## 1   DESCRIPTION

The Honeywell Infrared Gas Monitor (Model IR-148) detects solvents and gases such as HCFCs, HFCs and PFCs. IR-148 can have 1, 4 or 8 sampling points. This InfraTox driver reports gas values, alarms and troubles for each point.

The serial driver can emulate a Client or a Server. The FieldServer and Zellweger device are connected using a RS-485 network.

**As a Client:**

The driver listens passively for messages from the IR-148 unit and stores data extracted from the messages. The driver cannot poll the IR-148 device for Data. The driver records some additional data age information (which is stored in the FieldServer's Data Arrays) because messages do not always contain information about all sensors and depending on the IR-148 operational mode (e.g. Locked mode), may never contain information other than for one sensor.

**As a Server:**

The server side if this driver has been developed primarily to test the Client side driver as part of FieldServer's QA program. The driver sends messages reporting the state of the samples. The server driver can also be locked to report the status/value of one particular sample channel.

It is possible to connect up to three Honeywell Zellweger units (IR-148) on one RS-485 network provided that one unit is configured as a single point unit (IR-148 1 point), one as a 4-point unit (IR-148 4 point) and the other as an 8 point unit (IR-148 8-point). At this stage one device with 8 points and one with 4 points have been tested separately.

To allow for the possibility that the device is connected on a RS-485 network with other devices (such as the relay module option) messages that are not 49 bytes long and which do not begin with 0xB1 will be ignored. The Driver will, however, provide statistics for the ignored as well as the processed messages.

### 1.1   Connection Facts

| FieldServer Mode | Nodes | Comments |
|---|---|---|
| Client | 3 | Tested only 2 Nodes (IR-148 8 point and IR-148 4 point) on separate networks |
| Server | 3 | Developed to test Client side of the Driver |

## 2   FORMAL DRIVER TYPE

Passive Client & Active Server

## 3   COMPATIBILITY

| FieldServer Model | Compatible |
|---|---|
| FS-B35 Series | Yes |
| ProtoNode/ProtoAir | No |
| QuickServer FS-QS-10xx | No |
| QuickServer FS-QS-12xx | Yes |
| QuickServer FS-QS-20xx | No |
| QuickServer FS-QS-22xx | Yes |

## 4   CONNECTION INFORMATION

| | |
|---|---|
| Connection Type: | RS-485 (Two wire, Half-Duplex) |
| Baud Rates: | 19200 (Vendor Limitation) |
| Data Bits: | 8 (Vendor Limitation) |
| Stop Bits: | 1 (Vendor Limitation) |
| Parity: | None |
| Multidrop Capability: | Yes |

## 5   DEVICES TESTED

| Device | Tested (FACTORY, SITE) |
|---|---|
| Honeywell Zellweger IR-148 | Factory (only IR-148 8 point unit) |
| Honeywell Zellweger IR-148 | Site (only IR-148 4 point unit) |

| Offset | Sensor | Contents | Description |
|---|---|---|---|
| 33..43 | 4 | | |
| 44..54 | 5 | | |
| 55..65 | 6 | | |
| 66..76 | 7 | | |
| 77..87 | 8 | | |

## 6 COMMUNICATIONS OPTIONS SUPPORTED

### 6.1 Write (Control) Operations Supported

| Message Types | Notes |
|---|---|
| Gas Value Message | Message reports a gas value and units. |
| Trouble Message | Message reports a trouble for one sensor. |
| Blank Message | Message used to flash IR-148 display. |
| Alarm Message | Message reports an alarm (C/W/A) for one sensor. |
| Locked Point Message | Unit is locked onto a single sample. |
| Other 49 byte messages beginning 0xb1 | Discarded but driver reports stats on these messages. |
| Other 49 byte messages | |
| Other messages | |

## 7 DATA STORAGE

### 7.1 Default

**NOTE: One Set of Consecutive Data Array Elements per Point/Sensor.**

| Offset | Sensor | Contents | Description |
|---|---|---|---|
| 0 | 1 | Alarm or Trouble | Set non-zero if alarm or a trouble has been reported, else set zero. |
| 1 | 1 | Alarm Type | 0 = None, 1 = Caution, 2 = Warning, 3 = Alarm |
| 2 | 1 | Trouble | 0 = None, 1 = Trouble |
| 3 | 1 | Gas Value | Gas value multiplied by 100 is stored here. If configured, scaling will be applied. |
| 4 | 1 | Gas Units | 1st 3 bytes of gas units are written here as ASCII characters. |
| 5 | 1 | Gas Units | |
| 6 | 1 | Gas Units | |
| 7 | 1 | State | 0 = Enabled 1 = Disabled |
| 8 | 1 | Gas Value Valid | 1 = Gas Value updated with most recent message. 0 = Gas Value not updated. |
| 9 | 1 | Gas Value Age | In seconds since last update. Initial (and max) value 0xffff |
| 10 | 1 | Sensor Data Age | Time since last message containing data about this sensor in seconds since last update. Initial (and max) value = 0xffff |
| 11..21 | 2 | | |
| 22..32 | 3 | | |

### 7.2 Extended

| Offset | Sensor | Contents | Description |
|---|---|---|---|
| 0 | 1 | Alarm or Trouble | Non-zero if alarm or a trouble has been reported. Zero if neither are currently being reported. |
| 1 | 1 | Alarm Type | 0 = None, 1 = Caution, 2 = Warning, 3 = Alarm |
| 2 | 1 | Trouble | 0=None, 1=Trouble |
| 3 | 1 | Gas Value | Gas value multiplied by 100 is stored here. When stored, if configured, scaling will be applied. |
| 4 | 1 | Gas Units | 1st 3 bytes of gas units are written here as ASCII characters. |
| 5 | 1 | Gas Units | |
| 6 | 1 | Gas Units | |
| 7 | 1 | State | 0 = Enabled, 1 = Disabled |
| 8 | 1 | Gas Value Valid | 1 = Gas Value updated with most recent message. 0 = Gas Value not updated. |
| 9 | 1 | Gas Value Age | In seconds since last update. Initial (and max) value = 0xffff |
| 10 | 1 | Sensor Data Age | Age since last message, containing data from this sensor in seconds. Initial (and max) value = 0xffff |
| 11 | 1 | I/O State | 255 = unknown, 0=Warm up, 1 = Ready, 2 = Trouble, 3= Cal/Setup |
| 12 | 1 | Alarm Latched Status | 0=No, 1=Yes |
| 13 | 1 | Audio On Status | 0=No, 1= Yes |
| 14 | 1 | Alarm Latching Preference | On Caution (0=No, 1= Yes) |
| 15 | 1 | Alarm Latching Preference | On Warning (0=No, 1= Yes) |
| 16 | 1 | Alarm Latching Preference | On Alarm (0=No, 1= Yes) |
| 17 | 1 | Audio On Preference | On Caution (0=No, 1= Yes) |
| 18 | 1 | Audio On Preference | On Warning (0=No, 1= Yes) |
| 19 | 1 | Audio On Preference | On Alarm (0=No, 1= Yes) |

| Offset | Sensor | Contents | Description |
|--------|--------|----------|-------------|
| 20 | 1 | Audio On Preference | On Trouble (0=No, 1= Yes) |
| 21 | 1 | Audio On Preference | On Auxiliary (0=No, 1= Yes) |
| 22-24 | 1 | Spare | |
| 25-49 | 2 | | |
| 50-74 | 3 | | |
| 75-99 | 4 | | |
| 100-124 | 5 | | |
| 125-149 | 6 | | |
| 150-174 | 7 | | |
| 175- 199 | 8 | | |

T28600-102

MSA Safety
1991 Tarob Court, Milpitas, California 95305 USA
**O.** +1 408 262-6611　　**TF:** +1 800 72 SIERRA (74377)　　**E.** SMC-insidesales@msasafety.com
www.sierramonitor.com

4/19