## **ADC Mapping**

• These settings are designed to use sensors with pulse, frequency outputs. The mapping function allows to obtain the calculated pulse value from the sensor and write this value to the register of the selected virtual ADC channel for further processing. For example, this function allows the use of inductive or capacitive sensors with an impulse, frequency output as an odometer for monitoring the height of the instrument.

## Main window:

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P.	CNC Settings	Mapping Port #	Source Type/Number	Destination Port Number	Inve	rsion	
	Axes/Motors	Port #1	Bulso Counter #1 ×				
	Inputs/Outputs/Sensors	Port#1	Puise Counter #1 *				
	Alarms	Port #2	Pulse Counter #1 🔻		0 🜩		
	Triggers/Timers	Port #3	Pulse Counter #1 ×				
	MPG through binary inputs						
	Jog through ADC inputs	Port #4	Pulse Counter #1 🔻		0 ≑		
	I/O Expand cards mapping						
	ADC Mapping Connections						
6	Network						
mark	Motion						
	Hardware PLC						
<u> </u>	Software PLC						
20	G-codes settings						
	Macro List						
<u> </u>	Macro Wizard						
	Probing Wizard						
	Preferences						
	Work Offsets						
	Parking Coordinates						
	Technology						
	Camera						
	> axes RICP > Papel/Pendant						
	Hardware						
	Advanced						
CO 1							

Basic functions:



• To activate this function, simply check the box next to the selected port.

Mapping Port #	Source Type/Number	Destination Port Number		Inversion
Port #1	Pulse Counter #1 🔻		0 🌲	
Port #2 🕅	Pulse Counter #1 🔻		0 🔹	
Port #3 🕅	Pulse Counter #1 🔻		0 🔺	
Port #4	Pulse Counter #1 🔻		0 🔹	

• Next, you must select the counter number to which the sensor is connected. The number of the counter depends on the version of the controller, so please refer to the controller documentation for the correct definition of the counter number.

Mapping Port #	Source Type/Number	Destination Port Number	1	nversion
Port #1 🔽	Pulse Counter #1 🔻		1	
Port #2 📃	Pulse Counter #1 👻		0 *	
Port #3 🕅	Pulse Counter #1 🔻		0 4	
Port #4 🕅	Pulse Counter #1 👻		0 🔺	

• Next, select the virtual channel number of the ADC, in which the counter value will be placed in the register. Virtual channels begin their numbering right after the numbers of real ADC channels. Ie if you have on the controller for example four channels of ADC (ADC0, APC1, APC2, APC3), then the first channel number will be ATSTS5 and you accordingly need to select channel number 5.

Mapping Port #	Source Type/Number	Destination Port Number		Inversion
Port #1 🔽	Pulse Counter #1 🔻		0 🌲	
Port #2 🥅	Pulse Counter #1 Pulse Counter #2		0 *	
Port #3 📃	Pulse Counter #3 Pulse Counter #4		0 *	
Port #4 🕅	Pulse Counter #1 🔻		0 🛓	

• Setting channel number 5 of the ADC

Mapping Port #	Source Type/Number	Destination Port Number		Inversion
Port #1 🔽	Pulse Counter #1 🔻		5 🤹	
Port #2 🕅	Pulse Counter #1 🔻			
Port #3 📃	Pulse Counter #1 💌		0 🗼	
Port #4 📃	Pulse Counter #1 🔻		0 *	

 If it is necessary to invert the value of the sensor, simply check the check box for the desired inversion. Inversion can be useful if, for example, the value from the sensor increases as the distance decreases, but it is necessary that the value of the sensor decreases when the distance is changed.

Mapping Port #	Source Type/Number	Destination Port Number	I	nversion
Port #1 📝	Pulse Counter #1 🔻		1 🚔	
Port #2 📃	Pulse Counter #1 🔻		0 *	
Port #3 📃	Pulse Counter #1 🔻		0 *	
Port #4 📃	Pulse Counter #1 🔻			

Example task: For example, we have an inductive sensor with an impulse frequency output.

As you approach the measurement object, the frequency from the sensor increases,

and when you move away from the object, the frequency decreases.

We have an ET1 controller with (four real inputs of the ADC and two inputs for the counter).

Our task is to adjust the height tracking while working on this sensor.

- Decision:
  - Connect the sensor to the input of the counter 1. For this, the inputs ENC1 A and ENC A
    are used.



2. Activate channel 1 in the settings menu of the ADC mapping. Select number of counter # 1.

Mapping Port #	Source Type/Number	Destination Port Number	1	Inversion
Port #1	Pulse Counter #1 🔻		0 🌲	<u> </u>
Port #2 📃	Pulse Counter #1 💌		0 🔹	
Port #3 🕅	Pulse Counter #1 🔻		0 🔺	
Port #4 🕅	Pulse Counter #1 🔻		0	

3. Since we are connected to the inputs of counter 1, the counter 1 is selected in the menu.

Mapping Port #	Source Type/Number	Destination Port Number		Inversion
Port #1 🔽	Pulse Counter #1 🔻		0 🌲	
Port #2 🕅	Pulse Counter #1 🔻		0 🜲	
Port #3 🕅	Pulse Counter #1 👻		0 🔺	
Port #4 🕅	Pulse Counter #1 🔻		0 🔹	

4. Since there are four real ADCs on the controller, the first virtual channel will be channel 5 of the ADC. We choose him for work.

Mapping Port #	Source Type/Number	Destination Port Number	J.	Inversion
Port #1 🔽	Pulse Counter #1 🔻		5 🚔	
Port #2 🕅	Pulse Counter #1 💌		0 🜲	
Port #3 🕅	Pulse Counter #1 💌		0 🗼	
Port #4 🕅	Pulse Counter #1 🔻		0	

5. For tracking, it is more convenient if the value of the ADC register increases with increasing distance to the object, and decreases when you approach the object. Our sensor works the other way around. Therefore, set the inversion on the selected port.

Mapping Port #	Source Type/Number	Destination Port Number		Inversion
Port #1 🔽	Pulse Counter #1 🔻		5 ≑	V
Port #2 🕅	Pulse Counter #1 👻		0 🔹	
Port #3 📃	Pulse Counter #1 👻		0 🐥	
Port #4 🕅	Pulse Counter #1 🔻		0 *	

6. Next, we will configure the gap stabilization system to work with the ADC5 channel, in the corresponding menu.

CNC Settings	THE such to d	1 Number of Th			
Axes/Motors	THC enabled	Number of TH			
Inputs/Outputs/Sensors	THC feedback channel	ADC5	✓ ADC0	▼ ADC0	▼ ADC0
Alarms	Arc Voltage Ref	1284.99	0	0	0
Limits	Are totage iter	10000			
Triggers/Timers	AE	C/Voltage ratio 0.07			
MPG through binary inputs					
Jog through ADC inputs	Alarm Move Up (if difference betwee	en mesaured and reference voltage	e more than given value, al	arm rooo	
I/O Expand cards mapping	detected, torch is moved up)			5000	
ADC Mapping					
Connections	THC Maximum Speed	200	00	Acceler	ation Ratio (20 by default) 20
Network					
Motion					
Hardware PLC	THC Low Speed (Height control is sus	spended, when current speed lowe	er than given value)	$\checkmark$	60
Software PLC					
G-codes settings					
DXF import settings	Alarm Arc Voltage Difference, V (If Di	ifferentce between Measured Arc '	Voltage and Reference is m	ore	
Macro List	than given value, THC is suspended	for "THC delay")		300	
Macro Wizard					
Probing Wizard					
Preferences	Alarm Arc Voltage Rise, V (If Measure	ed Arc Voltage Rise per 8ms is mor	re than given value, THC is	200	
P Screen	suspended for "THC delay"			500	
Work Uffsets					
Parking Coordinates	THC delay,s			1	
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Plasma Cutting	Hijco event output port	03 V ( )Delaur por var	iue is os		
THC	THC PI-control P ratio			-10	-10
lathe	THC PI-control I ratio			0	0
Tools	The Predition Trade			0	U
Snindle	THC pre-off,s	2	Cutting pre-of	f,s 0	
Gas/Oxfuel	Accept iog while THC activated				
Multi Head	Turn On THC Debug on USB			(III)	
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