

# iTrans™

## Fixed-Point Monitors



The iTrans fixed-point gas monitor employs an intelligent electronics platform to provide one or two points of detection from a single head for maximum flexibility, superior performance and lower installation costs.

Able to monitor any combination of gases for a specific environment, iTrans utilizes our industry-proven “smart” sensor technology and safety features including automatic sensor recognition, access code security, and zero and cal fault protection – all enclosed within an explosion-proof aluminum or stainless steel housing.

The microprocessor-controlled transmitters are capable of independent operation or multi-point system configuration. With optional on-board relays, the monitor has the added ability of stand-alone operation, activating alarms, horns, or fans and can also shut down a system without the need to wire back to a central control panel.

## SPECIFICATIONS

### Enclosures:

Cast aluminum, poly-bonded coating or 316 stainless steel. Both are explosion-proof, NEMA 7X, IP66 rated

### Sensors:

Combustible Gases: Catalytic bead and/or Non-Dispersive Infrared (NDIR)  
Oxygen / Toxic Gases: Electrochemical diffusion

### Measuring Ranges:

Combustible gases: 0-100% LEL in 1% increments  
Oxygen: 0-30% by volume in 0.1% increments  
Ammonia: 0-200 ppm in 1 ppm increments  
Carbon Monoxide: 0-999 ppm in 1 ppm increments  
Hydrogen Sulfide: 0-500 ppm in 1 ppm increments  
Sulfur Dioxide: 0.2-99.9 ppm in 0.1 ppm increments  
Hydrogen Cyanide: 0.2-30 ppm in 0.1 ppm increments  
Hydrogen Chloride: 0.2-30 ppm in 0.1 ppm increments  
Phosphine: 0-1 ppm in 0.01 ppm increments  
Nitrogen Dioxide: 0.2-99.9 ppm in 0.1 ppm increments  
Nitric Oxide: 0-999 ppm in 1 ppm increments  
Chlorine: 0.2-99.9 ppm in 0.1 ppm increments  
Chlorine Dioxide: 0.02-1 ppm in 0.01 ppm increments  
Hydrogen: 0-999 ppm in 1 ppm increments

### Input Current (Max)

Toxic Gas / Oxygen: 150 mA at 24 VDC (single gas)  
Combustible gases (Catalytic): 175 mA at 24 VDC, 0.6 A peak (single gas)  
Combustible gases (Infrared): 150 mA at 24 VDC, 0.6 A peak (single gas)  
Combined catalytic/infrared: 280 mA at 24 VDC (two gas)

### Input Voltage:

12-28 VDC operating range (24 VDC typical)

### Display:

Dual-channel split-screen LED display (4 digit, 7-segment arrangement per channel) provides simultaneous display of one or two gases.

### Signal Output:

4-20 mA, linear (analog) and ModBus RTU (digital)  
RS485 digital communication with ModBus RTU software protocol system at 9600 baud. Three or four wire system capable of accommodating over 200 devices in bus configuration. Address selection through on-board 8-position dipswitch.

### Alarm Relays

3 alarm relays: Two user-programmable relays, SPST, N.O.; plus one fault relay, SPST, N.C.

### Contact Capacity:

5 Amps at 30 VDC

### Temperature Range:

-4°F to +122°F (-20°C to +50°C), typical

### Humidity Range:

15-90% RH (non-condensing), typical

### Approvals: (Sensor-specific)

Consult factory for current approval status  
NRTL/c and CSA – Class I, Div. 1, 2,  
Groups B, C, D; AEx d IIB + H2  
ATEX – Ex d IIB + H2 T5 (sensor-specific)  
IEC – Ex d IIB + H2 T5 (sensor-specific)  
China – GB 3836. 1-Ex d IIC T4; LEL version  
GB15322-94 Fire protection

### ITRANS™ PART NUMBER / ORDERING MATRIX

<b>A</b> – Sensor 1 configuration	<b>E</b> – Sensor 2 configuration
<b>B</b> – Gas sensor 1	<b>F</b> – Gas sensor 2
<b>C</b> – 4-20 mA output scale for sensor 1	<b>G</b> – 4-20 mA output scale for sensor 2
<b>D</b> – Optional on-board relays	

### A – SENSOR 1 CONFIGURATION

1 – Explosion-proof / On-Board
2 – Explosion-proof / Remote*
3 – Non-hazardous remote / Duct mount
4 – Explosion-proof / On-Board with Splash Guard
5 – Explosion-proof / Remote with Splash Guard*
6 – XP 316 Stainless Steel / On-Board
7 – XP 316 Stainless Steel / Remote*

### B – GAS SENSOR 1

1 – Carbon Monoxide (CO)
2 – Nitric Oxide (NO)
3 – Ammonia (NH <sub>3</sub> )
4 – Hydrogen Sulfide (H <sub>2</sub> S)
5 – Sulfur Dioxide (SO <sub>2</sub> )
6 – Nitrogen Dioxide (NO <sub>2</sub> )
7 – Chlorine (Cl <sub>2</sub> )
8 – Chlorine Dioxide (ClO <sub>2</sub> )
9 – Hydrogen Cyanide (HCN)
A – Oxygen (O <sub>2</sub> )
B – LEL Infrared (factory methane calibration)
C – LEL Catalytic plug-in (factory pentane calibration)
D – Carbon Monoxide - Hydrogen Null (CO - H <sub>2</sub> )
F – Hydrogen Chloride (HCl)
G – LEL Infrared Propane
K – Phosphine (PH <sub>3</sub> )
L – Hydrogen (H <sub>2</sub> )

### C – 4-20 mA OUTPUT SCALE FOR SENSOR 1

0 – 0-999
1 – 0-500
2 – 0-100
3 – 0-50
4 – 0-30
5 – 0-10
6 – 0-2
7 – 0-1
8 – 0-20
9 – 0-200

### D – OPTIONAL ON-BOARD RELAYS

0 – No Relay Modules
1 – With On-Board Relays

iTrans™ offers a wide variety of sensor configurations and relay options for maximum flexibility and affordability. Use the following guide to select the options that best fit your monitoring needs and applications. Industrial Scientific recommends that a fixed system application survey be completed to help provide the most accurate assessment of your equipment requirements.

iTrans™ Base Part Number: **7814635-ABCDEFGF** (sensor options listed below) *Dual reading LED display, magnetic calibration tool, and calibration cup are standard items with all iTrans monitors.*

**Ordering example:** An iTrans™ with an on-board LEL (4-20 mA scale 0-100) and remote mount H<sub>2</sub>S (4-20 mA scale 0-500) with optional relays would have a part number of 7814635-1C21241

### E – SENSOR 2 CONFIGURATION

0 – No sensor
1 – Explosion-proof / On-Board
2 – Explosion-proof / Remote*
3 – Non-hazardous remote / Duct mount
4 – Explosion-proof / On-Board with Splash Guard
5 – Explosion-proof / Remote with Splash Guard*
6 – Stainless Steel Dual On-Board (currently not available)
7 – XP 316 Stainless Steel / Remote*

### F – GAS SENSOR 2

(required only for dual sensor version)
1 – Carbon Monoxide (CO)
2 – Nitric Oxide (NO)
3 – Ammonia (NH <sub>3</sub> )
4 – Hydrogen Sulfide (H <sub>2</sub> S)
5 – Sulfur Dioxide (SO <sub>2</sub> )
6 – Nitrogen Dioxide (NO <sub>2</sub> )
7 – Chlorine (Cl <sub>2</sub> )
8 – Chlorine Dioxide (ClO <sub>2</sub> )
9 – Hydrogen Cyanide (HCN)
A – Oxygen (O <sub>2</sub> )
B – LEL Infrared (factory methane calibration)
C – LEL Catalytic plug-in (factory pentane calibration)
D – Carbon Monoxide – Hydrogen Null (CO - H <sub>2</sub> )
F – Hydrogen Chloride (HCl)
G – LEL Infrared Propane
K – Phosphine (PH <sub>3</sub> )
L – Hydrogen (H <sub>2</sub> )

### G – 4-20 mA OUTPUT SCALE FOR SENSOR 2

(required only for dual sensor version)
0 – 0-999
1 – 0-500
2 – 0-100
3 – 0-50
4 – 0-30
5 – 0-10
6 – 0-2
7 – 0-1
8 – 0-20
9 – 0-200

\*Remote sensor maximum distance = 200m  
Consult factory for availability, additional gases, ranges and certification information. Subject to change without notice.