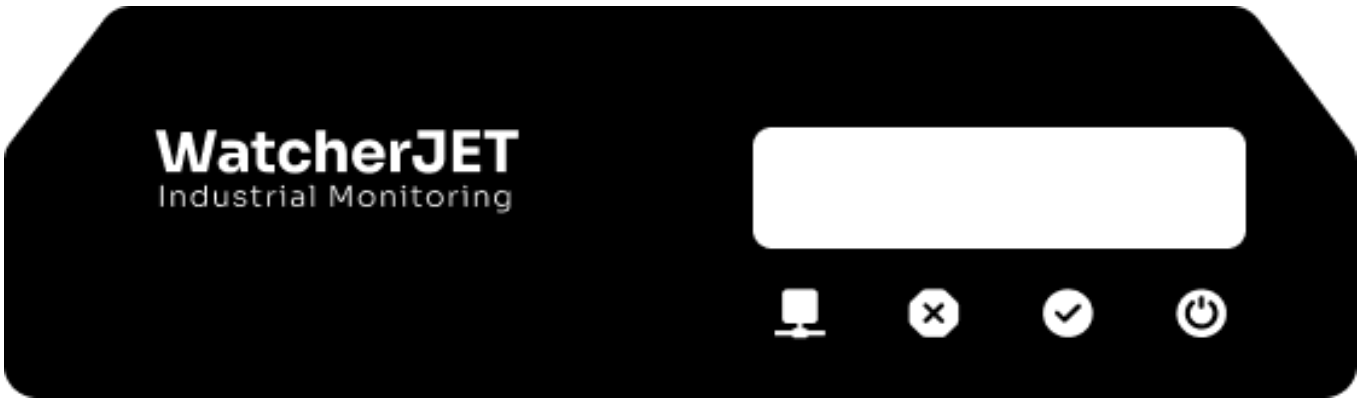
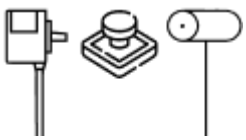
STEP-BY-STEP USER GUIDE

WatcherJET 3.0



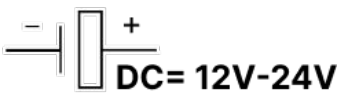


Step 1:

Connect the sensors

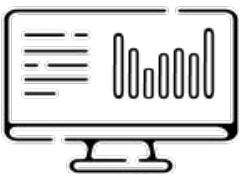
Step 2:

Connect the power supply



Step 3:

Provide an access point (AP)



Step 4:

Go to onsole.monitait.com/factory/watchers to add your watcher and get real-time feedback

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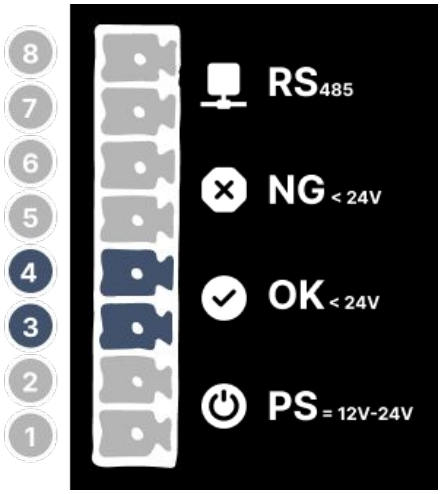
External machine signal

- **Production Count**

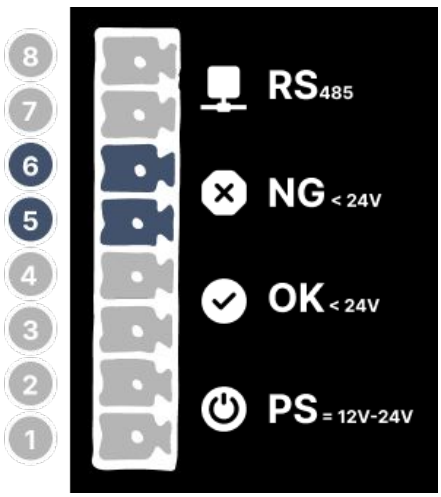
  Any 12-24 signal from the machine can be used as a one piece counter. Connect 2 wires from your machine to the OK inputs (3 and 4) to start counting automatically with WatcherJET.

  *Bidirectional signal and isolated by internal optocoupler



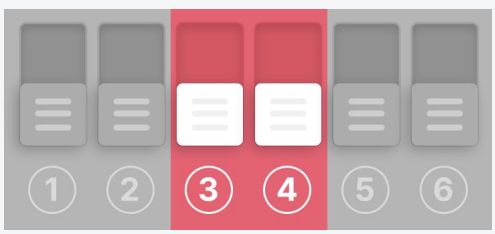
- **Counting Defects**

  Connect the ejector signal or the machine output to the NG inputs (5 and 6).



Mode settings for counting defects

Counting rejected products
If you're counting defects using the ejector signal, ensure that **keys 3 and 4 are turned off.** This will count each signal received as a defective product.



Step 1: Connect the sensors

External machine signal

- **Production Count**

  Any 12-24 signal from the machine can be used as a one piece counter. Connect 2 wires from your machine to the OK inputs (3 and 4) to start counting automatically with WatcherJET.

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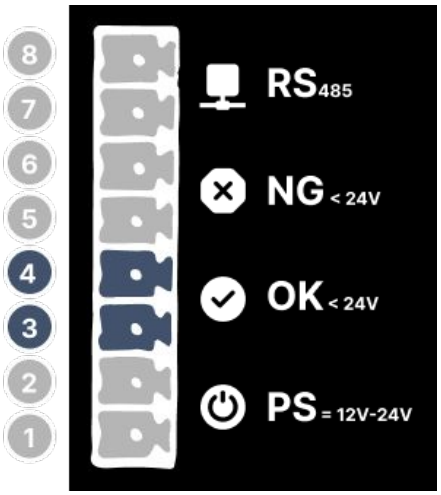

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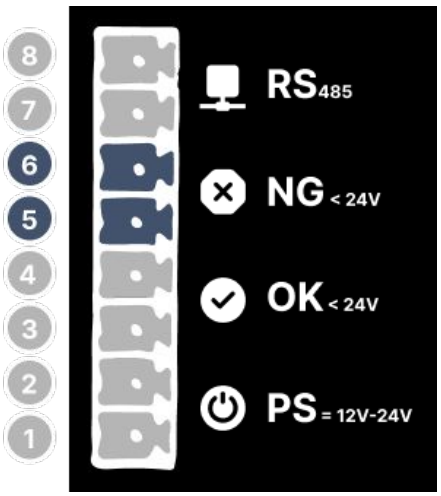

Mode settings for counting defects

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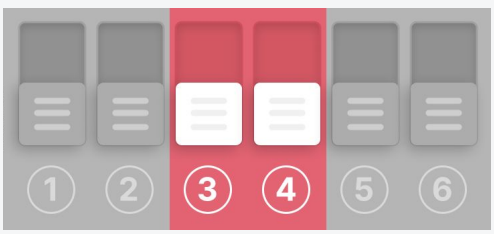


Step 1: Connect the sensors

Counting remained products

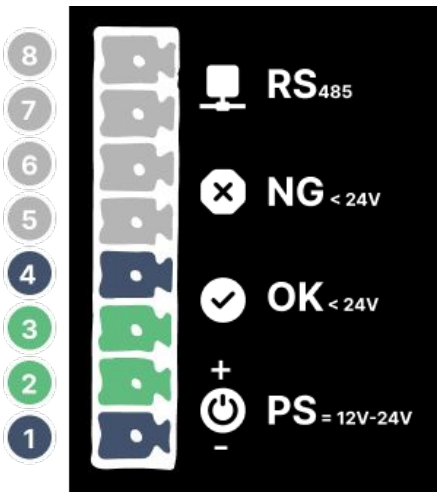
If you're counting non-defective products based on the machine output signal, **turn key 3 on and key 4 off.** This will count the remaining products after subtracting the defective ones (Total OK products minus NG products).

Push button

- **Production Count**

  Take one wire from the push button and connect it to the **OK input (4).** Connect the other wire from the same button to the **negative power input (1).**

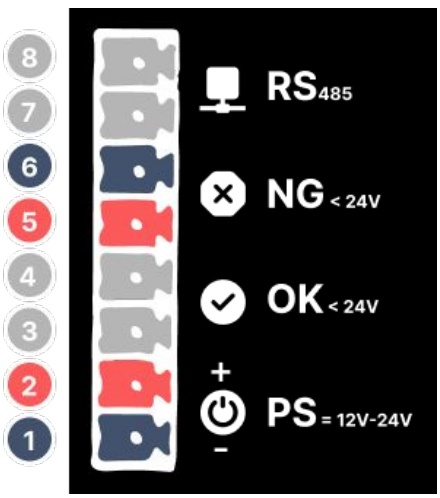
  Now, take a wire and connect the **other OK input (3) to the positive power input (2).**



- **Counting Defects**

  To count defects with a push button repeat the same steps with another push button and the NG inputs.

  Take one wire from the push button and connect it to the **NG input (6).** Connect the other wire from the same button to the **negative power input (1).**



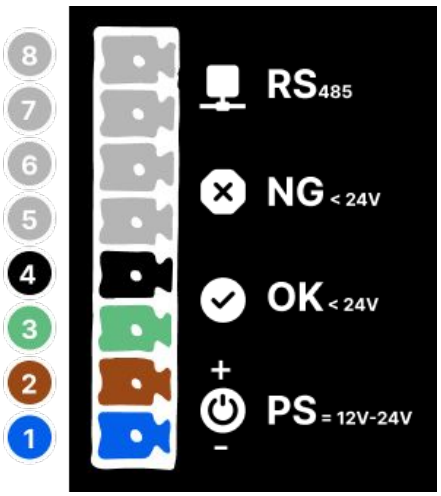
Now, take a wire and connect the **other NG input (5) to the positive power input (2).**

Obstacle sensor

- **Production Count**

  Take the sensor **black wire** and connect it to the **OK input (4).** Then connect the **brown wire** to the **positive power input (2)** and the **blue wire** to the **negative power input (1).**

  Now, take a wire and connect the **other OK input (3) to the positive power input (2).**

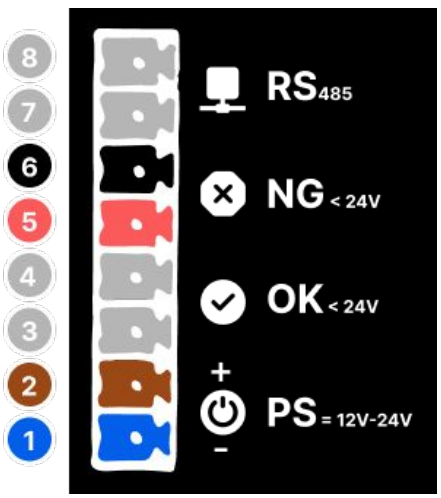


- **Counting Defects**

  To count defects with a obstacle sensor repeat the same steps with another sensor and the NG inputs. Then adjust the mode settings according to your counting method.

  Take the sensor **black wire** and connect it to the **NG input (6).** Then connect the **brown wire** to the **positive power input (2)** and the **blue wire** to the **negative power input (1).**

  Now, take a wire and connect the **other NG input (5) to the positive power input (2).**

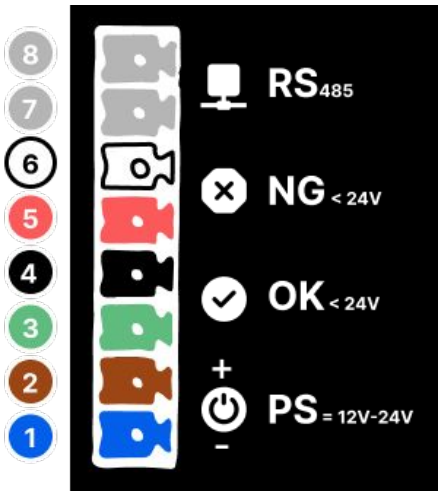


Step 1: Connect the sensors

Encoder

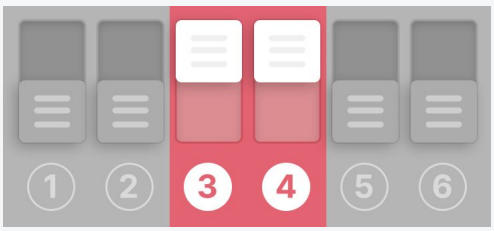
Take the encoder **white** wire and connect it to one of the **NG inputs (6).** Then take the **black wire** and connect it to the **OK input (4).** Now, connect the **brown wire** to the **positive power input (2)** and the **blue wire** to the **negative power input (1).**

Finally take two wires and connect the **other OK input (3) and the other NG input (5) to the positive power input (2).**



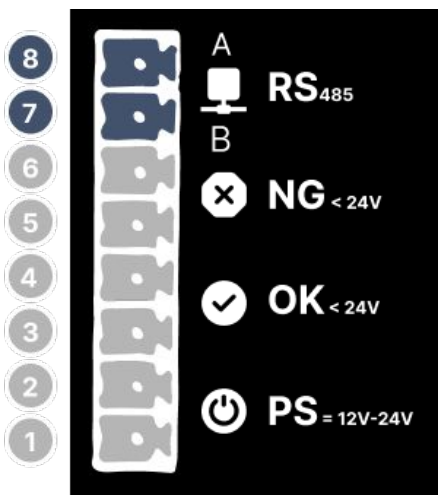
Mode settings for counting with encoder

Counting with high frequency mode
When connecting encoder to watcherJET or operating the WatcherJET device on a high-speed production line, where counts exceed 1Hz (1 per second), switch to high frequency mode by **turning on both keys 3 and 4.**



RS485 protocol

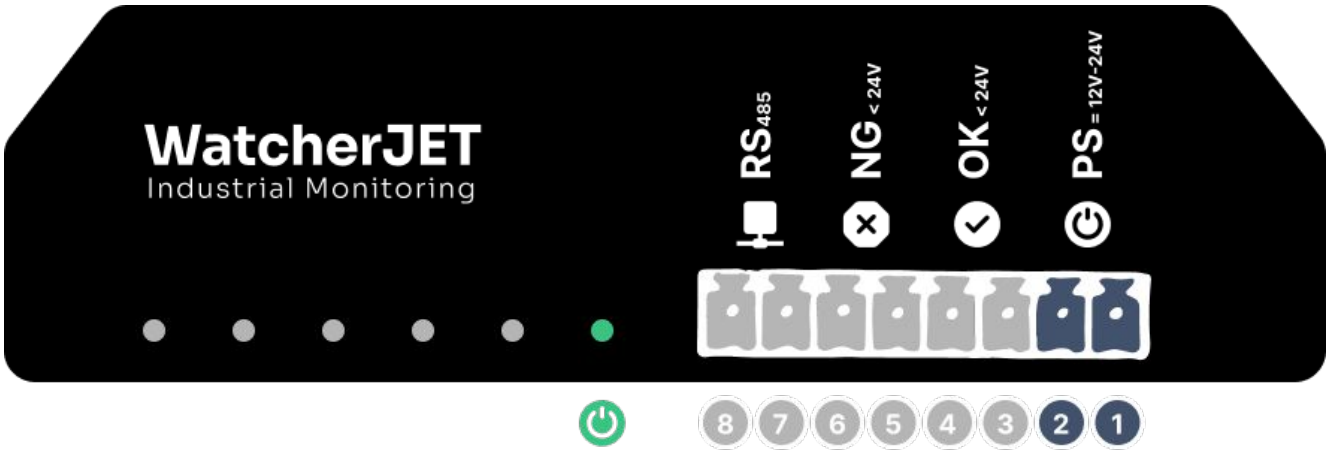
If you want to connect more than one sensor to your device and collect other types of data you need to use RS485 protocol. Take the A lead from your sensor and connect it to the RS485-A inputs (8) then take the B lead of the sensor and connect it to the RS485-B inputs (7).



Step 2: Connect the power supply

Plug the device into power

Connect the power supply unit to the power inputs (1,2) then plug into power and check if the green light for the power turns on.



Power supply specifications

Power Supply Unit (Recommended)	
Input Voltage	12-24v DC
Output Voltage	12-24v DC
Input Current	100mA
Maximum output current	2A
Frequency	50Hz
Operating Temperature	-10 to 50 °C

Temporary setup using mobile hotspot

*Use this to test your watchers

1. Turn on the hotspot
2. Change hotspot name & password
   *Name: **Monitait**
   *Password: **p@ssword**
   The watchers will connect to the hotspot automatically (this might take a few seconds)
3. Go to connected devices on your phone to find watcher register ID

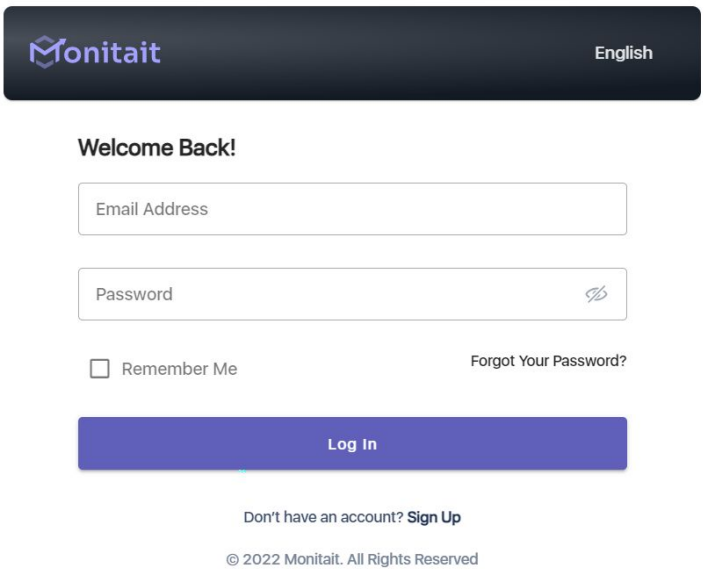
Permanent setup using router

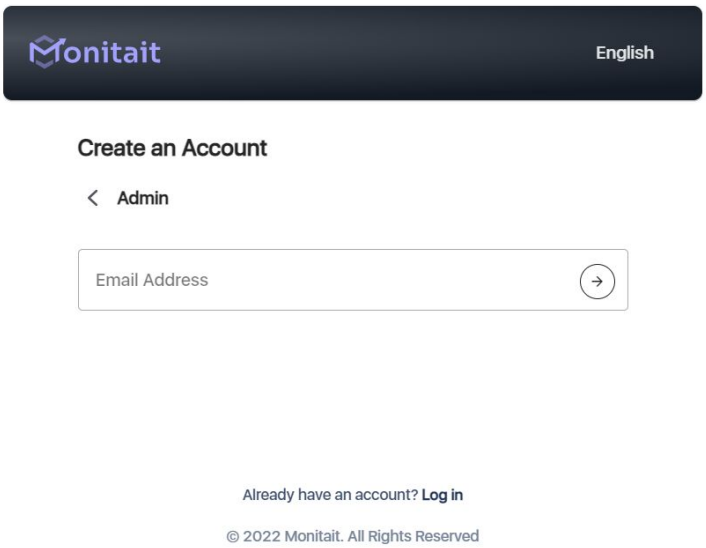
You can use any type of router you have for this step but if you are considering acquiring new ones there are three models that have been tested and completely compatible with WatcherJET system:

Tenda N301 - setup
D-Link DIR-612 - setup
UniFi AP-AC-LR - setup

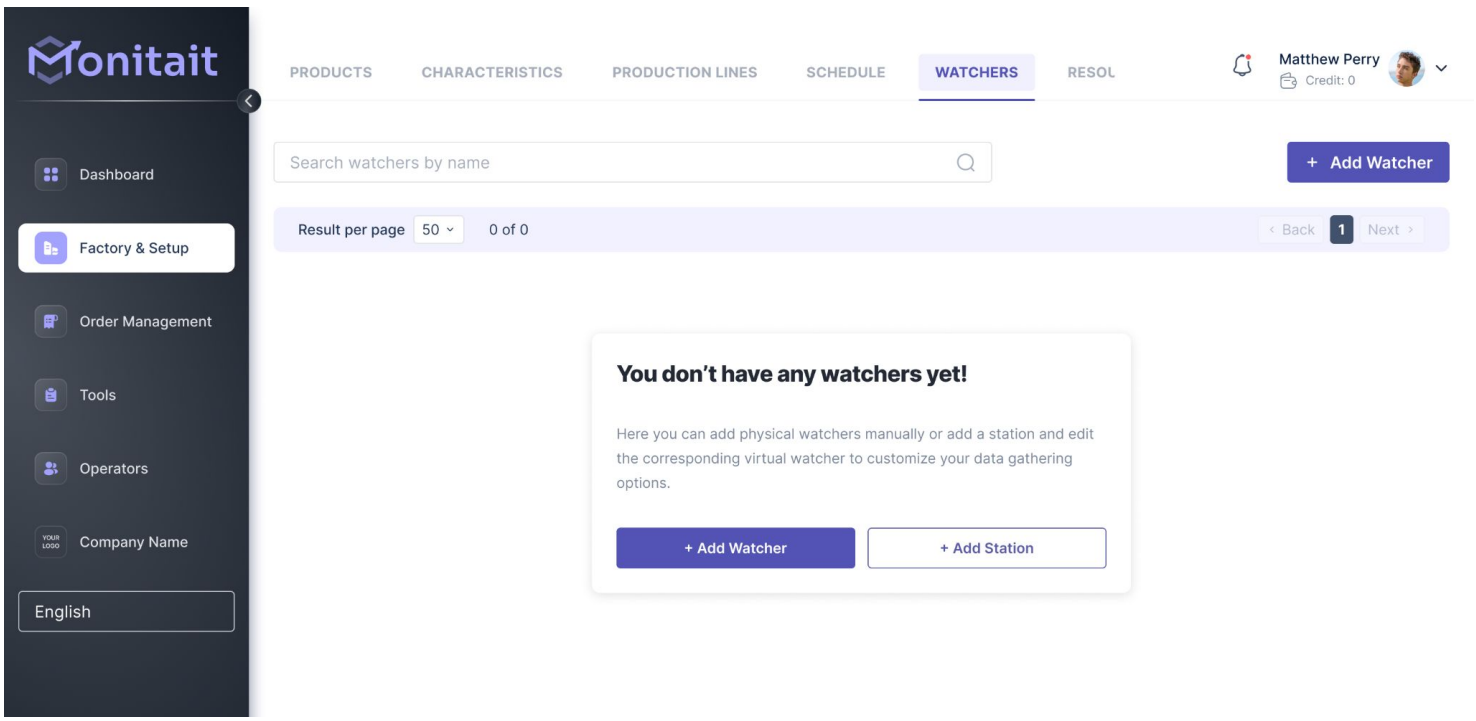
Step 4: Go to console.monitait.com

1. Sign up or log into your monitait account from console.monitait.com



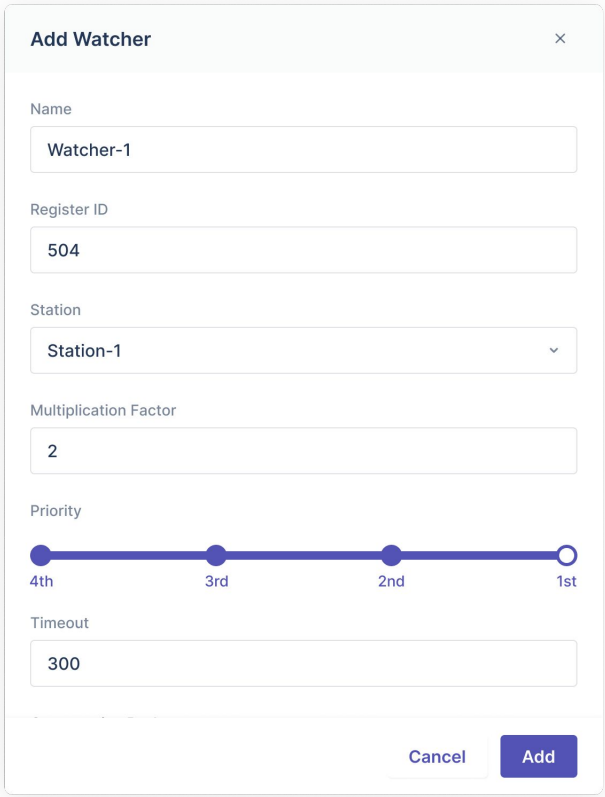


2. Go to the **watchers tab** from the factory & setup section On the Monitait panel and click on the +Add Watcher button



Step 4: Go to console.monitait.com

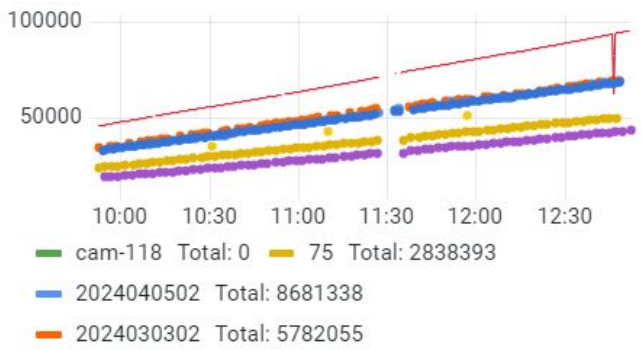
3. On the add watcher modal pick a name for your watcher then enter the watcher's **registration ID** on your device and select the station where this watcher is going to be installed.

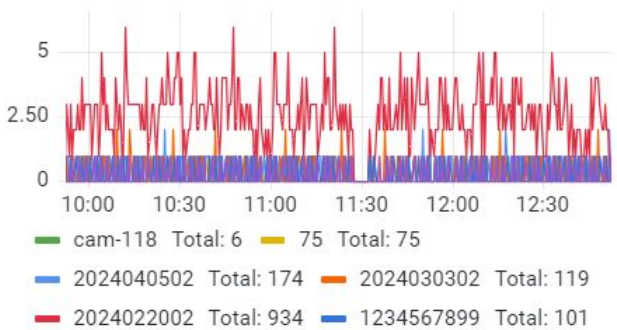


Advanced settings:

- **Multiplication Factor:** Sets the quantity for each received signal
- **Priority:** Specifies which data to prioritize when receiving data from multiple watchers.
- **Timeout:** Defines the minimum duration that will be considered downtime when the watcher isn't sending signals.

4. Go to your Monitait **dashboard** to view your production data

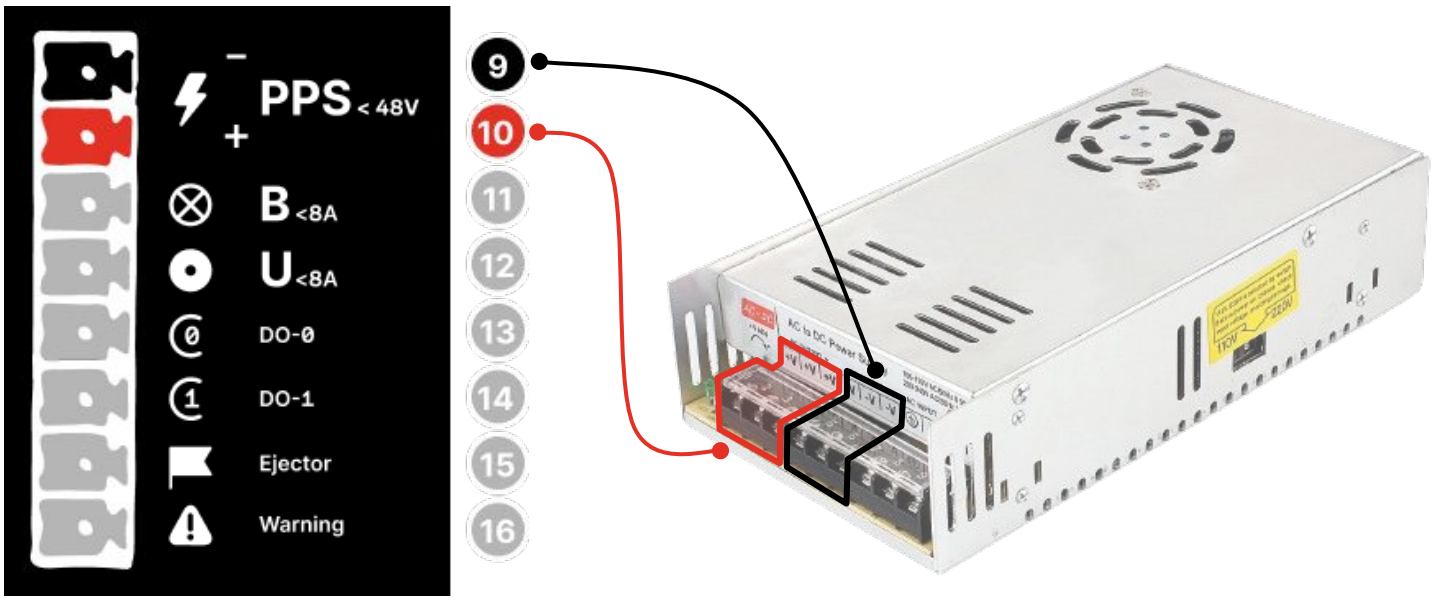




Step 1: Connect the high current power supply

- Take a wire and connect one of the negative power supply outputs to the negative PPS input on the watcher (10).

- Take another wire and connect one of the positive power supply outputs to the positive PPS input on the watcher (9).

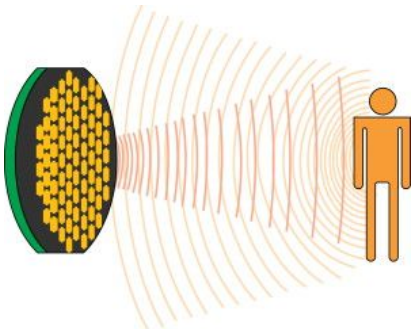


⚠ Caution!

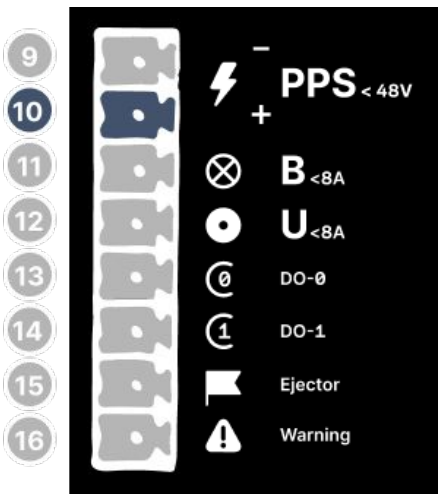
Before using a high-current power supply, make sure you fully understand how it works and follow all the safety instructions in its manual and **ENSURE THAT YOUR POWER SUPPLY IS NOT EXCEEDING 48V.**

Connecting the emitters

Any device or component that generates and releases a specific type of signal, such as light, sound, or electromagnetic waves, projecting it in an unidirectional flow, can be considered an emitter.



Take the positive contact from the emitter and connect it to the positive PPS input on the watcher (10).



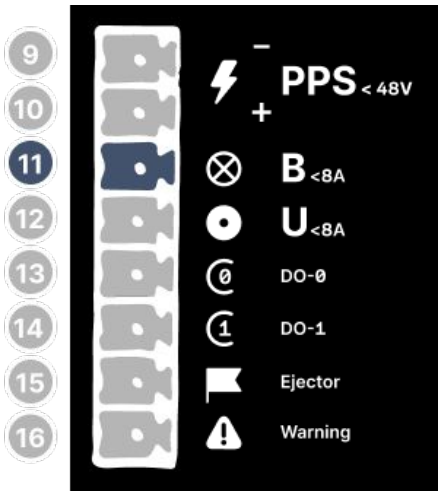
Hint!

For optimal protection of the WatcherJET system from potential high-current damage, it is strongly recommended that you connect the positive terminal of the emitters directly to the positive output of the power supply.

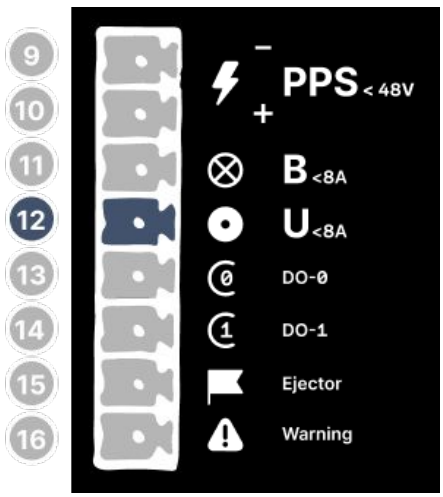
Step 2: Set up the emitters

The rest of this process depends on the emitter intended placement:

- **Adverse Emitters:** If the emitters are placed far from the detector and their signal comes from the other side they are considered to be ‘adverse’. In this case take the **negative contact from the emitter** and connect it to the **B output (11)** on the watcher.



- **Aligned Emitters:** If the emitters are positioned side by side and in close proximity to the detector, they are considered to be ‘aligned’. In this case take the **negative contact from the emitter** and connect it to the **U output (12)** on the watcher.

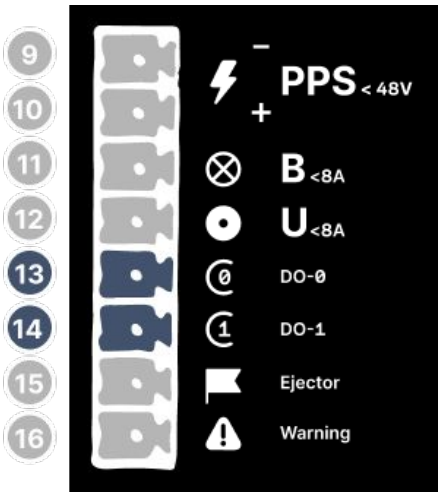


Hint!

You can use a SSR relay if the emitter demands more than 8A.

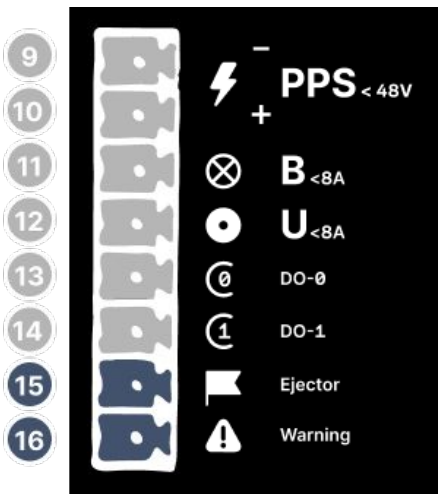
Digital Outputs

DO-0 and DO-1 (13 and 14) are digital outputs and they need advanced settings.
Contact our technical team to learn more about these outputs.



Connecting ejector and warning

To take action based on the collected data you can connect the ejector (15) and warning (16) outputs to your PLC digital input.



Caution!

These outputs are just OPTO isolated NPN outputs. PLEASE DO NOT USE THESE FOR ANY HIGH CURRENT LOAD.