

# Mpg through binary inputs

Main window:

The screenshot shows the 'CNC Settings' window with the 'MPG through binary inputs' configuration. The left sidebar has a tree view with 'MPG through binary inputs' selected and highlighted with a yellow box and a circled '3'. The main area contains two tables for configuring MPG inputs.

**MPG/Encoder through binary inputs**

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	<input type="checkbox"/> Input 8	<input type="checkbox"/> Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/> Input 10	<input type="checkbox"/> Input 11	MPG wheel	General Purpose		400
#2	<input checked="" type="checkbox"/> Input 8	<input checked="" type="checkbox"/> Input 9	MPG wheel	Pendant		65536
#3	<input checked="" type="checkbox"/> Input 10	<input checked="" type="checkbox"/> Input 11	MPG wheel	General Purpose		400

**MPG/Encoder ET10 encoder inputs**

	Input#	Slot	Axis	Dimension	Encoder Resolution
#4	<input type="checkbox"/> ET10 Encoder #0	MPG wheel	X		100
#5	<input type="checkbox"/> ET10 Encoder #0	MPG wheel	X		100
#6	<input type="checkbox"/> ET10 Encoder #0	MPG wheel	X		100
#7	<input type="checkbox"/> ET10 Encoder #0	MPG wheel	X		100

Basic functions:

The annotated screenshot shows the same 'CNC Settings' window with yellow callout boxes highlighting key functions:

- Select № of input 1**: Points to the 'Input1' column header.
- Select № of input 2**: Points to the 'Input2' column header.
- Activation MPG**: Points to the checkboxes in the 'MPG/Encoder through binary inputs' table.
- Select number of encoder for ET10**: Points to the 'Input#' column header in the 'MPG/Encoder ET10 encoder inputs' table.
- Select MPG type**: Points to the 'Slot' column header in both tables.
- Set axis for MPG**: Points to the 'Axis' column header in both tables.
- Set step in «mm» of MPG**: Points to the 'Dimension' column header in both tables.
- Set resolution encoder for MPG**: Points to the 'Encoder Resolution' column header in both tables.
- Save settings**: Points to the floppy disk icon in the top right corner.

## Mpg/Encoder throught binary inputs

- To activate the MPG, it is necessary to check the box next to number of MPG:

MPG/Encoder through binary inputs

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution	
#0	<input checked="" type="checkbox"/>	Input 8	Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/>	Input 10	Input 11	MPG wheel	General Purpose		400
#2	<input type="checkbox"/>	Input 8	Input 9	MPG wheel	Pendant		65536
#3	<input type="checkbox"/>	Input 10	Input 11	MPG wheel	General Purpose		400

- MPG - designed for manual control of the CNC without resorting to control from the operator panel. With the help of the control panel, the operator of the CNC machine can change the position of the axes, change the feedrate, adjust the spindle operation, set "0" and perform other operations while in close proximity to the workpiece.
- examples of MPG are presented below:



- After activation, you can select the operating input numbers for the MPG on the controller - input1 and input2

input1:

MPG/Encoder through binary inputs

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution	
#0	<input checked="" type="checkbox"/>	Input 8	Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/>	Input 10	Input 11	MPG wheel	General Purpose		400
#2	<input type="checkbox"/>	Input 8	Input 9	MPG wheel	Pendant		65536
#3	<input type="checkbox"/>	Input 10	Input 11	MPG wheel	General Purpose		400

ET10 encoder inputs

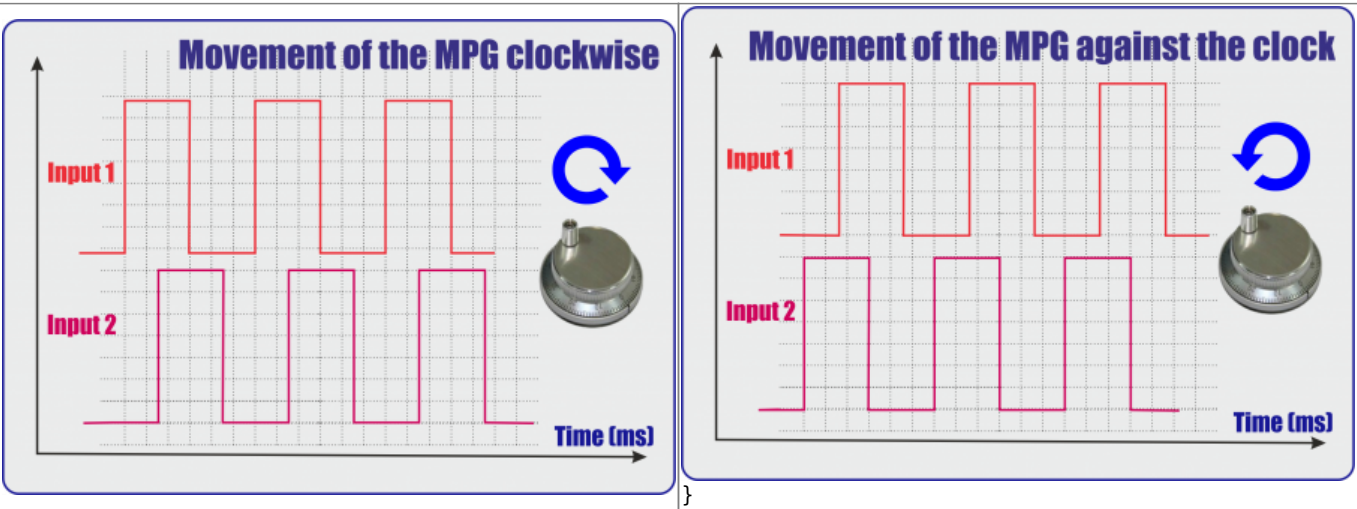
	Input#	Slot	Axis	Dimension	Encoder Resolution
#4	ET10 Encoder #0	MPG wheel	X		100

input2:

MPG/Encoder through binary inputs

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	<input checked="" type="checkbox"/> Input 8	Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/> Input 10	Input 0	MPG wheel	General Purpose		400
#2	<input type="checkbox"/> Input 8	Input 1	MPG wheel	Pendant		65536
#3	<input type="checkbox"/> Input 10	Input 2	MPG wheel	General Purpose		400
		Input 3				
		Input 4				
		Input 5				
		Input 6				
		Input 7				
		Input 8				
		Input 9				
#4	<input type="checkbox"/> ET 10 Encoder #0		MPG wheel	X		100

- Timing diagram of signals of MPG:



- It is also necessary to select the MPG function:

MPG/Encoder through binary inputs

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	<input checked="" type="checkbox"/> Input 8	Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/> Input 10	Input 11	MPG wheel	General Purpose		400
#2	<input type="checkbox"/> Input 8	Input 9	THC/Z axis offset	Pendant		65536
#3	<input type="checkbox"/> Input 10	Input 11	MPG wheel	General Purpose		400

Functions	Discriptions
MPG wheel	Direct control of MPG
THC/Z axis offset	Controlling the tracking on cutting with the help of MPG
Spindle Sync	Spindle control, via the analog output to control the spindle speed.

- If necessary, select the coordinate axis, which will be controlled by MPG

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	Input 8	Input 9	MPG wheel	Pendant		400
#1	Input 10	Input 11	MPG wheel			400
#2	Input 8	Input 9	MPG wheel			65536
#3	Input 10	Input 11	MPG wheel			400

**MPG/Encoder ET10 encoder inputs**

Input#	Slot	Axis	Dimension	Encoder Resolution
#4	ET 10 Encoder #0	MPG wheel		100
#5	ET 10 Encoder #0	MPG wheel		100
#6	ET 10 Encoder #0	MPG wheel		100
#7	ET 10 Encoder #0	MPG wheel		100

- Next we select the length of displacements with the help of MPG. Number of movements in mm per pulse MPG:

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	Input 8	Input 9	MPG wheel	Pendant	0.1	400
#1	Input 10	Input 11	MPG wheel	General Purpose		400

- We set the resolving power of the PGM - the number of pulses per one revolution of PGM

	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution
#0	Input 8	Input 9	MPG wheel	Pendant	0.1	401

## Mpg/Encoder ET10 through binary inputs

If you use the ET10 controller <https://shop.pv-automation.com/et10/9-mycnc-et10.html>, you can use not only MPG function, but also the encoders, to monitor the position of any of the axes.

- To activate the MPG or Encoder, it is necessary to check the box next to needed number:

	Input#	Slot	Axis	Dimension	Encoder Resolution
#4	ET 10 Encoder #0	MPG wheel	X		100
#5	ET 10 Encoder #0	MPG wheel	X		100
#6	ET 10 Encoder #0	MPG wheel	X		100
#7	ET 10 Encoder #0	MPG wheel	X		100

- After activation, you can select the encoder number on the controller for operating



**MPG/Encoder ET10 encoder inputs**

	Input#	Slot	Axis	Dimension	Encoder Resolution
#4 <input checked="" type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#5 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#6 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#7 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100

- It is also necessary to select the MPG function:

**MPG/Encoder ET10 encoder inputs**

	Input#	Slot	Axis	Dimension	Encoder Resolution
#4 <input checked="" type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#5 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#6 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#7 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100

Functions	Discriptions
MPG wheel	Direct control of MPG
THC/Z axis offset	Controlling the tracking on cutting with the help of MPG
Spindle Sync	Spindle control, via the analog output to control the spindle speed.

- If necessary, select the coordinate axis, which will be controlled by MPG

**MPG/Encoder ET10 encoder inputs**

	Input#	Slot	Axis	Dimension	Encoder Resolution
#4 <input checked="" type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#5 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#6 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100
#7 <input type="checkbox"/>	ET 10 Encoder #0	MPG wheel	X		100

- Next we select the length of displacements with the help of MPG. Number of movements in mm per pulse MPG:

MPG/Encoder ET10 encoder inputs

	Input#	Slot	Axis	Dimension	Encoder Resolution	
#4	<input checked="" type="checkbox"/>	ET10 Encoder #0	MPG wheel	X	0.1	100
#5	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100
#6	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100
#7	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100

- We set the resolving power of the PGM - the number of pulses per one revolution of PGM

MPG/Encoder ET10 encoder inputs

	Input#	Slot	Axis	Dimension	Encoder Resolution	
#4	<input checked="" type="checkbox"/>	ET10 Encoder #0	MPG wheel	X	0.1	100
#5	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100
#6	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100
#7	<input type="checkbox"/>	ET10 Encoder #0	MPG wheel	X		100

- Simple



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