Autostart AS731/732 Generator Controller
PC Communication Software AS7CN V2.2.x
Installation and Operating Instructions

MURPHY

Please read the following information before installing. A visual inspection of this product for damage during shipping is recommended before installation. It is your responsibility to ensure that qualified mechanical and electrical technicians install this product. If in doubt, please contact your local Murphy representative.

1. Introduction

1.1 Communications overview

The Autostart AS731 and AS732 provide full-function, automatic or manual control for diesel generators.

Both units include an RS232 interface that allows communication with other RS232 equipment such as PCs and modems. When used with software model AS7CN for PC and Windows®, the system allows a remote PC operator to program, monitor and control an Autostart and generator.

Model AS732 additionally features an RS485 Modbus® interface, allowing communication between several AS732s (e.g. in a multi-genset system) or between AS732s and other RS485 equipment (e.g. PLC, SCADA or building management systems).

This document details the communication features of AS731/AS732 firmware versions V2.2.x, along with the installation and operation of (fully compatible) software AS7CN versions 2.2.x. Firmware or software versions before or after these revisions may contain more, less or reconfigured features: more details of compatibility are given below; if in doubt, please contact our technical sales department for up to date product information and compatibility details.

For additional information about the AS731 and AS732, please refer to the following documents:-

Ref.	Title
ms6127	AS731 sales bulletin and technical specification
ms6341	AS732 sales bulletin and technical specification
mi6128	AS731/732 installation A: electrical connection
mi6129	AS731/732 installation B: programming
mi6243	AS731 installation C: AS730 to AS731/AS732 retro-fitting
mi6130	AS731/732 operation
mi6263	AS731/AS732 RS232 protocol
mi6344	AS732 RS485 MODBUS® communication protocol

Windows® is a registered trademark of Microsoft corporation

MODBUS® is a registered trademark of AEG Schneider Automation Inc.

2.

Familiarisation
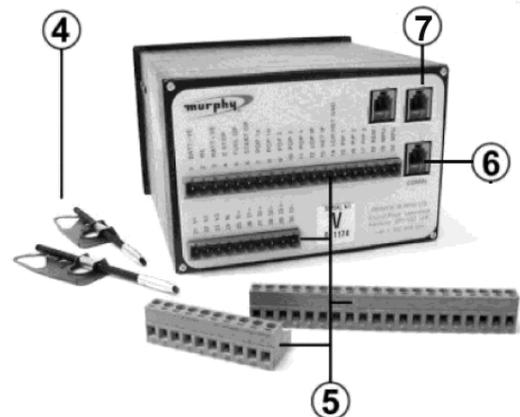### Front facia

1. 2 line x 16 character backlit liquid crystal display
2. Operator control keys
3. Auto/manual mode LED indication. The Auto LED flashes while communication is in progress.

Rear facia

4. Mounting clamps
5. 2 x two part, screw terminal blocks, 1 – 20 and 21 - 30
6. RS232 communication port (via RJ11 connector)
7. (AS732 only) RS485 comms ports (2 x RJ45 connectors)

Hardware

2.1 RS232 communications

2.1.1 General

The Autostart RS232 port uses an RJ11 connector on the rear facia, as shown in the diagram on page 1. The RS232 link is typically used to communicate with a PC running Murphy software AS7CN, which may then be used to program, monitor or control the Autostart and generator system. As detailed in the diagrams at the foot of this page, the link may be 'local' (up to 10 metres using a simple RS232 serial lead) or 'remote' (any distance, using suitable RS232 modems and the telephone network).

2.1.2 RS232 accessories

The following accessories are available from Murphy:-

Model	Description
AS7CP	R232 local comms (null modem) lead, RJ11 to 9 way D type
AS7CQ	RS232 adaptor for optional use with AS7CP, 9 way D to 25 way D.
AS7CR	RS232 modem lead, RJ11 to 25 way D type.

A 'local' serial link requires the use of lead AS7CP: this lead alone is sufficient if the PC has a 9 way COM port; if the PC has a 25 way COM port, adapter AS7CQ is also required.

'Remote' communication typically requires the use of modem lead AS7CR, two modems (with telephone connections), and a modem to PC lead. Note: Murphy is unable to supply modems or modem-PC leads.

2.1.3 RS232 connection - general

IMPORTANT: Before attempting any RS232 connection, ensure that AS731/732 pin 1 (battery negative supply on the main terminal block) is connected to earth/ground, and that the Autostart is switched off. This is a necessary precaution to avoid excessive (possibly destructive) earth currents when connecting to certain RS232 equipment.

> **WARNING: failure to connect pin 1 to negative DC and ground may result in permanent damage to the Autostart or connected RS232 equipment (e.g. PC or laptop).**
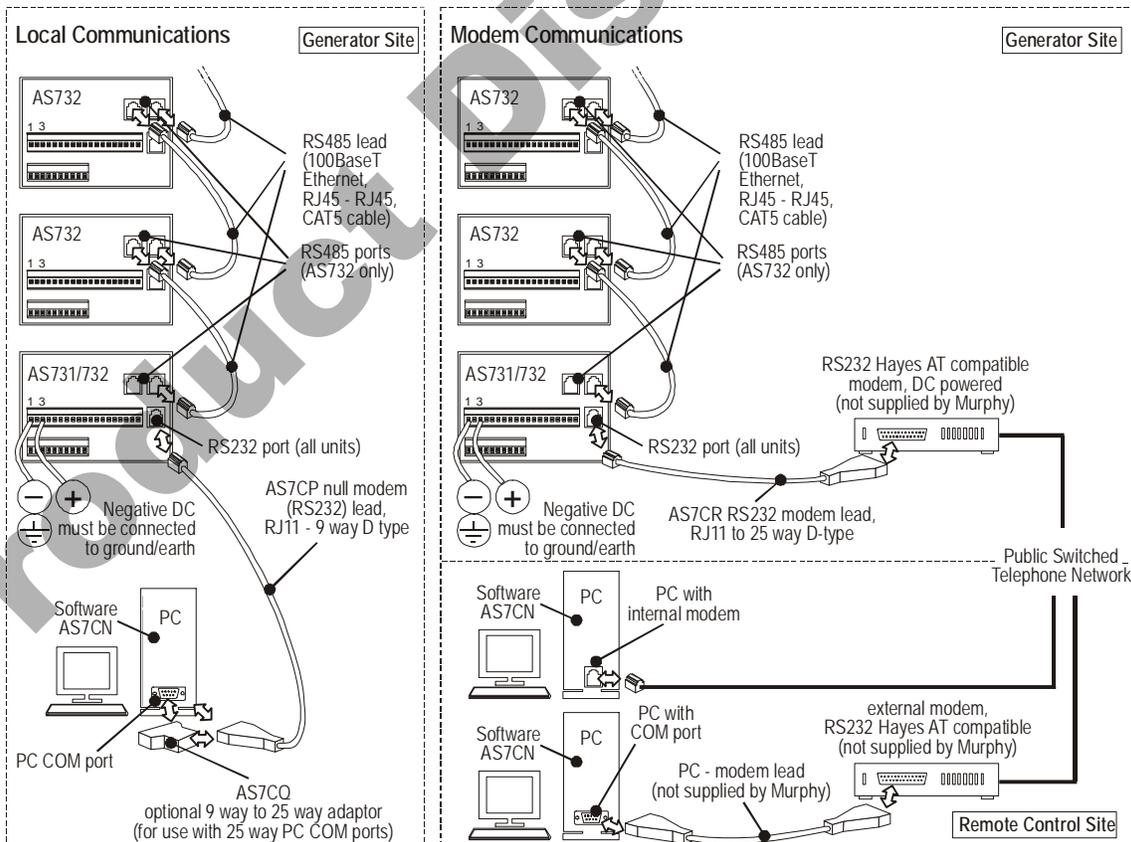
2.1.4 RS232 local connection (distances up to 10 metres)

For distances up to 10 metres, PCs with a 9 way COM port can be connected directly to the AS731 using lead AS7CP. For PCs with a 25 way COM port, use an additional adapter model AS7CQ.

To connect up a local link:-

1. Ensure that both Autostart and PC are powered down.

2. Connect the RJ11 (telephone type) plug of lead AS7CP into the AS731/732 RS232 socket.

3. The other end of lead AS7CP can be connected directly into PC's with a 9 way COM port. For PCs with a 25 way port, connect adapter AS7CQ between the lead and PC port.

AS731 to PC connection

2.1.5 Remote (Modem) Communication

Two modems are required, one connected to the Autostart at the generator site, the other connected (or internal) to the PC at the remote control site. The modems must be RS232 and Hayes AT compatible, and must comply with the technical and legal requirements of the connected telephone network.

At the Autostart/ generator site, the modem should ideally use an uninterruptable power supply (usually a battery/DC system). If the Autostart is required to dial out on fault conditions, the generator site must be enabled for a tone dialling (rather than pulse dialling) telephone system.

To connect the generator site:-

1. Ensure that both modem and Autostart are powered down.
2. Take lead AS7CR and connect the RJ11 (telephone type) plug into the Autostart RS232 socket.
3. Connect the other (25 way D-type) end of the lead into the modem RS232 port.
4. Connect the modem telephone and power supply leads as specified by the modem manufacturer.
5. Power up the system: modem first, then Autostart.

At the PC control site, ensure that the modem is correctly fitted to the PC, either internally as a modem card or externally via a serial port. Refer to the modem manufacturer's instructions if required.

2.2 RS485 communications (AS732 only)

An RS485 network is formed by daisy-chaining units as shown in the diagram at the foot of page 2. Inter-connection is via leads with RJ45 plugs and screened cable, such as those found in 100BaseT Ethernet systems: use CAT5 cable as a minimum; CAT5E cable is recommended.

The total length of the network must not exceed 1000 metres (approx 3300 feet). Network terminator modules are supplied with each AS732 and should be left inserted into any unconnected sockets, i.e. in units at either end of the network.

Before use, each AS732 must be programmed with an RS485 'address' that is unique for each network: address '1' designates a 'master' controller; addresses 2 to 32 may be used for 'slave' controllers. On systems where an RS232 link is required (e.g. for multi-genset control via a modem), the RS232 link must be connected to the AS732 programmed with 'master' RS485 status.

AS732 communication over the RS485 network is by use of the MODBUS® protocol. AS732 firmware version 2.00 uses the MODBUS® ASCII variant of the protocol; firmware versions V2.1.x and above use the MODBUS® RTU protocol. Use of the protocol allows a remote 'master' controller (e.g. PC, PLC, SCADA or building management system) to interrogate an AS732 'slave' and receive data about Autostart, engine, generator or plant status. Full details of the AS732 MODBUS® protocol can be found in Murphy document mi6344.

3. PC software AS7CN

Model AS7CN is a software tool that allows RS232 communication between an Autostart AS731/AS732 and a PC/Windows® compatible system. The Windows®-based interface allows a PC user to monitor, control and program a locally or remotely connected Autostart system. (Note: the software does not allow direct communication to an AS732 RS485 network, but connection to an AS732 RS232 port can be used as a 'gateway' for the interrogation and control of multiple AS732 controllers on a common RS485 network.

Before attempting to install or operate the software, please read the following sections in full.

3.1 Software Installation

Before communication can occur between a PC and Autostart, software AS7CN must be correctly installed and configured.

3.1.1 Compatibility

The following information relates to AS7CN software versions 2.2.x, which is fully compatible with AS731 and AS732 firmware V2.2.x. AS731s with older firmware (V1.00 to V2.1.0) will communicate with the latest software but are not fitted with some of the latest programmable features. Software V2.2.x is NOT compatible with AS732 firmware V2.00 (Modbus ASCII version).

Software AS7CN is designed for use on any PC or PC compatible laptop running English versions of Windows® '95, '98, ME or 2000. The software supports communication by RS232 serial port using an internal modem or external modem with designations COM1, 2, 3 or 4.

3.1.2 Software Availability

Software AS7CN is available from Murphy as a single, self-extracting file. The latest version of this file, named **as7cn_v2_2_0.exe,** is available as a free of charge download from our website **http://www.fwmurphy.co.uk/download**. From the list of software shown on the web page, click on the link that says 'Click here to download as7cn_v2_2_0.exe'.

The procedure is then as for any other Internet file download: follow the Windows® instructions, making a note of the drive and location to which you save the install file.

3.1.3 Install Procedure

If you are updating the software (if an existing version of AS7CN is already installed), remove the old version first by following the uninstall procedure in section 3.1.4.

To install AS7CN version 2.2.0:-

- Click on the Windows® **Start** button, and select **Run…**
- From the **Run…** dialog box, select **Browse…**
- From the **Browse…** dialog box, select the drive and directory location where the file **as7cn_v2_2_0.exe** is stored (the directory to which the file was saved during the download process). Click on the file **as7cn_v2_2_0.exe**, then click **OK**

- Back in the **Run…** dialog box, the file **as7cn_v2_2_0.exe** should now be shown in the 'Open' field. Click **OK**.
- Follow the InstallShield® wizard instructions. If the default settings are used, the software is installed to location **C:\Program files\Murphy\AS7CN.** Shortcuts are also added to the desktop and to the **Start** menu.

3.1.4 Uninstall Procedure

Software AS7CN may be repaired or uninstalled by launching its InstallShield® Wizard as detailed below. Please read all the instructions below (including the uninstall notes) before proceeding:-

- Click on the Windows® **Start** button, then select **Settings,** then **Control Panel.** Double click on the **Add/Remove Programs** icon.
- From the Add/Remove Programs Properties box (with the install/uninstall tab selected), click the earlier version of AS7CN that needs to be uninstalled – depending on the software version number, the entry may be listed as "AS731…", "AS7CN…" or "Murphy AS731…" – then click the **Add/Remove…** button.
- The InstallShield® wizard will run. Select the 'remove' option, then click **Next >**
- Follow the wizard instructions. Warning messages may be displayed about removing shared Windows® components. If a newer version of AS7CN is to be installed immediately afterwards, it is generally safe to remove the shared components by selecting 'yes' (and also ticking 'don't display this message again'). If, however, the software is to be permanently removed, or if you are in doubt, it is safest to keep the shared components by selecting 'no' to each warning.
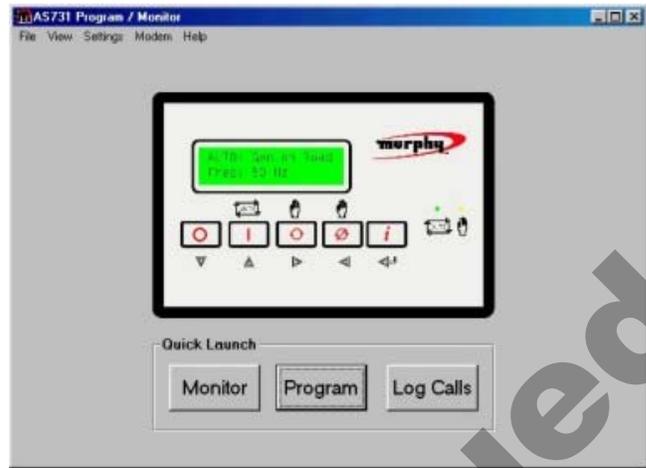
Additional uninstall notes:-

1) The procedure above does not remove ***.731** or ***.732** files, which are created when custom AS731 (program mode) 'profiles' are saved to disk (see section 3.7 for details of Autostart program 'profiles').

2) Program profiles (***.731** files) that have been saved to disk using software AS7CN V1.02 or earlier CANNOT be read by AS7CN V1.03 or later. If you have older profiles on disk and want to use these with V1.03 or later software, please consult your Murphy representative.

3.2 Running the Software

The software may be used to communicate with an Autostart (via the RS232 connection), or may be used in 'stand-alone' mode to create, edit and save program profiles (see section 3.7). If communication with an Autostart is required, ensure before running the software that a) all RS232 communication hardware is connected and b) the Autostart is powered up.

To run the software, click the shortcut on the Windows® desktop or in the Start menu (select **Start | Programs | Murphy | AS731-732**). The software runs and displays the main menu:-

When run for the very first time, the software will also ask the operator to configure the PC communication port - see section 3.4 below for full details.

Three buttons on the main menu screen - 'monitor', 'program' and 'log calls' - allow the operator to select one of three (mode) screens:-

- Click **Monitor** to upload and display real time data about the status of the connected system, and for limited control over the system. Full details are given in section 3.6.
- Click **Program** to view and edit AS731/732 program 'profiles'. Each profile contains settings for timers, input/output configurations, etc. Profiles may be opened from disk, saved to disk, uploaded from or downloaded to the Autostart and printed out. Full details are given in section 3.7.
- Click **Log calls** to get the software to wait for incoming calls from remote Autostart units. The site name and fault condition is displayed on screen and logged for later review. See section 3.8 for full details.

3.3 Drop-down menus

The menu bar has several drop-down options, similar in style and operation to other Windows® based software:-
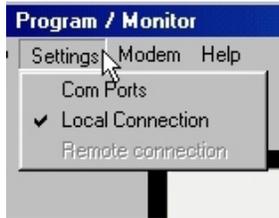

The **File** menu includes options for managing AS731/732 program profiles, including opening from and saving to disk, uploading to and downloading from the Autostart, and for printing.

Full details are given in section 3.7 below.

Use the **View** menu to select the main menu screen, or one of the three operating screens (monitor, program or log calls). The currently selected screen option is highlighted with a tick.

Program / Monitor

Settings | Modem | Help

Com Ports

✓ Local Connection

Remote connection

The **Settings** menu allows configuration of the PC RS232 communication port, and the selection of 'local' or 'remote' communication mode (see section 3.4 below).

The currently selected option is highlighted with a tick.

Program

Settings | Modem | Help

Connect

Disconnect

The **Modem** menu options are only available when the PC is fitted with a modem. These options allow the user to connect and disconnect a communications link with a remote Autostart.

This menu is not required when communication is 'local' - the software automatically establishes a connection through the local serial port.

Help | Murphy USA Home page | Murphy UK Home page | Murphy UK AS731 Home page | About

Help Includes hyperlinks to Murphy website home and Autostart pages.

Help|About gives details of the software and its version number.

3.4 Configuring the PC communication port

Each PC serial port or modem is assigned a COM port number by the Windows® operating system. Before communication can occur with the Autostart, the software must be set with the number of the COM port to be used.

The configuration screen below launches automatically when the software is run for the very first time. These settings can also be changed at any time by selecting clicking the **Settings|Com ports** menu option:-

Settings

Local COM port
- Not used
- COM 1
- COM 2 (selected)
- COM 3
- COM 4
- COM 5
- COM 6

MODEM COM port
- Not used
- COM 1
- COM 2
- COM 3
- COM 4 (selected)
- COM 5
- COM 6

Initial mode
- Local (selected)
- Remote

MODEM initialise string (Outgoing): ATZE1V1X0S0=0

MODEM initialise string (Incomming): ATE0V0X0S0=0

MODEM dial-out mode
- Tone (selected)
- Pulse

Apply | Defaults | Cancel

For both local and modem (remote) port settings, click on the correct COM port number, or on the 'not used' option. If the correct COM port is not known, refer to the PC manufacturer's data. If an incorrect COM port is entered, the software typically displays 'can't open COM port'.

Note: For **local communication**, the PC serial port may be physically labelled with the COM setting. On older PCs, the serial port is often designated as COM2 (with COM1 reserved for the mouse). On newer PCs and laptops, the mouse often has its own dedicated connector and the serial port is often designated COM1).

For **modem (remote) communication**, the modem may be external or internal to the PC. An external modem is connected via a serial port, with its own COM setting as for local communication (often COM1 or COM2). An internal modem card does not use a serial port connection, but is still allocated a COM number (often COM 3 or 4).

The modem initialise strings (outgoing and incoming) contain Hayes AT commands to set up the modem operating characteristics. These should only be edited by experienced modem users. Below this, a separate software control allows the PC modem to use either tone or pulse dialling mode.

3.5 Making a connection

Before a communication link can be established between software and Autostart, the Autostart must be connected and powered up. The software allows selection of 'local' or 'remote' communication modes.
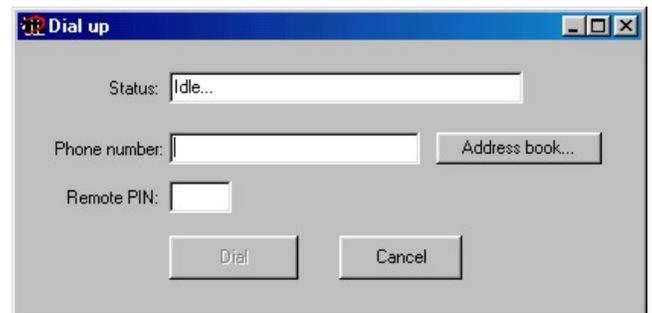
3.5.1 Local connection

For a local connection (using a simple serial link) click on **Settings|Local Connection.** The software then attempts to establish a link to the AS731/732 through the specified serial (COM) port.

3.5.2 Remote (modem) connection

'Remote' communication requires that a modem is fitted to the PC and that the software has been set up correctly for that modem (see section 3.4). To make a connection to a remote Autostart:-

Click on **Settings|Remote Connection.** This drop down menu option is only available if the software detects that a modem is fitted to the PC.

Click on the **Modem|Connect** drop down menu item to display the following dialog box:-

Dial up

Status: Idle...

Phone number: [   ] Address book...

Remote PIN: [   ]

Dial | Cancel

• Click the mouse in the **Phone number** box and manually type in the remote modem number. Alternatively, click on **Address book** to bring up

Product Discontinued

pre-programmed numbers (see 3.5.3 below for details). *Note: when dialling through a private exchange, additional prefix numbers may be required, e.g. '9' to access an outside line, and ';' (comma) to wait for the outside line dial tone.*

- Click the mouse in the **Remote PIN** box and type in the correct access PIN (personal identification number) for the remote Autostart. The factory default PIN is 5678.
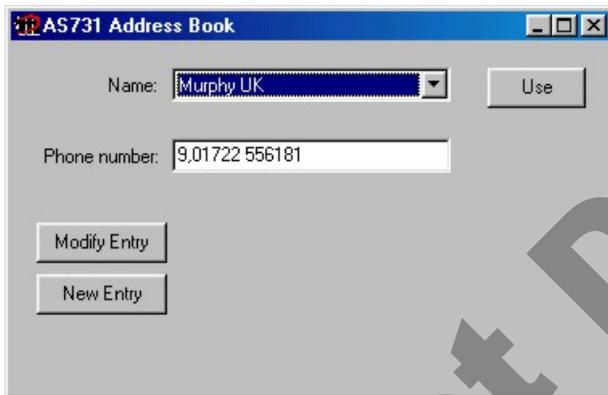
- Click on **Dial**

The PC modem then dials out to the remote Autostart modem. The connection progress is displayed in the 'status' area. After a successful connection, the software displays a 'connected' message - programming, monitoring and control of the Autostart are then exactly as for a 'local' connection. If a connection is not successful (e.g. due to a modem fault or incorrect PIN), appropriate error messages are displayed.

Disconnecting a remote connection

When monitoring or programming of a remote Autostart is complete, end the modem session by selecting the **Modem|Disconnect** drop down menu option.

3.5.3 Using the address book

Access to the address book is from the Dial dialog box (see section 3.5.2 above). The address book allows storage and recall of 20 site names and modem numbers:-

To view existing entries, click on the **Name** drop down list and select the contact required: the corresponding phone number is shown in the **Phone number** box.

To use the highlighted contact and return to the 'Dial' dialog, click on **Use**.

To modify existing entries, or create a new contact, click the **Modify Entry** or **New Entry** buttons. Type the new details in the boxes provided, then click **Store**.

3.6 Monitor Mode

Once a connection has been established between PC and Autostart, the generator status can be monitored by clicking on the **View|Monitor** drop-down menu or the main menu **Monitor** button.

In monitor mode, data about the generator system is uploaded from the Autostart and displayed in real time. When monitoring an AS731, the software displays a 'single genset' screen format below left, providing 'full' details about the Autostart, engine and AC parameters (see numbered points following for more detail).
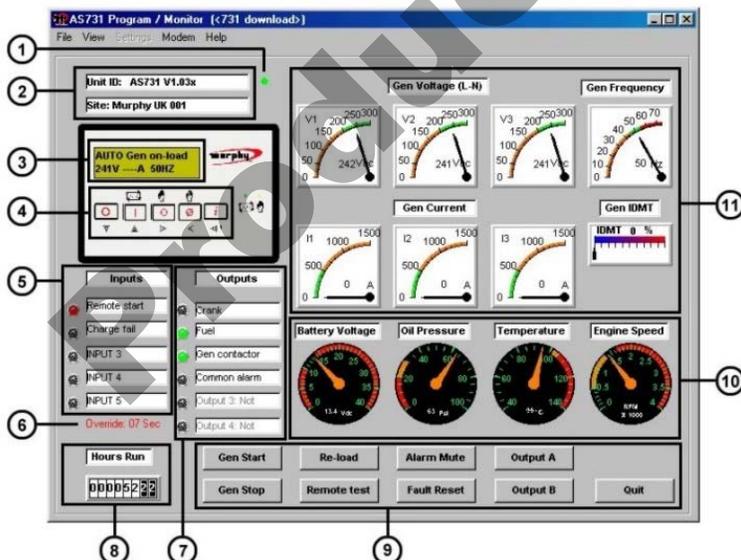
When monitoring an AS732, the software displays a 'multi-genset' screen format (shown below right). This screen can display summary information for several generators, using data passed via RS232 from a 'master' AS732 (which in turn has collected data from a number of RS485 networked 'slave' AS732s).

On this multi-genset screen, the operator can a) read a summary text status for each genset, b) start and stop each genset, and c) press the 'full monitor' button to display details (screen as below left) for each genset.
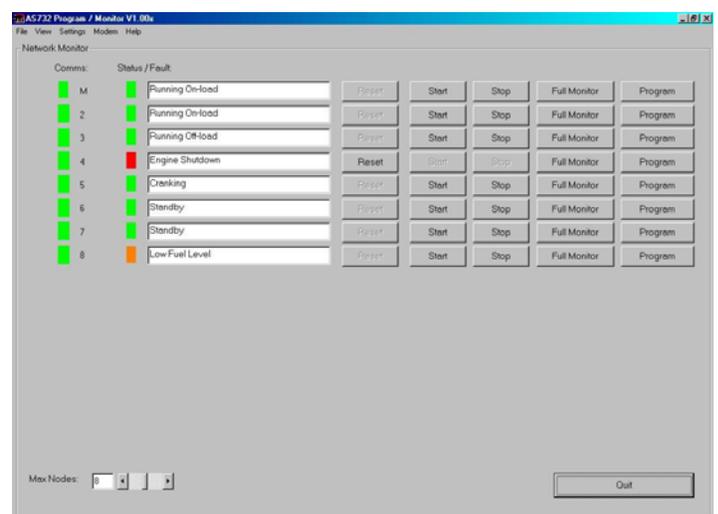
The key features of the single genset screen are, as labelled on the diagram below left:-

1. Communications status. The green LED simulation flashes while communication is in progress between software and Autostart. No flashing indicates that the communication link has broken or stalled.

2. Details of a) the unit ID, i.e. "AS731" and the firmware version number, and b) the site name – the 16 character name programmed into each unit.

Single genset ('full') monitor screen (all units)

Multi-genset monitor screen (AS732 RS485 systems only)

3 This area mimics the messages shown locally on the Autostart's liquid crystal display.

4 A simulation of the Autostart front facia control buttons. The Auto mode button and two Manual mode buttons are fully operational, allowing the PC operator to remotely select Auto and Manual modes. The Off/reset and Info (*i*) buttons do not have any function in the software screen.

5 Input status. Simulated LEDs indicate the real time status of the AS731/732 inputs. The programmed function of each input is also shown.

6 Fault override timer status.

7 Output status. Simulated LEDs indicate the real time status of the AS731 outputs. The programmed output function is also shown.

8 Hours run counter.

9 Clickable buttons for the remote control of the connected Autostart. See 3.6.1 below for full details.

10 Engine parameters, including battery volts, oil pressure, engine temperature and engine speed (RPM). Oil pressure and engine temperature are displayed only if resistive senders are used; engine RPM is displayed only when a magnetic pickup speed sensor is used. Warning and trip zones are shown in amber and red respectively.

11 Generator AC parameters, including 3 phase AC voltage and current, single phase frequency, and AC current trip IDMT progress. Warning and trip zones are again shown in amber and red.

3.6.1 Control buttons

At the bottom of the single genset monitor screen, a number of mouse-clickable buttons allow control over the selected Autostart and generator. The button functions are:-

Gen Start Gives an immediate engine start, provided the Autostart is locally set to Auto mode and the engine is stationary. Autostart runs the generator in 'test' mode (i.e. off load), but will automatically load the generator if the remote start contact is activated (e.g. if the mains fails).

Clicking the 'gen start' button has no effect if the Autostart has been locally set to manual mode, or if the engine is already running.

Gen Stop Click this button to stop the engine. This button has no effect if Autostart is running the generator on load (i.e. if the remote start input is active), or if locally selected.

Re-load This control operates in the same way as an AS731/732 input programmed to 'load reset'. If the Autostart has automatically 'released' the generator load (e.g. because of a voltage, frequency or current fault), this control may be used to manually reload the generator (assuming re-loading is not set to be automatic). The Autostart will only attempt to put the generator back on load if the measured voltage, frequency and current have returned to within normal limits.

Fault Reset **WARNING: DANGER OF ENGINE AND PLANT DAMAGE**

The **Fault Reset** control may be used to remotely reset a shutdown fault condition and can be used whether the Autostart is in Auto or Manual mode. It should **only** be used if the reason for the displayed fault has been established and corrected.

If the Autostart is in Auto mode, pressing **Fault Reset** causes the unit to return to an 'Auto: standby' state - the Autostart will then automatically attempt to restart the engine if a remote start or mains fail condition exists. If the original fault has not been corrected, damage to plant may occur when the engine automatically restarts.
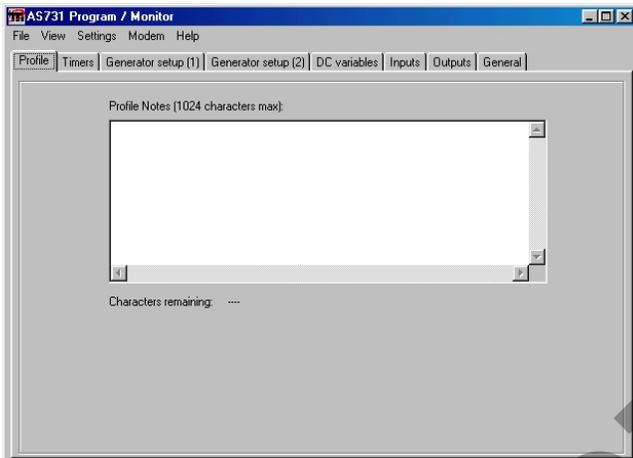
Output A May be used to activate and de-activate any AS731/732 output that has been programmed to a **PC cntrl A** function. For full details, see programming literature reference mi6129.

Output B Similar to **Output A** above, but this control activates any output programmed to **PC cntrl B.**

Alarm Mute The PC speaker will sound if an Autostart or generator fault occurs. Click this software key to mute the speaker.

Note: this control does not mute any 'klaxon' output local to the Autostart.

Remote test Initiates an automatic test of the engine or generator. If the communication link is broken after a test is initiated, Autostart continues to run the engine for the pre-programmed 'remote test' time.

Quit **Quit** button. Click this to exit monitor mode and return to the main menu. The monitor screen will also close if **View|Main menu** or **View|Program** is selected, or if a settings 'profile' is opened from disk or uploaded from the Autostart.

3.7 Program mode

The AS731/732 has around 50 programmable features – timers, inputs, outputs, control options, etc. Software AS7CN allows the creation and editing of program 'profiles', each profile being a collection of individual function settings. The software also allows profiles to be saved to and opened from the PC hard disk, floppy disk or network drive, and uploaded from or downloaded to the Autostart (see section 3.7.2).

To select the program screen, select the **View|Program** drop down option, or click on the main menu quick launch **Program** button. The program mode screen also opens automatically if an Autostart profile is loaded (e.g. by clicking on **File|Open Profile from disk** or **File|Upload Profile from Autostart**).

The program mode screen has eight selectable tabs, each of which allows the operator to view and edit a sub-set of the profile settings. The program mode screen typically opens with the 'Profile' tab selected, as follows:-

3.7.1 Viewing and editing settings

Click on the appropriate tab to view each group of program settings, then use the mouse to edit the value, option or text for each function. The eight screens are shown below for reference, but full details of the individual program options are listed in installation (programming) document mi6129.
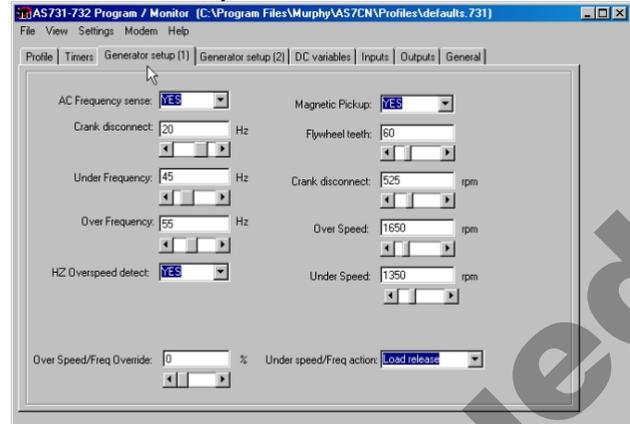
1. Profile

In the opening screen shown above, the operator can enter notes about this particular program profile. The notes are stored with the profile (either to disk or within the Autostart) and will appear whenever the profile is opened or uploaded.
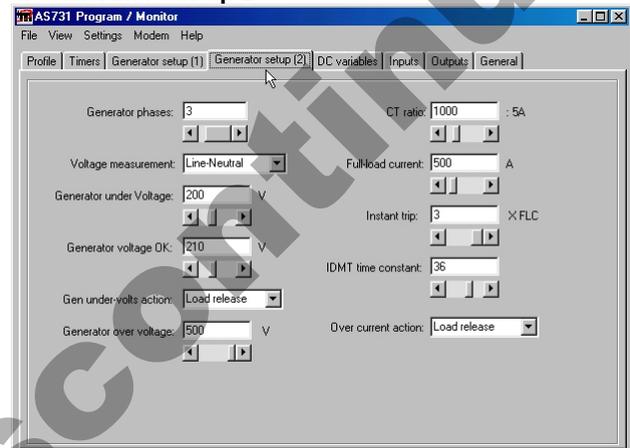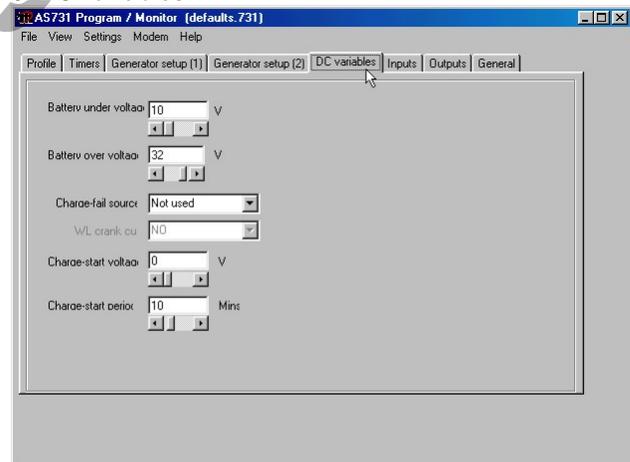
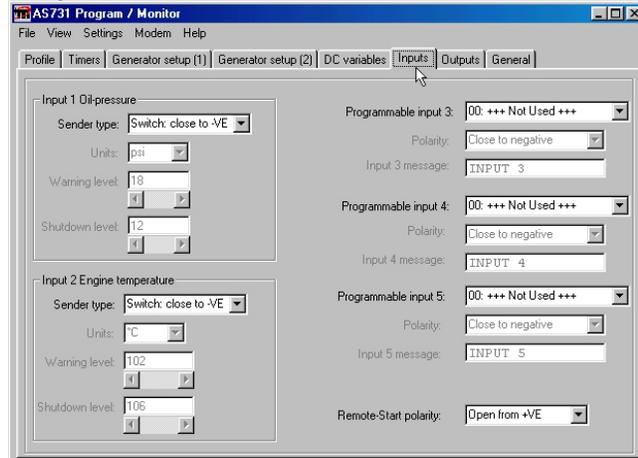#### 2. Timers

3. Generator set-up 1

4. Generator set-up 2

5. DC variables

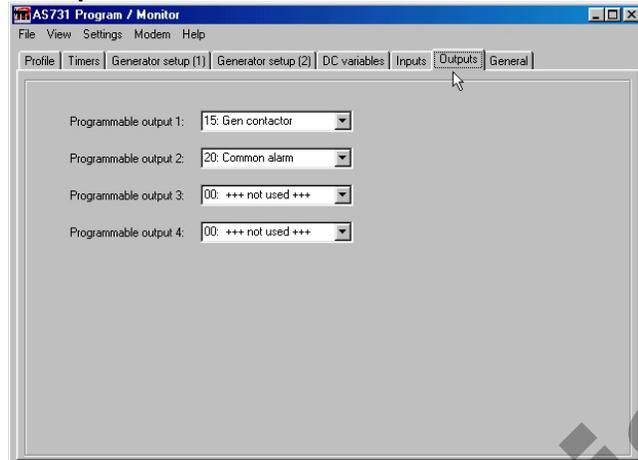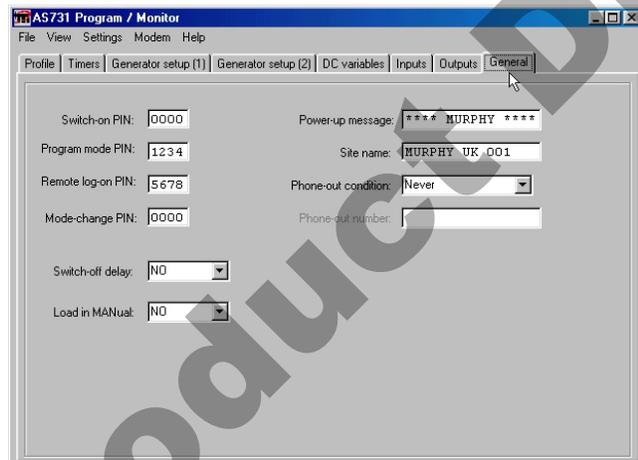## 6. Inputs

7. Outputs

8. General

3.7.2 Managing Profiles

Use the **File** drop-down menu for storing and retrieving program profiles, to or from either disk or AS731/732.

Opening from/saving to disk

Profiles may be opened from and saved to disk regardless of whether an Autostart is connected or not. Profiles may be saved to disk with a **.731** or **.732** file extension (according to user preference – both file types can be read by either AS731 or AS732 units). The filenames should be chosen to allow organised storage and later recall, e.g. "siteA.731" or "siteXYZgen1.732" etc. The default save directory is **C:\Program Files\Murphy\ AS7CN\Profiles**, but the software allows selection of any location on hard disk, floppy disk or network drive.

When a profile is opened from disk, the filename appears in the software title bar. The profile remains open if the operator switches between program, monitor or main title screens. If no profile is open (e.g. immediately after start-up), selection of 'program' from the main title screen causes the automatic opening of the default factory profile (filename **defaults.731**).

Uploading from/downloading to an AS731/732

Once the PC is connected to an AS731 or AS732, profiles may be saved (downloaded) from the PC to the Autostart, or opened (uploaded) from Autostart to PC. Note that the profile filename is not stored in the Autostart, and that the software allocates the filename **"upload"** to all uploaded profiles.

The download of Autostart profiles typically takes a few seconds to complete, but can take longer - up to 25 seconds - when certain program settings are changed (e.g. a change to the AC over current settings usually results in the Autostart having to recalculate it's calibration tables).

The transfer status of all downloads and uploads is displayed by the software, and appropriate error messages are shown if the communication link or transfer process fails.
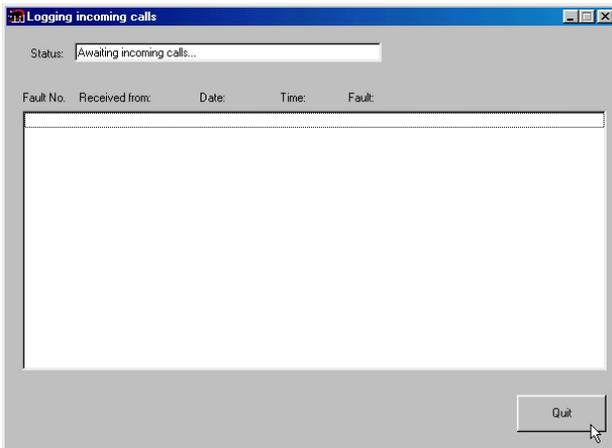
3.8 Log Calls

Where a modem communication link has been set up between PC and modem, the 'log calls' mode allows the software to wait for and log incoming calls from remote Autostart units. In order to use this feature, the Autostart/ generator site modem and telephone exchange must employ a tone dialling (rather than pulse dialling) system.

To use this facility, program each Autostart with one of the 'dial out on fault' options (shutdown faults only, or warning and shutdown faults), and with the telephone number of the PC/modem which is to be used to log calls: for full details of programming, see document mi6129.

At the PC end, select this software mode by clicking on the main menu **Log calls** button, or on the **View|Log calls** menu option. The screen displays:-

For each incoming call, the software records the details of the Autostart site name, fault type, and the time and date received. The information is added to a text file named **faultlog.txt** (stored on the PC in the software's installation directory), which is then displayed in the large scrollable area shown above.

Once a fault message has been logged, the software runs a short (10 seconds) timer, during which the PC operator (if present) has the option of maintaining communication. If this timer expires, the software automatically breaks off communication, freeing itself to receive other calls.

If the Autostart dials out but fails to log the fault (e.g. if the PC is switched off, or the modem is already engaged, or the software is not in 'log calls' mode), the unit breaks off communication then automatically retries every minute; the Autostart will retry indefinitely, until the fault is logged.

3.9 Exit

To exit the software, select the **File|Exit** drop down menu item.