# **ProSoft Connectors**

# **PLX51 Historical Values**

This connector is used to download data from one or more PLX51 DLplus 232 data loggers to a local database from which data can be retrieved for reporting.

# **Configure Data Logging**

Configuration for the ProSoft Data Logger Plus is performed from the ProSoft PLX50 Configuration Utility. The information below briefly outlines the device configuration. For more detailed setup information, refer to the PLX51-DLPlus-232 User Manual. Both the configuration utility and device user manual are available on the official ProSoft website.

From the Configuration Utility:

File         Device         Tools         Window         Help           1	Ethernet Port Configuration	:	×
Configuration     Configuration     Configuration     Status     Configuration     Configuration	Part Configuration Interface Statistics         Media Statistics           Network Configuration Type	Port 1 Negotistion Auto v Port Speed 100 v Duglex Full Duplex v General	
Name Miter Line Description Connection Path 152.168.9.76	Secondary NS         0         0         0         0         0           Domain Name	MAC Addess 00:00:80:F0:0C:08 TCP Inactivity Timesut 120 (s)	

- Click the "+" button to add a new device.
- Select *PLX51-DLplus-232*.
- Open the **Ethernet Port Config** menu.
- Set the **Network Configuration Type** based on the network environment where the device is installed.

In the **Configuration** menu:

File Device 1001s Window Help 1 🖬 🖬 🖌 🗗 🗇 🕂 📲 🗐 🖉 🤱 🆘 Project Explorer	_	_	_			_				
Poster, ABLOBK         → Hinet Line (PUST-Diplus-222)         → Congration         → Module Line (PUST-Diplus-232)         → Feature Line (PUST-Diplus-232)         → Reactor Line (PUST-Diplus-232)         → Reactor Line (PUST-Diplus-232)         → Reactor Line (PUST-Diplus-232)         → Name       Mort Line	Mixer Line - Cor     General Serial Le     Instance Name     Description     IP Address     Data Source     Logging Mode	figuration gix Source DF Mixer Line 192 . 1 Logix Overwrite	F1 Source (Di	isabled) Mo	dbus Sou	nce (Disabled) Major Revisio	Advanced	~		*
Description Connection Path 192,168,9.76	¢					)k	Apply		Cancel >	

- Assign an **Instance Name** to indicate the nature of the data logged by the device. In this example, the configuration represents a production line which involves mixing machinery.
- Assign a **Data Source** based on the type of PLC connected to the Data Logger.

- It is recommended to set **Logging Mode** to *Overwrite* for continuous logging using XLReporter.
- Click **Apply.** Download the configuration to the device.

Based on the **Data Source**, open the corresponding **Source** tab in the Configuration menu. The below example shows configuration for an Allen-Bradley Logix PLC.

ProSoft PLX50 Configuration Utility - SyTech_ABLOGIX*									-		;
File Device Tools Window Help											
🎦 🚭 😫   X 🗗 🏦   🕂 📳 🖪 🞗 🗇											
Project Explorer 🛶 🕂 🗙 📃											
SyTech_ABLOGIX	Mixer Line - Configuration									•	x
Configuration     Ethernet Port Config     Share	General Serial Logix Source	DF1 Source (Disabled) Modbus Source (Disabled) Advance	ed								
	Logix Devices (max. of 3 items.)										
	Target Name	Logix Control	ler Path				-	Browse	Browse Ta	g:	
Generation (PLX51-DLplus-232)	Mixer PLC	192.168.9.240									
🗄 🌗 Reactor Line (PLX51-DLplus-232)	) m										
Properties	Logix Tag (max. of 200 items.) Target Name	T arget T ag	Group Gr Trigger Me	roup	Data Type		Δу	Min∆T	Max∆T	^	
ät 2↓ □	Mixer PLC 🗹 MIXE	R_SPEED_ON			BOOL	$\sim$	0.1	1	1		
Name Mixer Line	Mixer PLC 🗹 MIXE	R_SPEED			DINT	$\sim$	0.1	1	1		
Connection Path 192.168.9.76	Mixer PLC 🗹 MIXE	R_RAMPRESSURE			DINT	$\sim$	0.1	1	1		
	Mixer PLC 🗹 MIXE	R_RAMPRESSURE_ON			BOOL	~	0.1	1	1		
	Mixer PLC 🗹 MIXE	R_ZONE1_TEMP			REAL	~	0.1	1	1	~	
Name Internet Name for the Davise		Ok Appl	y Cancel								

- Assign a **Target Name** which indicates the purpose of the connected PLC. In the above example, 192.168.9.240 is the IP address of the PLC.
- Open **Browse** to select the device using network discovery.
- Open Browse Tags to select the tags logged by the Data Logger.
- For each tag, assign the value deadband (▲y), minimum, and maximum timed rates at which the tag data is logged. It is recommended to configure logging resolution only as high as is required for reporting. Doing so optimizes the responsiveness of the reporting application.
- Click **Apply** and download the configuration to the device.

## Connector

ProSo	ft PLX51 Settin	gs	-		×
Conr	nector Name	PLX51 Data Logger_1			
Dev	vices Storage	Settings			
	Add 🥖 Mo	dify 🔀 Delete			
	Name		IP/Location		
►	Production Line	1	192.168.9.77		
*	add device				
			Apply	Clo	se

## **Devices** Tab

This tab displays all the devices configured to retrieve data for the connector.

Click Add to open the Device Setup dialog and add a new device.

## **Device Setup**

Device Setup	vice Setup × Device Name Production Line 1 /// IP/Location 192.168.9.77 Login User /// Login Password /// Running: 1 /// ConfigVald: 1 /// ContingUser: 1 LogingInhibited: 0 /// LogingGNc: 59691 /// LogingGNc: 59691 /// LogingCR:: 59691 /// LogindCR:: 59691 /// LogindCR:: 59691 /// LogindCR:: 59691 /// LogindCR:: 59691 /// DataSource: EtherNet/IP /// currentID: 1610057063 /// serialNum: 8DF0DFFC /// instance: PS77 // totalFecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cacheRecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cacheRecordCount: 16777216 // cacheRecordCount: 16777216 // cacheRecordCount: 167761622 // cacheRecordCount: 167761622 // cacheRecordCount: 16777216 // cac		
Device Name	Production Line 1		~
IP/Location	192.168.9.77		
Login User			
Login Password			
		V	erify device
ConfigVálid: 1 ContinousLogging: Rollover: 1 LoggingInhibited: 0 LoggingInhibited: 0 ConfigCRC: 59891 LogIndex: 1030632 UnloadIndex: 1032 DataSource: Ethert currentDateTime: 2 currentDateTime: 2 currentD	1 1920 1847P 021/01/07 22:04:23 57053 FC 16777216 167761622 98.91		
		OK	Cancel

For the device set **Device Name** to a descriptive name for the device. This name appears whenever tags are browsed for the connector.

Set **IP/Location** to the IP address of the device.

Click Verify Device to test connectivity and data retrieval from the device.

## Storage Tab

roSoft PLX51 Sett	ings		-		×
Connector Name	PLX:	51 Data Logger_1			
Devices Storage	e Setting	js			
Target					
🔘 Text File	Folder	C:\XLRprojects\XLR_Demo\D	ata		
	File	{date}-{device}			
Database	Type Source	Microsoft Access C:\XLRprojects\XLR_Demo\D ge Data Older Than 90 🗼 da	ata∖XLRda ıy(s)	tabaseı	
Scan Rate					
Every		5 📥 minute(s) 🗸	Start 12:0	0:00 AM	-
On Apply	Crea Vali	ate Database Tables date Data Transfer			

This tab displays the settings that determine where the data is stored on the local machine.

## Target

The target settings determine the database where the device data is stored. A browse pushbutton  $[\dots]$  is provided to define the connection to the database.

For applications with high data volume, a third-party database server such as Microsoft SQL Server is recommended. For small systems, a built-in Microsoft Access database is available in the  $\Data$  directory of the project.

The **Purge Data** option is provided to help control the size of the database.

## Scan Rate

This setting defines the interval at which data is collected from the data logger devices into the **Target Database**.

#### **On Apply**

These options are triggered when the Apply button is clicked.

**Create Database Tables** creates all the necessary tables in the Target Database. If these tables already exist they will be overwritten. This setting is enabled default during initial setup of the connector.

Validate Data Transfer validates the connection between XLReporter and the REST server on each configured data logger device.

### **Settings Tab**

roSoft PL	X51 Settin	gs		-		×
Connector	t PLX51 Settings ector Name PLX51 Dat ces Storage Settings protection Protocol Request meout Wat before request Request retries before fail Request retry interval		Logger_1			
Devices	Storage	Settings				
Conne	ction					
Pr	rotocol		http	7		
R	equest time	out	20	secs		
W	ait before r	equest	0	msecs		
R	equest retri	es before fail	2			
R	equest retry	interval	100	msecs		
				Apply	C	ose

This tab displays the parameters of the HTTP connection to the device(s).

**Protocol** can be either *http* or *https*. If a secure connection is required, use *https*, otherwise use *http*.

**Request timeout** is the number of seconds to wait for a request to complete before a timeout error occurs. The default is 20 seconds.

**Wait before request** is the number of milliseconds to wait between connecting to Talk2M and requesting data. The default is *0* milliseconds.

**Request retries before fail** is the number of times the request is retried before it is considered an error when the request fails. The default is 2.

**Request retry interval** is the number of milliseconds to wait between each retry if a request fails. The default is *100*.

## Schedule

As a consequence of the Scan Rate setting, a schedule is added to the Schedule Designer.

	ii So	chedule Designer	r				-		$\times$
	File	Tools Schee	duler						
i e	₿ A	dd 🥖 Modify	🔀 Delete 🛛 🏹	Outline 🛛 🧭 Test		Outline		-	• •
		Condition			Action				
	$\checkmark$	c:\XLRprojects\t	est\Input\PLX51	Data Logger_1					
	$\checkmark$	Continuous	Recur	5 minutes(s); <every day="">; 00:00:00</every>	RunApplication	bin\plx51Sync.exe "c:\XLRprojects\test\lr	nput\PLX51	Data Log	ger_1"
	ad	d schedule							

# Data Group

The following describes the historical data group settings specific to the **PLX51 History Values** connector.

Group Types

📄 Select Group Type	×
O Summary Values from Server	
Summary Values from XLReporter	
◯ Raw Values	
◯ Raw Text	
<ul> <li>Sampled Values</li> </ul>	
◯ Live Values	
O Custom Values	
Base on	
 dlank> ~	
OK	cel

## For PLX51 History Values the following group types are available:

## Summary Values from XLReporter

This group type retrieves sampled values from the database and performs calculations on those samples for reporting.

By default, summary values are calculated time weighted and values are propagated based on the last known value. However, to change this so that summary values are calculated strictly on the data returned check **use raw values**.

## **Raw Values**

This group retrieves every numeric value logged to the database between the start and end time specified.

By default, the **Output Options** on the **Columns** tab of the Data Group settings is set to *Timestamp on First Column* which does not display millisecond-resolution timestamps. Millisecond timestamps are enabled with *Timestamp, Millisecond on first column*.

### **Custom Values**

This option opens the Database Group builder where a query can be configured to retrieve data from any table in the database.

## **Group Settings**

#### Setup Tab

Edit Preview	nen (i eno i bata coggei,				
tup Columns T	ime Period Filters				
	Descript	tion			
	Retriev	al			
		Retrieval Mode	Raw Values	$\sim$	
		Rate (secs)	30		

## **Retrieval (Summary Values for XLReporter Group)**

The **Retrieval** settings define how data is retrieved for the calculations selected for the group. The following settings are available:

Retrieval Mode

This setting defines how data is retrieved from the historian. For the PLX51 Data Logger only *Raw Values* are available.

• Lead Time

The amount of time (in seconds) to retrieve data before the start time.

## Verify the Data Connector

**XLReporter** retrieves data for a report using a **History Group**. A quick way to create a **History Group** is from the **XLReporter Project Explorer**.

- Select, Tools, Connector Groups
- Select the connector
- Select Add.
- Set the Group Type to Raw Values and click OK.

On the **Columns** tab of the group, select the tag Name(s).

up Columns Time Period Filters			
Selected Columns			
Name	Scaling	Heading	
· MIXER ZONE1 TEMP		MIXER ZONE1 TEMP	
		MIXER ZONE2 TEMP	
MIXER_SPEED		MIXER_20NE2_TEM	
MIXER BAMPBESSUBE		MIXER BAMPBESSUBE	
EXTR ZONE1 TEMP		EXTR ZONE1 TEMP	
EXTR ZONE2 TEMP		EXTR ZONE2 TEMP	
EXTR SPEED		EXTR SPEED	
EXTR_PELLETSPEED		EXTR_PELLETSPEED	
BATCH_TANKTEMP		BATCH_TANKTEMP	
BATCH_MIXPRESSURE		BATCH_MIXPRESSURE	
BATCH_ZONE1		BATCH_ZONE1	
BATCH_ZONE2		BATCH_ZONE2	
H2O_FLOW1		H2O_FLOW1	
H2O_FLOW2		H2O_FLOW2	
H2O_FLOW3		H2O_FLOW3	
H2O_FLOW4		H2O_FLOW4	
H2O_PUMP1_STATE		H2O_PUMP1_STATE	•
Output Ontions			
ouput optione			

From the menu bar:

- Click **Preview**
- Enter a Start date
- Click **Refresh**.

Preview					
🈏 Refresh 💿 Stop	*	Date	MIXER_ZONE1_TEMP	MIXER_ZONE2_TEMP	
Date		1/21/2020	74.1212158203125	74.1212158203125	
Start 21 Jan 2020		1/21/2020 12:01:00 AM	80.1212158203125	76.1212158203125	
End 22 Jan 2020		1/21/2020 12:02:00 AM	16	75.321044921875	
⊕ ୍ ◀ ▶	- 🕨	1/21/2020 12:03:00 AM	22	75.8381576538086	
		1/21/2020 12:04:00 AM	28	75.7197875976563	
		1/21/2020 12:05:00 AM	34	75.5581741333008	
		1/21/2020 12:06:00 AM	40	76.0077972412109	
		1/21/2020 12:07:00 AM	46	75.4261779785156	
		1/21/2020 12:08:00 AM	52	76.1543960571289	
		1/21/2020 12:09:00 AM	58	75.4110870361328	
		1/21/2020 12:10:00 AM	64	76.2080764770508	
		1/21/2020 12:11:00 AM	70	75.4759292602539	
		1/21/2020 12:12:00 AM	76	76.1795806884766	
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