AUTOMATIC TRANSFER SWITCH CONTROLLERS ATL SERIES
2 power sources automatic transfer switch controllers

The automatic transfer switch controllers ATL 600 - ATL601 - ATL 610 - ATL 800 can supervise and manage the changeover between 2 three-phase power sources. The voltage and frequency measurements are shown on the graphic LCD display and the LEDs on the front panel provide a clear indication about the power source status.

- Management of 2 power sources
- Control of undervoltage, overvoltage, phase loss, asymmetry, minimum and maximum frequency, with time delay and independent enabling
- Inputs, outputs, limits, counters and alarms are programmable by the user
- Power sources can be independently defined as utility or generator
- Automatic test management for standby and rotation generators
- Suitable for LV and MV systems
- Programmable maintenance alarms
- Suitable for contactors, motorised circuit breakers and motorised changeover switches
- Tie breaker management for ATL 800 only
- Closed transition available for ATL 800 only
- Customizable change-over devices layout and transfer strategy for ATL 800 only
- Built-in PLC technology for ATL 800 only
- Built-in NFC technology for ATL 800 only

ATL 600 - ATL 800 can supervise and manage the changeover between 2 three-phase power sources. The voltage and frequency measurements are shown on the graphic LCD display and the LEDs on the front panel provide a clear indication about the power source status.

- Management of 2 power sources
- Control of undervoltage, overvoltage, phase loss, asymmetry, minimum and maximum frequency, with time delay and independent enabling
- Inputs, outputs, limits, counters and alarms are programmable by the user
- Power sources can be independently defined as utility or generator
- Automatic test management for standby and rotation generators
- Suitable for LV and MV systems
- Programmable maintenance alarms
- Suitable for contactors, motorised circuit breakers and motorised changeover switches
- Tie breaker management for ATL 800 only
- Closed transition available for ATL 800 only
- Customizable change-over devices layout and transfer strategy for ATL 800 only
- Built-in PLC technology for ATL 800 only
- Built-in NFC technology for ATL 800 only

For ATL 610 - ATL 800 only:
- Dual AC/DC power supply
- Real time clock with backup energy
- Expandability with EXP... modules (e.g. Ethernet, extra I/Os).

### Operational characteristics

<table>
<thead>
<tr>
<th></th>
<th>ATL 600</th>
<th>ATL 601</th>
<th>ATL 610</th>
<th>ATL 800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
<td>110-240VAC</td>
<td>12/24VDC</td>
<td>110-240VAC and 12/24VDC</td>
<td>110-240VAC and 12/24/48VDC</td>
</tr>
<tr>
<td>Voltage measurement inputs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Rated voltage Ue</td>
<td>100-480VAC L-L</td>
<td>100-480VAC L-L</td>
<td>100-600VAC L-L</td>
<td></td>
</tr>
<tr>
<td>- Measurement range</td>
<td>50-576VAC L-L</td>
<td>50-576VAC L-L</td>
<td>50-720VAC L-L</td>
<td></td>
</tr>
<tr>
<td>- Frequency range</td>
<td>45...65Hz</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current inputs</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmable digital inputs</td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>- Type of input</td>
<td>Negative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmable relay outputs</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expandability</td>
<td>-</td>
<td>With EXP... modules (2 max.)</td>
<td>With EXP... modules (3 max.)</td>
<td></td>
</tr>
<tr>
<td>RS485 port</td>
<td>-</td>
<td>With EXP 1012</td>
<td>Built-in</td>
<td></td>
</tr>
<tr>
<td>Real time clock</td>
<td>-</td>
<td>With EXP 1012</td>
<td>Built-in</td>
<td></td>
</tr>
<tr>
<td>Compatible software</td>
<td>xPress and xApp</td>
<td>xSynergy xPress and xApp</td>
<td>xSynergy xPress, xApp and xApp</td>
<td></td>
</tr>
<tr>
<td>Flush-mount housing</td>
<td>144x144mm</td>
<td>144x144mm</td>
<td>180x240mm</td>
<td></td>
</tr>
<tr>
<td>Degree of protection</td>
<td>IP20 at rear, IP40 on front; IP65 with EX80 01 optional gasket</td>
<td>IP20 at rear. IP65 on front</td>
<td>IP20 at rear. IP65 on front</td>
<td></td>
</tr>
</tbody>
</table>

Certifications and compliance
Certifications obtained: cULus, EAC, ROM.
3 power sources automatic transfer switch controller

ATL 900 is an ATS controller with high performance. Specific functions are available for the control of three power sources and three switching breakers. It is possible to use the default logics for the changeover strategy or personalise them with the integrated PLC. ATL 900 has four current inputs; with this feature, it can use measured power to define new logics on the control of the power sources.

ATL 900 - Some possible configurations

Operational characteristics

<table>
<thead>
<tr>
<th>ATL 900</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply voltage</td>
</tr>
</tbody>
</table>
| Voltage measurement inputs | 100-600VAC L-L
|  | 50-720VAC L-L
|  | 45...65Hz |
| Current inputs | 4 inputs (5A or 1A) |
| Programmable digital inputs | 12 |
| Type of input | Negative |
| Programmable relay outputs | 3 with 1 normally open contact each (NO - SPST) rated 16A 250VAC
|  | 3 with 1 normally open contact each (NO - SPST) rated 8A 250VAC
|  | 4 with 1 changeover contact each (NO/NC - SPDT) rated 8A 250VAC |
| Expandability | With EXP... modules (3 max.) |
| RS485 port | Built-in |
| Real time clock | Built-in |
| Compatible software | Synergy, Xpress, NFC and Sanj APP |
| Flush-mount housing | 180x240mm |
| Degree of protection | IP20 at rear. IP65 on front |

Certifications and compliance

Certifications obtained: cULus, EAC, RCM.
USB and Wi-Fi dongles

Through the optical port, direct connection to a PC USB port (using CX 01 dongle) or via Wi-Fi (using CX 02 dongle) is allowed. CX 02 dongle (Wi-Fi) can furthermore make:

- Copy of the parameters
- All parameters in the ATL can be saved in the CX 02 memory and if required loaded on the same device again (backup function) or to a different one of the same type (replication of the configuration).

- Clone of the device settings
- In addition to the copy of the parameters, the current values of the statistical data, counters and events can be saved in memory as well, in order to fully replicate an ATL on another device of the same type or to restore the ATL to a previously saved state.

Optical port

All the controllers are equipped with a front optical port to support programming through CX 01 dongle and to use the functionality of CX 02 Wi-Fi dongle.

- No need to remove power from the panel to connect to the controller
- Electrical safety (no electrical connection)
- IP54 guaranteed
- Convenience of working on the front.

Real time clock for ATL 610, ATL 800 and ATL 900

The ATLs have a real time clock with integrated backup reserve energy so all events are identified by the time stamp at which they occurred.

4 current inputs for ATL 900

Current inputs allow to monitor load power demand and to define proper changeover strategy.

- Knowing the power demand of the system and the rated power of the sources, the ATL 900 is able to select the best source available that can correctly supply the loads.
- The input and output functions are preconfigured with the most common settings but the user can easily change the default configuration to adapt the controller to the application needs. All inputs and outputs are configurable.
- There are four types of programmable internal variables:
  - Limit thresholds
  - Remote-controlled variables
  - User alarms
  - Programmable counters

- About enabled limits and counters, the user can find the relative pages, scrolling them on the display.

Expandability

(2 slots for ATL 610 - 3 slots for ATL 800-ATL 900)

The configuration of the ATL in different installations can have many variants, for example the types of communication (USB, RS485, Ethernet) or the number of inputs and outputs required. ATLs support expandability by EXP...plug-in modules.

Since the expansion modules are common with other LOVATO Electric products, this saves on management cost and, above all, guarantees configuration flexibility at installation time as well, providing performance ease especially when the system is already in operation. The following EXP modules are available:

- Digital inputs and outputs
- Analog inputs and outputs (for ATL 800 and ATL 900 only)
- USB, RS232, RS485, Ethernet and Profibus communication
- GPRS/GSM modem (for ATL 800 and ATL 900 only).

The module is automatically recognised by the ATL when installed.

Programmable PLC logic for ATL 800 - ATL 900

With PLC logic capability, programs can be made to combine internal status of the controller variables with signals incoming from the field to activate outputs, define new changeover actions and/or generate alarms.

NFC for ATL 800 - ATL 900

Parameter programming by smart devices (e.g. tablets and mobile phones) is now possible using NFC wireless technology.

Plug-in GPRS/GSM modem for ATL 800 - ATL 900

By fitting the EXP1015 expansion module, the controller is automatically equipped and configures a GSM/GPRS modem. This simplifies installation and wiring. Once a data-enabled SIM card is inserted, alarm or event SMS, email messages and latest logged data can be transmitted by the controller to FTP servers.

Closed transition for ATL 800 - ATL 900

For applications which require “closed transition” change-over strategy, ATL 800 - ATL 900 is programmable with specific functions both for spontaneous synchronising or controlled synchronising.
**Sam1 App**

CX02 dongle is the access point to the ATL through the Sam1 APP. Thanks to Sam1, one can:

- See all the ATL measurements on smartphones or tablets.
- Send commands, such as counters reset or enabling and disabling of ATL outputs.
- Set parameters, save a copy in a file and retrieve it in case of need; the file can be sent via email as well.
- See active user alarms.
- See the event list and save a copy.

APP is downloaded from Google Play Store or Apple iTunes.

**NFC App**

Programming the parameters via tablet and smartphone is now possible also through NFC wireless technology. Bringing a smartphone or tablet with NFC connection enabled close to the display of the ATL 800 or ATL 900 activates the APP and the controller connected is recognised automatically. It will then be possible to modify the parameters and program the ATL.

**Xpress configuration and remote control software**

is a software that permits to:

- Transfer setup parameters from ATL to PC or vice versa.
- Read measurements.
- See events and alarms.
- Send commands.

**Synergy supervision and energy management software**

ATL 610, ATL 800 and ATL 900 are compatible with the current version of Synergy. Thanks to the communication expansion modules, they can be immediately added to an existing network without needing extra external accessories. Serial and Ethernet communications are supported. The Ethernet port is suitable to work with both static IP and dynamic IP address and the ATL network configuration is similar to what is normally done for PCs.
## Automatic transfer switch controllers

### For 2 power sources

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATL 100</td>
<td>Automatic transfer switch controller for 2 single phase power sources, modular housing (3 modules), power supply 110/230VAC configurable</td>
</tr>
<tr>
<td>ATL 600</td>
<td>Automatic transfer switch controller with optical port for 2 power sources, 144x144mm, power supply 110-440VAC</td>
</tr>
<tr>
<td>ATL 601</td>
<td>Automatic transfer switch controller with optical port for 2 power sources, 144x144mm, power supply 12/24VDC</td>
</tr>
<tr>
<td>ATL 610</td>
<td>Automatic transfer switch controller with optical port for 2 power sources, 144x144mm, power supply 110-440VAC and 12/24VDC, expandable with EXP... expansion modules</td>
</tr>
<tr>
<td>ATL 800</td>
<td>Automatic transfer switch controller with optical port for 2 power sources, 180x240mm, power supply 110-440 VAC and 12/24/48VDC, expandable with EXP... expansion modules, built-in RS485</td>
</tr>
</tbody>
</table>

### For 3 power sources

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATL 900</td>
<td>Automatic transfer switch controller with optical port for 3 power sources, 180x240mm, power supply 110-440 VAC and 12/24/48VDC, expandable with EXP... expansion modules, built-in RS485, 3ph+N current inputs</td>
</tr>
</tbody>
</table>

## Expansion modules for ATL 610 - ATL 800 - ATL 900

### Inputs and outputs

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP10 00</td>
<td>4 opto-isolated digital inputs</td>
</tr>
<tr>
<td>EXP10 01</td>
<td>4 opto-isolated static outputs</td>
</tr>
<tr>
<td>EXP10 02</td>
<td>2 digital inputs and 2 static outputs, opto-isolated</td>
</tr>
<tr>
<td>EXP10 03</td>
<td>2 relay outputs rated 5A 250VAC</td>
</tr>
<tr>
<td>EXP10 06</td>
<td>2 relay outputs rated 1.5A 440VAC AC-15</td>
</tr>
<tr>
<td>EXP10 07</td>
<td>3 relay outputs rated 1.5A 440VAC AC-15</td>
</tr>
<tr>
<td>EXP10 08</td>
<td>2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC</td>
</tr>
</tbody>
</table>

### Communication ports

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP10 10</td>
<td>Opto-isolated USB interface</td>
</tr>
<tr>
<td>EXP10 11</td>
<td>Opto-isolated RS232 interface</td>
</tr>
<tr>
<td>EXP10 12</td>
<td>Opto-isolated RS485 interface</td>
</tr>
<tr>
<td>EXP10 13</td>
<td>Opto-isolated Ethernet interface with web server function</td>
</tr>
<tr>
<td>EXP10 14</td>
<td>Opto-isolated Profibus-DP interface</td>
</tr>
</tbody>
</table>

## Communication devices and accessories

### EXP10...

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXP10 04</td>
<td>2 opto-isolated analog inputs</td>
</tr>
<tr>
<td>EXP10 05</td>
<td>2 opto-isolated analog outputs</td>
</tr>
<tr>
<td>EXP10 15</td>
<td>GPRS/GSM modem (antenna excluded; see CX 03 below)</td>
</tr>
</tbody>
</table>

### CX 01

USB dongle for PC – ATL connection, for programming, data download, diagnostics and firmware upgrade. Complete with cable, 1.8m long

### CX 02

Wi-Fi dongle for PC – ATL programming, data download, diagnostics and cloning

### CX 03

GSM quad-band antenna IP67 (800/900/1800/1900MHz) for EXP10 15 expansion module

### EXP80 01

IP65 gasket seal for internal display frame for ATL 6...

## Dual power supply module

<table>
<thead>
<tr>
<th>Order code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATL DPS1</td>
<td>For measurement and control of voltages present at supply inputs to power motorised circuit breakers/changeover switches, modular housing (3 modules), power supply 110/230VAC configurable</td>
</tr>
</tbody>
</table>

---

**Lovato electric**
2 power sources modular automatic transfer switch controller

ATL 100 is a single phase automatic transfer switch controller in a modular housing. ATL 100 monitors the 2 single phase voltage inputs and it connects to the output the line that is within the limits. The 2 outputs can control contactors or motorized changeover switches to perform the transfer between the lines.

Operational characteristics
- Rated supply voltage: 110/230VAC configurable
- Frequency: 50/60Hz
- Input voltage range: 80-300VAC
- Voltage tripping thresholds min / max: 80% / 120% of preset value
- 2 line inputs L1-L2: single phase, between phase and neutral
- Priority line: L1 when both input values are within limits
- Fixed delay time between line switching: 0.5 seconds
- 4 status indication LEDs for voltage of each line within limits, voltage present at output, relay output anomaly
- Mounting: on 35mm DIN rail (IEC/EN 60715) or by screws using extractible clips
- Modular housing, 3 modules
- Degree of protection: IP40 on front; IP20 at rear.

Certifications and compliance

Dual power supply module

ATL DPS1 is capable of measuring and controlling two auxiliary supply voltages at its inputs designating the most ideal to connect to the output. It reduces the number of components and improves installation safety.

Operational characteristics
- Rated supply voltage: 110/230VAC configurable
- Frequency: 50/60Hz
- Input voltage range: 80-300VAC
- Voltage tripping thresholds min / max: 80% / 120% of preset value
- 2 line inputs L1-L2: single phase, between phase and neutral
- Current output: 4A max
- Priority line: L1 when both input values are within limits
- Fixed delay time between line switching: 0.5 seconds
- 4 status indication LEDs for voltage of each line within limits, voltage present at output, relay output anomaly
- Mounting: on 35mm DIN rail (IEC/EN 60715) or by screws using extractible clips
- Modular housing, 3 modules
- Degree of protection: IP40 on front; IP20 at rear.

Certifications and compliance