BACnet Modbus Gateway

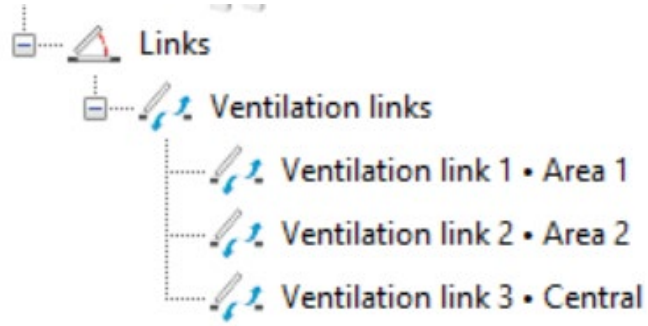
Description of the BACnet export

Application

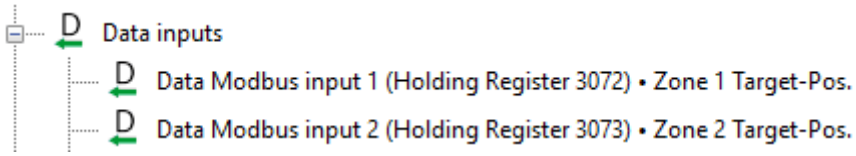
In this application example, there are two ventilation links that are to be controlled with position accuracy via BACnet.
The actual positions of the drives in the zones and the respective open and close messages are to be returned to BACnet as feedback.
Two digital Modbus inputs are to be used to send a central open and a central close signal from BACnet.

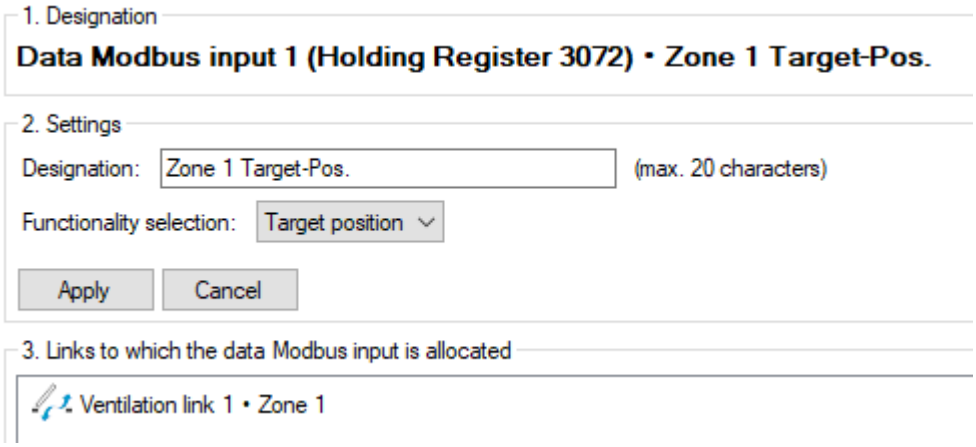
Links

There is one ventilation link per zone. A higher-level ventilation link is responsible for the central commands.

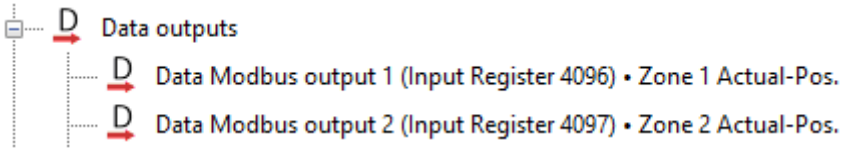


Modbus Inputs and outputs

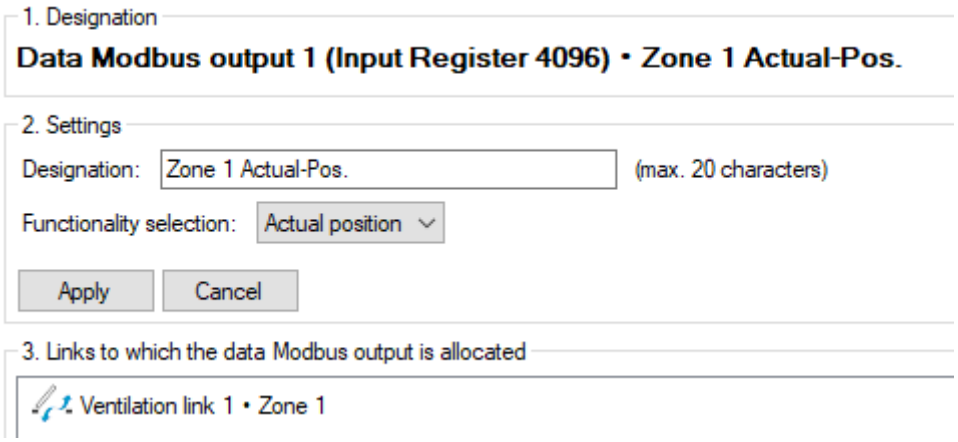




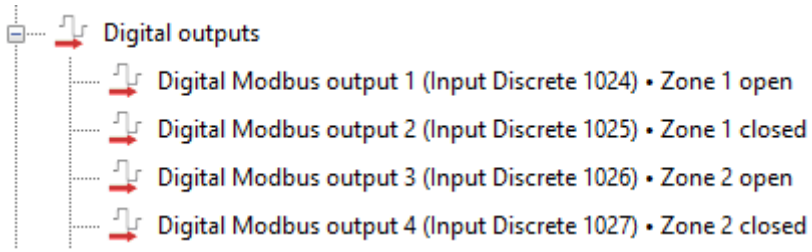
For the feedback of the actual position, data Modbus outputs are used per zone.



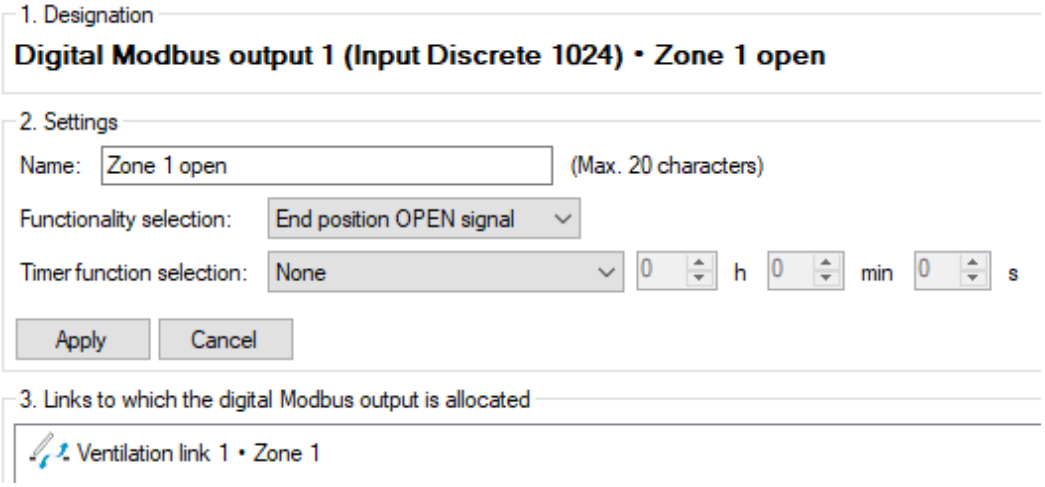
These are also assigned to the ventilation links and the "Actual position" functionality is selected.



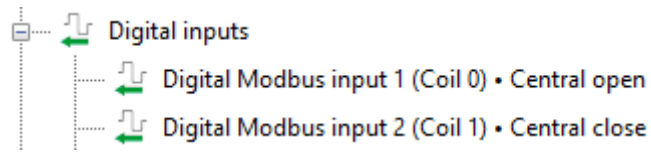
The open and close messages are passed on to BACnet via digital Modbus outputs.



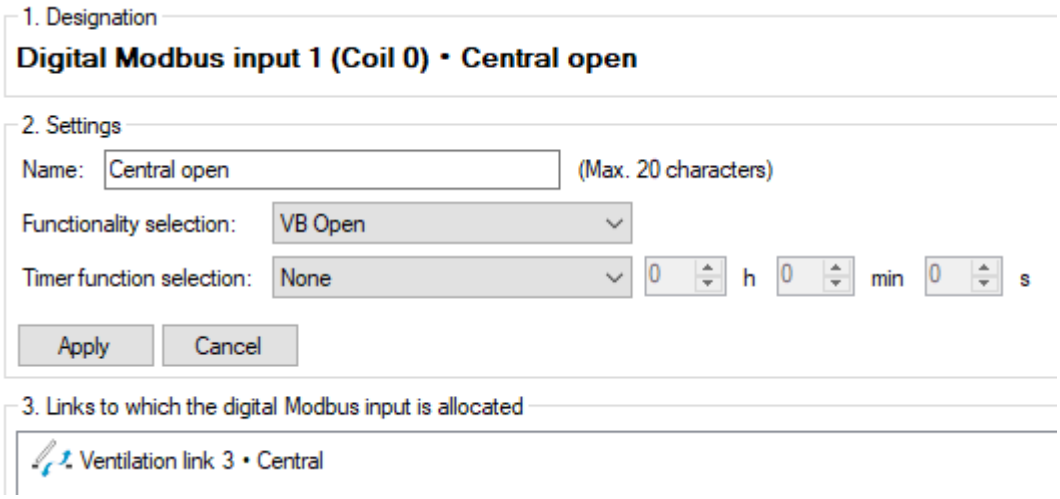
These are also assigned to the respective ventilation links. “Open message" or "Close message" is selected as the functionality.



The central open and central close control is realized via two digital Modbus inputs.

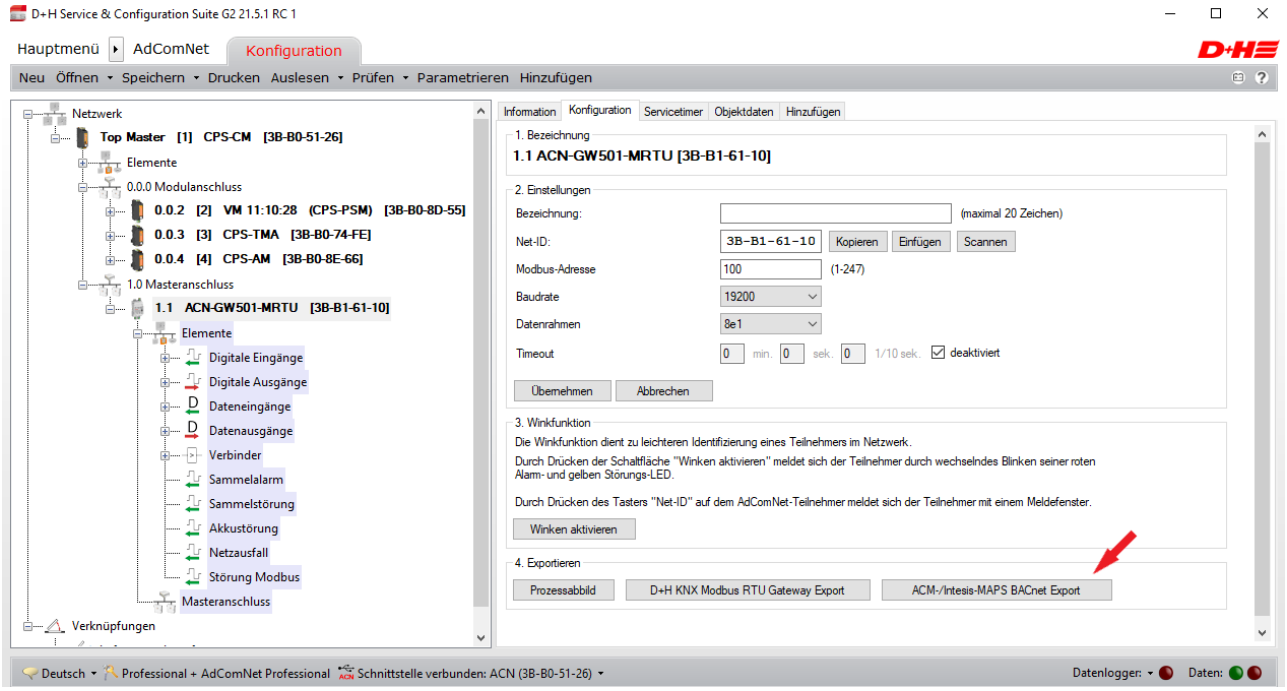


These are assigned to the higher-level ventilation link and set to the "LT-Open" or "LT-Closed" functionality.



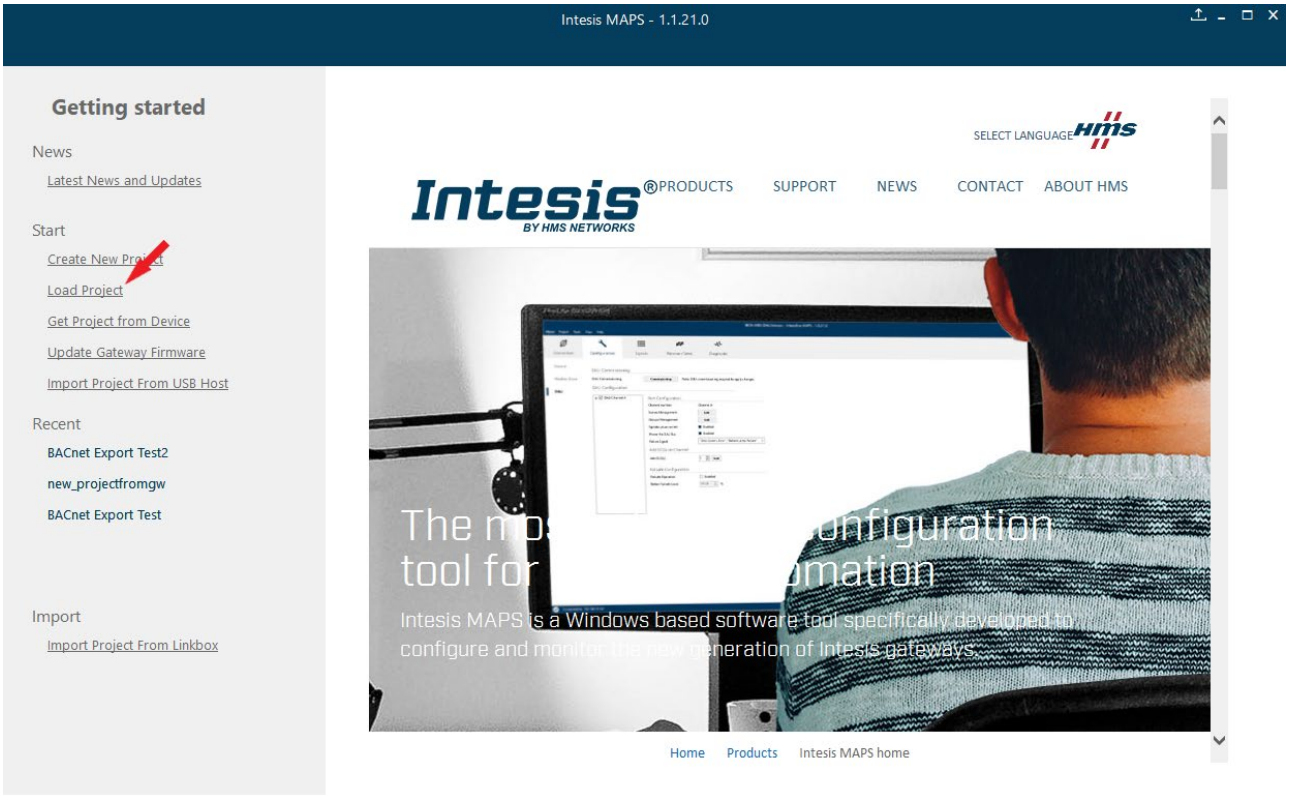
Export

In order to be able to connect the BACnet gateway as easily as possible, an export of the data points can be carried out with the SCS.
To do this, the configuration tab of the Modbus gateway is called up. There, the button "ACM/Intesis-MAPS BACnet Export" can be used to create two files that can be imported into the Intesis configuration software. A configuration file (.ibmaps) and a data point file (.xlsx) must be created for the respective manufacturer (Intesis/Anybus).



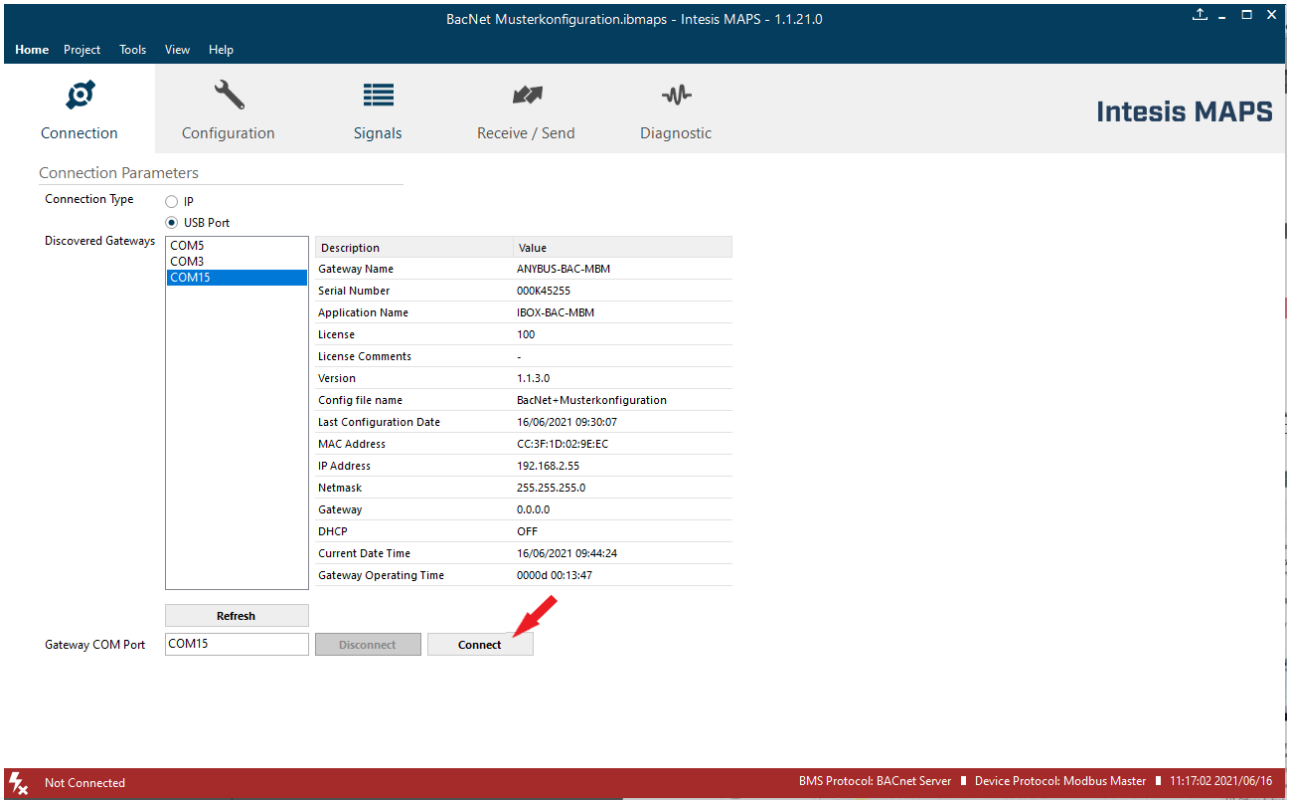
BACnet configuration software Intesis MAPS

In order to use the BACnet Modbus gateway, it must be configured with the Intesis MAPS software (with ACM MAPS for Anybus). For this purpose, the created project file (.ibmaps file) is loaded via the "Load Project" button.



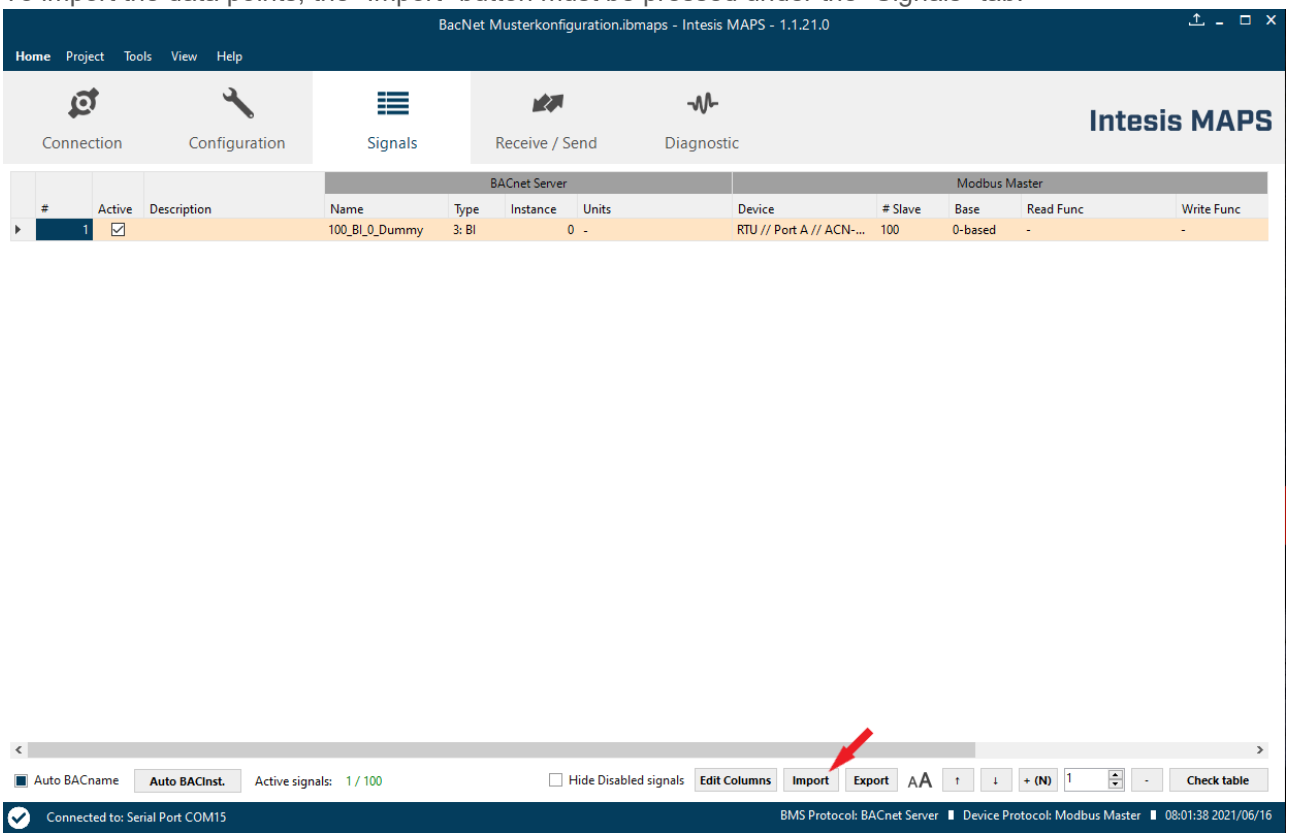
Connection with the Intesis Gateway

Under the "Connection" tab, the interface and the connection must be selected. After that, the connection is established with the "Connect" button. In this case the connection was established via USB.

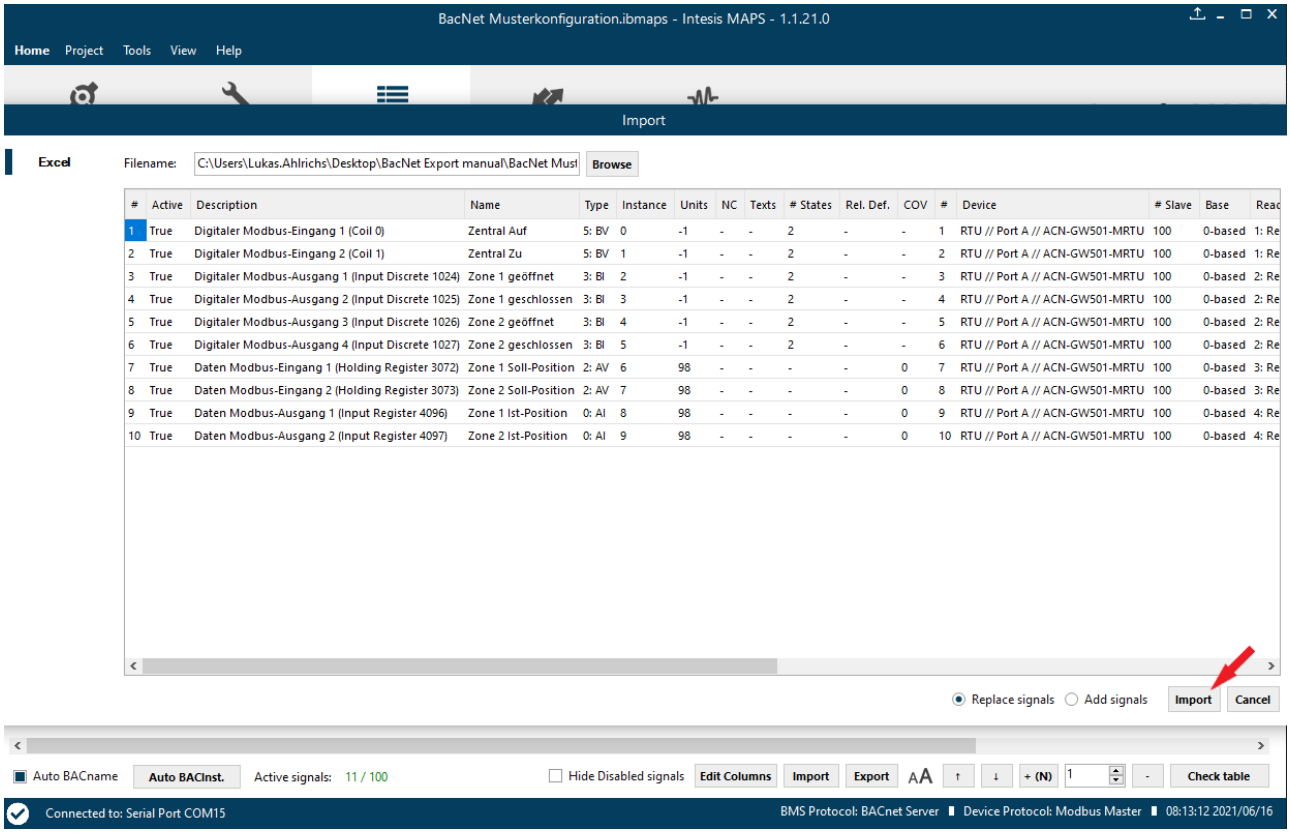


Import of the datapoints with Intesis MAPS

To import the data points, the "Import" button must be pressed under the "Signals" tab.



Now the data point file (.xlsx) must be selected. After another click on "Import" the data points are loaded into the configuration.

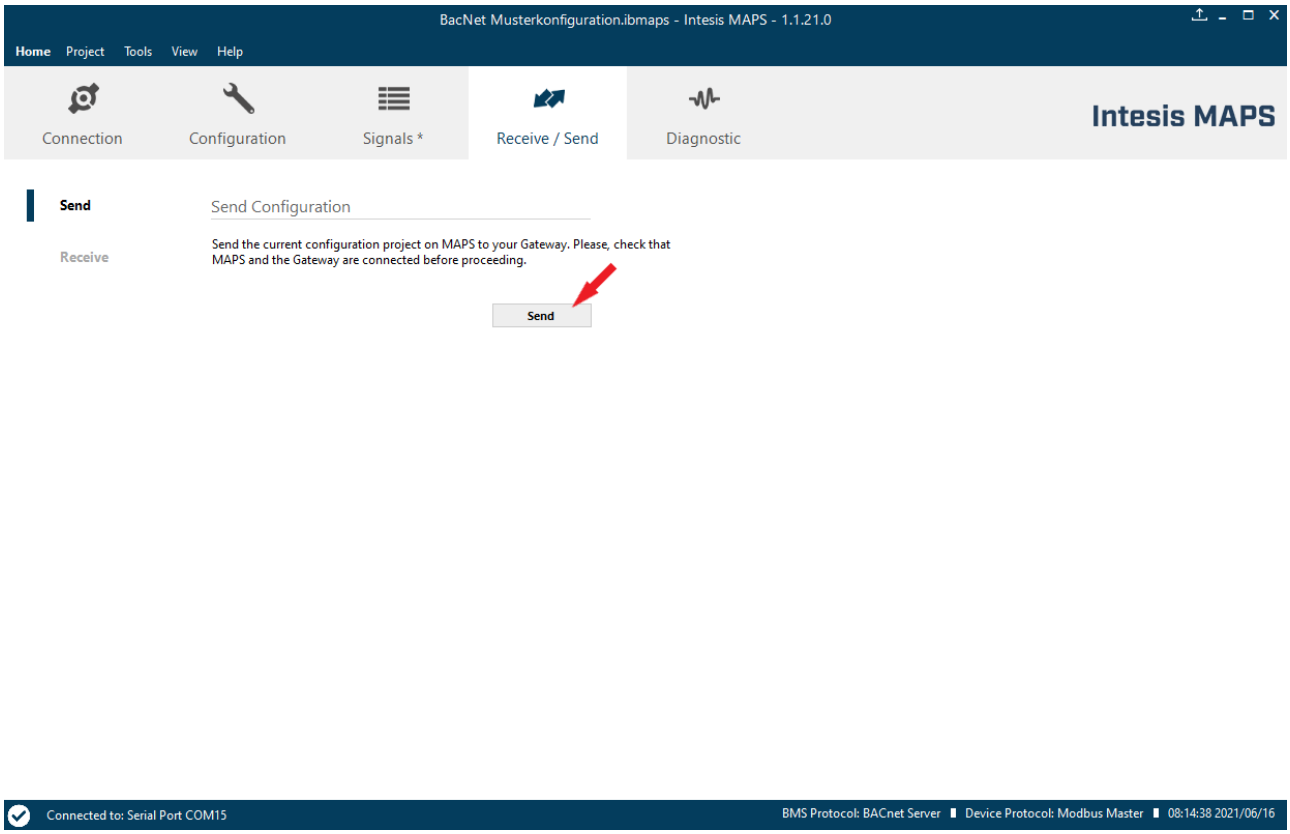


#	Active	Description	Name	Type	Instance	Units	NC	Texts	# States	Rel. Def.	COV	#	Device	# Slave	Base	Reac
1	True	Digitaler Modbus-Eingang 1 (Coil 0)	Zentral Auf	5: BV	0	-1	-	-	2	-	-	1	RTU // Port A // ACN-GW501-MRTU	100	0-based	1: Re
2	True	Digitaler Modbus-Eingang 2 (Coil 1)	Zentral Zu	5: BV	1	-1	-	-	2	-	-	2	RTU // Port A // ACN-GW501-MRTU	100	0-based	1: Re
3	True	Digitaler Modbus-Ausgang 1 (Input Discrete 1024)	Zone 1 geöffnet	3: BI	2	-1	-	-	2	-	-	3	RTU // Port A // ACN-GW501-MRTU	100	0-based	2: Re
4	True	Digitaler Modbus-Ausgang 2 (Input Discrete 1025)	Zone 1 geschlossen	3: BI	3	-1	-	-	2	-	-	4	RTU // Port A // ACN-GW501-MRTU	100	0-based	2: Re
5	True	Digitaler Modbus-Ausgang 3 (Input Discrete 1026)	Zone 2 geöffnet	3: BI	4	-1	-	-	2	-	-	5	RTU // Port A // ACN-GW501-MRTU	100	0-based	2: Re
6	True	Digitaler Modbus-Ausgang 4 (Input Discrete 1027)	Zone 2 geschlossen	3: BI	5	-1	-	-	2	-	-	6	RTU // Port A // ACN-GW501-MRTU	100	0-based	2: Re
7	True	Daten Modbus-Eingang 1 (Holding Register 3072)	Zone 1 Soll-Position	2: AV	6	98	-	-	-	-	0	7	RTU // Port A // ACN-GW501-MRTU	100	0-based	3: Re
8	True	Daten Modbus-Eingang 2 (Holding Register 3073)	Zone 2 Soll-Position	2: AV	7	98	-	-	-	-	0	8	RTU // Port A // ACN-GW501-MRTU	100	0-based	3: Re
9	True	Daten Modbus-Ausgang 1 (Input Register 4096)	Zone 1 Ist-Position	0: AI	8	98	-	-	-	-	0	9	RTU // Port A // ACN-GW501-MRTU	100	0-based	4: Re
10	True	Daten Modbus-Ausgang 2 (Input Register 4097)	Zone 2 Ist-Position	0: AI	9	98	-	-	-	-	0	10	RTU // Port A // ACN-GW501-MRTU	100	0-based	4: Re

With the import, the General and the Modbus settings as well as the data points matching the AdComNet configuration are automatically taken over correctly.
Digital Modbus inputs and outputs are bit variables and data Modbus inputs and outputs configured to setpoint or actual position are automatically created in BACnet with the matching "Unit" in percent. The conversion BACnet value 100% to Modbus value 1000 is also already set correctly.

Upload the configuration

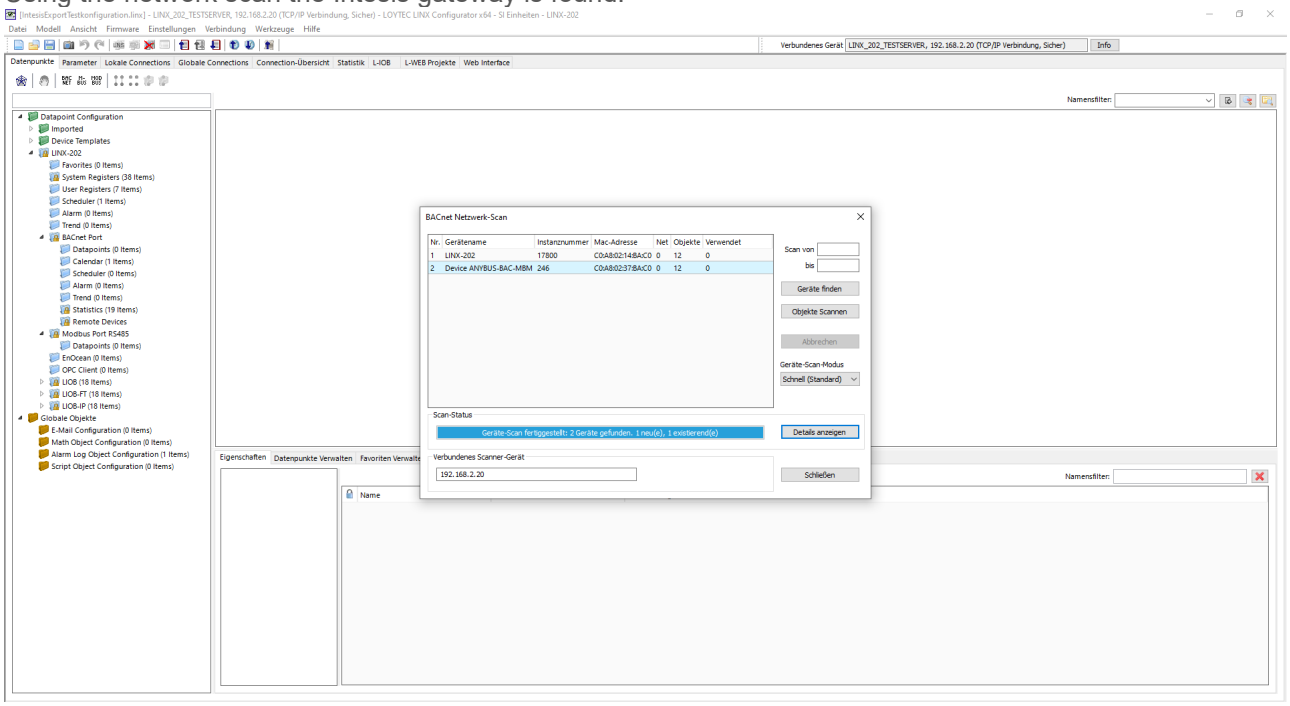
To upload the configuration to the gateway, the "Send" button must be pressed in the "Receive / Send" tab while the connection is active.

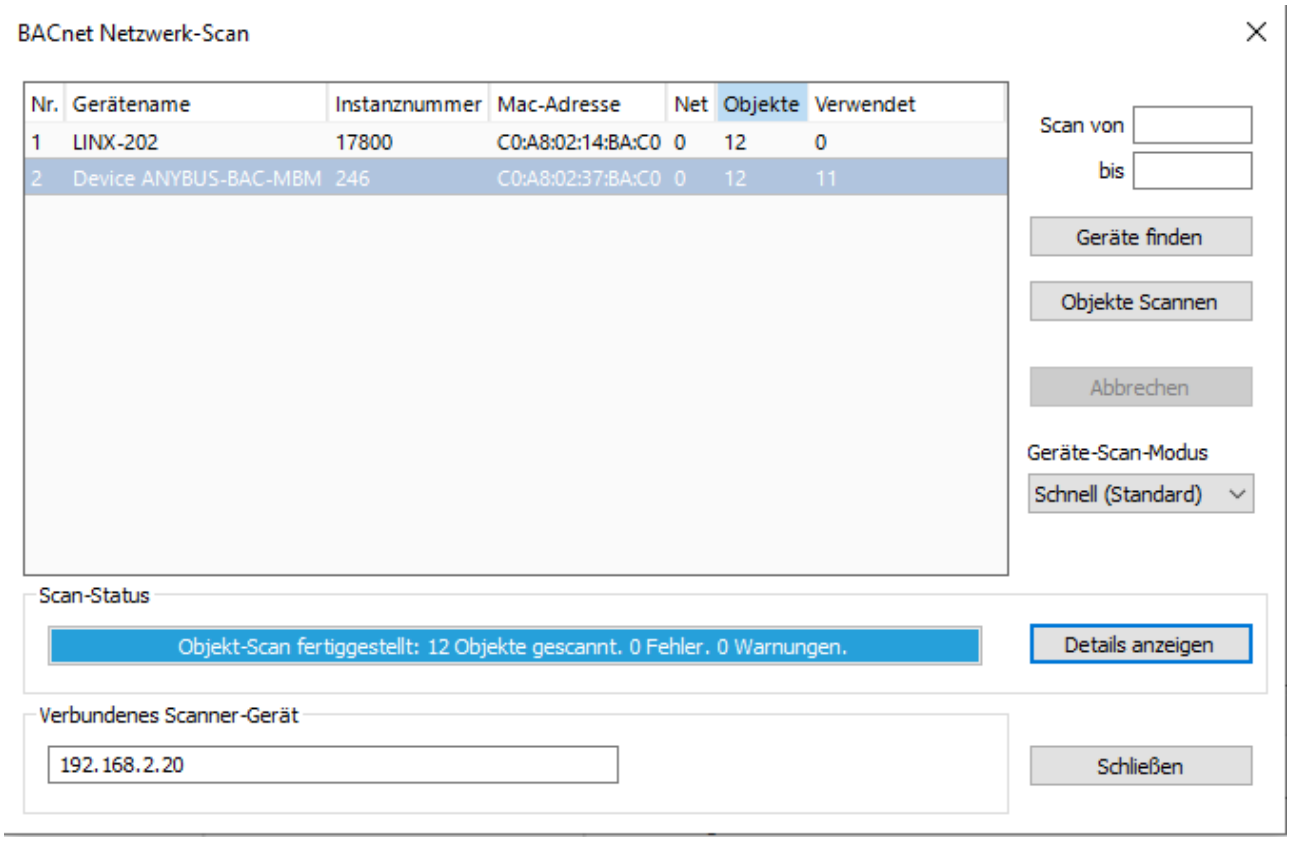


Example for scanning the data points from BACnet

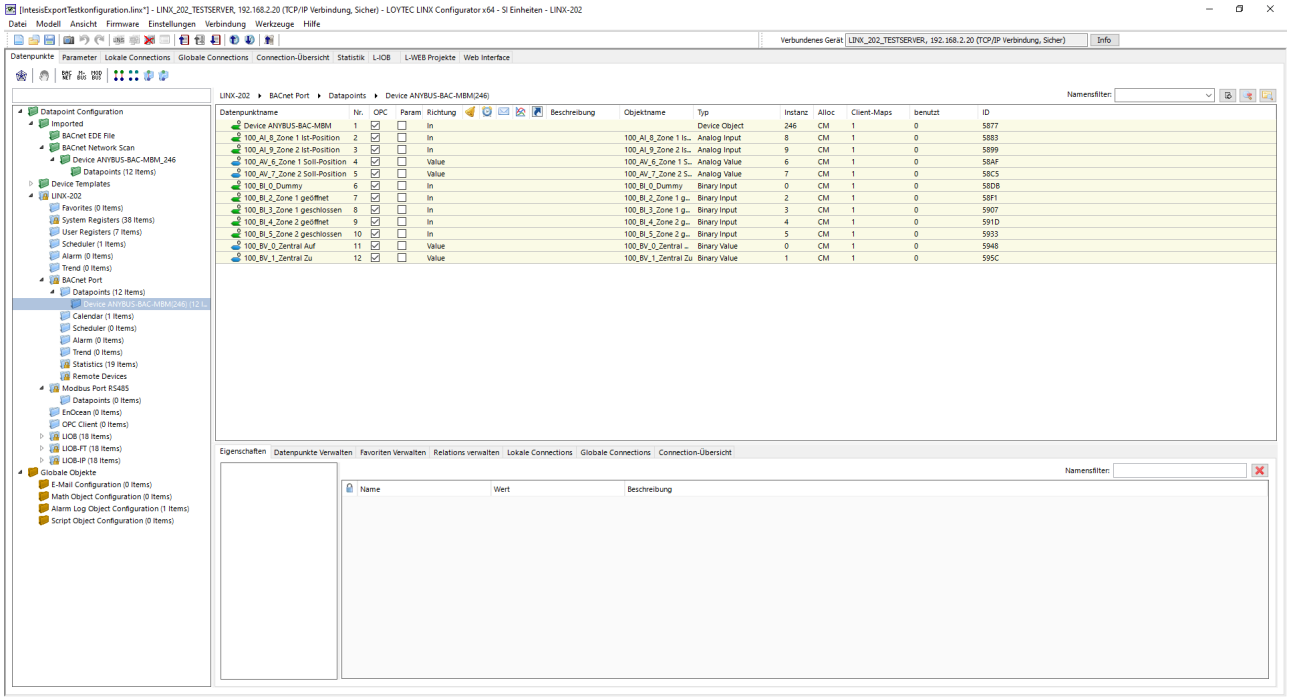
As a connection example, a Loytec LINX-202 was used as a BACnet controller and connected to the gateway. The following shows how the data points are "scanned" using the Loytec software.

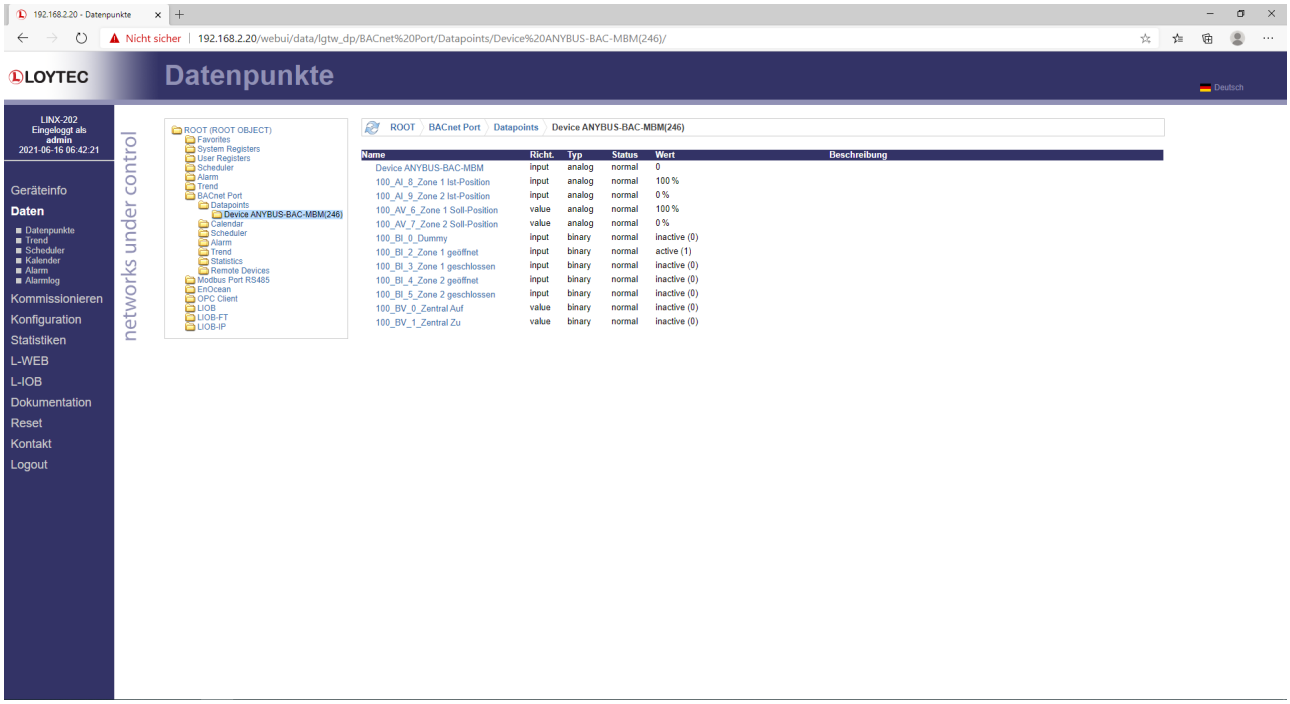
Using the network scan the Intesis gateway is found.





Now the individual data points are displayed in the device.





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