

MachineLink Installation Guide





IMPORTANT INFORMATION

Working inside Machine electrical cabinets can be dangerous.



Installation of the MachineLink should be conducted by a competent person who can safely install equipment inside an electrical cabinet.

Please read all instructions carefully before beginning installation.

These installation guidelines are provided in good faith to help prevent any potential problems caused by errors in installation.

FourJaw Manufacturing Analytics Ltd shall not be held responsible for installation actions taken or not taken. There are some details of installation that are assumed to be general electrical knowledge to experienced installers; which are not included in these guidelines.

All Machines are different, and it is the sole responsibility of the installer to determine which actions are safe to perform for the particular Machine they are working with.

These installation guidelines are intended to be strictly recommendations and are not to serve as a fail-safe installation checklist. The selection of an experienced installer is the sole responsibility of the customer.

FourJaw Manufacturing Analytics Ltd does not accept any responsibility for product failure resulting from or associated with improper installation.



ITEM CHECKLIST



Current Clamps x2

Sensors to measure the electrical current draw of your machinery



Cable Clips x6

To keep cables tidy and route them safely around your machinery



USB Cable x1

To connect the SensorBox to the MachineLink



Extension Cable x1

To extend the reach of one current clamp



SensorBox x1

Plugs into Current Clamps to collect and send data to the Machinel ink via USB



Wi-Fi Antenna xl

Plugs into the MachineLink to increase Wi-Fi signal strength



MachineLink x1

The main computational unit that securely sends your data to the FourJaw Platform



Wi-Fi Extension Cable x1 (optional)

Plugs into the MachineLink & the Wi-Fi Antenna to enable the antenna to be in a better position to pick up Wi-Fi signal 3



Power Supply x1

Powers the MachineLink from a 3-pin (UK) socket





01. Isolate the Electrical Supply

Locate the Machine you want to install the MachineLink on and **fully isolate the electrical supply**.

IMPORTANT: Please ensure you have read and follow the important information found at the beginning of this document.



02. Identify the Machine

The MachineLink arrives pre-configured for each individual Machine. Make sure the label on the back of your MachineLink matches the Machine you're installing it on.

Next, you'll need to open up your electrical cabinet to identify where to place the current clamp. Follow the guides below to get the correct clamp placement.

Clamp Sizing:

Occasionally, you may find that the wires in your machine are too large for the provided current clamps. If this is the case, please email <u>support@fourjaw.com</u> and we will send you larger current clamps.



03A. Main Electrical Supply Clamp

The first current clamp always goes on the main power supply of your machinery and plugs into the GREEN input of your SensorBox. Place the clamp around one of the phases, (usually phase 2/L2 if possible but any would work) after the main isolator. **(See the image in step 5)**

Do not put the clamp around the Earth cable.





03B. Second Current Clamp

The current clamp, which plugs into your SensorBox's PINK input, can be used to monitor the current draw of one or more motors within your machine. FourJaw will read the operation of these motors as UPTIME. When the motors are turned off, it is regarded as DOWNTIME.

The following instructions vary by machine:

Skip to 4A: If your machine utilisation can be determined by looking at only a single motor (e.g. a single spindle CNC machine, a single motor stamp/press or a single grinding wheel motor).

Skip to 4B: If your machine's productivity is derived from numerous motors, any of which might show productivity. (e.g. a twin spindle CNC machine, a lathe with live tooling, or a combined sawing/drilling machine).

Skip to 5: If your machine does not have a spindle or motor - e.g., it is an oven, clamp the second current clamp around another of the three phases so that two phases of your main power supply are being monitored.



04A. Single Motor Machine

If your machine productivity is indicated by a single motor, attach the second current clamp to only one of the three phases that supplies the main motor. Plug this clamp into the PINK input on the MachineLink.



04B. Multiple Motor Machine

If your machine productivity is indicated by multiple different motors acting independently, then attach the second current clamp to the joint power unit supplying all of these motors. This tends to be the largest amongst a bank of units.





05. Plug in Current Clamps

Take the small black SensorBox from your MachineLink kit and plug the current clamps into the coloured jacks.

IMPORTANT – you must plug in the clamps as follows:

GREEN - Main Supply Current Clamp (Step 3a)

PINK – This can be attached to either a second phase of the main power supply or a spindle or motor power supply. (step 4/5)



06. Power SensorBox

Plug the micro-USB cable into the SensorBox and pass the other end of the USB cable to the outside of the electrical cabinet (through a hole, opening or gland). Close the electrical cabinet.



07. Fit the MachineLink

Locate a position on the outside of the Machine that the MachineLink can be fixed to using the adhesive strips. It is best to clean the surface first to ensure adhesion of the strips.

TIP - Putting the MachineLink high up away from the machine will maximise the Wi-Fi connection. You can use the enclosed Wi-Fi extension cable to get a greater height if needed. You can also use an ethernet cable instead of Wi-Fi if that is preferred.

IMPORTANT – make sure that the USB cable coming from the SensorBox inside the electrical cabinet can reach the MachineLink USB ports.

Once you've chosen a suitable location within reach of the USB cable, fix the MachineLink to the outside of your Machine using the adhesive strips





08. Plug In and Power on

Plug in the USB cable coming from the sensor box into a USB port on the MachineLink.

Next, plug in power to the MachineLink from a nearby 3-pin plug socket. You may need to run an extension cable to achieve this.

Next, plug in the Wi-Fi Antenna in to one of the USB ports at the back of the MachineLink.

Once you're ready, turn on the power to the MachineLink and check that you can see the power light on the back of the MachineLink and a green light flashing on the Wi-Fi Antenna.



09.	Run	the	Machi	ne

Run the machine in a normal operational cycle to capture data points for at least one minute before letting the machine sit idle for at least one minute. Normal operation can then resume.

This captured data will be used to calibrate the FourJaw signal

Manufacturing	
assword / PIN	
Remember Me	
Sign In	

10. Login to begin Testing

Log in to your web app portal and check you can see the machine on the MachineLink workspace.

Speak to the FourJaw support team to move to the data classification phase of the install.

Email: support@fourjaw.com Phone: (+44) 0114 400 0158



SUPPORT

Knowledge Base

Find answers to common questions and keep up to date with the latest product release features.

Visit: help.fourjaw.com

Customer Support

You can contact our customer support team Monday-Friday, 8:00 am until 5:30 pm (GMT):

Email: support@fourjaw.com Phone: (+44) 0114 400 0158

The FourJaw Machine Link and related parts cannot be disposed of in the normal waste system as they are WEEE (Electrical and Electronic waste).

When you have finished using them, please contact FourJaw at support@fourjaw.com.

We will arrange for it to be returned to us and will where possible reuse the equipment. If it is not possible to reuse it, we will ensure that it is disposed of safely.

