Instructions

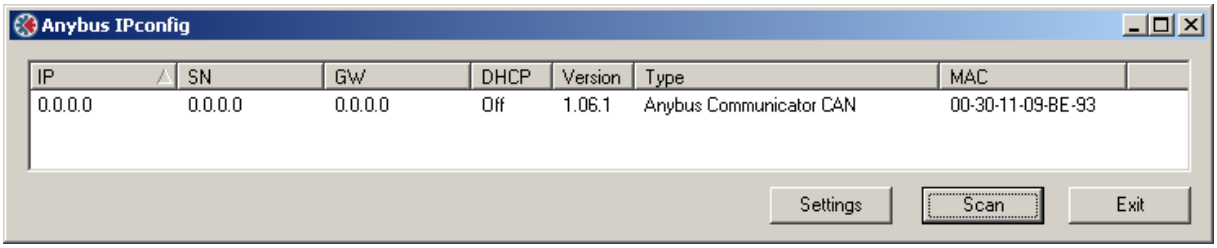
How to set up a WEBER C30S with EthernetIP fieldbus

1 Connection

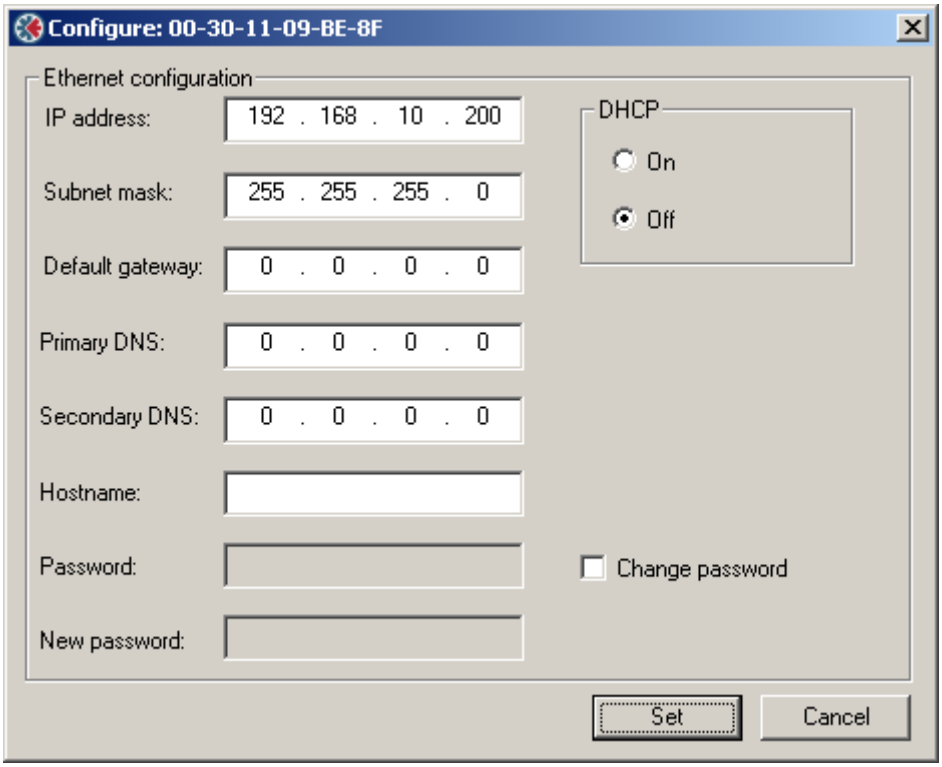
Make sure that the C30S is connected to the EthernetIP Network and the unit is switched on.

2 Set IP Address

To set the IP Address of the C30S the Tool "`Anybus IPConfig`" has to be used. It has to be installed on a PC, which is connected to the C30S station via Ethernet.



Mark the device and press the "`Settings`" button to adjust the IP configuration:



It does make sense to also set a password, to prevent others from changing the IP Configuration.

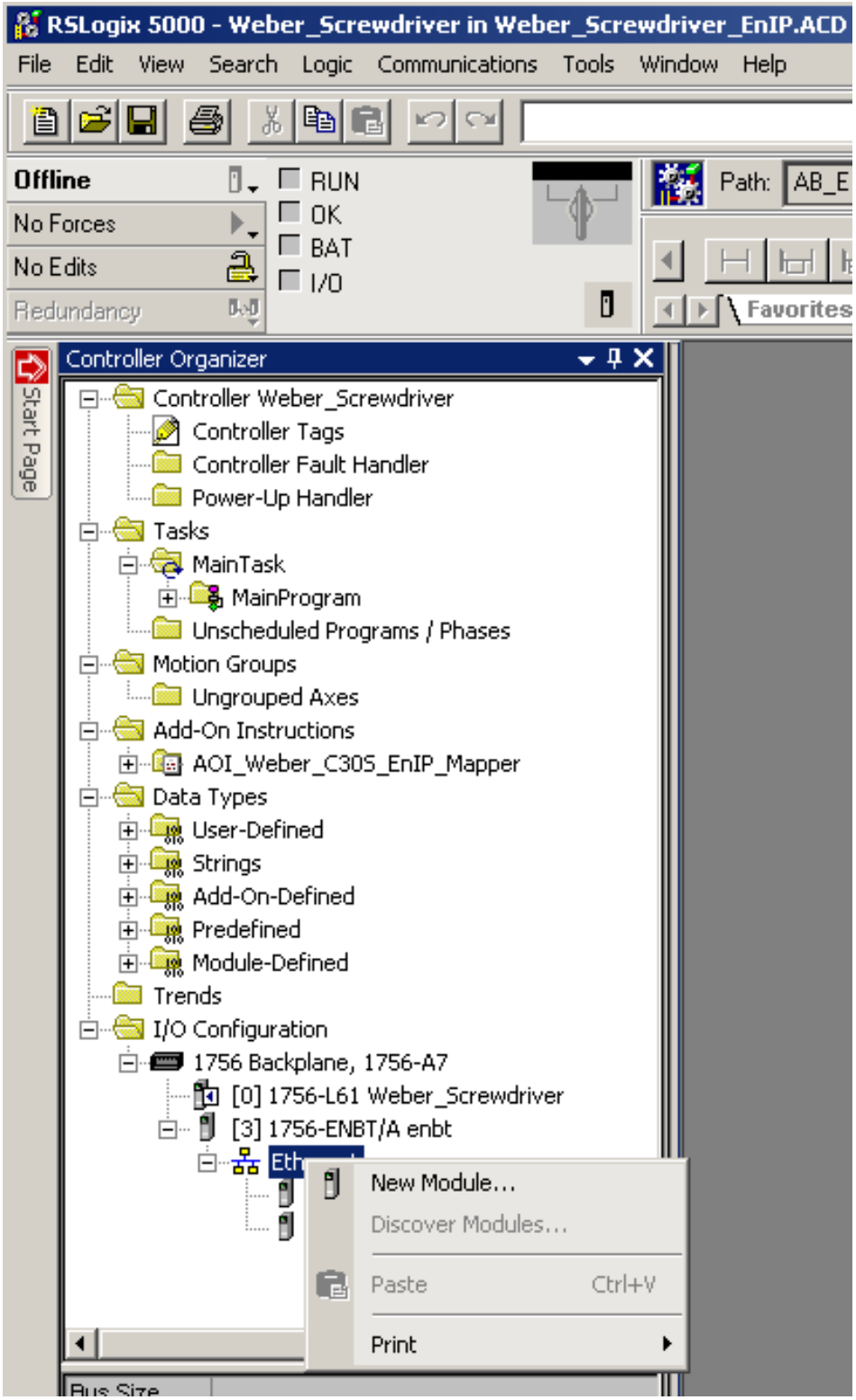
3 Import of the EDS File

Use the Rockwell Software EDS Hardware installation tool to register the EDS file to the Database.

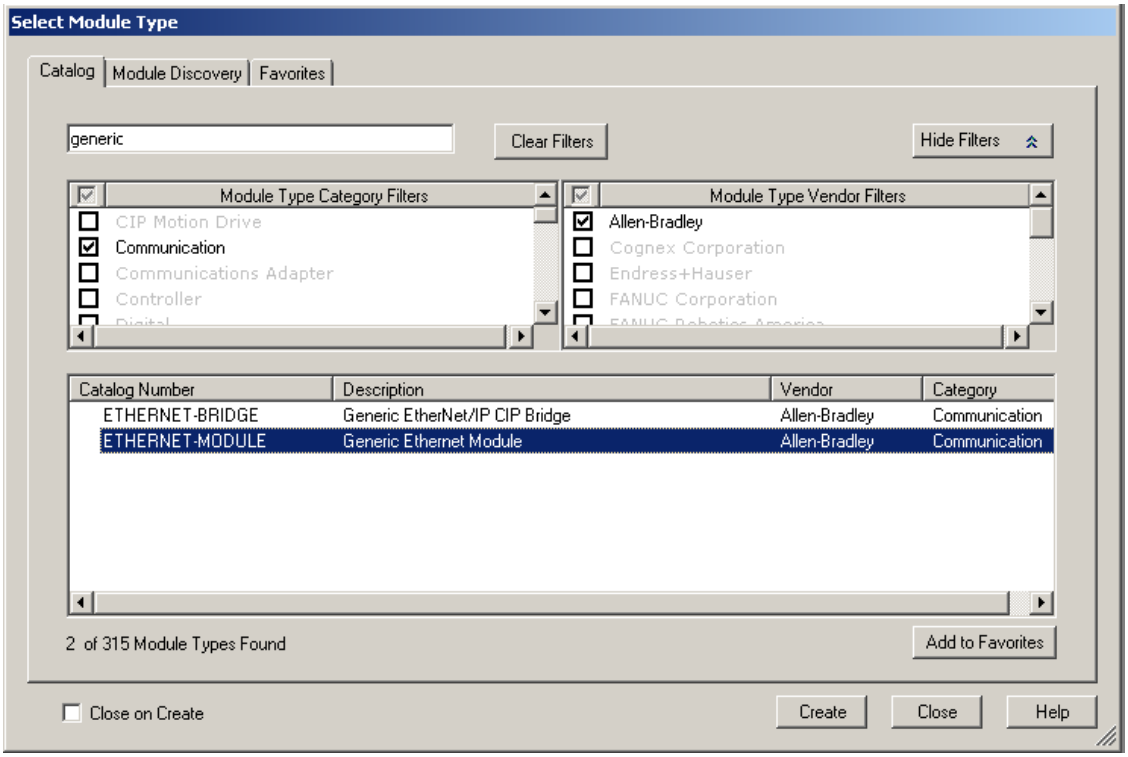
Select the file (`005A000C00530100.EDS`) and "`Add`" it.

4 Configure a C30S slave

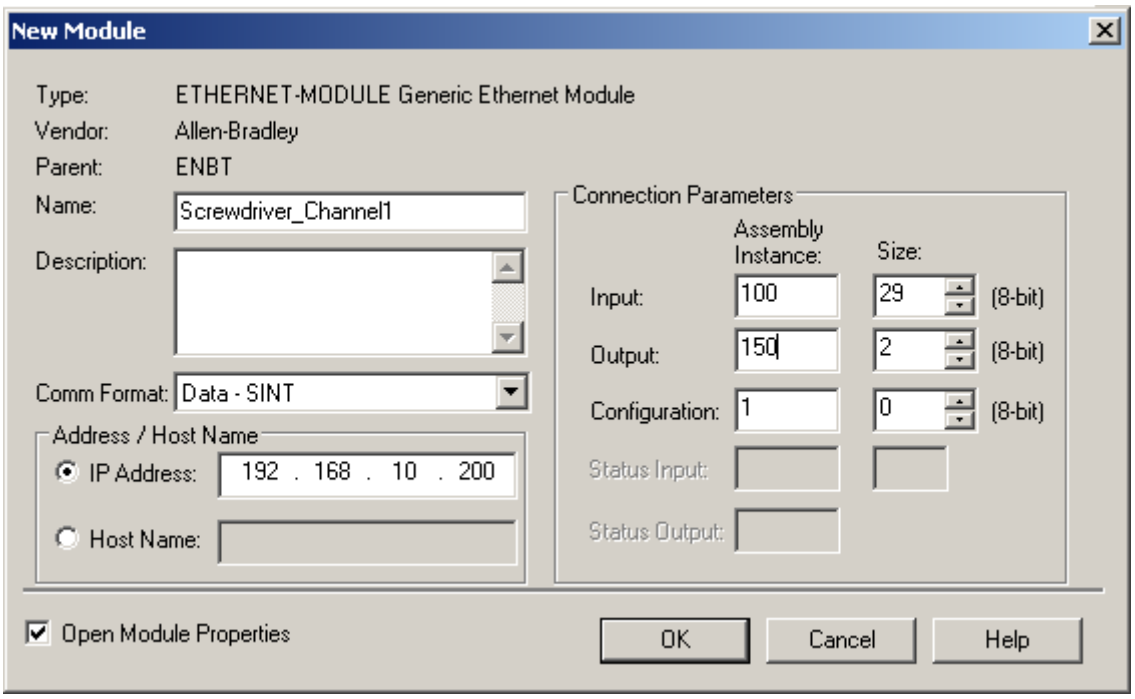
At the "Controller Organizer" under "I/O Configuration" right click on "Ethernet" and add a "New Module".



Select "Generic Ethernet Module" and "Create" the new module.

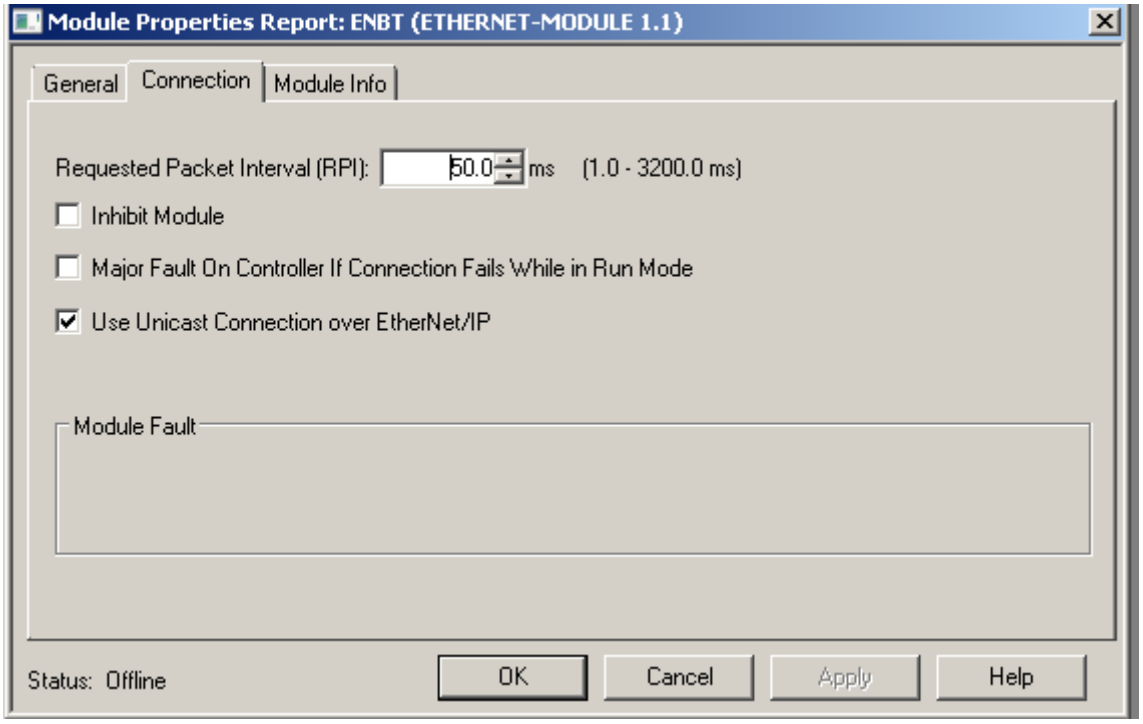


Enter the slave name and enter the IP Address of the slave (created in Section 2). Adjust the Comm Format, Assembly Instance and the Size according the screenshot:



Select the "Ok" icon.

In the "Connection" tab the RPI can be adjusted. We recommend to set it to 50ms.



This configuration would allow the possibility to check the communication to the C30S slave device. After downloading to, and starting the PLC, you should be able to see in the "Controller Tags" of the slave device the input data. This data is organized in bytes, so the values can not be interpreted directly.

Screwdriver_Channel1:I.Data	{...}	{...}	Decimal	SINT[29]
Screwdriver_Channel1:I.Data[0]	23		Decimal	SINT
Screwdriver_Channel1:I.Data[1]	2		Decimal	SINT
Screwdriver_Channel1:I.Data[2]	6		Decimal	SINT
Screwdriver_Channel1:I.Data[3]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[4]	1		Decimal	SINT
Screwdriver_Channel1:I.Data[5]	-68		Decimal	SINT
Screwdriver_Channel1:I.Data[6]	-81		Decimal	SINT
Screwdriver_Channel1:I.Data[7]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[8]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[9]	59		Decimal	SINT
Screwdriver_Channel1:I.Data[10]	72		Decimal	SINT
Screwdriver_Channel1:I.Data[11]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[12]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[13]	-60		Decimal	SINT
Screwdriver_Channel1:I.Data[14]	-6		Decimal	SINT
Screwdriver_Channel1:I.Data[15]	-24		Decimal	SINT
Screwdriver_Channel1:I.Data[16]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[17]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[18]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[19]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[20]	0		Decimal	SINT
Screwdriver_Channel1:I.Data[21]	63		Decimal	SINT

5 Use the WEBER supplied UDT and AOI

At the "Controller Organizer" under "Data Types", right click on "User Defined" and choose "Import data Type...". Select the File "UDT_Weber_C30S.L5X" and import it.

This should give you 3 new data types.

UDT_C30S_To_PLC: Structure of the input data from the C30S
UDT_PLC_To_C30S: Structure of the output data to the C30S
UDT_Weber_C30S: Complete structure encapsulating the above two UDT's.

Now we need to create an instance of the UDT_Weber_C30S data type. Name this instance according your wishes. It will keep the data which is there to communicate to the C30S.

At the "Controller Organizer" right click on "Add On Instructions" and choose "Import Add on Instruction...". Select the File "AOI_Weber_C30S_Ethernet_Data_Mapper.L5X" and import it.

You can keep the given name of the function block. This gives you the function block which maps the IO data to the UDT structure which we have already created above.

Now you need to invoke the AOI in your program cyclically. The three input parameters are:

Screwdriver Data: Put the instance of the UDT_Weber_C30S struct
Field Input: module input tag of the Ethernet IP IO's
Field Output: module output tag of the Ethernet IP IO's

The AOI function uses the Ethernet IP input data and fills the "UDT_C30S_To_PLC" data structure. It also writes the information in the "UDT_PLC_To_C30S" struct to the Ethernet IP output area.

Now you can use the C30S tags in your PLC program.

⊟ Screwdriver_Data_Channel1	{...}	{...}		UDT_Weber_C30S	In and Output Data for Weber I
⊟ Screwdriver_Data_Channel1.Out	{...}	{...}		UDT_PLC_To_C30S	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.Automatic	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.Start	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.AckFault	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.DS1	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.DS2	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.ExtDigSig	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.Res1	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.Out.Res2	0		Decimal	BOOL	In and Output Data for Weber I
⊞ Screwdriver_Data_Channel1.Out.Prog	0		Decimal	SINT	In and Output Data for Weber I
⊟ Screwdriver_Data_Channel1.IN	{...}	{...}		UDT_C30S_To_PLC	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.NoFault	1		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.ReadyToSt...	1		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.OK	1		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.NOK	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.DepthRea...	1		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.Res1	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.Res2	0		Decimal	BOOL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.Res3	0		Decimal	BOOL	In and Output Data for Weber I
⊞ Screwdriver_Data_Channel1.IN.ProgResult	2		Decimal	SINT	In and Output Data for Weber I
⊞ Screwdriver_Data_Channel1.IN.StrategyRe...	6		Decimal	SINT	In and Output Data for Weber I
⊞ Screwdriver_Data_Channel1.IN.CodeResult	1		Decimal	INT	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.TorqueResult	-0.03967285		Float	REAL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.PreTorque...	0.010986328		Float	REAL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.AngleResult	-2006.75		Float	REAL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.DepthResult	0.0		Float	REAL	In and Output Data for Weber I
Screwdriver_Data_Channel1.IN.DriveTime	0.59999585		Float	REAL	In and Output Data for Weber I
⊞ Screwdriver_Data_Channel1.IN.CycleNumber	150		Decimal	DINT	In and Output Data for Weber I

6 Error detection

With the function block “GetSystemValue”, the status of the Ethernet IP Bus can be evaluated. “InstanceName” must be set in the bus module of the C30S. For “AttributeName” you need to use “FaultCode”. In “Dest”, the actual status is shown. Zero indicates that the C30S is properly connected to the bus.