

ACTILINK-S Integro Quick Start Guide



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Intended Use

Synapticon documentation contains information to ensure the safe and proper use of its products. As such, all Synapticon products should be handled, installed, and maintained by trained automation and control specialists who have knowledge of electrical systems and/or drive technology. These individuals should also be familiar with the applicable standards and requirements.

It is recommended to understand all components, safety information, and precautions for correct operation prior to use. Refer to, and retain, this documentation for reference.

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Documentation Overview

Original Instructions

This document includes original instructions for using *ACTILINK-S Integro*. All product components described in this documentation are delivered in a specific hardware/software configuration. Any changes made to the hardware or software configuration that differ from the documented options, void any Synapticon liability in this regard.

Reporting Errors

It is in our best interest to provide detailed, user-oriented and error-free documentation. If something is missing, incomprehensible or incorrect, go to [Suggest Documentation Improvement](#) and complete the form displayed there. In the “Link to documentation page” field, enter **ACTILINK-S Integro Quick Start Guide v1.0**.

Versioning

This documentation will be constantly updated and improved. The version in the footer reflects the current documentation release.

From Box to First Motion in 6 Simple Steps

Your Path to Effortless Motion

This guide provides the essential steps to safely install, connect, and commission your ACTILINK-S Integro integrated servo motor. By following these instructions, you will achieve your first controlled motion quickly and confidently.

NOTE

This manual uses the SOMANET Integro *metric* connector configuration as an example.

For additional information on advanced features, refer to the [ACTILINK-S Integro Operations Manual](#).

Step 1: Unboxing and Preparation

1.1. Box Contents

The box includes one ACTILINK-S Integro integrated servo motor.

NOTE

Power, EtherCAT and STO cables are not included and must be purchased separately to match your system requirements.

1.2. Required Equipment Checklist

- A stable DC power supply (SELV/PELV compliant, 24-60VDC, with a minimum current rating of 5A or higher, depending on the application load).
- Standard industrial cables with the following specifications:
 - Power Cable: M12, 4+1 pin, L-coded connector female
 - EtherCAT Cable: M8, 4-pin, A-coded connector male
 - STO Cable: M8, 3-pin, A-coded connector male
- A computer running Windows or Linux.
- The latest version of the OBLAC Drives commissioning software, which can be downloaded from [OBLAC Drives](#)
- A direct Ethernet connection from your computer to the ACTILINK-S EtherCAT port. If your laptop is missing the port, the USB to RJ45 adapter can be used. Restart the OBLAC App after connecting a new network adapter to your computer.



1.3. Identifying Motor Connectors

Familiarize yourself with the connectors on your motor. A metric (M8/M12) option is displayed below.



Step 2: Mechanical Installation

2.1. Mounting

For safety reasons, only operate the motor when it is connected to a sturdy environment. Additionally, remove the pin from the motor shaft as it may dislodge at a higher rpm. If the motor will be operated dynamically, or for a long, continuous session, mount the motor as intended on a clean, flat, and thermally conductive metal surface to help with heat dissipation.

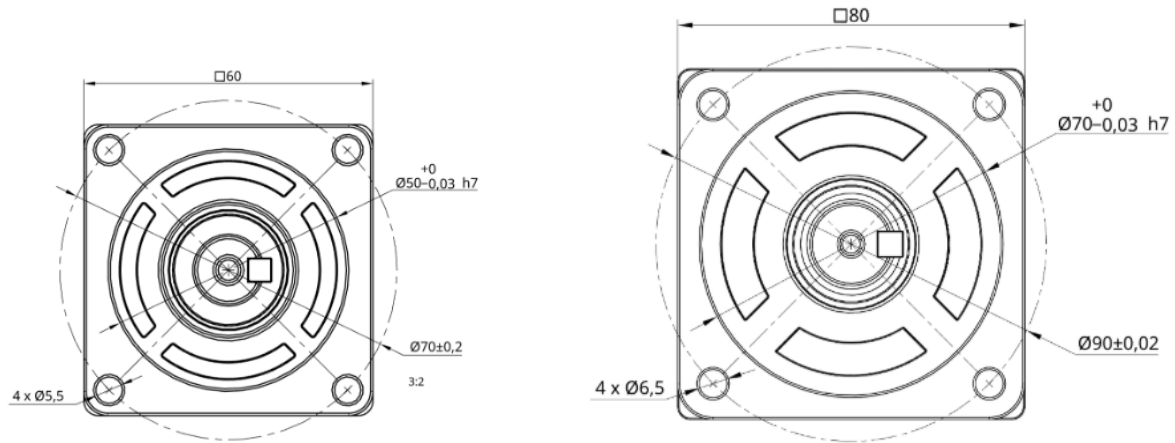
2.2. Fastening the Motor

Use four screws to mount the motor via its flange.
Avoid over tightening the screws.

Mounting Specifications

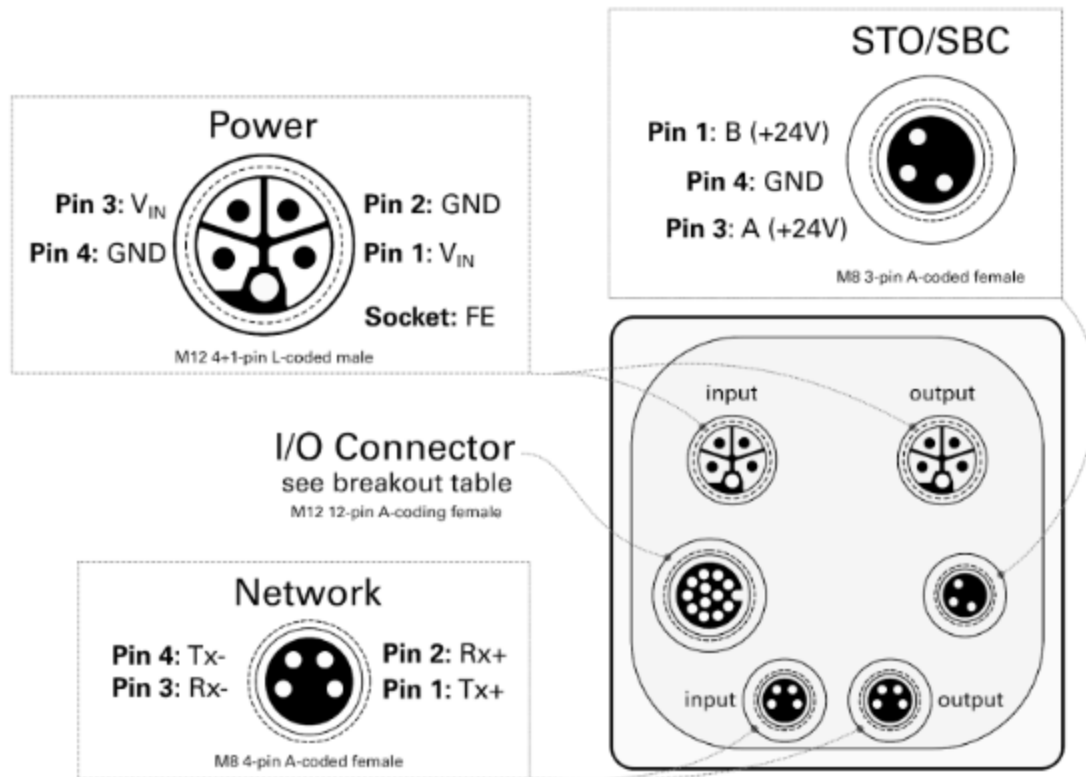
Flange Size	Screw Specification
60 mm	4x M5 screws
80 mm	4x M6 screws

2.3. Mounting Diagrams



ACTILINK-S 6 mounting interface (left) and ACTILINK-S 8 mounting interface (right)

Step 3: Electrical Connections (Metric M8/M12 Model)



Overview of the SOMANET Integro metric option connections - view from the cable side towards the device side.

NOTE

I/O Connector. For pinout details, see: [Power Connector Pinouts](#).

NOTE

GND refers to Ground (-).

V_{IN} refers to Voltage In (+).

With the network connector, the pinout applies to all variants except the CAN variants.

IMPORTANT

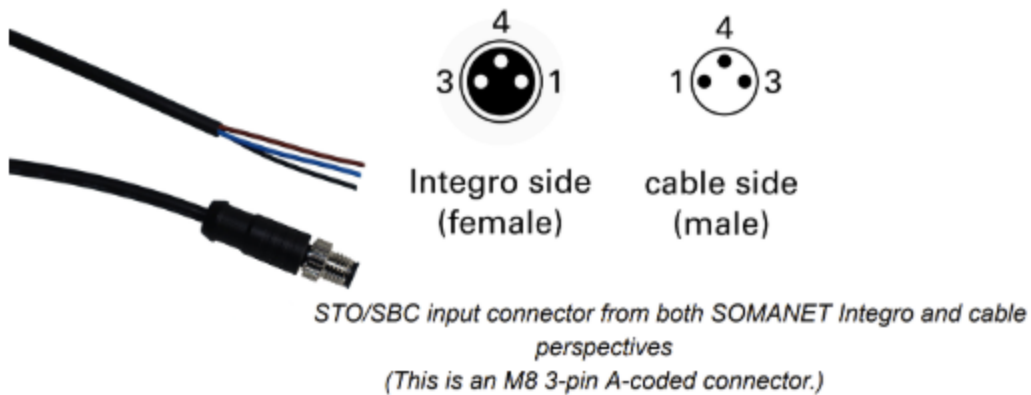
To prevent device damage, you **must** connect all cables in the following sequence **before** turning on the power supply:

3.1. Connect Protective Earth (PE)

This is your most important safety connection. Connect the PE terminal of the power cable to your system's central ground point.

3.2. Connect STO/SBC (Safe Torque Off)

- For initial testing, the STO function must be safely enabled.
- Connect the STO cable to the M8 STO connector.
- Apply +24VDC to the STO-SBC A and STO-SBC B pins and connect STO-SBC GND as shown in the diagram. If this circuit is open, the motor will not be enabled.



Pin #	Color	Function
1	Blue	STO-SBC B (+24 V)
3	Brown	STO-SBC A (+24 V)
4	Black	STO-SBC GND

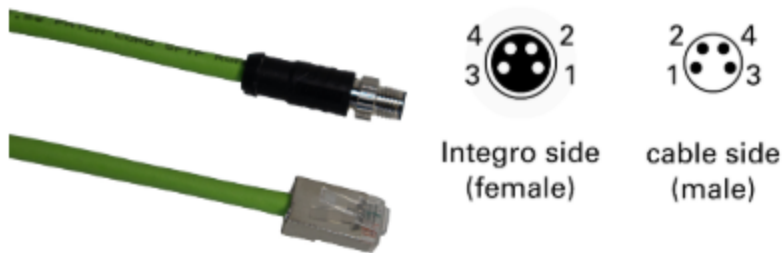


*STO/SBC input connector from both SOMANET Integro and cable perspectives
(This is an M8 3-pin A-coded connector.)*

Pin #	Color	Function
1	Blue	STO-SBC B (+24 V)
3	Brown	STO-SBC A (+24 V)
4	Black	STO-SBC GND

3.3. Connect EtherCAT

Connect an EtherCAT cable from your master/PC to the EtherCAT IN M8 port on the motor.



*Fieldbus connector from both SOMANET Integro and cable perspectives
(This is an M8 4-pin A-coded connector.)*

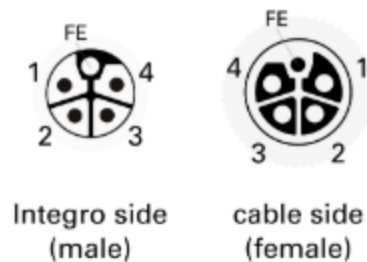
Pin #	Color	Function for Ethernet, EtherCAT, Ethernet/IP and PROFINET	Function for CAN
1	Yellow	TX+	CANL
2	White	RX+	CAN_0V
3	Orange	RX-	CANH
4	Blue	TX-	CAN_+V

3.4. Connect Main Power

Connect the M12 power cable to the motor's power port.

ATTENTION

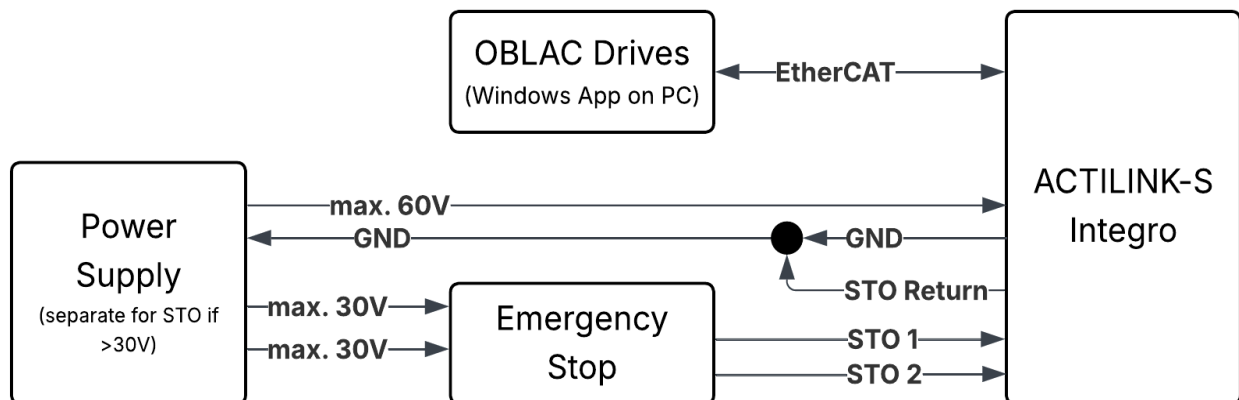
Double-check the polarity (VIN+ and GND-) before connecting to the power supply. Reverse polarity can permanently damage the drive.



*Power Connector from both SOMANET Integro and cable perspectives
(This is an M12 4+1-pin L-coded connector.)*

Pin #	Color	Function
1	Brown	VIN
2	White	GND
3	Blue	VIN
4	Black	GND
FE	Grey	PE

Step 4: Power-Up and Software Connection



4.1. Power On

After verifying all connections, turn on your 24-60VDC power supply.



4.2. Observe the LED

The LED ring on the motor will illuminate. Refer to the LED Status Table in [Step 6](#) to understand its initial state. The LED should cycle through initialization (Pink) and then settle into a steady state, e.g., solid Green/Yellow.

4.3. Launch OBLAC Drives

The *OBLAC Drives App* is available free of charge and can be run on a Windows or Linux PC. Using the OBLAC Drives App is recommended for most users.

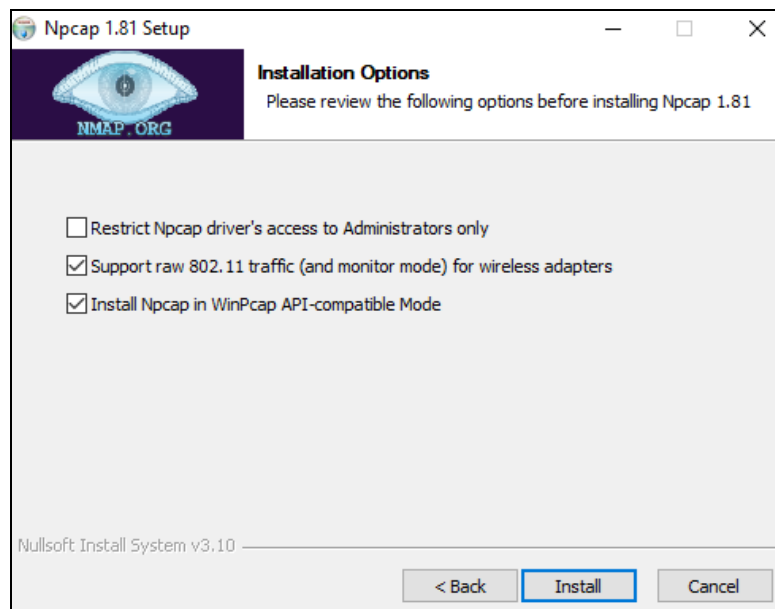
Go to [OBLAC Drives](#) to find the current version of Synapticon's software tools.

To run the OBLAC Drives Windows App, the *Npcap* packet capture library must be installed. Under Npcap's free licensing model, the standard (free) version is typically limited to installation on up to five systems. Npcap can be downloaded from the [Npcap Web site](#). Refer to the image below for the correct boxes to be checked.

When using Linux, Ubuntu 22.04 is necessary due to a specific OS library that is required.

NOTE

If Wireshark was installed previously, Npcap must be removed and installed again as Wireshark automatically installs it without the WinPcap API-compatible mode turned off.



4.4. Download and Install the App

To install the App, download one of the setup files below:

[Download OBLAC Drives Windows \(.exe\)](#)

[Download OBLAC Drives Linux \(.deb\)](#)

To find all OBLAC Drives versions and bundle files for installing OBLAC Drives on OBLAC Boxes, go to: [OBLAC Drives Bundles](#).

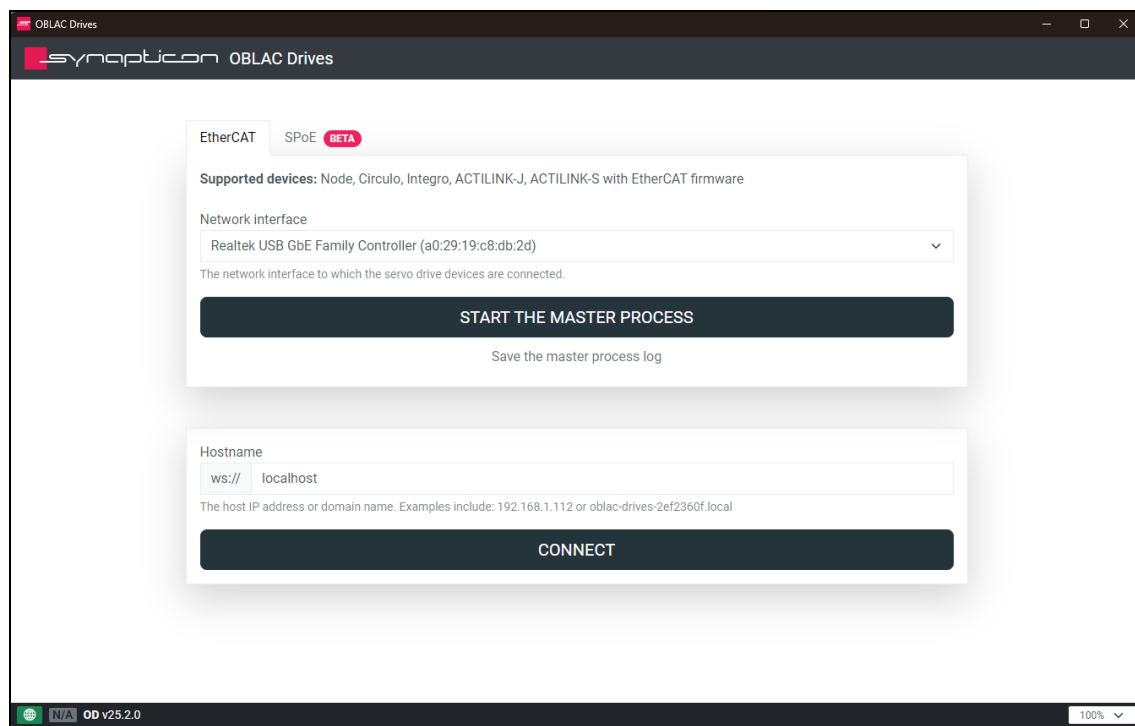
- On Windows, the application is installed in the user's home directory under **AppData\Local\oblac-drives**.
- On Linux, the application is placed in **/usr/lib/oblac-drives**.

Installing a newer release automatically removes the existing version before installing the new one, allowing users to upgrade - or even downgrade - if needed.

4.5. Start the Application using the EtherCAT Protocol

Follow the procedure below to start the OBLAC Drives App and connect to your device:

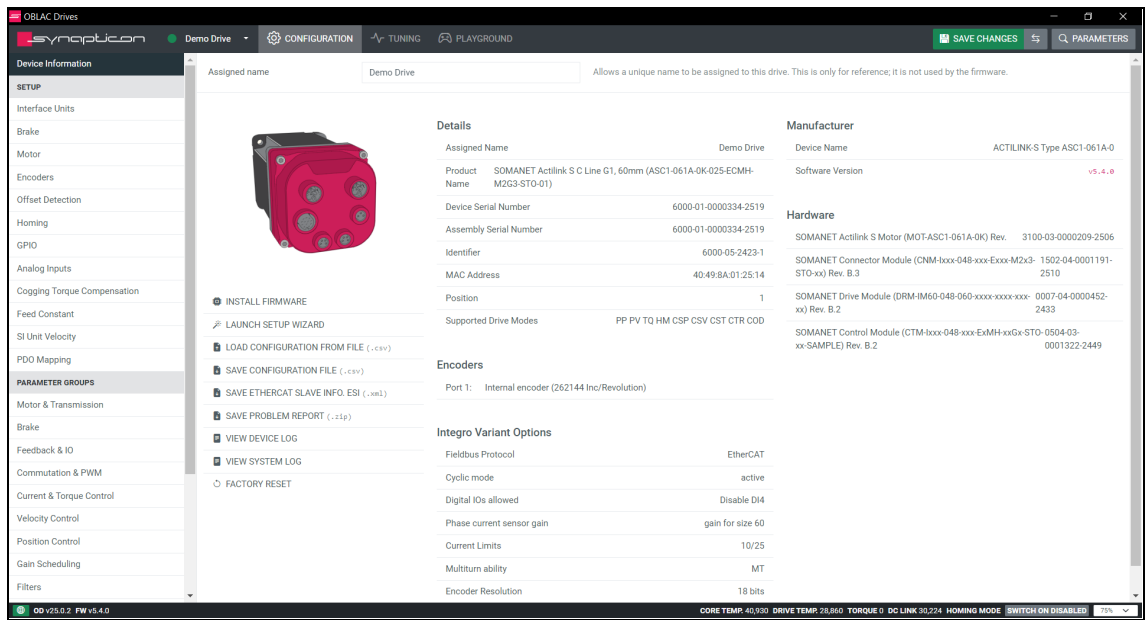
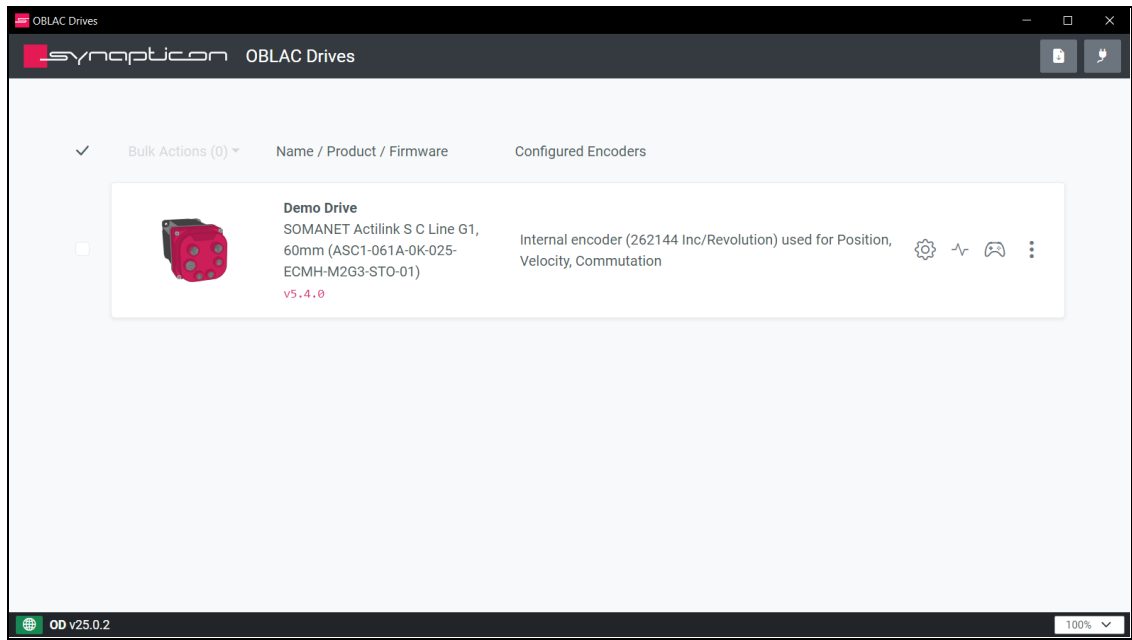
1. Connect one or several Synapticon drives - or motors - to your computer's LAN port and power them up.
2. Start the application by double clicking on the respective icon.
3. In the window displayed, select the protocol for the devices that are to be connected. By default, EtherCAT is selected. Select the network card of the connected device. If there is only one (wired) network card, it is selected by default. If your network card does not appear in the list, switch to expert mode and manually enter the MAC address of your network adapter.



4. Click **START THE MASTER PROCESS** for communication to be established with your drives.
5. Once the process has started in the background, the App automatically proceeds to the next step and connects to your devices.

4.6. Establish Communication

The software should automatically detect the connected ACTILINK motor over the EtherCAT network.



Step 5: First Motion and Status Check

5.1. Open the Playground

In OBLAC Drives, navigate to the ***Playground*** section. This is a tool for issuing direct motion commands.

5.2. Enable the Drive:

In the Playground, click the button to enable the drive. The motor's LED status should change.

5.3. Issue a Motion Command

- Select "Velocity Mode".
- Enter a low speed, for example, 100 rpm.
- Click **Start**. The motor shaft should begin to turn smoothly.
- Click **Stop** to halt the motion.

Congratulations! You have successfully commissioned your ACTILINK-S Integro motor.

Step 6: Commissioning with the Setup Wizard (optional)

In OBLAC Drives, click **Launch Setup Wizard**. The software will guide you through the next steps.

NOTE

If switches are connected for homing or limits, the IOs must also be configured. Additionally, [verify the electrical connection](#), such as the isolation and grounding on the I/O Connector.

This should be configured before entering the Setup Wizard.

6.1. Name the Drive

The wizard prompts for a device description to be entered (optional).

6.2. Define Units

The **default setting** of the Servomotor is **Resolution / RPM** with **CW** rotation. Either the interface units of OBLAC Drives or the settings on the device can be configured.

- *SI Units* allows adjustments to be made between RPM and RPS. This will affect every velocity relative value on the drive.
- *Feed Constant* allows a customized unit/revolution to be configured, e.g., spindle pitch 20mm per revolution -> 20000um/revolution. This will affect every position relative value on the drive.

6.3. Homing

This step of the setup allows the Servomotors 0 position with homing functions and home offset to be defined. Set the option if home position should be applied after a power cycle.

NOTE

System polarity allows you to configure the motor to CCW. This parameter must be established before entering the Setup Wizard.

6.4. Software Position Limits

Instead of wired limit switches, software position limits can be configured based on the drive's actual position (any feed constant is already applied). Most ACTILINK-S Integro variants include a battery-free multiturn encoder.

6.5. Protections

Protections include:

- Quick stop option code
- Quick stop deceleration
- Undervoltage setpoint
- Overvoltage setpoint
- Overcurrent setpoint
- Following error window
- Velocity window
- Maximum torque
- Maximum motor speed.

6.6. Auto-Tuning

Because the drives are already pre-tuned, in most cases, performing auto-tuning is optional. If you want to perform auto-tuning again, either:

- navigate to the **Tuning** tab, or
- run the Setup Wizard again.

NOTE

In the Setup Wizard, clicking the **Finish** button saves all configured parameters. After clicking **Finish**, you are automatically redirected to the **Playground** tab, where the applied changes can be tested and verified.

6.7. Master Configuration

Configure the FIR filter to your master's communication frequency.

Navigate to **Parameters** on the top right side of the OBLAC screen. Next, search for FIR Filter.

You can also adjust the [Object 0x2500 Cyclic control input frequency](#), which is used for setting the frequency at which the drive will read new control data from the master.

6.8. Save to Device

At the end of the wizard, click **Save to device**. This stores the configuration in the motor's non-volatile memory.

6.9. Good to Know

The motor temperature is named *“External scaled measurement” 0x2038:0*.

By default, the drive will not allow the profiled position mode to wrap around the max and min position value; this becomes important when you need continuous motion in one direction. This can be adjusted by “Profile position option code”.

LED Status Overview

If STO is active, the LED color will be yellow. If STO is *not* active, the LED color will be green.

Device Status	LED Behavior	LED Color
Initialization (Init Mode)	Circular (1500ms)	Synapticon Pink
Not ready to switch on or Switch on disabled	Solid	Green / Yellow*
Ready to switch on or Switched on	Slow Blinking (1000 ms)	Green / Yellow*
Operation enabled or Quick stop active	Two Plane Pulses (1500 ms)	Green / Yellow*
Fault reaction active	Two Plane Pulses (1500 ms)	Red
Fault	Solid	Red
Bootloader	Circular (1500ms)	Blue
Locating the device (used in SPoE)	Slow Blinking (1000 ms)	Synapticon Pink
Variant mismatch/failure	Slow Blinking (1000 ms)	Red

* The color is yellow if STO is active; otherwise, it is green.

Initial Troubleshooting

Problem	Solution
LED is solid Red	A fault has occurred. Connect with OBLAC Drives and check the "Log" or "Dashboard" for the specific error message.
Motor will not enable (LED is Yellow)	The STO circuit is not closed. Check your +24VDC supply to the STO connector and your wiring as per Step 3.2.
OBLAC Drives does not find the device	Check the EtherCAT cable connections at both the PC and the motor's "IN" port. Ensure that your network adapter is configured correctly.

For Advanced Configuration

Refer to [Motion Control](#), [Digital IO](#), and [Electrical Installation](#) to explore detailed configuration information. Also see the [ACTILINK-S Integro Operations Manual](#).