

12-36-1000 I/O Telephone Interface with AutoDialer



PRODUCT INFORMATION

12-36-1000 Autodialler and Relay Telephone Interface

1.0 INTRODUCTION

The 12-36-1000 is a autodialer and telephone interface that can be used autonomously allowing voice prompted relay control. The user can either use the 4 on board inputs to trigger the auto-dialer or connect to a 12-32-0000 input module for indefinite input expansion.

Basic English default wave files are used that may be replaced by the user to fit specific requirements. The user can control 2 on board relays and interrogate the state of the 4 on board inputs. All input and output wave files can be changed by the user. Programming is via USB port.

2.0 INSTALLATION

Connecting the unit to the phone system is a simple process.

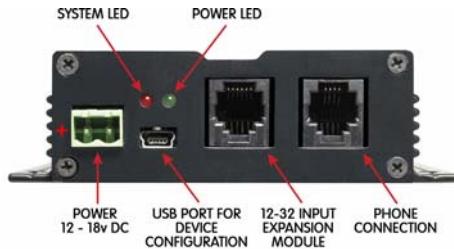
- (1) Plug one end of a telephone cable into the 'phone connection' socket (see diagram on page 2) and the other into the wall telephone socket.
- (2) If connecting a 12-32 Input Expansion module connect the cable supplied with the 12-32 to the '12-32 Input Expansion' socket. (See diagram on page 2).

NOTE: Cables supplied with computer modems may not work as they may use the two outside contacts on the connector instead of the inside contacts used by the 12-36.

3.0 STATUS INDICATORS

POWER LED: The green flashing LED indicates that the unit is operating normally.

SYSTEM LED: The red LED indicates a fault if flashing red. When processing a call the LED will be held on until the call has been terminated.



4.0 OPERATION

- 4.1 When the 12-36 answers a call a programmed "Welcome – Please enter PIN" (O-WELCOM.WAV) message is heard.
- 4.2 User enters a 4 digit PIN (if the PIN is set to be 0000 then no pin will be required, and it will immediately move to next step).
- 4.3 The user is prompted with instructions to control the relays.
- 4.4 The user can push '1' to control relay 1, '2' to control relay 2 or '3' to check all input states.
- 4.5 The user will be prompted with instructions for relay 1 (O_RELAY1.WAV) or instructions for relay 2 (O_RELAY2.WAV) depending on whether '1' or '2' were pressed. If '3' is pressed input wave files for input 1(L_INPUT1.WAV or L_IN1_HI.WAV), input 2(L_INPUT2.WAV or L_IN2_HI.WAV), input 3(L_INPUT3.WAV or L_IN3_HI.WAV) and input 4(L_INPUT4.WAV or L_IN4_HI.WAV) are played.
- 4.6 To close a relay the user presses '1' and to open a relay the user presses '0'.
- 4.7 If any invalid keys are pressed the user will be notified with the goodbye message (O_BYEBYE), and then disconnected.
- 4.8 A response to the action entered by the user will be heard.
- 4.9 Operation will return to step 4.3. If no further action is made the device will timeout and a 'goodbye' message will be played before the user is disconnected.

5.0 AUTODIALER OPERATION

The 4 on board inputs can be enabled to phone a specified number, using a programmed debounce when going low. Inputs are only triggered when going low.

Input wave files used:

Input1 – I_INPUT1.WAV
 Input2 – I_INPUT2.WAV
 Input3 – I_INPUT3.WAV
 Input4 – I_INPUT4.WAV

A retry time can be programmed to control how quickly the autodialer will redial if not answered or the line is busy. For confidence of message delivery the autodialer can be configured to require an acknowledgement key press from the person answering the call. If the call is not acknowledged, the phone will continuously redial at the programmed retry interval until the star key has been pressed (when prompted to do so).

Multiple phone numbers can be called by connecting inputs together, and configuring different numbers. The user can reprogram all of the input wave files.

6.0 12-32 INPUT MODULE SUPPORT

The 12-36, on reception of a SALCOM protocol message in the RS232 port from a 12-32 input module will operate the auto-dialer. The auto-dialer will operate in any protocol setting.

Salcom protocol message format for Autodialer operation.

CANNNNNNN L MMMMMMMMMMMMMMMM

Where CA must always be CA, and can not change. N is not used at all. L is not used. All autodialer information is stored in the message payload MMMMMMMMMMMM.

First the number, then a 8.3 format wavefile to play.

e.g. CA1234567 4 32334677 FLOATHI.WAV

The wave file must be loaded onto the SD card sampled at 11025 bps and 8 bit. This message format is used to allow 12-32 input modules to be used.

Upon reception of CA1234567 4 32334677 FLOATHI.WAV

1. If the phone is already off the hook, the serial message "ER6 BUSY" is returned and does not process the message. The message is not queued. If the phone is not busy, then message is processed and if successful returns "CA1234567".

2. 12-36 takes phone off hook.
3. Autodialer dials 32334677
4. The 12-36 waits until line has been quiet for 6 seconds (configurable) (stopped ringing – and person at other end to stop talking).
5. The wavfile I_WELCOM.WAV (something like "This is a Salcom 12-36 automated message") is played.
6. The wavfile FLOATHI.WAV (user defined message of interest) is played.
7. The wavfile I_REPEAT.WAV ("To repeat this message press 1") is played.
8. The 12-36 waits 10 seconds then plays I_BYEBYE.WAV

It is important when using a 12-32 that the ACK timeout is configured to be approximately 1 minute, to give the 12-36 time to attempt to send a message.

7.0 PROGRAMMING

- 7.1 Installing the VCP USB Driver:** To use the USB port to communicate with the 12-36, a Virtual Com Port driver must be installed on the PC.

To install the Silicon Laboratories USB driver, run the driver installer CP210x_VCP_Win2K_XP_S2K3.exe provided on the supplied PSD CD and follow the on screen instructions. Once the driver is installed, an additional COM port will be available via the Salcom PSD programming software. Alternatively, windows should be able to automatically locate and load drivers from the internet. VCP USB driver updates are provided periodically by Silicon Laboratories and may be downloaded free of charge from <https://www.silabs.com/support>.

- 7.2 Preparations for Connecting the Programming Software:** To change the field programmable options, the unit must be connected to a PC running the 12-36 PSD programming software in Windows XP.

The 12-36 must be powered during programming, +13.8V to power terminals.

Ensure that the 12-36 PSD has the correct com port selected under the options menu. Once correctly configured perform the following:

1. **Press connect:** The status at the bottom of the 12-36 PSD will indicate if successfully connected.

2. **Press the read button, or load a PSD configuration file:** This will load all settings of the 12-36, which is required before any changes can be programmed. The 12-36 PSD will provide feedback if the user selected operations are successful.

7.3 Using the Programming Software

The 12-36 PSD allows the user to configure various options as detailed below.

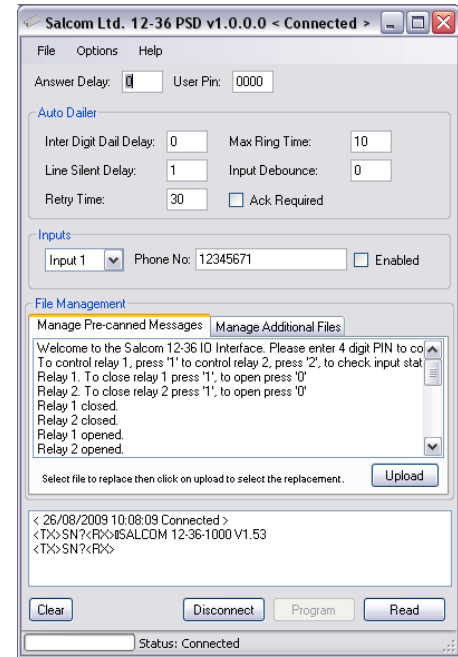


Fig. 1. 12-36 Programming Software (PSD)

Answer Delay:	How long the line needs be silent before beginning playback in 0.1 seconds (including ringing) – must be 2 digits. 1-99 (0.1 second steps) valid.
User Pin:	4 digit security number. Set to 0000 for no pin required (1234 default)

7.4 Auto Dialer

Inter Digit Dial Delay:	Provides control over the rate at which a number is dialed in 0.1 seconds. Must be a single digit (0-9).
Line Silent Delay:	How long the line needs to be silent before beginning playback (including ringing). Must be two digits. (1-99, 0.1 second steps).
Retry Time:	How long between redialing retries.
Max Ring Time:	How many times the auto-dialer will ring before disconnecting. (10-99).
Input Debounce:	How long an input must be held before triggering an event. (0-99, 0.1 second steps).
Ack Required:	When enabled requires the user to acknowledge the call by pressing the '*' button otherwise it will continue to retry.

7.5 Inputs

If you would like the auto-dialer to dial a number once an input is triggered (goes low), select the input from the drop down, enter the phone number and select 'Enabled'. Up to 4 onboard inputs can be configured. If more inputs are required, a Salcom 12-32-0000 input module can be connected.

7.6 Custom Wave File Preparation

When uploading wave files it is important that the wave files are correctly formatted. The wave files should be formatted as 8 bit mono, sampled at 11025 Hz. If these settings are not used the wave file when played will be distorted or unrecognisable.

Created wave files should be normalised to improve audio levels and reduce background noise.

7.7 Pre-canned Messages

To replace a pre-canned message, select the 'Manage Pre-canned Messages' tab as displayed in Fig. 1, then select the message you would like to replace in the list. Next click on upload to select the replacement file. Once you have selected the file to upload the upload process will begin automatically.

NOTE: After uploading a new pre-canned messages the original file will be replaced. The text of the original message will still be displayed to show the original meaning.

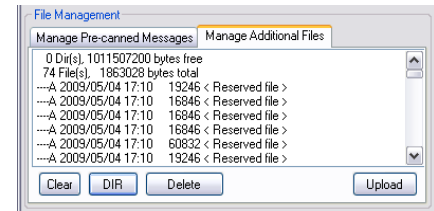


Fig. 2. Managing additional files.

7.8 Managing Additional Files

Additional files are used by the 12-32 expansion module. The 12-32 can specify the use of any 8.3 WAV file. For this to work correctly, the WAV files specified by the 12-32 expansion module must have been loaded by the user onto the 12-36-1000. To manage additional files select the 'Manage Additional Files' tab. As shown in Fig. 2.

Directory listing: To display a directory listing of files located on the disc click on the 'DIR' button. Files marked with < Reserved File > are used by the device and cannot be altered.

Delete a file: To delete a file select the file and click on 'Delete'. Only .WAV files can be deleted.

Clear screen: To clear the screen click on 'Clear'.

Upload a file: To upload a file click on 'Upload' then select the file you would like to upload. Once you have selected the file the upload process will begin automatically. Only .WAV files can be uploaded to the device.

8.0 SPECIFICATIONS

Signal Input	DTMF level -26dBm to + 3dBm (reference 1mW into 600 ohm load) maximum 10dB positive and negative twist.
Signal output	0 to + 9 dBm (voice sample dependant)
Tone duration	40mS tone, 40mS space (minimum)
Languages Supported	English. User may support any other language by uploading their own wave files.
Wave Files Supported	PCM 8 bit mono, sampled at between 8000 and 16000Hz (11025 preferred). Stored on FAT32 formatted micro SD card. Wave files can either be loaded using configuration software or by removing SD card and using an SD card reader to manually copy files. Supplied card will allow for several hours playback.
Telephone Interface	600 ohm dc blocked transformer with electronic loop and optically isolated ring detector. (Two wire)
Inputs	4 Inputs, pulled up to +12v (10K), ground to trigger. Expansion possible using the 12-32 input module.
Outputs	2 N/O relay outputs. 1Amp @24VDC (Not suitable for 240VAC connection)
Connectors	RJ12 (centre conductors) to phone and RJ12 socket for paging transmitter interface. Screw terminals to relay outputs, inputs and power connector.
Power supply	+12 to 18v D.C. - nominally 45mA.

9.0 WARRANTY

Our Products are warranted for a period of 12 months from date of purchase against faulty materials and workmanship. Should any fault occur the unit should be returned to the vendor, freight pre-paid. Please include a description of the fault to assist with prompt return. Any unauthorized alterations or repairs will invalidate the warranty.

10.0 DISCLAIMER

All information provided in this document is carefully prepared and offered in good faith as a guide in the installation, use and servicing of our products. Installers must ensure that the final installation operates satisfactorily within the relevant regulatory requirements. We accept no responsibility for incorrect installation. We reserve the right to change products, specifications, and installation data at any time, without notice.

11.0 TROUBLESHOOTING

TROUBLESHOOTING		
PROBLEM	CAUSE	Fix
Green LED not flashing	No power to the unit	Check that power is connected to the paging transmitter and that all cables are securely connected
Unit does not answer when dialled	Telephone connection incorrect	Confirm that the extension is working by replacing the 12-36 with a telephone. If the extension works, ensure the correct cable is being used (refer section 2)
Every time a call is sent, FONEpage eventually responds with: <i>"We are experiencing difficulties at the moment, please try again later"</i>	Unit not communicating with the paging transmitter	Check the cable connections between the 12-36 and the paging transmitter
Erratic behaviour.	RF transmission affecting the operation of the 12-36	Relocate the 12-36 as far away as possible from sources of radio interference (ie radio transmitters)

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