WAGO-Software Manual



WAGO ETS Plug-in for the Configuration of WAGO KNX Devices

Version 3.0.1



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Every conceivable measure has been taken to ensure the accuracy and completeness of this documentation. However, as errors can never be fully excluded, we always appreciate any information or suggestions for improving the documentation.

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We wish to point out that the software and hardware terms as well as the trademarks of companies used and/or mentioned in the present manual are generally protected by trademark or patent.



Table of Contents

1	Notes about this Documentation	5
1.1	Scope	5
1.2	Copyright	5
1.3	Symbols	6
1.4	Number Notation	8
1.5	Font Conventions	8
2	Important Notes	9
2.1	Legal Bases	9
2.1.1	Subject to Changes	9
2.1.2	Personnel Qualification	9
2.2	System Requirements	10
2.3	Safety Advice (Precautions)	10
3	ETS	11
3.1	WAGO ETS Plug-ins	11
3.2	Access to KNX Devices via ETS5	12
3.3	Interworking Datapoint Types (DPTs)	12
3.4	Syntax of Network Variable Names	13
3.4.1	Syntax for Simple Variable	13
3.4.2	Syntax for Array Variables	13
3.4.3	Syntax for Nested Variables	14
3.4.4	Syntax for Nested Array Variables	14
3.5	Importing the ETS-Plug-in in ETS5	15
3.6	Opening a Project	18
4	KNX/EIB/TP1 Module / KNX IP Controller Parameterization	20
4.1	Opening the ETS Plug-in	20
4.2	Graphical User Interface of the ETS Plug-in	22
4.2.1	Main Menu	22
4.2.1	.1 "File" Menu Item	23
4.2.1	.1.1 Exporting a Configuration as an XML File (Backup)	25
4.2.1	.1.2 Exporting a Configuration as a CSV File	26
4.2.1	.1.3 Import XML File (Backup Restore)	26
4.2.1	.1.4 Importing a CSV File	27
4.2.1	.2 "View" Menu Item	27
4.2.1	.3 "Tools" Menu Item	28
4.2.1	4 "Options" Menu Item	28
4.2.1	4.1 Defining the Telegram Delay After Reset	29
4.2.1	4.2 Finding the File Paul to WAGO-I/O-PRO	29
4.2.1	4.5 Setting ID Decemptors	30
4.2.1	5 "Help" Menu Item	31 21
4.2.1 1 1 1	Toolbar	גר גר
ч.2.2 4 2 3	"Network Variables" Tab – List of Network Variables	52
474	"Network Variables" Tab – FIR Datatynes	32
425	"Properties" Tab	36
4.2.6	Status Bar	38



4.3	Importing a Symbol File in the ETS Plug-in	
4.4	Associating Network Variables and Group Addresses	
4.4.1	Creating Associations	
4.4.2	Deleting Associations	
5 Pa	arameterization of the KNXnet/IP-Router in ETS5	
5.1	"IP-Router" Dialog	
5.2	Operation	
5.2.1	Extended Settings	
5.2.2	IP -> TP	
5.2.2.1	Individual Addressed and Broadcast Telegrams	
5.2.2.2	Group Telegrams of Main Groups 0 to 13	
5.2.2.3	Group Telegrams of Main Groups 14 to 31	
5.2.3	TP -> IP	
5.2.3.1	Acknowledge of Group Oriented Telegrams	
5.2.3.2	Individual Addressed and Broadcast Telegrams	
5.2.3.3	Group Telegrams of Main Groups 0 to 13	
5.2.3.4	Group Telegrams of Main Groups 14 to 31	50
6 U	ninstalling the ETS Plug-in	
List of]	Figures	
List of '	Tables	



1 Notes about this Documentation

Note

Always retain this documentation!

This documentation is part of the product. Therefore, retain the documentation during the entire service life of the product. Pass on the documentation to any subsequent user. In addition, ensure that any supplement to this documentation is included, if necessary.

1.1 Scope

This documentation applies for the WAGO ETS Plug-in in conjunction with ETS and the KNX IP controller 750-889.

1.2 Copyright

This Manual, including all figures and illustrations, is copyright-protected. Any further use of this Manual by third parties that violate pertinent copyright provisions is prohibited. Reproduction, translation, electronic and phototechnical filing/archiving (e.g., photocopying) as well as any amendments require the written consent of WAGO Kontakttechnik GmbH & Co. KG, Minden, Germany. Non-observance will involve the right to assert damage claims.



1.3 Symbols

Personal Injury!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

A DANGER

Personal Injury Caused by Electric Current!

Indicates a high-risk, imminently hazardous situation which, if not avoided, will result in death or serious injury.

▲ WARNING

Personal Injury!

Indicates a moderate-risk, potentially hazardous situation which, if not avoided, could result in death or serious injury.

Personal Injury!

Indicates a low-risk, potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

NOTICE

Damage to Property!

Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.



NOTICE

Damage to Property Caused by Electrostatic Discharge (ESD)! Indicates a potentially hazardous situation which, if not avoided, may result in damage to property.



Note

Important Note!

Indicates a potential malfunction which, if not avoided, however, will not result in damage to property.





Information

Additional Information: Refers to additional information which is not an integral part of this documentation (e.g., the Internet).



1.4 Number Notation

Table 1: Number Notation

Number Code	Example	Note
Decimal	100	Normal notation
Hexadecimal	0x64	C notation
Binary	'100'	In quotation marks, nibble separated with
	'0110.0100'	dots (.)

1.5 Font Conventions

Table 2: Font Conventions

Font Type	Indicates
italic	Names of paths and data files are marked in italic-type.
	e.g.: C:\Program Files\WAGO Software
Menu	Menu items are marked in bold letters.
	e.g.: Save
>	A greater-than sign between two names means the selection of a
	menu item from a menu.
	e.g.: File > New
Input	Designation of input or optional fields are marked in bold letters,
	e.g.: Start of measurement range
"Value"	Input or selective values are marked in inverted commas.
	e.g.: Enter the value "4 mA" under Start of measurement range.
[Button]	Pushbuttons in dialog boxes are marked with bold letters in square
	brackets.
	e.g.: [Input]
[Key]	Keys are marked with bold letters in square brackets.
	e.g.: [F5]



2 Important Notes

This section describes the legal principles and system requirements for using the software in compliance with intended purpose, underlying provisions and stated specifications.

2.1 Legal Bases

2.1.1 Subject to Changes

WAGO Kontakttechnik GmbH & Co. KG reserves the right to provide for any alterations or modifications that serve to increase the efficiency of technical progress. WAGO Kontakttechnik GmbH & Co. KG owns all rights arising from the granting of patents or from the legal protection of utility patents. Third-party products are always mentioned without any reference to patent rights. Thus, the existence of such rights cannot be excluded.

2.1.2 Personnel Qualification

Any steps related to the use of WAGO software may only be performed by qualified employees with sufficient knowledge of handling the respective PC system used.

Steps in which files are created or changed on the PC system may only be performed by qualified employees with sufficient knowledge in the administration of the PC system used in addition to the aforementioned.

Steps in which the behavior of the PC system in a network is changed may only be performed by qualified employees with sufficient knowledge in the administration of the network used in addition to the aforementioned.



2.2 System Requirements

Table 3: ETS System Requirement

Min. 2 GHz processor capacity
Windows Vista (SP2), Windows 7 (SP1), Windows 8,
Windows 8.1, Windows 10
Min. 2 GB, 4 GB recommended
Min. 20 GB
Super VGA or higher
1024×768
Recommended
USB, KNXnet/IP controller 750-889 as router, KNXnet/IP
The ETS Plug-in requires the ETS in version 4.0 or higher



Note

Importing *e*!*COCKPIT* **.xml Files** When using *e*!*COCKPIT*, the product database for the KNX/EIB/TP1 module (753-646) must be the following version number or higher: Wago_TP1Klemme_753-646_2_0_367_581.vd4

2.3 Safety Advice (Precautions)



Note

Use up-to-date security software!

Secure operation of the PC system can be at risk as a result of malware such a viruses and Trojans, as well as related threats such as denial-of-service attacks. Therefore, make sure that the latest security software and definitions are always installed on the PC system.



Note

Disable or uninstall software that is no longer required!

The vulnerability of a PC system against malware and related threats increases with the number of installed or active software components (applications and services). Therefore, uninstall or disable software components that are not needed for the purpose at hand.



3 ETS

The ETS (Engineering Tool Software) was specially developed for planning, project design and startup of KNX/EIB networks. During its development, ETS functionality was optimized and the latest version includes options for setting up, maintaining, servicing and expanding KNX networks.

The software integrates all the major components of a KNX network such as lines, devices and building areas into an intuitive, easy-to-use package that enables controllers and device behaviors to be set up or modified. The software programs and configures individual devices within the bus system in order to implement new requirements effectively and quickly.

The manufacturer-independent design of ETS enables manufacturers in the building automation industry to integrate their devices into the ETS product database using certified standards. This manual describes devices developed WAGO Kontakttechnik GmbH & Co. KG.



Information

Additional information

Additional information about ETS can be found on the manufacturer's website <u>http://www.knx.org</u>.

3.1 WAGO ETS Plug-ins

The WAGO ETS Plug-ins described in this document are an extension of the ETS product database for using WAGO devices such as the KNX/EIB/TP1 Module (753-646) and the KNX IP Controller (750-889), as well as the KNXnet/IP Router (consisting of the KNX Module and KNX IP Controller). This extension enables you to configure WAGO devices via ETS.

The software's enhanced structure offers intuitive navigation — providing both new experienced ETS users with exceptional usability.

The key feature of the KNX/EIB/TP1 Module and Controller software is the ability to map WAGO network variables 1:1 to communication objects in the ETS.

Communication objects are activated via a checkbox in the "Edit Parameters" dialog. The communication object is visible in the topology area of the ETS when this checkbox is checked, and is hidden when the checkbox is unchecked.

Communication objects are given the same name as the network variable they are mapped to. This ensures that the internal mapping of the WAGO software is also represented inside ETS.



3.2 Access to KNX Devices via ETS5

ETS provides the following options in order to access KNX devices within a bus system:

- USB
- ETHERNET ("KNXnet/IP" or "KNXnet/IP Routing")

The ETS5-equipped PC used for project design must be connected to a KNX interface.

Within ETS5, an interface can be configured via "Bus" > Connections > Interfaces > Configured Interfaces > [+].

ETS5 ^M				
ETS Overview Bus	Catalogs Settings	KNX		
- Connections Interfaces Options	Current Interface <no interface="" selected=""> Configured Interfaces </no>	IP Tunneling Name Neue Verbindung		
- Monitor	- Neue Verbindung 0.0.0.3671	Server		
Group Monitor Bus Monitor	 Discovered Interfaces 	Port 3671		
- Diagnostics		Network Address Translation Connect using NAT mode		
Unload Device Device Info — Individual Addresses Programming Mode Individual Address Che Line Scan		Test Select		

Figure 1: "Bus" Tab

If the KNX IP Controller functions as a KNXnet/IP Router, you can connect it directly to a standard ETHERNET interface on your PC using an RJ-45 cable.

In this case, the cable runs from ETHERNET to twisted pair and twisted pair to ETHERNET via the KNX IP Controller (750-889) and the KNX/EIB/TP1 Modules (see also Section "KNXnet/IP Router Parameterization").

3.3 Interworking Datapoint Types (DPTs)

DPTs describe defined formats and data widths of communication objects. The KNX Module supports the following EIB data widths:

- 1 ... 7 bits
- 1 ... 4 bytes



- 6 bytes
- 8 bytes
- 10 bytes
- 14 bytes



Note

Additional information about "Interworking Datapoint Types"! Additional information about "Interworking Datapoint Types" can be found at http://www.knx.org.

3.4 Syntax of Network Variable Names

Each network variable name contains the program name. It is preceded and separated from the actual name by a period.



Note

"Show short name" option

The "Show short name" option in the ETS Plug-in user interface (see Section "KNX/EIB/TP1 Module/KNX IP Controller" >... > "View' menu item") makes it possible to suppress the display of the program name. This also removes the prefix, infix (in this case, the "period" character between the basic name and the suffix) and suffix. The communication objects in the ETS user interface are then also displayed accordingly in abbreviated form!

3.4.1 Syntax for Simple Variable

The syntax for simple variable names is:

<Program name>.M<No1>_<No2>_<Basic name>

Table 4: Syntax for Simple Variable

Wildcard	Length	Explanation
<no1></no1>	Digits	KNX Module number
<no2></no2>	3 digits	Data address

3.4.2 Syntax for Array Variables

The syntax for array variable names is:

<Program name>.M<No1>_<No2>_<Basic name>[<No3>]



Table 5: Syntax f	or Array Variable	
Wildcard	Length	Explanation
<no1></no1>	Digits	KNX Module number
<no2></no2>	3 digits	Identifies variable array
<no3></no3>	Digits	Identifies variable in array

3.4.3 Syntax for Nested Variables

The syntax for names of nested variables is:

<Program name>.M<No1>_<No2>_<Basic name>[<No3>]

Table 6: Syntax for Nested Variables

Wildcard	Length	Explanation
<no1></no1>	Digits	KNX Module number
<no2></no2>	3 digits	Identifies variable group
<no3></no3>	Digits	Identifies variable in group

3.4.4 Syntax for Nested Array Variables

The syntax for names of nested array variables is:

```
<Program name>.M<No1>_<No2>_<Basic name>._<No3><Suffix>[<No4>]
```

Table 7: Syntax for Nested Variables

Wildcard	Length	Explanation
<no1></no1>	Digits	KNX Module number
<no2></no2>	3 digits	Identifies main group
<no3></no3>	Digits	Identifies subgroup in main group
<no4></no4>	Digits	Identifies variable in subgroup



3.5 Importing the ETS-Plug-in in ETS5

To import the ETS plug-in, select the corresponding vd4 file:

- 1. Click the "**Catalogs**" tab in the ribbon.
- 2. Click the **[Import...]** button.



Figure 2: Importing Products

The "Open product file" dialog appears.

V S_Technisches_Konzept + KNX)	→ ISE → Releases → B	uild 2.0.367.581	• [• +] [
Organize 🔻 New folder				III • 🚺	6
★ Favorites	<u>^</u>	Name	Date modified	Туре	
Oreative Cloud Files		Wago_IpController_750-889_750-849_2	03.02.2016 19:52	VD4 File	
E Desktop		Wago_TP1Klemme_753-646_2_0_367_581	03.02.2016 19:52	VD4 File	
🚺 Downloads					
Secent Places	11 I				
Bilder					
🔀 Libraries					
Documents					
👌 Music					
E Pictures					
Videos					
🖳 Computer					
🏭 Windows (C:)	•	([
File name: Wago_IpController_750-889_750-849_2_		367_581.vd4	- ETS product	files (*.knxprod;*	.v •

Figure 3: Importing Products – Select File Path

3. Find the file path of the product file to be imported in the directory and click **[Open]**.



Note

Multiple selections are possible.

To import multiple products at the same time, press and hold the [SHIFT] button.





Figure 4: Progress Display - Analysis

A prompt shows you the progress of the import. The product file is analyzed. You are then prompted to select the product language(s):

*	Manul	acturer Name	Order Number	Medium Type	Application
					×
R		Select Product	t Language(s)		
		Language			
		German (Germany)			
		English (United Stat	es)		
		Import Selecte	d Languages	mport All Languag	es Cancel

Figure 5: Selecting the Product Language

- 4. Select the product language(s):
 - Click the language(s) you want to select. To select multiple languages, press and hold the [SHIFT] button. The languages selected are highlighted in blue. Then click the [Import Selected Languages] button.



• If you want to import all available languages in the software interface, click the [Import All Languages] button directly.

*	Manufacturer Name Order Numb	er Medium Type Application	C.
K	Converting Product File \\\Wago_IpController_750-88	× 39_750-849_2_0_367_581.vd4	
	Reading Project File	• 00:03• 00:02	
L			
		Corre	

Figure 6: Progress Display - Conversion

A prompt shows you the progress of the import: The project file is read, translation(s) loaded and the project file converted.

If you had selected multiple product files for import, the process is repeated for each product file.



Figure 7: Progress Display – Completion



5. A message then appears that the import has been completed successfully. Click **[OK]** to close the window.

The ETS product database is updated and henceforth includes imported products, e.g., KNX module and KNX IP controller in this example.

₩ ETSS™ ETS							
Overview Bus	Catalogs	Settings					KNX'
🛃 Import 🏦 Export 🛛 🖓	Download	Manufacturers			Se	earch	Q
📩 Favorites 🔹	Manufactur	er Name	Order Number	Medium Type	Application	Catalan	Analisation
My Products	WAGO Kontakt	technik				Catalog	Application
to Recent Products	WAGO Konta	aIP-Controller	750-889	IP	IP-Controller		
Manufacturers •	WAGO Konta	aTP1-Module	753-646	TP	TP1-Klemme		
 WAGO Kontakttechnik 							
Anwendungskontroller							
IP-Controller							
🔺 🏬 Klemmen							
TP1-Klemme							

Figure 8: Product Catalog (Extract)



Note

Importing e!COCKPIT .xml Files

When using *e!COCKPIT*, the product database for the KNX/EIB/TP1 module (753-646) must be the following version number or higher: Wago_TP1Klemme_753-646_2_0_367_581.vd4

If an older file was added, the project or database may need to be discarded to correctly import the current product database.

3.6 Opening a Project

1. To open a project in the ETS, select the "Overview" tab.

🚆 ETS5 [™] - TestPrjDoku						
ETS Edit Workplac	e Commissioning Diagnostic	s Extras \	Window			0
Overview B	Bus Catalogs	Settings				KNX
Your Projects •	F 🎢 🛃 🏦		TestPrjDoku		Import Date: 21.	03.2016 Last Modified: 11.03.2016 09:23
Name	Last Modified Status		Details	Project Log	Project Files	
Test Project Wago_IpRou	ter 21.03.2016 11:03 Unknown					
TestPrjDoku	11.03.2016 09:23 Unknown		Name TestPriDoku		Password	Set Password
Testprojekt WAGO	10.03.2016 10:45 Unknown		Project Number		BCU Key	Cat Var

Figure 9: Selecting a Project (Extract)

2. Double-click the required project to view the project.



🖳 ETS5™ - TestPrjDoku				-			X
ETS Edit Workplace Com	missioning	Diagnostics Extras Wind	low				~ 0
Close Project 🌾 Undo	🐴 Redo	Reports Work	cplace 🔹 🚺 Catalogs 🛛 📰 Diagnostics				
Topology 👻						∧ □ ×	<
🕂 Add Areas 🛛 🛪 🗙 Delete 🖠	Download *	🚺 Info 🔹 🙍 Reset 🦂	Unload *		Search	Q	
Topology •	Area *	Name	Description	Mainline Me	Domain Address		
 Dynamic Folders I Neuer Bereich 	1	Neuer Bereich		IP	.ta		0

Figure 10: Project in the ETS – Topology View (Extract)



4 KNX/EIB/TP1 Module / KNX IP Controller Parameterization

The KNX/EIB/TP1 Module (753-646), referred to as the KNX Module, and the KNX IP Controller (750-889) use the same ETS Plug-in; however, the controller offers additional functions. This description applies to both the KNX Module and the Controller. Other functions are described.

The following section describes the procedure for using the ETS Plug-in for the KNX Module and the KNX IP Controller within the ETS. The ETS Plug-in is contained in the product database.

4.1 Opening the ETS Plug-in

1. To go to the plug-in interface, select the required device in the topology view.

TS Edit Workplace Co	ommissioning [Diagnostics Extras Window								
Close Project	🐴 Redo	Reports Workplace	e 🔹 📑 Catalogs	Diagnostics						
opology 🔻									^	
🛚 Add Areas 🛛 👻 🗙 Delete	🛨 Download 🔻	🕕 Info 🔹 幻 Reset 🧳 Un	load *			Search				Q
Topology	* Number	* Name	Object Function	Description	Group Address	Length	CI	R W	τι	Data
i Dynamic Folders	■치0	DPT_PRO_NEWXML.M1_001		Art des Funktion		1 bit	с -	W T	U	switch 1
Initial devices	■ \$ 1	DPT_PRO_NEWXML.M1_002		Art des Funktion		1 bit	с -	W 1	' U	switch
Modified devices	■2 2	DPT_PRO_NEWXML.M1_003		Art des Funktion		1 bit	с -	W T	U	up/do
woomed devices	■ 2 3	DPT_PRO_NEWXML.M1_004		Art des Funktion		1 bit	с -	W T	U	up/do
1 Neuer Bereich	■2 4	DPT_PRO_NEWXML.M1_005		Art des Funktion		2 bit	с -	W T	U	switch
1.0.1 IP-Controller	■‡ 5	DPT_PRO_NEWXML.M1_006		Art des Funktion		2 bit	C -	W T	U	switch
1.1 Neue Linie	■2 6	DPT_PRO_NEWXML.M1_007		Art des Funktion		1 bit	C -	W T	U	
H 12 Neue Linie	■2 7	DPT_PRO_NEWXML.M1_008		Art des Funktion		1 bit	с -	W T	U	
12 1 2 News Links	■ ‡ 8	DPT_PRO_NEWXML.M1_009		Art des Funktion		2 bit	C -	W T	U	
In 1.5 Neue Linie	2	DPT_PRO_NEWXML.M1_010		Art des Funktion		2 bit	C -	WT	U	
	■2 10	DPT_PRO_NEWXML.M1_011		Art des Funktion		4 bit	с -	W T	U	dimmi
	2 11	DPT_PRO_NEWXML.M1_012		Art des Funktion		4 bit	с -	W T	U	dimmi
	2 12	DPT_PRO_NEWXML.M1_013		Art des Funktion		4 bit	с -	W T	U	
	■2 13	DPT_PRO_NEWXML.M1_014		Art des Funktion		4 bit	с -	W T	U	
	2 14	DPT_PRO_NEWXML.M1_015		Art des Funktion		1 byte	с -	W T	U	charac
	2 15	DPT_PRO_NEWXML.M1_016		Art des Funktion		1 byte	с -	W T	U	charac
	■2 16	DPT_PRO_NEWXML.M1_017		Art des Funktion		1 byte	с -	WT	U	charac
	2 17	DPT_PRO_NEWXML.M1_018		Art des Funktion		1 byte	с -	W T	U	charac
	2 18	DPT_PRO_NEWXML.M1_019		Art des Funktion		1 byte	с -	W T	U	angle
	■2 19	DPT_PRO_NEWXML.M1_020		Art des Funktion		1 byte	с -	W T	U	angle
	20	DPT_PRO_NEWXML.M1_021		Art des Funktion		1 byte	с -	W T	U	percer
	22 21	DPT_PRO_NEWXML.M1_022		Art des Funktion		1 byte	с -	W T	U	percer
	22	DPT_PRO_NEWXML.M1_023		Art des Funktion		1 byte	с -	wı	U	counte +
	Group Obje	Parameter								

Figure 11: Selecting a Device

2. Go to the "Parameter" tab if necessary.



Transfer Transfer		
ETS Edit Workplace Com	nissioning Diagnostics Extras Window	
Close Project	Kedo 🧮 Reports 📰 Workplace * 🚉 Catalogs 🔣 Diagnostics	
Topology 🔻		• □ × <
🕂 🕂 Add Areas 🛛 🛪 🗙 Delete 🛨	Download 🔻 🥒 Highlight Changes Default Parameters	Search 🔎 📗
Topology 🔹	1.0.1 IP-Controller	
4 🛅 Dynamic Folders		0
hitial devices		ŏ
Modified devices		\$
🔺 🔛 1 Neuer Bereich		
🕨 📒 1.0.1 IP-Controller		
🖻 🙀 1.1 Neue Linie		
🖻 🗄 1.2 Neue Linie		
1.3 Neue Linie		
	Open product specific parameter dialog	
	Group Objects Parameter	
<no interface="" selected=""></no>	1.0.1 IP-Controller	Last used workspace

Figure 12: Opening the "Parameter" Dialog

3. Click the **[Open product specific parameter dialog]** button. The plug-in for the selected device opens.

ETS5"	1.0.1 IP-Controller (IP-Con	troller v1.0)							×
	File View Tools Ontion	Help							_
		778 PE 0						10/0 mm	
🔘 Clos									
Topolog	Network variables							Properties	
Topolot	EIB datatypes			List	t of network variab	es		Network variable	-11
Add A	EIB datawidths	No. CO #	Name	Туре	Send on reset	Read on reset	Timeout Cyc *	Name	
TT Topol	EIB datatypes	☑ 1 0	DPT PRO NEW	DPT	Off	Off			
	Bonn ElS types	✓ 2 1	DPT_PRO_NEW	DPT	Off	Off	· · · E	DPT_PRO_NEWXML.M1_001_FbDPT_Swit	
- 1 <u>-</u> Uy		V 32	DPT_PRO_NEW	DPT	Off	Off		cn_1X	
📔 📔 In		V 4 3	DPT_PRO_NEW	DPT	Off	Off	· · ·		
📄 📂 M		V 5 4	DPT_PRO_NEW	DPT	Off	Off	· ·	Startup behaviour	
4 10 11		6 5	DPT_PRO_NEW	DPT	Off	Off		Send on reset	
· • • •		76	DPT_PRO_NEW	1 bit	Off	Off			
- Þ 🚹 1.		87	DPT_PRO_NEW	1 bit	Off	Off		Read on reset	
Þ 🖬 1.		98	DPT_PRO_NEW	268	Off	Off			
N E I		V 1 9	DPT_PRO_NEW	2 bit	Off	Off		Timing behaviour	
			DPT_PRO_NEW	DPT	0#	01			
i 1.			DPT_PRO_NEW	4 ba	0#	0#		limebase: sec.	
1		1 12	DPT_PRO_NEW	4 68	Off	0#		Cyclic send:	
1		1 14	DPT PRO NEW	DPT	Off	Off			
1		V 1 15	DPT PRO NEW	DPT	Off	Off		Timeout 0 Sec.	
		1 16	DPT PRO NEW	DPT	Off	Off			
		V 1.17	DPT_PRO_NEW	DPT	Off	Off	· · ·		
							•		
	Chackeum: 0vEE02EE02						Assigned group a	drassas: 0.0%	
	Checkadin. OXI T 0211 02						Assigned group a	uureaaca. 0.076	1.41
	Gr	oup Objects	Parameter						
<no int<="" td=""><td>erface selected></td><td></td><td> </td><td>1.0.1 IP-Cor</td><td>ntroller</td><td></td><td></td><td>Last used workspace</td><td></td></no>	erface selected>			1.0.1 IP-Cor	ntroller			Last used workspace	

Figure 13: Plug-ins Window



4.2 Graphical User Interface of the ETS Plug-in

The graphical user interface displays all relevant data applicable to configuring the KNX Module.

The main window is divided into various areas, which are described in the following sections:

	1	2		3							2	1
101	.1.1 TP1 Module (TP1-Mo	dule v0.										
File	View Options Help					_	_					
2	- A A A T	T										M/AGO*
Net	unde unsiehlen										mention	Record during
vet	WORK Variables									ı é	ropenies	
	EIB datatypes			l Lis	tofnetwork	variables					Network variable	·
1	EIB datawidths	No. CO#	Name	Туре	Send	Read	Timcout	Cyclic send	Group addresses		Name	
1	10111 EIB datatypes	V 1 0	FLC_PRG.M2_00	DPT_Switch	On	Off	10 sec.	-	0/0/1			
	mann Elo types	✓ 2 15	PLC_PRG.M2_00	DPT_UpDown	Off	Off	-	+			PLC_PRG.M2_001_Fbt	DPT_Switch
		👿 3 2	PLC_PRG.M2_00	1 bit	Off	Off	÷		0/0/1			
		V 4 18	PLC_PRG.M2_00	DPT_Switch_Control	Off	Off	÷	1.00	=		e	
		V 5 4	PLC_PRG.M2_00	2 bit	Off	Off	÷	1.00	1		Startup benaviour	
		▼ 6 5	PLC_PRG.M2_00	DPT_Control_Dimming	Off	Off			0/0/2		Send on reset	
		7 14	PLC_PRG.M2_00	4 bit	Off	Off	-					
		✓ 8 3	PLC_PRG.M2_00	DPT_Angle	On	Off	÷	1 sec.			Read on reset	
		96	PLC_PRG.M2_00	DPT_Scaling	Off	Off	-	7 min.				
		17	PLC_PRG.M2_01	DPT_Value_1_Ucount	On	Off	3 sec.	· •	0/1/0		Timing behaviour	
		18	PLC_PRG.M2_01	DPT_Value_1_Count	Off	Off	5 C	4 min.				
		V 19	PLC_PRG.M2_01	DPT_Char_ASCII	On	Off	3 min.	1.00			Timebase:	sec. 🔻
		V 1 10	PLC_PRG.M2_01	1 byte	Off	Off	4 sec.	÷				a la cil
		✓ 1 11	PLC_PRG.M2_01	DPT_Value_2_Ucount	Off	Off					Cyclic send:	4 ⊕ sec.
		1 12	PLC_PRG.M2_01	DPT_Value_2_Count	Off	Off	-	-				the local
		V 1. 13	PLC_PRG.M2_01	DPT_Value_Temp	Off	Off	-	-			Timeout	10 🌩 sec.
		1 16	PLC: PRG M2 01	DPT Value Lux	Off III	Off						
Che	www.0vEE02EE02								Assigned group	addi	00000	16%
Cines									Abbigliou group	Guu	00000	
	6										5	
	0										5	

Figure 14: Overview of the ETS Plug-in

Pos.	Description/Section
1	Main Menu
2	Toolbar
3	"Network Variables" tab – List of network variables
4	"Properties" tab
5	Status bar – Percentage bar
6	"Network variables" tab – EIB datatypes

Table 8: Legend for the "Overview of the ETS Plug-in" Figure

This display structure cannot be changed, although the toolbar and the Properties window may be shown or hidden above the View menu item in the main menu. It is also possible to use the mouse to resize the individual window panes to the desired height and width.

4.2.1 Main Menu

The main menu contains the following items, each contains its own submenu items:

- File
- View
- Tools^{*}
- Options
- Help

*only when configuring controllers



.

4.2.1.1 "File" Menu Item

1	.1.1 TP1-Module (TP1-Module v0.9)	
File	View Options	Help	
	Import SYM-XML	. file	1
	Save	Ctrl+S	
	Export	•	
	Import	۱.	Nam
	Print	Ctrl+P	PLC PLC
	Print preview		PLC
	Exit		PLC
		▼ 6 5	PLC
		07 14	PLC

Figure 15: "File" Menu Item

Menu Item	Description
Import SYM-	Imports an SYM_XML file.
XML file	
Save	Saves the settings to the database of the ETS. The basic changes made via the ETS Plug-in are saved in the ETS. The
	menu item is only activated if changes were made.



Menu Item	Description	
Export	The following submenu items enable you to export the	
	current configuration.	
	XML (Backup)	
	Export as XML file (not a SYM_XML file). All settings of	
	WAGO devices (assignment of network variables, their	
	properties, the settings of network variables and the	
	assignment of communication objects to group addresses,	
	etc.) are saved as an XML file. This file is used as a backup	
	or as a template for the ETS Plug-in. When importing this	
	file, the predefined settings are accepted in the devices and	
	replace any existing settings.	
	CSV (editing parameters)	
	Export as CSV file. The exported ASCII text contains a table	
	of the network variables visible in the ETS. The first row is	
	used as the header and contains the property names. Any	
	additional row corresponds to a network variable. The	
	property values (table columns) are separated by semicolons.	
	You can open and edit the exported *.csv file with Excel or a	
	text editor.	
	Note	
	\rightarrow Notes on saving a *.csv file after editing!	
	Excel cannot save any additional information in	
	CSV format, such as cell formats, row heights or	
	column widths. Therefore when saving, confirm	
	the format warning prompt with "Yes" in order to	
	retain the *.csv file format!	

Table 9: "File" Menu Item



Menu Item	Description		
Import	Use the following submenu items to import a configuration.		
	XML (Restore) Import as an XML file. This is not a SYM XML file.		
	CSV Export as a CSV file. The imported .csv file must have been previously exported and, if necessary, edited with Excel or a text editor. This enables you to change group address associations and other properties of network variables. However, name, data type (DPT) and CO number cannot be changed		
	Note		
	 CSV file does not contain a fully specified configuration! Unlike an exported XML file, the CSV file does not contain a fully specified configuration. It is therefore not suitable for: transferring the configuration to a different device reimporting after a manual change of the ETS visibility of variables reimporting after an XML or SYM_XML import. 		
Print	 Prints the current configuration. Two different documentation types can be selected: "Based on group addresses" "Based on network variables". 		
Print preview	Displays the print preview. The same two documentation types can be selected (see "Print" menu item).		
Exit	Closes the Plug-in. If the modifications have not been saved, the software will provide a prompt with the option to save the changes.		

Table 9: "File" Menu Item

4.2.1.1.1 Exporting a Configuration as an XML File (Backup)

- 1. In the main menu choose File > Export > XML (Backup).
- 2. Enter a storage location in the opened dialog.
- 3. Left-click **[Save]** to save the configuration and close the dialog.



Note

Routinely save the configurations!

It is recommended that the configurations are regularly exported to create a backup file.



4.2.1.1.2 Exporting a Configuration as a CSV File



Note

CSV file does not contain a fully specified configuration! Unlike an XML file, the CSV file does not contain a fully specified configuration.

It is therefore not suitable as a backup file.

- 1. In the main menu choose File > Export > CSV.
- 2. Enter a storage location in the opened dialog.
- 3. Left-click [Save] to save the configuration and close the dialog.





Simple editing of group address associations and other properties of network variables!

You can edit the properties of network variables with Excel or a text editor. Many text fields start with an additional blank space in order to prevent accidental automatic Excel conversions.

After editing, be sure to save the file again in *.csv file format.

4.2.1.1.3 Import XML File (Backup Restore)

- 1. In the main menu, choose File > Import > XML (Restore).
- 2. Search for the required XML file in the dialog that opens.
- 3. Left-click **[Open]** to import the configuration file and close the dialog.
- 4. A warning prompt indicates that importing a configuration will overwrite all existing settings and assignments. If you agree, click the **[Yes]** button.



Note

Retain settings via the ETS Import/Export function (XML)! The export or import function (XML) enables you to recover previous settings after a new installation of the ETS, or to load them another PC.



4.2.1.1.4 Importing a CSV File



Note

CSV files do not contain a fully specified configuration!

Unlike an exported XML file, the CSV file does <u>not</u> contain a fully specified configuration. It is therefore not suitable for:

- transferring the configuration to a different device
- reimporting after a manual change of the ETS visibility of variables
- reimporting after an XML or SYM_XML import.
- 1. In the main menu, choose File > Import > CSV.
- 2. In the dialog that opens, search for the CSV file required.
- 3. Left-click **[Open]** to import the file and close the dialog.
- 4. A warning prompt indicates that importing a configuration will overwrite all existing settings and assignments. If you agree, click the **[Yes]** button.

4.2.1.2 "View" Menu Item



Figure 16: "View" Menu Item

Table	10:	"View"	Menu Item	
1 4010	10.	1010	monu nom	

Menu Item	Description	
Show toolbar	When checked, displays the toolbar. The toolbar is otherwise hidden.	
Show properties	When checked, the "Properties" tab is displayed on the right in the window. It is otherwise hidden.	
Show short names	The network variable names are displayed in short form, e.g., "FbDPT_Switch" instead of "PLC_PRG.M2_001_FbDPT_Switch".	

Selecting the Show Short Name option displays the network variable names in abbreviated form — both in the Plug-in window, as well as with the communication objects in the ETS user interface.

The short name omits the following:

- the preceding program name, including the separator
- the prefix for identifying the KNX Module and index of the DPT function block



• the infix (between basic name and suffix) for identification when nesting.

Langform	Short form
<program name="">.<basic name=""></basic></program>	<basic name=""></basic>
<program name="">.KNX<no>_<basic name=""></basic></no></program>	<basic name=""></basic>
<program name="">.M<no1>_<no2><basic name=""></basic></no2></no1></program>	<basic name=""></basic>
<program name="">.M<no1>_<no2><basic name="">[<no3>]</no3></basic></no2></no1></program>	<basic name="">[<no3>]</no3></basic>
<program name="">.M<no1>_<no2><basic name="">.<suffix></suffix></basic></no2></no1></program>	<basic name="">.<suffix></suffix></basic>
<program name="">.M<no1>_<no2><basic name="">. <suffix></suffix></basic></no2></no1></program>	<basic< td=""></basic<>
<no4>]</no4>	name>. <suffix>[<no4>]</no4></suffix>

More information on the syntax of network variable names can be found in the Section "ETS" > ... > "Syntax of Network Variable Names."

4.2.1.3 "Tools" Menu Item

The Tools menu item is only displayed for controller configuration.

1.0.1 IP-Controller (IP-Controller v1.0)		
File View Tools Options Help		
58 🔲 🖨	Start CoDeSys	
Network varia	Web browser	
с пр	detet and	

Figure 17: "Tools" Menu Item

Table 12: "Tools" Menu Item

Menu Item	Description
Start CODESYS	Start the WAGO-I/O-PRO software *)
Web browser	Start the web browser with the Web-based Management (WBM) **)

^{*)} Requirement: Correct path to the .exe file of the software, see Section "Finding the File Path to WAGO-I/O-*PRO*" ^{**)} Requirement: Available connection to the controller.



Note

Configure the IP parameters prior to CODESYS or web access! To start CODESYS or the web browser via ETS, the IP parameters must be set via **Options** > **IP Parameters...** (see Section "Setting IP Parameters").

4.2.1.4 "Options" Menu Item

1.0.1 IP-Controller (IP-Controller v1.0)		
File View Tools	Options Help	
5 🗌 🖨 🖻 1	IP parameters	
Network variables	Options	

Figure 18: "Options" Menu Item - Controller Example



Table 13: "Options" Menu Item	
Menu Item	Description
IP parameters *)	This opens the "IP Controller" dialog to set the IP parameters for the controller. *)
Options	This opens the "Options" dialog to enter settings for functions such as telegram delay and automatic save.

Table 13: "Options" Menu Item

^{*)} only when configuring controllers

The **Options...** menu item opens the "Options" dialog.

The "Options" dialog consists of 3 tabs:

- Parameters
- CODESYS
- Autosave

4.2.1.4.1 Defining the Telegram Delay After Reset

Use the "Parameters" tab to define the telegram delay after a reset.

This is the smallest interval that must be observed between successive telegrams. 0, 50, 100, 250 and 500 milliseconds [ms] can be selected.

Options	
Parameters CoDeSys Autosave	
Telegram delay on reset	0 ms 0 ms 50 ms 100 ms 250 ms 500 ms
ОК	Cancel Accept

Figure 19: "Options" Dialog - "Parameters" Tab

4.2.1.4.2 Finding the File Path to WAGO-I/O-PRO

In the "CODESYS" tab, enter the file path of the .exe file for the WAGO-I/O-*PRO* (CODESYS) software.



Options 💌
Parameters CoDeSys Autosave
Path of CoDeSys application:
C:\Program Files (x86)\3S Software\CoDeSys V2.3\CoDeSy Browse
Calder Accept

Figure 20: "Options" Dialog - "CODESYS" Tab

4.2.1.4.3 Setting the Autosave Function

Use the "Autosave" tab to define automatic save for the current configuration. For this, the Enable automatic save of the configuration checkbox must be checked. Enter a number that defines the save interval in minutes.



Note

"Autosave" function saves changes in the database!

The "Autosave" function is identical to the normal "Save" function and saves changes in the ETS database.

An XML file is not saved (as is the case with **File** > **Export** > **XML** (**Backup**)).

Options	— ×
Parameters CoDeSys Autosave	
Enable automatic save of the configuration	
Save every Z ਦ ਦ minute(s)	
OK Cancel Accept	

Figure 21: "Options" Dialog - "Autosave" Tab



4.2.1.4.4 Setting IP Parameters

The IP Parameters... menu item is only displayed when configuring the controller. This opens the "IP Controller" dialog:

1.0.1 IP-Controller	
KNXnet/IP parameter	
Enable IP parameter settings	
IP address assignment:	manual 💌
IP Address:	192.168.1.111
Subnet mask:	255.255.255.0
Standard gateway:	0.0.0.0
Routing multicast address:	224.0.23.12
MAC address (12:23:34:45:56:67):	00:30:DE:02:60:47
Current IP address of device:	192.168.1.111 Scan IP
	OK Cancel

Figure 22: "IP Controller" Dialog - KNXnet/IP Parameters of the KNX IP Controller

The KNX IP Controller needs an IP address for network integration. Various options for assigning the IP address include "manual," "BootP," "DHCP."

Use the **[Scan IP]** button to search the network for the IP address of the controller specified by the MAC address. If no suitable device is found for the MAC address, the device is marked accordingly. An automatic search is also performed for the device after opening the parameters dialog.



Note

Specify the MAC address in the IP parameters dialog!

The MAC address of the KNX IP Controller must be specified in the MAC address field. The address is located on the back of the controller and on a self-adhesive, tear-off label on the side of the controller.

4.2.1.5 "Help" Menu Item

□ 1.1.1 IP-Controller (IP-Controller v1.0)					
File View Tools Options Help					
🎜 🗌 🎒 💣 🄊 IP 🚦	About				
Network variables					





Table 14: "Help" Menu Item	
Menu Item	Description
About	Displays information about the ETS Plug-in.

4.2.2 Toolbar

The toolbar provides fast and convenient access to frequently used functions of the main menu.

5	9	P	Þ	IP	ø	3
---	---	---	---	----	---	---

Figure 24: Toolbar

Table 15: Tool	lbar
Button	Action
	Imports an SYM_XML file, similar to selection of the SYM_XML file.
I	Saves the settings to the ETS. The SYM_XML file is not changed.
	Prints the current configuration.
	Shows or hides the "Properties" tab.
P	Opens the "Options" dialog.
IP	Opens the "IP Parameters" dialog. *)
2	Exports the current configuration as an XML file (not a SYM_XML file).
₹.	Imports a configuration as an XML file (not a SYM XML file).

^{*)} only when configuring controllers

4.2.3 "Network Variables" Tab – List of Network Variables

A "List of network variables" is located in the middle of the "Network Variables" tab. This lists all the network variables available that you can associate with group addresses from the ETS. These network variables each have a specific data point type by which they can be filtered (see Section "Network Variables' Tab – Datatypes").



Note

Observe naming conventions of network variables!

Observe the syntax conventions for network variable names, which are described in detail in the Section "ETS" > ... > "Syntax of Network Variable Names."

The following properties are listed in the "List of Network Variables" table:



Table Column	Value	Description
		Checkbox for enabling or disabling
		visibility in the ETS.
No.	(Table row number)	Consecutive number of the table rows.
CO #	(Communication	Communication object number in the ETS'
	object number)	topology. The communication object
		number is assigned automatically.
Name	(Network variable	The network variable name is taken from
	name)	WAGO-I/O-PRO (CODESYS) and is
		preceded by the "program name." With
		the appropriate setting in the "View" menu
		display of the program name is disabled
Type	(Data point type	Data point type name. If the data point has
турс	name or if without	no type its data width is shown
	type amount $+$ unit	
	of data width)	
Send on reset	On/Off	If the controller is reset, this variable
		automatically sends the current value on
		the bus or not.
		This function can be used to initialize the
		specific group object.
Read on reset	On/Off	If the controller is reset, this variable
		automatically reads the current value from
		This function can be used to initialize the
		associated function block
Timeout	(amount + unit)	The data point has a watchdog and expects
Timeout	(uniouni + unit)	an update within the specified time.
Cvclic send	(amount + unit)	Time interval for repetitive cyclic send
	()	operation.
Group	(x/x/x)	Assigned KNX group addresses.
addresses		A data point can be associated with
		several group addresses, maximum 253
		group addresses/assignments. Data points
		and group addresses are associated in the
		topology window of the ETS.

Table 16: List of Network Variables

Checkbox for Visibility in the ETS

The checkbox at the beginning of the line for each list entry defines whether the corresponding network variable in the ETS is visible as a communication object and appears in the topology list.

Some of the current properties/values of the network variables, e.g., "Read on reset," can be edited in the area of the "Properties" tab (see Section "Properties' Tab").





Note

Multiple selection is supported!

In order to change the properties of several network variables at the same time, you can mark several lines in the "List of network variables" simultaneously. The changes that you make in the "Properties" tab then apply to all network variables marked in the list.

4.2.4 "Network Variables" Tab – EIB Datatypes

The "Network Variables" tab contains the "EIB datatypes" in the left-hand area of the user interface. The tree structure displayed enables you to filter the "List of network variables" by EIB datawidth, EIB datatypes or EIS types.

The EIB and EIS types represent the available data point types in the ETS. The "List of network variables" only shows those network variables that correspond to the data type you have selected.

The "EIB datawidths" tree node enables you to filter the network variables independently by datawidth rather than the actual data type. This enables you to also list the new datawidths without a type.

Network variables						
EIB datatypes				Listofnetw	vork variables	
EIB datatypes	*	No.	CO #	Name	Туре	Send
±1		V 1	0	PLC_PRG.M1_00	DPT_Value_Temp	Off
	=					
⊞						
⊡010 10.000	-	•				+

Figure 25: Selection of EIB Datatype 9 xxx, Corresponds to DPT_Value_Temp



1	Network variables						
	EIB datat	ypes			Listofnetw	ork variables	
	EIS types	•	No.	CO #	Name	Туре	Send
	10110 EIS 1		1	0	PLC PDC M1 00	DPT Value Temp	0#
	10110 EIS 2			U	FLC_FRG.MI1_00	DF1_value_temp	Oli
	10110 EIS 3						
	10110 EIS 4	E					
	10110 EIS 5						
	10110 EIS 6						
	10110 EIS 7						
	10110 EIS 8						
	10110 EIS 9						
	10110 EIS 1	0.000 👻	< -				4



Network variables						
EIB dataty	/pes	List of network variables				
EIB datawi	idths 🔺	No.	CO #	Name	Туре	Send
10110 1 bit		V 1	0	PLC_PRG.M1_00	DPT_Value_Temp	Off
10110 3 bit	=					
10110 4 bit 10110 5 bit						
10110 6 bit						
10110 2 byte						
10110 3 byte	-	•				÷.

Figure 27: Selection of EIB Datawidth 2 Byte, also Contains DPT_Value_Temp



Note

Only one attribute (data type/datawidth) can be used as a filter! Only one attribute can be entered as a filter. Multiple selection in the EIB datatype window is not possible.



4.2.5 "Properties" Tab

Properties							
 Network variable Name 							
PLC_PRG.M2_001_FbDPT_Switch							
Startup behaviour							
Send on reset							
🔲 Read on reset							
Timing behaviour							
Timebase:	sec. •						
📄 Cyclic send:	4 <u>*</u> sec.						
V Timeout	10 <u></u> sec.						

Figure 28: "Properties" Tab

The "Properties" tab displays the properties of selected network variables. You can read or write properties here. The settings made are immediately updated in the "List of Network Variables" table.



Designation	Explanation	Read / Write
Name	Description of the selected network variable. If several network variables are selected: empty	R
	Startup behavior	
Send on reset checkbox	If the checkbox is checked, values are updated after a device reset. The values are updated with a voltage reset, the reset of the node from the ETS and a software reset of the IEC application.	RW
Read on reset checkbox	If the checkbox is checked, the device reads the current value from the bus after a device reset.	RW
	Timing behavior	
Timebase	Conversion of the timebase to seconds [sec.] or minutes [min.]. Only enabled if the Cyclic send or Timeout checkbox is selected	R/RW
Cyclic send checkbox	If the checkbox is checked, the device sends its value to the bus with the defined interval.	R/RW
Timeout checkbox	If the checkbox is checked and the telegram is not updated within the specified time, the device indicates a timeout on the corresponding FbDPT function block in the PLC. The data point has a watchdog and expects a program update within the specified time.	R/RW

		0.3.7. 1	
Table 17: Pr	operties o	of Network	Variables

If you have made multiple selections in the "List of network variables," the properties of all selected network variables can be updated simultaneously. Checkboxes in which the selected network variables are different are marked in blue (see figure "Multiple Selection for Editing Network Variables").



							Properties
			Listofn	etwork variables			Network variable
No		CO #	Name	Туре	Send	Rea	▲ Name
V	1	0	PLC_PRG.M2_00	DPT_Switch	On	Off	
	2		PLC_PRG.M2_00	DPT_UpDown	Off	Off	
	3		PLC_PRG.M2_00	1 bit	Off	Off	
	4		PLC_PRG.M2_00	DPT_Switch_Control	Off	Off	
	5		PLC_PRG.M2_00	2 bit	Off	Off	Startup behaviour
1	6		PLC_PRG.M2_00	DPT_Control_Dimming	Off	Off	Sand on reast
1			PLC_PRG.M2_00	4 bit	Off	Off	Jend on reset
1			PLC_PRG.M2_00	DPT_Angle	On	Off	Read on reset
1			PLC_PRG.M2_00	DPT_Scaling	Off	Off	
1			PLC_PRG.M2_01	DPT_Value_1_Ucount	On	Off	Timing behaviour
1			PLC_PRG.M2_01	DPT_Value_1_Count	Off	Off	
1	1.	9	PLC_PRG.M2_01	DPT_Char_ASCII	On	Off	Timebase:
1	1.	10	PLC_PRG.M2_01	1 byte	Off	Off	
1	1.	11	PLC_PRG.M2_01	DPT_Value_2_Ucount	Off	Off	Cyclic send:
1	1.	12	PLC_PRG.M2_01	DPT_Value_2_Count	Off	Off	
1	1.	13	PLC_PRG.M2_01	DPT_Value_Temp	Off	Off	Timeout
V	1.	16	PLC_PRG.M2_01	DPT_Value_Lux	Off	Off	
V	1.	17	PLC_PRG.M2_01	DPT_Value_AirQuality	Off	Off	T
1			111			•	

Figure 29: Multiple Selection for Editing Network Variables

4.2.6 Status Bar

The "Assigned group addresses" percentage bar is shown on the right of the status bar. This indicates the relative usage of the ETS Plug-in based on the following limits:

- **253 communication objects** for the configuration of controller and modules
- **254 group addresses** for the configuration of controller and modules
- **254 associations** for the configuration of controller and modules.

Usage is stated as a percentage of the specified capacity. It is displayed as a green bar.



Figure 30: "Assigned Group Addresses" Percentage Bar (Example)

Example:

The system is at full capacity when there are 253 communication objects or 254 group addresses or 254 associations present.

If two communication objects with 127 group addresses each are connected, this makes 254 associations. The system is then at full capacity.

No further assignments are possible with 100 % rate of usage.



4.3 Importing a Symbol File in the ETS Plug-in

Specific configurations are required to operate the KNX Module and the KNX IP Controller. The WAGO-I/O-*PRO* software generates these configurations and exports them to an "SYM_XML" icon file.

In the Plug-in window:

- 1. Click **[File]** in the main menu of the plug-in user interface.
- 2. Select the Import SYM-XML file... menu item.

1	.1.1 TP1-Module (TP1-Module v0.9)	
File	View Options	Help	_
	Import SYM-XML	file	1
	Save	Ctrl+S	
	Export	•	
	Import	•	Nam
	Print Print preview Exit	Ctrl+P	PLC PLC PLC PLC
		▼ 6 5	PLC
		7 14	PLC

Figure 31: "Import SYM-XML File..." Menu Item

3. In the "Select SYM-XML file for this device" window, select a SYM_XML file containing the specific configuration of the KNX Module or KNX IP Controller.

Select SYM-XML file for thi	s device	X
SYM-XML file		Browse
Update existing config overwritten by the new	uration from SYM-Xml file (otherwise the cur SYM-XML file)	rent configuration is
Settings Module index:		
	Update Cancel	

Figure 32: "Select SYM-XML File for this Device" Dialog

A checkbox is provided below the entry field for the source file.

• If the box is unchecked, the device configuration is overwritten with the data in the SYM_XML file.



• If it is checked, the current device configuration is synchronized with the settings specified in the SYM_XML file.

If a node contains several KNX Modules, the DPTs of all bus modules are contained in the SYM_XML file. In this case, proceed as follows:

- 4. In the **Module index** selection field ("Settings" area), select the KNX Module number for the DPTs to be imported.
- 5. Click [Update] to start the synchronization.



Note

Observe the index counting method and designation!

If a second KNX Module of this type is used on a KNX IP Controller (750-889), it will operate in device mode. The first KNX Module is automatically set to router mode. Although the first KNX Module cannot be accessed via the IEC application, the second KNX Module is addressed via index 2 (see also the manual of the KNX IP 750-889 Controller).

The selected module index influences the naming of the network variables (see Section "Network Variables").



Note

Configure KNX Modules individually!

Several KNX Modules cannot be configured at the same time.



4.4 Associating Network Variables and Group Addresses

The basic task of the ETS software is visualizing the associations of network variables of the KNX Module or KNX IP Controller with group addresses in the ETS and enabling them to be edited.

4.4.1 Creating Associations

Associations between communication objects and group addresses are created using "drag & drop" in the ETS.

1. Click and hold on the required network variable from the **Topology** view and drag it to the required group address in the **Group Addresses** view.

ETSS - TestPrjDoku												0	
ETS Edit Workplace Com	missioning D	hagnostics (xtras Window										
🕲 Close Project 🥜 Undo	A Redo	Reports	Workplace	e * 🚺 Catalog	Diagnostics								
Topology 🔻					<u></u>							^ 🗆	×
🕨 Add Areas 🔹 🗙 Delete 🔮	Download *	1 Info *	🖸 Reset 🖗 Ur	nload *				Se	arch				Q
Topology ·	Number	Name		Object Function	Description	Group Ad	idres Lengt	h C	R	w	т	U Data Type	Pri
Dynamic Folders	■ \$ 0	DPT_PRO_NE	WXML.M1_001		Art des Funktion		1 bit	С	-	WT	r u	switch	Lov
11 Neuer Bereich	1	DPT_PRO_N	WXMLM1_002		Art des Funktion		1 bit			W 1	r u	switch	Lov
I 0 1 ID Controller	1	DPT_PRO_N	WXML.M1_003	a 10 10	Art des Funktion		1 bit	С	•	WT	U	up/down	Lov
10.1 P*Controller	■‡ 3	DPT_PRO_N	WXMLM1_004		Art des Funktion		1 bit	С		WT	r u	up/down	Lov
1.1 Neue Linie	#‡ 4	DPT_PRO_NE	WXMLM1_005	. /	Art des Funktion		2 bit	С	-	WT	U	switch con.	Lov
▲ 🗄 1.2 Neue Linie	■ ‡ 5	DPT_PRO_NE	WXML.M1_006	. /	Art des Funktion		2 bit	С	-	W T	r u	switch con.	Lov
1.2.0 IP-Router	■‡ 6	DPT_PRO_NE	WXML.M1_007	. /	Art des Funktion		1 bit	C		WT	U		Lov
1.2.1 TP1-Module	■27	DPT_PRO_NE	WXML.M1_008		Art des Funktion		1 bit	С	•	WT	U		Lov
1 1 3 Neue Linie	-*10	DOT DOO NO	MANANI 141 000		Art das Evolution		7 hit	^		147 1			1
and these same	Group Obje	cts Para	meter										
Group Addresses *												^ □	×
🕂 Add Group Addresses 📼 🗙	Delete 👲 De	ownload *	Info - Ne	set 🖗 Unload *				Se	arch				ρ
Group Addresses	Address	•	Name		Description	Centra F	ass T Data	Тур	e Le	ngth		No. of L	ast Val
Dynamic Folders	88 0/0/1	L	icht			No N	o switch	1				0	
R 0 Neue Hauntoninne	88 0/0/2	T	emperatur			No N	0					0	
DO OTO New Minder	-	/											
A Ba U/U Neue Mittelgruppe													
88 0/0/1 Licht		12.3											
88 0/0/2 Temperatur	I Link with	0/0/1 Licht											
8 0/1 Neue Mittelgruppe													
B 0/2 Neue Mittelgruppe													
RR 1 Neue Hauptgruppe													
PQ 2 Neue Hausterunge	Group Addr	esses											
con interface calected >			0/0 New	a Mittelonunne	1- DPT PR	O NEWXML	M1 002 FbD8	T Su	inch	Last	used	worksnace	

Figure 33: Creating an Association Using "Drag & Drop"

Invalid association attempts are detected and indicated.



Note

Associated network variable sets the type for further associations! If a group address is associated with a network variable, only additional variables of the same type can be associated with the relevant group address.

Alternatively, you can also create the association via the context menu of the relevant communication object:

- 1. Right-click the communication object to open the context menu.
- 2. In the context menu, select Link with....



ETSS™ - TestPrjDoku														+c	
ETS Edit Workplace Con	nmissioning D	Diagnostics E	xtras Window												
👩 Close Project 🦨 Undo	A Redo	Reports	Workplac	e 🔹 🚺 Catalogs	Dia Dia	gnos	tics								
Topology -														^ ⊏	×
🛉 Add Areas 🔹 🗶 Delete 🚽	Download •	1 Info *	🖸 Reset 🐇 Un	load *				1	Se	arch	1				Q
Topology	Number	Name		Object Function	Descript	tion	Group Addre	Length	c	R	w	т	U	Data Type	e Pri
Dynamic Folders		DPT_PRO_NE	WXML.M1_001		Art des Fi	unkti	ion	1 bit	с		W	т	U	switch	Lov *
1 Neuer Bereich	1	DPT_PRO_NE	WXML.M1_002	•	Art des Fi	unkti	ion 0/0/1	1 bit	с	-	W	т	U	switch	Lov
101 IP-Controller	■‡ 2	DPT_PRO_NE	WXML.M1_003		Art des F	unkti	ion	1 bit	с	•	W	Т	U	up/down	Lov
	#‡ 3	DPT_PRO_NE	WXML.M1_004		Art des Fi	unkti	ion	1 bit	С		W	Т	U	up/down	Lov
LI Neue Linie	1	DPT_PRO_NE	WXML.M1_005		Art des Fi	unkti	ion	2 bit	c	•	W	T	U	switch con	Lov
▲ E 1.2 Neue Linie	*	DPT_PRO_NE	WXML.M1_006		Art des F		Onen	114	-	_	147	T	U	switch con	lov
1.2.0 IP-Router	1 7 6	DPT_PRO_NE	WXML.M1_007		Art des F		open					I	U		Lov
1.2.1 TP1-Module		DPT_PRO_NE	WXML.M1_008	•	Art des F		Download					1	0		Lov
a 1.3 Neue Linie					ALC RAFE		Link with					Ŀ			
	Group Obje	cts Parar	meter			×	Delete	Del							
Group Addresses *						×	Cut	Ctrl	+ X					^ □	\times
🕂 Add Group Addresses 🔹 🗙	Delete 👲 De	ownload *	Info 🔹 👩 Re	set 🤌 Unload 🕶		0	Сору	Ctrl	+ 0						P
Group Addresses •	Object *		Devi	ce	Sendi	0	Paste							Progra	m
Dynamic Folders	1: DPT_PR	O_NEWXML.M	1_002_Fb 1.2.1	TP1-Module	s	-	Paste Special	Special Ctrl + V			ale TP1-Mo			dule	
8 0 Neue Hauptgruppe						-	Paste Extended								
4 28 0/0 Neue Mitteloruppe							Properties	Alt -	+ En	nter					
20/0/1 Licht															
8 0/0/2 Temperatur															
PR 0/1 News Mitteles															
BB ort iveve Mitteigruppe															
58 0/2 Neue Mittelgruppe															
1 Neue Hauptgruppe	Accoriation	11/6													
2 Naue Hauntaninne	· masociacioni														

Figure 34: Object Context Menu

The "Link With Group Address" dialog opens:

	ĸ
Link With Group Address	
1.2.1 TD1-Module	
Object: 5: DPT_PRO_NEWXML.M1_006_FbDPT_Switch_Control_RX -	
• • • • • • • • • •	
Existing New	_
Group Address	
1/0/2	
OK Cano	el

Figure 35: "Link With Group Address" Dialog

3. To go to a list with available group addresses, click the [...] button.



					×
ink With Gr.	oup Ado	dress			
.2.1 TP1-Module	2				
Object: 5: DPT_PF	RO_NEWXM	L.M1_006_FbD	PT_Switch_Control_F	RX -	
			Caarab		0
			Search		P
Group Address	Name	Description			
0/0/2	Temperatu	r			
1/2/0	Beispiel 1				
1/2/1	Beispiel 2				
					_
				OK	Canc

Figure 36: Drop-down List with Group Addresses

- 4. Select a target group address and click **[OK]** to confirm. The connection is established and the drop-down list is closed.
- 5. Alternatively, you can create a new group address under the "New" tab directly that is immediately associated with the network variable. Click **[OK]** to confirm.

The syntax of the address entered is monitored. If you make an invalid entry, the input field is outlined in red and no **[OK]** button appears:



ok With	Group Addross
IK VVIUI	Group Address
.1 TP1-Mo	dule
ject: 5: DP	T_PRO_NEWXML.M1_006_FbDPT_Switch_Control_R
Existing	New
Group Ac	Idress
One	
Name	
Name	
Name Test	
Name Test	
Name Test	
Name Test	

Figure 37: Example of Signaling an Incorrect Entry

6. When you have entered a correct group address (*x/x/x*) and name (*free form text*), the **[OK]** button appears. Clicking the button confirms the group address you created and the window closes:

	×
Link With (Group Address
1.2.1 TP1-Mod Object: 5: DPT	ile PRO_NEWXML.M1_006_FbDPT_Switch_Control_RX -
Existing	New
Group Add	ress
2/1/1	
Name	
Test	
	OK Cancel

Figure 38: "New" Tab

4.4.2 Deleting Associations

1. To remove a network variable/group address association, click an object in the **Group Addresses** view. A context menu appears.



Group Addresses									Search	+
	Object *	Device	Sending	Data Type	с	R	W T	U	Product	Program
Dynamic Folders Si 0 Neue Hauptgruppe Si 0/0 Neue Mittelgruppe O/0 Neue Mittelgruppe O/0/1 Licht	Z1: DPT_PRO_NEWXMLAsto	Download Unlink Set Sending	S	switch	C	- 1	WΤ	U	TP1-Module	TP1-Module
0/0/2 Temperatur 0/1 Neue Mittelgruppe 0/2 Neue Mittelgruppe 0/2 Neue Mittelgruppe 21 Neue Hauptgruppe	·									

Figure 39: Object Context Menu

2. Clicking the **Unlink** menu item removes the connection between the communications object and the group address.



5 Parameterization of the KNXnet/IP-Router in ETS5

The first KNX Module behind a KNX IP Controller (and possibly behind other non-KNX Modules) extends the function of the KNX IP Controller to a KNXnet/IP Router. Any subsequent KNX modules operate in device mode. The KNXnet/IP Router routes telegrams from IP to a twisted-pair cable and vice versa.

The following section describes the steps for using the KNXnet/IP router within the ETS.

5.1 "IP-Router" Dialog

Proceed as follows to parameterize the KNXnet/IP Router:

1. Select the IP router in the ETS **Topology** view.



Figure 40: Selecting the IP-Router

- 2. Switch from the "**Group Objects**" tab to the "**Parameter**" tab to display the device settings.
- 3. Click [+] before **Device Settings** to expand the submenu points.
 - Extended Settings
 - IP -> TP
 - TP -> IP



Cober Project Ondo Redo Topology Add Areas X Delete Download Topology 1.2.0 IP-1 Dynamic Folders - Device Modified devices Extent 11 Néwel Streich IP - 3 12 Neuer Streich IP - 3 12 Neuer Streich IP - 3 12 Neuer Streich IP - 3	Highlight Changes Router > Device Settin se Settings	Default Parameters rgs > Extended Settings Device name:	Search	
Add Areas X Delete Download Topology C Dynamic Folders D Initial devices I 10.01P-Controller D I 11.Neve Linie I 12 Neve Linie I 12 Neve Linie D I 12 Neve	 Ø Highlight Changes Router > Device Settir e Settings inded Settings 	Default Parameters pgs > Extended Settings Device name:	Search	
Image: Note of the sector Extension Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector Image: Note of the sector <th>nded Settings</th> <th></th> <th></th> <th></th>	nded Settings			
L 1.2.0 IP-Router ▶ 1 1.2.1 TP1-Module L 1.3 Neue Linie	> TP > IP	Voltage monitor: Routing multicast address: Remarks: This settings become requin Project number (0-4095): Installation number (0-15):	 locked unlocked 239.0.23.12 ed, if the project contains more than one router 111 15 	devicel
Group Ob	jects Parameter	c		

Figure 41: "Parameter" Tab

5.2 Operation

The software has the basic task of setting up the KNXnet/IP Router and adapting its IP parameters to the network.

5.2.1 Extended Settings

You can view and set general data such as the device name, project number and installation number in the **Extended Settings** menu item.

IP-Router > Device Set	tings > Extended Settings	
Device Settings	Device name:	
Extended Settings	Voltage monitor:	O locked O unlocked
IP -> TP	Routing multicast address:	2240.23.12
TP -> IP		
	Remarks: This settings become requ	ured, if the project contains more than one router device!
	Project number (0-4095):	0
	Installation number (0-15):	0



 Table 18: "Extended Settings" Menu Item of the KNXnet/IP Router

Parameter	Description
Device name	Freely selectable device name with a maximum of 30
	characters to identify the device in the ETS.



Table 18: "Extended	Settings"	Menu Item of the KNXnet/IP Router

Parameter	Description			
Voltage monitor	Response of the device to a bus power failure:			
	"locked":	Power failure and restoration are not reported.		
	"unlocked":	Failure and restoration of power on the		
		bus line are reported by KNXnet/IP		
		(default).		
Routing multicast	IP address for	KNXnet/IP routing:		
address	address reserved for KNXnet/IP: 224.0.23.12			
	general address: 239.0.0.0 239.255.255.255			
	valid address range: 224.0.0.0.0239.255.255.255			
Project number *)	Setting the Project number			
	(value range 0	4096)		
Installation number *)	Setting the ins	stallation number		
	(value range 0	15)		

*) These settings are only required if the project contains more than one router



Note

Bus power failure and return are reported via KNX!

If a power failure is detected on the bus line, the error is output as a KNXnet/IP telegram. Power restoration is also indicated via KNXnet/IP. Exception: Bus power failure and return are <u>not</u> reported if you select the

"locked" option for Voltage monitor.



Note

Ensure uniqueness of physical addresses!

The physical address (tunneling address) is not managed by the ETS. For this reason, the ETS cannot prevent a double assignment of the same physical address and it is recommended that an address in the upper value range is used (e.g., 1.1.254).



Note

Assign value "0" to project and installation numbers!

The project and installation numbers are used for the compatibility of future ETS developments and should have the value "0" for current ETS projects.



Note

Watch for different project numbers! The project number in the "Extended Device Parameters" dialog is <u>not</u> identical to the project number assigned in the ETS.





Note

Incorrect entries will not be saved!

Incorrect entries are not saved in the system!



Note

IP Parameter Settings

The controller plug-in can be used to set the IP parameters from the ETS (IP Addr., Subnet, etc.), see section *"KNX/EIB/TP1 Module / Controller KNX IP Parameterization"* > ... > *"Setting IP Parameters"*!

5.2.2 IP -> TP

In the **IP** -> **TP** menu item, set the parameters for filtering and confirmation of telegrams transmitted from the IP medium to twisted pair (TP).

Device Settings	Individual addressed and broadcast	Ch D	
	telegrams:	filter (normal)	
Extended Settings			
IP -> TP	Group telegrams of main groups 0 to 13:	filter (normal)	
TP -> IP	Group telegrams of main groups 14 to 31:	route (normal)	-

Figure 43: IP -> TP

5.2.2.1 Individual Addressed and Broadcast Telegrams

In this selection box, you set the filtering of physically addressed and broadcast telegrams:

- route: All telegrams are routed.
- lock: No telegram is routed.
- filter (normal): Filtering is performed according to the filter table.

5.2.2.2 Group Telegrams of Main Groups 0 to 13

In this selection box, you set the filtering of telegrams for the main groups 0 to 13:

- route: All telegrams are routed.
- lock: No telegram is routed.
- filter (normal): Filtering is performed according to the filter table.

5.2.2.3 Group Telegrams of Main Groups 14 to 31

In this selection box, you set the filtering of telegrams for the main groups 14 to 31:

• route (normal): All telegrams are routed.



•	lock:	No telegram is routed.
•	filter:	Filtering is performed according to the filter table.

5.2.3 TP -> IP

In the **IP** -> **TP** menu item, set the parameters for filtering and confirmation of telegrams transmitted from the twisted pair (TP) to the IP medium

Device Settings	Acknowledge of Group oriented telegrams:	all only when routed	
Extended Settings IP -> TP	Individual addressed and broadcast telegrams:	filter (normal)	•
TP -> IP	Group telegrams of main groups 0 to 13:	filter (normal)	•
	Group telegrams of main groups 14 to 31:	route (normal)	-

Figure 44: TP -> IP

5.2.3.1 Acknowledge of Group Oriented Telegrams

This selection box sets how telegrams for group-oriented telegrams are confirmed:

- all: All telegrams are confirmed.
- only when routed: All routed telegrams are confirmed.

5.2.3.2 Individual Addressed and Broadcast Telegrams

This selection box sets filtering for the physically addressed telegrams and broadcast telegrams:

- route: All telegrams are routed.
- lock: No telegram is routed.
- filter (normal): Filtering is performed according to the filter table.

5.2.3.3 Group Telegrams of Main Groups 0 to 13

In this selection box, you set the filtering of telegrams for the main groups 0 to 13:

- route: All telegrams are routed.
- lock: No telegram is routed.
- filter (normal): Filtering is performed according to the filter table.

5.2.3.4 Group Telegrams of Main Groups 14 to 31

In this selection box, you set the filtering of telegrams for the main groups 14 to 31:

- route (normal): All telegrams are routed.
- lock: No telegram is routed.
- filter: Filtering is performed according to the filter table.



6 Uninstalling the ETS Plug-in

Proceed as follows to remove the software from your system.

For controller:

- 1. On your PC, open the Control Panel and click "Programs," **[Uninstall a program]**. The entry "Wago-IEC61131Controller-IpRouter" is shown in the software list.
- 2. Right-click the required entry and choose [Uninstall] in the context menu.

For modules:

- 1. On your PC, open the Control Panel and click "Programs," [Uninstall a program]. The entry "Wago-TP1Clamp" is shown in the software list.
- 2. Right-click the required entry and choose [Uninstall] in the context menu.



List of Figures

Figure 1: "Bus" Tab	12
Figure 2: Importing Products	15
Figure 3: Importing Products – Select File Path	15
Figure 4: Progress Display – Analysis	16
Figure 5: Selecting the Product Language	16
Figure 6: Progress Display – Conversion	17
Figure 7: Progress Display – Completion	17
Figure 8: Product Catalog (Extract)	18
Figure 9: Selecting a Project (Extract)	18
Figure 10: Project in the ETS – Topology View (Extract)	19
Figure 11: Selecting a Device	20
Figure 12: Opening the "Parameter" Dialog	21
Figure 13: Plug-ins Window	21
Figure 14: Overview of the ETS Plug-in	22
Figure 15: "File" Menu Item	23
Figure 16: "View" Menu Item	27
Figure 17: "Tools" Menu Item	28
Figure 18: "Options" Menu Item – Controller Example	28
Figure 19: "Options" Dialog – "Parameters" Tab	29
Figure 20: "Options" Dialog – "CODESYS" Tab	30
Figure 21: "Options" Dialog – "Autosave" Tab	30
Figure 22: "IP Controller" Dialog – KNXnet/IP Parameters of the KNX IP	
Controller	31
Figure 23: "Help" Menu Item	31
Figure 24: Toolbar	32
Figure 25: Selection of EIB Datatype 9 xxx, Corresponds to DPT Value Temp	34
Figure 26: Selection of EIS Type EIS 5, Corresponds to DPT Value Temp	35
Figure 27: Selection of EIB Datawidth 2 Byte, also Contains DPT Value	
Temp	35
Figure 28: "Properties" Tab	36
Figure 29: Multiple Selection for Editing Network Variables	38
Figure 30: "Assigned Group Addresses" Percentage Bar (Example)	38
Figure 31: "Import SYM-XML File" Menu Item	39
Figure 32: "Select SYM-XML File for this Device" Dialog	39
Figure 33: Creating an Association Using "Drag & Drop"	41
Figure 34: Object Context Menu	42
Figure 35: "Link With Group Address" Dialog	42
Figure 36: Drop-down List with Group Addresses	43
Figure 37: Example of Signaling an Incorrect Entry	44
Figure 38: "New" Tab	44
Figure 39: Object Context Menu	45
Figure 40: Selecting the IP-Router	46
Figure 41: "Parameter" Tab	47
Figure 42: Extended Settings	47
Figure 43: IP -> TP	49
Figure 44: TP -> IP	50
	-



List of Tables

Table 1: Number Notation	8
Table 2: Font Conventions	
Table 3: ETS System Requirement	10
Table 4: Syntax for Simple Variable	13
Table 5: Syntax for Array Variable	14
Table 6: Syntax for Nested Variables	14
Table 7: Syntax for Nested Variables	14
Table 8: Legend for the "Overview of the ETS Plug-in" Figure	22
Table 9: "File" Menu Item	23
Table 10: "View" Menu Item	27
Table 11: Structure of the Network Variable Name - Long/Short Form	
Table 12: "Tools" Menu Item	
Table 13: "Options" Menu Item	
Table 14: "Help" Menu Item	32
Table 15: Toolbar	32
Table 16: List of Network Variables	33
Table 17: Properties of Network Variables	37
Table 18: "Extended Settings" Menu Item of the KNXnet/IP Router	47



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