Getting to know the NAC

The Network Automation Controller controls and manages C-Bus systems for buildings and integrates Building Management Systems such as Heating/Cooling and Energy Monitoring/Control.

From simple control to advanced installations, C-Bus provides control and automation of lighting, blinds and shutters and room occupancy.

The integrated visualisation allows local or remote control via PC, tablet, touch panel or smart phone. This includes scene functions, scheduling, trend logging and control.

Logic scripts can be programmed into the device to achieve complex control and advanced management functions.

The integration of IP cameras, web services and additional building management functions (e.g. BACnet and MODBUS) is possible via Ethernet.

Interaction with other equipment and systems is possible via I/O connections including RS-232, RS-485 (MODBUS RTU), digital input (optional monitored input), SELV relay output and LED driver output.

The communication with MODBUS allows the integration of energy metering and climate control with C-Bus. The product can be accessed over Ethernet for configuration and visualisation via the web server function.

Local access for configuration with a laptop is provided by the USB Type B adaptor.

A USB Type A connector for USB host (USB 2.0 High Speed) provides connection to USB expansion devices.

8 LEDs on the front panel provide full status feedback. 2 Reset buttons permit software and hardware reset functionality.

The product needs an external power supply (24 V DC).

The Network Automation Controller is designed for a maximum of:

- Objects (C-Bus and internal): *2000
- Users for visualisation: *50
- MODBUS devices: *31
- BACnet data points: *500

* Limits not physical but dependant on maximum CPU load.

For your Safety

**DANGER**

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- It is illegal for persons other than an appropriately licensed electrical contractors or other persons authorised by legislation to work on the fixed wiring of any electrical installation.
- To comply with all safety standards, the product must be used only for the purpose described in this instruction and must be installed in accordance with the wiring rules and regulation in the location where it is installed.
- There are no user serviceable parts inside the product.

Failure to follow these instructions will result in death or serious injury.

**CAUTION**

EQUIPMENT DAMAGE HAZARD

Install the device according to instructions in this document.

- Pay attention to the specifications and wiring diagrams related to the installation.
- Do not use this product for any other purpose than specified in this instruction.

Failure to follow these instructions can result in minor injuries, or equipment damage.

Connections

<table>
<thead>
<tr>
<th>Digital Input</th>
<th>24 V DC/48 V AC 1 A max</th>
<th>24 V DC 10 W max</th>
</tr>
</thead>
<tbody>
<tr>
<td>USB-A</td>
<td>USB Type A connector for USB host</td>
<td>USB 1.1 and USB 2.0 devices are supported</td>
</tr>
<tr>
<td>USB-B</td>
<td>USB Type B connector for USB programming Port</td>
<td>USB 1.1 full speed is supported</td>
</tr>
<tr>
<td>RS-485</td>
<td>MODBUS</td>
<td>D1+ and D0 = twisted wires</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Incorporates 47kΩ polarisation resistors</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional in-built low power terminator of 120 Ω = link AT-BT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Optional in-built legacy terminator of 120 Ω = link BT-A</td>
</tr>
<tr>
<td>RS-232</td>
<td>C-Bus</td>
<td>TX = Transmit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 C-Bus Connectors with RJ pins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pin 1 Remote ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pin 2 Remote ON</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pin 3 C-Bus Neg (-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pin 4 C-Bus Pos (+)</td>
</tr>
</tbody>
</table>

* To use RJ 45 with C-Bus Cat-5 network cable
Displays and Operating Elements

Meaning of the Status Feedback LEDs

<table>
<thead>
<tr>
<th>Lights</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power (Green, blinking Red)</td>
<td>Controller is running with blink rate proportional to processor load</td>
</tr>
<tr>
<td>Power (Green)</td>
<td>Problem with processor board or power supply</td>
</tr>
<tr>
<td>Power (Red)</td>
<td>Controller has no power</td>
</tr>
<tr>
<td>Status (Green)</td>
<td>Controller is running properly.</td>
</tr>
<tr>
<td>Status (Red flashing)</td>
<td>During factory reset</td>
</tr>
<tr>
<td>Status (Red)</td>
<td>During software reset</td>
</tr>
<tr>
<td>Status (Off)</td>
<td>During boot-up</td>
</tr>
<tr>
<td>Relay (Green)</td>
<td>Relay is On</td>
</tr>
<tr>
<td>Relay (Off)</td>
<td>Relay is Off</td>
</tr>
<tr>
<td>Digital Input (Green)</td>
<td>Input in high resistance (6.9 kΩ) – switch open state</td>
</tr>
<tr>
<td>Digital Input (Yellow)</td>
<td>Open circuit (&gt; 12 kΩ)</td>
</tr>
<tr>
<td>Digital Input (Red)</td>
<td>Short circuit (&lt; 1 kΩ)</td>
</tr>
<tr>
<td>Digital Input (White)</td>
<td>Input in low resistance (2.2 kΩ) – switch closed state</td>
</tr>
<tr>
<td>RS232 (Green)</td>
<td>Controller is transmitting</td>
</tr>
<tr>
<td>RS232 (Magenta)</td>
<td>Controller is receiving and transmitting</td>
</tr>
<tr>
<td>RS232 (White)</td>
<td>No communication</td>
</tr>
<tr>
<td>RS485 (Green)</td>
<td>Controller is transmitting</td>
</tr>
<tr>
<td>RS485 (Magenta)</td>
<td>Controller is receiving and transmitting</td>
</tr>
<tr>
<td>RS485 (White)</td>
<td>No communication</td>
</tr>
<tr>
<td>Ethernet (Green)</td>
<td>Ethernet is operating (100 Mb/s)</td>
</tr>
<tr>
<td>Ethernet (Yellow)</td>
<td>Ethernet is operating (10 Mb/s)</td>
</tr>
<tr>
<td>Ethernet (Blinking)</td>
<td>Data traffic</td>
</tr>
<tr>
<td>C-Bus (Green)</td>
<td>C-Bus powered and clock active</td>
</tr>
<tr>
<td>C-Bus (Flashing)</td>
<td>C-Bus low voltage warning</td>
</tr>
<tr>
<td>C-Bus (Off)</td>
<td>No C-Bus power or no active clock</td>
</tr>
<tr>
<td>C-Bus Output Driver</td>
<td>40 mA current limited</td>
</tr>
<tr>
<td>Display elements</td>
<td>8 Status Feedback LEDs, Power, Status, Relay, Digital Input, RS232, RS485, Ethernet, C-Bus</td>
</tr>
</tbody>
</table>

How to Reset

Software Reset

Shut down and Reset
- Forces running processes to stop and reboots after

Factory Reset
- Recover your system to its original factory condition

Hardware Reset

Processor Reboot
- Power turned off and back on again
- Wake up signal for a unit that has been shut down

Configuration

Access to the web server of the Controller
- Default user name: admin
- Default password: admin

Access via Ethernet
- The Controller must be supplied with 24 V DC
- The default IP address is 192.168.0.10
- Connect Ethernet cable with PC.
- Use on the PC e.g. address 192.168.0.9 and subnet mask 255.255.255.0
- Run Google Chrome™ or Firefox® and go to 192.168.0.10.

Access via USB-B:
- The Controller may be powered by USB for configuration purposes.
- The IP address is 192.168.254.10.
- The USB drivers are included with the latest C-Bus Toolkit installation.
- Connect USB-B with a USB port of the PC. The PC is given a DHCP IP address in the range of 192.168.254.1 – 192.168.254.9.
- Run Google Chrome™ or Firefox® and go to 192.168.254.10.

With the C-Bus Toolkit you can configure, export and import a C-Bus project.
It is recommended to update the firmware to install the latest features, security updates and bug fixes. Scan the QR code using the Facility Hero App for information specific to your device.

Technical Data

- Power Supply: 24 V DC +/- 5 %
- 10 W max
- 2 W typical
- C-Bus Power: 15-36 V DC, 32 mA
- Operating elements: Software Reset button
- Hardware Reset button
- Display elements: 8 Status Feedback LEDs, Power, Status, Relay, Digital Input, RS232, RS485, Ethernet, C-Bus
- External Interfaces:
  - Power supply: 24 V DC plus separate GND
  - LED Output Driver: 40 mA current limited
  - Relay Output: NO, NC, Common
- RS-485 MODBUS:
  - RS-485, MODBUS, RS-232, Ethernet
  - RS-232: Receive, Transmit, Common
  - RS-485: 2x RJ45
  - Modbus: Terminals 18x screw terminals 1.5 mm² single-core and multi-core
- Dimensions (WxHxD): 108 x 63 x 93 mm
- Mounting method: DIN Rail, clips
- External conditions:
  - Ambient temperature during operation: -5 °C to +45 °C
  - Ambient temperature during storage: -20 °C to +80 °C
  - Rel. humidity (not condensing): 10 % to 93 %
  - Type of protection: IP 20
- Radiated Emissions: EN 55022 / AS/NZS CISPR 22 Class A

Warning: This is a Class A product. In a domestic environment this product may cause radio interference which may require adequate measures.

Schneider Electric (Australia) Pty Ltd

Customer Care Australia:
Phone: 1300 369 233
Email: customercare.au@schneider-electric.com
www.clipsal.com
www.schneider-electric.com.au

Schneider Electric (New Zealand) Ltd

Schneider Electric (NZ) Ltd
38 Business Parade South
East Tamaki 2013
Auckland
New Zealand
Customer Care New Zealand:
Phone: 0800 652 999
Email: sales@nz-schneider-electric.com