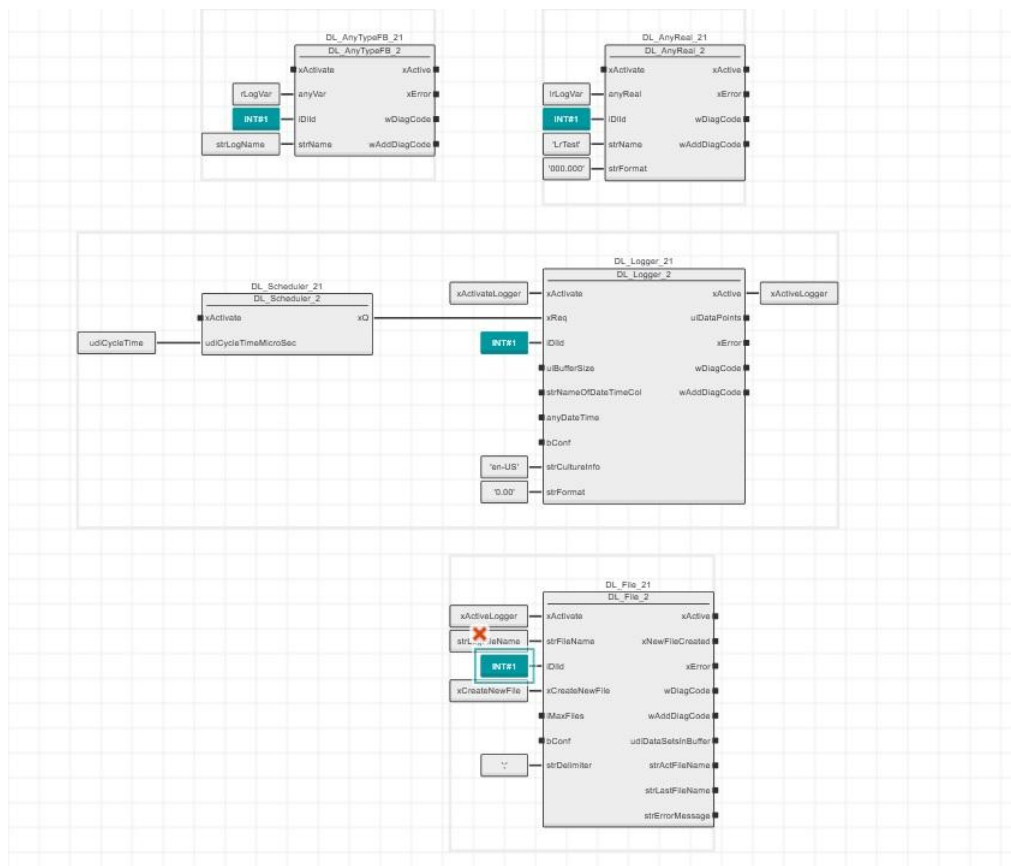


Datalogger Function Blocks

The function blocks for Data Logging are used to collect data of any data types and store into csv or binary files.

Data Logging function blocks



The green marked variables addresses the the fbs between each other.

The following function blocks are available for Data Logging:

Function	Short description
DL_AnyTypeFB_2	This function block is used to log variables of any IEC61131 data type
DL_AnyReal_2	This function block is used to log variables of any IEC61131 data type
Data Logger	This FB is used to collect data in internal buffers.
DL_File_2	This function block is used to store data to the local file system as CSV or binary files
DL_Scheduler_2	This FB can be used as a scheduler for the logging requests.

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DL_AnyTypeFB_2

Type Function block

Description This function block is used to log variables of any IEC61131 data type except strings. The function is copying the process data into a local RAM buffer.

WARNING

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system. ¹

Notes This FB can only be used in combination with DL_Loader_2 and DL_File_2

Parameters

Inputs

- xActivate
- anyVar
- iDId
- strName

Outputs

- xActive
- xError

- › wDiagCode
- › wAddDiagCode

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8300	0x0000	Function block is active.
0xC110	0x0002	Unsupported data type @ anyVar used.
0xC110	0x0003	iDIld must be a value between 0 - 7
0xC900	0x0001	The internal buffer is already in use. This error should not happen if so please contact Phoenix Contact for support.
0xC900	0x0002	The internal buffer address is already in use. This error should not happen if so please contact Phoenix Contact for support.

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DL_AnyReal_2**Type** Function block**Description** This function block is used to log variables of any IEC61131 data type except strings. The function is copying the process data into a local RAM buffer.**WARNING**

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system.¹**Notes** | This FB can only be used in combination with DL_Logger_2 and DL_File_2**Parameters Inputs**

- › xActivate
- › anyReal
- › rDelta
- › iDIld
- › strName
- › strFormat

Outputs

- › xActive
- › xError
- › wDiagCode
- › wAddDiagCode

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8300	0x0000	Function block is active.
0xC110	0x0002	Unsupported data type @ anyVar used.
0xC110	0x0003	iDIld must be a value between 0 - 7
0xC900	0x0001	The internal buffer is already in use. This error should not happen if so please contact Phoenix Contact for support.
0xC900	0x0002	The internal buffer address is already in use. This error should not happen if so please contact Phoenix Contact for support.

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DL_StringType_2**Type** Function block**Description** This function block is used to log variables of any IEC61131 data type except strings. The function is copying the process data into a local RAM buffer.**WARNING**

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system.¹**Notes** | This FB can only be used in combination with DL_Logger_2 and DL_File_2**Parameters Inputs**

- › xActivate
- › strIn
- › xLogOnChange
- › iDIld
- › strName

› strFormat

Outputs

› xActive

› xError

› wDiagCode

› wAddDiagCode

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8300	0x0000	Function block is active.
0xC110	0x0002	Unsupported data type @ anyVar used.
0xC110	0x0003	iDIld must be a value between 0 - 7
0xC900	0x0001	The internal buffer is already in use. This error should not happen if so please contact Phoenix Contact for support.
0xC900	0x0002	The internal buffer address is already in use. This error should not happen if so please contact Phoenix Contact for support.

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DL_Logger_2

Type

Function block

Description

This FB is used to collect data and store this in internal buffers.



WARNING

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system. ¹

¹ When running the application logic in simulation mode, the function blocks for Ethernet communication establish a **real** connection to other devices/servers. Thus, outputs and variables connected to real hardware may be set and therefore may cause real damage to the machine.

Notes

› Function blocks have to be instantiated.

The instance name of the function block has to be declared in the 'Variables' table of the POU where the FB is going to be used. The instance name must be unique within the POU.

Parameters

Inputs

› xActivate

› xReq

› iDIld

› uiBufferSize

› strNameOfDateTimeCol

› anyDateTime

› bConf

› strCultureInfo

› strFormat

Outputs

› xActive

› uiDataPoints

› xError

› wDiagCode

› wAddDiagCode

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8300	0x0000	Function block is active.
0xC110	0x0003	Configuration error: iDIld must be a value between 0 - 7

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DL_File_2

Type

Function block

Description

This function block is used to store data to the local file system as CSV or binary files.

For each data set is used one row which contains the actual values of all instanced data point FBs.

 WARNING

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system. ¹

¹ When running the application logic in simulation mode, the function blocks for Ethernet communication establish a **real** connection to other devices/servers. Thus, outputs and variables connected to real hardware may be set and therefore may cause real damage to the machine.

Notes

- ┆ Function blocks have to be instantiated.
The instance name of the function block has to be declared in the 'Variables' table of the POU where the FB is going to be used. The instance name must be unique within the POU.
- ┆ If you reset the PLC at the same time when the data logger is writing in a file it is possible to damage the file and lose data.

Parameters**Inputs**

- xActivate
- strFileName
- iDIId
- xCreateNewFile
- iMaxFiles
- bConf
- strDelimiter

Outputs

- xActive
- xNewFileCreated
- xError
- wDiagCode
- wAddDiagCode
- udiDataSetsInBuffer

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8100	0x0000	Function block is initializing.
0x8300	0x0000	Function block is running.
0xC110	0x0001	Too many IO driver used. Maximum is for.
0xC110	0x0008	Invalid value strCultureInfo
0xC110	0x0009	Invalid value strFormat
0xC310	0x0000	Too many data in buffer, data sets losses.
0xC310	0x0000	Too many data in buffer, data sets losses.
0xC340	0x0001	Error read ini file. Maybe invalid file name configured.
0xC340	0x0002	Error create Initial file.
0xC343	0x0001	Error create Logging file.
0xC343	0x0002	Error open Logging file
0xC343	0x0003	Error write into Logging file
0xC343	0x0004	Error close Logging file.
0xC343	0x0005	Error close Logging file.

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DL_OnEvent_2**Type**

Function block

Description

This FB is used to store the in case of an event the data sets before and after the event into a csv file.

The configured buffer on the data logger is used for pre records. The buffer size of the data logger should be bigger then the to be logged pre records because of a possible loss of data. Post records are not limited. Pre- & Post-Records count the Event as one record.

Each data set is added with absolute time stamp. In the header the Event time stamp is stored.

Log example (PreRecords := 5;PostRecords := 5):

```
# : buffersave version 2.00 13.10.2017
```

```
#
```

```
# Logfile Time
```

```
#Event Time: 2018-06-12 09:37:16.055
```

2018-06-12 09:37:15.975
2018-06-12 09:37:15.995
2018-06-12 09:37:16.015
2018-06-12 09:37:16.035
2018-06-12 09:37:16.055
2018-06-12 09:37:16.075
2018-06-12 09:37:16.095
2018-06-12 09:37:16.115
2018-06-12 09:37:16.135

 WARNING

Unintended machine operation

Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system.¹

¹ When running the application logic in simulation mode, the function blocks for Ethernet communication establish a **real** connection to other devices/servers. Thus, outputs and variables connected to real hardware may be set and therefore may cause real damage to the machine.

Notes

- Function blocks have to be instantiated.
The instance name of the function block has to be declared in the "Variables" table of the POU where the FB is going to be used. The instance name must be unique within the POU.
- Known issues: The buffer writing to memory is asynchrony to the logging. Means if the configured bufferSize at the DataLogger is equal to PreRecords it can happen that not all PreRecords are saved.
If the event trigger is fired before preRecords is in the memory it can be that the file is empty.

Parameters**Inputs**

- ▶ xActivate
- ▶ strFileName
- ▶ iDIId
- ▶ xCreateNewFile
- ▶ iMaxFiles
- ▶ bConf
- ▶ strDelimiter
- ▶ xLogEvent
- ▶ uiPreRecords
- ▶ uiPostRecords

Outputs

- ▶ xActive
- ▶ xNewFileCreated
- ▶ xError
- ▶ wDiagCode
- ▶ wAddDiagCode
- ▶ udiDataSetsInBuffer

Diagnostic Codes

Diagnostic Code (hex)	Additional Diagnostic Code (hex)	Meaning
0x8100	0x0000	Function block is initializing.
0x8300	0x0000	Function block is running.
0xC110	0x0001	To many IO driver used. Maximum is for.
0xC110	0x0008	Invalid value strCultureInfo
0xC110	0x0009	Invalid value strFormat
0xC343	0x0001	Error create Logging file.
0xC343	0x0002	Error open Logging file
0xC343	0x0003	Error write into Logging file
0xC343	0x0004	Error close Logging file.
0xC343	0x0005	Error close Logging file.
Known issues: If the trigger for the logfile is fired before the prerecord buffer is full the logged file contains no data.		

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DL_Scheduler_2	
Type	Function block
Description	This FB can be used as a scheduler for the logging requests.
	 WARNING Unintended machine operation Verify that the influence of the output data cannot result in an unintended or hazardous behavior of the entire system.¹
Notes	Function blocks have to be instantiated. The instance name of the function block has to be declared in the 'Variables' table of the POU where the FB is going to be used. The instance name must be unique within the POU. If the FB is running in a 100ms Task and udiCycleTimeMicroSec is set to 100ms one cycle can be lost.
Parameters	Inputs  xActivate  udiCycleTimeMicroSec Outputs  xQ

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