

MPG through binary inputs

Main window:

The screenshot shows the 'CNC Settings' window with the 'MPG through binary inputs' option selected in the left sidebar. The main area displays two tables for configuring MPG inputs.

MPG/Encoder through binary inputs

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

MPG/Encoder ET10 encoder inputs

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

Basic functions:

The annotated screenshot highlights the basic functions for configuring MPG through binary inputs. Yellow callout boxes point to specific elements in the interface:

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

Mpg/Encoder through binary inputs

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

	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 controlling the system 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:

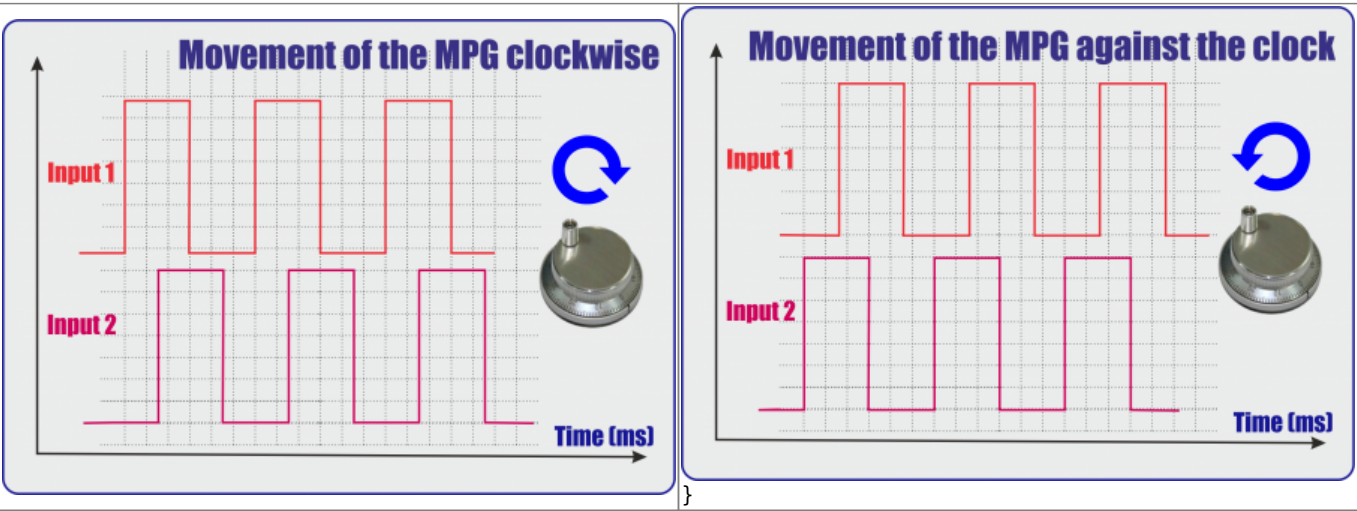
	Input1	Input2	Slot	Axis	Dimension	Encoder Resolution	
#0	<input checked="" type="checkbox"/>	Input 8	Input 9	MPG wheel	Pendant		400
#1	<input type="checkbox"/>	Input 0	Input 1	MPG wheel	General Purpose		400
#2	<input type="checkbox"/>	Input 2	Input 3	MPG wheel	Pendant		65536
#3	<input type="checkbox"/>	Input 4	Input 5	MPG wheel	General Purpose		400
#4	<input type="checkbox"/>	Input 6	Input 7	MPG wheel			
ET10 encoder inputs							
	Input#	Slot	Axis	Dimension	Encoder Resolution		
#4	<input type="checkbox"/>	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 for the MPG signals:



- 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	Spindle Sync	General Purpose		400

Functions	Discriptions
MPG wheel	Direct control of the MPG
THC/Z axis offset	Controlling the tracking (torch height control) while cutting with the help of an 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 the 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

- Next we select the length of displacements with the help of an 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 MPG - the number of pulses per one revolution of MPG

	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 utilize not only the 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 required MPG/encoder 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 to specify which encoder will be operated

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 wheel/THC/Spindle Sync):

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	THC/Z axis offset	X		100
#7 <input type="checkbox"/>	ET 10 Encoder #0	Spindle Sync	X		100

Functions	Discriptions
MPG wheel	Direct control of MPG
THC/Z axis offset	Controlling the tracking (THC) while cutting with the help of an 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

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