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## ATL20 – ATL30

### Automatic transfer switch controller

## REMOTE CONTROL SOFTWARE MANUAL



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## Introduction

With ATLSW Remote control software, you can connect one or several ATL transfer switches to a PC via a RS232 serial port or a RS485 serial bus.

It can be used for commissioning of the controller, for troubleshooting in case of problems and also for continuous supervision.

The software provides the following functions:

- Graphic display of all the measurements returned by the device
- Access to the Setup menus
- Access to ATL Real time clock
- Access to ATL statistic data
- Possibility of set-up parameter save/load/printout
- Display of virtual front panel of the controller with the possibility of activating the keys
- Switching between operation modes
- Keypad lock function
- Display of the Event log, showing the most recent 100 events with date and time

## Minimum resources of the PC

- Windows<sup>®</sup> 95/98/2000/XP operating system
- Graphic card with 1024x768 or higher resolution
- A free standard RS232 serial interface (COM:)
- 64Mb of RAM
- Pentium<sup>®</sup> class or higher processor
- CD-ROM drive for installation

## Installation

To install the software, you need a PC with the operating system already installed and running and the program setup CD. You should also have at least a basic knowledge of the PC and be familiar with Windows<sup>®</sup>. operating system commands.

1. Close all applications running
2. Insert the CD in the drive
3. From the root directory, start the *Atl\_Setup.exe* program
4. If a previous installation is already present on the hard drive, then the installation program will automatically start a procedure to remove the older revision. After this , the installation process will start.
5. A window is displayed asking you to specify the directory in which you want to install the program. To change directory, enter the new name in the specific box.
6. Follow the instructions that will be shown until the end of installation.
7. Reboot the PC.

## Activation of the PC-ATL connection

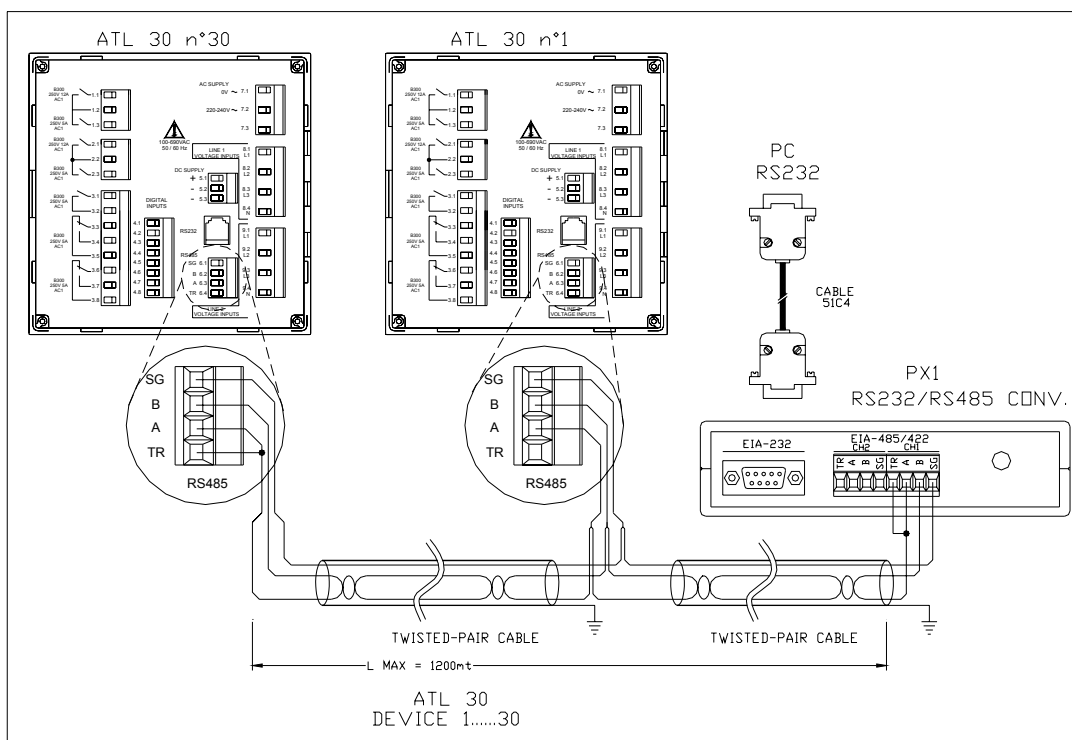
To operate the remote control program, it is essential the PC and ATL can communicate by serial interface. The connection can be realized in different ways, since the ATL is provided with two independent serial interfaces:

### RS-232 direct connection

- Connect the ATL and the PC using the Lovato cable code 51C2
- Can be used to quickly connect the device during commissioning / maintenance
- It is possible to connect only one device at a time

### RS-485 connection

- Connect the Rs-232/Rs-485 converter to the PC using cable 51C4.
- Connect all ATL RS-485 interface terminals in parallel with the twisted-pair cable and then to the interface converter, as shown in the following wiring diagram. Make sure the polarity is correct ( A and B terminals).
- We strongly recommend to use an interface converter supplied by Lovato. If the user wants to use an interface converter of another brand, we will not be able to help with wiring, nor to assure that the communication will work properly. However, the interface converter must be insulated and have an automatic enable line control circuit.
- In case you have connected more than one device, from the front keyboard of each device, enter the Function setup and set one different RS-485 serial address for each ATL, starting from address 01. Make sure that the PC speed and parity settings match the ATL RS-485 setting.



### Modem connection

Using the remote control it is also possible to achieve connection from a remote location, using a couple of modems. Modems can be of standard type or GSM, and can be connected on the RS-232 or RS-485 port. See the I106IGB1002 document on the original CD for more details about modem connection.

When working with modems, both the PC software and the ATL must be set to work with modbus® ASCII protocol. See the Configuration-options chapter and the Function setup parameters on the operating manual of the ATL.

## Main window

The main window displays all the various measurements returned by the device, providing a complete overview of the panel status.

All the functions are accessible from the drop-down menus and those used most frequently are also shown on the toolbar. Some of these functions are blocked and can be accessed only after entering the user-modifiable password (at the first setting, the default password is *LOVATO*).

The following are displayed in the main window:

- Voltage and frequency of both Line 1 and Line 2 sources
- Switching devices status
- ATL supply status
- Alarm status

Lastly, the following are indicated, from left to right, on the *status bar* close to the lower edge of the main window:

- Model and release of the internal firmware of the ATL connected
- Serial communication status (ONLINE = connection active, OFFLINE = connection not active)
- ATL operating mode
- Any alarm conditions
- Page refresh rate
- Modem connection status (if used)

Main window

The screenshot shows the 'ATL Control panel' software interface. The window title is 'ATL Control panel' and the menu bar includes 'View', 'Configuration', 'Mode', 'Communication', 'Parameters', 'Tools', and 'Help'. A toolbar contains icons for 'R', 'M', 'A', 'T', and other functions. The main display area is divided into several sections:

- LINE 1:** Displays voltage readings (L1, L2, L3) at 231, frequency readings (L1-L2, L2-L3, L3-L1) at 400, and a central frequency reading of 50.0 Hz. It includes status indicators for 'INTO LIMITS' and 'LINE 1 OK', and control buttons for 'OPEN', 'CLOSE', 'TRIP', and 'WITHDRAWN'.
- LINE 2:** Similar to Line 1, with voltage readings at 231, frequency readings at 400, and a central frequency reading of 50.0 Hz. It includes status indicators for 'INTO LIMITS' and 'LINE 2 OK', and control buttons for 'OPEN', 'CLOSE', 'TRIP', and 'WITHDRAWN'.
- SUPPLY:** Shows 'AC SUPPLY' and 'DC SUPPLY' (highlighted in green) with a 'V BATT' reading of 24.5.
- ALARMS:** A list of alarm messages including 'A01 - LOW BATTERY VOLTAGE', 'A02 - HIGH BATTERY VOLTAGE', 'A03 - LINE1 SWITCH FAULT', 'A04 - LINE2 SWITCH FAULT', 'A05 - LINE1 WRONG PHASE SEQ', 'A06 - LINE2 WRONG PHASE SEQ', 'A07 - LOAD NOT POWERED T. OUT', 'A08 - GENERATOR NOT READY', and 'A09 - EMERGENCY STOP'.
- LOAD:** A status indicator at the bottom center.
- Footer:** Displays 'ATL20 Rev.00', 'ONLINE', 'AUT MODE', and '0,43'.

Callouts provide the following descriptions:

- Switches to OFFLINE mode (communication OFF)
- Selects operation mode on the ATL
- Accesses the setup menu programming
- Displays the event log window
- Displays Inputs - Outputs status
- Drop-down box to select the controller in RS-485 multi-drop networks.
- Switches to ONLINE mode (communication ON)
- Real time clock setting
- Displays the virtual front panel
- Displays statistic data
- Switches locking of the ATL keypad ON/OFF
- Utility / genset icon
- AC and DC power supply status
- Voltage readings
- Frequency reading
- Line status indicators
- Alarms status
- Switching device status indicators. In MAN mode, double-clicking on this box will initiate a manual changeover.
- Device model and software revision
- Serial connection status
- Current ATL operating mode
- Live alarms
- Page refresh time
- Modem status

### System configuration

To access the configuration window it is necessary to enter the password. After the first installation, by default, the password is *LOVATO* (the user can change it later). Click on *Password* menu, key-in *LOVATO* and then confirm with *OK*.

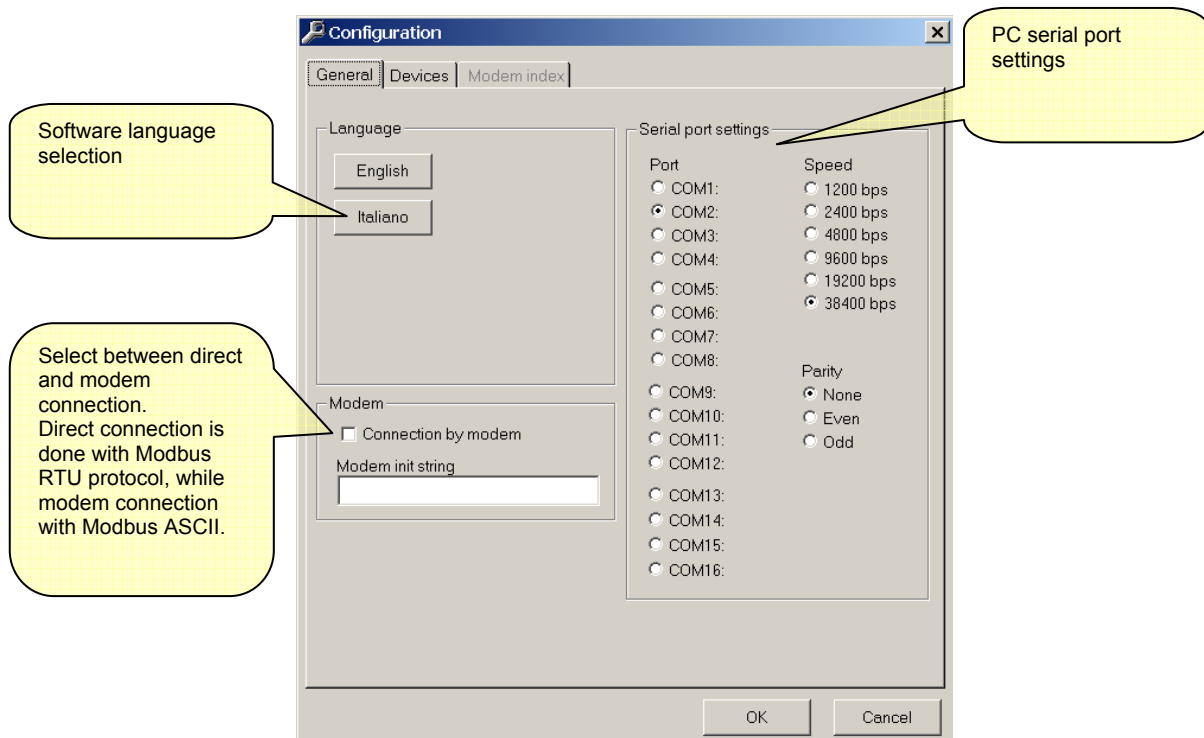
Now, to open the configuration window click on *Configuration-Options* menu.

The configuration phase is a very important step to correctly define the program operation. In particular, in the case in which are connected more than one device, the user will have to pay attention to the setting of each *ATL* connected to the network.

Before proceeding with the explanation of the various functions of the software, we will examine the configuration window, looking at the meaning of all settings.

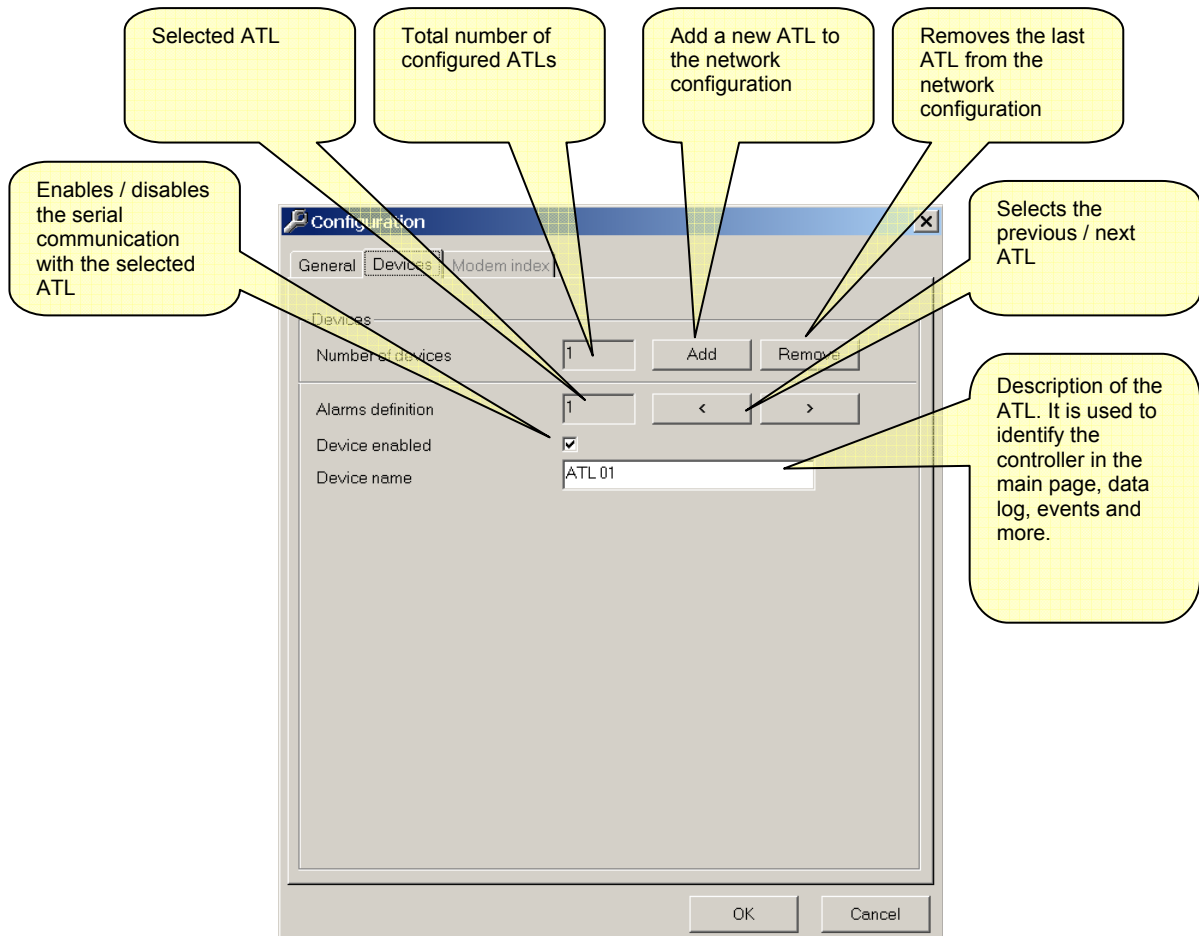
### Configuration-Options-General

In the general window there are some generic setting of the software. Particular attention must be paid to the serial port setting, that must be used to select the *PC* serial port, and to the serial interface settings that must be the same as the ones programmed into the controllers *Function* setup.



### Configuration-Options-Controllers

When using a RS-485 multidrop network, it is necessary to specify how many controllers are connected to the PC. Using this window it is possible the total number of ATL, and to give a name to each of them. In case one controller is not to be accessed, it is possible to disable it using the dedicated checkbox.



### Configuration-Options-Modem Index

If the software is configured for connecting via modem, it is possible to store a list of the various installations, that is a list of places where a ATL network with modem is installed. For each installation, the user can define a code, a name and the corresponding phone number of the modem on the field. This way, when wanting to connect with a particular installation, it will be possible to dial it directly from this list. For each installation it is possible to define if one or more units are installed and associate an initial page to be loaded once connection has been established.

The screenshot shows the 'Configuration' dialog box with the 'Modem index' tab selected. The dialog has three tabs: 'General', 'Devices', and 'Modem index'. The 'Modem index' section contains the following fields:

- Code:** [001]
- Description:** [Remote plant]
- Phone number:** [0,3355084870]

Below the fields are four buttons: 'New', 'Add', 'Remove', and 'Update'. To the right of these buttons are three navigation arrows (left, center, right). Below the buttons is a table with the following data:

Code	Desc	Tel
001	Remote plant	0,3355084870

At the bottom of the dialog are 'OK' and 'Cancel' buttons. Six callout boxes provide instructions:

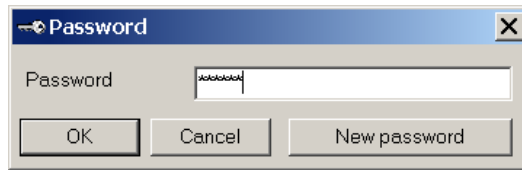
- Installation code. They must all be different.** (points to the Code field)
- Description of installation** (points to the Description field)
- Phone number of modem to be called** (points to the Phone number field)
- Number of ATL units connected to the modem.** (points to the right side of the dialog)
- Name of page to be loaded after connection has been established.** (points to the right side of the dialog)
- To enter a new record, first click on *New*, fill the fields and then click on *Add*.** (points to the New and Add buttons)
- To eliminate a record, first select it in the table, then click *Remove* button.** (points to the Remove button and the first row of the table)
- To modify an existing record, first select it from the table, then do your modification in the field above, finally click on *Update*.** (points to the Update button and the first row of the table)

## Password

When the software is started some of the functions are disabled. By means of the *Password* menu it is possible to key in the password that will allow access to all functions, including:

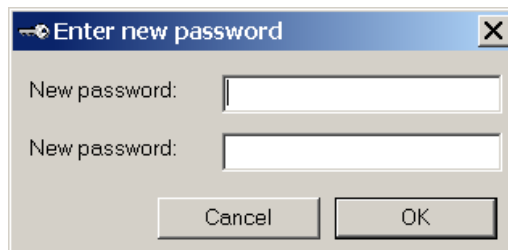
- Modifying remote control software settings
- Entering a new password
- Delete records from *Data log* databases
- Modify the ATL settings from the remote control
- Operate the virtual front panel keys
- Reset MAX values, event log, operation counters etc.

### *Password*



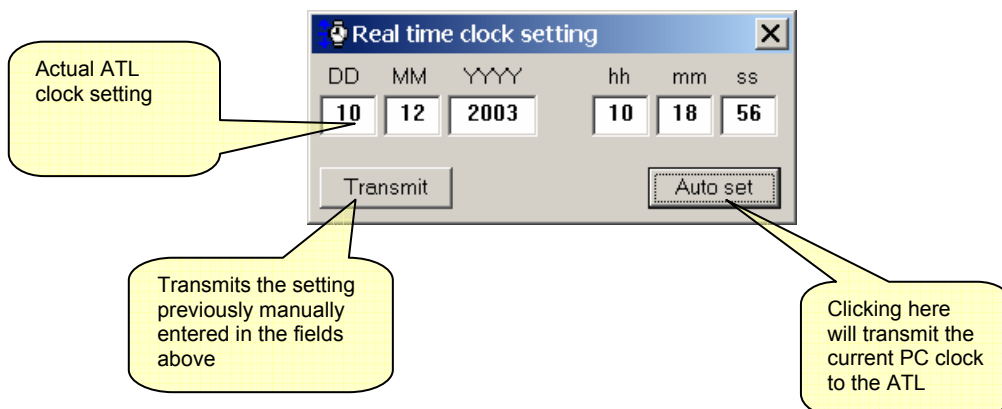
After the first installation the password is LOVATO. Later, the user will be able to customize its password, using the New Password button and then entering the new desired password two times.

### *New password*



## Real Time Clock setting

To view and set the RTC (real time clock) of the ATL, click on the dedicated icon on the toolbar. The following window will be shown, allowing to check and eventually modify the clock setting.



### Access to Setup menus

Device settings are entered via the setup parameters which you can display and modify from the specific *Parameters* menu or directly from the toolbar by clicking on the matching icon. If you have not entered the password previously, only the current settings are displayed without transmission of modifications to the device.

This method of accessing ATL settings is handier and more immediate compared with direct access from the front keypad as, using the PC; the following are displayed:

- Code of the parameter
- Description in the language set
- Value set
- Graphic box or drop-down box with possible options

The parameters have been grouped in several menus that reflect the organization described in the operations manual.

- P1 - Rated data menu
- P2 - General data menu
- P3 - Line 1 voltage control
- P4 - Line 2 voltage control
- P5 - Programmable inputs
- P6 - Programmable outputs
- P7 - Serial interface ports
- P8 - Automatic test

You can save the complete series of settings of an device in a file so as to re-use these to set another device with the same settings.

You can save the complete series of settings of a ATL on the disk of the PC in an ASCII text file for fast, easy reloading of these in another device. This function is useful when programming a number of control units with the same settings or in order to maintain a master file of the original settings of a system.

### Online Programming

When the PC is connected to a device (Online mode) the parameter transfer is always done from/to the device internal memory. In this mode, the user can:

- View and modify the parameter values into the device (menu *Parameters-Edit setup parameters* then use buttons *Transmit* and *Receive*)
- Load a file from disk and transmit it to the device (*Parameters-Load file*)
- Download the device settings and save them into a file (*Parameters-Save file*)
- Print the device settings (*Parameters-Print*)

### Offline Programming

When the user is working without an ATL device connected to the PC (Offline mode), then all the transfers are from/to the hard disk. In this mode it is possible to:

- Load an existing file from disk, show its content on the setup table window (*Parameters-Load file*). From the setup table window is then possible to edit parameters and save them back to disk (button *Save*) or print them (button *Print*).
- Create a new parameter file with the factory default settings (*Parameters-New default file*). In this case the user will be prompted to specify the device model (ATL20 or ATL30) and the software revision level of the destination device (shown on the device display at power-up). The default revision is the most recent.
- Re-open the setup table to edit parameters (*Parameters-Edit setup parameters*). If the user tries to edit parameters before having loaded a file, the system will act like when creating a new file.

## Parameters files

The following are saved in each .PAR file:

- Type and internal release of the ATL device
- Setup parameters of all menus

The online file transfer to an ATL can be done only if the file to be uploaded was created for the same ATL model and has a compatible software revision, otherwise the software will give an alarm indication.

## Setup menu

The screenshot shows the 'Setup table - [default]' window for 'Setup menu ATL30'. It is divided into two sections: 'P1 Nominal data' and 'P2 General data'. The 'P1' section includes parameters like Nominal voltage (400V), VT ratio (1.00), wiring configuration (3-phase + neutral), Voltage control mode (L-L), Nominal frequency (50Hz), and Nominal battery voltage (OFF). The 'P2' section includes Application type (Utility-to-Generator), Phase sequence control (OFF), Priority line selection (Line 1), and Line1->Line2 interlock time (6.0s). A 'Transmit' button is highlighted in yellow. At the bottom, there are buttons for 'Receive', 'Default', 'Save', 'Print', and 'Exit'.

**Callouts:**

- Menu title:** Points to the window title 'Setup table - [default]'.
- Code of the parameter:** Points to 'P1.01 Nominal voltage'.
- Parameter description:** Points to 'P1.03 wiring configuration'.
- Scroll down box with possible options:** Points to the dropdown menu for 'P1.05 Nominal frequency'.
- Graphic bar. Drag this with the mouse to modify the setting:** Points to the slider for 'P1.01 Nominal voltage'.
- Setting of the parameter. Highlighted in yellow if different from the factory-set default value. Double clicking on this box, the parameter can be set using the numeric keypad:** Points to the '400V' value box for 'P1.01'.
- Transmits the values displayed in the window to the ATL and saves them. Enabled only in online mode, with password:** Points to the 'Transmit' button.
- Resets the values to the factory-set default:** Points to the 'Default' button.
- In Offline mode, saves parameters to a file:** Points to the 'Save' button.
- In Offline mode, print the parameter settings:** Points to the 'Print' button.
- Closes the setup window:** Points to the 'Exit' button.
- Scroll bar to access the parameters below:** Points to the vertical scroll bar on the right side of the parameter list.

## Modem parameters

If modems are used for remote control, it is necessary to program certain parameters in the ATL needed to control the modem connected to the ATL itself. Due to their particular structure, these parameters are not available on the keyboard-display of the device, and may therefore only be set through a PC and remote control software.

As it is necessary to program these parameters *before* being able to use the modem, this programming is usually carried out connecting the PC and the ATL directly with the RS-232 serial cable.

When a modem is used it is possible to configure the ATL so that it answers only calls from the PC or so that it can autonomously call the PC in the case of particular events (call against alarms or at fixed intervals).

It is also possible to connect the ATL to a GSM modem, i.e. to a device that combines a conventional modem and a cell phone, to be able to make calls also from stations with no telephone line. In this case it will also be possible to make the ATL send SMS messages or send electronic mail messages, still as a result of an alarm or when a fixed interval of time has elapsed (note that sending E-mails through an SMS is a service supplied only by some phone companies).

The window shown below contains all the parameters needed to perform the above-mentioned functions:

The screenshot shows the 'ATL-side modem parameters' window with the following sections and callouts:

- Modem general enable:** Points to the 'Enable modem' checkbox.
- AutoCall enable:** Points to the 'Enable calls from ATL' checkbox.
- Choice of type of modem standard / GSM:** Points to the 'GSM modem' checkbox.
- Description needed to identify the caller:** Points to the 'ATL identification string' field (value: ATL UNDER TEST).
- Any modem initialization command (normally not necessary):** Points to the 'Initialization string' field.
- Type of telephone line (normally Tone):** Points to the 'Tone dialing (DTMF)' radio button.
- Enable SMS commands:** Points to the 'Enable SMS commands' checkbox.
- Password for SMS commands:** Points to the 'SMS commands password' field.
- Enable calls to PC:** Points to the 'Connect to PC' checkbox.
- PC phone no.:** Points to the 'phone nr.' field for 'Connect to PC' (value: 987654321).
- Call enable in case of alarm:** Points to the 'In case of alarm, after' checkbox.
- Periodical call enable:** Points to the 'Periodically, every' checkbox.
- Call enable in case of auto transfer execution:** Points to the 'After automatic transfer' checkbox.
- SMS messages address autocal x 3:** Points to the 'phone nr.' field for 'Send SMS' (value: 123456789).
- Enable sending SMS x3:** Points to the 'Send SMS' checkbox.
- Autocall E-mail address Note: Some GSM modems need to use '! instead of '@' in the address:** Points to the 'E-mail address' field (value: mymailllovatoelectric.co).
- Disables calls when the ATL is not in the AUT mode:** Points to the 'Disable calls when ATL is not in AUT mode' checkbox.
- Transmits and stores the parameters in the ATL:** Points to the 'Transmit' button.
- Reads the parameters from the ATL and views them in this page:** Points to the 'Receive' button.
- Phone number ATL end (optional):** Points to the 'ATL modem phone number' field.
- Telephone number for sending e-mail via SMS. Depends on the service operator:** Points to the 'E-mail SMS phone nr.' field (value: 49696).
- Code needed to direct an SMS to an e-mail box. Depends on the service operator:** Points to the 'E-mail SMS prefix' field (value: EMAIL).

## View menu

### Front panel

Using the programming software, you can also display a 'virtual' representation of the front panel of the ATL on the monitor of the PC; this is useful, for example, if you want to demonstrate functioning by projecting the image of the monitor of the PC.

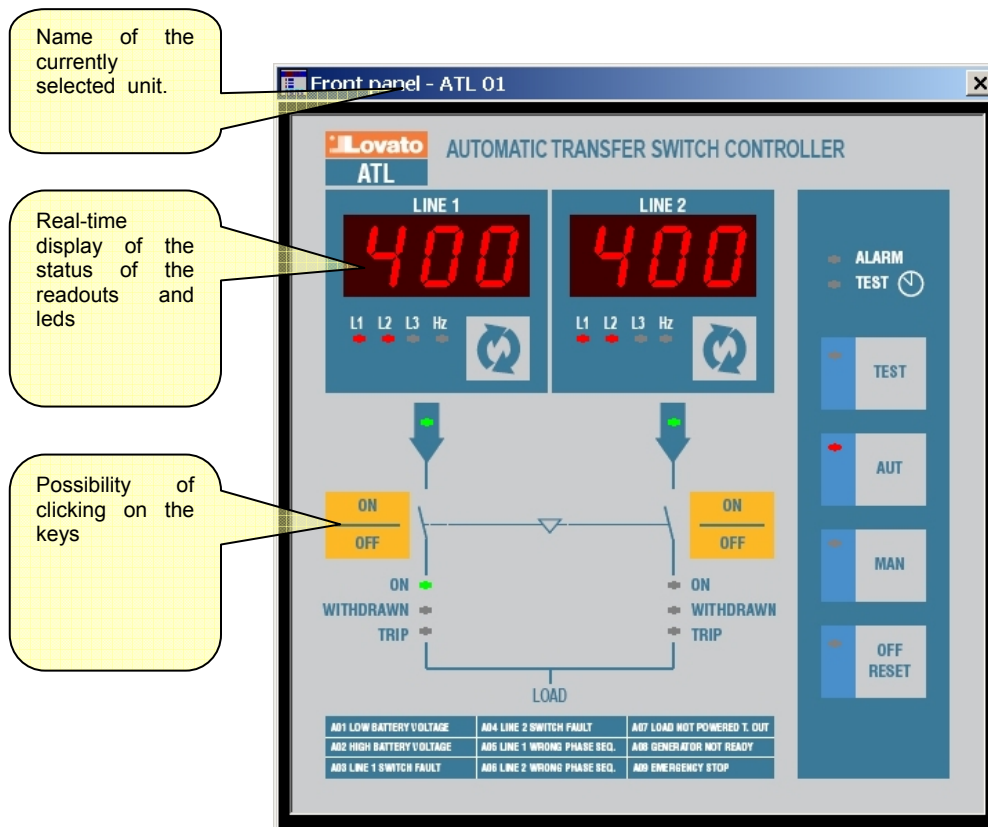
Accessing this window from the *Display-Front Panel* menu, the front panel of the device connected is shown, with real-time display of the readouts and leds in their current status.

When working in a multi-drop network, in the title bar of the window it is reported the name of the unit currently selected.

Clicking with the mouse on the keys (after having entered the password), you can select the measurements and functions in the same way as on the physical device. However, you cannot access those functions (such as parameter programming, reset statistics, etc.) that require simultaneous pressing and/or holding down of the keys.

#### Note:

The quality of the graphic representation of the front panel may vary according to the graphic resolution of your PC and/or the monitor settings used.



## Event log

The event log window shows what happened to the system in the past, keeping trace of the last 40 events each of them with date and time reference. Events history is stored in non-volatile memory, so it is kept even without power supply.

Events include:

- Source lines present / not present
- Switching devices opening/closing
- Alarms begin and end
- Change of operation mode
- Change of setup parameters
- Remote communication on/off
- Power supply on/off

The screenshot shows the 'Event log' window with a table of events. Callouts point to the columns: 'Event number', 'Event time stamp', and 'Code and description of the event'. Below the table are buttons for 'Delete', 'Export', 'Print', and 'Exit', each with a callout explaining its function.

Event number	Date	Time	Event
82	01-01-06	12:00:32	[083] - Begin of alarm A03 - Line 1 switch fault
83	01-01-06	12:01:02	[087] - Begin of alarm A07 - Load not powered timeout
84	01-01-06	12:00:00	[001] - ATL Power on
85	01-01-06	12:00:12	[042] - Line 1 present
86	01-01-06	12:00:12	[062] - Line 2 present
87	01-01-06	12:00:12	[029] - Stop command to generator 2
88	01-01-06	12:00:14	[052] - Line 1 switch closed
89	01-01-06	12:00:00	[001] - ATL Power on
90	01-01-06	12:00:12	[042] - Line 1 present
91	01-01-06	12:00:12	[062] - Line 2 present
92	01-01-06	12:00:12	[029] - Stop command to generator 2
93	01-01-06	12:00:00	[001] - ATL Power on
94	01-01-06	12:00:12	[042] - Line 1 present
95	01-01-06	12:00:12	[062] - Line 2 present
96	01-01-06	12:00:12	[029] - Stop command to generator 2
97	01-01-06	12:00:28	[052] - Line 1 switch closed
98	01-01-06	12:01:05	[210] - Begin of remote control
99	01-01-06	12:02:40	[211] - End of remote control
100	01-01-06	12:03:56	[210] - Begin of remote control

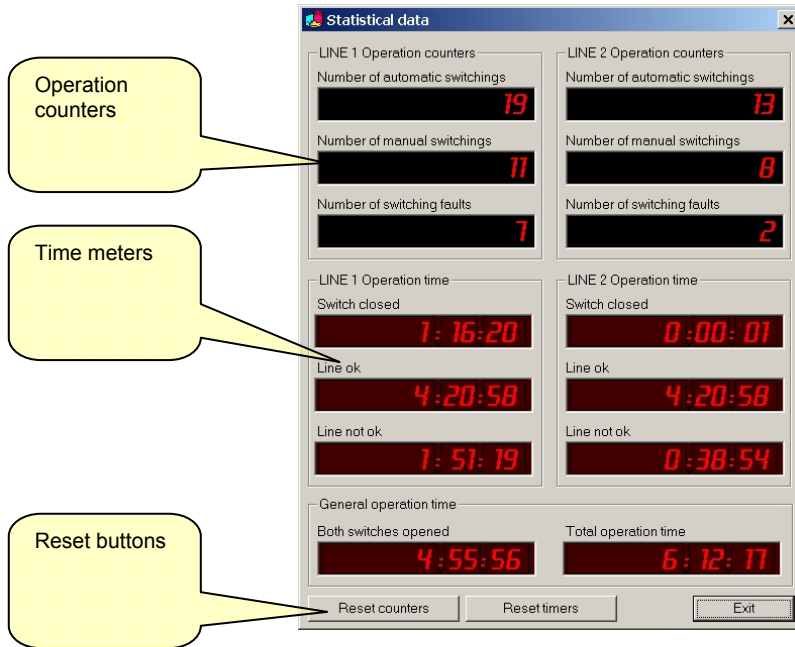
Buttons and their functions:

- Delete:** Clear events history. Available only after entering the password.
- Export:** Export to ASCII file.
- Print:** Print event history.
- Exit:** Close Event log window.

### Statistic data

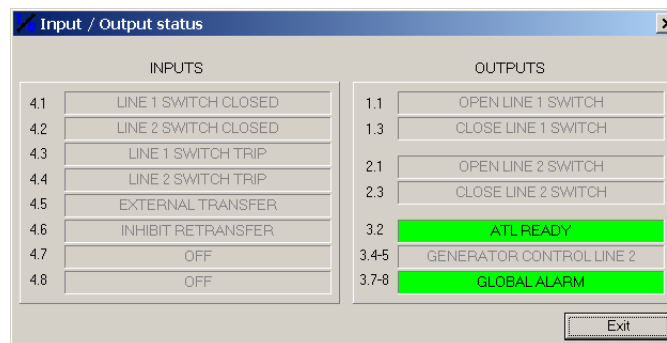
The statistic data window groups some time-meters and operation counters that keep track of the ATL operation history. These data are stored in a non-volatile memory so they are not lost when the ATL is powered down.

Two password-protected buttons allow to reset timers and counters.



### Input-Outputs

This window shows the function programmed on ATL Input-Output terminals, and their current status. Please note that for the output relays, the status shown is the status of the relay coil (energized/not energized) that sometimes is opposite to the logic function of the relay (example: global alarm relay energized = conditions ok).



### Keyboard lock-Unlock

Using this function it is possible to lock or unlock the front panel keyboard of the device, preventing unauthorized access to setup settings, memory clearing etc. (see ATL operation manual).

## Appendix A – Remote control through modem

### Connection via standard modem

To make a remote connection via a switched telephone line the use of a pair of modems is necessary. Lovato guarantees correct operation of the connection using modems of the following type:

- 3-Com U.S. Robotics 56K model 5630

Though correct operation is possible also with modems of other types, in this manual all the configuration commands (variables depending on the manufacturer) and the connection diagrams will refer to the above-mentioned modem model.

***Though very simple in conception, connection via modem requires that the installer have a minimum of experience concerning the problems connected with serial communication, modem programming, types of telephone lines, etc. In an attempt to simplify the configuration procedure as far as possible, we have subdivided the operations to be carried out in the following steps:***

#### 1. Modem configuration at the ATL end

From the ATL end the modem must be configured before it can be used. Configuration serves to implement the following functions:

- Disable the echo
- Set a communication speed fixed at 9600 baud
- Permanently store the two previous settings as default at switch on

To make these configurations, the modem to be connected to the ATL will have to be momentarily connected to the PC with its standard cable. Then start the PM.EXE program (supplied together with this software) and press the *Program modem* button. Wait for the confirmation message and then disconnect the modem from the PC and connect it to the ATL. The PM.EXE program transmits the following configuration string to the modem:

**AT E0 &N6 &U6 &W0 <CR>** (commands valid for modem model 5630)

If the user is familiar with terminal emulation programs (such as Windows Hyperterminal) this programming can be done manually without the aid of the PM.EXE program. In this case, it will be necessary to set the serial interface at 9600 Baud, 8 bit, No parity, 1 stop bit and type in the above string from the keyboard. On pressing return the modem will answer with OK confirming that programming has taken place.

#### 2. ATL configuration

Also the ATL needs a configuration to be able to converse with the modem.

- Connect the PC to the ATL with the direct RS232 cable code 51C2.
- Set the password
- From the Online mode, choose *Modem parameters* from the *Parameters* menu (see description on previous pages).
- Activate the general modem enable (first option at top left).
- If you want the ATL to call the PC on its own initiative, activate the *enable calls from ATL* and *Connect to PC* boxes, specifying the PC modem telephone number and the conditions that will determine the call (against alarm, periodical, etc.)
- Transmit and store the settings with the *Transmit* button
- From the ATL front panel, enter Setup menu P7 and set the parameter *P7.03 RS-232 protocol* to Modbus ASCII + modem

#### 3. System connection

- Connect the modem programmed at point 1 with the ATL using the cable code 51C5
- Connect the second modem to the PC with the standard cable provided with the modem. The PC-side modem does not require any particular programming (it must be left at factory defaults).
- Connect both modems to the respective telephone lines. For the first tests you are advised to use two internal lines in the same office to keep the call under control.

#### **4. Configuration of the ATL Remote control program**

- Start the ATL Remote control program from the PC with the modem already connected and powered.
- Choose the *Configuration-Options* menu
- Set the *Connection via modem* box from the *General* table.
- If the *Modem index* table is empty, enter a record with the name of the installation and the phone number corresponding with the telephone line of the modem connected to the ATL.
- Click on *OK* to close and save the *Options* window.

#### **5. Online Connection**

- Choose *Call with modem* from the *Communication* menu
- From the pull-down box choose the name of the installation to be called. The corresponding telephone number (previously loaded in the *Modem index*) will be shown in the box below.
- Click on *Dial*
- At this point, the modem at the PC end calls the ATL modem. After a few rings the ATL modem and the program switch automatically to the online mode.
- To end the connection, choose *Modem-Hang up* from the *Communication* menu

#### ***In the event of problems...***

If during the attempted call the modem connected to the ATL does not 'ring', this means that the call fails to reach its destination. In this case, carry out the following checks:

- Try dialing the telephone number of the line to which the ATL is connected using a normal telephone. The modem called should give off sounds that ought to be heard in the handset. If this does not happen, there are problems on the telephone line or on the switchboard.
- Check that PC modem is powered and connected with the cable to the correct serial port (the one set in *Communication-Serial port*)

If the modem called rings repeatedly but the connection fails to be established (the window with the wording 'Connection OK' is not shown):

- Check the ATL programming (see previous point 2)
- Check the ATL-modem 51C5 cable

If the wording 'Connection OK' is shown on the PC but then the program switches to Offline:

- Try connecting directly from the PC to the ATL with cable 51C2 and carry out all the checks described in the 'Direct RS-232 connection' chapter
- Check that the modem is programmed correctly as described in the previous point 1

## Connection via GSM modem

To make a remote connection through the GSM cellular network a GSM modem needs to be connected to the ATL and a second, traditional or GSM modem has to be connected to the PC.

Lovato guarantees correct operation of the connection using GSM modems of the following type:

- Funkanlagen Falcom A-2D

This type of modem is highly versatile and allows access to functions that are not normally possible with a traditional modem (SMS, E-mail). However, though taking place at 9600 bps, transmission via ether needs longer signal transfer times, to the disadvantage of communication speed.

***Though very simple in conception, connection via GSM modem requires that the installer have a minimum of experience concerning the problems connected with serial communication, modem programming, types of telephone lines, etc. In an attempt to simplify the configuration procedure as far as possible, we have subdivided the operations to be carried out in the following steps:***

### 1. Configuration of the GSM modem at the ATL end

From the ATL end the modem must be configured before it can be used. Configuration serves to implement the following functions:

- Disable the echo
- Set a fixed communication speed at 9600 baud
- Disable the PIN request after switch on
- Set the SMS service provider number
- Set the SMS mode on 'Text mode'
- Permanently store the two previous settings as default at switch on

To make these configurations the GSM modem to be connected to the ATL should be momentarily connected to the PC with its standard cable. Then start the PM.EXE program (supplied together with this software) and press the *GSM modem program* button. Wait for the confirmation message and then disconnect the GSM modem from the PC.

#### Important:

***A SIM-CARD enabled for data transmission is needed to make the GSM modem work. A normal SIM-CARD for cell phone does not work if used with the GSM modem. Contact the SIM-CARD Supplier to have it enabled. If the SIM card has different phone numbers for voice and data, use the phone number for data.***

### 2. ATL configuration

Also the ATL needs configuration to be able to converse with the modem.

- Connect the PC to the ATL with the direct cable RS232 (51C2).
- Check that the software revision in the ATL is 11 or over
- Set the password
- From the Online mode, choose *Modem parameters* from the *Parameters* menu (see description on previous pages).
- Activate the general modem enable (first option at top left).
- Activate the *GSM Modem* option
- If you want the ATL to call the PC on its own initiative, activate the *enable calls from ATL* and *Connect to PC* boxes, specifying the PC modem telephone number in the *phone number* box and the conditions that will determine the call (against alarm and/or periodical)
- If you want the ATL to send an SMS message in the occurrence of the above-mentioned conditions, activate one or more *Send SMS* options and specify the number of the cell phone to which the SMS is to be sent for each one of them.
- In the same way, if you want the ATL to send an electronic mail message, activate the *Send E-mail* option and specify the electronic mail address of the addressee in the special box.
- Transmit the settings with the *Transmit* button
- From the ATL front panel, enter Setup menu P7 and set the parameter *P7.03 RS-232 protocol* to Modbus ASCII + modem

### 3. **System connection**

- Connect the GSM modem programmed at point 1 with the ATL via cable code 51C7
- Connect the second modem to the PC using the standard cable provided with the modem
- Power the GSM modem and wait 30 seconds for initialisation

### 4. **Configuration of the ATL Remote control program**

- Start the ATL Remote control program from the PC with the modem already connected and powered.
- Choose the *Configuration-Options* menu
- Set the *Connection via modem* box from the *General* table.
- If the *Modem index* table is empty, enter a record with the name of the installation and the phone number corresponding with the telephone line of the modem connected to the ATL.
- Click on *OK* to close and save the *Options* window

### 5. **Online Connection**

- Choose *Call with modem* from the *Communication* menu
- From the drop-down box choose the name of the installation to be called. The corresponding telephone number (previously loaded in the *Modem index*) will be shown in the box below.
- Click on *Dial*
- At this point, the modem at the PC end calls the ATL modem. After a few rings the ATL modem and the program switch automatically to the online mode.
- To end the connection, choose *Modem-hang up* from the *Communication* menu

#### ***In the event of problems...***

If during the attempted call the GSM modem connected to the ATL does not 'ring', this means that the call fails to reach its destination. In this case, carry out the following checks:

- Check that the signal near the GSM modem is strong enough (> 40%). To do this, use the PM.EXE program.
- Check that the PC modem is powered and connected with the cable to the correct serial port (the one set in *Configuration-Options-Serial port*)

If the modem called rings repeatedly but the connection fails to be established (the window with the wording 'Connection OK' is not shown):

- Check the ATL programming (see previous point 2)
- Check the ATL-modem cable 51C7
- If you are using a phone line passing through a switchboard, try to use a direct line. Some switchboards 'alter' the phone call and make it unrecognizable by the GSM modem.

If the PC shows the wording 'Connection OK' but then the program goes Offline:

- Check the quality of the GSM signal
- Try connecting directly from the PC to the ATL with cable 51C2 and carry out all the checks described in the 'Direct RS-232 connection' chapter
- Check that the GSM modem is programmed correctly as described in the previous point 1

## Appendix B – Commands with SMS messages

If a GSM modem is used it is possible to control the ATL from any cell phone sending SMS Messages. From the cell phone, the user has to send an SMS with the required commands and forward it to the phone number of the GSM modem connected to the ATL. The command syntax is very simple as most of it reflects the wording on the front panel buttons: sending for example 'MAN' is the same as pressing the MAN button on the front panel. This way, it will be possible to control any ATL from any place that can be reached by the GSM signal.

To prevent unauthorized access, the commands are to be preceded by a password defined by the user during installation. If the SMS message is not preceded by the correct password, it will be ignored. If however the message comes from one of the cell phones defined as addressees of alarm messages (see modem parameters window), the password will not be necessary.

The following table lists the possible commands:

COMMAND	FUNCTION
RESET	Switches to RESET-OFF mode and Resets alarms
MAN	Switches to MAN mode
AUT	Switches to AUT mode
TEST	Switches to TEST mode
ONOFF1	Simulates pressing of ON-OFF Line1 button
ONOFF2	Simulates pressing of ON-OFF Line2 button
PWD=<password>	Enters the access password

The commands can be chained and spaced by a pause.

To enable the execution of SMS commands it is necessary to enable the corresponding box in the *Modem Parameters* window (see Modem Parameters chapter). In the same window the user has to specify the password intended to be used. As mentioned previously, if the cell phone used to send the commands is the same one designated as addressee of the alarm messages, it will not be necessary to enter the password. In this case the telephone number (under *Send SMS..*) will have to be stored in international format, for example +393359609600.

After performing a sequence of commands the ATL will answer with a confirmation message that will be sent to the cell phone that generated the message.

The structure of the confirmation message is the following:

- ATL Identification
- Operating mode
- Line 1 status
- Line 2 status
- Breaker 1 status
- Breaker 2 status

If the password in the SMS message does not correspond with the one stored in the ATL, the commands will not be performed and an invalid password answer will be sent.

The *SMS Commands* function works with the same criterion and the same connection layout as the normal alarm signalling *Autocall* function. It is also possible to use the two functions at the same time. Refer to the *Modem parameters* and *Connection via GSM modem* chapters for the details and how to solve problems.