.8
Syngas (30% CH4 & 70% H2)	32-in Plume	Very Low	13 (4)	2.1

TXP-FDE IR3-H2

Immunity to False Alarm

False Alarm Source	Modulated		Unmodulated	
	Distance ft. (m)	Response	Distance ft. (m)	Response
Sunlight, Direct, Reflected with/without water		No Alarm		No Alarm
Incandescent frosted glass light, 300W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Fluorescent, 70W (3x23.3W)	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric arc	3.0 (1.0)	No Alarm	3.0 (1.0)	No Alarm
Arc welding	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Radiation heater, 1850W	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Quartz lamp (500W) non-shielded	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Mercury vapor lamp 160Wx3	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Exhausts	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Projector LED	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Solenoid bell	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Soldering iron	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm
Electric drill	2.0 (0.5)	No Alarm	2.0 (0.5)	No Alarm

Approvals and Performance

ATEX	ATEX: II 2 G D Ex db IIC T5 Gb or Ex db eb IIC T5 Gb and Ex tb IIIC T95°C Db -55°C<Ta<75°C Ex db IIC T4 Gb or Ex db eb IIC T4 Gb and Ex tb IIIC T105°C Db -55°C<Ta<85°C
IECEX, INMETRO & PESO	Ex db IIC T5 Gb -50°C≤Ta≤75°C Ex db IIC T4 Gb -50°C≤Ta≤85°C
FMus & FMc	Class I, Div. 1, Groups B, C & D; T4 Class I, Zone 1, AEx/Ex db IIC T4 Gb T4 -50°C≤Ta≤85°C T5 -50°C≤Ta≤75°C
EAC CU TR	1Ex d IIC T5 Gb or 1Ex de IIC T5 Gb and Ex tb IIIC T95°C Db -55°C≤Ta≤75°C 1Ex d IIC T4 Gb or 1Ex de IIC T4 Gb and Ex tb IIIC T105°C Db -55°C≤Ta≤85°C
Performance	ANSI FM 3260

Macurco Gas Detection

1504 W. 51st Street

Sioux Falls, SD 57105

Phone: 1-877-367-7891

Website: www.macurco.com

Email: Macurco_info@dwyeromega.com



TXP-FDE IR3-H2

Specifications

Flame Detector Specifications

Dimensions	5.51" (L) x 3.54" (W) x 3.54" (H)
Shipping Weight	9.9 lbs. (4.5 kg.)
Power & Electrical	Operating Voltage: 18-32 VDC Current (Standby): 120 mA Current (Maximum): 180 mA Conduit Entries: 2 x 3/4" NPT or M25x1.5 Wiring: 12-20 AWG
Outputs	Relays: 3 x SPST 2A @ 30 VDC Analog: 4-20 mA stepped (sink or source) Digital: Modbus RS-485 RTU LED: Tri-color (Green, Yellow and Red)
HART	HART® 7 for configuration & maintenance
Detection Time and Distance	40ms for fast burst or explosion For 32" (0.8 m) hydrogen fire: 1.5s at 0-66 ft. (0-20 m) 4s at 66-100 ft. (20-30 m)
Sensitivity Options	Extreme, High, Medium, Low and Very Low
Field of View	90° Horizontal and 75° Vertical
Time Delay	0-30 seconds
Built-in-Test (BIT)	Automatic (Upon startup and in 20 minute intervals) Manual (PC software or wire terminal short)
Temperature Range	-67°F to +185°F (-55°C to +85°C)
Humidity	Up to 99% (RH), non-condensing
Ingress Protection	IP66 & 68; NEMA 4X & 6P
Approvals	Refer to Table on Page 3

Ordering Information

Part Number	Description
84-2211-1100-20	TXP-FDE IR3-H2, No Video, SS, 3/4" NPT, Tilt Mount
84-2211-1200-10	TXP-FDE IR3-H2, No Video, SS, M25, Tilt Mount
84-1211-1200-10	TXP-FDE IR3, No Video, SS, 3/4" NPT, Tilt Mount
84-1211-1100-20	TXP-FDE IR3, No Video, SS, M25, Tilt Mount
84-2112-1200-10	TXP-FDE IR3-H2-HD, Video, SS, 3/4" NPT, Tilt Mount
84-2112-1100-20	TXP-FDE IR3-H2-HD, Video, SS, M25, Tilt Mount
84-1112-1200-10	TXP-FDE IR3-HD, Video, SS, 3/4" NPT, Tilt Mount
84-1112-1100-20	TXP-FDE IR3-HD, Video, SS, M25, Tilt Mount

*Specifications shown are for TXP-FDE IR3-H2 models only

Accessories

Part Number	Description
84-2000-0000-08	TXP-FDE IR3-H2, SS, Flame Simulator Kit
84-1000-0000-08	TXP-FDE IR3, SS, Flame Simulator Kit
84-8000-0000-04	TXP-FDE Weather Cover for Models without Video
84-8000-0000-01	TXP-FDE HD Weather Cover
84-8000-0000-05	TXP-FDE USB to RS-485 PC Converter Kit
84-8000-0000-08	TXP-FDE Pole Mount Adapter, SS, 2" & 3"
84-8000-0000-10	TXP-FDE HD Duct Mount Kit without Sapphire Window
84-8000-0000-11	TXP-FDE HD Duct Mount Kit with Sapphire Window
84-8000-0000-12	TXP-FDE HD Airshield for Dust and Snow Protection
84-8000-0000-13	TXP-FDE HD Paint and Dust Shield Adapter Ring Kit
84-8000-0000-14	TXP-FDE HD Disposable Paint and Dust Shields (Qty. 10)

Represented By:

Macurco Gas Detection
1504 W. 51st Street
Sioux Falls, SD 57105

Phone: 1-877-367-7891

Website: www.macurco.com

Email: Macurco_info@dwyeromega.com



Flame Simulator



Weather Cover



Pole Mount Adapter