

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)

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	1 st 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		

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

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	1 st 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		