

IMP-3

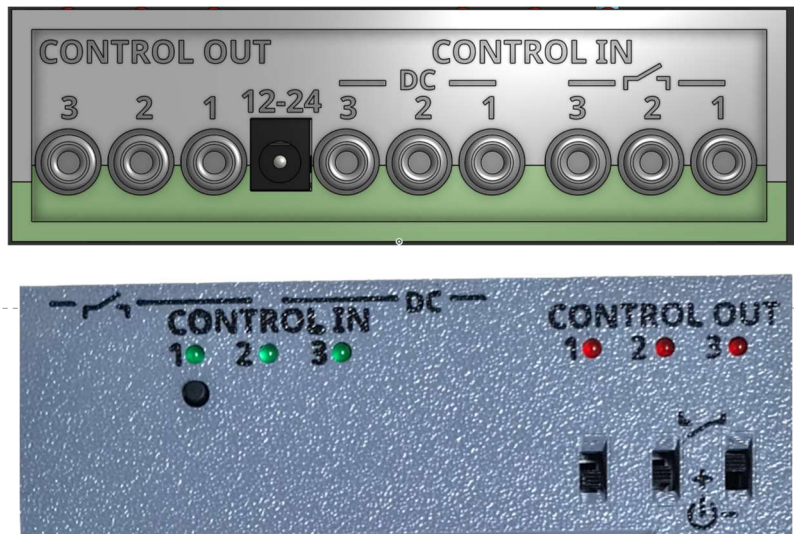
User Manual

Version 260521

3-Channel Pulse Controller with Wireless Motor Control



1 Hardware: Inputs/Outputs and Switches



1.1 Control IN 1–3

- **Left** (normally open contact): Start with potential-free normally open contact
- **Right** (DC): Start with 5–24 VDC

1.2 Button for Control IN 1

- Starts IN 1 manually as long as the pushbutton is pressed

1.3 Control OUT 1–3

- **Switch up**: Open-collector switching output. External voltage max. 24 VDC
- **Switch bottom**: The voltage from the DC input is output directly

1.4 KAM (3)

- The KAM output corresponds to OUT 3, but is designed to control a camera.
- The KAM output only works when switch 3 is set to the up position.
The KAM output is equipped with a protective cap that must be placed on OUT 3 when using the KAM. This prevents a load with an external voltage from being connected to OUT 3. This would most likely destroy the camera control.

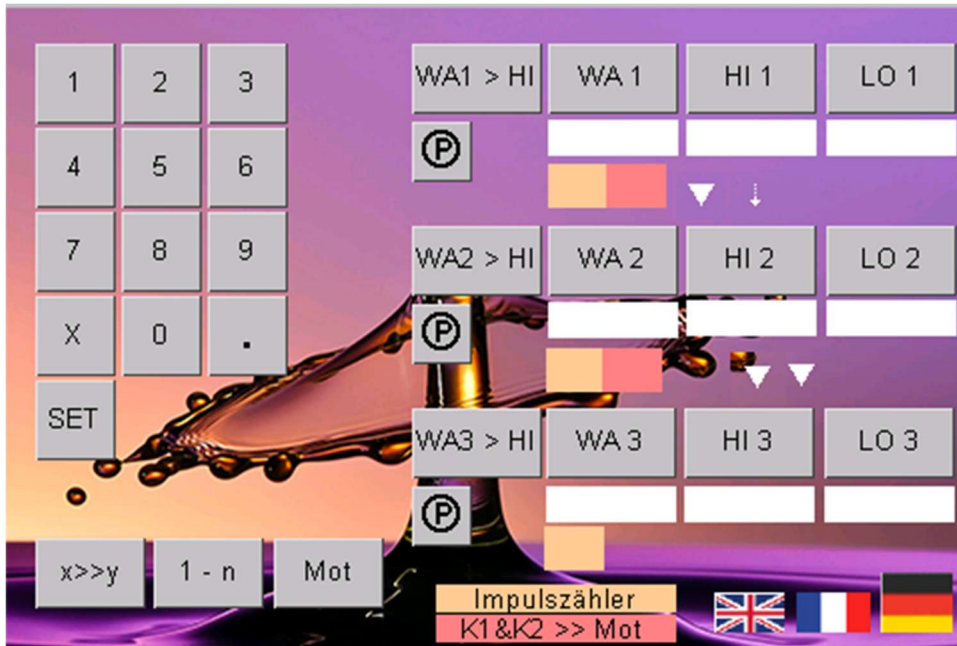
Tip:

For longer exposures, set the camera to TIME mode. Shutter remains open as long as the camera is triggered.

1.5 LEDs

- The LEDs indicate the current active status.

2 Home



2.1 Pulse Mode



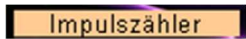
on the home screen. Switches the corresponding Control IN between:

- Continuous: Channel active as long as a signal is present
- Pulse: 1st pulse = input active / 2nd pulse = input inactive

2.2 RF icon

When the icon is visible, the channel is transmitted to the receiver via IMP-RFE.
The corresponding Control OUT continues to function simultaneously.

2.2 Pulse counter display



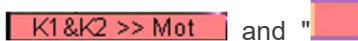
Appears when a pulse limit (count > 0) is set on at least one channel.

2.3 Count Display (Pulse Counter)



Appears when a pulse limit (count > 0) is set for this channel.
Displays the remaining count and counts down after startup.

2.4 K1 & K2 to Motor



are displayed when the "Kan1 & Kan2" function is active on the stepper side.



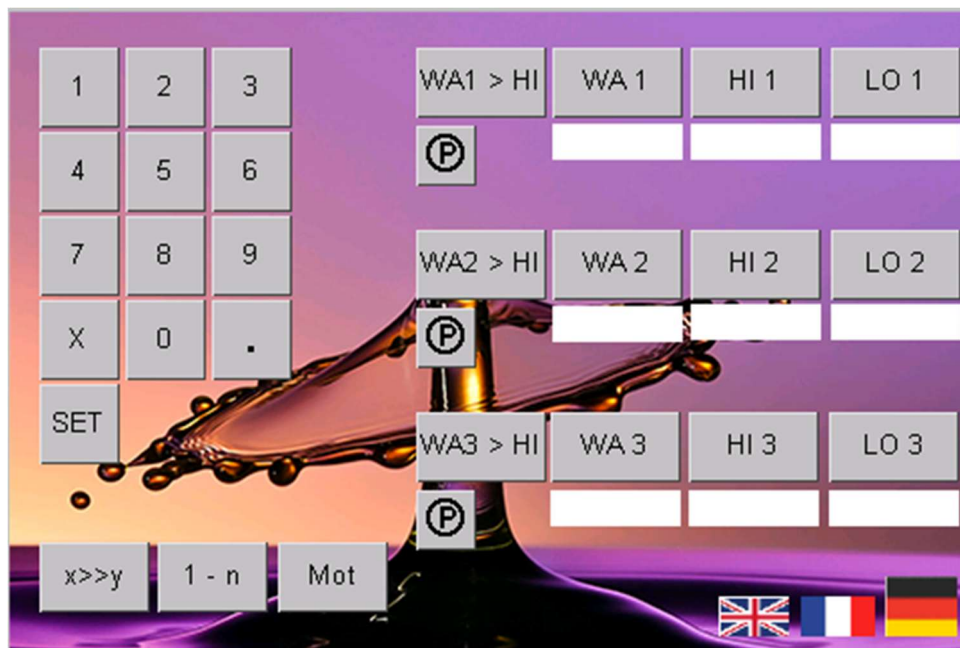
Displays the remaining number of motor pulses and counts down after startup.




2.5


- Clicking on a small flag changes the language of the IMP-3
- The large flag indicates the current language. Clicking on it switches to the guide mode with a simplified user guide.

3 Display: WA>HI / WA / HI / LO – Set times



 WA, HI, and LO are set individually for each channel.
Setting range: 0.001 s (1 ms) to 9999 s (approx. 2h 45min)

3.1 Operation

- Press the desired button (turns yellow)
- Enter time or delete with X
- Confirm with SET 

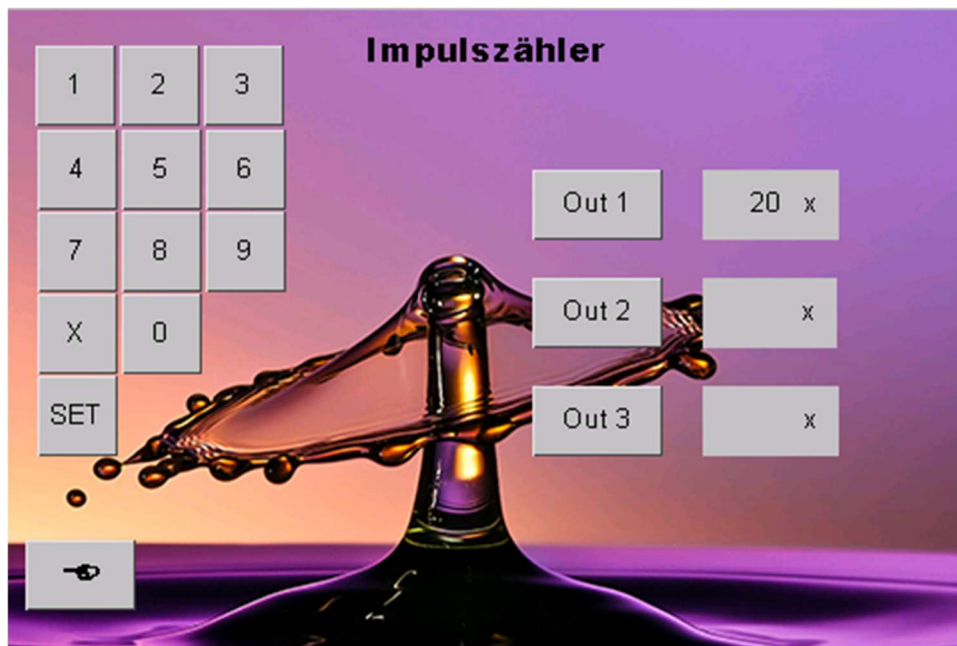
3.2 Time Definitions


- WA = Wait time before the 1st pulse
- HI = Length of the HI time of a pulse
- LO = Length of the LO time of a pulse
- WA > HI = During the wait time, the output is HI

3.3 Color display


- YELLOW button = Function is running / being saved

4 Display: 1–n – Pulse counter



 The number of pulses can be limited for each channel.

4.1 Operation

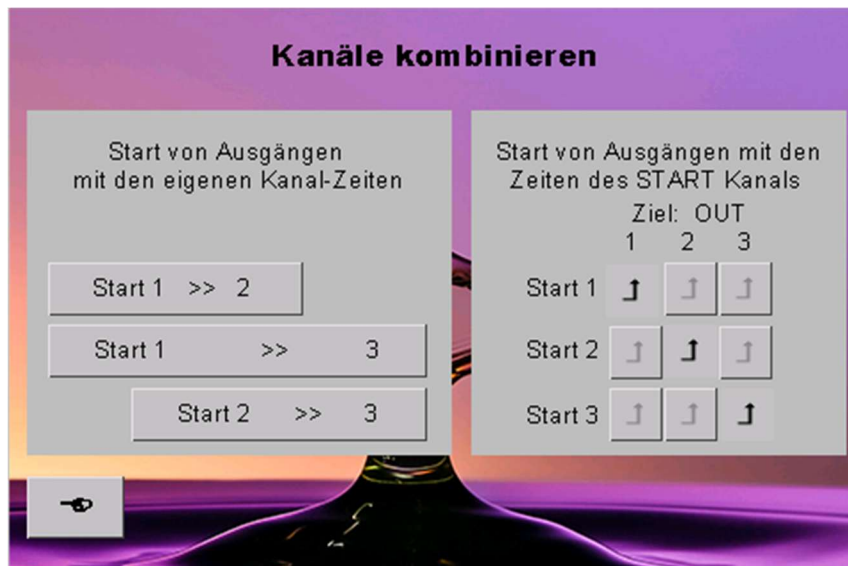
- Press OUT1 / OUT2 / OUT3 (turns yellow)
- Enter number or delete with X
- Confirm with SET 

4.2 Values

- 0 (empty) = Pulse generator runs until Start OFF
- 1–9999 = This number of pulses is generated after start

The number is displayed on the start page and counts down after start.
When it reaches 0, the start is automatically canceled.

5 Display: x>>y – Channel sequence



Two operating modes for channel chaining are set on this page.

- **Left: Follow mode:** The channels start with their own WA, HI, and LO times.
- **Right: Parallel mode:** The WA, HI, and LO times of the start channel are also applied to the destination outputs.

5.1 Follow Mode



A channel simultaneously starts the programmed follow channel.



Each channel runs with its own time settings.

- **1>>2:** Channel 1 also starts Channel 2
- **2>>3:** Channel 2 also starts Channel 3
- **1>>3:** Channel 1 also starts Channel 2
- Multiple selections possible: 1>>2 + 2>>3
Active combinations are displayed on the home page in the HI column.
- To achieve a true follow during the first cycle, the WA time for the subsequent channel must be set to (HI1+LO1). However, this only really makes sense if the number of pulses is set to 1.

After the start channel stops, the follow channels complete their current cycle and then stop.

5.2 Cross/Parallel Mode

The programmed parallel output behaves the same as the start output.

-  : Output 2 runs in parallel with Channel 1
-  : Outputs 2 and 3 run in parallel with channel 1

Simultaneous Follow and Cross/Parallel settings that address the same OUT are automatically disabled (cannot be selected).

6 Display: Mot – Stepper Motor Control




On this page, you configure the settings for connecting the IMP-3 to the IMP-RFE receiver via radio.

6.1 Channel Selection


- To save the settings, a channel must first be activated





6.2 Speed

- Setting range: 0–999
- Adjust using ▲ ▼. Pressing and holding accelerates the change.
- If " " is enabled, you can enter values directly using the numeric keypad.



6.3 Acceleration

- Setting range: 0–99
- Start-up and run-down ramp. Applies to START, multiple HI, and OFF.
- For LO: hard stop (no ramp)
- When  is enabled, input can be entered directly via the numeric keypad.

6.4 Direction of rotation

-   Use the direction key to switch between clockwise and counterclockwise rotation

6.5 Speed range

-  Slow: approx. 0.1 rpm to 3 rpm
-  Fast: approx. 3 rpm to 15 rpm



6.6 Manual Motor Operation

As long as the **Manual Motor** button is pressed, the motor runs at the speed of the active channel. The outputs on the IMP-3 are not controlled during this time.



6.7 Recording HI Time

The duration of manual motor operation can be recorded and saved as HI Time for the active channel.

- **= HI Time** active + press **Manual Motor** = time measurement starts.
- Release **Manual Motor** = measured time is transferred to HI of the active channel.

The button is only active if Channel 1 or Channel 2 is already selected.

6.8 " Kan1 & Kan 2 " Function

- **Kan1 & Kan 2** are transmitted together to the IMP-RFE
- The number of pulses can be set manually on the pulse counter page (default after initial setup: 1). The saved value is applied upon activation.
- On the home screen, the pulse counts are highlighted in red and the motor icon is displayed
- Recommended: Switch to Pulse Start
- When **" Kan1 & Kan 2 "** is activated, the additional function **" Kan:111222 "** is also displayed.
- The default is Channel 1 first, then Channel 2
- However, the button can be switched to **" Kan:121212 "**. Then, the channels are processed alternately.

6.9 Examples

Example A: Outbound and return trip

Ch1: Right, Count=1, WA= 0 Hi=10s Lo=1.5s
Ch2: Left, Count=1, WA= 1.5 Hi=10s Lo=0.1s

- Sequence: 10s right → 1.5s wait → 10s left

Example B: Multiple movement

Ch1: Right, Count=3, WA= 0 Hi=2s Lo=0.5s
Ch2: Left, Count=1, WA= 0 Hi=1.5s Lo=0.1s

- Sequence: 2s R → 0.5s W → 2s R → 0.5s W → 2s R → 0.5s W → 1.5s L

Example C: Alternating

The channels are processed alternately.

- Ch1=3x / Ch2=3x → k1 k2 k1 k2 k1 k2
- Ch1=5x / Ch2=3x → k1 k2 k1 k2 k1 k2 k1 k1
- Ch1=2x / Ch2=4x → k1 k2 k1 k2 k2 k2

This function applies only to motor control via IMP-RFE. The OUT outputs on the IMP-3 do not follow this sequence.