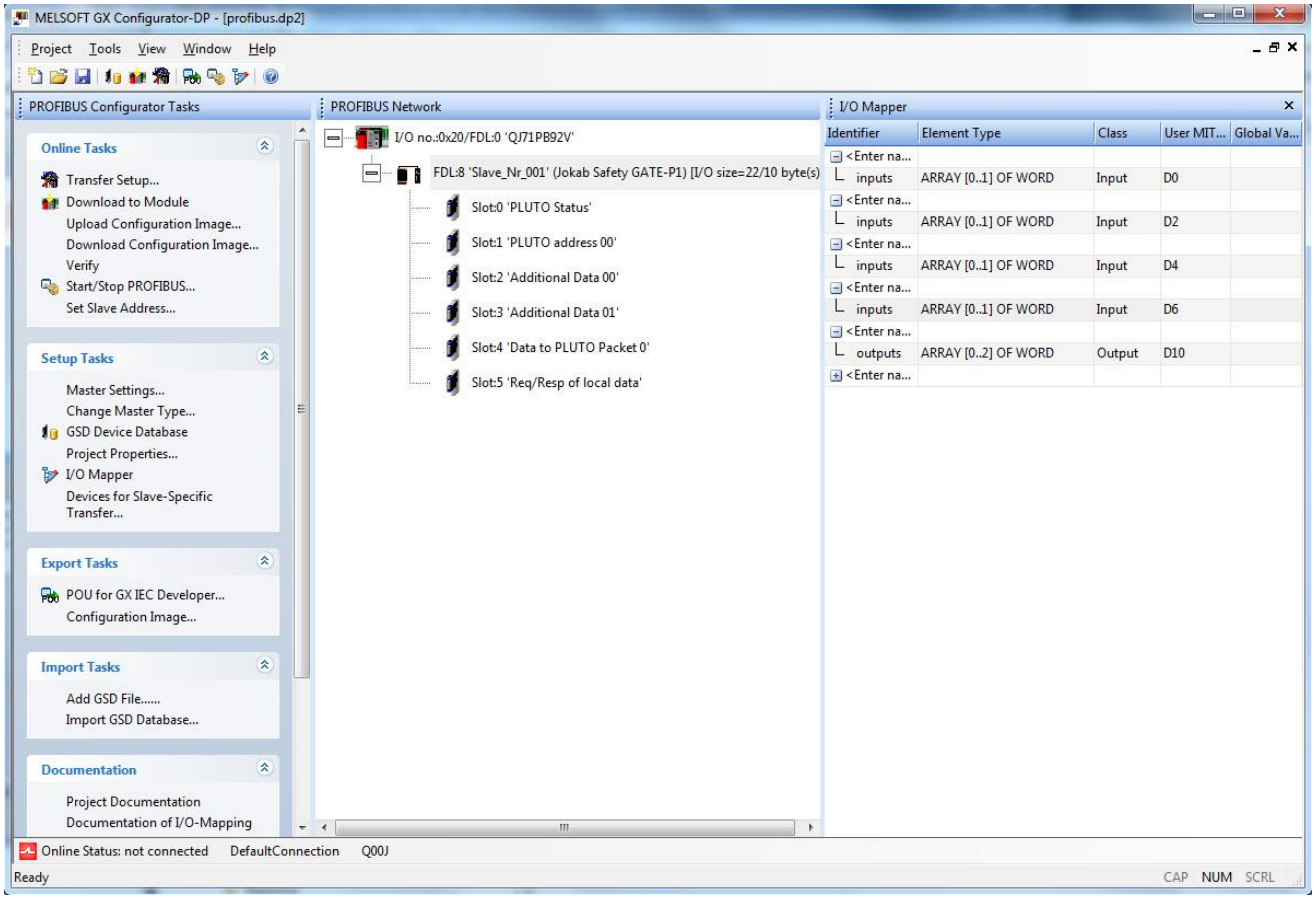
Pluto GATE-P2

Integration with Mitsubishi Q



Integration Description

Table of contents:

1 General

The Profibus Gateway is a unit used to transfer data between Profibus and Pluto bus. Communication both ways is possible.

This document describes how to setup and work with the Pluto gateway Gate-P2 in Pluto Manager and Mitsubishi GX Configurator-DP/GX IEC Developer. It also brings up how to use a number of sample function blocks for the Mitsubishi Q CPU family for complete communication back and forth between a Pluto unit and a Mitsubishi PLC, through the gateway. All functions are samples and are to be used “as is”.

2 Hardware

2.1 Casing

Below are pictures describing the Pluto GATE-P2.

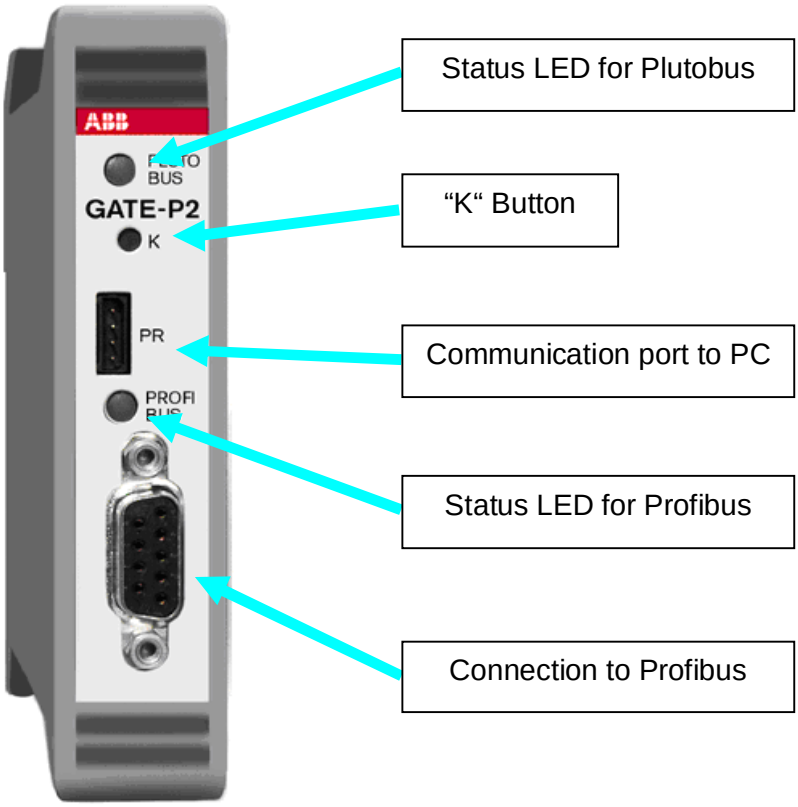


Figure 1

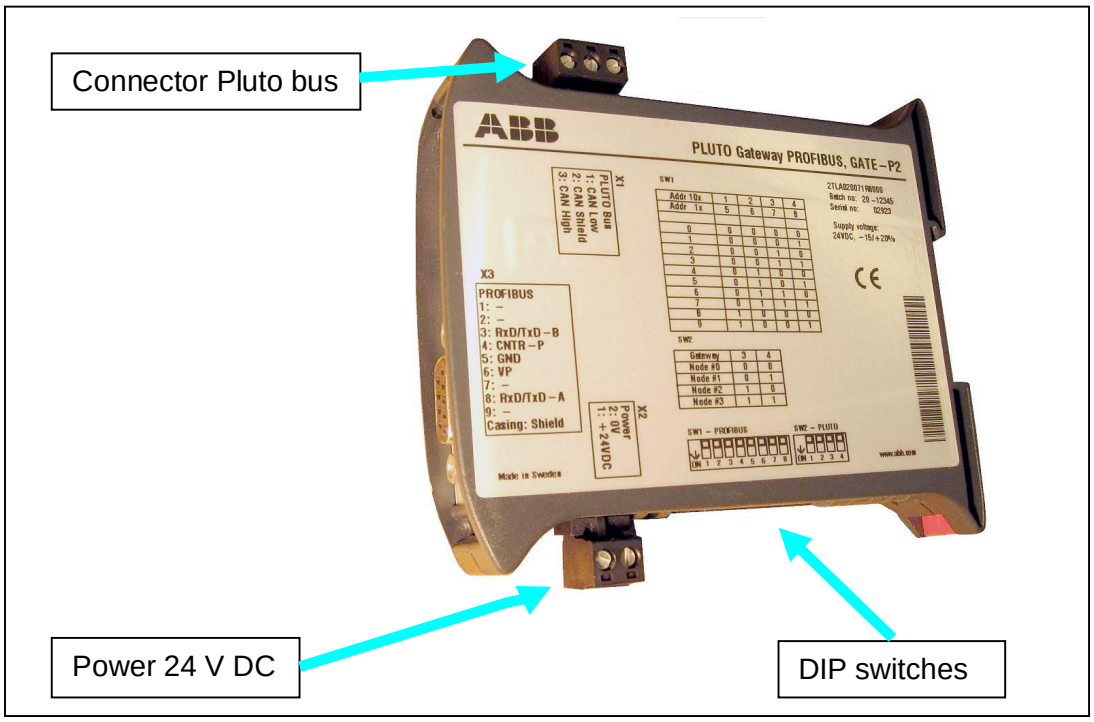


Figure 2

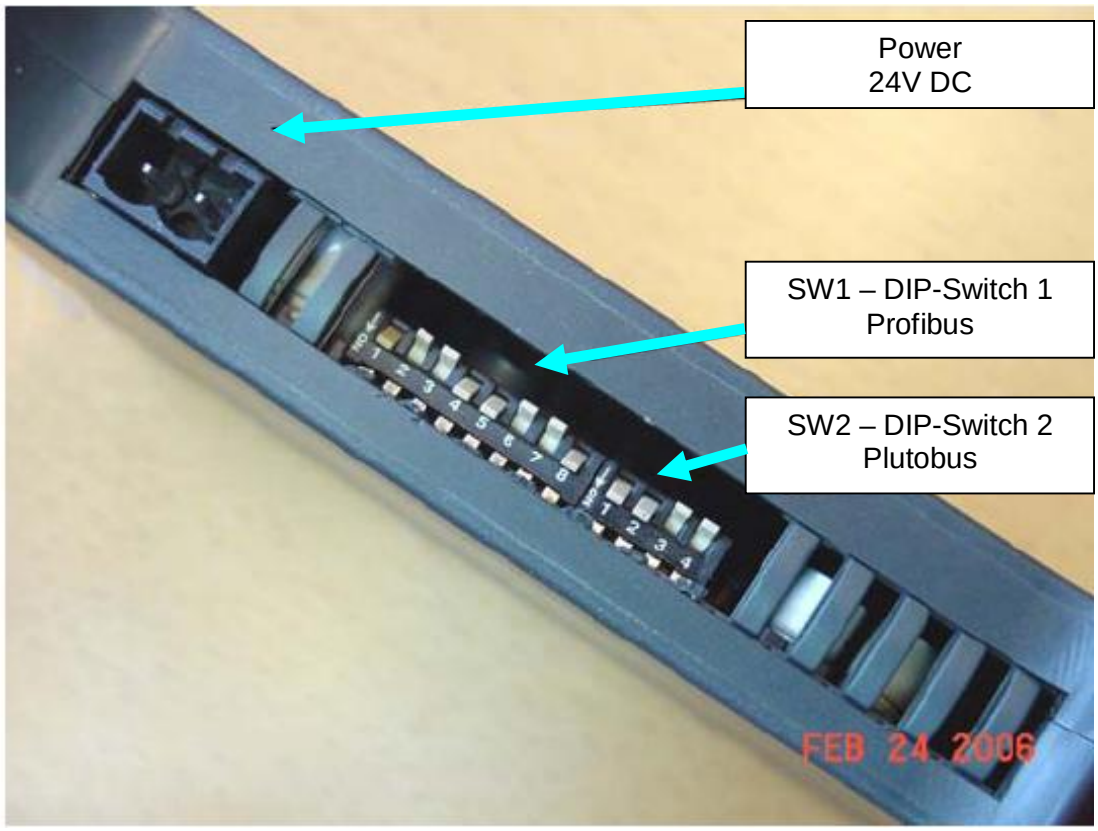


Figure 3

2.2 Pluto bus

The Pluto bus is a CAN bus which means the connection shall follow the common rules for all CAN buses.

2.2.1 Connecting the Pluto bus

The connector for the Pluto bus is located on the upper side.
If the gateway is placed first or at the end of the bus a 120Ω end terminating resistor must be mounted.

PIN	Label	Description
1	CL	Pluto CAN-L
2	SE	Pluto CAN bus shield
3	CH	Pluto CAN-H

2.2.2 Baud rate detection

The gateway will automatically detect the baud rate on the Pluto bus when there is traffic on it.

2.2.3 Status LED for Pluto bus

LED – Pluto bus	Description	Remark
Flashing GREEN/RED	Pluto bus baud rate search.	When bus is not connected or no traffic on the bus.
GREEN short off flash	Pluto unit detected and baud rate is set. In bridge function mode: Full operation.	
Flashing GREEN 40 /60 (on/off)	Gateway in full operation. Pluto bus is running and receiving SYNC/POLL/OUTPUT on the field bus. (Not for bridge function mode)	
Continuously RED	Fatal error detected.	

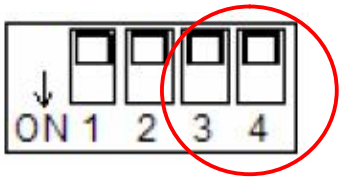
2.2.4 Gateway Address Pluto bus settings

The gateway has an address switch for giving it an address on the Pluto bus, switch ”SW2”. The address makes it possible to receive data on the Pluto bus in the Pluto unit from up to four different gateways.

It is not necessary to set an address if the gateway is only used to send data to the Profibus. It is however encouraged to set an address if you use several gateways. This is because there will be trouble for the ”Bus Status“- function in the Pluto Manager tool if there are gateways using the same address.

Switch row 1 SW 1 - Profibus

Switch row 2 SW 2 – Pluto bus



Pluto bus address	DIP – SW2.3	DIP – SW2.4
1	0	0
2	0	1
3	1	0
4	1	1

2.3 Profibus

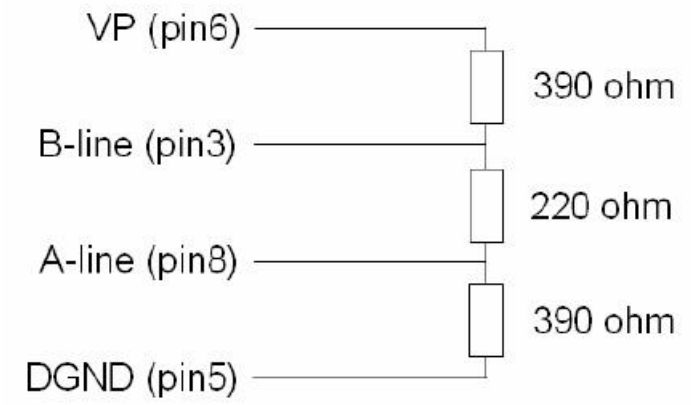
The Profibus is implemented in the Gateway as a DP Slave using the DP-V0 protocol. The DP-V0 protocol is fully compatible with the DPV1 and DPV2 protocols.

2.3.1 Connecting the Profibus

The gateway uses the standard Profibus connector (D-sub 9-poles).

Pin	Signal	Description
1	Shield	Shield/functional ground
2	-	-
3	RxD/TxD-P	Receive/Transmit data – plus (B wire – red)
4	CNTR-P	Repeater control signal (direction control), RTS signal
5	DGND	Data ground (reference potential for VP)
6	VP	Supply voltage – plus (P5V)
7	-	-
8	RxD/TxD-N	Receive/Transmit data – minus (A wire – green)
9	-	-

The PROFIBUS cable must have a termination in **each end of the bus.**



2.3.2 Baud rate Profibus

The PROFIBUS speed is automatically detected. Supported speeds are:

9.6 kbits/s, 19.2 kbits/s, 93.75 kbits/s, 187.5 kbits/s, 500 kbits/s, 1.5 Mbit/s, 3 Mbit/s, 6 Mbit/s and 12 Mbit/s

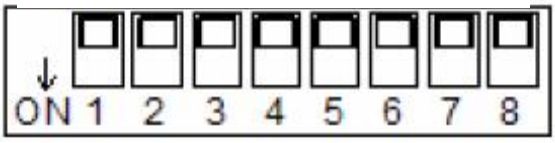
2.3.3 Status LED for Profibus

LED	Description	Remark
Fast flashing red/green	Baud Search	Trying to find and set the correct baud rate
Fast flashing green	Waiting Parameter	Discovered a working/live Profibus, waiting for the Master to contact the slave (Gateway)
Slow flashing green	Waiting Configuration	The Master has discovered the slave (Gateway) and the Gateway is now receiving the setup configuration
Fixed green	Data exchange state	Profibus up and running
Fixed red	Error detected	Bad address setting. Internal error.

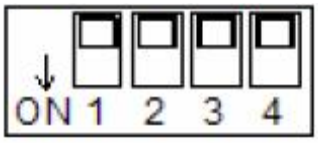
2.3.4 Gateway Address Profibus setting

The PROFIBUS address is set by DIP-switch “SW1” in the range 00 – 99 with BCD code setting. The singles are set on SW1:5-8 and the tens on SW1:1-4 according to the table below. If any of the address switches is using the “not used” setting then the PROFIBUS LED will light steady red.

Switch row 1 SW 1 - Profibus



Switch row 2 SW 2 – Pluto bus



Address 10 x	DIP – SW1.1	DIP – SW1.2	DIP – SW1.3	DIP – SW1.4
Address 1 x	DIP – SW1.5	DIP – SW1.6	DIP – SW1.7	DIP – SW1.8
1	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
Not used	1	0	1	0
Not used	1	0	1	1
Not used	1	1	0	0
Not used	1	1	0	1
Not used	1	1	1	0
Not used	1	1	1	1

Example: Address 25 SW 1.5 - SW1.8 = 0101
SW 1.1 - SW1.4 = 0010

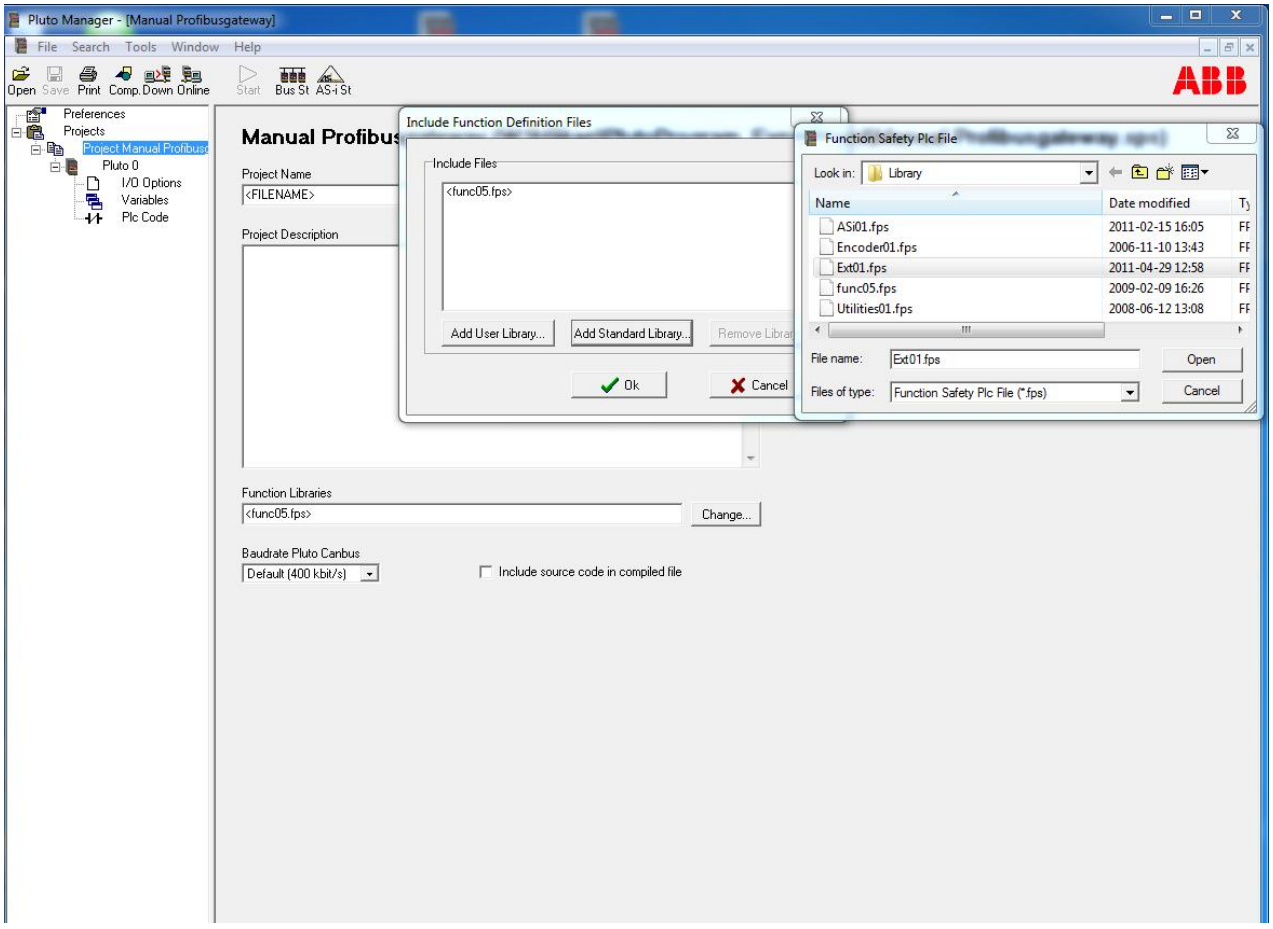
3 Setup in Pluto Manager

All global data from the Pluto units (max. 32) connected to the Pluto bus is sent constantly, cyclically. In order to receive the global data in the Mitsubishi PLC, no function library must be setup in Pluto Manager.

In order to send data other than the global data, and to receive data from the Mitsubishi PLC, a function library must be setup.

3.1 Selecting the function library

1. Click on the user project
2. Click on the “Change” button
3. Click on “Add Standard Library“
4. Click and select “Ext01.fps“, then click on Open



After this procedure the ”Function Libraries” window should show (func05.fps is added by default):

3.2 Transmitting from Pluto to Mitsubishi PLC

This chapter describes how to transmit data on the Pluto bus, through the gateway and onwards to the super ordinate system.

Be careful to not cause unnecessary bus load on the Pluto bus. A Pluto unit can only send four telegrams every PLC cycle. In a big network of Pluto units where every unit transmits every cycle the load on the bus will quickly become high. For examples on how to program see the "Pluto Gateway Manual".

3.2.1 Transmit global data from Pluto

The global data of each Pluto unit is constantly available on the Pluto CAN bus, with or without a connected gateway. The Pluto unit therefore does not need to be setup with any special transmission components for sending the global data.

The global data consists of the following components:

Global inputs:	Ix.0 to Ix.7
	Ix.10 to Ix.17
Global Memories:	GMx.0 to GMx.11
Global outputs:	Qx.0 to Qx.3

Where "x" is the number of the Pluto unit.

Further setup in Pluto Manager for global data is not necessary!

Note: In Pluto B46-6 not all of the safety inputs are available as global data. The outputs Qx.4 and Qx.5 are not sent in the global data.

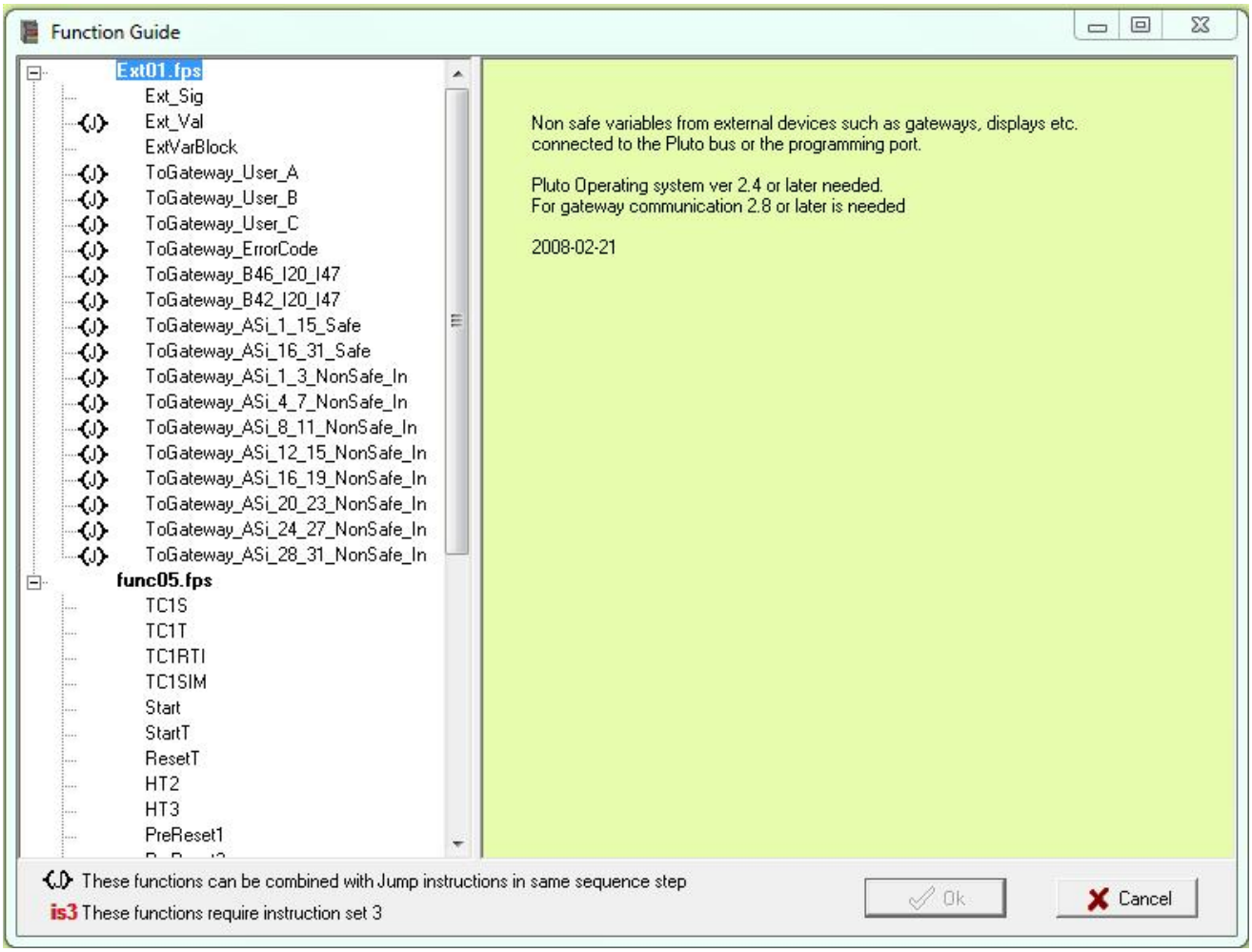
In order to send these extra inputs on the Pluto bus a special function (ToGateway_B46_I20_I47) from the "ext01.fps" library must be used. For Qx.4 and Qx.5 the function "ToGateway_User_B" could be used to send them as bits for example.

The global data for Pluto-AS-i varies from the other Pluto members. See the Pluto Gateway manual.

3.2.2 Transmit other data from Pluto

In order to transmit other data (registers, bits, inputs and outputs) in addition to the global data on the Pluto bus, functions from the “ext01.fps” must be used. These were added under “Selecting the function Library”.

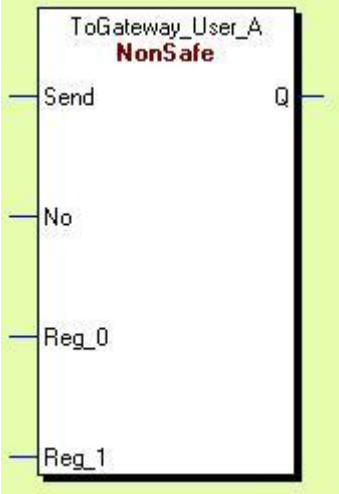
Components of the Function library “ext01.fps”:



Block description:

The following text describes the function blocks used to transmit data to the super ordinate system from the Pluto bus, through the gateway, on the Profibus and to the Mitsubishi PLC.

3.2.2.1 ToGateway_User_A:



Render it possible to send two freely chosen registers.

Input variables:

Send: When "1" data is transmitted.
No: Number used in the "GX configurator", slave user parameters, (ToGateway_UserNumber_X, X=1-99) to identify the data received. It must be unique and used only once by any "ToGateway" block in the Pluto using the "No" pin, where "No" is a number ranging from 1-99.

Reg_0: Addressing if the 1st register (R or SR register) to be transmitted.
Reg_1: Addressing if the 2nd register (R or SR register) to be transmitted.

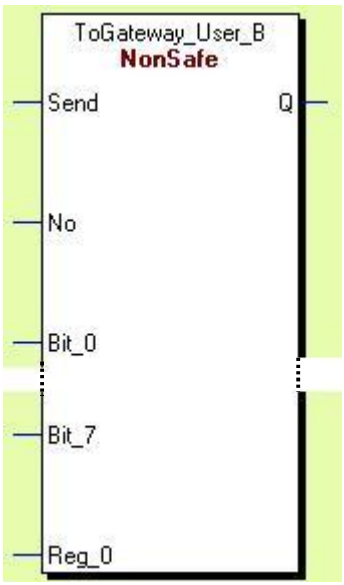
Output variables:

Q: Output is "1" during transmission.

Inputs in the Mitsubishi PLC:

Byte0 = Reg_0 low byte
Byte1 = Reg_0 high byte
Byte2 = Reg_1 low byte
Byte3 = Reg_1 high byte

3.2.2.2 ToGateway_User_B:



Render it possible to send eight freely chosen bits and one freely chosen Register, plus the Pluto unit's error code.

Input variables:

Send: When "1" data is transmitted.
No: Number used in the "GX configurator", slave user parameters, (ToGateway_UserNumber_X, X=1-99) to identify the data received. It must be unique and used only once by any "ToGateway" block in the Pluto using the "No" pin, where "No" is a number ranging from 1-99.

Bit_0 to Bit_7: Addressing of up to eight bit variables (I, Q, M, SM) to be transmitted.
Reg_0: Addressing if the register (R or SR register) to be transmitted.

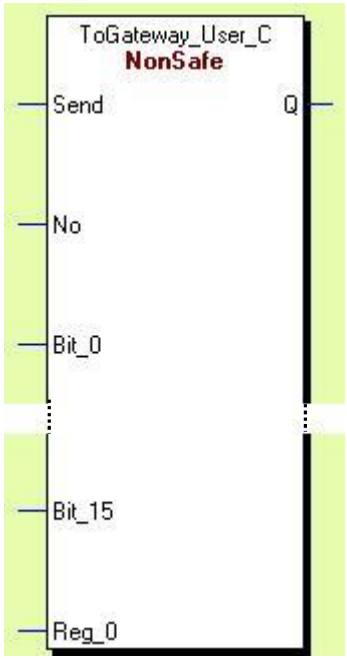
Output variables:

Q: Output is "1" during transmission.

Inputs in the Mitsubishi PLC:

Byte0 = Reg_0 low byte
Byte1 = Reg_0 high byte,
Byte2 = Bit_7, Bit_6, Bit_5, Bit_4, Bit_3, Bit_2, Bit_1, Bit_0
Byte3 = Error Code

3.2.2.3 ToGateway_User_C:



Render it possible to send sixteen freely chosen bits and one freely chosen register.

Input variables:

Send: When "1" data is transmitted.
No: Number used in the "GX configurator", slave user parameters, (ToGateway_UserNumber_X, X=1-99) to identify the data received. It must be unique and used only once by any "ToGateway" block in the Pluto using the "No" pin, where "No" is a number ranging from 1-99.

Bit_0 to Bit_15: Addressing of up to sixteen bit variables (I, Q, M, SM) to be transmitted.
Reg_0: Addressing if the 1st register (R or SR register) to be transmitted.

Output variables:

Q: Output is "1" during transmission.

Inputs in the Mitsubishi PLC:

Byte0 = Reg_0 low byte
Byte2 = Bit_7, Bit_6, Bit_5, Bit_4, Bit_3, Bit_2, Bit_1, Bit_0
Byte1 = Reg_0 high byte
Byte3 = Bit_15, Bit_14, Bit_13, Bit_12, Bit_11, Bit_10, Bit_9, Bit_8.

3.2.2.4 ToGateway_ErrorCode:

Render it possible to send the Pluto unit's error code.

Input variables:

Send: When "1" data is transmitted.

No: In GX configurator, slave user parameters, use "ToGateway_ErrorCode.

Output variables:

Q: Output is "1" during transmission.

Inputs in the Mitsubishi PLC:

Byte0 = not used
Byte1 = not used
Byte2 = not used
Byte3 = Error Code

3.2.2.5 ToGateway_B46_I20_I47:

Render it possible to send the inputs not included in the global data from the B46-6.

Only used when needed when working with the B46-6!

Input variables:

Send: When "1" data is transmitted.

No: In GX configurator, slave user parameters, use "ToGateway_B46_I20_I47.

Output variables:

Q: Output is "1" during transmission.

Inputs in the Mitsubishi PLC:

Byte0 = Ix.27, Ix.26, Ix.25, Ix.24, Ix.23, Ix.27, Ix.21, Ix.20,
Byte1 = Ix.37, Ix.36, Ix.35, Ix.34, Ix.33, Ix.37, Ix.31, Ix.30,
Byte2 = Ix.47, Ix.46, Ix.45, Ix.44, Ix.43, Ix.42, Ix.41, Ix.40,
Byte3 = Error Code

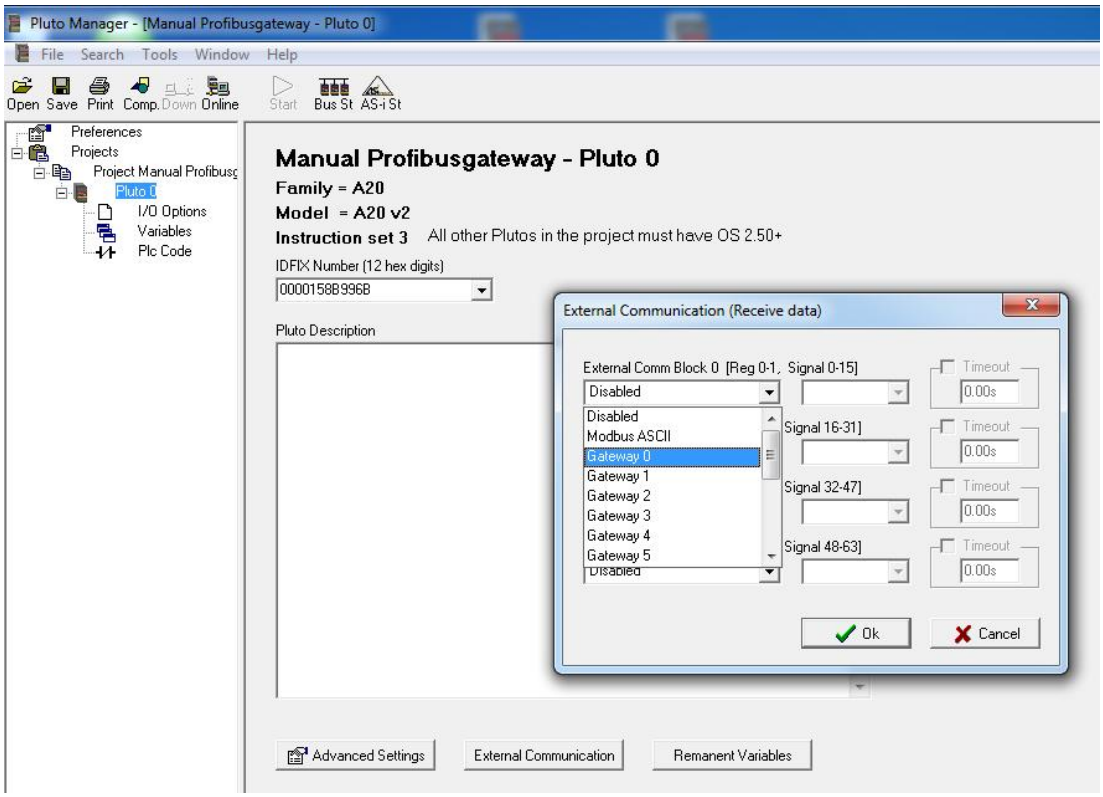
3.3 Transmitting from the Mitsubishi PLC to Pluto

3.3.1 Setup External Communication in Pluto Manager

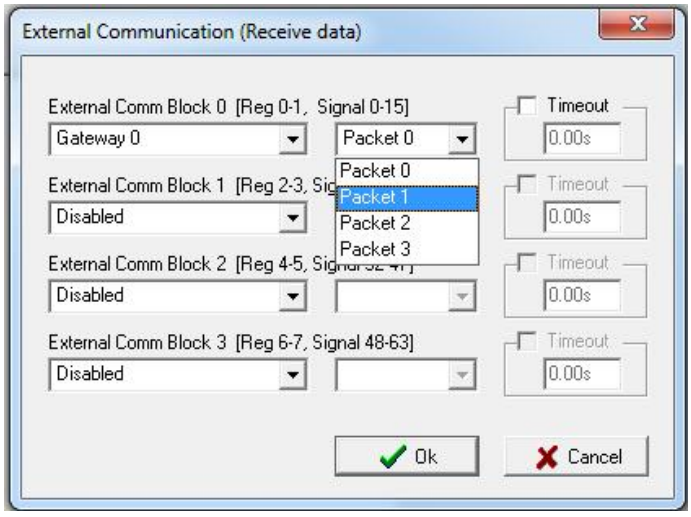
In a Pluto network the maximum number of Pluto safety PLC units possible to connect is 32. Added to that is up to four gateways. Each gateway can transmit 24 bytes of data divided into four packets of six bytes in each. A packet that the gateway receives from the super ordinate system is transmitted on to the Pluto bus. The Pluto that wishes to receive a certain packet must be configured so that packet ends up in an “External Comm Block”.

The following pictures explain how to setup the Pluto unit to receive data from the super ordinate PLC unit through the gateway.

Selecting the gateway:



Selecting the packet:



Selecting the gateway and packets received from it.

In order to setup the Pluto PLC to receive data from a gateway the gateway’s address must be set. Which packet from the chosen gateway to be received must also be chosen and mapped to the Comm Block the user wish it to end up in.

It is possible to choose between up to four gateways, 0-3. Each gateway can send up to four packets.

It is therefore possible to differentiate the gateways and the packets.

After this setup no further configuration is necessary in the Pluto to receive external data.

3.3.2 Receive Data in Pluto

Below is described which blocks can be used to receive data from the super ordinate system, via the Profibus, through the gateway and over the Pluto Bus.

Data transmitted to the Pluto unit is split into four External Comm Blocks, each Comm Block containing 16 data bits and two 16 bit registers. Comm Block zero contains bits 0-15 and registers 0 and 1, Comm Block one contains bits 16-31 and registers 2 and 3, Comm Block two contains bits 32-47 and registers 4 and 5, Comm Block three contains bits 48-63 and registers 6 and 7.

Block description:

3.3.2.1 Ext_Sig:

The block reads one bit variable from the Profibus gateway, written to the gateway by the super ordinate system.

Input variables:

VarNo:	A number ranging from 0-63, note which bit number belongs to which “External Comm Block” and also which packet was configured to end up in this Block.
PostClear:	PostClear sets the output “Q” to 0 in the next PLC cycle. If it is unconditionally set “Q” will follow what the external device write to VarNo.

Output variables:

Q:	Q is the output and can control an M, GM or Q according to what the external device transmit.

3.3.2.2 Ext_Val:

The block reads 16 bits from the Profibus gateway, written to the gateway by the super ordinate system.

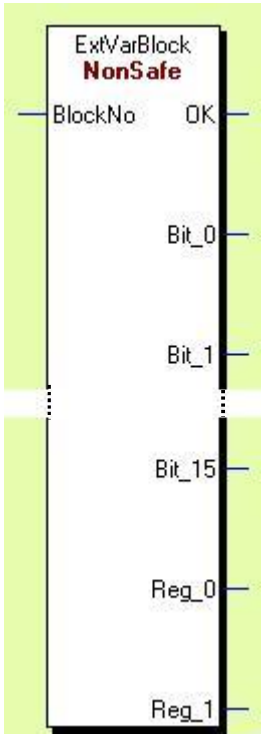
Input variables:

VarNo:	A number between 0-7, note which register number belongs to which “External Comm Block” and also which packet was configured to end up in this Block.
PostClear:	PostClear sets the output “Value” to 0 in the next PLC cycle. If it is unconditionally set “Value” will follow what the external device write to VarNo.

Output variables:

OK	Dummy Bit which is normally “1”. It must be connected to an M, GM or Q.
Value	Value is the output received from the external device and must be connected to a Register R.

3.3.2.3 ExtVarBlock:



The block reads the whole packet received into an "External Comm Block" from the gateway, written to the gateway by the super ordinate system.

Input variables:

BlockNo:	A number between 0-3 corresponding to the External Comm Block that is setup in PlutoManager.

Output variables:

OK:	Dummy Bit which is normally "1". It must be connected to an M, GM or Q.
Bit_0 to Bit_15:	The bits included in the Comm block, it must be connected to an M, GM or Q.
Reg_0:	The first register included in the Comm block. It must be written to a register R.
Reg_1:	The second register included in the Comm block. It must be written to a register R.

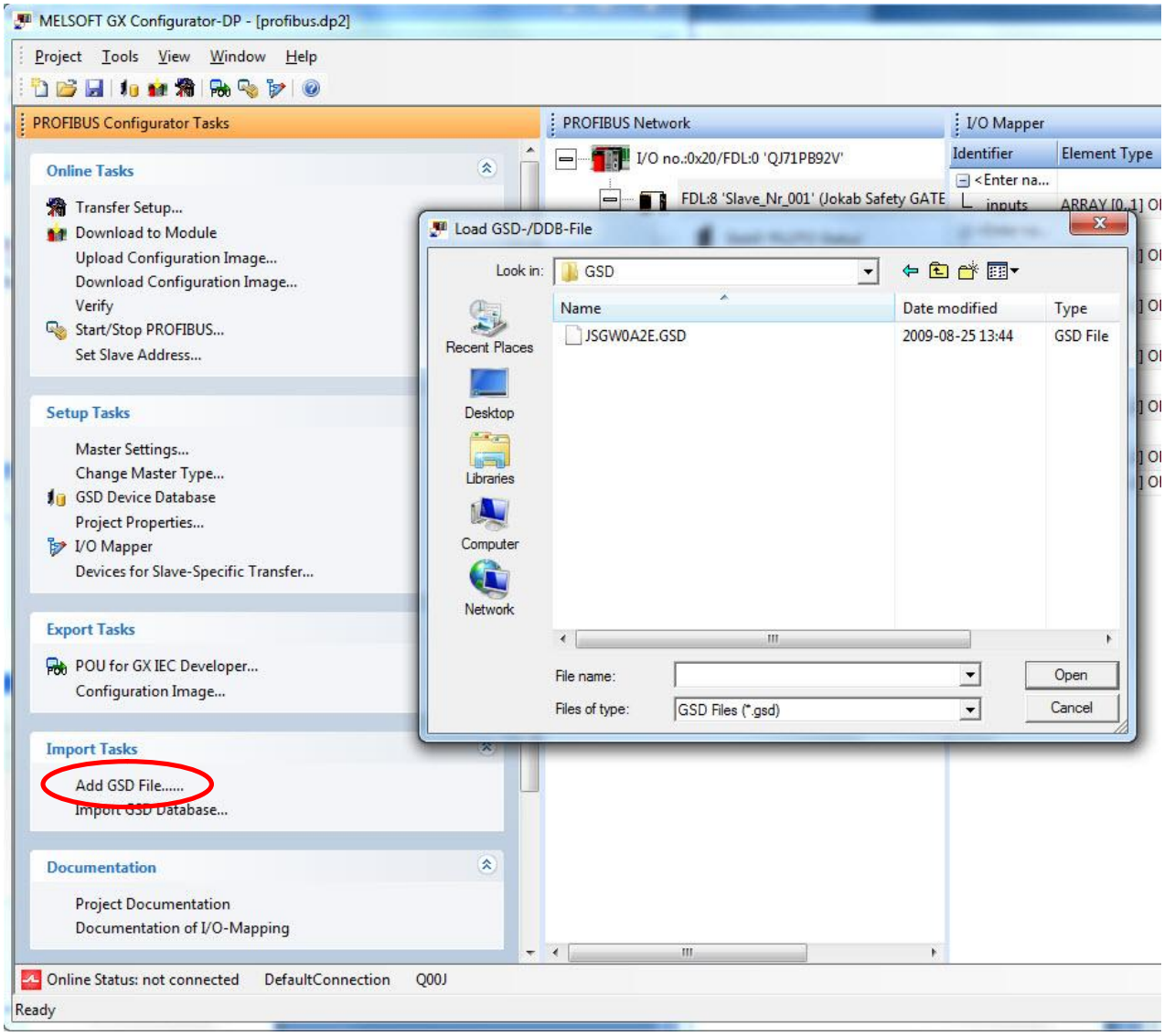
4 Setup in GX Configurator DP

This chapter will describe how to setup and use the GSD file in GX Configurator DP. The GSD-file for the gateway is located on the disc enclosed in the package with the gateway. GSD revision 3 version 2 should do for most applications. For further information about the different versions, see the disc.

4.1 Setup the HW Config

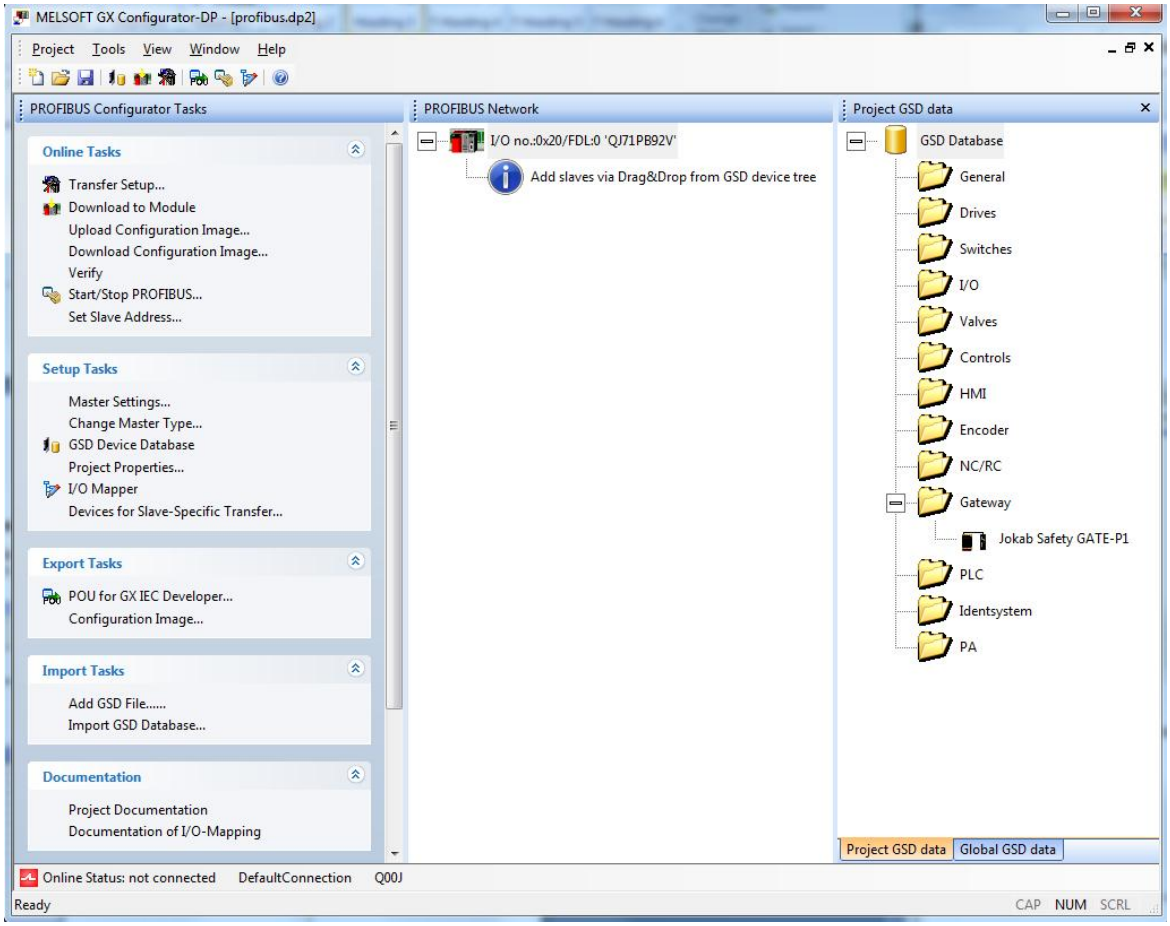
4.1.1 GSD-file selection and installation

Click “Add GSD file”, then browse to where the GSD file is located.



4.1.2 Gateway selection and connection

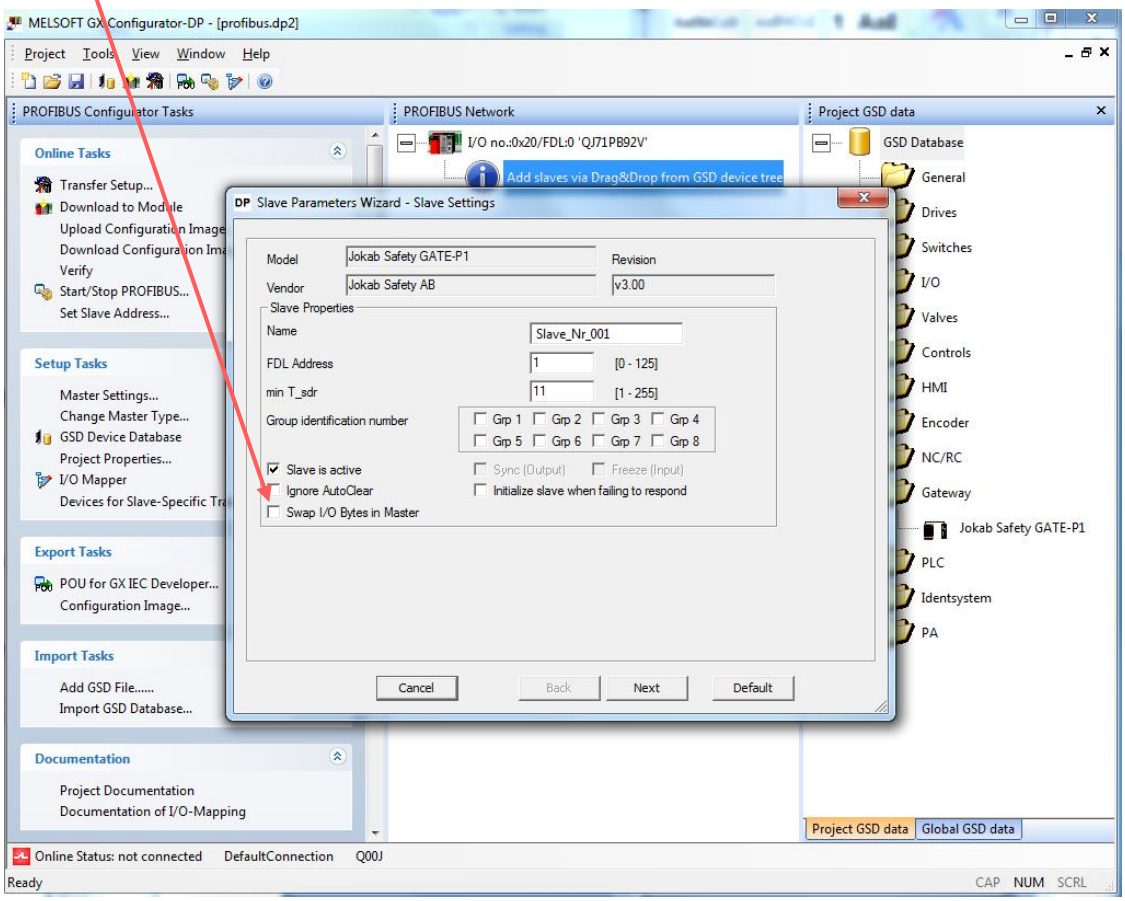
The GSD file should be installed in the gateway folder, just drag and drop.



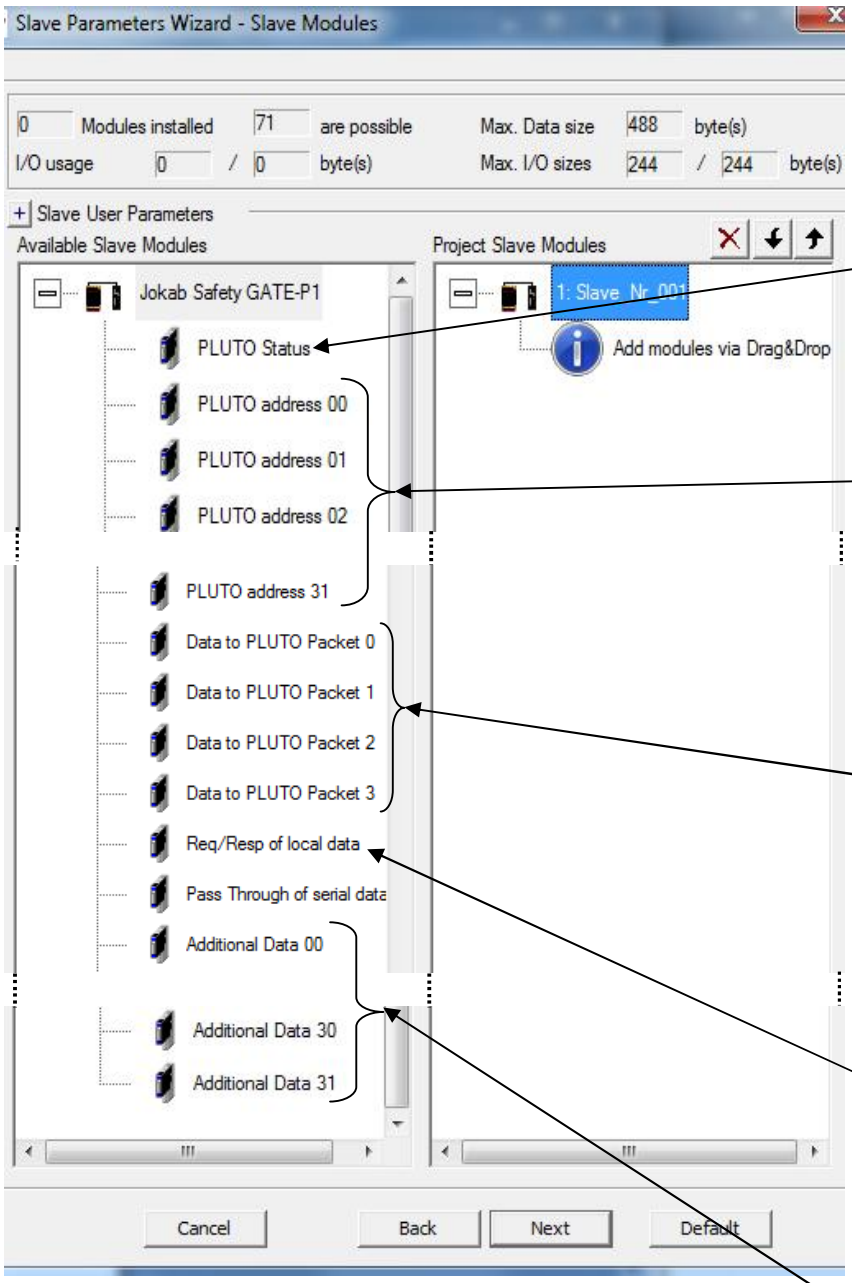
4.1.2.1 Configuration options

When the GSD device is “dropped” this window should appear. Here you give the gateway a name and a node address (FDL Adress).

Note: if you mark “Swap I/O Bytes in Master” the function blocks for GX IEC Developer will produce faulty data.



Click next.



This picks up a status message that is always transmitted on the Pluto bus. It contains information about which Pluto units are active on the bus. It is 32 bits long where each bit corresponds to each Pluto unit active. A set bit means an active Pluto unit.

Send from the specified Pluto its global data to the super ordinate system.
Example:
PLUTO address 05 will send what global data Pluto unit 5 is sending over the Pluto bus to the gateway, to be received by the Mitsubishi PLC.

The four packets available that the super ordinate system can send to the Pluto bus through the gateway.

Note that each packet is unique and should be used only once!

See the Gateway manual, available e.g. under “Help-> Gateway->Pluto Gateway Manual” in Pluto Manager,

A number of 32 Additional Data posts available.

Note that each one is unique and should be used only once!
It does not correspond to the Pluto unit’s number.

4.1.2.2 Req/Resp of local data

This requires a special procedure to be used described more thoroughly in the Gateway Manual.

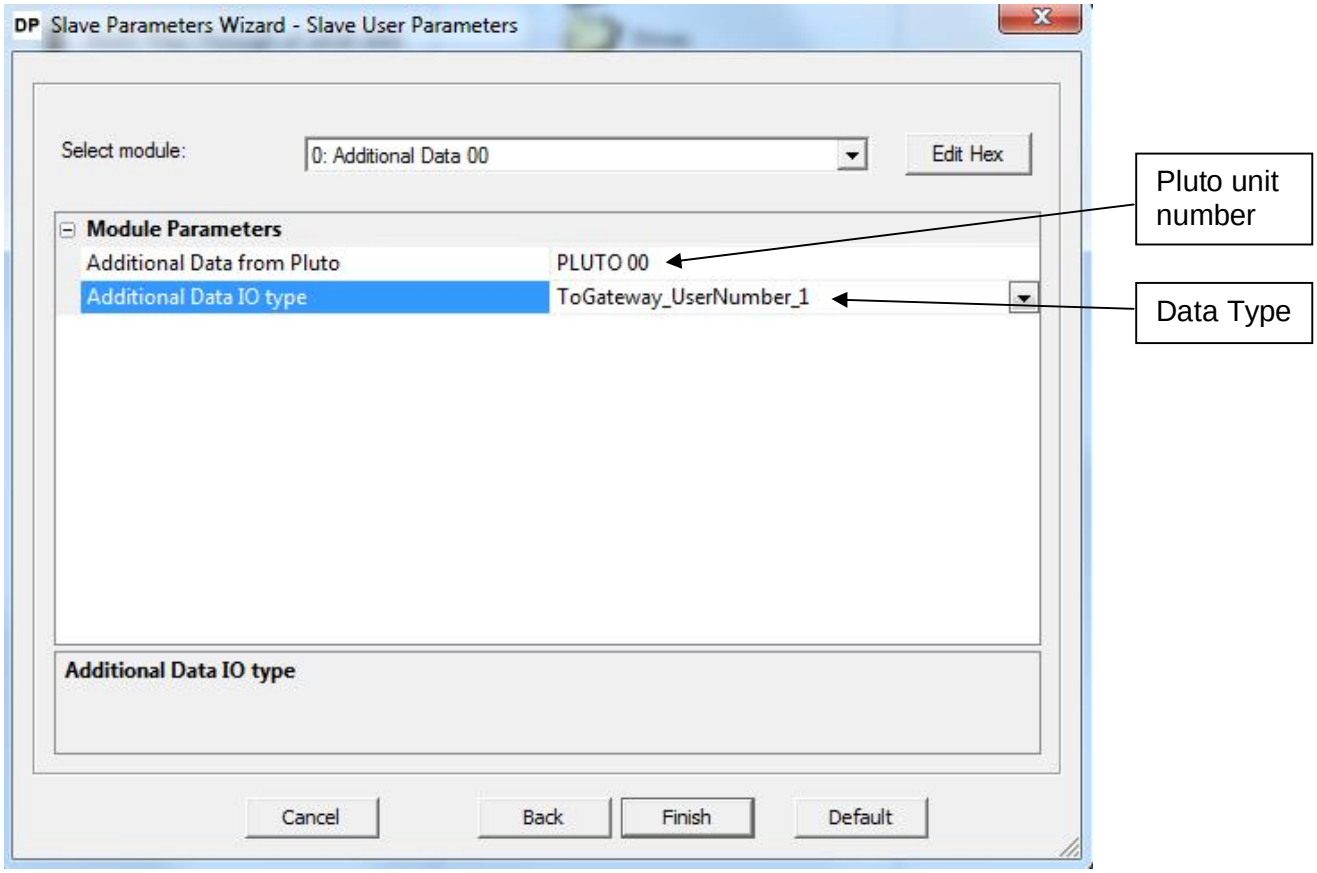
4.1.2.3 Additional Data 0-31

There are 32 available slots for Addition Data that the super ordinate system can use to receive data from the different Pluto units on the Pluto bus through the gateway. The numbers 0-31 does not correspond to the Pluto unit's number; it is unique and should be used only once.

It can be set to receive different types of data from the different Pluto units on the Pluto bus. It must be specified which Pluto unit it is that is sending and what type of data.

The type can be:

- The Error code currently in the Pluto unit.
- The inputs not included in the global data transmitted on the Pluto bus inside a Pluto B46.
- A number of safe and non safe inputs from an AS-i Pluto.
- A user defined additional data block with a unique number ranging from 0-99. This number is also used in the Pluto unit so that each system can identify the data. Note that only 32 additional data blocks are available but they can be numbered 0-99.

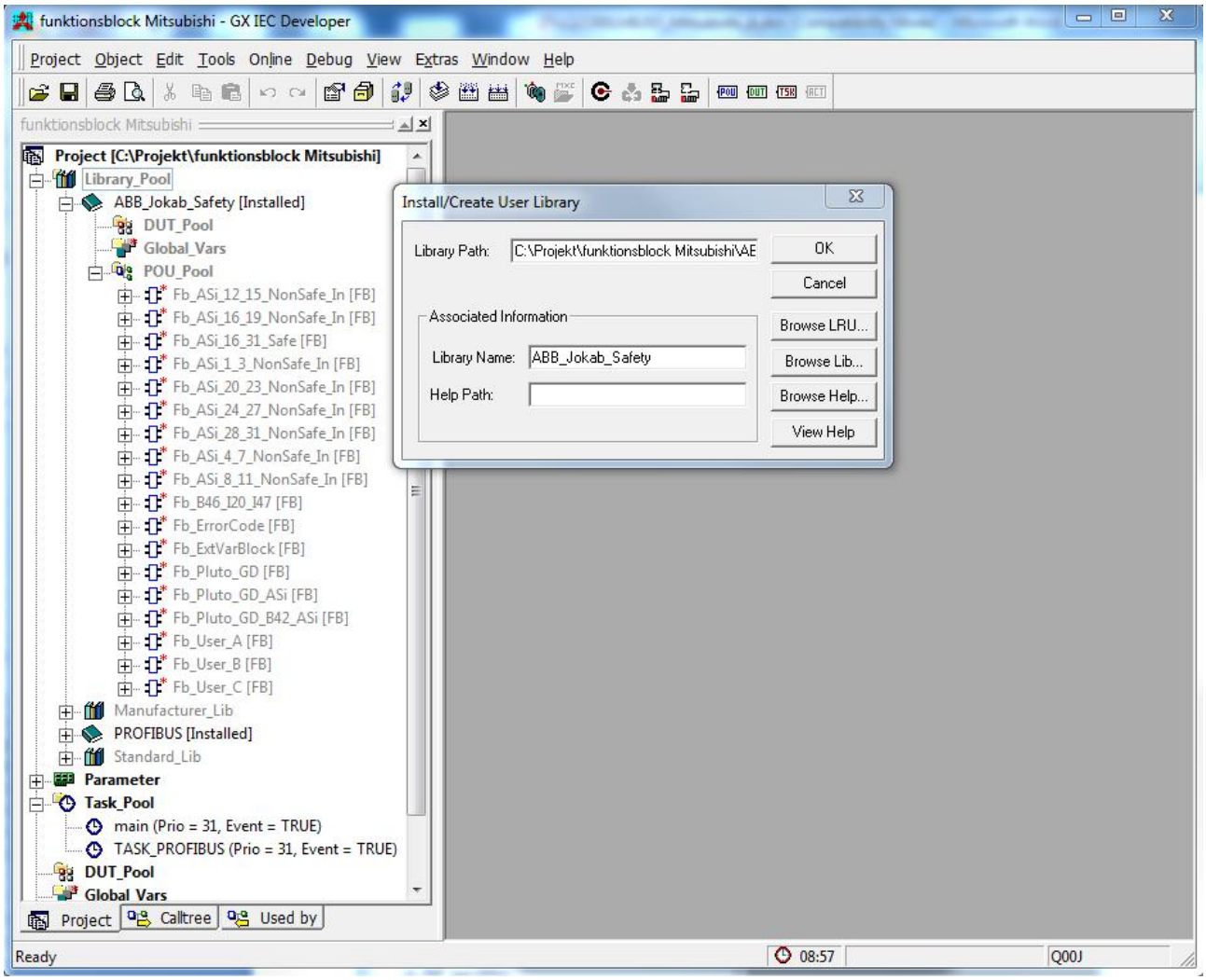


4.2 Jokab function block library

Included on the disc provided with the Gateway there is a function library called “ABB_Jokab_Safety.sul”. It is open and fully modifiable and provided for free. They are to be used “as is”.

4.2.1 Installation

In GX IEC Developer project tree, mark “Library_Pool” and “right click” choose “Install/Create user libray”. Click “Browse Lib”, select the file “ABB_Jokab_Safety.sul” and click “OK”.
The library “ABB_Jokab_Safety” can now be viewed in the “Library_Pool”.



4.2.2 Use

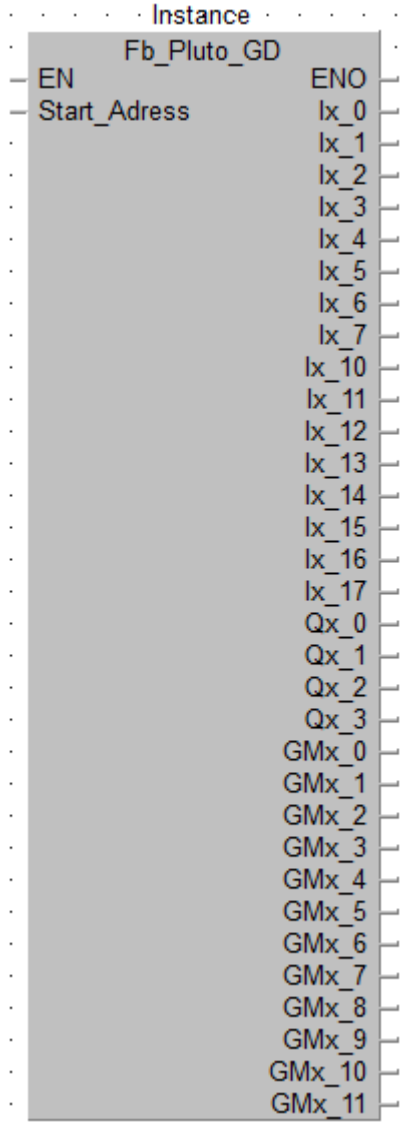
The blocks will now be available in the program editor.

4.2.3 Description of function blocks

Below follows a description of the function blocks available in the library.

4.2.3.1 Function block - Global data from Pluto (read)

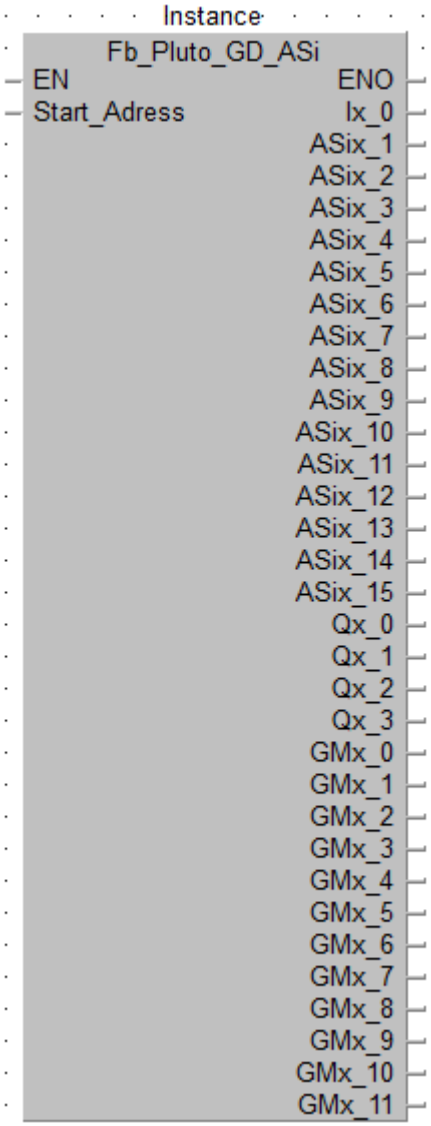
This block is used with non AS-i plutos.



Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Ix_0 To Ix_17:	Inputs from Pluto, x= Pluto node nr (Boolean).
Qx_0 To Qx_3:	Safety outputs from Pluto, x= Pluto node nr (Boolean).
GMx_0 To GMx_11:	Global memories from Pluto, x= Pluto node nr (Boolean).
ENO:	Enable output from FB (Boolean).

4.2.3.2 Function block - Global data from Pluto ASi (read)

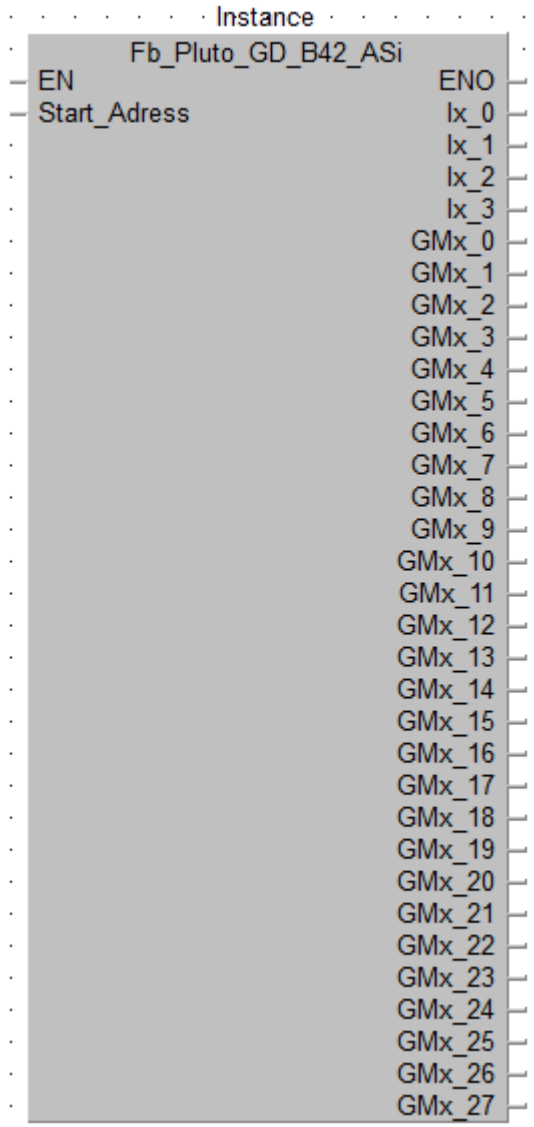
This block is used with the pluto AS-i.
No corresponding programming is needed in Pluto.



Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for outputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Ix_0:	Input from Pluto, x= Pluto node nr (Boolean).
ASix_1 – ASix_15:	Pluto AS-i local safety AS-i slave. x= Pluto node nr (Boolean).
Qx_0 - Qx_3:	Safety outputs from Pluto, x= Pluto node nr (Boolean).
GMx_0 - GMx_11:	Global memories from Pluto, x= Pluto node nr (Boolean).
ENO:	Enable output from FB (Boolean).

4.2.3.3 Function block - Global data from Pluto B42 ASi (read)

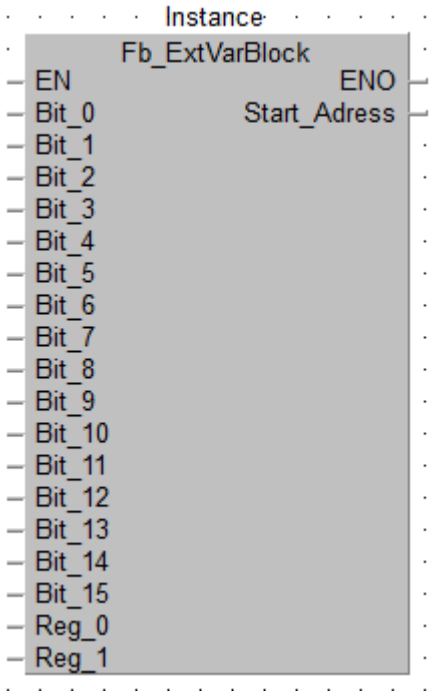
This block is used with the pluto B42 AS-i.
No corresponding programming is needed in Pluto.



Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for outputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Ix_0 – Ix_3:	Inputs from Pluto, x= Pluto node nr (Boolean).
GMx_0 - GMx_27:	Global memories from Pluto, x= Pluto node nr (Boolean).
ENO:	Enable output from FB (Boolean).

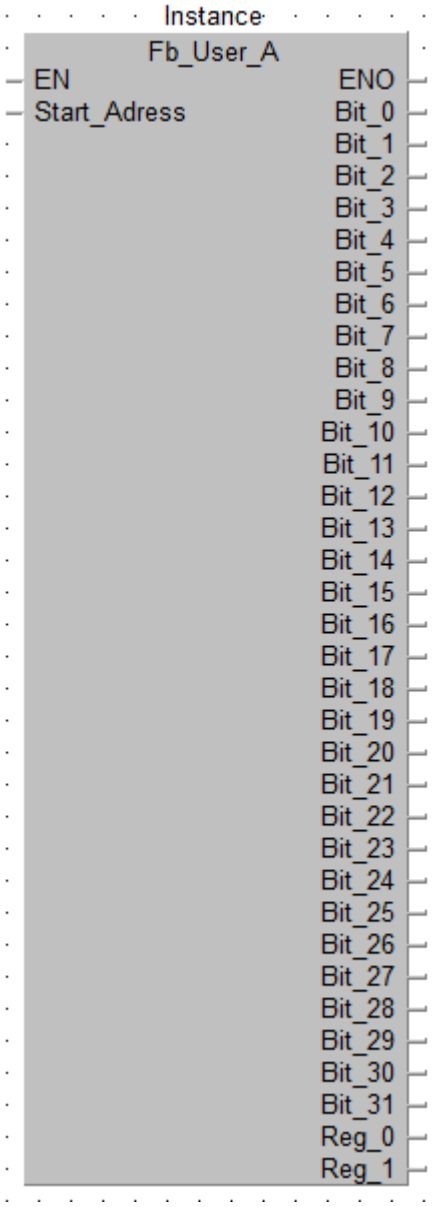
4.2.3.4 Function block - Data to Pluto (write)

Corresponding programming is needed in Pluto. See “Transmitting from the Mitsubishi PLC to the Pluto”.



Input	
EN:	Enables or disables the complete block.
Bit_0 to Bit_15:.	Connect to a Boolean variable and send to Pluto. If not connected to a variable 0 (False) is default value (Boolean)
Reg_0 and Reg_1:.	Connect to a integer variable and send to Pluto. If not connected to a variable 0 is default value (Integer).
Output	
Start_Adress:	Start address for outputs from the hardware configuration in GX configurator DP. Array of 48 bool.
ENO:	Enable output from FB (Boolean).

4.2.3.5 Function block – Additional data – USER A (read)

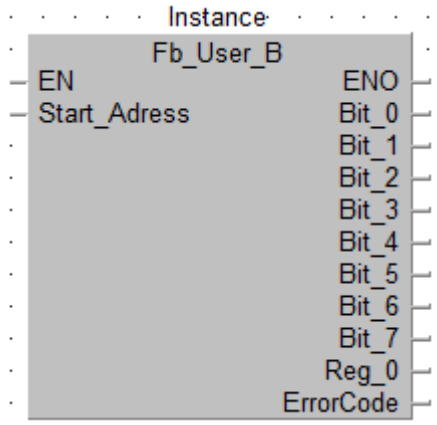


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto”
or Manual Pluto Gateway chapter “Additional data”.

This block will receive user defined 32 bit value from Pluto.
The variables can be used either as 32 bits or two 16 bits register. Bits 0-15 are the same as in Reg_0, bits 16-31 are the same as in Reg_1.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Bit0 – Bit31	32 bits user defined data from Pluto (Boolean).
Reg0, Reg1	16 bits user defined data from Pluto (integer).
ENO:	Enable output from FB (Boolean).

4.2.3.6 Function block – Additional data – USER B (read)

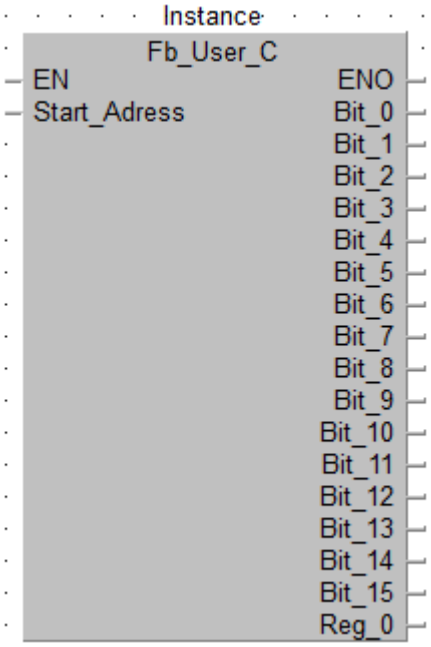


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive user defined 8 bit value, 16 bits register and error code from Pluto.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Bit0 – Bit7	8 bits user defined data from Pluto (Boolean).
Reg_0	16 bits user defined register data from Pluto (Integer).
ErrorCode	Pluto error code value (Byte).
ENO:	Enable output from FB (Boolean).

4.2.3.7 Function block – Additional data – USER C (read)

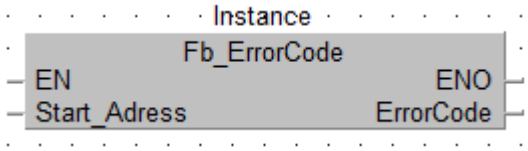


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive user defined 16 bits value and16 bits register from Pluto.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Bit0 – Bit15	16 bits user defined data from Pluto (Boolean).
Reg_0	16 bits user defined register data from Pluto (Integer).
ENO:	Enable output from FB (Boolean).

4.2.3.8 Function block – Additional data – Error code (read)

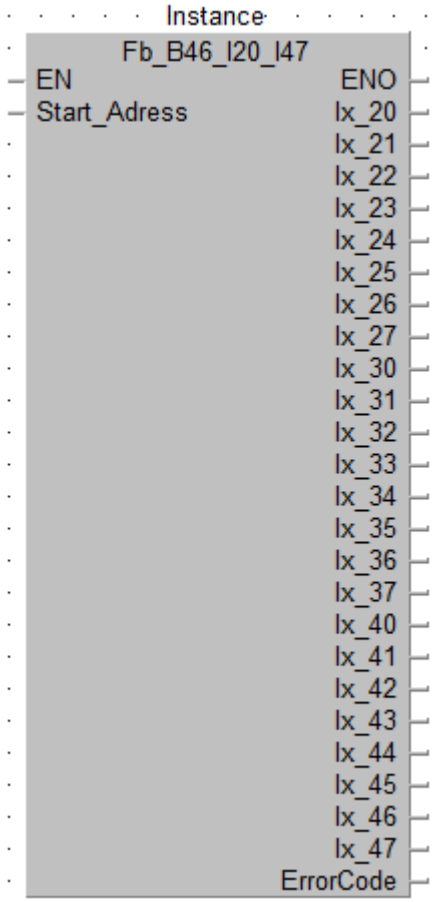


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive error code from Pluto.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Error_code	Pluto error code value (Byte).
ENO:	Enable output from FB (Boolean).

4.2.3.9 Function block – Additional data – B46 I20-I47 (read)



Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

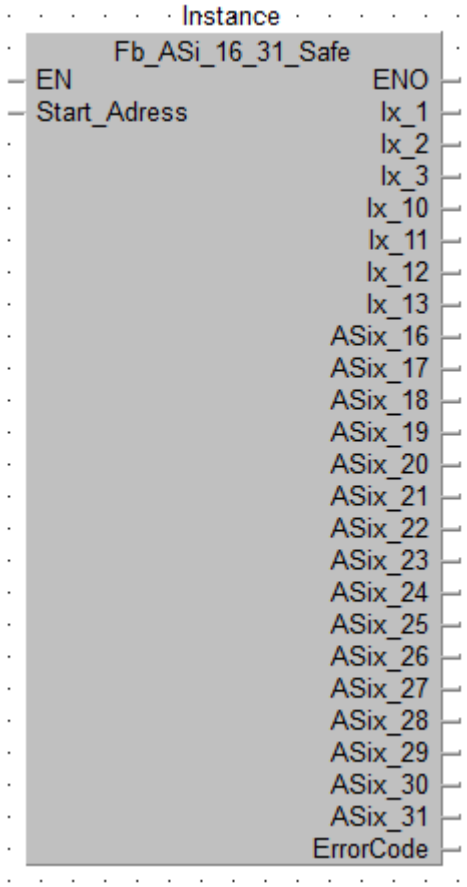
This block will receive Pluto B46 local data I20 – I47 and error code from Pluto.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Ix_20 – Ix47	Pluto B46 local inputs I20 – I47(Boolean), x= Pluto node nr.
Error_code	Pluto error code value (Byte).
ENO:	Enable output from FB (Boolean).

4.2.3.10 Function block – Additional data – ASi 16-31 safe (read)

Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive Pluto AS-i local inputs 1 – 13, AS-i safety slave 16 – 31 and Pluto error code.



Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
Ix1 – Ix13	Pluto AS-i local inputs. x= Pluto node nr (Boolean).
ASix_16 – ASix_31	Pluto AS-i local safety AS-i slave. x= Pluto node nr (Boolean).
Error_code	Pluto error code value (Byte).
ENO:	Enable output from FB (Boolean).

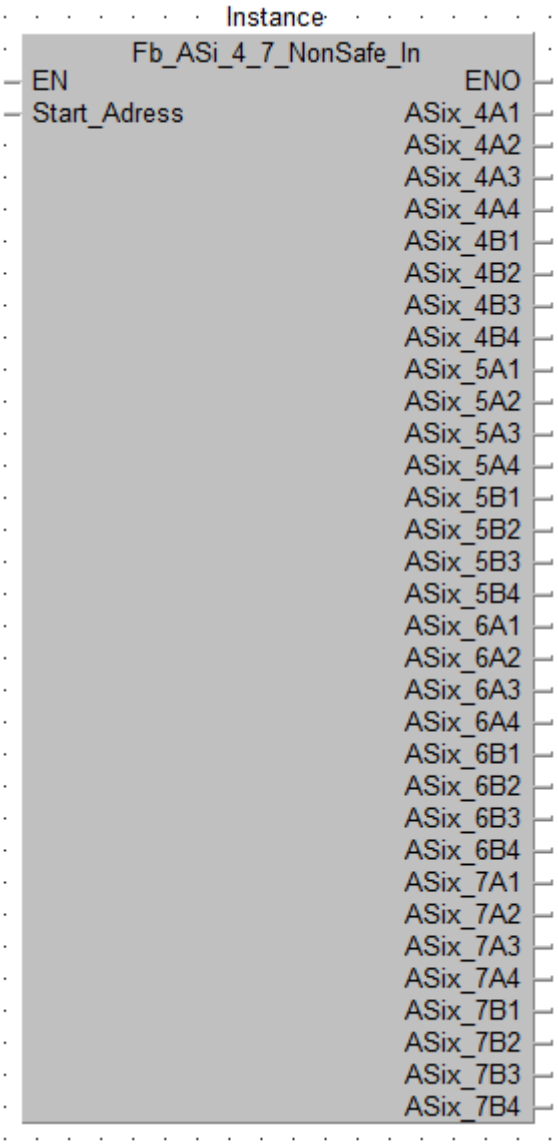
4.2.3.11 Function block – Additional data – ASi 1-3 non safe (read)

Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 1 – 3.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_1A1 – ASix_3A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_1B1 – ASix_3B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.12 Function block – Additional data – ASi 4-7 non safe (read)

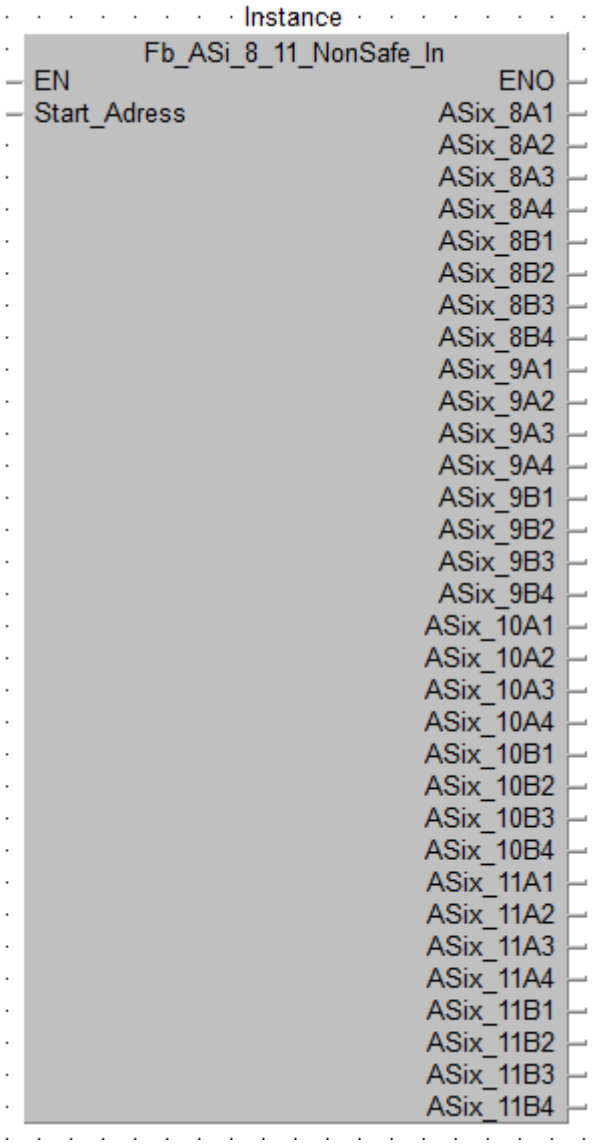


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 4 – 7.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_4A1 – ASix_7A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_4B1 – ASix_7B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.13 Function block – Additional data – ASi 8-11 non safe (read)

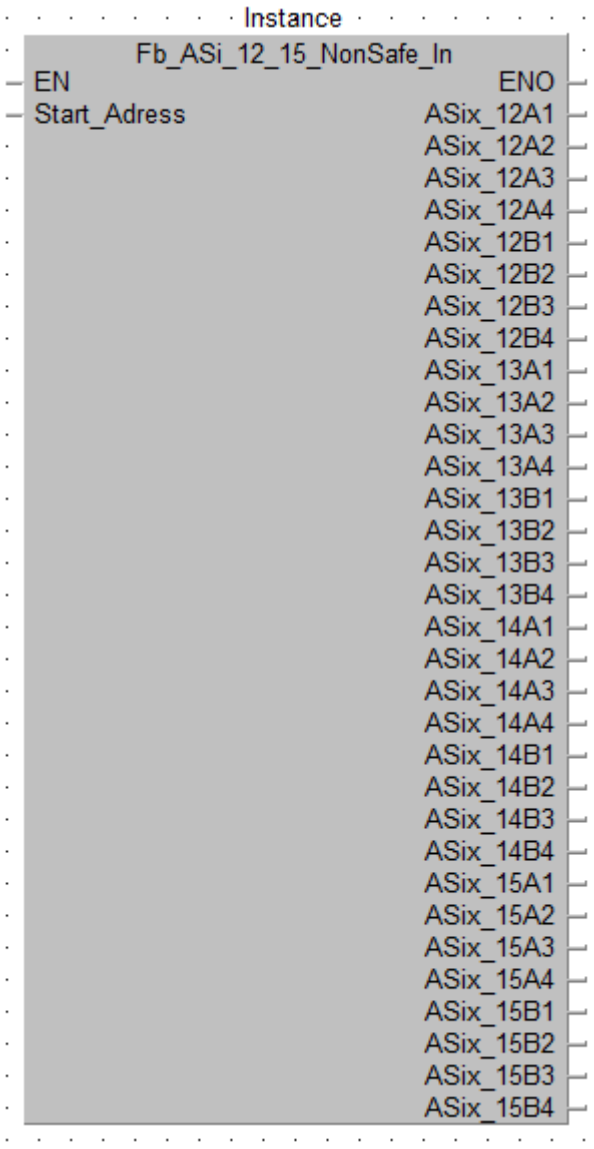


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 8 – 11.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_8A1 – ASix_11A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_8B1 – ASix_11B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.14 Function block – Additional data – ASi 12-15 non safe (read)

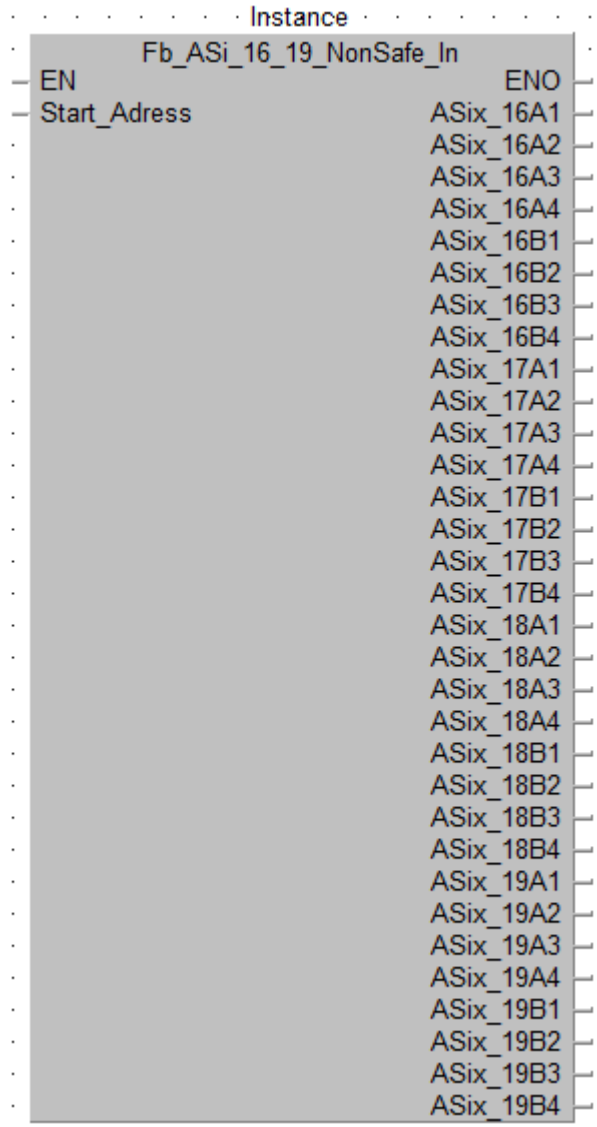


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 12 – 15.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_12A1 – ASix_15A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_12B1 – ASix_15B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.15 Function block – Additional data – ASi 16-19 non safe (read)

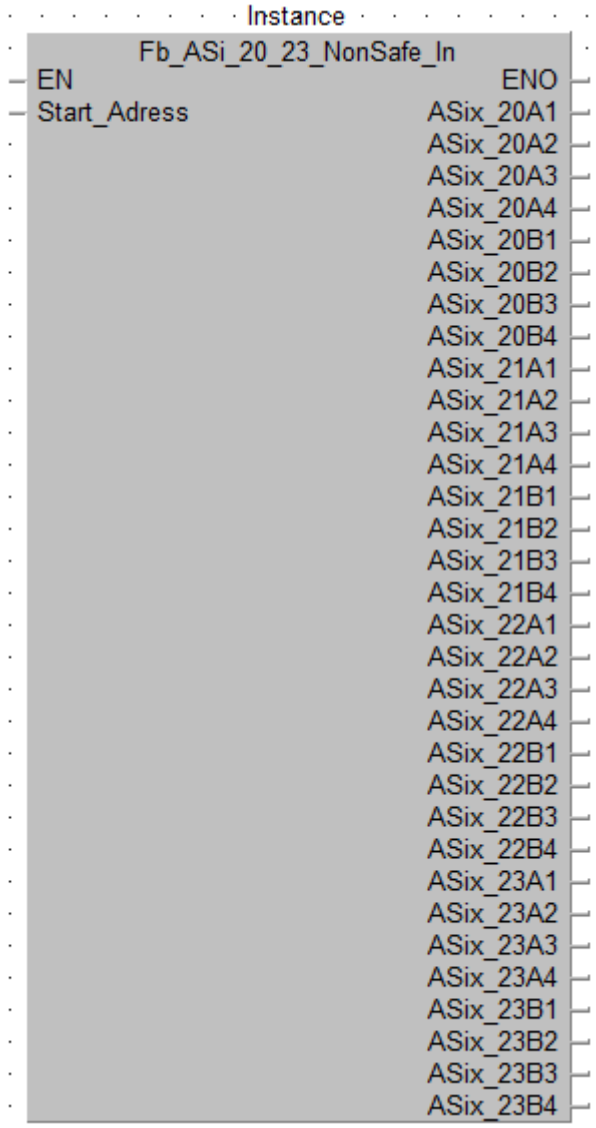


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 16 – 19.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_16A1 – ASix_19A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_16B1 – ASix_19B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.16 Function block – Additional data – ASi 20-23 non safe (read)

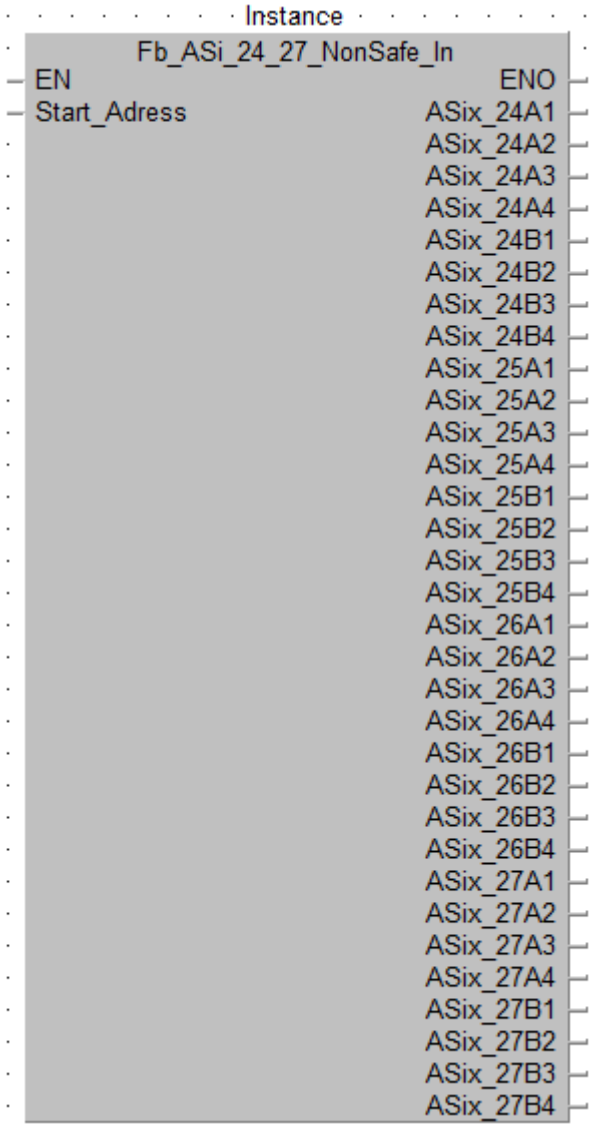


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 20 – 23.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_20A1 – ASix_23A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_20B1 – ASix_23B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.17 Function block – Additional data – ASi 24-27 non safe (read)

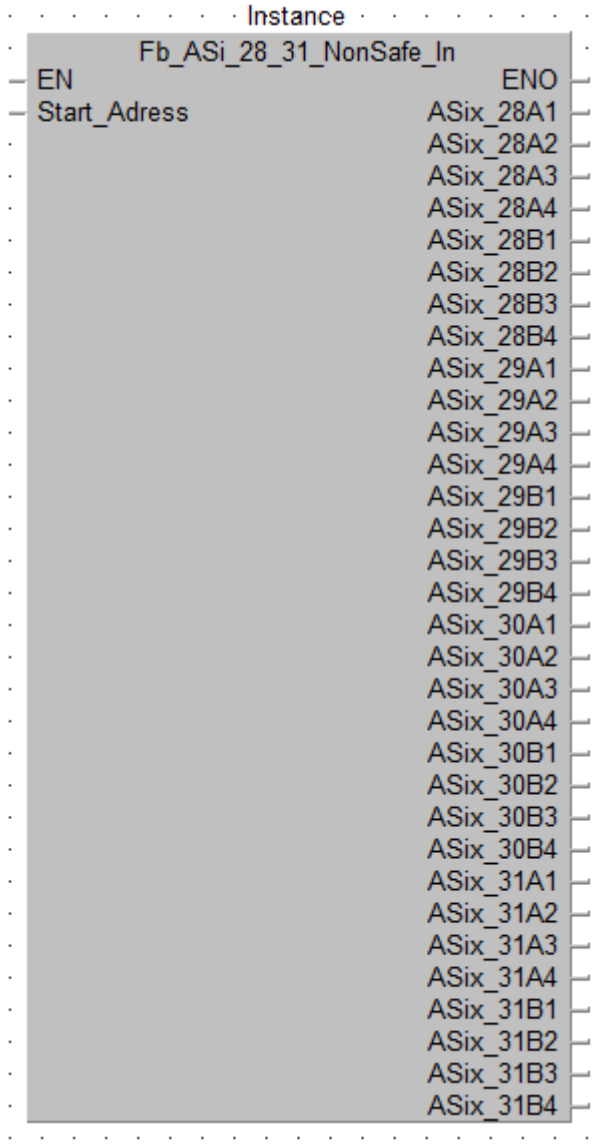


Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 24 – 27.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_24A1 – ASix_27A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_24B1 – ASix_27B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).

4.2.3.18 Function block – Additional data – ASi 28-31 non safe (read)



Corresponding programming is needed in Pluto.
See “Transmit other data from the Pluto” or Manual Pluto Gateway chapter “Additional data”.

This block will receive data from Pluto AS-i local non safe AS-i slave address 28 – 31.

Input	
EN:	Enables or disables the complete block.
Start_Adress:	Start address for inputs from the hardware configuration in GX configurator DP. Array of 32 bool.
Output	
ASix_28A1 – ASix_31A4	Pluto AS-i local non safe AS-i standard and extended A slave (Boolean). x= Pluto node nr.
ASix_28B1 – ASix_31B4	Pluto AS-i local non safe AS-i extended B slave (Boolean). x= Pluto node nr.
ENO:	Enable output from FB (Boolean).