



Optris XI/CSV EtherNet/IP interface

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1 General

The Optris XI/CSV EtherNet/IP interface board can be easily installed inside the electronic box of any Xi (except Xi 400) or CSvsion. The XI/CSV EtherNet/IP interface connector is a 4-pin M12 connector, D-coded, installed on an extra electronic box. It is suited for industrial Ethernet with an IP67 protection rate. An extra implemented software stack guarantees the EtherNet/IP communication functionality.

The EtherNet/IP settings are stored on the board and the board communicates with the Optris devices via serial interface. The EtherNet/IP settings remain on the board in case of interchanging the Optris devices.

2 Description

Optris XI/CSV EtherNet/IP interface board basic characteristics:

- Device class: adapter device
- Device type: 06h
- Connection: 1 x M12
- Transfer speed up to 100Mbit/s full-duplex, auto-negotiation capable

The EtherNet/IP module maps the object temperature, internal temperature, device status, and other device data to its Input Assembly which is then sent onto the EtherNet/IP network using CIP. In the initialization phase, the XI/CSV EtherNet/IP interface board sends the device's configuration data which is accessible for setup via the PLC programming software Controller Tags. Furthermore, XI/CSV EtherNet/IP interface board allows you to change a subset of parameters in data exchange mode using different classes.

3 Configuration

The easiest way to incorporate an EtherNet/IP device into a PLC programming software Project is by installing the EDS file and selecting the right module type (ACXICSVEIPK).

The ACXICSVEIPK interface is delivered in DHCP mode. For changing the IP address and the IP mode to static use the *"EtherNet/IP Address Commissioning Tool"*.

Start the Rockwell *"EtherNet/IP Address Commissioning Tool*", go to **Settings**, select the used EtherNet adapter, and go to **Unassigned**.



말 EtherNet/IP Address Commissi	oning Tool	- 0	×
EtherNet/IP /	Address Commissioning Tool	English 🔻 🔿 He	łþ
G Unassigned	Unassigned Requests		7
Assigned			
Configuration	✓ Host Name IP MAC Request Type Status Requested Date ↓ ✓ 9C43:1E7F.FF.FF DHCP Failed: Cannot assign 2023-10-12 11:37:03	Request Count 421	
Settings			
Settings			
且 Log			
		View Assigned 😞	
	EtherNet/IP Address Commissioning Tool Version 2.01, Copyright © 2022 Rockwell Automation Technologies, Inc. All Rights Reserved		
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Select the device and click **Add to Configuration**. Set an IP address and a short description and click **OK**.

Click Assigned, select the device, and click Set IP Configuration Mode

EtherNet/IP Address Commi	issioning Tool							-		×
EtherNet/IP	Address Commission	oning Tool						English 🔻	⑦ H	alp
G Unassigned	Assigned Requests + Add to Configuration	🚺 Refresh State	💮 Set IP Configura	ation Mode 🛛 🧃	🖥 Delete 🛛 🕞 E	Export	Q Filter		л . 2	
Assigned	Host Name	IP	MAC	Request Type	Description	IP Configurat	CIP Informati	Modified 4		
Configuration		192.168.1.10	9C:43:1E:7F:FF:FF	DHCP	Xi 1	Dynamic	Unknown	2024-01-16 16:1.		
Settings										
Log										
	EtherNet/IP Address Commis	ssioning Tool Versi	on 2.01, Copyright (ckwell tomation © 2022 Rockwel	I Automation Tee	chnologies, Inc. All	Rights Reserved.			
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Set the IP mode to Static Mode, click **Apply**, and close the program.





3.1 EDS File

To allow for easier implementation in automation projects, the device manufacturer describes the device features in an EDS file, which is supplied to the end-user and can be installed into the PLC programming environment using *"Rockwell Automation – Device Description File Installation Tool"*.

The XI/CSV EtherNet/IP device EDS file is named: ACXICSVEIPK.EDS

Start the *"Rockwell Automation – Device Description File Installation Tool"* and click on Add Device Description File.

Rockwell Automation - Device Description File Installation Tool 35.0.13.0						
This tool allows you to change the device description information currently installed on your computer.						
Add Device Description File Launch the Device Wizard and add selected device description files only.						
<u>Remove</u> Launch the Device Wizard and remove selected device description files only.						
<u>E</u> xit						

Select the option **Register a single device description file** and browse to the file **ACXICSVEIPK.EDS** file.



ckwell Automation's Device Wizard				×
Registration Device Description file(s) will be added to your s	ystem for use in Rockw	vell Automation application	s.	N.
 Register a single device description file Register a directory of device description files 	□ Look in subfolde	18		
Named: A:\Studio 5000\Projects\ACXICSVEIPK.eds		Browse		
• If there is an icon file (ico) with the same n then this image will be associated with the d	name as the file(s) you a levice.	are registering		
	1	o perform an installation te	est on the file(s), click N	ext
			Weiter >	Abbrechen

Click **next** until the message appears that the installation is completed and close the software "*Rockwell Automation – Device Description File Installation Tool*".

Now the **ACXICSVEIPK.EDS** file is installed and the Optris device can be inserted into your project.

3.2 Configuration

The XI/CSV EtherNet/IP device configuration using the EDS file (after it has been installed) only consists of choosing the right module, naming the device, and typing in its IP address.

For the installation of the EDS file use the "*Rockwell Studio 5000*" and create a new project. You have also the possibility to import an existing project. Select the controller, name your project, and choose the location for the file.

👌 New Project					?	×	
Project Types			Search			×	
ổ Logix	▶ Comp	act GuardLogix®	5370 Safety Contr	oller		1	
🕥 View	 Comp Comp 	 Compact GuardLogix® 5380 Safety Controller CompactLogix™ 5370 Controller 					
	▲ Comp	✓ CompactLogix [™] 5380 Controller					
	5069-L306ER		CompactLogix [™] 5	380 Controller			
	5069-L306ERM CompactLogix™ 5380 Controller						
	50	69-L3100ERM	CompactLogix [™] 5	380 Controller			
	50	69-L310ER	CompactLogix [™] 5	380 Controller			
	50	69-L310ERM	CompactLogix [™] 5	380 Controller			
	50	69-L310ER-NSE	CompactLogix [™] 5	380 Controller			
	50	69-L320ER	CompactLogix [™] 5	380 Controller		*	
	N <u>a</u> me:	Optris_Xi_CSV					
	Location:	A:\Studio 5000	\Projects	Ŷ	Brow	/se	

Connect the Optris_XI_CSV to the AB PLC port click with the right mouse button on your port in the project and add a New Module.

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Select the module type, after filtering **ACXICSVEIPK**, and click on **Create**.

		ear Hitters		Show Filters
Catalog Number	Description	Vendor	Category	
ACXICSVEIPK	EtherNet/IP Pyrometer ADPT V2	Optris GmbH	Generic Device	

Set the name and the Ethernet Address to your Optris device address and click on OK.





-General*	General				
- Connection - Module Info - Configuration - Internet Protocol - Port Configuration	Type: Vendor: Parent:	ACXICSVEIPK EtherNet/IP Pyro Optris GmbH Local	meter ADPT V2		
	Na <u>m</u> e:	OptrisXiCSV		Ethernet Address	in press
	Description:		A	Private Network: IP Address: Host Name:	192.168.1. <u>19</u>
	Module Defi	nition			
	Revision: Electronic K Connection	1.001 eying: Compatible Mc s: Input Only	odule		

Now the Project has to be downloaded to the PLC.



Start the PLC program by clicking **Run Mode**. To see the current cyclic values double-click on the **Controller Tags**.





Logix Designer - Optris_Xi_CSV [5069-L306ER 35.11]	*			
File Edit View Search Logic Communication	ns Tools Window Help			
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Run Mode Controller OK Finnergy Storage OK Rem Run No Forces No Forces	68.0.1 % 묾 (3 4 Harrie HF 4/F	()(U)(L)- tPAx Safety Alarms	Bit Timer/Counter Input/Output
Controller Organizer	X Controller Tags - Ontris Xi CSV(controller) X			
a -	Scope: Contris Xi CSV V Show: All Tags			
▲ 🛁 Controller Optris_Xi_CSV				.
🧭 Controller Tags	Name ===	Value Force Mask	 Style 	Data Iype D
Controller Fault Handler	 OptrisXiCSV:C 	{}	{}	_06DC:ACXICSVEIPK
Power-Up Handler	OptrisXiCSV:C.Temperature_unit	1	Decimal	SINT
A C MainTask	OptrisXiCSV:C.unused_usint1	0	Decimal	BOOL
MainProgram	OptrisXiCSV:C.Emissivity	1.0	Float	REAL
🛑 Unscheduled	OptrisXiCSV:C.Transmission	1.0	Float	REAL
A G Motion Groups	OptrisXiCSV:C.Slope	1.0	Float	REAL
Ungrouped Axes	OptrisXiCSV:C.Emissivity_T1	0.0	Float	REAL
Assets	OptrisXiCSV:C.Averaging_mode	0	Decimal	SINT
be Logical Model	OptrisXiCSV:C.unused_usint2	0	Decimal	BOOL
🔺 🛁 I/O Configuration	OptrisXiCSV:C.Averaging_time	0.0	Float	REAL
✓	OptrisXiCSV:C.Averaging_smart_threshold	0.0	Float	REAL
A & A1. Ethernet	OptrisXiCSV:C.max_attenuation_mode	0	Decimal	SINT
5069-L306ER Optris_Xi_CSV	OptrisXiCSV:C.unused usint3	0	Decimal	BOOL
▲ 器 A2, Ethernet	OptrisXiCSV:C.max attenuation threshold	90.0	Float	REAL
5069-L306ER Optris_Xi_CSV	OntrisXiCSV:C.max attenuation fixed va	0.0	Float	REAL
ACXICSVEIPK OptriskiCSV	Optric XiC SV-1	11	1.1	06DC-ACXICSVEIPK
	Ontric ViCSVII ConnectionFaulted	0	Decimal	BOOL
	OptriskiesVilleonneedonnaaree	2#0000_0000_000_00	Pinan	DINIT
	OrthinViCSI/II Desperse toron portion	2#0000_0000_0000_00	Dinaly	DINI
	OptriskiCSVII.Process_temperature	0.0	Float	REAL
	OptrisXiCSV:I.Head_temperature	33.600006	Float	REAL
	OptrisXiCSV:I.Electronic_temperature	32.899994	Float	REAL
	OptrisXiCSV:I.Current_temperature	37.0	Float	REAL
	OptrisXiCSV:I.Averaging_temperature	-99999.0	Float	REAL
	OptrisXiCSV:I.Ratio_temperature	-99999.0	Float	REAL
	OptrisXiCSV:I.Ratio_T1_temperature	-99999.0	Float	REAL
	OptrisXiCSV:I.Ratio_T2_temperature	-99999.0	Float	REAL
	() Manifer Tage (Edit Tage)			

4 Parameter Setting

Some settable parameters of an Optris device are available in the Configuration Data. Changing the parameters this way can only happen upon device initialization, i.e. when downloading the program to the PLC (default values are sent if no changes have been made). Once the parameter setting has been performed, the I/O device is ready to send cyclic productive data. While certain device characteristics are parameterizable only during the configuration, others can also be set in the data exchange mode using different classes. The tables below contain all the parametrizable characteristics and are followed by a short implementation description. If a value is not defined for a type of a device the value of *-99999.0* appears.



4.1 Device Parameters

The parameters included in the Configuration Data are accessible through Controller Tags in the Rockwell PLC programming environment (*Rockwell Studio 5000*). Changing them in the controller tags will first have an effect after downloading the program to the PLC. The Rockwell programming software allows however for an easy saving of these tags so that the values can always be sent as default upon initialization. These values must also be included in the user parameters. The configuration data length is 28 bytes.

Offset	Name	Size in byte	Format
0	Temp. unit	1	uint8
1	unused	1	uint8
2	Emissivity	4	real
6	Transmission	4	real
10	Slope	4	real
14	Emissivity T1	4	real
18	Averaging Mode	1	real
19	unused	1	uint8
20	Averaging Time	4	real
24	Smart Averaging threshold	4	real
28	Max Attenuation Mode	1	uint8
29	unused	1	uint8
30	Max Attenuation max. Attenuation	4	real
34	Max Attenuation fixed TRatio Value	4	real

Table 1: Config data; once after project start (write only)

Name	== ▲ Value	 Force Masl 	k 🔶	Style	Data Type
OptrisXiCSV:C		{}	{]	}	_06DC:ACXICSVEIPK
OptrisXiCSV:C.Temperature_unit		1		Decimal	SINT
OptrisXiCSV:C.unused_usint1		0		Decimal	BOOL
OptrisXiCSV:C.Emissivity		1.0		Float	REAL
OptrisXiCSV:C.Transmission		1.0		Float	REAL
OptrisXiCSV:C.Slope		1.0		Float	REAL
OptrisXiCSV:C.Emissivity_T1		0.0		Float	REAL
OptrisXiCSV:C.Averaging_mode		0		Decimal	SINT
OptrisXiCSV:C.unused_usint2		0		Decimal	BOOL
OptrisXiCSV:C.Averaging_time		0.0		Float	REAL
OptrisXiCSV:C.Averaging_smart_thre	shold	0.0		Float	REAL
OptrisXiCSV:C.max_attenuation_mod	le	0		Decimal	SINT
OptrisXiCSV:C.unused_usint3		0		Decimal	BOOL
OptrisXiCSV:C.max_attenuation_thre	shold	90.0		Float	REAL
OptrisXiCSV:C.max_attenuation_fixed	d_va	0.0		Float	REAL



4.2 Pyrometer Input Data The EtherNet/IP device Input data length is 60 bytes; the communication format is SINT.
 Table 2: Input Data; (cyclic – read-only)

Offset	Name	Size in byte	Format
0	Status	4	dword
4	Process temperature	4	real
8	Head temperature	4	real
12	Electronic temperature	4	real
16	Current temperature	4	real
20	Averaging temperature	4	real
24	Ratio temperature	4	real
28	T1 temperature	4	real
32	T2 temperature	4	real
36	Attenuation	4	real
40	Current Epsilon	4	real
44	Current transmission	4	real
48	IO1 mV value	4	real
52	Xi process temperature	4	real
56	Xi flag temperature	4	real
60	Xi internal temperature	4	real
64	Xi chip temperature	4	real
68	Flag state	1	uint8
69	Area count	1	uint8
70	unused[2]	2	uint8
72	Focusmotor position	4	real
76	Temp area 1	4	real
80	Temp area 2	4	real
84	Temp area 3	4	real
88	Temp area 4	4	real
92	Temp area 5	4	real
96	Temp area 6	4	real
100	Temp area 7	4	real
104	Temp area 8	4	real
108	Temp area 9	4	real
112	Temp calc obj. 1	4	real
116	Temp calc obj. 2	4	real
120	Temp calc obj. 3	4	real
124	Temp calc obj. 4	4	real
128	Temp calc obj. 5	4	real
132	Temp calc obj. 6	4	real
136	Temp calc obj. 7	4	real
140	Temp calc obj. 8	4	real
144	Temp calc obj. 9	4	real

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4.3 User Parameter

The EtherNet/IP device can read and set user parameters (see **Table 3**). The user parameter class is 0x0f.

Table 3: User Parameter; Clas 0x0f; Attribute 1

		Size in		
Instance	Name	byte	Format	R/W
1	Temp. unit	1	uint8	R/W
2	Tprocess	4	real	R
3	Thead	4	real	R
4	Telectronic	4	real	R
5	Tcurrent	4	real	R
6	Taverage	4	real	R
7	Tratio	4	real	R
8	T1	4	real	R
9	Т2	4	real	R
10	Attenuation	4	real	R
11	current emissivity	4	real	R
12	current transmission	4	real	R
13	IO1 voltage	4	real	R
14	Laser on/off	1	uint8	R/W
15	Status	4	uint32	R
16	Emissivity	4	real	R/W
17	Transmission	4	real	R/W
18	Slope	4	real	R/W
19	Emissivity T1	4	real	R/W
20	Averaging Mode	1	real	R/W
21	Averaging Time	4	real	R/W
22	Smart Averaging threshold	4	real	R/W
23	Max Attenuation max. Attenuation	4	real	R/W
24	Max Attenuation Mode	1	uint8	R/W
25	Max Attenuation fixed TRatio Value	4	real	R/W
26	unused	4	uint32	R/W
27	unused	4	uint32	R/W
28	unused	4	uint32	R/W
29	unused	4	uint32	R/W
30	Xi Tprocess	4	real	R
31	Xi Tflag	4	real	R
32	Xi Tinternal	4	real	R
33	Xi Tchip	4	real	R
34	Flag state	1	uint8	R/W
35	Focusmotor position	4	real	R/W
36	Area count	1	uint8	R

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EtherNet/IP



37	Temp. Area 1	4	real	R
38	Temp. Area 2	4	real	R
39	Temp. Area 3	4	real	R
40	Temp. Area 4	4	real	R
41	Temp. Area 5	4	real	R
42	Temp. Area 6	4	real	R
43	Temp. Area 7	4	real	R
44	Temp. Area 8	4	real	R
45	Temp. Area 9	4	real	R
46	Temp. calculated obj. 1	4	real	R
47	Temp. calculated obj. 2	4	real	R
48	Temp. calculated obj. 3	4	real	R
49	Temp. calculated obj. 4	4	real	R
50	Temp. calculated obj. 5	4	real	R
51	Temp. calculated obj. 6	4	real	R
52	Temp. calculated obj. 7	4	real	R
53	Temp. calculated obj. 8	4	real	R
54	Temp. calculated obj. 9	4	real	R
55	Emissivity area 1	4	real	R
56	Emissivity area 2	4	real	R
57	Emissivity area 3	4	real	R
58	Emissivity area 4	4	real	R
59	Emissivity area 5	4	real	R
60	Emissivity area 6	4	real	R
61	Emissivity area 7	4	real	R
62	Emissivity area 8	4	real	R
63	Emissivity area 9	4	real	R
64	Mode area 1	1	uint8	R
65	Mode area 2	1	uint8	R
66	Mode area 3	1	uint8	R
67	Mode area 4	1	uint8	R
68	Mode area 5	1	uint8	R
69	Mode area 6	1	uint8	R
70	Mode area 7	1	uint8	R
71	Mode area 8	1	uint8	R
72	Mode area 9	1	uint8	R
73	Distri. Range min 1	4	real	R
74	Distri. Range min 2	4	real	R
75	Distri. Range min 3	4	real	R
76	Distri. Range min 4	4	real	R
77	Distri. Range min 5	4	real	R
78	Distri. Range min 6	4	real	R
79	Distri. Range min 7	4	real	R

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80	Distri. Range min 8	4	real	R
81	Distri. Range min 9	4	real	R
82	Distri. Range max 1	4	real	R
83	Distri. Range max 2	4	real	R
84	Distri. Range max 3	4	real	R
85	Distri. Range max 4	4	real	R
86	Distri. Range max 5	4	real	R
87	Distri. Range max 6	4	real	R
88	Distri. Range max 7	4	real	R
89	Distri. Range max 8	4	real	R
90	Distri. Range max 9	4	real	R
91	Emissivity	4	real	R/W
92	transmission	4	real	R/W
93	Fixed ambient temperature	4	real	R/W
94	Temperature unit	1	uint8	R/W

4.3.1 User Parameter Example

Example of setting the User Parameter Emissivity.

Open your project and rename the controller's name (the names of the controller and the ACXICSVEIPK must be different) by double-clicking on the controller.

Create a **New Local Tag** for reading serial numbers and double-click on **Parameters and Local Tags**. Click on the **Edit Tags** tab and create 3 new tags as shown in the picture below.



Create **MainRoutine** insert these 3 instructions and click on three dots [Logi Designer - Optrix JL (SV [5069-J306ER 35.1])



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Set the configuration values according to **Table 3**, **s**et the communication path to Optris_XI_CSV, and click on **OK**. Download the project to the PLC and start the PLC program in **Run Mode**.

Configurati	on" (òommun	ication T	ag				
Message	Type:		CIP Gener	ic		~		
Service	Para	neter V	Vrite		~	Source Element:	Emissivity	~
Type:						Source Length:	4 📫	(Bytes)
Ser <u>v</u> ice Code:	10	(He:	x) <u>⊂</u> lass:	f	(Hex)	Destination		~
Instance	91		Attri <u>b</u> ute:	1	(Hex)	Element:	New Tag	
) Enable	0	Enable	Waiting	⊖ Sta	art	⊛ Done [Done Length: 0	

Double-click on **Parameters and Local Tags** and click on the **Monitor Tags** tab.

Logix Designer - O	ptris_Xi_CSV [506	9-L306ER 35.11]*														
File Edit View	Search Logic	Communications	Tools V	vindow Help												
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Run Mode	Pati	n: Ethernet\192.168.	0.1		4	* **	•			-()(L)(L)- ONS	OSR OSF				
I/O OK	Rem Run	No Forces	▶	No Edits	B .		4 ا	Favorites A	Add-On Alarm	s Bit Timer	/Counter	Input/Output	Compare	Compute/Math	Move/Logical	File
Controller Organizer		▼ ₽ ×	🥏 Contre	oller Tags - Optris	_Xi_CSV(controller	🖉 Pre	ogram Para	ameters and Loo	al Tags - MainF	rogram ×	📒 MainP	rogram - Mainf	Routine			
0 1			Scope:	La Main Program	Show: All	Tags									~ 7	r. En
Controller Opt	ris_Xi_CSV		Nam	e			Usage	Value	+	Force Mask	•	Style		Data Type	Desc	Pr
Controller	Fault Handler		* b5	SetEmiss			Local	[1]		Decimal		BOOL		
📁 Power-Up	Handler		Er	nissivity			Local		0.95			Float		REAL		4
A 📹 Tasks			▶ m	sgSetEmissivity			Local		{}		{	}		MESSAGE		
A & MainPr	ogram															
Para	ameters and Loc	al Tags														
🚺 Mai	inRoutine														1	
📁 Unschedul	ed			Ionitor Tags (E	dit Tags /				- 1							
🔺 🖼 Motion Group	5									_		_				
• • • •	e	<u> </u>	•• •	~ ~ ~	-											

Set the value of the Emissivity to e.g. 0.95

4.4 Device Information

The XI/CSV EtherNet/IP device can read device information (see table). The device information class is 0x64.

Instance	Name	Size in byte	Format	R/W	comment
1	Serial	4	uint32	R	
2	FW rev.	2	uint16	R	
3	temp. unit	1	uint8	R	0- °F / 1- °C
4	Range low 1	4	real	R	
5	Range high 1	4	real	R	

Table 4: Device information; class 0x64, Attribute 1

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6	Range low 2	4	real	R	
7	Range low 3	4	real	R	
8	Range Ambient low	4	real	R	
9	Range Ambient high	4	real	R	
10	Model strings	24	char[]	R	
11	Model flags	8	uint16[]	R	not used
12	AreaCount	1	uint8	R	
13	FocusmotorMinPos	2	uint16	R	
14	FocusmotorMaxPos	2	uint16	R	

4.5 Example read Device Information

Example of reading serial number.

Open your project and rename the controller's name (the names of the controller and the ACXICSVEIPK must be different) by double-clicking on the controller.

Create a **New Local Tag** for reading serial numbers and double-click on **Parameters and local tags**. Click on **Edit Tags** and create 3 new tags shown in the picture below.







Set the configuration values according to **Table 3**, **s**et the communication path to Optris_XI_CSV, and click on **OK**. Download the project to the PLC and start the PLC program in **Run Mode**.

Configuratio	on* Cor	mmunicat	ion Ta	g					
Message	<u>Type:</u>	CIF	^o Generi	ic		×	~		
Service Type:	Get Att	tribute Sir	ngle		~	Source Element			~
Service		H	_			Source Length:	0	\$	(Bytes)
Code;	e	(Hex)	<u>C</u> lass:	64	(Hex)	Destination	De	evSerial	~
Instance:	1	Attr	i <u>b</u> ute:	1	(Hex)	ciement;	L.	lew Tag	n i
) Enable	() En	able Wai	ting	() Sta	ırt	() Done	Done I	Length: 0	

Double-click on Parameters and Local Tags and click on the Monitor Tags tab.

Logix Designer - C	Optris_Xi_CSV [50	69-L306ER 35.11]*									
File Edit View	Search Logic	Communications	Tools Window Help								
ቴ 🗳 🗎 👄	x 🗇 a 🤊	e (~ \$ \$	🕷 📴 🏡 Do Bo	* 🕫	1 Ca Ca					
Run Mode	E Pa	th: Ethernet\192.168.(0.1	· · ·			++ ++ -{ > -{L>	-(U)- ONS OSR OSF			
I/O OK	Rem Run	No Forces	▶ No Edits	a.	4 1	Favorites Add-C	In Alarms Bit Tir	ner/Counter Input/Output	Compare Compute/Math	Move/Logical File/Misc.	File/Shift Sequence
Controller Organizer			🥏 Controller Tags - Optris_Xi	CSV(controller) 📿 P	rogram Para	meters and Local Ta	gs - MainProgram 🛛 🗙	📕 MainProgram - Main	Routine		
ð 95			Scope: 5 MainProgram	Show: All Tags					✓ T Enter Name		
Controller Op	tris_Xi_CSV		Name	=== ×	Usage	Value	 Force Mas 	k 🔶 Style	Data Type	Description	Constant
Controller	Fault Handler		 bReadSerial 		Local	I	1]	Decimal	BOOL		
Power-Up	Handler		▶ DevSerial		Local		21064052	Decimal	UDINT		
A C Tasks			msgReadSerial		Local		{}	{}	MESSAGE		
A & MainP	rogram										
🥥 Par	rameters and Loo	al Tags									
🗈 Ma	inRoutine										
📕 Unschedu	led										
4 📹 Motion Group	DS .		A A A MARKATAN (F.M.								
Ungroupe	d Axes		A Monitor Tags A Edit	lags /							
P 💻 Alarm Manag	er		Errors								

Set the value from bReadSerial to 1 and press Enter. The Serial number of the Optris_XI_CSV is shown under DevSerial.



4.6 Direct communication

The XI/CSV EtherNet/IP device can communicate directly with the Optris device. The user parameter class is 0x65.

Attribute	Name	Size in byte	Format	R/W
1	send/receive	variable	uint8[]	R/W

4.6.1 Example direct communication

Example of setting USER PARAMETER Emission.

Open your project and rename the controller's name (the names of the controller and the ACXICSVEIPK must be different) by double-clicking on the controller.

Create a **New Local Tag** for reading serial numbers and double-click on **Parameters and Local Tags**. Click on the **Edit Tags** tab and create new tags like those shown in the picture below.

🖕 💾 🖶 🗴 🗇 🎝 🖉 🦉	28	• • • • 📭 📴 🗽 🕞 👦	🛎 🕫 📾 🕫 😭				
RUN OK Energy Storage I/O Offline .	No Forces	* 윮 윤	Tavorites A	dd-On Alarms Bit Timer/Count	osr osr osr Input/Output	Compare C	ompute/Math Move/Logical
troller Organizer 🚽 🔫 🗙	📙 MainProgram - MainRout	ne 🖉 Program Parameters and I	ocal Tags - MainProgram	×			
0 <u>=</u>	Scope: L MainProgram	Show: All Tags		~ T. B			
Controller Optris_Xi_CSV	Name 📰 🔺	Usage Alias For I	Base Tag Data Type	Description	External Access	Constant	Style
Controller Fault Handler	bSendCTcmd	Local	BOOL	set to 1 -> starts the routine	Read/Write		Decimal
💼 Power-Up Handler	▶ msgRecCmd	Local	MESSAGE	send the message	Read/Write		
Tasks	msgSendCmd	Local	MESSAGE	send the message	Read/Write		
A h MainProgram	RecBuffer	Local	SINT[16]	receivebuffer	Read/Write		Decimal
Parameters and Local Tags	SendBuffer	Local	SINT[16]	sendbuffer	Read/Write		Decimal
MainRoutine	XiCommandReceive	Local	STRING	Xi command	Read/Write		
Unscheduled	XiCommandSend	Local	STRING	Xi answer	Read/Write		
Ungrouped Axes	0			<u></u>			
Alarm Manager Assets Logical Model	✓ Monitor Tags X Edit	Tags /					



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Set the configuration values like shown in the picture below, **s**et the communication path to Optris_XI_CSV, and click on **OK**. Download the project to the PLC and start the PLC program in **Run Mode**.

Message Configuration - msgSendCmd	X Message Configu	ration - msgRecCmd	×
Configuration Communication Tag	Configuration Co	mmunication Tag	
Message Type: CIP Generic	✓ Message <u>T</u> ype:	CIP Generic V	~
Service Type: Set Attribute Single Source Service 10 (Hex) Glass: 65 (Hex) Destina Code: 10 (Hex) Glass: 65 (Hex) Destina Instance: 1 Attribute: 1 (Hex) Element	Element: SendBuffer[0] V Length: 0 (Bytes) tion V t: New Tag Service Get A Service Code: e Code: 1	ttribute Single Source Element Source Length: (Hex) Class: 65 (Hex) Destination Attribute: 1 (Hex)	t:: ↓ 0 ‡ (Bytes) RecBuffer[0] ↓ New Tag

Double-click on Parameters and Local Tags and click on the Monitor Tags tab.

🖬 Run Mode				×							
Controller OK Path: Energy Storage OK I/O OK Rem Run		No Forces	No Edits	1	1. I	± □ 4 • •	Favorites	Add-On A	-//- -//- -//- 0/- 0/- Alarms Bit Timer/Counter	sR OSF Input/Output Compare	re Com
Controller Organizer	▼ 7 ×	📕 Mai	nProgram - MainRout	ine 🗸	Program Parameters an	d Local Tags - N	AainProgra	n ×	e		-
d" "		Scope	: 🔓 Main Program	 ✓ Sł 	n <u>o</u> w: All Tags			~	T Enter Name Filter		~
Controller Optroller Optroller 1	is_Xi_CSV	Na	me 🔡 🔺	Usage	Value 🗧	Force Mask*	Style	Data Type	Description	Constant	12
Controller F	ault Handler	*	bSendCTcmd	Local	[1]		Decimal	BOOL	set to 1 -> starts the routine		Рго
 Power-Up Handler Tasks MainTask MainTask 		Þ	msgRecCmd	Local	{}	{}		MESSAGE	send the message		perti
		Þ	msgSendCmd	Local	{}	{}		MESSAGE	send the message		es
		Þ	RecBuffer	Local	{}	{}	Decimal	SINT[16]	receivebuffer		
🖉 🖓 Para	meters and Local Tags	Þ	SendBuffer	Local	{}	{}	Decimal	SINT[16]	sendbuffer		
MainRoutine Unscheduled Motion Groups Ungrouped Axes Alarm Manager Assets Sot the value from hS and		Þ	XiCommandReceive	Local	'!SN=21064052\$r'	{}		STRING	Xi command		
		Þ	XiCommandSend	Local	'?SN'	{}		STRING	Xi answer		
			Monitor Tags (Edi	t Tags ,	e Entor						

The serial number of the Optris device is shown under XiCommandRecieve.





5 LED functions and reset Button

The XI/CSV EtherNet/IP module has 4 LED (I1...I4).



- I1 LED on \rightarrow The connection to the Optris device is established
- I2 LED \rightarrow no function
- I3 LED on \rightarrow Ethernet connection is established
- I3 LED is flashing \rightarrow data transfer
- $I4 LED \rightarrow$ reset function

5.1 How to reset the CT communication interface

The XI/CSV EtherNet/IP box must be switched off. Press the button **SW** on the board and switch the box on in the meantime. The I4 – LED flashes red. Release the button the fifth time it flashes. I4 – LED flashes green 5 times as confirmation. After reset follow settings are restored:

IP-Mode:	DHCP
Static IP:	0.0.0.0
Subnet mask:	0.0.0.0
Gateway:	0.0.0.0

Contact information

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