1m. Configuring the Network

RSLinx Classic for Rockwell Automation Networks and Devices is a comprehensive factory communications solution for use with Microsoft Windows operating systems. It is mainly used to configure network parameters, DDEOPC servers and to program and communicate with PLC controllers. Th RSLinx Classic cooperates with all Rockwell Automation programming and configuration applications such as RSLogix, RSNetWorx, RSView32 (HMI), FactoryTalk View SE, and FactoryTalk View ME Station. It's also possible to build your own data monitoring and acquisition applications using third party applications: MATLAB/Simulink, LabView, Microsoft Office etc. RSLinx Classic also incorporates advanced data optimization techniques and contains a set of diagnostics.

This section outlines the main tasks you will need to configure and test the Ethernet/IP network using the RSLinx Classic software. Table 1m.1 contains the information necessary to correctly configure the network nodes.

	CompactLogix L35E	1734-AENT	PanelView Plus 600	PowerFlex40	WAGO 750- 341
IP Address	192.168.1.1	192.168.1.2	192.168.1.3	192.168.1.5	192.168.1.182
Subnet Mask	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0	255.255.255.0
Gateway IP Address	none	none	none	none	none

Table 1m.1. Ethernet/IP parameters of the laboratory setup modules

The first step is to configure a driver. A driver is the software interface to the hardware device that will be used to communicate between RSLinx Classic and PLC controller (processor). To configure a driver, run the RSLinx Classic software and click the **Run** button. The RSLinx Classic application main window appears. Next click the **Communications > Configure Drivers** option in the main menu. The Configure Drivers dialog box appears, which is used for adding, editing, or deleting drivers. Choose an **Ethernet/IP Driver** from the pop-up menu and next click **Add New...**, and complete the information required in the driver configuration dialog box that is shown in Fig. 1m.1.

Configure Drivers	?×
Available Driver Types: Ethernet/IP Driver Add New	Close Help
Configured Drivers: Name and Des CoNet-Etherne Choose a name for the new driver. (15 characters maximum) CoNet-Ethernet	Configure Startup Start
	Stop Delete

Fig. 1m.1. The Configure Drivers main window

Now the RSWho option can be activated to discover and check the existing Ethernet/IP network. RSWho displays networks and devices in a style similar to Windows Explorer. A variety of integrated configuration and monitoring tools are accessible from the right mouse button. The left pane of RSWho is the tree control, which shows networks and devices. The right pane is the list control, which shows all members of a collection. A collection is a network, or a device that is a bridge. The RSWho browses a network to check the status of each node. If the icon marked by picture **E** is animated, the network is being browsed. Network browsing can be done in automatic (**Autobrowse** checkbox is enabled) or manual mode (**Autobrowse** is cleared, the **Refresh** button is active). The RSWho's main window for a developed Ethernet/IP network is presented in Fig. 1m.2.

NB!!! A device that appears with a red X indicates that RSWho previously recognized this device, but now it cannot. The red X indicates a communication status error, such as unplugging a recognized device. These devices can be removed from the RSWho display by right-clicking the device and clicking Remove.



Fig. 1m.2. The RSWho main window

1m.1 Creating a new project and configuring the Ethernet/IP nodes in RSLogix5000

This section focuses on creating a new project and configuring the CompactLogix L35E controller with RSLogix5000 development software. The 1734-AENT I/O adapter, the *PowerFlex40E* inverter and the WAGO coupler are accessible as remote I/O nodes via Ethernet/IP. It is assumed that you have an overall understanding of Allen-Bradley hardware and software. The RSLinx Classic program must be run before configuring the hardware in a new project !

Creating a new project

1) To create a new project start *RSLogix5000* software. The *RSLogix5000* main window is shown in Fig. 1m.3.



Fig. 1m.3. The RSLogix5000 new project main window

2) Create a new project by selecting the **New Project** item (or the **File\New** menu item). The *New Controller* dialog window is displayed (see Fig. 1m.4). The following parameters must be set:

- Type: 1769-L35E CompactLogix5335E Controller
- Revision: 16
- Name: Enter an appropriate name (here CoNet_Base)
- Description: Enter an appropriate description
- Chassis Type: <none>
- Slot: 0
- Created In: Enter an appropriate folder

Module 5

New Controller			×
Vendor:	Allen-Bradley		
Туре:	1769-L35E CompactLogix5335E Controller	ОК	
Revision:	16 💌	Cancel	
	🔲 Redundancy Enabled	Help	
Name:	CoNet_Base		
Description:			
			
Chassis Type:	<none></none>		
Slot:	0 🚍 Safety Partner Slot:		
Create In:	C:\Program Files\Rockwell Software\RSLogix 5000\ENU\	Browse	

Fig. 1m.4. The New Controller dialog window

3) Press the **OK** button

4) Open the **I/O Configuration** folder in the project window tree. Expand the tree and find **CompactBusLocal** item. Right click on **CompactBusLocal** and select the **New Module...** menu item. The **Select Module** window is displayed.

5) Select **1769-IQ6XOW4/B** from the list and click **OK**.

6) The **Module Properties** dialog window is displayed.

7) Enter the following parameters:

- Name: Local_DIO,
- Slot: 1 (slot of the scanner).

8) Repeat steps 4-7 for the **1769-IF4XOF2/A** module. The module properties are:

- Name: Local_AIO,
- Slot: 2.

9) Select the **Communications -> Download** program menu item. After downloading, if everything was setup correctly, the "I/O OK" indicator is green.

1m.2 Configuring the Ethernet/IP nodes

The proposed network structure contains at least four nodes: CompactLogix L35E controller, 1734-AENT POINT-IO, PowerFlex 40 inverter and WAGO I/O adapter. The CompactLogix L35E controller is a local one and it is configured when a new project is created. All the others are distributed nodes and must be separately added to the project.

1734-AENT POINT-IO

 Open the I/O Configuration folder in the project window tree. Expand the tree and find 1769-L35E Ethernet Port LocalENB. Right click on Ethernet and select the New Module... menu item. The Select Module window is displayed.

2) Select 1734-AENT/A from the list and click OK.

3) The **Module Properties** dialog window is displayed (see Fig. 1m.5).

4) Choose the **General** tag and enter the following parameters:

- Name: Distributed_IO,
- IP Address: 192.168.1.2,
- Chassis Size: 6,
- Revision: 2.3,
- Electronic Keying: Compatible Keying.

Module 5

Module Prop	erties: LocalENB:0 (1734-AENT/A 2.3)
General Conn	ection Module Info Port Configuration Port Diagnostics Chassis Size
Туре:	1734-AENT/A 1734 Ethernet Adapter, Twisted-Pair Media
Vendor: Parent: Na <u>m</u> e: Descri <u>p</u> tion:	Allen-Bradley LocalENB Distributed_10 IP Address: 192 . 168 . 1 . 2 Host Name I Host Name:
Comm <u>F</u> ormat: Sl <u>o</u> t: <u>R</u> evision:	Rack Optimization Chassis Size: Chassis Size: Electronic Keying: Compatible Keying
Status: Offline	OK Cancel Apply Help

Fig. 1m.5. Module properties of 1734-AENT/A Ethernet Adapter

5) Select the **Connection** tag and set the **Requested Packed Interval (RPI)** to 100.0 ms (Fig. 1m.6). This parameter sets the refreshing of I/O data over the Ethernet/IP network.

Module Properties: LocalENB:0 (1734-AENT/A 2.3)
General Connection Module Info Port Configuration Port Diagnostics Chassis Size
<u>R</u> equested Packet Interval (RPI): 100.0 ➡ ms (2.0 - 750.0 ms) Inhibit Module Indipior Fault On Controller If Connection Fails While in Run Mode
Module Fault
Status: Offline OK Cancel Apply Help

Fig. 1m.6. Connection tag of module properties

NB!!! The RPI is a common parameter configuration for all the modules connected to a network. It specifies the period at which data is updated over a connection. For example, an input module sends data to a controller at the RPI that is assigned to the module. Typically an RPI is configured in milliseconds (ms). The range is 0.2 ms to 750 ms. If an Ethernet/IP network connects the devices, the RPI reserves a slot in the stream of data flowing across the network. The timing of this slot may not coincide with the exact value of the RPI, but the control system guarantees that the data transfers at least as often as the RPI.

6) Press the **OK** button. The new **1734-AENT/A Distributed_IO** item and **PointIO 6 Slot Chassis** sub-item in the project tree are displayed.

7) Right click on **PointIO 6 Slot Chassis** and select the **New Module...** menu item. The **Select Module** window is displayed.

8) Select 1734-IB8 from the list and click OK.

9) The **Module Properties** dialog window is displayed (see Fig. 1m.7).

10) Choose the **General** tag and enter the following parameters:

- Name: Remote_DI8,
- Slot: 1,
- Revision: 3.1.

11) Select the **Connection** tag and set the **Requested Packed Interval (RPI)** to 100.0 ms.

12) Press the **OK** button.

13) 8) Repeat steps 7-12 for **1734-OB4E**, **1734-OE2V**, **1734-IE2V** and **1734-VHSC24** modules respectively. Parameters of the modules are collected in Table 1m.2.

	1734-0B4E	1734- OE2V	1734-IE2V	1734-VHSC24
Newse	Demete DO4	Demete AO2	Demete AID	
Name	Remote_DO4	Remote_AO2	Remote_AI2	Remote_VHSC
Slot	2	3	4	5
Revision	3.1	3.1	3.1	3.1
RPI	100 ms	100 ms	100 ms	100 ms

Table 1m.2. Parameters of the modules connected via 1734-AENT POINT_IO

Section 1m: Configuring the network

If the configuration was setup correctly the branch **1734-AENT/A Distributed_IO** of the project window tree will look like Fig. 1m.7.



Fig. 1m.7. The branch 1734-AENT/A Distributed_IO of the project window

750-341 WAGO I/O adapter

1) Open the **I/O Configuration** folder in the project window tree. Expand the tree and find the **1769-L35E Ethernet Port LocalENB** item. Right click on **Ethernet** and select the **New Module...** menu item. The **Select Module** window is displayed.

2) Select **Generic Ethernet Module** from the list and click **OK**. The **Module Properties**. dialog window is presented in Fig. 1m.8. Enter the following parameters:

•	Name:	WAGO_IO,
•	Comm Format:	Data - SINT (8-bit signed integer value; -128 to +127),
•	IP Address:	192.168.1.182 (IP Address of WAGO 750-341),
•	Input Assembly Instance:	107 (CIP Assembly Instance),
•	Input Size:	1 (1 bytes of Input Process Data),
•	Output Assembly Instance:	101 (CIP Assembly Instance),
•	Output Size:	1 (1 bytes of Input Process Data),
•	Configuration Assembly Instance:	1 (Not used by system),
•	Configuration Size:	0 (Not used by system).

The EtherNet/IP settings for the WAGO 750-341 are configured through the built-in web pages. Using a web browser like Microsoft Internet Explorer, Mozilla Firefox etc. The following parameters were set:

- The IP address: 192.168.1.182,
- The EtherNet/IP protocol. Both the Modbus/TCP and Modbus/UDP protocols must be disabled in order to map the input and output process image to an EtherNet/IP fieldbus master.

Module Prop	perties: LocalENB (ETHERNET-MODU	LE 1.1)			×
General Con	nection Module Info				
Type:	ETHERNET-MODULE Generic Etherne	et Module			
Vendor:	Allen-Bradley				
Parent:	LocalENB				
Na <u>m</u> e:	WAGO IO	Connection Para	ameters		
Description:			Assembly Instance:	Size:	
_		<u>I</u> nput:	107	1 -	(8-bit)
		O <u>u</u> tput:	101	1 ÷	(8-bit)
Comm <u>F</u> ormat	Data - SINT	Configuration:	1	0 ÷	[(8-bit)
Address / H	ost Name		<u> </u>	<u> </u>	
IP <u>A</u> ddre	ess: 192 . 168 . 1 . 182	<u>S</u> tatus Input:			
C <u>H</u> ost Na	ime:	Status Output:			
Status: Offline	ОК	Cancel	Apply		Help

Fig. 1m.8. Module properties of the WAGO I/O Adapter

PowerFlex 40E inverter

1) Open the **I/O Configuration** folder in the project window tree. Expand the tree and find the **1769-L35E Ethernet Port LocalENB** item. Right click on **Ethernet** and select the **New Module...** menu item. The **Select Module** window is displayed.

2) Select **PowerFlex 40-E** from the list and click **OK**. The **Module Properties**. dialog window is presented in Fig. 1m.9. Enter the following parameters:

- Name: PowerFlex,
- IP Address: 192.168.1.5,
- Revision: 3.3.

Section 1m: Configuring the network

Module Prope	rties: LocalENB (PowerFlex 40-E 3.3)		
General Conne	ction Module Info Port Configuration Drive	1	
Type: Vendor:	PowerFlex 40-E PowerFlex 40 Drive via 22-COM Allen-Bradley	IM-E	
Parent:	LocalENB	Address / Host Name	
Na <u>m</u> e:	PowerFlex	● IP <u>A</u> ddress: 192 . 168 . 1 . 5	
Descri <u>p</u> tion:	A	C Host Name:	
_ Module Defin	ition	1	
Series:	None <u>C</u> hange		
Revision:	3.3		
Electronic Ne	ying: Compatible Module		
Data Format:	Datalinks 0 Datalinks		
Status: Offline	eOK	Cancel Apply He	lp

Fig. 1m.9. Properties of the PowerFlex 40E inverter

3) Press **OK** button. The item **PowerFlex 40E PowerFlex** will be added to the project tree.

If the configuration of all nodes in the network is done correctly, the RSLogix 5000 main window should look like Fig. 1m.10.

🄏 RSLogix 5000 - CoNet_Base [1769-L35E]			
File Edit View Search Logic Communications Tools Window Help			
🖹 😂 📕 🎒 🦹 🖻 💼 🛩 斗 Distributed_IO:1:C	- & & & F	201 8821398839	
Path	RKocot_dyplom\192.168.1.1\Backplane\0	✓ 品	
No Forces			•
No Edits	orites & Add-On & Alarms & Bit & Ti	ner/Counter 🖌 Input/Output 🖌 Compare 🖌 Compute/Math 👗 Move/Logic	al & File/Misc. & File/Shift & Sequencer & Equipment
	Controller Tags - CoNet_Base(co	ntroller)	
Controller Tags	Scope Ma CoNet Base	Show Show All	
Controller Fault Handler			
Power-up Handler	Name	Value Value Value	Description
A Gala MainTask	±)-Distributed_IU: 1:L	{} AB:1734_D18:U:0	
🗄 🕞 MainProgram	+-Distributed_IU:1:1	2#0000_0000 SINT	
Unscheduled Programs / Phases	+)-Distributed_10:20	() AB:1734_DUB4:U:U	
E Motion Groups	H-Distributed_10:2:1	2#0000_0000 SINT	
Ungrouped Axes	El-Distributed_10:2:0	2#0000_0000 SIN1	
	E-Distributed_IU:3:C	() AB:1734_UE2:C:U	
User-Defined	E Distributed_IU:3:1	() AB:1734_UE21:0	
🕀 🕞 Strings	L_Distributed_10:3:0	() AB:1734_0E2:0:0	
- Add-On-Defined	L Distributed_10:4:C	() AB:1734_IE2:C:0	
E Redefined	L Distributed_10:4:1	() AB:1734_IE21:0	
Module-Defined Transfer		() AB:1734_VHSC:C:0	
E-S I/O Configuration	Distributed_10:5:1	() AB:1734_VHSC:1:0	
😑 🎆 Backplane, CompactLogix System	Distributed_10:5:0	() AB:1734_VHSC:0:0	
1769-L35E CoNet_Base	Distributed_I0:I	() AB:1734_6SLOT:1:0	
🖹 🛷 1769-L35E Ethernet Port LocalENB	Distributed_I0:0	() AB:1734_6SLOT:0:0	
Ethernet	±-Local1:C	{} AB:1769_IQ6K0W4:C:0	
1/69-L35E Ethernet Port LocalENB	±-Local1:1	{} AB:1769_IQ6KOW4:1:0	
E- PointIO 6 Slot Chassis	±-Local1:0	{} AB:1769_IQ6KOW4:0:0	
[0] 1734-AENT/A Distributed_IO	±-Local:2:C	{} AB:1769_IF4K0F2:C:0	
[1] 1734-IB8/C Remote_DI8	±-Local:2:1	{} AB:1769_IF4K0F2:I:0	
[2] 1734-OB4E/C Remote_DO4	±-Local:2:0	{} AB:1769_IF4X0F2:0:0	
[3] 1734-OE2V/C Remote_AO2		() AB:PowerFlex40_Drive_8Bytes:I:	0
[4] 1/34-IE2V/C Remote_AI2	+ PowerFlex:0	<pre>{} AB:PowerFlex40_Drive_4Bytes:0</pre>	:0
PowerFlex 40-E PowerFlex		<pre>{} AB:ETHERNET_MODULE:C:0</pre>	
ETHERNET-MODULE WAGO_IO		{} AB:ETHERNET_MODULE_SINT	_1B
E-III CompactBus Local		{} AB:ETHERNET_MODULE_SINT	_1B
[0] CompactBus Local			
[1] 1769-IQ6XOW4/B Local_DIO	Monitor Tags / Edit Tags /	•	• //
Create Output Energize instruction			

Fig. 1m.10. The main window of RSLogix5000 project

The program/configuration can now be downloaded to the CompactLogix controller. Select the **Communications -> Download** program menu item. After downloading, if everything was setup correctly, the "I/O OK" indicator is green. If an error does occur, it means the improper connection size and/or communication format was entered for either the input or output parameters.

1m.3 Address I/O data of configured modules

Information about all the I/O modules is presented as a set of tags. Each tag uses a data structure. The structure depends on the specific features of the I/O module. The name of the tags is based on the location of the I/O module in the system. An I/O address follows the format shown in Fig. 1m.11.





Fig. 1m.11. Address format of tags

Location **LOCAL** = local chassis of the controller.

ADAPTER_NAME = identifies remote communication adapter or bridge module.

:Slot Slot number of I/O module in its chassis.

:Type Type of data (**I** = input, **O** = output, **C** = configuration, **S** = status).

.Member Specific data from the I/O module; depends on what type of data the module can store. For a digital module, a Data member usually stores the input or output bit values. For an analog module, a Channel member (CH#) usually stores the data for a channel.

.SubMember Specific data related to a Member.

.Bit Specific point on a digital I/O module; depends on the size of the I/O module.

The relationship between I/O configuration and the tag address is shown in Fig. 1m.12. To expand a structure and display its members, click the $_{\mu}+''$ sign.

Stope Stope Stope Stope Stope 1/0 Configuration • • • • • • • • • • • • •		Controller Tags - CoNet_Base(controller)				
Name A Value Data Type Description I/O Configuration		Scope: 🔁 CoNet_Base 👻 Show.	Show All			
I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O Configuration I/O C		Name 🛆	Value 🔦	Data Type	Description	
Image: Construction Image: Distributed_U2C () AB1734_DB2C0 () Image: Distributed_U2C () AB1734_DB2C0 () AB1734_DB2C0 () Image: Distributed_U2C () AB1734_DB2C0 () AB1734_DB2C0 () Image: Distributed_U2C () AB1734_DB2C0 () () AB1734_DB2C0 () Image: Distributed_U2C () AB1734_DB2C0 () <t< td=""><td></td><td>E-Distributed_I0:1:C</td><td>{}</td><td>AB:1734_DI8:C:0</td><td></td><td></td></t<>		E-Distributed_I0:1:C	{}	AB:1734_DI8:C:0		
I/O Configuration # Dimbace_[0.2.0 () AB:173_0084.00 Backplane, CompactLogix System # Dimbace_[0.2.0 2#000_0000 [SNT I/O Dimbace_[0.2.0 2#000_0000 [SNT I/O I/O 1759-L3SE CoNet_Base # Dimbace_[0.3.0 () AB:173_0022.00 I/O I/O 1759-L3SE Ethernet Port LocalENB # Dimbace_[0.3.0 () AB:173_0022.00 I/O I/O 1759-L3SE Ethernet Port LocalENB # Dimbace_[0.3.0 () AB:173_0022.00 I/O I/O 1734-AENT/A Distributed_IO I/O () AB:173_VISC.00 I/O I/O 1734-AENT/A Distributed_IO I/O I/O I/O I/O I/O 1734-AENT/A Distributed_IO I/O I/O I/O I/O I/O I/O 1734-AENT/A Distributed_IO I/O I/O I/O I/O I/O I/O I/O 1734-AENT/A Distributed_IO I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O I/O </td <td></td> <td></td> <td>2#0000_0000</td> <td>SINT</td> <td></td> <td></td>			2#0000_0000	SINT		
I/O Configuration I Dimbate[0.21 2#0000_0000 [SNT III Solution III Dimbate[0.20 2#0000_0000 [SNT III Solution III Solution IIII Solution IIIII Solution IIII Solution IIII Solution IIIII Solution IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII		Distributed_I0:2:C	()	AB:1734_D0B4:0:0		
Backplane, CompactLogix System # Dimbade(0.20 2#0000_0000 SiNT 10 1769-L3SE Colvet_Base # Dimbade(0.30 () A81734_DE2:00 Image: System # Dimbade(0.30 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.30 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.30 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.41 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.41 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.51 () A81734_DE2:00 () A81734_DE2:00 Image: System # Dimbade(0.51 () A81734_DE2:00 () A81734_DE2:00 Image: System System # Dimbade(0.51 () A81734_DE2:00 () A81734_DE2:00 Image: System Syste	E di I/O Configuration	Distributed_10:2:1	2#0000_0000	SINT		
Intervet Intervet <td< td=""><td>🖻 🌐 📶 Backplane, CompactLogix System</td><td>E-Distributed_I0:2:0</td><td>2#0000_0000</td><td>SINT</td><td></td><td></td></td<>	🖻 🌐 📶 Backplane, CompactLogix System	E-Distributed_I0:2:0	2#0000_0000	SINT		
Image: Set	1769-L35E CoNet Base	E-Distributed_10:3:C	()	AB:1734_0E2:C:0		
Image: Second and the second	- A 1769-L35E Ethernet Port LocalENB	E-Distributed_I0:3:1	()	AB:1734_0E2:1:0		
Image: Comment Image:		Distributed_I0:3:0	()	AB:1734_0E2:0:0		
Image: Section of the sectio		Distributed_I0:4:C	()	AB:1734_IE2:C:0		
Image: State of the state	1769-L35E Ethernet Port LocalENB	±-Distributed_I0:4:1	()	AB:1734_IE2:1:0		
Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of a block chassis Image: Construct of	🖻 📲 1734-AENT/A Distributed_IO	E-Distributed_IU:5rL	()	AB:1734_VHSU:U:U		
Image: CompactBus Local Image: Compact	🖻 🛲 PointIO 6 Slot Chassis	E-Distributed_IU:5:1	()	AB:1734_VHSU:000		
Image: Comparison of	[10] 1734-AENT/A Distributed TO	E-Distributed_10:00	()	AB:1734_VHSC:0:0		
□ [2] 1734-084E/C Remote_D04 □ (1) 1734-084E/C Remote_D04 □ (1) 1734-084E/C Remote_D04 □ [2] 1734-084E/C Remote_D04 □ (1) 1734-084E/C Remote_D04 □ (1) 481783 [0800/41:0 □ [3] 1734-084E/C Remote_D02 □ (1) 1734-084E/C Remote_D04 □ (1) 481783 [0800/41:0 □ [4] 1734-1821/C Remote_A12 □ (1) 1734-1821/C Remote_A12 □ (1) 481783 [0800/41:0 □ [5] 1734-VHSC24/C Remote_VHSC □ (1) 481783 [0800/41:0 □ (1) 481783 [0800/41:0 □ [6] 1734-VHSC24/C Remote_VHSC □ (1) 481783 [0800/41:0 □ (1) 481783 [0800/41:0 □ [7] PowerFlex 40-E PowerFlex □ (1) 481783 [0800/41:0 □ (1) 481783 [0800/41:0 □ [7] PowerFlex 40-E PowerFlex □ (1) 481783 [0800/41:0 □ (1) 481783 [0800/41:0 □ [7] CompactBus Local □ (1) 481783 [0800/41:0 □ (1) 481783 [0800/41:0 □ [7] CompactBus Local □ (1) 482 [0:0 □ (1) 482 [0:0:0 □ [7] [10] CompactBus Local □ (1) 482 [0:0 □ (1) 482 [0:0:0 □ [7] [10] CompactBus Local □ (1) 482 [0:0 □ (1) 482 [0:0:0 □ [7] [10] CompactBus Local □ (1) 482 [0:0 □ (1) 482 [0:0 □ [7] [10] CompactBus Local □ (1) 482 [0:0 □ (1) 482 [0:0 □ [7] [10] CompactBus Local </td <td>[1] 1734-TB9/C Perrote DT9</td> <td>Distributed_I0:0</td> <td>()</td> <td>AB-1734_65L01.10</td> <td></td> <td></td>	[1] 1734-TB9/C Perrote DT9	Distributed_I0:0	()	AB-1734_65L01.10		
		E docati C	()	AB:1769_06201.0.0		
	[] [2] 1734-OB4E/C Remote_DO4	T-Local 1:	()	AB:1769 IQ6X0W410		
	[3] 1734-OE2V/C Remote_AO2	+ Locat1:0	{}	AB:1769 IQ6X0W4:0:0		
↓ [5] 1734-VHSC24/C Remote_VHSC ← Loss21	[4] 1734-IE2V/C Remote_AI2	±-Locat2:C	()	AB:1769 IF4X0F2:C:0		
	1 [5] 1734-VHSC24/C Remote VHSC	±-Locat2:I	{}	AB:1769_IF4X0F2:I:0		
ETHERNET-MODULE WAGO_IO ProverFext	PowerElex 40-E PowerElex	±-Locat 2:0	()	AB:1769_IF4X0F2:0:0		
Compatible Local Com		PowerFlex:	()	AB:PowerFlex40_Drive_8Bytes:1:0		
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	ETHERNET-MODULE WAGO_10	+ PowerFlex:0	{}	AB:PowerFlex40_Drive_4Bytes:0:0		
[0] Compactibus Local [1] ₩wka6_001 [1] ₩wka6_001	E CompactBus Local		{}	AB:ETHERNET_MODULE:C:0		
ET1 1360 TOCKYOW4/R Local DTO ET1 1360 TOCKYOW4/R Local DTO ET1 1360 TOCKYOW4/R Local DTO	🖳 🗒 [0] CompactBus Local		()	AB:ETHERNET_MODULE_SINT_1B		
	[1] 1769-IQ6XOW4/B Local_DIO	±-WAG0_10:0	{}	AB:ETHERNET_MODULE_SINT_1B		
22 1769-IF4XOF2/A Local_AIO	[2] 1769-IF4XOF2/A Local_AIO	Monitor Tags & Edit Tags /				

Fig. 1m.12. Connection between I/O Configuration tree and the tag address

Table 1m.3 lists all the configured I/O modules and corresponding tag addresses.

I/O module	Tag address		
[1] 1769-IQ6XOW4/B Local_DIO	Local1:C – configuration		
	Local1:I – input		
	Local1:O – output		
[2] 1769-IF4XOF2/A Local_AIO	Local2:C – configuration		
	Local2:I – input		
	Local2:0 – output		
[1] 1734-IB8/C Remote_DI8	Distributed_IO:1:C – configuration		
	Distributed_IO:1:I – input		
[2] 1734-OB4E/C Remote_DO4	Distributed_IO:2:C – configuration		
	Distributed_IO:2:I – input		
	Distributed_IO:2:0 – output		
[3] 1734-OE2V/C Remote_AO2	Distributed_IO:3:C – configuration		
	Distributed_IO:3:I – input		
	Distributed_IO:3:0 – output		
[4] 1734-IE2V/C Remote_AI2	Distributed_IO:4:C – configuration		
	Distributed_IO:4:I – input		
[5] 1734-VHSC24/C Remote_VHSC	Distributed_IO:5:C – configuration		
	Distributed_IO:5:I – input		
	Distributed_IO:5:0 – output		
PowerFlex 40-E PowerFlex	PowerFlex:I – input		
	PowerFlex:O – output		
ETHERNET-MODULE WAGO_IO	WAGO_IO:C – configuration		
	WAGO_IO:I – input		
	WAGO_IO:O – output		

Table 1	lm.3.	I/O	data	tag	addresses

All tags presented in Table 1m.3 are located in **Controller Tag** scope (top of the project tree). Hence all programs have access to the member data of these tags.

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