DET-TRONICS

INSTRUCTIONS

Gas Inspector Monitor Software for use with Det-Tronics FlexVu® Universal Display Model UD10

IMPORTANT

All firmware versions of the FlexVu® UD10 are compatible with the latest Gas Inspector Monitor (1.6.xx). To take full advantage of the latest Gas Inspector Monitor features, the FlexVu UD10 firmware must be 2.80 or higher. The firmware version is located in the Systems Setup window (see Figure 11).

DESCRIPTION

The FlexVu® Universal Display Model UD10 is designed and approved as a 'stand alone' device, while also performing all the functions of a gas controller. When the FlexVu UD10 is used in combination with a compatible Detector Electronics Corporation (Det-Tronics) gas sensor/detector, it is able to record important information (alarms, faults, and calibrations) from the sensor/detector. The information is date and time stamped, and stored in the electronics module of the FlexVu UD10. Gas Inspector Monitor allows the user to later upload the stored information to a Personal Computer (PC), where it can be displayed, saved, or printed.

FEATURES

- Data logs available for Det-Tronics sensors/detectors (see Table 1)
- Displays real time fault/alarm indicators
- Stored data can be uploaded to a PC
- Logs can be viewed, stored to a file, or printed.

Table 1—Data Logging Capabilities

	Calibration Log Storage	
	UD10	**SENSOR/DETECTOR**
GT3000	X	X
PIR9400	X	
PIRECL	X	X
OPECL	X	X
NTMOS	X	
C706X	X	
CGS	X	

NOTE: All event logs are stored in the UD10.

HARDWARE REQUIREMENTS

Gas Inspector Monitor software can operate on most Intel® based computers running Microsoft® Windows XP or Windows 7. When installing Gas Inspector Monitor in Windows 7, ensure that the PC is a 32-bit version. Currently, 64-bit computers running Windows 7 are incompatible with Gas Inspector Monitor.

A minimum of 16 megabytes of RAM is required, however, 32 or more megabytes are recommended for optimum performance. The software also requires a color monitor with a minimum resolution of 640 by 480, and a hard drive with at least 10 megabytes of free space.

INSTALLATION

SOFTWARE

⚠CAUTION

The PC must always be located in a non-hazardous controlled location.

NOTE

It is recommended that the installation of the USB and RS-485 drivers be completed before installing the Gas Inspector Monitor software.

NOTE

The following procedures are for Windows XP. If using Windows 7, note that the dialog windows may appear different from the examples shown.

⚠WARNING

Do not open the FlexVu UD10 assembly in a hazardous area when power is applied.

Driver Software

The first installation setup is for the USB driver followed automatically by the installation of the RS-485 driver.

Follow these steps to install the driver software:

1. Apply power to the FlexVu UD10. Allow it to warm up and reach a normal operating mode.
2. Insert the driver installation CD.
3. Connect the RS-485 to the FlexVu UD10's Modbus terminal, then connect the converter to a USB port on the PC (Figure 1).

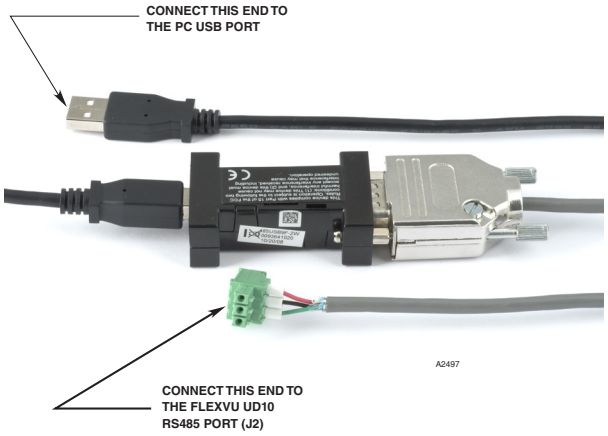


Figure 1—Gas Inspector Connector with RS-485 to USB Converter

NOTE

The Gas Inspector Connector includes a universal power supply that can plug into any standard 120/240 Vac outlet.

4. The Found New Hardware Wizard will appear. Select "No, not this time," then click *Next* (Figure 2).

Figure 2—Found New Hardware Wizard

5. On the following window, select "Install the software automatically (Recommended)," then click *Next* (Figure 3).

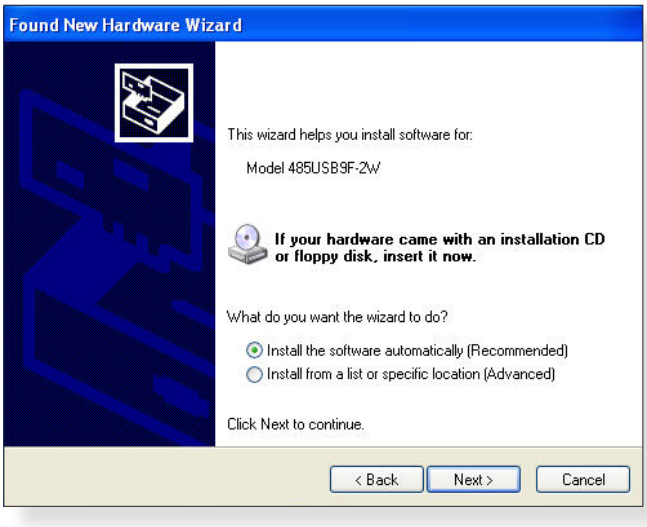


Figure 3—Recommended Driver Installation

6. Installation will begin when the Hardware Installation window appears. Click *Continue Anyway* to proceed with the installation (Figure 4).

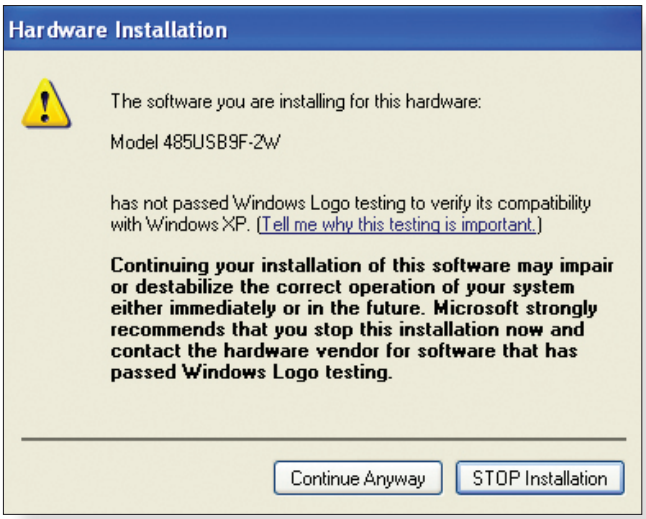


Figure 4—Hardware Installation Window

7. When installation is complete, a confirmation window will appear (Figure 5). Click *Finish* to complete this stage of the installation.

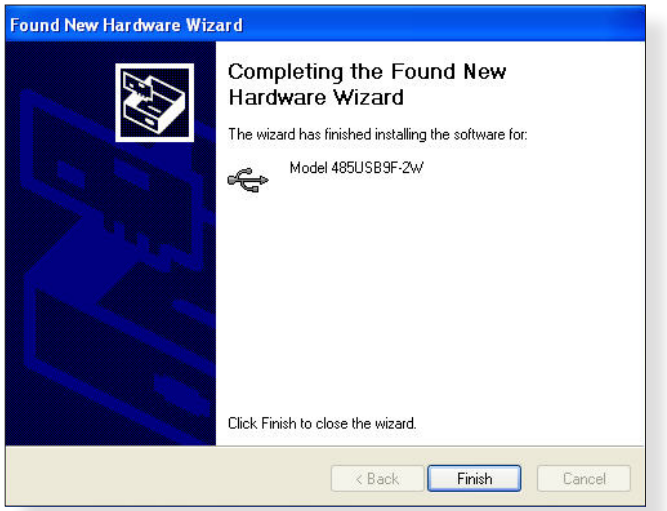


Figure 5—Completed Driver Installation

8. The installation process for the RS-485 driver will begin automatically. Follow the instructions from Step 4 to complete the installation for the RS-485.

Gas Inspector Monitor Software

NOTE

It is strongly recommended that all running programs in Windows be closed before installing the Gas Inspector Monitor software.

NOTE

Uninstall all previous versions of Gas Inspector Monitor and restart the computer before proceeding to Step 1.

1. Insert the Gas Inspector Monitor software CD (p/n 010268-001).
2. Click *Next* on the Welcome window (Figure 6).

Figure 6—Welcome Window

3. Choose a destination (Figure 7) for installing Gas Inspector Monitor, then click *Next* to continue.

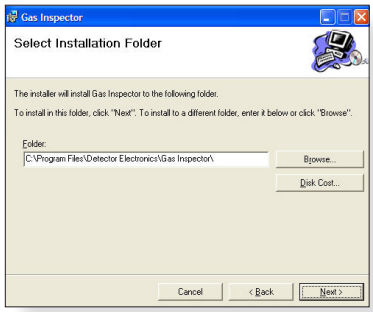


Figure 7—Install Destination

4. A confirmation window will appear to verify that the installation should begin. Click *Next* to confirm (Figure 8).

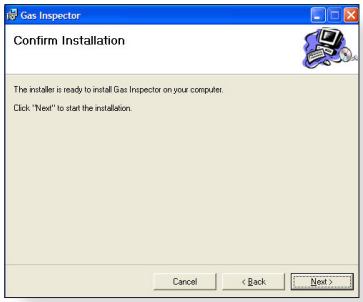


Figure 8—Conirm Installation

5. When the installation is complete, a confirmation window will appear (Figure 9). Click *Close* to end the installation process.

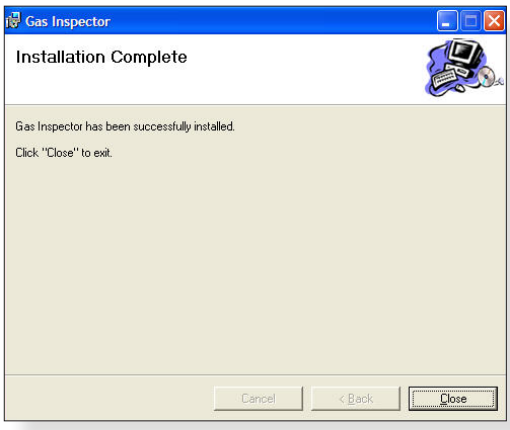


Figure 9—Installation Complete Window

Active X Software

At the initial startup of Gas Inspector Monitor, some users may be alerted to install Active X (Figure 10). This installation is performed only once and is required for Gas Inspector Monitor to function correctly. If the alert for Active X does not appear, proceed to the "Startup" section.

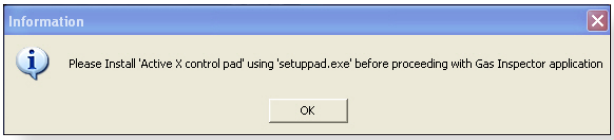


Figure 10—Install Active X Alert

Use the following procedure to install Active X:

1. Click on the "setuppad" installer, located on the Gas Inspector Monitor software CD.
2. Click *Yes* to accept the End User Agreement (Figure 10A).

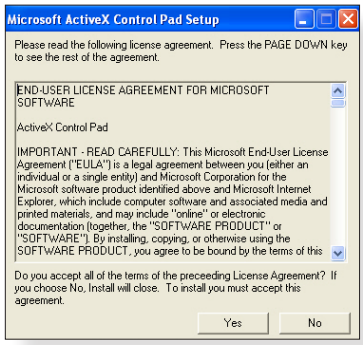


Figure 10A—End User Agreement Window

3. Click *Continue* on the Welcome window (Figure 10B).

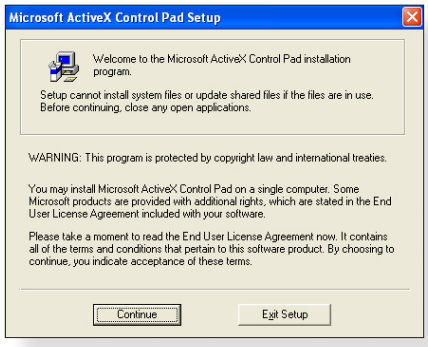


Figure 10B—Welcome Window

4. Click the large button to continue (Figure 10C).

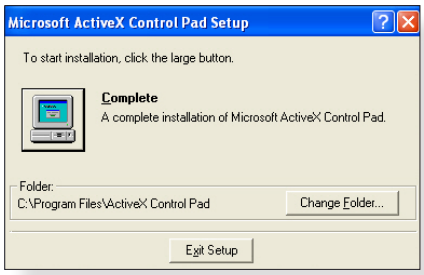


Figure 10C—Installation Location Window

5. Click *Continue* on the Program Group window to continue the installation (Figure 10D).

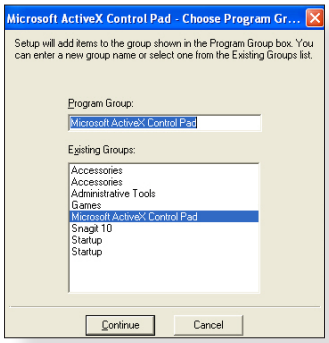


Figure 10D—Program Group Window

6. Click *OK* on the next window to exit the installer (Figure 10E).

Figure 10E—Exit Installer Window

NOTE

Communication between the FlexVu UD10 module and the PC uses the Modbus RTU protocol, with the FlexVu UD10 module configured as a Modbus slave.

⚠WARNING

Do not open the FlexVu UD10 assembly in a hazardous area when power is applied.

1. With the FlexVu UD10 in a normal operating mode, open Gas Inspector Monitor. The System Setup window will open with the recommended Modbus Settings of 9600 baud rate, no parity, and a polling address of 1 (Figure 11).

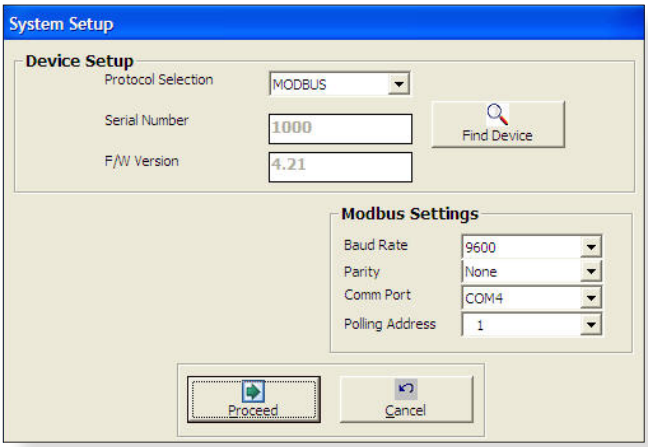


Figure 11—System Setup with Default Settings

2. Verify that the appropriate PC Comm port is selected by looking in the Windows Device Manager for the correct setting. This is accomplished by right-clicking on My Computer (from the Start Menu), then select "Manage." When the Computer Management window appears, select Device Manager (Figure 12) and expand the menu tree for Ports (COM & LPT). Make sure the RS-485 Port is using the same Comm Port shown in the System Setup window (Figure 11).

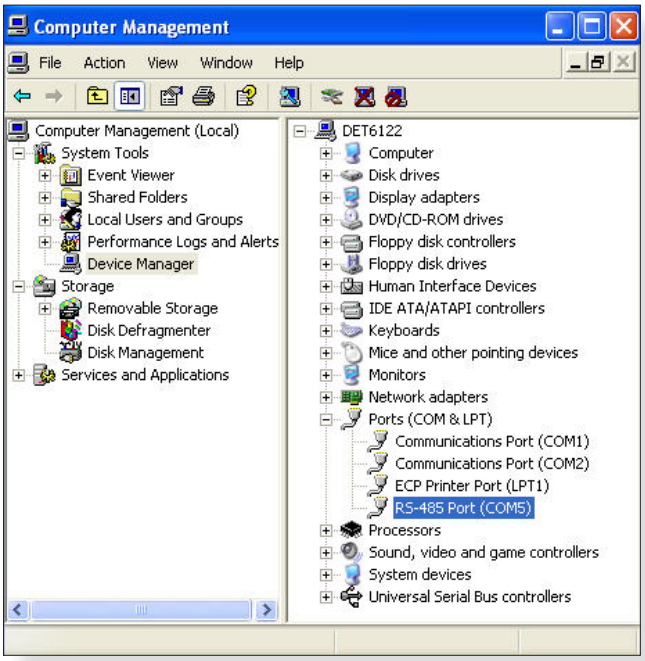


Figure 12—Computer Management Window

3. Click *Find Device* to create a connection between the FlexVu UD10 and the PC. A dialog box will appear above the System Setup window to confirm the connection (Figure 13). Click *OK*, then click *Proceed* to continue.

Figure 13—Device Connected Dialog Box

NOTE

In cases where the FlexVu UD10 cannot be found (Figure 14) after selecting "Find Device," the settings entered in the System Setup are incorrect or the USB converter is faulty. Uninstall and reinstall the drivers to resolve this problem.

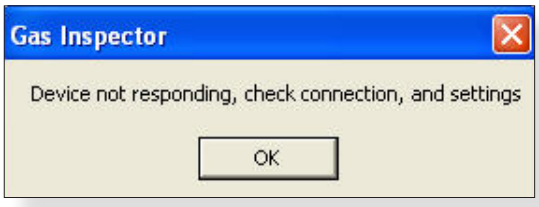


Figure 14—Device Not Connected Dialog Box

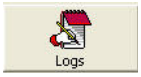
UNINSTALLING DRIVERS

1. To uninstall drivers, right-click on My Computer and select “Manage” to open the Computer Management window. Select “Device Manager*”* (Figure 12).
2. Expand the “Universal Serial Bus controllers” tree, and the USB converter will be listed by model number. Right-click on the appropriate model and choose “Uninstall.”
3. Click *OK* to confirm removal of the drive. The same steps can be used to uninstall the RS-485 driver.

TOOLS MENU

After the user completes all the required installations, Gas Inspector Monitor is ready to monitor information stored in the FlexVu UD10. The monitoring tools accessible to the user are Logs, Status, and System Setup.

LOGS



This option opens the Logs window, where the user can select between Event Logs or Calibration Logs. Choose the log type to be retrieved by selecting from the drop-down menu, labeled “Log Type” (Figure 15). Storing and retrieving of event logs are performed by the FlexVu UD10, for all sensor/detector types. Depending on the sensor/detector logging capabilities, calibration logs are stored in the sensor/detector or in the FlexVu UD10, (Table 1). All Event and Calibration Logs are dated and time stamped.

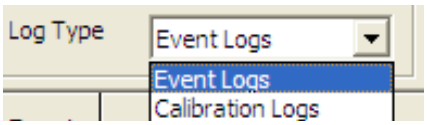


Figure 15—Log Type Selection

To begin retrieving logs, click the *Retrieve Logs* button (Figure 16).

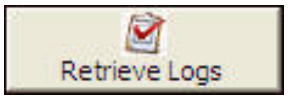


Figure 16—Retrieve Logs

All data is stored in non-volatile memory, which can accommodate approximately 1000 events. When the maximum is exceeded, the oldest events are automatically overwritten to make room for the newest events.

Event Logs

Event logs are listed by Event (number), Date, Time, Description, and Event ID. Each Event ID number is related to a specific Description (e.g. POWER UP, LOW ALARM ON, etc.). Normal status is highlighted in green, faults in yellow, and alarm events are red (Figure 20).

Calibration Logs

Calibration logs are listed by Event (number), Date, Time, Description, Event ID, Cal Zero, and Cal Span. Each Event ID number is related to a specific Description (e.g. ZERO CAL, SPAN CAL, etc.). The values under the Cal Zero and Cal Span columns represent the “Raw Sensor A-to-D (Analog-to-Digital) Counts.” Normal calibration status is highlighted in green, calibration faults in yellow, and failed calibrations are red (Figure 21).

SORT ORDER

By default, logs are sorted by most recent date and time. Logs can also be sorted by description (alphabetically), by double-clicking on the Description column header.

SAVING FILES

To save a file for use in a spreadsheet, such as Excel, click the *Export to File* button (Figure 17).

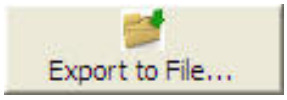


Figure 17—Export to File

ADDITIONAL BUTTONS

The *Stop* button (Figure 18) will immediately suspend the retrieval of an event log or calibration log. Click the *Retrieve Logs* button to begin a new retrieval.

Figure 18—Stop

The *Close* button (Figure 19) exits the Logs window, allowing other user accessible tools to be selected.

Figure 19—Close

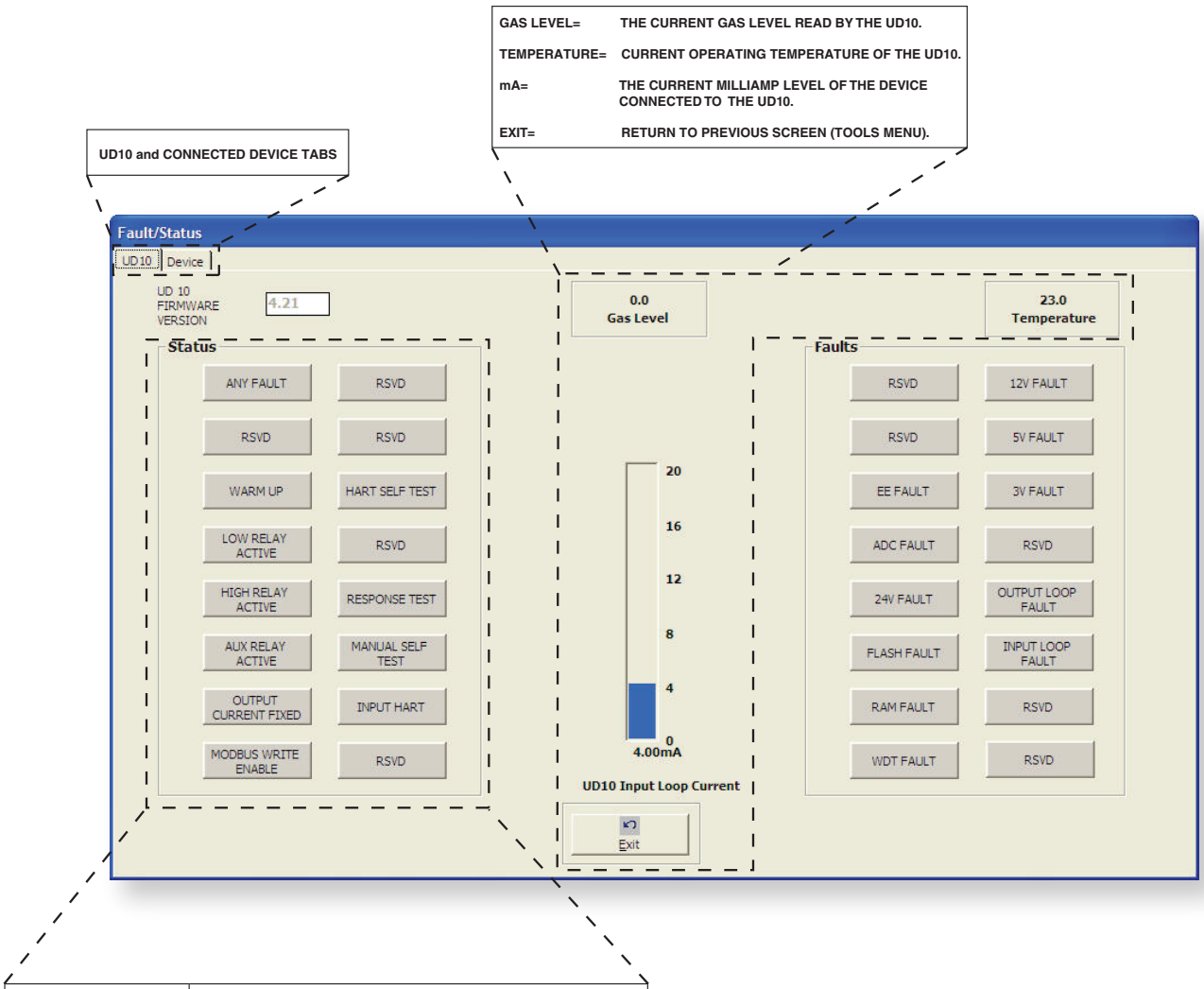
Figure 20—Example of Event Logs

Figure 21—Example of Calibration Logs

STATUS

Click the *Status* button to view the current status of the FlexVu UD10 and the connected device. By default, the status window displays the FlexVu UD10 information only. Select the Device tab to view information about the connected device.

The Fault/Status window displays various status and fault information about the FlexVu UD10 and the device connected to it. Note that all information in this window is read only. The FlexVu UD10 and the connected device each have their own distinct Fault/Status windows (Figures 22-25).

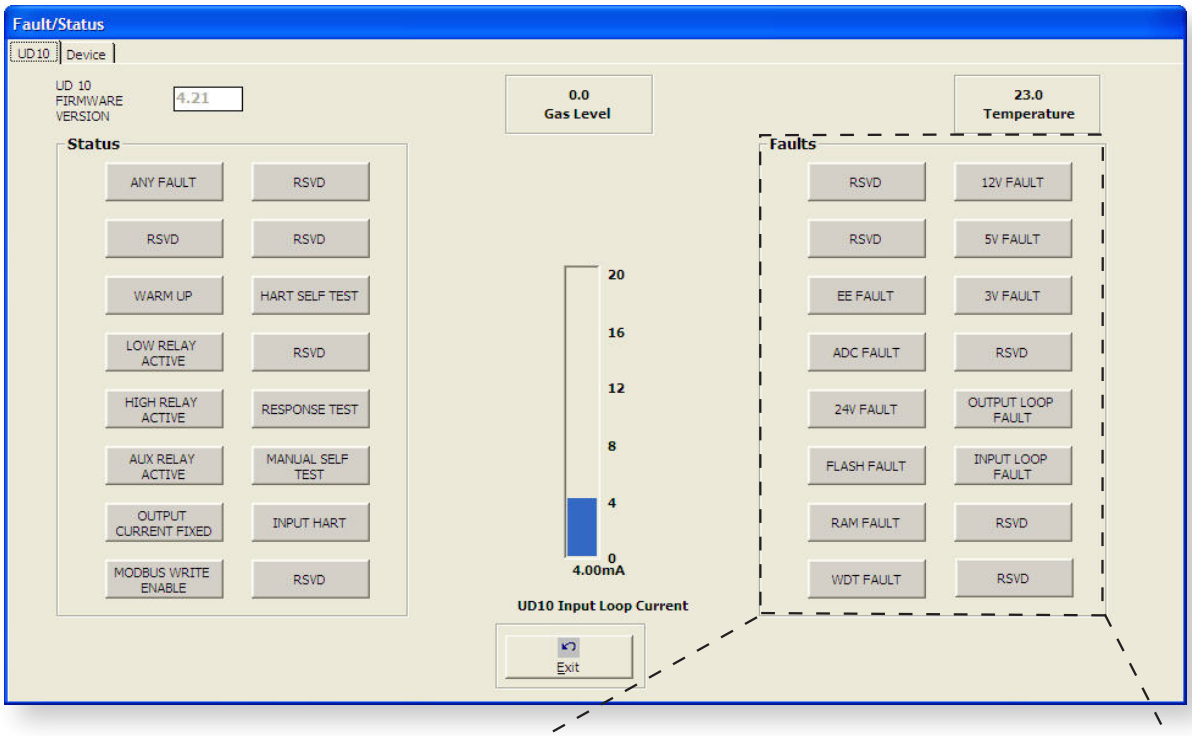


STATUS	DESCRIPTION
ANY FAULT	GENERAL FAULT INDICATION.
WARM UP	UD10 IS IN THE POWER-UP MODE.
LOW RELAY ACTIVE	LOW ALARM IS ACTIVE.
HIGH RELAY ACTIVE	HIGH ALARM IS ACTIVE.
AUXILIARY ACTIVE	AUXILIARY ALARM IS ACTIVE.
OUTPUT CURRENT FIXED	CURRENT IS FIXED FOR TESTING THE 4-20 LOOP.
MODBUS WRITE ENABLED	THERE IS ACCESS TO THE FACTORY CONFIGURATION VARIABLES IN THE UD10.
HART SELF TEST	HART INITIATED SELF TEST IS IN PROCESS.
RESPONSE TEST	4-20 IS LOCKED AT 4.0 mA FOR TESTING THE DISPLAY
MANUAL SELF TEST	MANUAL SELF TEST IS IN PROCESS.
INPUT HART	THERE IS NO COMMUNICATION BETWEEN THE UD10 AND THE CONNECTED HART BASED DETECTOR.

NOTE [1]: ALL INFORMATION DISPLAYED ON THIS SCREEN IS READ ONLY.

NOTE [2]: INDICATORS THAT ARE LABELED "RSVD," ARE NOT USED.

Figure 22—FlexVu UD10 Status Indicators Defined



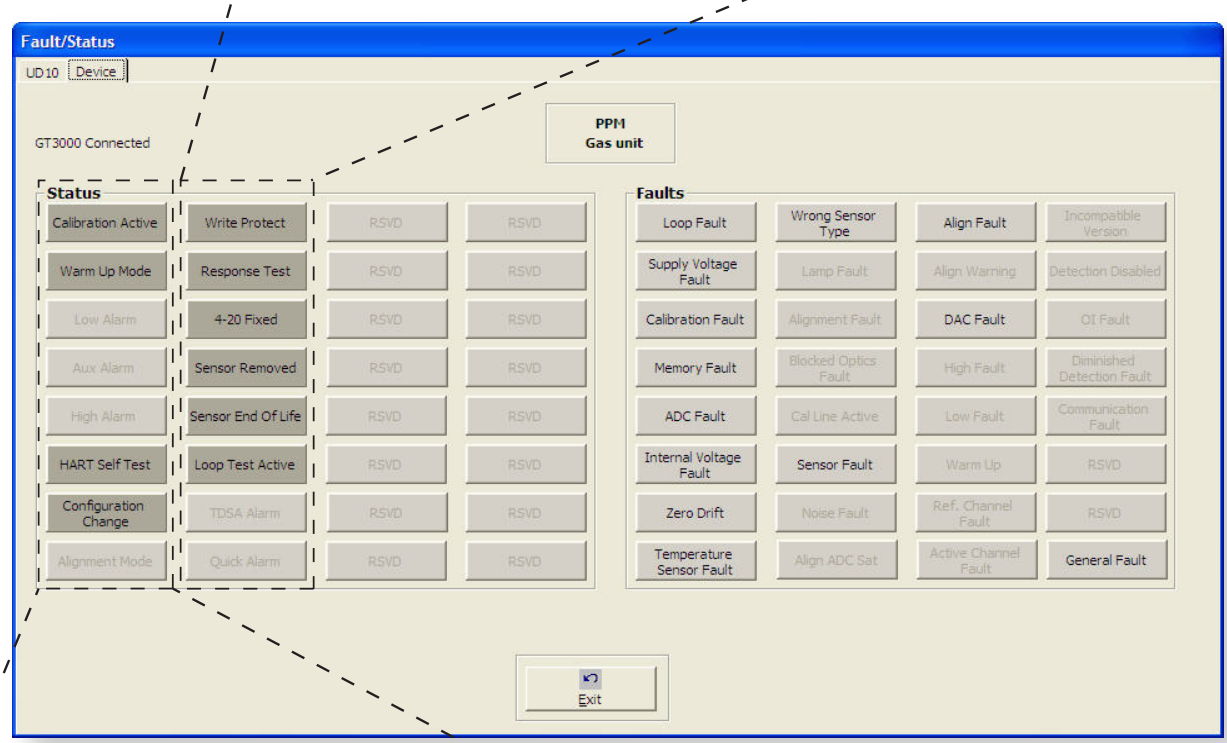
FAULT CONDITION	DESCRIPTION	RECOMMENDED ACTION
EE FAULT	FAULT IN NON-VOLATILE CONFIGURATION MEMORY.	RETURN TO FACTORY.
ADC FAULT	ADC REFERENCE VOLTAGE TOO HIGH OR LOW.	RETURN TO FACTORY.
24 VOLT FAULT	PROBLEM IN THE 24 VOLT POWER SUPPLY OR POWER WIRING.	CHECK POWER SOURCE. RETURN TO FACTORY.
FLASH FAULT	FAULT IN VOLATILE MEMORY.	RETURN TO FACTORY.
RAM FAULT	FAULT IN VOLATILE MEMORY.	RETURN TO FACTORY.
WDT FAULT	WATCHDOG TIMER IS NON-FUNCTIONAL.	RETURN TO FACTORY.
12 VOLT FAULT	12 VOLT INTERNAL POWER SUPPLY OUT OF TOLERANCE.	RETURN TO FACTORY.
5 VOLT FAULT	5 VOLT INTERNAL POWER SUPPLY OUT OF TOLERANCE.	RETURN TO FACTORY.
3 VOLT FAULT	3 VOLT INTERNAL POWER SUPPLY OUT OF TOLERANCE.	RETURN TO FACTORY.
OUTPUT LOOP FAULT	FAULT IN 4-20 mA OUTPUT LOOP.	CHECK 4-20 mA LOOP WIRING FOR SHORTS OR OPENS.
INPUT LOOP FAULT	FAULT IN SENSOR OR SENSOR LOOP.	CHECK SENSOR WIRING. CALIBRATE SENSOR. ENSURE THAT SENSOR TYPE MATCHES CONFIGURATION.

NOTE [1]: ALL INFORMATION DISPLAYED ON THIS SCREEN IS READ ONLY.

NOTE [2]: INDICATORS THAT ARE LABELED "RSVD," ARE NOT USED.

Figure 23—FlexVu UD10 Fault Indicators Defined

STATUS	DESCRIPTION
WRITE PROTECT	THE DEVICE IS IN THE WRITE PROTECT MODE.
RESPONSE TEST	4-20 IS LOCKED AT 4.0 mA FOR TESTING THE DEVICE.
4-20 FIXED	OUTPUT CURRENT IS FIXED FOR TESTING 4-20 LOOP.
SENSOR REMOVED	SENSOR MODULE IS MISSING OR DEFECTIVE.
SENSOR END OF LIFE (CGS ONLY)	SENSOR NEEDS REPLACEMENT.
LOOP TEST ACTIVE	4-20 LOOP IS IN PROCESS.
TDSA ALARM	NOT USED.
QUICK ALARM	NOT USED.



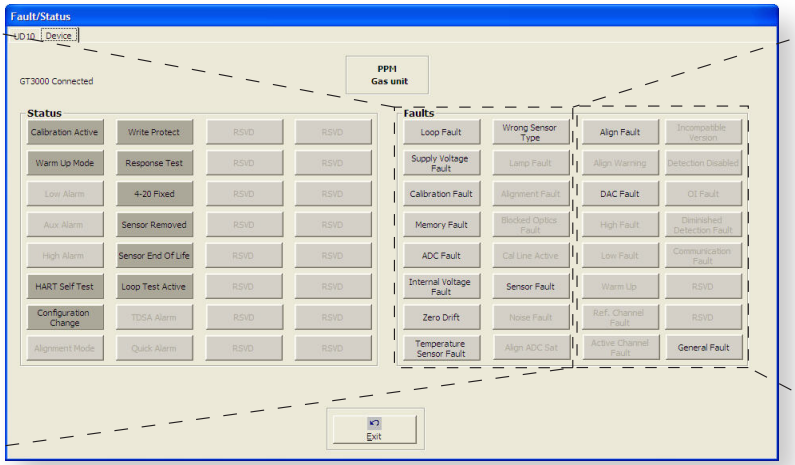
STATUS	DESCRIPTION
CALIBRATION ACTIVE	CALIBRATION IS IN PROCESS.
WARM UP MODE	DEVICE IS IN POWER-UP MODE.
LOW ALARM	A LOW ALARM CONDITION HAS BEEN DETECTED.
AUXILIARY ALARM	AN AUXILIARY ALARM CONDITION HAS BEEN DETECTED.
HIGH ALARM	A HIGH ALARM CONDITION HAS BEEN DETECTED.
HART SELF TEST	HART INITIATED SELF TEST IS IN PROCESS.
CONFIGURATION CHANGE	A CHANGE HAS BEEN MADE TO A CRITICAL DEVICE PARAMETER.
ALIGNMENT MODE	DEVICE IS IN A SPECIAL ALIGNMENT MODE (FOR OPECL).

NOTE [1]: ALL INFORMATION DISPLAYED ON THIS SCREEN IS READ ONLY.

NOTE [2]: EACH DETECTOR TYPE UTILIZES A SET OF DEVICE SPECIFIC STATUS BITS THAT DETERMINE WHICH INDICATORS BECOME ACTIVE DURING AN ALARM OR FAULT.

Figure 24—Device Status IndIcators Defined (GT3000 Shown)

STATUS	DESCRIPTION	RECOMMENDED ACTION
LOOP FAULT	CURRENT LOOP BELOW FAULT THRESHOLD.	CHECK 4-20 mA LOOP WIRING FOR SHORTS OR OPENS.
SUPPLY VOLTAGE FAULT	24 VOLT POWER SUPPLY VOLTAGE TOO LOW OR TOO HIGH.	VERIFY PROPER WIRING TO THE DEVICE AND CORRECT VOLTAGE LEVEL AT THE DISPLAY AND DETECTOR.
CALIBRATION FAULT	UNSUCCESSUL CALIBRATION	THIS FAULT CAN BE CAUSED IF THE CALIBRATION IS ALLOWED TO TIME OUT. IF SO, RE-CALIBRATE. ENSURE THAT THERE IS ENOUGH GAS IN THE CALIBRATION BOTTLE TO COMPLETE THE CALIBRATION. ENSURE THAT THE GAS BEING USED FOR CALIBRATION IS THE CORRECT TYPE AND CONCENTRATION. IT MUST MATCH THE CONFIGURED SETTING.
MEMORY FAULT	SELF-DETECTED MEMORY FAULT.	RETURN TO FACTORY.
ADC FAULT	SELF-DETECTED ADC FAULT.	RETURN TO FACTORY.
INTERNAL VOLTAGE FAULT	SELF-DETECTED VOLTAGE FAULT.	CHECK SUPPLY VOLTAGE. RETURN TO FACTORY.
ZERO DRIFT	SENSOR SIGNAL HAS DRIFTED NEGATIVE.	THIS DEVICE MAY HAVE BEEN CALIBRATED WITH BACKGROUND GAS PRESENT. PURGE WITH CLEAN AIR AND RE-CALIBRATE.
TEMP. SENSOR FAULT	TEMPERATURE SENSOR IS OUT OF RANGE.	RETURN TO FACTORY.
WRONG SENSOR TYPE	NEW OR DIFFERENT SENSOR TYPE IS INSTALLED.	CALIBRATING THE SENSOR WILL CLEAR THE FAULT. THE "CHANGE SENSOR TYPE" COMMAND CAN BE SENT FROM THE UD10 IF THE SENSOR IS PRE-CALIBRATED
LAMP FAULT	OPEN OR SHORTED LAMP.	REPLACE LAMP IF POSSIBLE. RETURN TO FACTORY.
ALIGNMENT FAULT	ALIGNMENT PROBLEM.	CHECK ALIGNMENT.
BLOCKED OPTIC FAULT	OPTICAL PATH IS BLOCKED.	LOCATE AND REMOVE OBSTRUCTION FROM THE OPTICAL PATH.
CAL LINE ACTIVE	CAL LINE IS ACTIVE AT START-UP.	ENSURE THAT THE CAL LINE WIRING IS NOT SHORTED AND THE SWITCH IS OPEN.
SENSOR FAULT	SELF-DETECTED FAULT WITH THE SENSOR.	CHECK SENSOR WIRING. CALIBRATE SENSOR. ENSURE THAT SENSOR TYPE MATCHES CONFIGURATION.
NOISE FAULT	EXCESSIVE NOISE ON SIGNAL.	CHECK ALIGNMENT OF THE DETECTOR.
ALIGN ADC SAT	ALIGNMENT ADC SATURATED.	CHECK ALIGNMENT OF THE DETECTOR.



STATUS	DESCRIPTION	RECOMMENDED ACTION
ALIGN FAULT	ALIGNMENT FAULT.	CHECK ALIGNMENT.
ALIGN WARNING	ALIGNMENT WARNING.	CHECK ALIGNMENT.
DAC FAULT	DAC FAULT DETECTED	RETURN TO FACTORY.
HIGH FAULT	DETECTOR OUTPUT IS HIGHER THAN SPECIFIED LIMIT.	CHECK SENSOR WIRING FOR SHORTS AND VERIFY CORRECT SENSOR TYPE AND CALIBRATION.
LOW FAULT	DETECTOR OUTPUT IS LOWER THAN SPECIFIED LIMIT.	CHECK SENSOR WIRING FOR OPENS AND CORRECT SENSORY TYPE AND CALIBRATION.
WARM UP FAULT	DEVICE IS WARMING UP.	WAIT FOR WARM UP TO COMPLETE.
REF. CHANNEL FAULT	ERROR IN THE REFERENCE CHANNEL.	RETURN TO FACTORY.
ACTIVE CHANNEL FAULT	ERROR IN THE ACTIVE CHANNEL	AN ACTIVE CHANNEL FAULT WOULD INDICATE AN ERROR IN THE ACTIVE CHANNEL. MOST LIKELY WILL REQURE FACTORY SERVICE.
INCOMPATIBLE VERSION	NOT USED	N/A
DETECTION DISABLED	NOT USED	N/A
O_i FAULT	NOT USED	N/A
DIMINISHED DETECTION FAULT	NOT USED	N/A
COMMUNICATION FAULT	NOT USED	N/A
GENERAL FAULT	A FAULT OF ANY TYPE HAS OCCURED	REFERENCE THE SPECIFIC FAULT FOR RECOMMENDED ACTION

NOTE [1]: ALL INFORMATION DISPLAYED ON THIS SCREEN IS READ ONLY.

NOTE [2]: EACH DETECTOR TYPE UTILIZES A SET OF DEVICE SPECIFIC STATUS BITS THAT DETERMINE WHICH INDICATORS BECOME ACTIVE DURING AN ALARM OR FAULT.

NOTE [3]: INDICATORS THAT ARE LABELED "RSVD," ARE NOT USED.

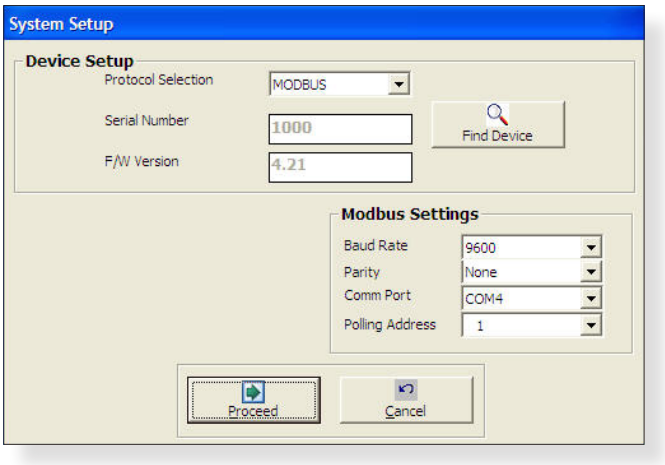
Figure 25—Device Fault Indcators Defined (GT3000 Shown)

SYSTEM SETUP

Clicking the *System Setup* button will open the System Setup window (shown below) where current settings can be viewed. It is also useful for troubleshooting the cause of any communication problem that might occur between the FlexVu UD10 and the PC.

NOTE

This System Setup window also appears each time Gas Inspector Monitor is opened (see Figure 11 in the "Startup" section).



System Setup Window

REPLACEMENT PARTS

The Inspector Connector is not designed to be repaired in the field. If it is determined that the problem is caused by an electronic defect, the device must be returned to the factory for repair.

Prior to returning devices, contact the nearest local Detector Electronics office so that a Return Material Identification (RMI) number can be assigned. **A written statement describing the malfunction must accompany the returned device or component to assist and expedite finding the root cause of the failure.**

Pack the unit properly. Always use sufficient packing material in addition to an antistatic bag as protection from electrostatic discharge.

NOTE

Det-Tronics reserves the right to apply a service charge for repairing returned product damaged as a result of improper packaging.

Return all equipment transportation prepaid to the factory in Minneapolis.

ORDERING INFORMATION

When ordering, please specify:

Part Number	Description
010204-001	W6300G1003, Gas Inspector Connector (includes Gas Inspector Monitor Software CD)
010268-001	Gas Inspector Monitor Software CD

For assistance in ordering a system to fit your application, please contact:

Detector Electronics Corporation
6901 West 110th Street
Minneapolis, Minnesota 55438 USA
Operator: (952) 941-5665 or (800) 765-FIRE
Customer Service: (952) 946-6491
Fax: (952) 829-8750
Web site: www.det-tronics.com
E-mail: det-tronics@det-tronics.com

Environmental Protection

Waste electrical products should not be disposed of with industrial and commercial waste. Please recycle where facilities exist. Check with your Local Authority or the local Detector Electronics office for recycling advice.

Det-Tronics manufacturing system is certified to ISO 9001—the world's most recognized quality management standard.

Carrier

95-8645

DET-TRONICS

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