

Elektronikkomponenten - Motoren - Entwicklung - CNC Fräsen - Service

USB Handrad V12 für Mach4



Handrad installieren

Es sollte bei Windows 10 automatisch erkannt werden und im Gerätemanager erscheinen



Wird es nicht erkannt, muss der Treiber installiert werden.

Link für Treiber: http://www.cnc-technics.de/CH341SER.rar

Bei Win7 muss der Treiber erst installiert werden.

Den COM Port merken, der wird für die Modbus Installation gebraucht.

Modbus einrichten:

- Unter Konfigurieren \rightarrow Control \rightarrow Plugins muss der ModBus aktiviert werden.
- Mach4 neu starten.

	Aktiviert	Beschreibung	Version	Hinzufüge
1	4	Core - Newfangled Solutions	4.2.0.4517	Entfarma
2	4	Keyboard Inputs - Newfangled Solutions	4.2.0.4578	
3	4	LUA - Newfangled Solutions	4.2.0.4517	
4	4	Modbus - Newfangled Solutions	4.2.0.4517	
5	4	Regfile - Newfangled Solutions	4.2.0.4517	
6	8	Serial - Newfangled Solutions	4.2 <mark>.0.4</mark> 517	
7	8	Surface Map - Newfangled Solutions	4.2.0.4517	
8	8	XBox Controller - DazTheGas and Newfangled	2.1.3	
9	X	ShuttlePro - Newfangled Solutions	4.2.0.4517	
0	8	Simulator - Newfangled Solutions	4.2.0.4517	
11	4	ESS v260 - Warp9 Tech Design, Inc.	1.0.1.260	

Plugin Modbus starten



Das Handrad anstecken und eine neue Modbus verbindung herstellen



Auf Groß Kleinschreibung achten

	Welcome to the Modbus Connection Setup Wizard.					
	New Connection Name: modbusMF Description:	PG				
•	Modbus Connection Type Serial ASCII Serial RTU TCP	e				
	Connection Options					
	Poll Interval (ms):	25				
	Retry Count:	3				
	Tieout (ms):	1000				
	Initial State:	Started \checkmark				
	Daniel/Enron 33	2bit mode. 32 bit integers. Float types. register addressing.				

Wenn das Handrad angesteckt ist und der Treiber von Windows richtig installiert wurde stellt man unter COM Port den richtigen ein. Ist der einmal eingestellt muss man das Handrad immer an dem selben USB Port stecken oder man muss den COM Port im Plugin Modbus ändern.

	Enter the serial connection settings.	
AND	Serial Settings	
	Port COM6 ~	
	Baud Rate 115200 🗸	
	Data Bits 8 🗸	
	Parity None 🗸	
	Stop Bits 1 🗸	
	Enable 485 Mode	

Desc noch ändern in Modbus Device und es sollt	e jetzt aussehen wie im Bild (COM PORT optional)
--	--

modbuskMPG Pesc Modbus Device onnection Type: Serial RTU Poll Interval (ms): [25 Retry Count: 3 Timeout: 1000 Daniel/Enron 32bit mode. Ube zero based register addressing. Serial Settings: Over an base diressing. Port COM6 Baud Rate Baud Rate 11520 Data Bits Image: Desc Bits Parity None Stop Bits Stop Bits Image: Desc Bits Enable 485 Mode Image: Desc Bits	
nodustMPG Desc Modbus Device onnection Type: Serial RTU Poll Interval (ms): 25 Retry Count: 3 Timeout: 1000 Initial State Stated > Daniel/Enron 32bit mode. U be zero based register addressing. Swap words on 32 bit integers: Swap words on float types: Serial Settings Port COM6 Baud Rate 115200 Data Bits 8 Parity None Stop Bits 1 Enable 485 Mode	
□ Danie / Entron 32bit mode. □ See 2ero based register addressing. □ Swap words on 32 bit integers. □ Swap words on float types. Port COM6 ✓ Baud Rate 115200 ✓ Data Bits 8 ✓ Parity None ✓ Stop Bits 1 ✓ Enable 485 Mode □	
Senal Settings Port COM6 ✓ Baud Rate 115200 ✓ Data Bits 8 ✓ Parity None ✓ Stop Bits 1 ✓ Enable 485 Mode	
Baud Rate 115200 v Data Bits 8 v Parity None v Stop Bits 1 v	
Data Bits 8 ~ Parity None ~ Stop Bits 1 ~ Enable 485 Mode _	
Parity None ~ Stop Bits 1 ~ Enable 485 Mode	
Stop Bits 1 ~	
Enable 485 Mode	
ОК	Canc

Jetzt werden 3 neue Werte festgelegt

ModbusSetup	×
Modbus	
91 91 ** ×	
- modbusMPG Add a Modbus Function Desc: Modbus Device Connection Type: Serial RTU v Poll Interval (ms): 25	
Retry Count: 3 Timeout: 1000 Initial State: Started V	
Daniel/Enron 32bit mode. 🗹 Use zero based register addressing.	
Swap words on 32 bit integers. Swap words on float types.	
Serial Settings	
Port COM1 ~	
Baud Rate 9600 ~	
Data Bits 8 🗸	
Parity None 🗡	
Stop Bits 1 V	
Enable 485 Mode	
	OK Cancel
	-di

Die Buttons:

odbusMPG	₽¥	🛱 Add Modbus Fur	iction		×	< s): 25	
			Welcom Setup W	e to the Modbu lizard	s Function	tate: Started 🗸	
			Select th	e Modbus func	tion type:	Idressing.	
	Carial Cattings		Read Coil	s (0x1)	~	5.	
	senal settings		Function Name	Buttons			
			Slave Address:	1	(Decimal)		
			Modbus Register:	100	(Decimal)		
			Register Count:	13	-		
			Initial State:	Started			
			Scan Multiplier:	1	(Valid for reads only)		
			Read As:	Signed	 (Valid for reads only) 		
			Use I/O?:	(bit packing)			
				-			
			Help < Ba	ick Nex	t > Cancel		
	Enable 485 Mode						

Alle werte so eintragen wie in der Tabelle, auch wieder auf Groß und Kleinschrift achten

	24						
odbusMPG		N	Andbus Function: Read Col	ils (0x1)	Slave Addres	ss: 1]
Buttons1			Modbus Register: 100		Nbr Reg	gs: 15	1
functions2			Initial State: Started	~		<	-
		s	can Denominator 1				
		Туре	Name		Description		
	Reg 1	Mach Input	XSel	XSel			
	Reg 2	Mach Input	YSel	YSel			
	Reg 3	Mach Input	ZSel	ZSel			
	Reg 4	Mach Input	ASel	ASel			
	Reg 5	Mach Input	Start_Button	Start_Button			
	Reg 6	Mach Input	Stop_Button	Stop_Button			
	Reg 7	Mach Input	Goto_Button	Goto_Button			
	Reg 8	Mach Input	frei	frei			
	Reg 9	Mach Input	Ref_Button	Ref_Button			
	Reg 10	Mach Input	Cooling_Button	Cooling_Button			
	Reg 11	Mach Input	WZL_Button	WZL_Button			
	Reg 12	Mach Input	Axis000_Button	Axis000_Button			
	Reg 13	Mach Input	Axis0_Button	Axis0_Button			
	Reg 14	Mach Input	Notaus_Button	Notaus_Button			
	Per 15	Mach Input	Spindel Button	Spindel_Button			

Der nächste ist Buttons1 und auch wieder mit "Add a Modbus function" generieren

modbusMPG		dd Modbus Function	Welcome to the Modbu Setup Wizard.	× Function	s): 25 tate: Started V	
	Serial Settings	Function of the second	Select the Modbus func Read Coils (0x1) on Name Buttons1	tion type: v	Idressing. s,	
		Slave Modbus Regist Register Nar	Address: 1 Register: 10 er Count: 5 ne Prefix:	(Decimal) (Decimal)		
		In Scan M	tial State: Started Aultiplier: 1 Read As: Signed Use I/O?: (bit packing)	 (Valid for reads only) (Valid for reads only) 		
	Enable 485 Mode 🛄	Help	< Back New	t> Cancel	<u></u>	

Alle Werte wieder eingeben

ousiMPG		N	lodbus Function:	Read Coils (0x1)		Slave Address	s: 1	
uttons1		r	Modbus Register:	10	Nbr Regs: 5			
nctions2			Initial State:	Started 🗠				
		So	an Denominator	1				
		Туре		Name	Description			
	Reg 1	Mach Input	Step001_B	utton	Step001_Button			
	Reg 2	Mach Input	Stepulu_B	utton	Stepulo_Button			
	Reg 3	Mach Input	Cont Putt	utton	Step100_Button			
	Reg 4	Mach Input	Step Butto	un un	Step Button			

Und der letzte sind	l die Encoder,	diesmal mit	Read Holding	Registers 16bit
---------------------	----------------	-------------	---------------------	------------------------

Welcom Setup W	e to the Modbus /izard.	Function
Select th	ne Modbus functi	on type:
Read Hol	ding Registers 16bit	(0x3) ~
Function Name	functions2	
 Slave Address:	1	(Decimal)
Modbus Register:	55	(Decimal)
Register Count:	3	1
Register Name Prefix:]
Initial State:	Started ~	
Scan Multiplier:	1	(Valid for reads only)
Read As:	Signed 🗸 🗸	(Valid for reads only)
Use I/O?:	🗌 (bit packing)	-

Alle Werte wieder eintragen und darauf achten das der Type umgestellt werden muss auf Mach Encoder Register

х

				9	Modbus				
V] #*	₩			2					
odbusMPG Buttons Buttons1 <mark>functions2</mark>		Moo Mo	dbus Function: odbus Register: [Initial State:	Read Holding Re 55 Started	gisters 16bit (0x3)	Slave Address: Nbr Regs: Read As:	1 3 Signed		
		Scar	Denominator	1			Jighta		
]		Туре		Name	Description				
	Reg 1	Mach Encoder Register	Encoder_10	0ppr	Encoder_100ppr				
	Reg 2	Mach Encoder Register	Encoder_sp	indel	Encoder_spindel				
	Reg 3	Mach Encoder Register	Encoder_tee	ed	Encoder_teed				
								ОК	Car

Danach auf OK

Mach4 neu starten

Als erstes jetzt das Handrad überprüfen ob alle Funktionen gehen Im Diagnostik Screen unter Diagnostische → ModBus



Jetzt werden die Werte zugeordnet unter Konfigurieren \rightarrow Control \rightarrow Eingangssignale

Input #5	Zuordnung aktivieren	Gerät	Name des Eingangs	Low-aktiv	Benutze	er-Beschreibung		^
Input #6				*				
Input #7	*			2			-	
Input #8	*			8				
Input #9	*			*			-	
Input #10	4	modbusMPG	Step001_Button	X				
Input #11	4	modbusMPG	Step010_Button	X				
Input #12	4	modbusMPG	Step100_Button	*			-	
Input #13	4	modbusMPG	XSel	×			_	
Input #14	4	modbusMPG	YSel	8			_	
Input #15	4	modbusMPG	ZSel	X			_	
Input #16	4	modbusMPG	ASel	*			_	
Input #17	4	modbusMPG	Start_Button	*			_	
Input #18	4	modbusMPG	Stop_Button	X				
Input #19	4	modbusMPG	Axis000_Button	*			_	
Input #20	4	modbusMPG	Axis0_Button	*			_	
Input #21	4	modbusMPG	Ref_Button	X			_	
Input #22	4	modbusMPG	WZL_Button	X			_	
Input #23	4	modbusMPG	Goto_Button	X				
Input #24	8			X				
Input #25	2			×				
Input #26	2			×			_	
Input #27	X			×				
Input #28	2			X				-

Der 100er Encoder integrieren:

Mpg #0		Fncoder	Counts Per Detent	Beschl, %	Velocity %	Umgekehrt	-			
	4	modbusMPG/Encoder_100ppr	1	100	100	2				
M _{F 3} #4	<u>×</u>		1	0	0	<u></u>	_			
Mpg #2	8		1	0	0	X				
Mpg #3	8		1	0.000000	0.000000	X				
Mpg #4	X		1	0.000000	0.000000	X				
Mpg #5	2		1	0.000000	0.000000	X				
Mpg #6	8		1	0.000000	0.000000	X				
Mpg #7	X		1	0.000000	0.000000	X				
Mpg #8	2		1	0.000000	0.000000	X				
Mpg #9	X		1	0.000000	0.000000	X				
Mpg #10	*		1	0.000000	0.000000	X				
Mpg #11	*		1	0.000000	0.000000	*				

Jetzt werden die LUA Scripte eingebunden: Bildschirm bearbeiten

Mach 4 - Demo	rd Rediener Hilfe			- 0 ×
Program Pun Warkzaugsfad Prohins Offeste	a Sperren			
	fa Freischalten	kzeuonfad		
Current Positions Program Extents	DRO Auto Calc	accupito .		
Reference X	Bildschirm bearbeiten			
Zero Y	Script-Editor öffnen			
Disbetimence At Acce	sprache auswählen			
Conto Machine Work Zero Coordinates	Distance: "Custom Button" To Go			
G Code MDI				
		¥*		
Control Feed Rate	Rapid Rate Spindel	Tool Information	File Onsi Run Onsi Tool Path Onsi Jooning	
Cycle Start FRO%	RRO% SRO%	Tool Change Current	Line	Cycle Time · 0000012
Gcode 100.00	100.00 100 Break OW / Brok		Current File:	
Vorschubstopp 250% +	100% + 150% +	Active H Offset # :	Load Load Recent G Code G Code	Load Soft Limits Wizards On/Off
Stop 100%	PGM RPM		Edit Close G Code G Code	Load Last Wizard Help Docs ?
Zunicksetsen 0%	50%	Touch Custom Button	Rewind Run G Code G Code From Here	Set Next G Code Line
Aktivieren	Spin RPM	Ramember Return to Position Position	Regen Tool Path	
G1 G17 G90 G91.1 G94 G21 G	640 G49 G80 G99 G50 G67 G97 G54	G61 G69 G15 G40.1		
History The ESS is not resp	oonding! An ESS power cycle and Mach4	restart may be needed.	Profile: fräse handrad	Screen: wx4.set

Screen Load Script

Mach 4 - Demo Datei Beacheiten Bildschirm Form	nat Annejoen Witard Rediener Hilfe		- 0 ×
Freihand 🗸 Gitter: 5 🔅	K 🖡 🗊 🞯 😰 📰 🥥 🐖 🗱 🔤 🖃 🔛 🗀 📓 🛗 🖊 🍯 🕲 🗛 🍭 🔆 冒	»	
Screen Tree Magager ×	Program Run Werkzeugpfad Probing Offsets Trace Disgnostics		
😥 Default	Current Positions Program Extents Werkzeugpfad		
	Go To Machine Distance Vousion Button*		
	G Code MDI		
Eingenschaften	Control Feed Rate Ranid Rate Snindel Tool Information File Dog Run Ora Tool Date Ora Leasing		
Screen Load Sc end end Screen Unload Screen unload	Cycle Start Ccode FRO% RRO% SRO% Current Code Current Tool 100.000 Current Tool 100 Current Tool Tool Current Tool Tool Tool Current Tool Tool Tool Tool Tool Tool Tool Too		
PLC Script local inst = mc.m Signal Script if SigLib[sig] ~= n	Prschubator 250% IGO% IGO% IGO% Active D Offset # : Active D Offset # : Current File: Current File: Current File: Current File: Current File: Current File: Cu		
Timer Script	Stop 100% Stop 20% 100% Custom		
	Auricksetze 05 - 05 - 0 10uCh Button Rewind Run G Code Set Next G Code From Here G Code Line		
	Aktivisren 0 00 0% - 50% - 0 00000 Remember Return to Regen Tool Paston Tool Paston		
	History Profile: Screen:		

ZeroBrane Studio - C:\Users\cnctechnics\AppData\L	ncal/Temp/JeC952.mcs		×
ile Edit Search View Project Help			
		_	_
Project Outline		_	
CAMberdHobby Conserved C	<pre>intermediate [] = -'C'} if or Num, Axis in pairs (AxisTable) do for each paired Num (key) and Axis (value) in the Axis table local rc = mc.mcAxisTsEnabled(inst,(Num)) find out if the axis is enabled, returns a 1 or 0 scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the jog pasitive button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the presence button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the zero axis button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty((itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty(itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty(itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty(itring.format ('btrNes' Axis)), 'Enabled', tostring(rc)):Turn the reference button on or off scc.SetProperty(itring.format ('btrNes' Axis)), 'Enabled', t</pre>		

Inhalt der datei screen_load.txt am ende einfügen

danach auf Script starten und das Fenster schließen, es sollte unten bei Output keine Fehlermeldung kommen



Identisch das PLC script einfügen

Mach 4 - Demo Datei Bearbeiten Bildschirm For	imat Anzeinen Witzurd Bediener Hilfe	- 0 >
Freihand V Gitter: 5 🛟	× 🖡 II 💿 🗑 🗑 🖉 🔍 II a I	»
Screen Tree Manager ×	Program Run Werkzeugpfad Probing Offsets Trace Diagnostics	
👜 Default	Current Positions Program Extents Werkzeugofed	
	Reference X -11.0000	
	(fore) Zero y -16.0000	
	Defleterence Z IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	
	A O.00000 Go To Machine Distance Vouelone Buildont	
	G Code MDI	
Eingenschaften X		
	Control Feed Rate Rapid Rate Spindel Tool Information File Oos Run Qos Tool Path Oos Jooping	
Screen Load Sc pageld = 0 Screen UnloadScreen unload	Cycle Start FRO% RRO% SRO% TealChange Carrent C Line: 0 Cycle Time : Control C	
PLC Script nachEnabled; Signal Script if SigLib[sig] ~= n	Active D Offset # : 0 Current File:	
Timer Script	Stop 100% Stop 200% Stop 2	
	Aurücksetze 0% - 0 Touch Button Ravind Run G Code Set Next G Code From Here G C dat Line	
	Aktivieren 0.00 0% - 50% - 0.00000 Poston Poston Tool Path	
	History Profile: Screen:	

auch wieder ab der letzten Zeile einfügen:

Ø ZeroBrane Studio - C:\Users\cnctechnics\AppData\Local\Temp\le6EA3.mcs -× File Edit Search View Project Help 🖞 🗘 • 🖬 🗿 📴 • 🔊 🔍 💘 💘 💘 🔍 🔍 🕲 🖬 Project Outline **★** le6EA3.mcs × X
[1023] = "droAngleXCenterY",
[1024] = "droAngleYpos",
[1025] = "droAngleYCenterY",
[1026] = "droAngleYCenterY",
[1027] = "droCal2",
[1029] = "droCal2",
[1029] = "droCageX",
[1030] = "droCageX",
[1031] = "droCagePiameter",
[1033] = "droCageDiameter",
[1034] = "droCageDiameter",
[1035] = "droCageBlock",
[1036] = "droCageBlockT"
} E C:\Mach4Hobby C:Mach4Hobby CrashReports Docs CrashReports CacdeFiles Lang Licenses Licenses LuaExamples Polydules Polydules Plugins Pmc 97 98 99 100
101
102
103
104
105
106
107
108
109
110
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135 Pmc
 Profiles
 Screens
 Subroutines
 Wizards
 ZeroBraneStudio
 Mach4_Lathe.ico
 Mach4_Mill.ico Mach4_Router.ico Mach4_Router.ico ScreenScript.lua test.tap ToolDisplay0.dat -- The following is a loop. As a rule of thumb loops should be avoided in the PLC Script. -- However, this loop only runs during the first run of the PLC script so it is acceptable. local unionse = (unitable(inset)) -- wake the Valuation name unionse equal the name from the table above --wk.NodessageBox (unionse) local val = mc.mcProfileGetString(inst, "PersistentDRos", (droName), "NotFound") -- Get the Value from the profile ini if(val == "NotFound") then -- If the value is not equal to NotFound scc.SetProperty((droName), "Value", val) -- Set the dros value to the value from the profile ini end -- End the If statement end -- End the For loop end --This is the last thing we do. So keep it at the end of the script! machStateOld = machState; machNasEnabled = machEnabled; an der letzten Zeile anfügen Output Local console Markers Google Chrome

Inhalt der Datei plc_script.txt am Ende einfügen

danach auch wieder das Script starten (Play Button) und das Fenster schließen. Mach4 neu Starten und das Handrad überprüfen.