FieldServer Protocol Driver Sheet
Honeywell Zellweger IR-148

FS-8700-102 Version: 1.02 / Rev. 3

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 seperately.

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 MATRIX

FieldServer Model	Compatible with this driver
FS-x30	Yes
SlotServer	No
ProtoNode	No
QuickServer FS-QS-10xx	No
QuickServer FS-QS-12xx	No
ProtoCessor FPC-ED2	No
ProtoCessor FPC-ED4	No

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 FUNCTIONS- SUPPORTED FUNCTIONS AT A GLANCE:

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 :** 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		
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	1st 3 bytes of gas units are written
5	1	Gas Units	

Sierra Monitor Corporation
1991 Tarob Court, Milpitas, California 95305 USA
O. +1 408 262-6611 TF: +1 800 72 SIERRA (74377) F. +1 408 262-9042 www.sierramonitor.com

Offset	Sensor	Contents	Description
6	1	Gas Units	here as ASCII characters.
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	Audion On Status	0=No, 1= Yes
14	1	Alarm Latching Preferenc e	On Caution (0=No, 1= Yes)
15	1	Alarm Latching Preferenc e	On Warning(0=No, 1= Yes)
16	1	Alarm Latching Preferenc e	On Alarm(0=No, 1= Yes)
17	1	Audio On Preferenc e	On Caution (0=No, 1= Yes)
18	1	Audio On Preferenc e	On Warning(0=No, 1= Yes)
19	1	Audio On Preferenc e	On Alarm(0=No, 1= Yes)
20	1	Audio On Preferenc e	On Trouble(0=No, 1= Yes)
21	1	Audio On Preferenc e	On Auxilary(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		

Sierra Monitor Corporation
1991 Tarob Court, Milpitas, California 95305 USA
O. +1 408 262-6611 TF: +1 800 72 SIERRA (74377) F. +1 408 262-9042 www.sierramonitor.com