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PN/J1939 LINK – Configuring data exchange

TIA Portal V15, SIMATIC S7

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Table of contents

1	Task	5
2	Solution	7
2.1	System configuration	7
2.2	Hardware and software components	8
2.3	General procedure	9
3	Configuration and parameter assignment of PN/J1939 LINK	11
3.1	Insert PN/J1939 LINK and assign parameters for PROFINET.....	11
3.2	Creating control and status bytes	18
4	Establishing cyclic data communication.....	21
4.1	Setting up the standard message	21
4.2	Creating function block SETIO and assigning parameters for it.....	26
4.3	Create and assign parameters for function block GETIO.....	29
4.4	Displaying the structure of the input data module and starting communication	32
4.5	Assigning parameters for cyclic change of value – Standard message	34
4.6	Interpreting PGN-1792 data.....	37
5	Assigning parameters for cyclic change of value - Data length > 8 bytes	39
5.1	Cyclic change of value output module - PDU format <= 239.....	39
5.2	Cyclic change of value input module - PDU format <= 239.....	41
5.3	Cyclic change of value output module - PDU format > 239.....	42
5.4	Cyclic change of value input module - PDU format > 239.....	44
6	Setting up remote request.....	45
6.1	Standard message – PGN data length <= 8 bytes, PDU format <= 239	45
6.1.1	Configure Link 2 – PGN_8B_RemReq_PDUF_230_Q.....	45
6.1.2	Configure Link 1 – PGN_8B_RemReq_PDUF_230_I	52
6.2	Standard message – PGN data length <= 8 bytes, PDU format > 239	56
6.2.1	Configure Link 2 – PGN_8B_RemReq_PDUF_241_Q.....	56
6.2.2	Configure Link 1 – PGN_8B_RemReq_PDUF_241_I	62
6.3	Standard message – PGN data length > 8 bytes, PDU format <= 239	66
6.3.1	Configure Link 2 – PGN_32B_RemReq_PDUF_231_Q.....	66
6.3.2	Configure Link 1 – PGN_32B_RemReq_PDUF_231_I	74
6.4	Standard message – PGN data length > 8 bytes, PDU format > 239	78
6.4.1	Configure Link 2 – PGN_32B_RemReq_PDUF_242_Q.....	78
6.4.2	Configure Link 1 – PGN_32B_RemReq_PDUF_242_I	85

7	Establish acyclic data communication	89
7.1	Configuring WRREC - PGN output proxy_CMDT	89
7.2	Configure RDREC – PGN input proxy_CMDT	94
7.3	Configuring WRREC - PGN output proxy_BAM	99
7.4	Configure RDREC – PGN input proxy_BAM.....	104
A	Appendix A.....	109
A.1	Internet links.....	109
A.2	History	109
A.3	List of abbreviations	110

1

Task

This application example explains the operation of two PN/J1939 LINKs. During configuration, the following is considered:

- How to use cyclic data communication
- How to use acyclic data communication
- How the events are transmitted

Knowledge required

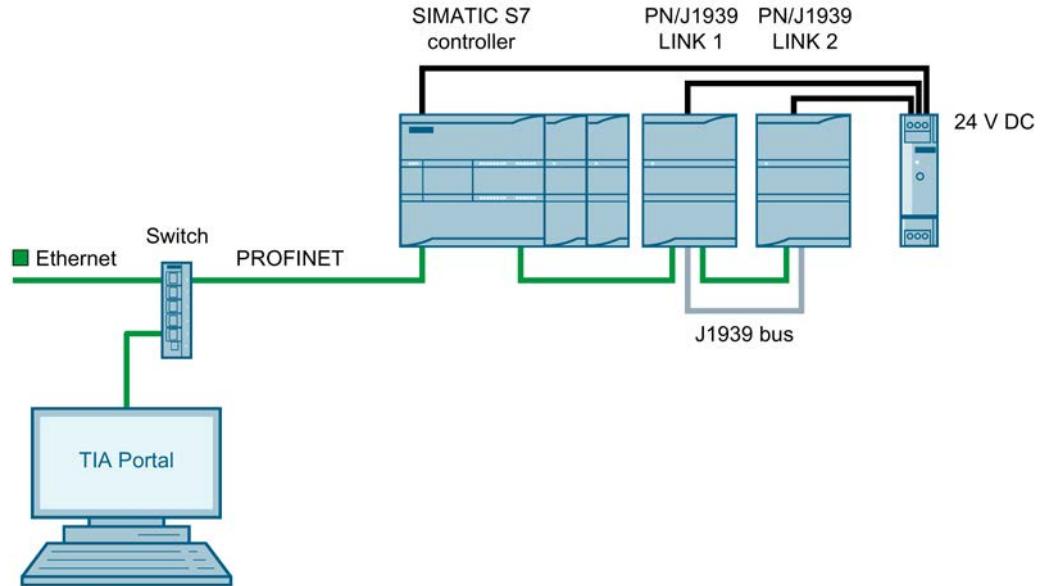
The following knowledge is required:

- Knowledge of programming a SIMATIC S7 controller
- Knowledge of configuration with TIA Portal
- Knowledge of working with the PROFINET fieldbus
- Knowledge in the J1939 communication protocol
- General knowledge in the field of automation technology
- General knowledge of communication networks

Solution

2.1 System configuration

For the application example use the following configuration:



The PN/J1939 LINKs are connected via PROFINET to the SIMATIC S7 controller.

The configuration takes place on a PC with installed TIA Portal.

2.2 Hardware and software components

The application example was created with the following components:

Hardware components

Component	Number	Article number	Comment
SIMATIC S7 control system	1	6ES7214-1AG40-0XB0	CPU 1214C DC/DC/DC
PN/J1939 LINK	2	6BK1623-0AA00-0AA0	Gateway between PROFINET and J1939 bus
Power supply SIMATIC S7-1200 Power Module PM1207	1	6EP1332-1SH71-4AA0	For power supply of controller and PN/J1939 LINK

Software components

Component	Number	Article number	Comment
TIA Portal V15	1	6ES7822-0AA00-0YL0	-
GSDML file	1	-	GSDML-V2.33-Siemens-PN_J1939_LINK-20181129

Example files and projects

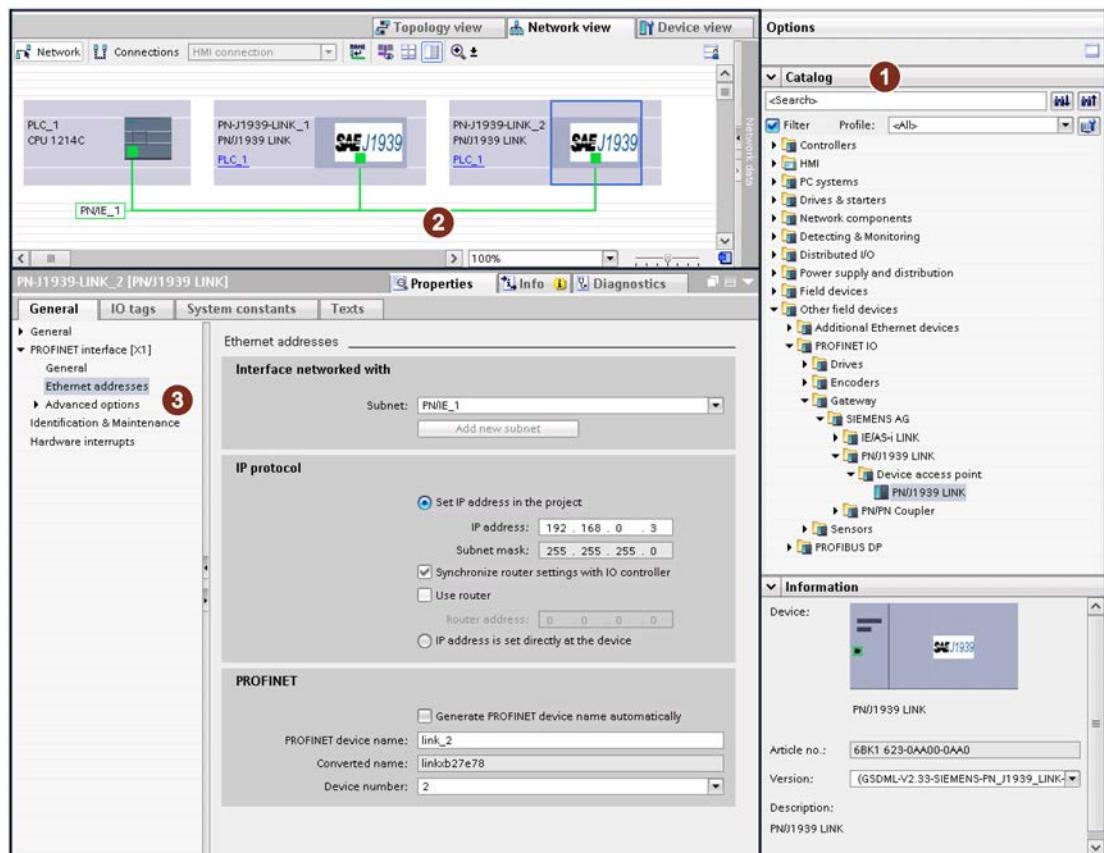
File	Comment
109760972_network_transitions_pnj1939_link_de.pdf	The German version of this document
109760972_network_transitions_pnj1939_link_en.pdf	The English version of this document
PN_J1939_Communication_V15.ap15	The TIA project of the application example

You can find the download link in the section "Internet links (Page 109)".

2.3 General procedure

Proceed as follows:

1. Create a project.
2. Set English as language for the graphical interface.
3. Insert the GSDML file for the PN/J1939 LINK.
4. Click "Catalog" ① and insert the devices according to section "Hardware and software components (Page 8)".
5. Connect the CPU and PN/J1939 via a PROFINET connection.
CPU and PN/J1939 LINKs are connected via PROFINET ② in the "Network view" window.
6. Assigning parameters for the PROFINET interface ③ for both PN/J1939 LINKs based on the conditions of your PROFINET network.



You can track the TIA project "PN/J1939_TIAproj_V15.zip" with the operations described below.

Solution

2.3 General procedure

Configuration and parameter assignment of PN/J1939 LINK

3.1 Insert PN/J1939 LINK and assign parameters for PROFINET

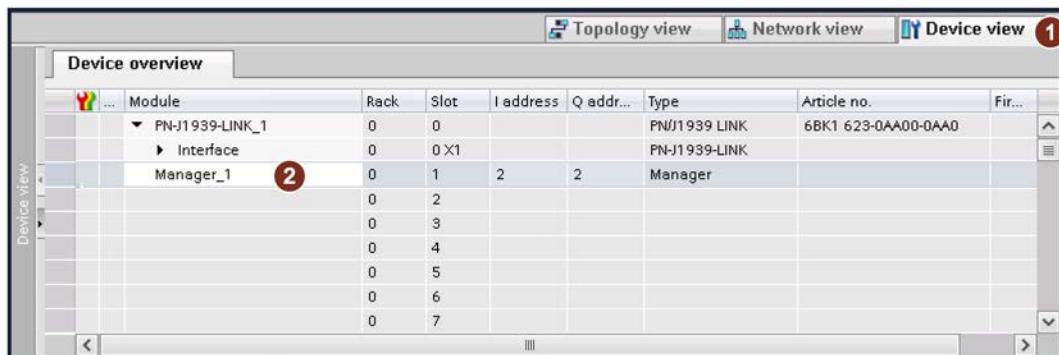
This section describes how to assign parameters for a network transition PN/J1939 LINK and PROFINET. Additional and supplementary information is available in the "SIMATIC Gateways PN/M-Bus LINK" operating instructions.

3.1 Insert PN/J1939 LINK and assign parameters for PROFINET

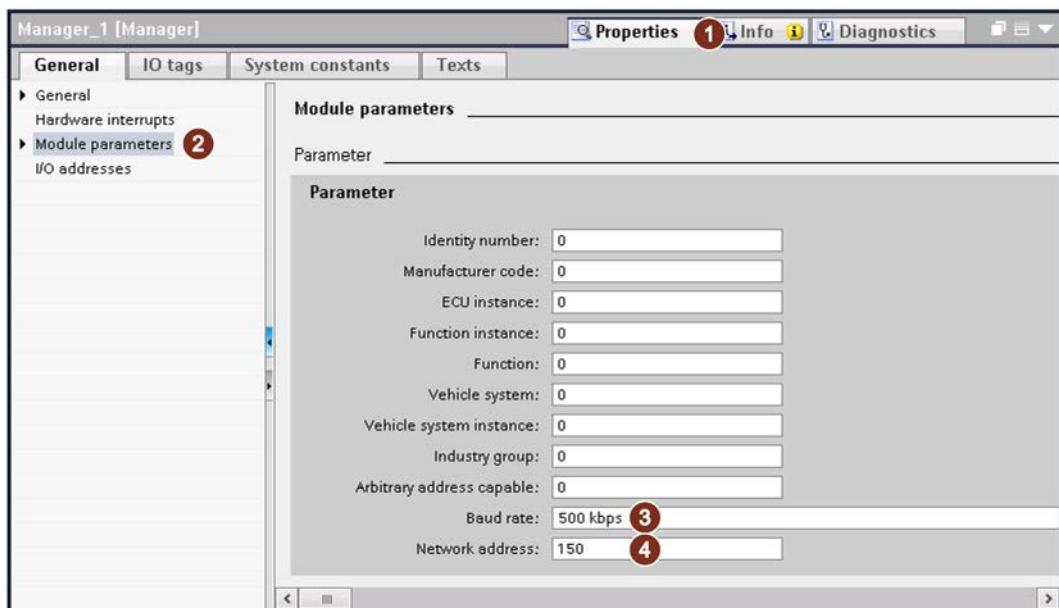
Assigning parameters for PN-J1939-Link_1

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → Manager_1 ②".



3. Click "Properties ① → General → Module parameters ②".

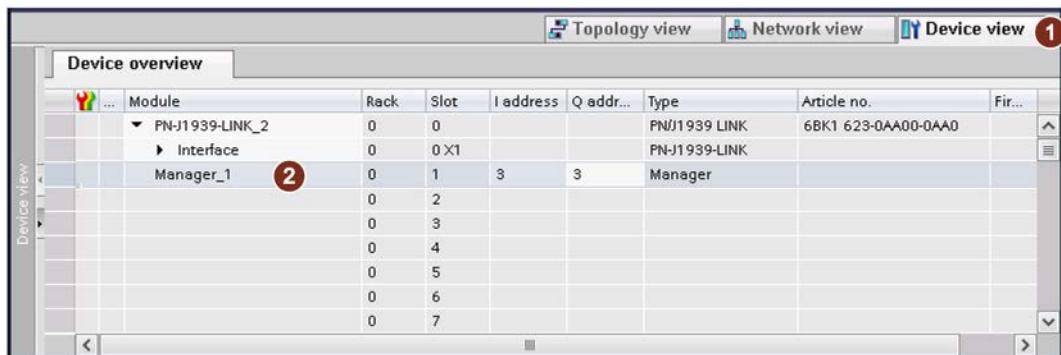


4. Make the following settings:
 - Baud rate "500 kbps" ③
 - Network address at "150" ④

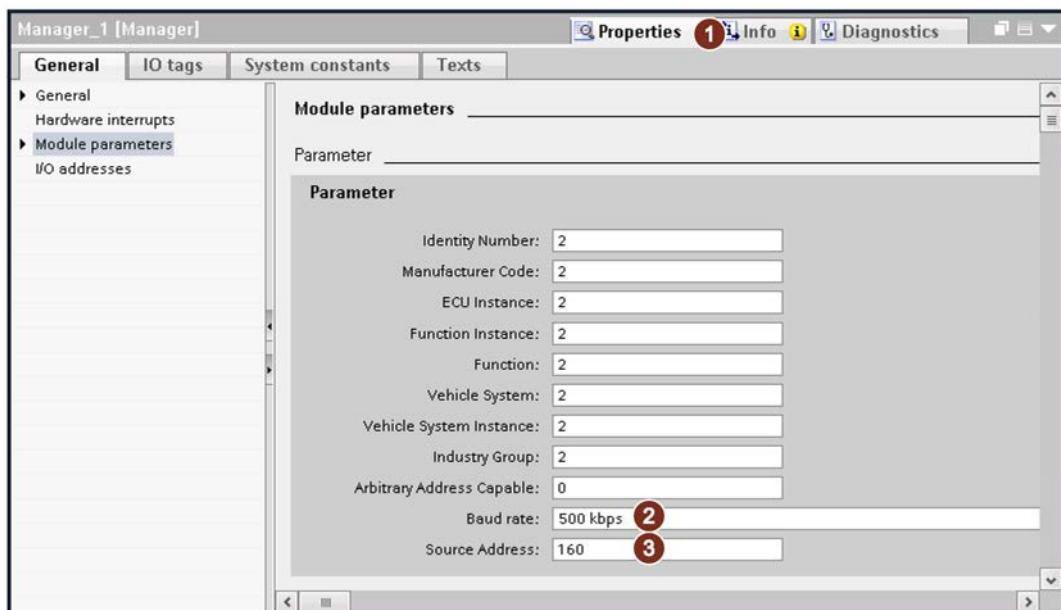
Assigning parameters for PN-J1939-Link_2

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → Manager_1 ②".



3. Click "Properties ① → General → Module parameters ②".



4. Make the following settings:

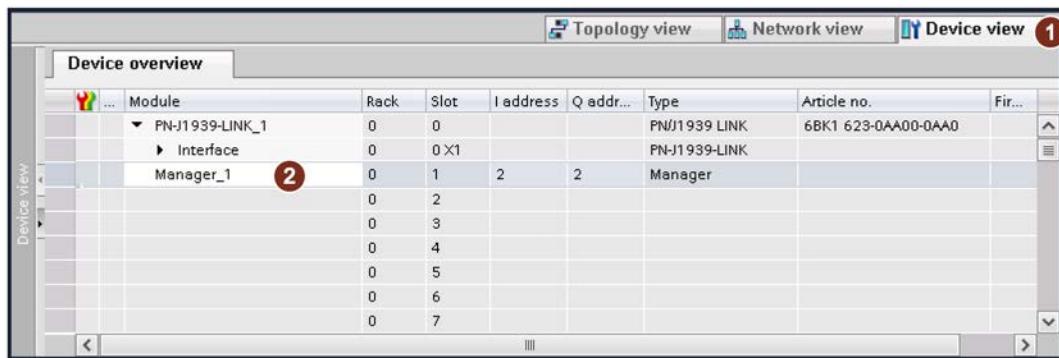
- Baud rate "500 kbps" ③
- Source address to "160" ④

3.1 Insert PN/J1939 LINK and assign parameters for PROFINET

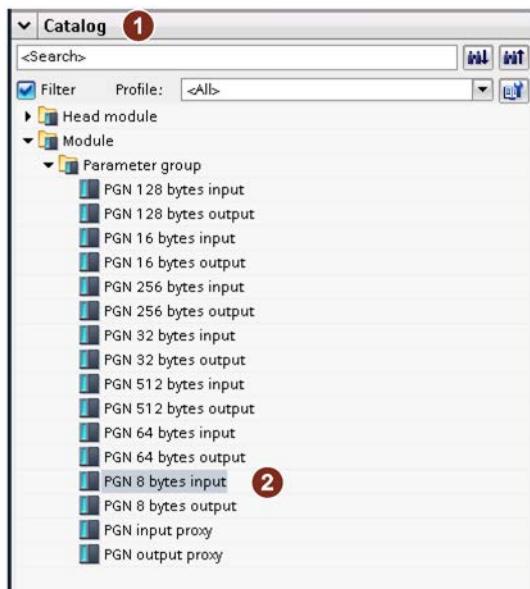
Inserting input module for PN-J1939-Link_1

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → Manager_1 ②".



3. Click "Catalog ① → Module → Parameter group".



4. Double-click "PGN 8 bytes input" ②.

The following dialog window with the parameter group "PGN 8 bytes input_1" ① is displayed.

A screenshot of a software interface titled "Device overview". The table has columns: Module, Rack, Slot, I address, Q addr..., Type, Article no., and Fir... . The rows show a hierarchy: PN-J1939-LINK_1 (Rack 0, Slot 0), Interface (Rack 0, Slot 0 X1), Manager_1 (Rack 0, Slot 1, I address 2, Q address 2), and PGN 8 bytes input_1 (Rack 0, Slot 2, I address 68...75, Type PGN 8 bytes input). A red circle labeled ① is on the "PGN 8 bytes input_1" row. Another red circle labeled ② is on the "Manager_1" row.

Module	Rack	Slot	I address	Q addr...	Type	Article no.	Fir...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN 8 bytes input_1	0	2	68...75		PGN 8 bytes input		
	0	3					
	0	4					
	0	5					
	0	6					
	0	7					

5. Change the component name ② to "PGN_1792_ValvePressure_I".

A screenshot of the same software interface as before, showing the "Device overview" table. The "PGN 8 bytes input_1" row now has a different name: "PGN_1792_ValvePressure_I". A red circle labeled ① is on the "PGN 8 bytes input_1" row, and a red circle labeled ② is on the "PGN_1792_ValvePressure_I" row. A red circle labeled ③ is at the top right of the table.

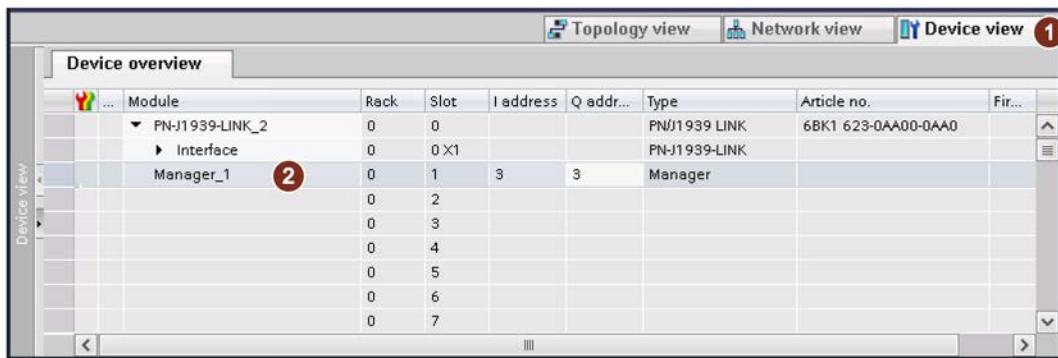
Module	Rack	Slot	I address	Q addr...	Type	Article no.	Fir...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN_1792_ValvePressure_I	2	68...75			PGN 8 bytes input		
	0	3					
	0	4					
	0	5					
	0	6					
	0	7					

3.1 Insert PN/J1939 LINK and assign parameters for PROFINET

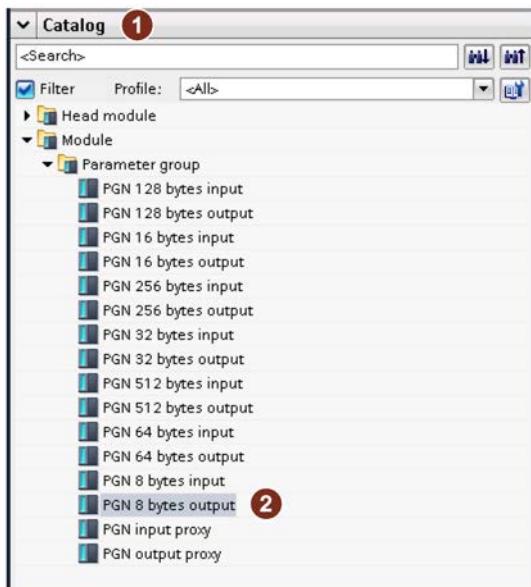
Inserting output module for PN-J1939-Link_2

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → Manager_1 ②".



3. Click "Catalog ① → Module → Parameter group".



4. Double-click "PGN 8 bytes output" ②.

The following dialog window with the parameter group "PGN 8 bytes output_1" ① is displayed.

A screenshot of a software interface titled "Device overview". The table has columns for Module, Rack, Slot, I address, Q addr..., Type, Article no., and Fir... . The "Module" column shows entries like "PN-J1939-LINK_2", "Interface", "Manager_1", and "PGN 8 bytes output_1". The "Type" column indicates "PN/J1939 LINK" for the first three and "PGN 8 bytes output" for the last one. A red circle labeled ① is placed over the "PGN 8 bytes output_1" row. Another red circle labeled ② is placed over the "PGN 8 bytes output" entry in the "Type" column of the same row.

Module	Rack	Slot	I address	Q addr...	Type	Article no.	Fir...
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	3	3	Manager		
PGN 8 bytes output_1	0	2		64...71	PGN 8 bytes output		
	0	3					
	0	4					
	0	5					
	0	6					
	0	7					

5. Change the component name ② to "PGN_1792_ValvePressure_Q".

A screenshot of the same software interface as the previous one, showing the "Device overview" table. The "PGN 8 bytes output_1" row has been renamed to "PGN_1792_ValvePressure_Q". A red circle labeled ① is placed over the "PGN 8 bytes output_1" entry in the "Type" column. Another red circle labeled ② is placed over the "PGN_1792_ValvePressure_Q" entry in the "Module" column.

Module	Rack	Slot	I address	Q addr...	Type	Article no.	Fir...
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	3	3	Manager		
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output		
	0	3					
	0	4					
	0	5					
	0	6					
	0	7					

See also

[Setting up the standard message \(Page 21\)](#)

3.2 Creating control and status bytes

3.2 Creating control and status bytes

Control bytes are required for both "PN/J1939 LINK" gateways so that they can change to the operating mode.

Creating control bytes

The control byte is represented by the address of the output byte that is assigned to the manager of the gateway.

Control byte	Meaning
0	The J1939 bus is not in operating mode. CAN communication is not active.
1	The J1939 bus is in operating mode. CAN communication is active.

Creating status bytes

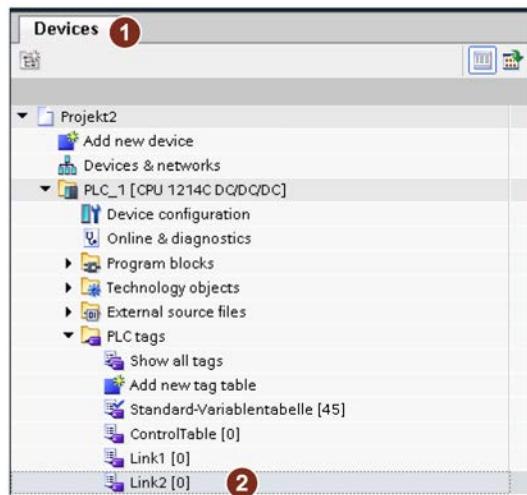
The status byte is represented by the address of the input byte that is assigned to the manager of the gateway.

Status byte	Meaning
0	J1939 LINK-Manager is off
1	J1939 bus is off
2	Error in the "passive" status
3	Error in "active" status, no errors on the J1939 bus

Creating control variables

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices ① → PLC_1 → PLC tags".
3. Double-click "Add new tag table".
4. Insert two additional tag tables.
5. Rename it to "ControlTable", "Link1" and "Link2" ②.



3.2 Creating control and status bytes

6. Create the following control variables ① in the 3 tables.

Link1

	Name	① Data type	② Address	③ Retain	Access...	Write...	Visibl...	Comment
1	Link1_Status_byte	Byte	%QB2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Link1_Control_byte	Byte	%QB2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	RDREC_REQ_CMDT	Bool	%M14.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	RDREC_REQ_MEM_CMDT	Bool	%M14.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	RDREC_BUSY_MEM_CMDT	Bool	%M14.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	RDREC_SR_OUT_CMDT	Bool	%M14.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	RDREC_REQ_BAM	Bool	%M15.4		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	RDREC_REQ_MEM_BAM	Bool	%M15.5		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	RDREC_BUSY_MEM_BAM	Bool	%M15.6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10	RDREC_SR_OUT_BAM	Bool	%M15.7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	ValveLoadSensePressure	Real	%MD6		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12	<Add new>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

Link2

	Name	① Data type	② Address	③ Retain	Access...	Write...	Visibl...	Comment
1	Link2_Control_byte	Byte	%QB3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Link2_Status_byte	Byte	%IB3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	WRREC_REQ_CMDT	Bool	%M14.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4	WRREC_REQ_MEM_CMDT	Bool	%M14.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	WRREC_BUSY_MEM_CMDT	Bool	%M14.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6	WRREC_SR_OUT_CMDT	Bool	%M14.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7	WRREC_REQ_MEM_BAM	Bool	%M15.1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8	WRREC_BUSY_MEM_BAM	Bool	%M15.2		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9	WRREC_SR_OUT_BAM	Bool	%M15.3		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10	WRREC_REQ_BAM	Bool	%M15.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	<Add new>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

ControlTable

	Name	① Data type	② Address	③ Retain	Access...	Write...	Visibl...	Comment
1	Start_communication	Bool	%M0.0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	RemoteRequest_ID	Int	%MW10		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	<Add new>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

7. Adapt the data types ② and the addresses ③.

You can use these control variables to change values either via the control program or via the watch table.

Establishing cyclic data communication

4.1 Setting up the standard message

Configure the module PN-J1939-LINK_2 as output module. The standard message length is ≤ 8 bytes.

Is defined for the module "PGN_1792_ValvePressure_Q" by the following 2 bytes:

- PDU F₁₆ = 0x07
- PDU S₁₆ = 0x00

Both bytes produce the number of the PGN as follows:

- PGN number₁₆ = 0xPDU F₁₆ and 0xPDU S₁₆
- PGN number₁₆ = 0x07 and 0x00 produce 0x0700
- PGN number₁₀ = 1792

Note

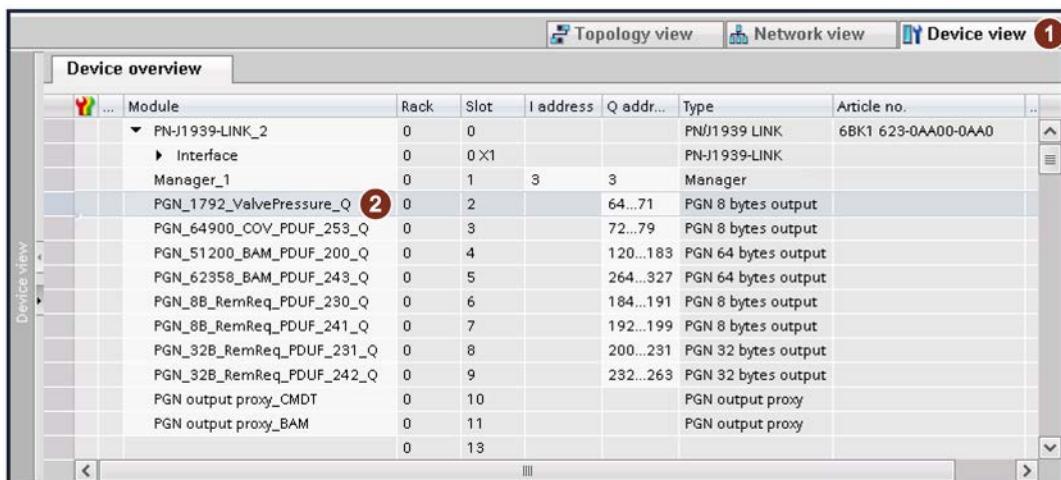
The PGN parameters PDU Format and PDU Specific can thus be converted to a decimal number to be displayed in the PGN list in the DAJ1939_SAE document.

4.1 Setting up the standard message

Assigning parameters for PN-J1939-Link_2

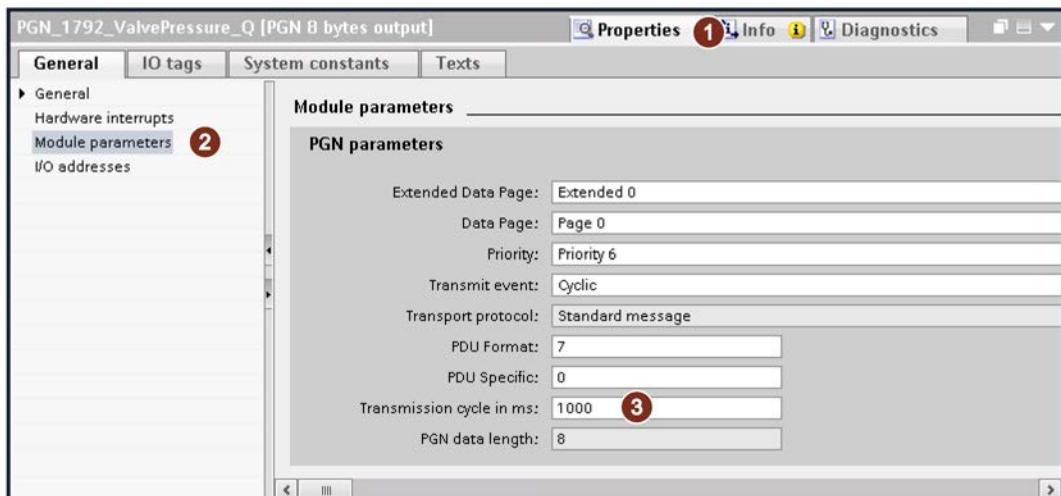
Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_1792_ValuePressure_Q ②".



Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValuePressure_Q ②	0	2		64...71	PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	0	5		264...327	PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8		200...231	PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
	0	13				

3. Click "Properties ① → General → Module parameters ②".



Module parameters
PGN parameters
Extended Data Page: Extended 0
Data Page: Page 0
Priority: Priority 6
Transmit event: Cyclic
Transport protocol: Standard message
PDU Format: 7
PDU Specific: 0
Transmission cycle in ms: 1000 ③
PGN data length: 8

4. Set the transmission rate to "1000" ③.

Assigning parameters for PN-J1939-LINK_1

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_1792_ValuePressure_I ②".

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0	0x1		PN-J1939-LINK	
Manager_1	0	1	2	2	Manager	
PGN_1792_ValuePressure_I	0	2	68...75		PGN 8 bytes input	
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input	
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
PGN input proxy_CMDT	0	11			PGN input proxy	
PGN input proxy_BAM	0	12			PGN input proxy	
	0	13				

3. Click "Properties ① → General → Module parameters ②".

Module parameters	
PGN parameters	
Extended Data Page:	Extended 0
Data Page:	Page 0
PDU Format:	7
PDU Specific:	0
CA Source Address:	160
Reception cycle in ms:	0
PGN data length:	8

4. Set the CA Source Address to "160" ③.

"160" is the source address of PN-J1939-LINK_2.

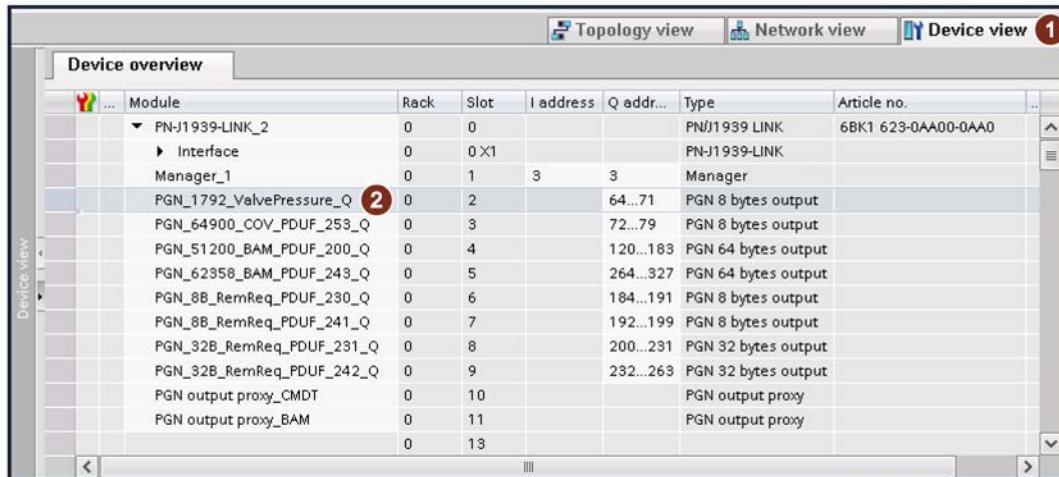
4.1 Setting up the standard message

Use associated hardware ID as system constant

To work with the associated input and output data, the hardware ID of the PN-J1939-LINK_2 must be known. The data to be transferred is written to the output module PN-J1939-LINK_2.

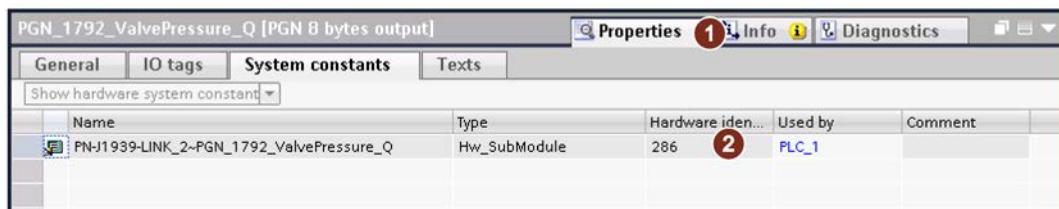
To view the hardware ID, proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_1792_ValuePressure_Q ②".



The screenshot shows a software interface for device configuration. At the top, there are tabs: Topology view, Network view, and Device view (which is selected, indicated by a red circle with the number 1). Below the tabs is a table titled "Device overview". The table has columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no. A vertical toolbar on the left is labeled "Device view". In the "Module" column, the entry "PGN_1792_ValuePressure_Q" is highlighted with a red circle containing the number 2. The table lists various modules and their properties, such as PGN_64900_COV_PDUF_253_Q, PGN_51200_BAM_PDUF_200_Q, and PGN_62358_BAM_PDUF_243_Q.

3. Click "Properties ① → System constants".



The screenshot shows the "Properties" dialog box for the module "PGN_1792_ValuePressure_Q [PGN 8 bytes output]". The tab "System constants" is selected, indicated by a red circle with the number 1. Below it, the "Texts" tab is visible. Under "System constants", there is a table with columns: Name, Type, Hardware iden..., Used by, and Comment. A dropdown menu "Show hardware system constant" is open. One row in the table is highlighted with a red circle containing the number 2, showing the hardware ID "286" under the "Hardware iden..." column. The "Used by" column shows "PLC_1".

The hardware ID is displayed at ②.

Note

Use the hardware ID as system constant.

Inserting additional modules for PN-J1939-Link_1 and PN-J1939-Link_2

Proceed as follows:

1. For PN-J1939-Link_1, insert the following modules ② and rename them ① as specified.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
▶ Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	2	2	Manager	
PGN 1792 ValvePressure_I	0	2	68...75		PGN 8 bytes input	
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input	
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
PGN_RequestMessage_Q	0	6	112...119		PGN 8 bytes output	
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
PGN input proxy_CMDT	0	11			PGN input proxy	
PGN input proxy_BAM	0	12			PGN input proxy	
	0	13				

2. For PN-J1939-Link_2, insert the following modules ② and rename them ① as specified.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
▶ Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN 1792 ValvePressure_Q	0	2	64...71		PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3	72...79		PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4	120...183		PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	0	5	264...327		PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6	184...191		PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7	192...199		PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8	200...231		PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9	232...263		PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
	0	12				
	0	13				

4.2 Creating function block SETIO and assigning parameters for it

If you want to assign values from the output data field "Link_2".PGN_1792_Q to the addresses of the output module, you must call the associated program resource.

Enter the hardware ID in the program resource SETIO.

Creating program resource SETIO and display hardware ID

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "SETIO_PGN_1792_DB [DB3]".

The program resource is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in...
1 Input						
2 ID	HW_SUBMODULE	"PN-J1939-LINK_2~PGN_1792_ValvePressure_Q"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 Output						
4 STATUS	DWord	16#0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 InOut						
6 OUTPUTS	Variant		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7 Static			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The hardware ID is displayed at ①. The corresponding start value can be found at ②.
See section "Setting up the standard message (Page 21)".

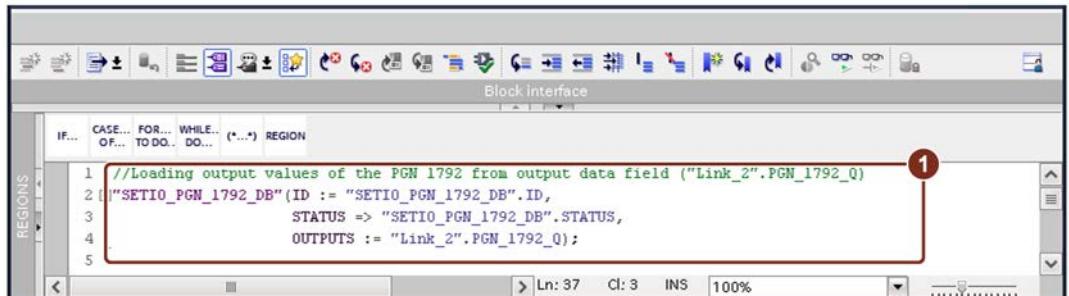
Load output values

Below, the data is defined by the parameter "OUTPUTS" of the program resource SETIO.

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]" ②.

The following dialog box is displayed.



4. Enter the program code ①.

As a result, the output values are loaded from the output data field.

Note

The program code corresponds to the application example
"109760972_network_transitions_pnj1939_link_xx".

Entering the structure of the output data field in PN-J1939-Link_2.

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_2 [DB2]" ②.

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...	Setpoint	C...
2 Link2_ControlBit	Byte	1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3 PGN_1792_Q	Array[0..7] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 PGN_1792_Q[0]	Byte	16#64	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 PGN_1792_Q[1]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 PGN_1792_Q[2]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7 PGN_1792_Q[3]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8 PGN_1792_Q[4]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9 PGN_1792_Q[5]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10 PGN_1792_Q[6]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11 PGN_1792_Q[7]	Byte	16#00	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12 PGN_64900_Q	Array[0..7] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

4. Insert the output data fields ①.

This creates the output data fields that the program block "Send_PGN [FC2]" accesses.

4.3 Create and assign parameters for function block GETIO

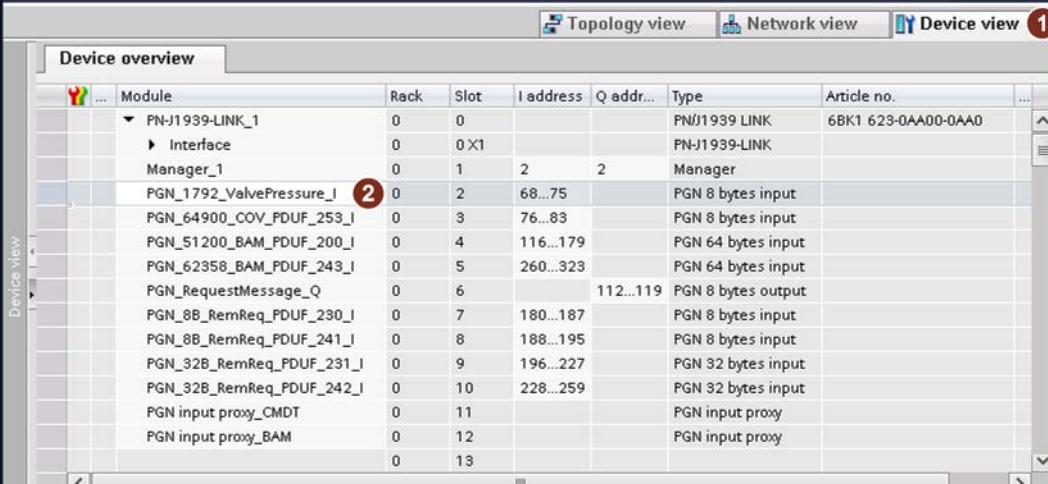
If you want to assign values from the input data field "Link_1".PGN_1792_I to the input module, you must create the program resource GETIO and assign parameters for it.

Enter the hardware ID in the program resource GETIO.

Displaying PN-J1939-Link_1 hardware ID

Proceed as follows:

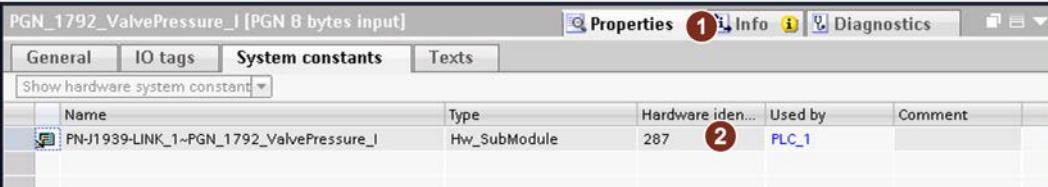
1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_1792_ValvePressure_I ②".



Device overview							
	Module	Rack	Slot	Address	Q addr...	Type	Article no.
▼	PN-J1939-LINK_1	0	0			PNJ1939 LINK	6BK1 623-0AA00-0AA0
▶	Interface	0	0X1			PNJ1939-LINK	
	Manager_1	0	1	2	2	Manager	
	PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input	
	PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input	
	PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
	PGN_62356_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
	PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output	
	PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
	PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
	PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
	PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
	PGN input proxy_CMDT	0	11			PGN input proxy	
	PGN input proxy_BAM	0	12			PGN input proxy	
		0	13				

To work with the required input and output data, the corresponding hardware ID of PGN_1792_ValvePressure_I is required.

3. Click "Properties ① → System constants".



Name	Type	Hardware iden...	Used by	Comment
PNJ1939-LINK_1~PGN_1792_ValvePressure_I	Hw_SubModule	287	PLC_1	

The hardware ID is displayed at ②.

Note

Use the hardware ID as system constant.

4.3 Create and assign parameters for function block GETIO

Create program resource GETIO

The program resource GETIO is used to assign values from the input module to the "Link_1".PGN_1792_I data field. The hardware ID must be created as GETIO.ID value.

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Devices ① → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "GETIO_PGN_1792_DB [DB4]".

The program resource is displayed.

Name	Data type	Start value	Retain	Accessible ...	Writa...	Visible in ...	Setpo...
1 Input							
2 ID	HW_MODULE	"PN-J1939-LINK_1~PGN_1792_ValvePressure_I"		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3 Output							
4 STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5 LEN	Int	0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6 InOut							
7 Static							

The hardware ID is displayed at ①. The corresponding start value can be found at ②.
See section "Setting up the standard message (Page 21)".

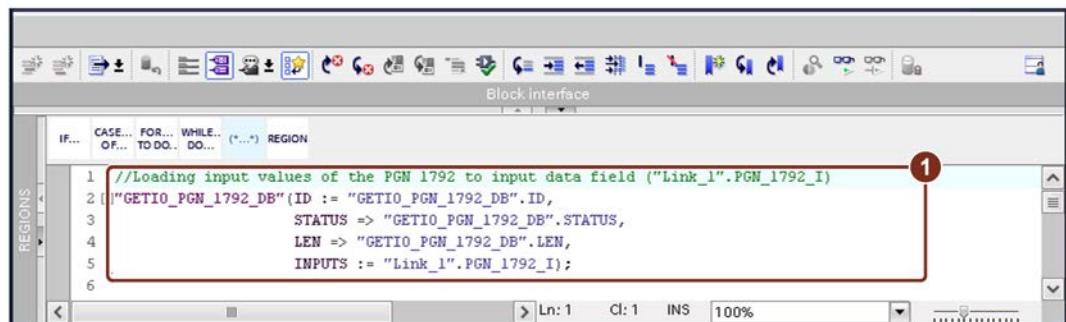
Load input values

The arrangement of data for saving input values is defined below by the "INPUTS" parameter.

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Devices ① → Project → PLC_1 → Program blocks".
3. Double-click "Read_PGN [FC3]" ②.

The following dialog box is displayed.



4. Enter the program code ①.

The input values are then loaded into the input data field.

Note

The program code corresponds to the application example
["109760972_network_transitions_pnj1939_link_xx"](#).

4.4 Displaying the structure of the input data module and starting communication

Displaying the structure of the input block "Link_1".PGN_1792_I

The structure of the data block is required to store the received PGN1792 data.

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]" ②.

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint
1 Static							
2 Link1_ControlBit	Byte	1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 PGN 1792_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4 PGN_1792_I[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 PGN_1792_I[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6 PGN_1792_I[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7 PGN_1792_I[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8 PGN_1792_I[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9 PGN_1792_I[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 PGN_1792_I[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11 PGN_1792_I[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12 PGN_64900_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13 PGN_51200_I	Array[0..63] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14 PGN_62358_I	Array[0..63] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15 PGN_8B_RemReq_PDUF_230_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4. Define the data structure ①.

Setting the watch table "Link_1" online

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Devices → Project → PLC_1".
3. Double-click "Watch table_1".

The following dialog box is displayed.

	Name	Address	Display format	Monitor value	Modify value	Com...
1	"Start_communication"	%M0.0	Bool	TRUE	TRUE	<input checked="" type="checkbox"/>
2						
3	"Link1_Control_byte"	%QB2	Hex			
4	"Link1_Status_byte"	%IB2	Hex			
5						
6	"Link2_Control_byte"	%QB3	Hex			
7	"Link2_Status_byte"	%IB3	Hex			
8						
9	"RemoteRequest_ID"	%MW10	DEC+/-			
10						
11	"WRREC_REQ_CMDT"	%M14.0	Bool	TRUE	<input checked="" type="checkbox"/>	
12	"RDREC_REQ_CMDT"	%M14.4	Bool	TRUE	<input checked="" type="checkbox"/>	
13						
14	"WRREC_REQ_BAM"	%M15.0	Bool			
15	"RDREC_REQ_BAM"	%M15.4	Bool			
16						
17	"ValveLoadSensePressure"	%MD6	Floating-point nu...			
18						
19		<Add new>				

4. Change the value of the "Start_communication" tag to "TRUE" ④.

This sets the control byte for both PN/J1939 LINKs to 0x01, and PN/J1939 LINK 1 and 2 change to operating mode.

5. Click "Monitor all" ① and then "Modify all selected values once and now" ②.

The watch table "Watch table_1" goes online. The values in the "Monitor value" column ③ are updated cyclically.

4.5 Assigning parameters for cyclic change of value – Standard message

The transmission cycle can be changed in the properties of the module parameters. Below, it is described, how you have to assign parameters for both modules, so that the transmission only takes place in case of a change of value. This parameter assignment reduces the data traffic.

Note

Leave all other settings and procedures as they are given in the example for the cyclic standard message according to section "Establishing cyclic data communication (Page 21)".

Assigning parameters for output module PGN_64900

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_64900_COV_PDUF_253_Q ②".

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	0	5		264...327	PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8		200...231	PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
		12				

3. Click "Properties ① → General → Module parameters".

General		IO tags		System constants		Texts	
▶ General				Module parameters			
Hardware interrupts				PGN parameters			
Module parameters				Extended Data Page:	Extended 0		
I/O addresses				Data Page:	Page 0		
				Priority:	Priority 6		
				Transmit event:	Change of value	②	
				Transport protocol:	Standard message		
				PDU Format:	253		
				PDU Specific:	132		
				Transmission cycle in ms:	500		
				PGN data length:	8		

4. Set the transmission cycle to the value "Change of Value" ②.

Assigning parameters for input module PGN_64900

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_64900_COV_PDUF_253_I ②".

Module	Rack	Slot	Address	Q addr...	Type	Article no.
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	2	2	Manager	
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input	
PGN_64900_COV_PDUF_253_I	2	76...83			PGN 8 bytes input	
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
PGN input proxy_CMDT	0	11			PGN input proxy	
PGN input proxy_BAM	0	12			PGN input proxy	
	0	13				

3. Click "Properties ① → General → Module parameters".

Module parameters	
PGN parameters	
Extended Data Page:	Extended 0
Data Page:	Page 0
PDU Format:	253
PDU Specific:	132
CA Source Address:	160
Reception cycle in ms:	0
PGN data length:	8

4. Make the following settings:

- PDU Format at "253" ②
- CA Source Address at "160" ③

4.6 Interpreting PGN-1792 data

After the PGN-1792 data has been transferred, it can be interpreted. Information on how this data is to be interpreted is available in SAE J1939. The protocol was defined by the International Society of Automotive Engineers (SAE).

The following applies to this application example:

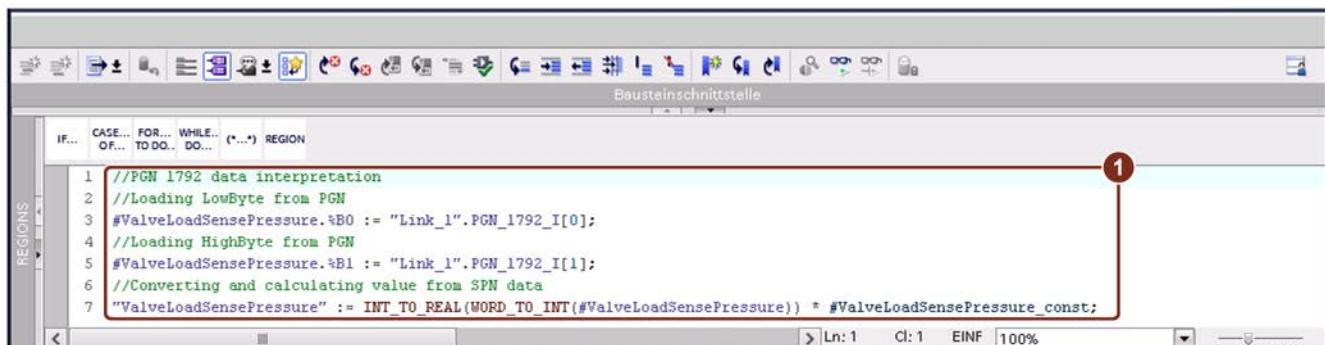
- Bytes 0 to 1: Metric SPN data
- Bytes 2 to 7: Not used
- Unit: kPa
- Measuring range: 0 to 321 275 kPa
- Resolution: 5 kPa/bit

Interpreting PGN-1972 data

Proceed as follows:

1. Select "Project tree → Devices → Project → PLC_1 → Program blocks".
2. Double-click "Process_PGN [FC4]" ②.

The following dialog box is displayed.



```

IF... CASE... FOR... WHILE... OF... TO DO... (*...*) REGION
1 //PGN 1792 data interpretation
2 //Loading LowByte from PGN
3 #ValveLoadSensePressure.%B0 := "Link_1".PGN_1792_I[0];
4 //Loading HighByte from PGN
5 #ValveLoadSensePressure.%B1 := "Link_1".PGN_1792_I[1];
6 //Converting and calculating value from SPN data
7 "#ValveLoadSensePressure" := INT_TO_REAL(WORD_TO_INT(#ValveLoadSensePressure)) * #ValveLoadSensePressure_const;

```

3. Enter the program code ①.

The required bytes are then loaded. The loaded data is then converted and calculated.

Sample calculation

The metric value for PGN 1792 should be 500 kPa.

Both bytes produce the number of the PGN as follows:

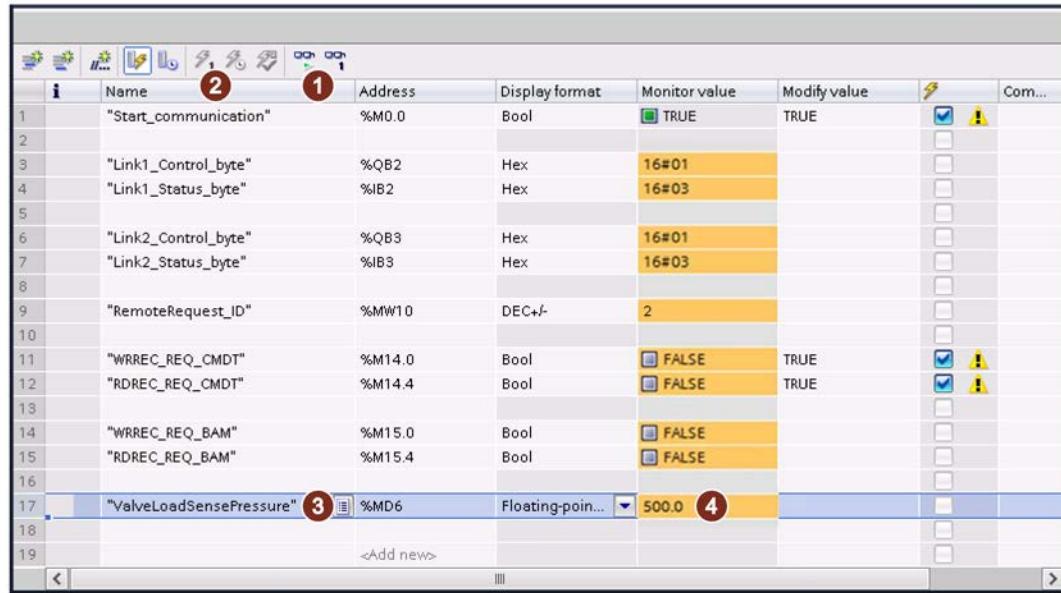
- SPN data₁₆ = 0x00 and 0x64
- SPN data₁₆ = 0x0064
- SPN data₁₀ = 100
- 100 × 5 (resolution per bit) = 500 kPa

Set resolution per bit

Proceed as follows:

1. Select "Project tree → Devices → Project → PLC_1 → Watch and force tables".
2. Double-click "Watch table_1".

The following dialog box is displayed.



The screenshot shows a software interface for managing watch and force tables. The window title is 'Watch and force tables'. The main area is a table with columns: Row, Name, Address, Display format, Monitor value, Modify value, and Com... (with checkboxes). The table contains 19 rows of data. Row 17 is highlighted with a blue selection bar and has a red circle with the number 3 over the 'Name' column. The 'Modify value' column for this row contains a value of '500.0' with a red circle containing the number 4. Other rows show various variable names like 'Start_communication', 'Link1_Control_byte', etc., with their respective addresses, formats, and current values (e.g., '16#01', '16#03').

	Name	Address	Display format	Monitor value	Modify value	Com...
1	"Start_communication"	%M0.0	Bool	TRUE	TRUE	<input checked="" type="checkbox"/>
2						<input type="checkbox"/>
3	"Link1_Control_byte"	%QB2	Hex	16#01		<input type="checkbox"/>
4	"Link1_Status_byte"	%IB2	Hex	16#03		<input type="checkbox"/>
5						<input type="checkbox"/>
6	"Link2_Control_byte"	%QB3	Hex	16#01		<input type="checkbox"/>
7	"Link2_Status_byte"	%IB3	Hex	16#03		<input type="checkbox"/>
8						<input type="checkbox"/>
9	"RemoteRequest_ID"	%MW10	DEC+/-	2		<input type="checkbox"/>
10						<input type="checkbox"/>
11	"WRREC_REQ_CMDT"	%M14.0	Bool	FALSE	TRUE	<input checked="" type="checkbox"/>
12	"RDREC_REQ_CMDT"	%M14.4	Bool	FALSE	TRUE	<input checked="" type="checkbox"/>
13						<input type="checkbox"/>
14	"WRREC_REQ_BAM"	%M15.0	Bool	FALSE		<input type="checkbox"/>
15	"RDREC_REQ_BAM"	%M15.4	Bool	FALSE		<input type="checkbox"/>
16						<input type="checkbox"/>
17	"ValveLoadSensePressure"	%MD6	Floating-point	500.0	4	
18						<input type="checkbox"/>
19						<input type="checkbox"/>
<Add new>						

3. Click "Monitor all" ① and then "Modify all selected values once and now" ②.

The watch table "Watch table_1" goes online.

The row "ValveLoadSensePressure" ③ is updated cyclically with the values calculated from the PGN-1792 data ④.

Assigning parameters for cyclic change of value - Data length > 8 bytes

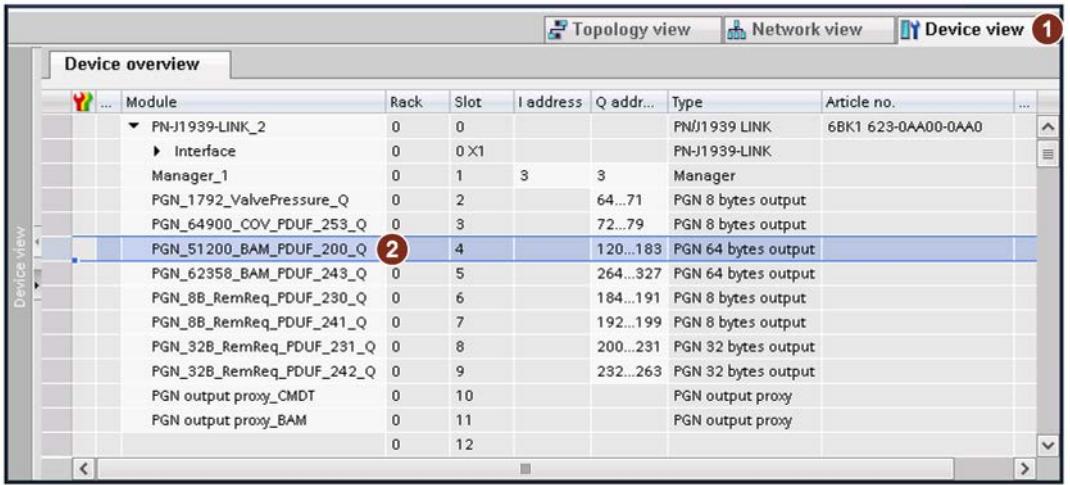
5.1 Cyclic change of value output module - PDU format <= 239

Length of the PGN data: > 8 bytes (BAM)

Configuring output module "PGN_51200_BAM_PDUF_200_Q"

Proceed as follows:

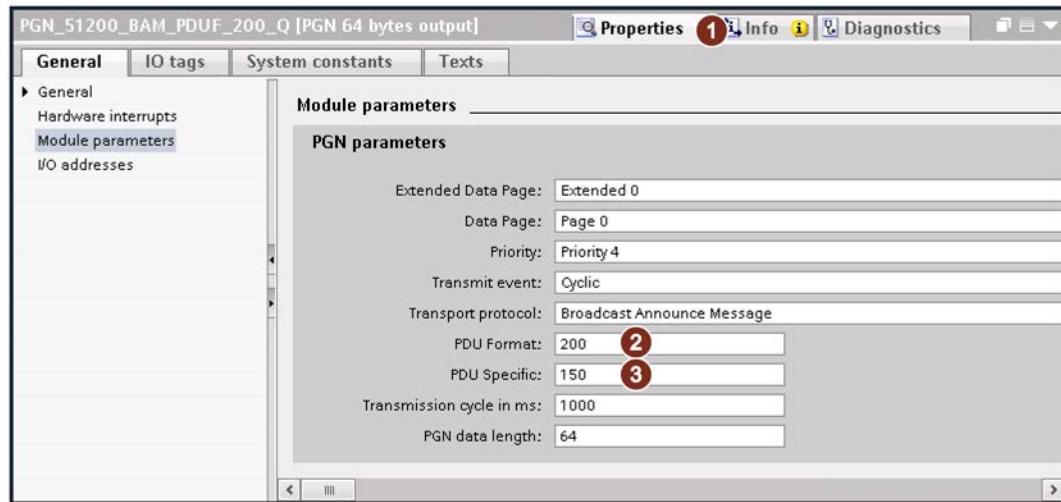
1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_51200_BAM_PDUF_200_Q ②".



Device overview						
	Module	Rack	Slot	I address	Q addr...	Type
▼	PN-J1939-LINK_2	0	0			PN/J1939 LINK
▶	Interface	0	0 X1			PN-J1939-LINK
	Manager_1	0	1	3	3	Manager
	PGN_1792_ValvePressure_Q	0	2	64...71	PGN 8 bytes output	
	PGN_64900_COV_PDUF_253_Q	0	3	72...79	PGN 8 bytes output	
	PGN_51200_BAM_PDUF_200_Q	2	4	120...183	PGN 64 bytes output	
	PGN_62358_BAM_PDUF_243_Q	0	5	264...327	PGN 64 bytes output	
	PGN_8B_RemReq_PDUF_230_Q	0	6	184...191	PGN 8 bytes output	
	PGN_8B_RemReq_PDUF_241_Q	0	7	192...199	PGN 8 bytes output	
	PGN_32B_RemReq_PDUF_231_Q	0	8	200...231	PGN 32 bytes output	
	PGN_32B_RemReq_PDUF_242_Q	0	9	232...263	PGN 32 bytes output	
	PGN output proxy_CMDT	0	10		PGN output proxy	
	PGN output proxy_BAM	0	11		PGN output proxy	
		0	12			

5.1 Cyclic change of value output module - PDU format <= 239

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:

- PDU Format at "200" ②
- PDU Specific at "150" ③

The other parameters must be set as described in the section "Assigning parameters for cyclic change of value - Standard message (Page 34)".

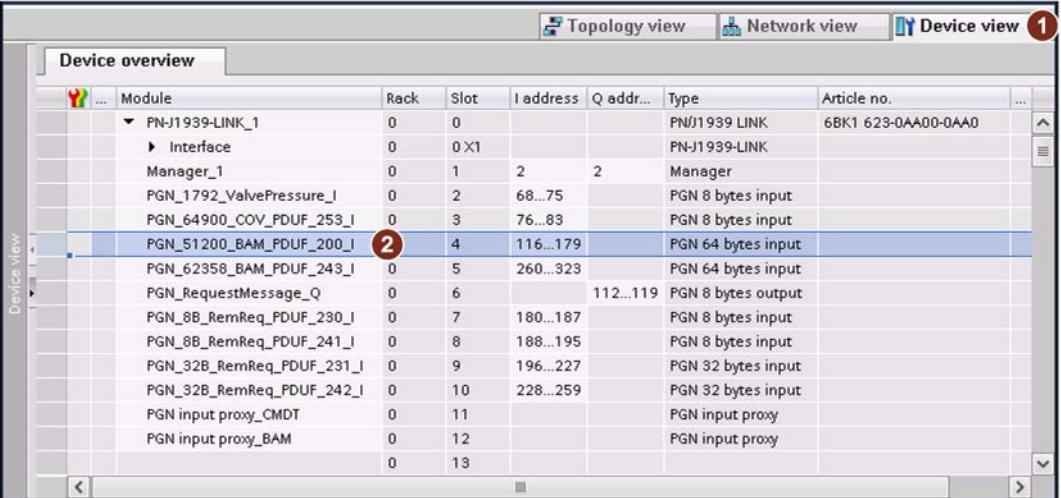
5.2 Cyclic change of value input module - PDU format <= 239

Length of the PGN data: > 8 bytes (BAM)

Configuring the input module "PGN_51200_BAM_PDUF_200_I"

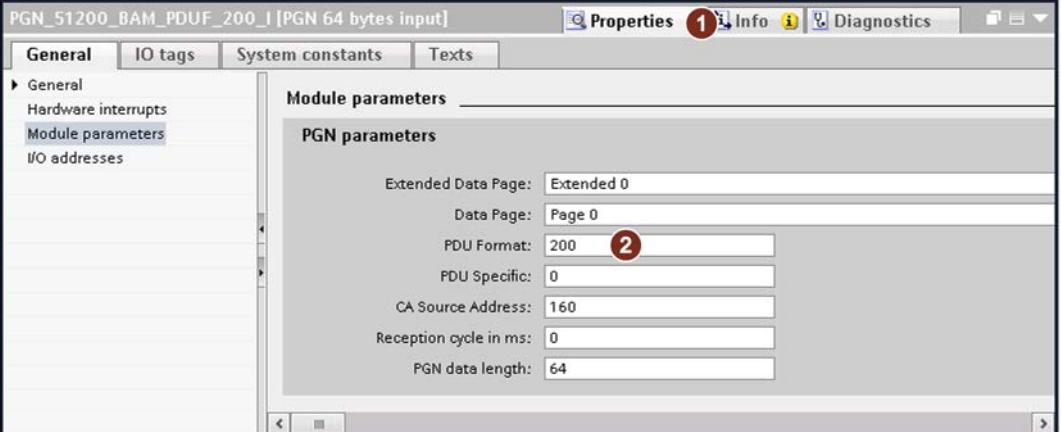
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_51200_BAM_PDUF_200_I ②".



The screenshot shows a software interface for device configuration. At the top, there are three tabs: Topology view, Network view, and Device view (the latter is highlighted with a red circle containing the number 1). Below the tabs is a table titled "Device overview". The table has columns for Module, Rack, Slot, I address, Q addr..., Type, Article no., and ... (with a small arrow icon). A vertical toolbar on the left is labeled "Device view". The table lists various modules, including "PN-J1939-LINK_1" and "PGN_51200_BAM_PDUF_200_I" (which is highlighted with a red circle containing the number 2). Other listed modules include "PGN_1792_ValvePressure_I", "PGN_64900_COV_PDUF_253_I", "PGN_62358_BAM_PDUF_243_I", "PGN_RequestMessage_Q", "PGN_8B_RemReq_PDUF_230_I", "PGN_8B_RemReq_PDUF_241_I", "PGN_32B_RemReq_PDUF_231_I", "PGN_32B_RemReq_PDUF_242_I", "PGN input proxy_CMDT", "PGN input proxy_BAM", and "PGN input proxy".

3. Click "Properties ① → General → Module parameters".



The screenshot shows the "Properties" dialog for the "PGN_51200_BAM_PDUF_200_I [PGN 64 bytes input]" module. At the top, there are tabs for Properties (highlighted with a red circle containing the number 1), Info, Diagnostics, and a search bar. Below the tabs, there are four tabs: General, IO tags, System constants, and Texts. The General tab is selected. On the left, there is a sidebar with links: General, Hardware interrupts, Module parameters (which is highlighted with a red circle containing the number 2), and I/O addresses. The main area is titled "Module parameters" and contains a section for "PGN parameters". It includes fields for Extended Data Page (Extended 0), Data Page (Page 0), PDU Format (200), PDU Specific (0), CA Source Address (160), Reception cycle in ms (0), and PGN data length (64).

4. Set the PDU format to "200" ②.

The other parameters must be set as described in the section "Assigning parameters for cyclic change of value - Standard message (Page 34)".

5.3 Cyclic change of value output module - PDU format > 239

In this case, the PGN parameter PDU Specific does not work as known. The PGN parameter PDU Specific is an extension of "PDU Format".

Configuring output module "PGN_62358_BAM_PDUF_243_Q"

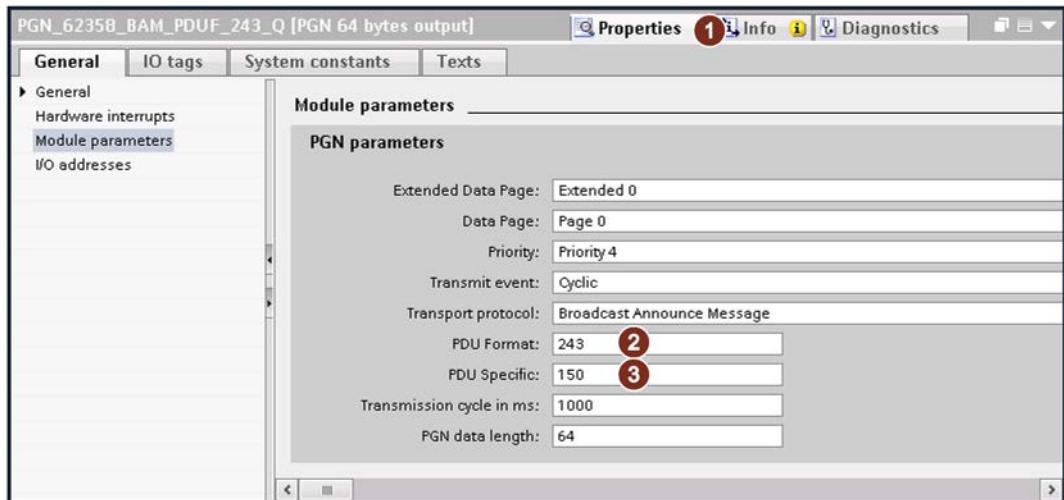
Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_62358_BAM_PDUF_243_Q ②".

The screenshot shows a software interface for device configuration. At the top, there are three tabs: "Topology view", "Network view", and "Device view". The "Device view" tab is selected, indicated by a red circle with the number 1. Below the tabs is a sub-tab labeled "Device overview". The main area is a table with the following columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no.. The table lists various modules, including the target module PGN_62358_BAM_PDUF_243_Q, which is highlighted with a red circle and the number 2. The table also lists other modules like PN-J1939-LINK_2, Manager_1, and several PGN output proxy entries.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	2	5		264...327	PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8		200...231	PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
	0	12				
	0	13				

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:

- PDU Format to "243" ②
- PDU Specific at "150" ③

The other parameters must be set as described in the section "Assigning parameters for cyclic change of value - Standard message (Page 34)".

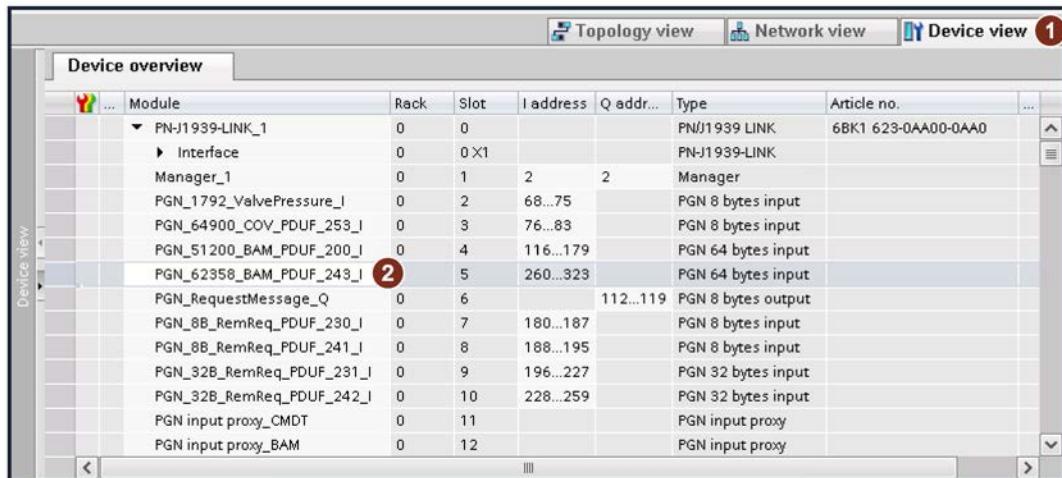
5.4 Cyclic change of value input module - PDU format > 239

Length of the PGN data: > 8 bytes (BAM)

Configuring the input module "PGN_62358_BAM_PDUF_243_I"

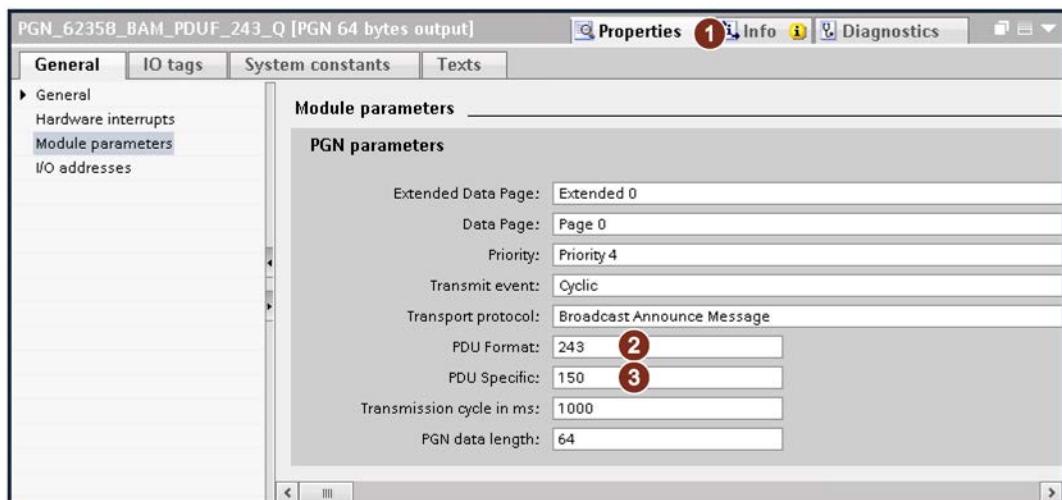
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_62358_BAM_PDUF_243_I ②".



The screenshot shows a table titled "Device overview" with columns: Module, Rack, Slot, I address, Q addr..., Type, Article no., and The table lists various modules and their configurations. The row for "PGN_62358_BAM_PDUF_243_I" is highlighted with a red circle containing the number 2, indicating it is the selected item.

3. Click "Properties ① → General → Module parameters".



The screenshot shows the "Properties" dialog for the PGN_62358_BAM_PDUF_243_I module. The "General" tab is selected. In the "Module parameters" section, the "PGN parameters" group is expanded. Several parameters are set: Extended Data Page: Extended 0, Data Page: Page 0, Priority: Priority 4, Transmit event: Cyclic, Transport protocol: Broadcast Announce Message, PDU Format: 243 (circled in red with 2), PDU Specific: 150 (circled in red with 3), Transmission cycle in ms: 1000, and PGN data length: 64.

4. Make the following settings:

- PDU Format to "243" ②
- PDU Specific at "150" ③

The other parameters must be set as described in the section "Assigning parameters for cyclic change of value - Standard message (Page 34)".

6

Setting up remote request

As a user, you can use remote request to receive the requested data.

6.1 Standard message – PGN data length <= 8 bytes, PDU format <= 239

6.1.1 Configure Link 2 – PGN_8B_RemReq_PDUF_230_Q

Assigning parameters for PGN_8B_RemReq_PDUF_230_Q

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_8B_RemReq_PDUF_230_Q ②".

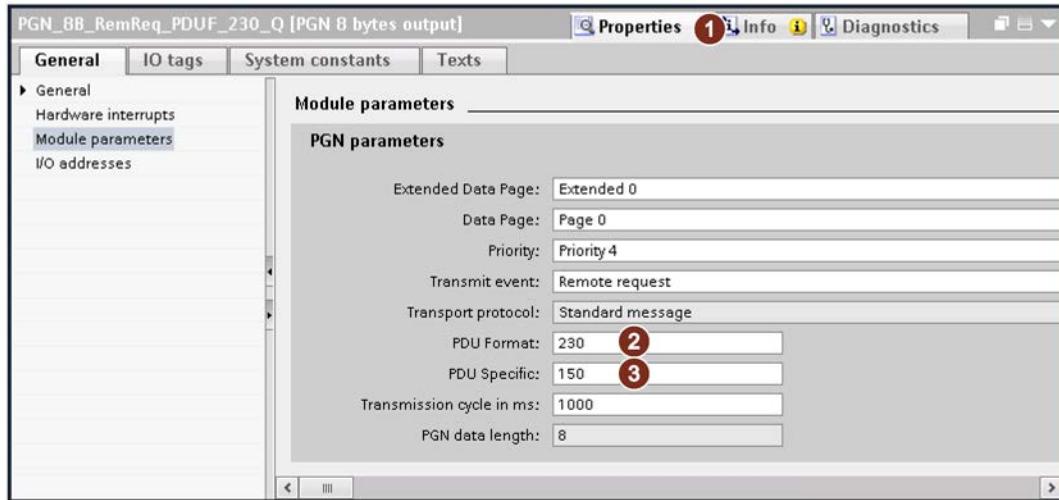
The screenshot shows a software interface titled 'Device overview'. At the top, there are three tabs: 'Topology view', 'Network view', and 'Device view' (which is selected, indicated by a red circle with the number 1). On the left, there is a vertical toolbar with icons for 'Device view' and 'Network view'. The main area is a table with columns: Module, Rack, Slot, Address, Q addr..., Type, Article no., and ... (with a dropdown arrow). The table lists various network components. A specific row for 'PGN_8B_RemReq_PDUF_230_Q' is highlighted with a red circle containing the number 2. This row has values: Rack 0, Slot 6, Address 184...191, Type PGN 8 bytes output, and Article no. 6BK1 623-0AA00-0AA0. Other rows include 'Manager_1' (Rack 0, Slot 1, Address 64...71, Type Manager), several PGN entries (e.g., PGN_1792_ValvePressure_Q, PGN_64900_COV_PDUF_253_Q), and PGN output proxy entries (e.g., PGN output proxy_CMDT, PGN output proxy_BAM).

Module	Rack	Slot	Address	Q addr...	Type	Article no.	...
▼ PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
▶ Interface	0	0X1			PN-J1939-LINK		
Manager_1	0	1	3	3	Manager		
PGN_1792_ValvePressure_Q	0	2	64...71		PGN 8 bytes output		
PGN_64900_COV_PDUF_253_Q	0	3	72...79		PGN 8 bytes output		
PGN_51200_BAM_PDUF_200_Q	0	4	120...183		PGN 64 bytes output		
PGN_62356_BAM_PDUF_243_Q	0	5	264...327		PGN 64 bytes output		
PGN_8B_RemReq_PDUF_230_Q	0	6	184...191		PGN 8 bytes output		
PGN_8B_RemReq_PDUF_241_Q	0	7	192...199		PGN 8 bytes output		
PGN_32B_RemReq_PDUF_231_Q	0	8	200...231		PGN 32 bytes output		
PGN_32B_RemReq_PDUF_242_Q	0	9	232...263		PGN 32 bytes output		
PGN output proxy_CMDT	0	10			PGN output proxy		
PGN output proxy_BAM	0	11			PGN output proxy		
	0	12					

Setting up remote request

6.1 Standard message – PGN data length <= 8 bytes, PDU format <= 239

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:

- PDU Format at "230" ②
- PGN Specific to "150" ③

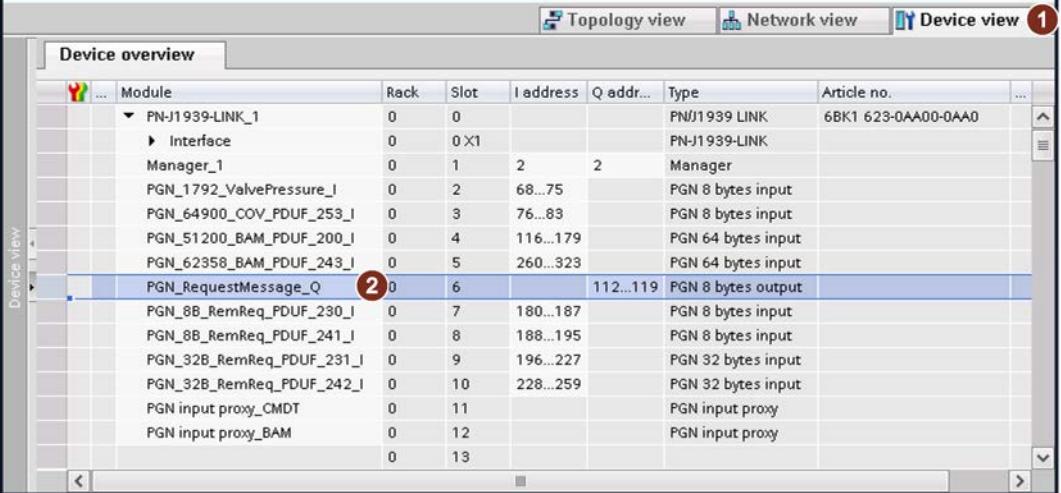
Assign parameters for PGN_RequestMessage_Q

PN/J1939 Link_1 as output PGN sends a request message to specify the requested PGN.

- PDU Format = 234 for the remote request
- PDU Specific = 160 for the source address of Link_2

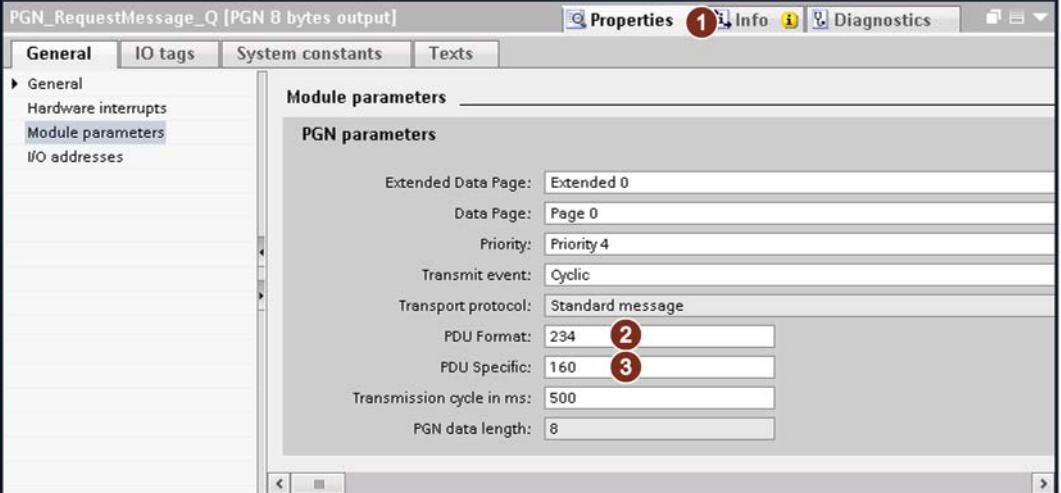
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_RequestMessage_Q ②".



Module	Rack	Slot	Address	Q addr...	Type	Article no.	...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	68K1 623-0AA00-0AA0	
Interface	0	0	X1		PN-J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input		
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input		
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input		
PGN_62356_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input		
PGN_RequestMessage_Q	②	6	112...119		PGN 8 bytes output		
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input		
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input		
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input		
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input		
PGN input proxy_CMDT	0	11			PGN input proxy		
PGN input proxy_BAM	0	12			PGN input proxy		
	0	13					

3. Click "Properties ① → General → Module parameters".



Module parameters	
PGN parameters	
Extended Data Page:	Extended 0
Data Page:	Page 0
Priority:	Priority 4
Transmit event:	Cyclic
Transport protocol:	Standard message
PDU Format:	② 234
PDU Specific:	③ 160
Transmission cycle in ms:	500
PGN data length:	8

4. Make the following settings:

- PDU format to "234" ②
- PGN Specific to "160" ③

Setting up remote request

6.1 Standard message – PGN data length <= 8 bytes, PDU format <= 239

The requested PGN is defined by the assigned output data of the request message.

- PDU F₁₆ = 0xE6
- PDU S₁₆ = 0x96

The data of the request message are:

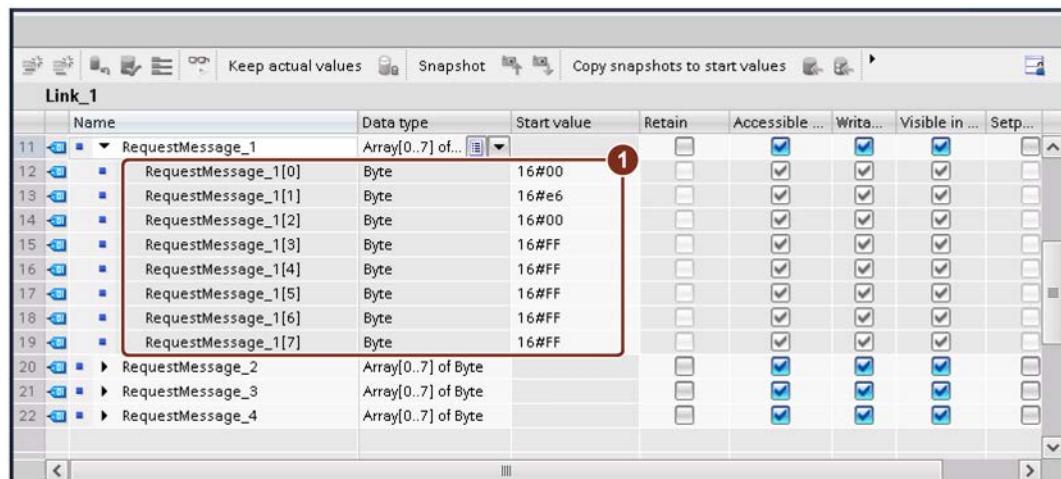
First byte	0x00	PDU Specific
Second byte	0xE6	PDU Format
Third byte	00	Default
Bytes 4 to 7	0xFF	Not used

Enter RequestMessage_1

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.



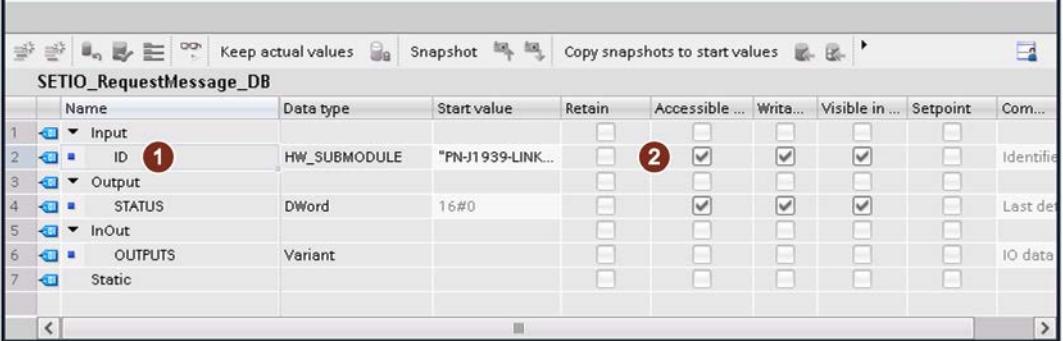
4. Enter the data of the request message ① according to the target PGN.

Assign parameters for SETIO_RequestMessage_DB [DB7]

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "SETIO_RequestMessage_DB [DB7]".

The program resource is displayed.



Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint	Com...
1 ▾ Input								
2 ▾ □ ID ①	HW_SUBMODULE	"PN-J1939-LINK..."	<input type="checkbox"/>	<input checked="" type="checkbox"/> ②	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Identifie...
3 ▾ Output								
4 ▾ □ STATUS	DWord	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		Last de...
5 ▾ InOut								
6 ▾ □ OUTPUTS	Variant		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		IO data...
7 ▾ Static			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

The hardware ID is displayed at ①. The corresponding start value can be found at ②.

Programming request message

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → Send_PGN [FC2]."
3. Double-click "Send_PGN [FC2]."

The following dialog box is displayed.

The screenshot shows the SIMATIC Manager dialog box with the title "Block interface". The code area displays the following program code:

```
40
41 //Do not process any Request Message, if LINKs are not in operations lmode
42 IF "Start_communication" THEN
43
44 //Selecting the request message according to demanded PGN
45 CASE "RemoteRequest_ID" OF
46
47 1://Request message to receive data from "PGN_8B_RemReq_PDUF_230_Q"
48   "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
49     STATUS => "SETIO_RequestMessage_DB".STATUS,
50     OUTPUTS := "Link_1".RequestMessage_1);
51
```

A red box highlights the line `1://Request message to receive data from "PGN_8B_RemReq_PDUF_230_Q"`. A red circle with the number **1** points to this line.

4. Enter the program code ①.

The request message for receiving data from "PGN_8B_RemReq_PDUF_230_Q" then has the following properties:

- ID: The hardware ID
- STATUS: The result
- OUTPUTS: Data of the request message

Create output data

The output data that is sent to the request from Link_2 (PGN_32B_RemReq_PDUF_230_Q) is defined below.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_2 [DB2]".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Se...
PGN_8B_RemReq_PDUF_230_Q	Array[0..7] of ...						
PGN_8B_RemReq_PDUF_230_Q[0]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[1]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[2]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[3]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[4]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[5]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[6]	Byte	16#01					
PGN_8B_RemReq_PDUF_230_Q[7]	Byte	16#01					
PGN_8B_RemReq_PDUF_241_Q	Array[0..7] of Byte						
PGN_32B_RemReq_PDUF_231_Q	Array[0..31] of Byte						

4. Enter the response data for the request message ①.

Assign output data

Use the SETIO function to assign output values from an output data field to the output PGN.

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.

```

20
21 //Loading output values of the PGN_8B_RemReq_PDUF_230_Q from output data field
22 //("Link_2".PGN_8B_RemReq_PDUF_230_Q)
23 ["SETIO_8B_RemReq_PDUF_230_DB"(ID := "SETIO_8B_RemReq_PDUF_230_DB".ID,
24 STATUS => "SETIO_8B_RemReq_PDUF_230_DB".STATUS,
25 OUTPUTS := "Link_2".PGN_8B_RemReq_PDUF_230_Q);
26
27 //Loading output values of the PGN_8B_RemReq_PDUF_241_Q from output data field ("Link_2".PGN_8B_RemReq_
28 ["SETIO_8B_RemReq_PDUF_241_DB"(ID := "SETIO_8B_RemReq_PDUF_241_DB".ID,
29 STATUS => "SETIO_8B_RemReq_PDUF_241_DB".STATUS,
30 OUTPUTS := "Link_2".PGN_8B_RemReq_PDUF_241_Q);

```

4. Enter the program code ①.

6.1.2 Configure Link 1 – PGN_8B_RemReq_PDUF_230_I

Assigning parameters for PGN_8B_RemReq_PDUF_230_I

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click on "Device view → Device overview → PGN_8B_RemReq_PDUF_230_I".

Module	Rack	Slot	Address	Q addr...	Type	Article no.
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN/J1939-LINK	
Manager_1	0	1	2	2	Manager	
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input	
PGN_64900_COV_PDUF_259_I	0	3	76...83		PGN 8 bytes input	
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
PGN input proxy_CMDT	0	11			PGN input proxy	
PGN input proxy_BAM	0	12			PGN input proxy	
	0	13				

3. Click "Properties ① → General → Module parameters".

PGN_8B_RemReq_PDUF_230_I [PGN 8 bytes input]

Properties ① Info Diagnostics

General IO tags System constants Texts

Module parameters

PGN parameters

Extended Data Page: Extended 0
Data Page: Page 0
PDU Format: 230 ②
PDU Specific: 150 ③
CA Source Address: 160
Reception cycle in ms: 0
PGN data length: 8

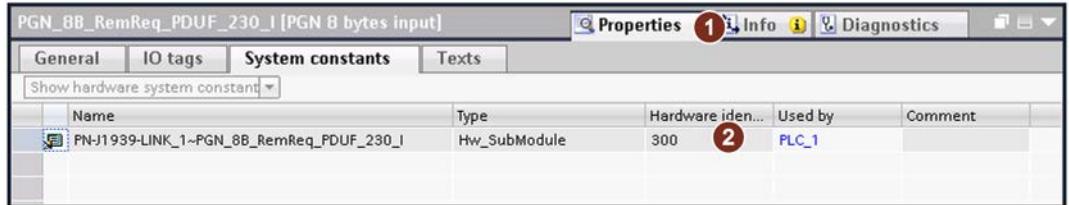
4. Make the following settings:

- PDU Format at "230" ②
- PDU Specific "150" ③

Displaying the hardware ID

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click on "Device view → Device overview → PGN_8B_RemReq_PDUF_230_I".
3. Click "Properties ① → System constants".



The hardware ID is displayed at ②.

Show start value

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "GETIO_8B_RemReq_PDUF_230_DB [DB8]".

The program resource is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write ...	Visible in ...
1 Input			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 ID	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_8B_RemReq_PDUF_230_I"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 Output			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 STATUS	DWord	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 LEN	Int	0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6 InOut			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7 INPUTS	Variant		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8 Static			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The hardware ID is displayed at ①. The corresponding start value can be found at ②.

6.1 Standard message – PGN data length <= 8 bytes, PDU format <= 239

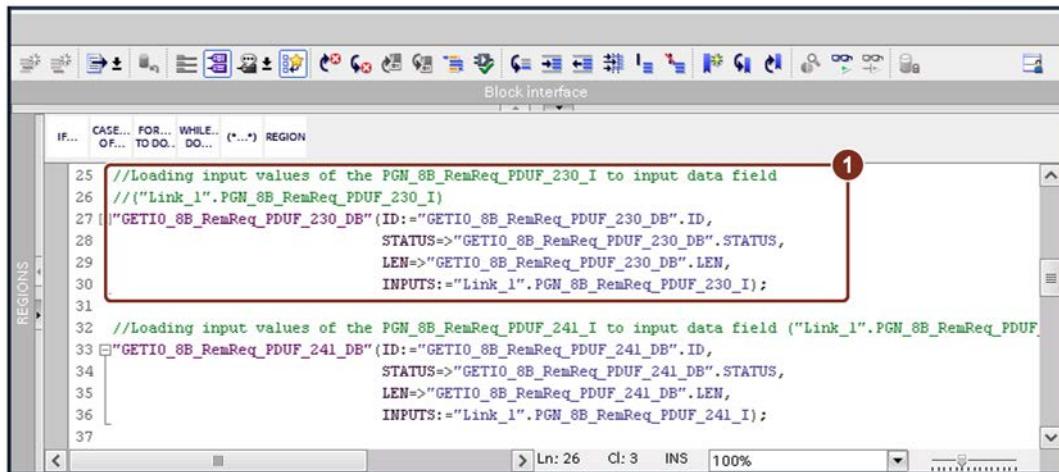
Assign input data

Use the GETIO function to assign data from the input PGN to the byte array.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Read_PGN [FC3]".

The following dialog box is displayed.



The screenshot shows a software interface titled "Block Interface" with a toolbar at the top. Below the toolbar is a menu bar with options like IF..., CASE..., FOR..., WHILE..., OF..., TO DO..., DO..., (*...*) REGION, and REGIONS. The main area is a code editor containing the following program code:

```
25 //Loading input values of the PGN_8B_RemReq_PDUF_230_I to input data field
26 //("Link_1".PGN_8B_RemReq_PDUF_230_I)
27 ["GETIO_8B_RemReq_PDUF_230_DB"(ID:="GETIO_8B_RemReq_PDUF_230_DB".ID,
28 STATUS=>"GETIO_8B_RemReq_PDUF_230_DB".STATUS,
29 LEN=>"GETIO_8B_RemReq_PDUF_230_DB".LEN,
30 INPUTS:="Link_1".PGN_8B_RemReq_PDUF_230_I);
31
32 //Loading input values of the PGN_8B_RemReq_PDUF_241_I to input data field ("Link_1".PGN_8B_RemReq_PDUF_
33 ["GETIO_8B_RemReq_PDUF_241_DB"(ID:="GETIO_8B_RemReq_PDUF_241_DB".ID,
34 STATUS=>"GETIO_8B_RemReq_PDUF_241_DB".STATUS,
35 LEN=>"GETIO_8B_RemReq_PDUF_241_DB".LEN,
36 INPUTS:="Link_1".PGN_8B_RemReq_PDUF_241_I);
37
```

A red circle labeled "1" points to the first line of code: "25 //Loading input values of the PGN_8B_RemReq_PDUF_230_I to input data field".

4. Enter the program code ①.

The assignment of the input data of the "PGN_8B_RemReq_PDUF_230_I" to the byte array is thus programmed.

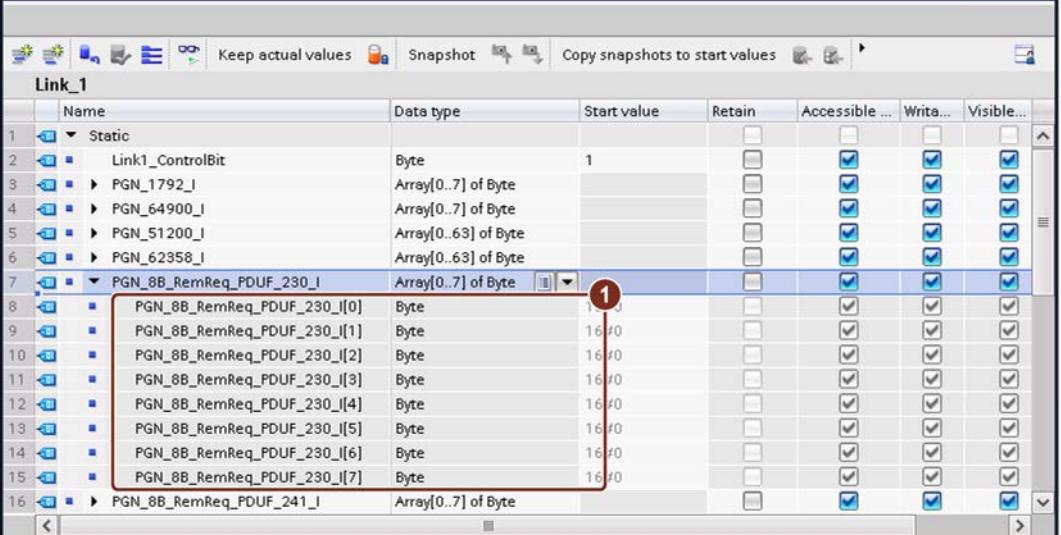
Assigning parameters for PGN_8B_RemReq_PDUF_230_I

Create the structure of the input data block of the PN-J1939-Link_1 that is used for saving receive data of the PGN 59030 (PGN_8B_RemReq_PDUF_230_Q).

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.



	Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible...
1	Static						
2	Link1_ControlBit	Byte	1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	PGN_1792_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	PGN_64900_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	PGN_51200_I	Array[0..63] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	PGN_62358_I	Array[0..63] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	PGN_8B_RemReq_PDUF_230_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	PGN_8B_RemReq_PDUF_230_I[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	PGN_8B_RemReq_PDUF_230_I[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	PGN_8B_RemReq_PDUF_230_I[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	PGN_8B_RemReq_PDUF_230_I[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	PGN_8B_RemReq_PDUF_230_I[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	PGN_8B_RemReq_PDUF_230_I[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	PGN_8B_RemReq_PDUF_230_I[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	PGN_8B_RemReq_PDUF_230_I[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	PGN_8B_RemReq_PDUF_241_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The result of the remote request is saved here ①.

6.2 Standard message – PGN data length <= 8 bytes, PDU format > 239

6.2.1 Configure Link 2 – PGN_8B_RemReq_PDUF_241_Q

Assigning parameters for PGN_8B_RemReq_PDUF_241_Q

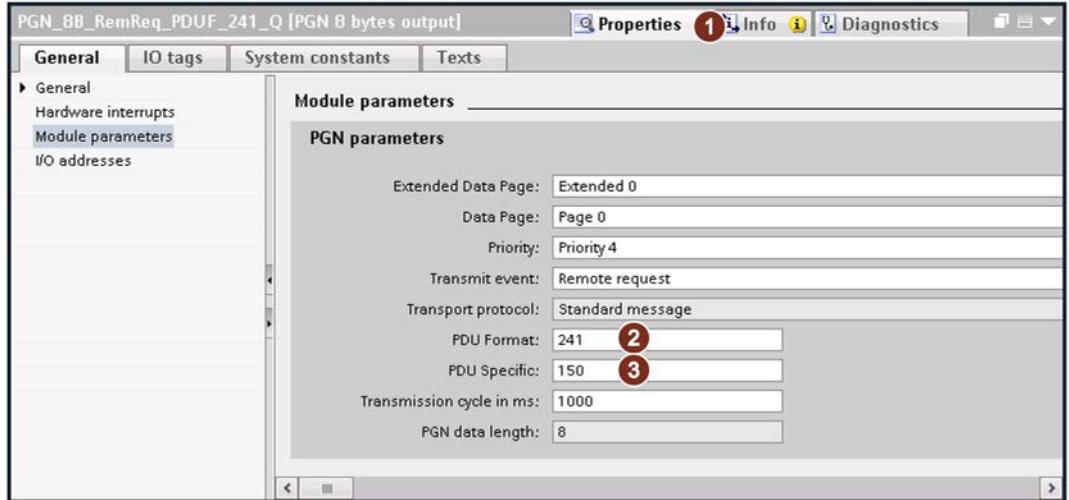
Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_8B_RemReq_PDUF_241_Q ②".

The screenshot shows a software interface for managing network devices. At the top, there are three tabs: 'Topology view', 'Network view', and 'Device view'. The 'Device view' tab is selected, indicated by a red circle with the number '1'. Below the tabs is a sub-tab labeled 'Device overview'. The main area is a table with the following columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no.. The table lists several network components, including a Manager module and various PGN entries. One specific entry, 'PGN_8B_RemReq_PDUF_241_Q', is highlighted with a blue selection bar and a red circle with the number '2', indicating it is the target for configuration.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	68K1 629-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	0	5		264...327	PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8		200...231	PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
		12				

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:
- PDU Format at "241" ②
 - PDU Specific at "150" ③

Assign parameters for PGN_RequestMassage_Q

In the application example, the same PGN is used for all remote requests. The data assigned to the output, on the other hand, is different.

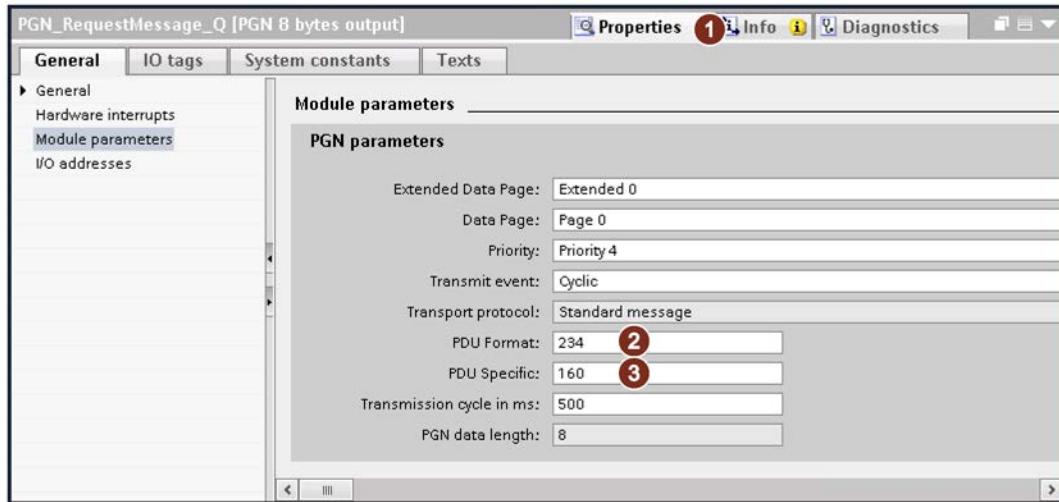
- PDU Format = 234 for the remote request
- PDU Specific = 160 for the source address of Link_2

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_RequestMassage_Q ②".

Device overview								
	Module	Rack	Slot	I address	Q addr...	Type	Article no.	...
▼	PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
▶	Interface	0	0 X1			PN-J1939-LINK		
	Manager_1	0	1	2	2	Manager		
	PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input		
	PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input		
	PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input		
	PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input		
	PGN_RequestMassage_Q	0	6	112...119		PGN 8 bytes output		
	PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input		
	PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input		
	PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input		
	PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input		
	PGN input proxy_CMDT	0	11			PGN input proxy		
	PGN input proxy_BAM	0	12			PGN input proxy		
		0	13					

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:

- PDU format to "234" ②
- PDU Specific to "160" ③

The requested PGN is defined by the assigned output data of the request message.

The requested PGN 61846 (Link_2: PGN_8B_RemReq_PDUF_241_Q) = 0xF196

- PDU F₁₆ = 0xF1
- PDU S₁₆ = 0x96

The data of the request message are:

First byte	0x96	PDU Specific
Second byte	0xF1	PDU Format
Third byte	00	Default
Bytes 4 to 7	0xFF	Not used

Enter RequestMessage_2

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog window shows the data of the request message.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setup...
11 ► RequestMessage_1	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12 ▼ RequestMessage_2	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13 □ RequestMessage_2[0]	Byte	16#96		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14 □ RequestMessage_2[1]	Byte	16#F1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15 □ RequestMessage_2[2]	Byte	16#00		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16 □ RequestMessage_2[3]	Byte	16#FF		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17 □ RequestMessage_2[4]	Byte	16#FF		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18 □ RequestMessage_2[5]	Byte	16#FF		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19 □ RequestMessage_2[6]	Byte	16#FF		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20 □ RequestMessage_2[7]	Byte	16#FF		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21 ► RequestMessage_3	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22 ► RequestMessage_4	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4. Add the data of the request message ① according to the target PGN.

Assign parameters for SETIO_RequestMessage_DB [DB7]

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "SETIO_RequestMessage_DB [DB7]".

The program resource is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	S...
1 □ Input							
2 □ ID ①	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_RequestMessage_Q"	②	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 □ Output							
4 □ STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 □ InOut							
6 □ OUTPUTS	Variant						
7 □ Static							

The ID is displayed at ①. The corresponding start value can be found at ②.

Programming request message

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.

```
2://Request message to receive data from "PGN_8B_RemReq_PDUF_241_Q"
"SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
    STATUS => "SETIO_RequestMessage_DB".STATUS,
    OUTPUTS := "Link_1".RequestMessage_2);

3://Request message to receive data from "PGN_32B_RemReq_PDUF_231_Q"
"SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
    STATUS => "SETIO_RequestMessage_DB".STATUS,
    OUTPUTS := "Link_1".RequestMessage_3);
```

4. Enter the program code ①.

The request message is now programmed to assign data from "PGN_8B_RemReq_PDUF_241_Q".

Create output data

The output data that is sent to the request from Link_2 (PGN_32B_RemReq_PDUF_241_Q) is defined below.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".

- Double-click "Link_2 [DB2]".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Se...
PGN_8B_RemReq_PDUF_230_Q	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q	Array[0..7] of ...			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[0]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[1]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[2]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[3]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[4]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[5]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[6]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_8B_RemReq_PDUF_241_Q[7]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_32B_RemReq_PDUF_231_Q	Array[0..31] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
PGN_32B_RemReq_PDUF_242_Q	Array[0..31] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

- Enter the response data for the request message ①.

Assign output data

Use the SETIO function to assign output data from a byte set to the requested PGN.

Proceed as follows:

- Switch to the project tree.
- Click "Devices → Project → PLC_1 → Program blocks".
- Double-click "Send_PGN [FC2]".

The following dialog box is displayed.

```

25
26 //Loading output values of the PGN_8B_RemReq_PDUF_241_Q from output data field
27 //("Link_2".PGN_8B_RemReq_PDUF_241_Q)
28 "SETIO_8B_RemReq_PDUF_241_DB"(ID := "SETIO_8B_RemReq_PDUF_241_DB".ID,
29 STATUS => "SETIO_8B_RemReq_PDUF_241_DB".STATUS,
30 OUTPUTS := "Link_2".PGN_8B_RemReq_PDUF_241_Q);
31

```

- Enter the program code ①.

The assignment of the output data of the "PGN_8B_RemReq_PDUF_241_Q" is thus programmed.

6.2.2 Configure Link 1 – PGN_8B_RemReq_PDUF_241_I

Assigning parameters for PGN_8B_RemReq_PDUF_241_I

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_8B_RemReq_PDUF_241_I ②".

Module	Rack	Slot	Address	Q addr...	Type	Article no.
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	2	2	Manager	
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input	
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input	
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input	
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input	
PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input	
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input	
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input	
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input	
PGN input proxy_CMDT	0	11			PGN input proxy	
PGN input proxy_BAM	0	12			PGN input proxy	
	0	13				

3. Click "Properties ① → General → Module parameters".

Module parameters	
PGN parameters	Extended Data Page: Extended 0 Data Page: Page 0 PDU Format: 241 (2) PDU Specific: 150 (3) CA Source Address: 160 (4) Reception cycle in ms: 0 PGN data length: 8

4. Make the following settings:

- PDU Format at "241" ②
- PDU Specific at "150" ③
- CA source address at "160" ④

Displaying the hardware ID

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click on "Device view → Device overview → PGN_8B_RemReq_PDUF_241_I".
3. Click "Properties ① → System constants".

Name	Type	Hardware iden...	Used by	Comment
PN-J1939-LINK_1~PGN_8B_RemReq_PDUF_241_I	Hw_SubModule	302	PLC_1	

The hardware ID is displayed at ②.

Show start value

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "GETIO_8B_RemReq_PDUF_241_DB [DB21]".

The program resource is displayed.

Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...
1 Input						
2 ID ①	HW_SUBMODULE	"PNJ1939-LINK_1~PGN_8B_RemReq_PDUF_241_I"	②	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 Output						
4 STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 LEN	Int	0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6 InOut						
7 INPUTS	Variant					
8 Static						

The hardware ID is displayed at ①. The corresponding start value can be found at ②.

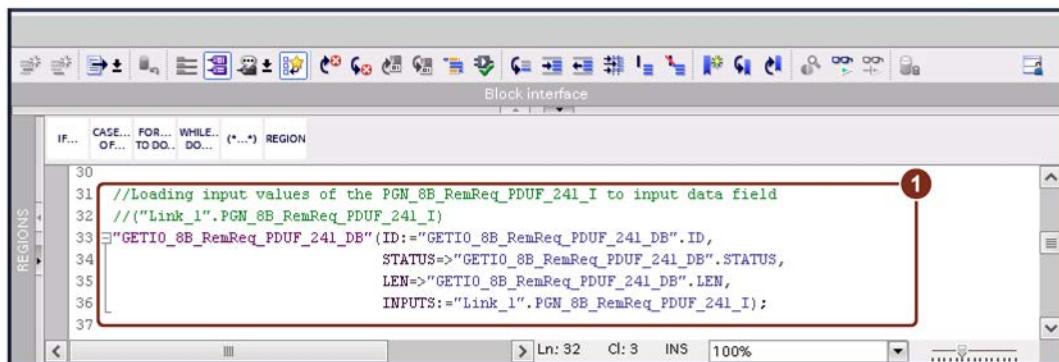
Assign input data

Use the GETIO function to assign data from the input PGN to the byte array.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Read_PGN [FC3]".

The following dialog box is displayed.



4. Enter the program code ①.

The assignment of the input data of the "PGN_8B_RemReq_PDUF_241_I" to the byte array is thus programmed.

Assigning parameters for PGN_8B_RemReq_PDUF_241_I

Create the structure of the input data block of the PN-J1939-Link_1 that is used for saving receive data of the PGN 61846 (Link_2: PGN_8B_RemReq_PDUF_241_I).

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible...
8 PGN_8B_RemReq_PDUF_241_I	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9 PGN_8B_RemReq_PDUF_241_I[0]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10 PGN_8B_RemReq_PDUF_241_I[1]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11 PGN_8B_RemReq_PDUF_241_I[2]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12 PGN_8B_RemReq_PDUF_241_I[3]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13 PGN_8B_RemReq_PDUF_241_I[4]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14 PGN_8B_RemReq_PDUF_241_I[5]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15 PGN_8B_RemReq_PDUF_241_I[6]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16 PGN_8B_RemReq_PDUF_241_I[7]	Byte	16#1		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17 PGN_32B_RemReq_PDUF_231_I	Array[0..31] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The result of the remote request is saved here ①.

6.3 Standard message – PGN data length > 8 bytes, PDU format <= 239

6.3.1 Configure Link 2 – PGN_32B_RemReq_PDUF_231_Q

Assigning parameters for PGN_32B_RemReq_PDUF_231_Q

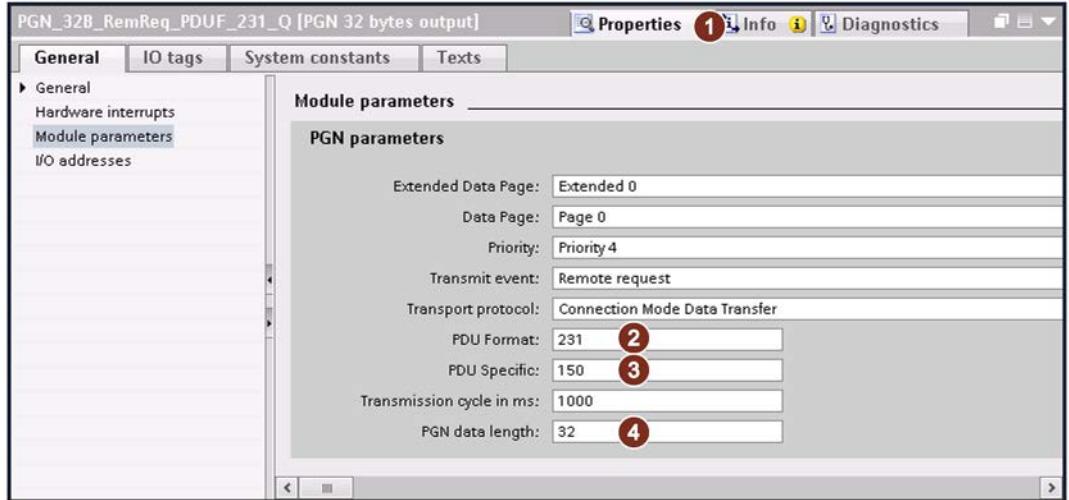
Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_32B_RemReq_PDUF_231_Q ②".

The screenshot shows a software interface for managing network devices. At the top, there are three tabs: 'Topology view', 'Network view', and 'Device view'. The 'Device view' tab is selected, indicated by a red circle with the number '1'. Below the tabs is a 'Device overview' table with the following columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no.. The table lists various modules and their configurations. A specific row, 'PGN_32B_RemReq_PDUF_231_Q', is highlighted with a blue selection bar and has a red circle with the number '2' on it, indicating it is the target for configuration.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0
Interface	0	0 X1			PN-J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output	
PGN_62358_BAM_PDUF_243_Q	0	5		264...327	PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	②	8		200...231	PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
		12				

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:

- PDU Format to "231" ②
- PDU Specific at "150" ③
- PGN data length at "32" ④

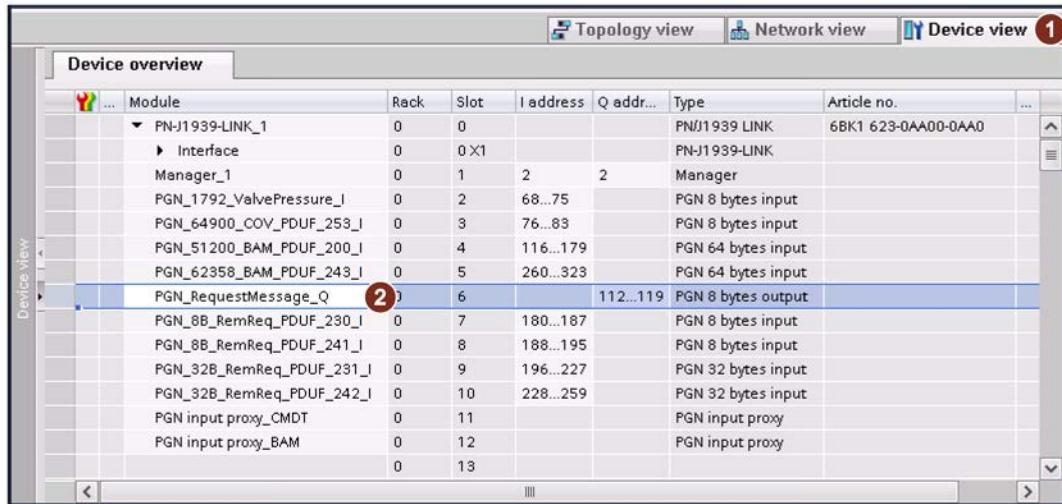
Assign parameters for PGN_RequestMessage_Q

In the application example, the same PGN is used for all remote requests. The data assigned to the output, on the other hand, is different.

- PDU Format = 234 for the remote request
- PDU Specific = 160 for the source address of Link_2

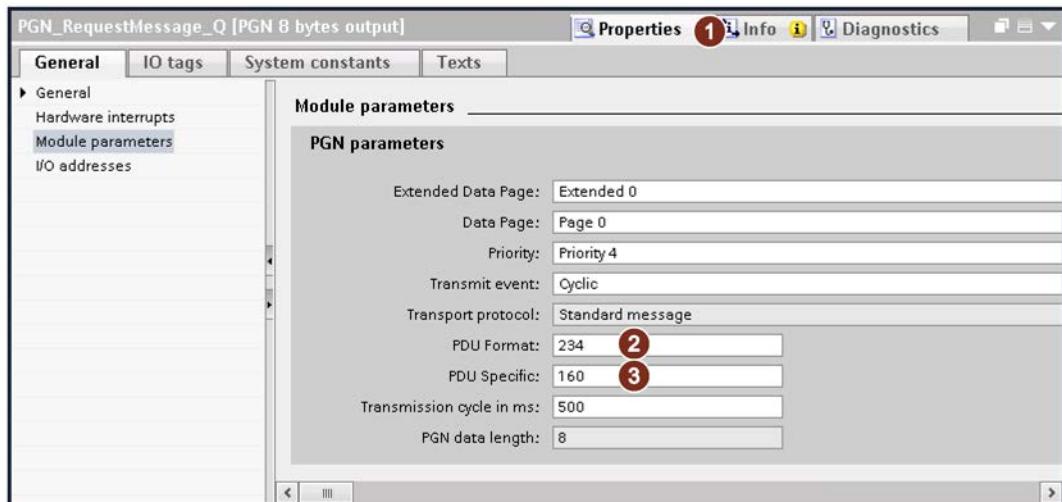
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_RequestMessage_Q ②".



Module	Rack	Slot	I address	Q addr...	Type	Article no.	...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input		
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input		
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input		
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input		
PGN_RequestMessage_Q ②	6		112...119		PGN 8 bytes output		
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input		
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input		
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input		
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input		
PGN input proxy_CMDT	0	11			PGN input proxy		
PGN input proxy_BAM	0	12			PGN input proxy		
	0	13					

3. Click "Properties ① → General → Module parameters".



Module parameters	
PGN parameters	
Extended Data Page:	Extended 0
Data Page:	Page 0
Priority:	Priority 4
Transmit event:	Cyclic
Transport protocol:	Standard message
PDU Format:	234 ②
PDU Specific:	160 ③
Transmission cycle in ms:	500
PGN data length:	8

4. Make the following settings:

- PDU format to "234" ②
- PDU Specific to "160" ③

The requested PGN is defined by the assigned output data of the request message.

The requested PGN 59286 (PGN_32B_RemReq_PDUF_231_Q) = 0xE796

- PDU F₁₆ = 0xE7 (231)
- PDU S₁₆ = 0x96 (150)

The data of the request message are:

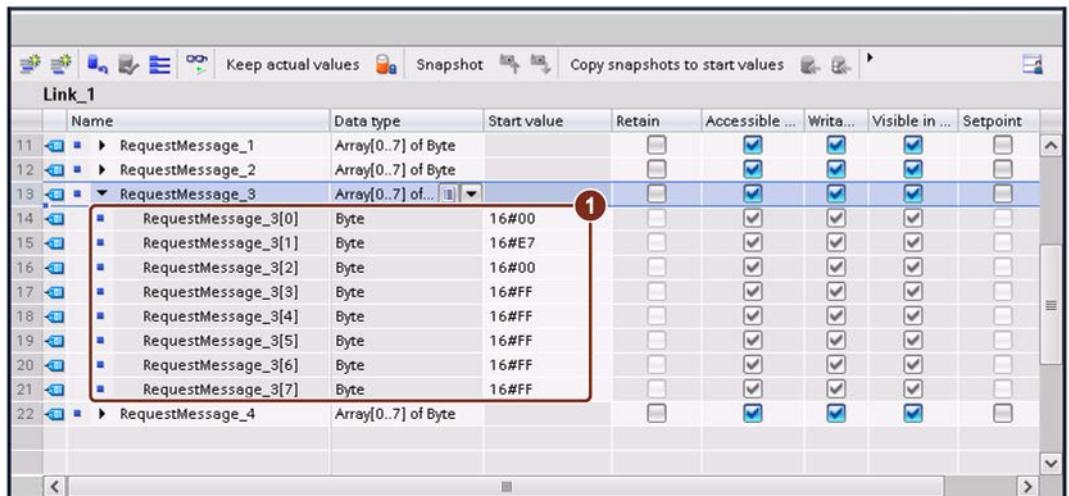
First byte	0x00 (in this case 0x00)	PDU Specific
Second byte	0xE7	PDU Format
Third byte	00	Default
Bytes 4 to 7	0xFF	Not used

Enter RequestMessage_3

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.



4. Add the data of the request message ① according to the target PGN.

Assign parameters for SETIO_RequestMessage_DB [DB7]

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "SETIO_RequestMessage_DB [DB7]".

The program resource is displayed.

	Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...	S...
1	Input							
2	ID	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_RequestMessage_Q"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Output							
4	STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	InOut							
6	OUTPUTS	Variant						
7	Static							

The ID is displayed at ①. The corresponding start value can be found at ②.

Programming request message

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.

```

42 //Do not process any Request Message, if LINKs are not in operationa lmode
43 IF "Start_communication" THEN
44
45 //Selecting the request message according to demanded PGN
46 CASE "RemoteRequest_ID" OF
47
48   1://Request message to receive data from "PGN_8B_RemReq_PDUF_230_Q"
49     "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
50                               STATUS => "SETIO_RequestMessage_DB".STATUS,
51                               OUTPUTS := "Link_1".RequestMessage_1);
52
53   2://Request message to receive data from "PGN_8B_RemReq_PDUF_241_Q"
54     "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
55                               STATUS => "SETIO_RequestMessage_DB".STATUS,
56                               OUTPUTS := "Link_1".RequestMessage_2);
57
58   3://Request message to receive data from "PGN_32B_RemReq_PDUF_231_Q"
59     "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
60                               STATUS => "SETIO_RequestMessage_DB".STATUS,
61                               OUTPUTS := "Link_1".RequestMessage_3);
62

```

4. Enter the program code ①.

The request message is now programmed to receive data from "PGN_32B_RemReq_PDUF_231_Q".

6.3 Standard message – PGN data length > 8 bytes, PDU format <= 239

Create output data

The output data that is sent to the request from Link_2 (PGN_32B_RemReq_PDUF_231_Q) is defined below.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_2 [DB2]".

The following dialog box is displayed.

	Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...
6	▶ PGN_62358_Q	Array[0..63] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	▶ PGN_88_RemReq_PDUF_230_Q	Array[0..7] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	▶ PGN_88_RemReq_PDUF_241_Q	Array[0..7] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	▶ PGN_32B_RemReq_PDUF_231_Q	Array[0..31] ...		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	▶ PGN_32B_RemReq_PDUF_231_Q[0]	Byte	16#03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	▶ PGN_32B_RemReq_PDUF_231_Q[1]	Byte	16#03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	▶ PGN_32B_RemReq_PDUF_231_Q[2]	Byte	16#03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	▶ PGN_32B_RemReq_PDUF_231_Q[3]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	▶ PGN_32B_RemReq_PDUF_231_Q[4]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	▶ PGN_32B_RemReq_PDUF_231_Q[5]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	▶ PGN_32B_RemReq_PDUF_231_Q[6]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	▶ PGN_32B_RemReq_PDUF_231_Q[7]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	▶ PGN_32B_RemReq_PDUF_231_Q[8]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	▶ PGN_32B_RemReq_PDUF_231_Q[9]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	▶ PGN_32B_RemReq_PDUF_231_Q[10]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	▶ PGN_32B_RemReq_PDUF_231_Q[11]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	▶ PGN_32B_RemReq_PDUF_231_Q[12]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	▶ PGN_32B_RemReq_PDUF_231_Q[13]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	▶ PGN_32B_RemReq_PDUF_231_Q[14]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
25	▶ PGN_32B_RemReq_PDUF_231_Q[15]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
26	▶ PGN_32B_RemReq_PDUF_231_Q[16]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
27	▶ PGN_32B_RemReq_PDUF_231_Q[17]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
28	▶ PGN_32B_RemReq_PDUF_231_Q[18]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29	▶ PGN_32B_RemReq_PDUF_231_Q[19]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30	▶ PGN_32B_RemReq_PDUF_231_Q[20]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31	▶ PGN_32B_RemReq_PDUF_231_Q[21]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32	▶ PGN_32B_RemReq_PDUF_231_Q[22]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
33	▶ PGN_32B_RemReq_PDUF_231_Q[23]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
34	▶ PGN_32B_RemReq_PDUF_231_Q[24]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
35	▶ PGN_32B_RemReq_PDUF_231_Q[25]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
36	▶ PGN_32B_RemReq_PDUF_231_Q[26]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
37	▶ PGN_32B_RemReq_PDUF_231_Q[27]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
38	▶ PGN_32B_RemReq_PDUF_231_Q[28]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
39	▶ PGN_32B_RemReq_PDUF_231_Q[29]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
40	▶ PGN_32B_RemReq_PDUF_231_Q[30]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
41	▶ PGN_32B_RemReq_PDUF_231_Q[31]	Byte	16#03	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
42	▶ PGN_32B_RemReq_PDUF_242_Q	Array[0..31] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4. Insert the output data ①.

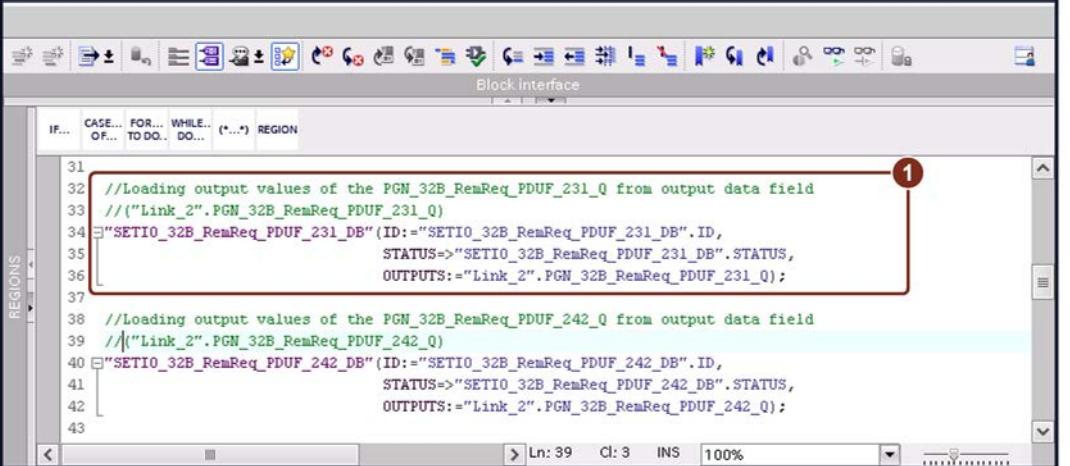
Assigning output data

Use the SETIO function to assign output data from a byte array to the output PGN.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → Send_PGN [FC2]".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.



```

31
32 //Loading output values of the PGN_32B_RemReq_PDUF_231_Q from output data field
33 //("Link_2".PGN_32B_RemReq_PDUF_231_Q)
34 SETIO_32B_RemReq_PDUF_231_DB(ID:="SETIO_32B_RemReq_PDUF_231_DB".ID,
35 STATUS=>"SETIO_32B_RemReq_PDUF_231_DB".STATUS,
36 OUTPUTS:="Link_2".PGN_32B_RemReq_PDUF_231_Q);
37
38 //Loading output values of the PGN_32B_RemReq_PDUF_242_Q from output data field
39 //("Link_2".PGN_32B_RemReq_PDUF_242_Q)
40 SETIO_32B_RemReq_PDUF_242_DB(ID:="SETIO_32B_RemReq_PDUF_242_DB".ID,
41 STATUS=>"SETIO_32B_RemReq_PDUF_242_DB".STATUS,
42 OUTPUTS:="Link_2".PGN_32B_RemReq_PDUF_242_Q);
43

```

4. Enter the program code ①.

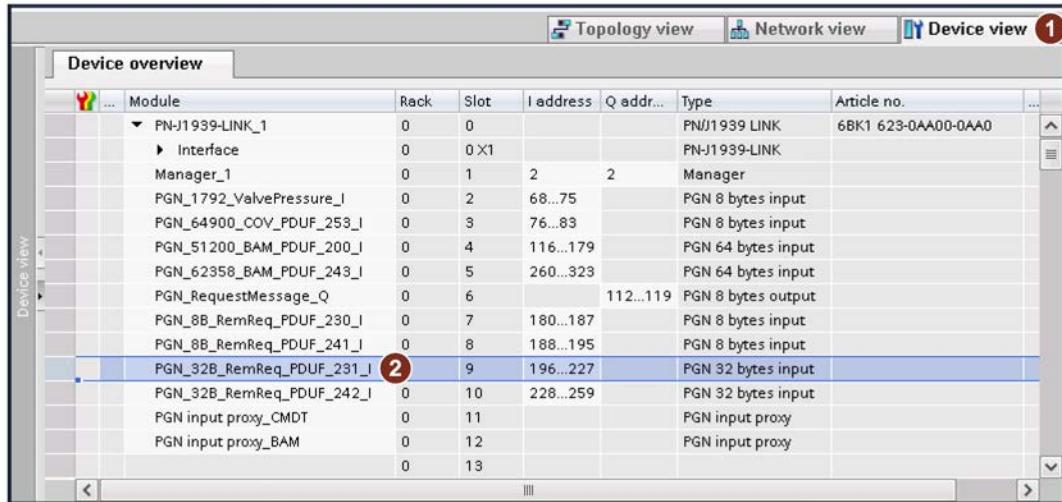
The assignment of the output data of the "PGN_32B_RemReq_PDUF_231_Q" is thus programmed.

6.3.2 Configure Link 1 – PGN_32B_RemReq_PDUF_231_I

Assigning parameters for PGN_32B_RemReq_PDUF_231_I

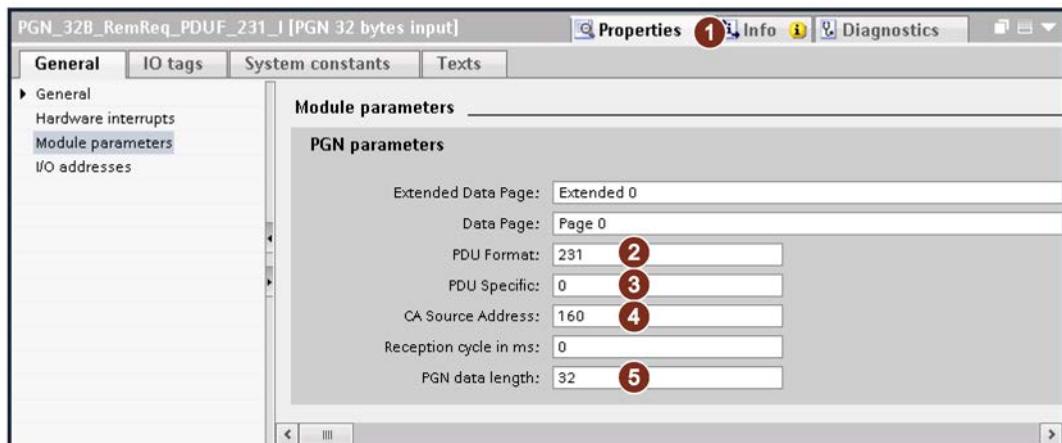
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_32B_RemReq_PDUF_231_I ②".



The screenshot shows a table titled "Device overview" with columns: Module, Rack, Slot, I address, Q addr..., Type, Article no., and A blue row highlights the entry "PGN_32B_RemReq_PDUF_231_I" at slot 9. A red circle with the number 2 is placed over this row.

3. Click "Properties ① → General → Module parameters".



The screenshot shows the "Properties" dialog for "PGN_32B_RemReq_PDUF_231_I [PGN 32 bytes input]". The "General" tab is selected. In the "Module parameters" section, several fields are highlighted with red circles and numbers:

- PDU Format: 231 (red circle 2)
- PDU Specific: 0 (red circle 3)
- CA Source Address: 160 (red circle 4)
- PGN data length: 32 (red circle 5)

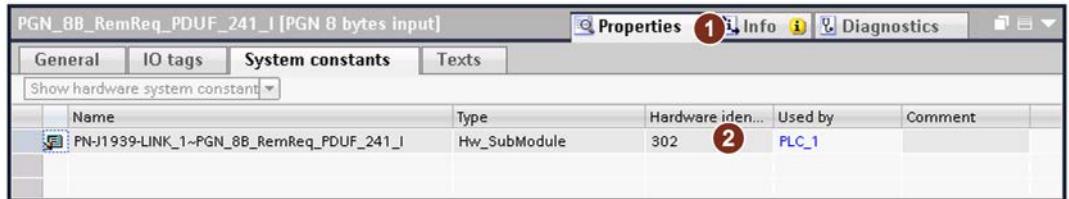
4. Make the following settings:

- PDU Format "231" ②
- PDU Specific to "0" ③
- CA source address at "160" ④
- PGN data length to "32" ⑤

Displaying the hardware ID

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click on "Device view → Device overview → PGN_8B_RemReq_PDUF_241_I".
3. Click "Properties ① → System constants".



The hardware ID is displayed at ②.

Show start value

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "GETIO_32B_RemReq_PDUF_231_DB [DB8]".

The program resource is displayed.

Name	Data type	Startvalue	Retain	Accessible ...	Write...	Visible in ...
1 Input						
2 ID ①	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_32B_RemReq_PDUF_231_I"	②	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3 Output						
4 STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5 LEN	Int	0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6 InOut						
7 INPUTS	Variant					
8 Static						

The hardware ID is displayed at ①. The corresponding start value can be found at ②.

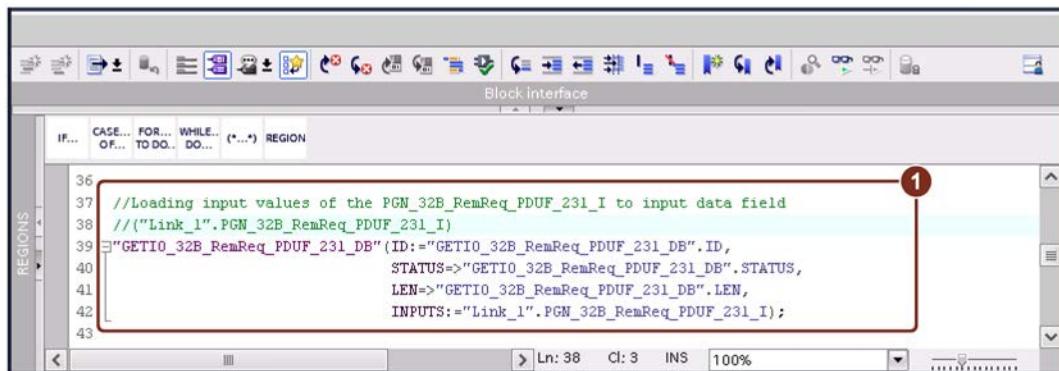
Assign input data

Use the GETIO function to assign data from the input PGN to the byte array.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Read_PGN [FC3]".

The following dialog box is displayed.



```
36 //Loading input values of the PGN_32B_RemReq_PDUF_231_I to input data field
37 //("Link_1", PGN_32B_RemReq_PDUF_231_I)
38 GETIO_32B_RemReq_PDUF_231_DB"(ID:="GETIO_32B_RemReq_PDUF_231_DB".ID,
39 STATUS=>"GETIO_32B_RemReq_PDUF_231_DB".STATUS,
40 LEN=>"GETIO_32B_RemReq_PDUF_231_DB".LEN,
41 INPUTS:="Link_1", PGN_32B_RemReq_PDUF_231_I);
42
43
```

4. Enter the program code ①.

The assignment of the input data of the "PGN_32B_RemReq_PDUF_231_I" to the byte array is thus programmed.

Assigning parameters for PGN_32B_RemReq_PDUF_231_I

Create the structure of the input data block of the PN-J1939-Link_1, which is used to store receive data of the PGN_32B_RemReq_PDUF_231_Q.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...
PGN_32B_RemReq_PDUF_231_I	Array[0..31] ...	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[0]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[1]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[2]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[3]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[4]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[5]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[6]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[7]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[8]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[9]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[10]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[11]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[12]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[13]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[14]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[15]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[16]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[17]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[18]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[19]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[20]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[21]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[22]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[23]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[24]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[25]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[26]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[27]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[28]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[29]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[30]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_231_I[31]	Byte	16#0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
PGN_32B_RemReq_PDUF_242_I	Array[0..31] of Byte		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The result of the remote request is saved here ①.

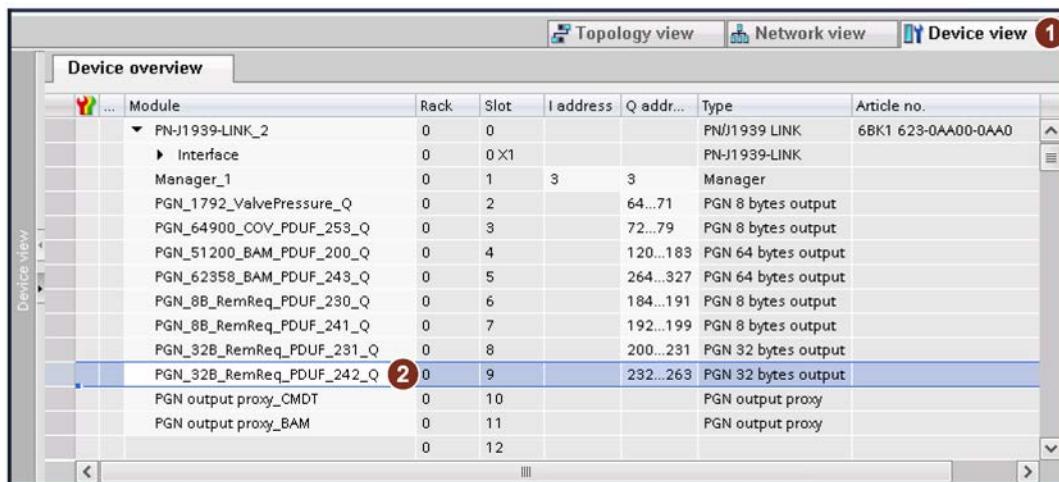
6.4 Standard message – PGN data length > 8 bytes, PDU format > 239

6.4.1 Configure Link 2 – PGN_32B_RemReq_PDUF_242_Q

Assigning parameters for PGN_32B_RemReq_PDUF_242_Q

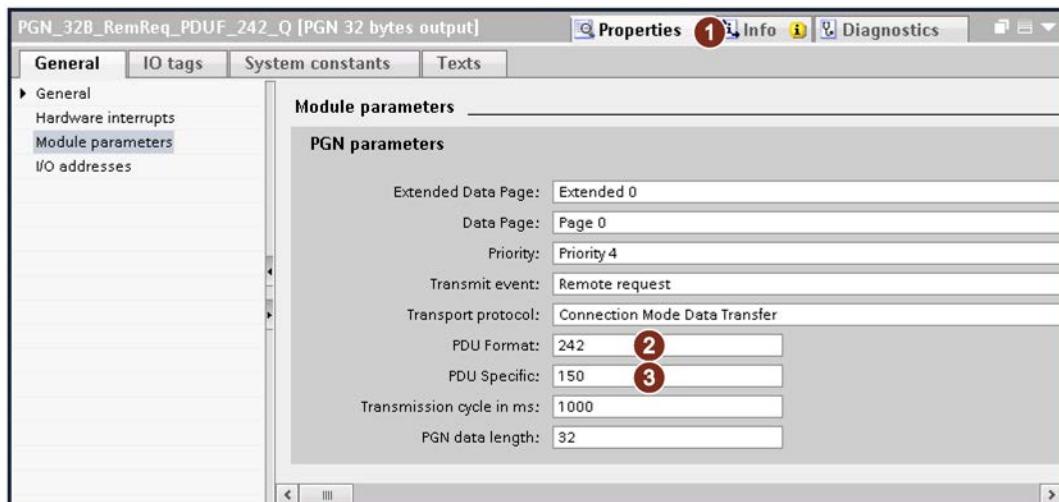
Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview → PGN_32B_RemReq_PDUF_242_Q ②".



The screenshot shows a software interface for managing network devices. At the top, there are three tabs: "Topology view", "Network view", and "Device view" (which is selected, indicated by a red circle with the number 1). Below the tabs is a table titled "Device overview". The table has columns for "Module", "Rack", "Slot", "Address", "Q addr...", "Type", and "Article no.". A vertical sidebar on the left is labeled "Device view". In the table, several rows represent different modules and interfaces. One row, "PGN_32B_RemReq_PDUF_242_Q", is highlighted with a blue background and has a red circle with the number 2 placed over its "Slot" column.

3. Click "Properties ① → General → Module parameters".



4. Make the following settings:
 - PDU Format at "242" ②
 - PDU Specific at "150" ③

Assign parameters for PGN_RequestMessage_Q

In the application example, the same PGN is used for all remote requests. The data assigned to the output, on the other hand, is different.

- PDU Format = 234 for the remote request
- PDU Specific = 160 for the source address of Link_2

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_RequestMessage_Q ②".

Module	Rack	Slot	I address	Q addr...	Type	Article no.	...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
▶ Interface	0	0 X1			PN-J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input		
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input		
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input		
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input		
PGN_RequestMessage_Q	2	6	112...119		PGN 8 bytes output		
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input		
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input		
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input		
PGN_32B_RemReq_PDUF_242_I	0	10	228...259		PGN 32 bytes input		
PGN input proxy_CMDT	0	11			PGN input proxy		
PGN input proxy_BAM	0	12			PGN input proxy		
	0	13					

3. Click "Properties ① → General → Module parameters".

Module parameters	
PGN parameters	
Extended Data Page:	Extended 0
Data Page:	Page 0
Priority:	Priority 4
Transmit event:	Cyclic
Transport protocol:	Standard message
PDU Format:	234 2
PDU Specific:	160 3
Transmission cycle in ms:	500
PGN data length:	8

Make the following settings:

- PDU format to "234" ②
- PDU Specific to "160" ③

The requested PGN is defined by the assigned output data of the request message.

6.4 Standard message – PGN data length > 8 bytes, PDU format > 239

The requested PGN 62102 (PGN_32B_RemReq_PDUF_242_Q) = 0xF296

- PDU F₁₆ = 0xF2
- PDU S₁₆ = 0x96

The data of the request message are:

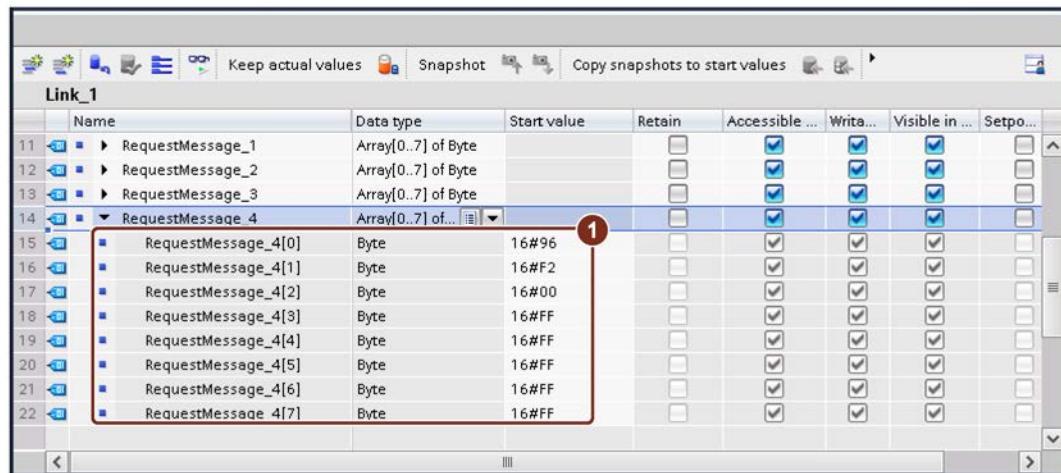
First byte	0x96	PDU Specific
Second byte	0xF2	PDU Format
Third byte	00	Default
Bytes 4 to 7	0xFF	Not used

Enter RequestMessage_4

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.



4. Add the data of the request message ① according to the target PGN.

Assign parameters for SETIO_RequestMessage_DB [DB7]

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices ① → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "SETIO_RequestMessage_DB [DB7]".

The program resource is displayed.

	Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Set...
1	Input							
2	ID	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_RequestMessage_Q"	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Output							
4	STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5	InOut							
6	OUTPUTS	Variant						
7	Static							

The ID is displayed at ①. The corresponding start value can be found at ②.

Programming request message

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.

```
IF... CASE... FOR... WHILE... OF... TO DO... (*...) REGION
41 //Do not process any Request Message, if LINKs are not in operations lmode
42 IF "Start_communication" THEN
43
44 //Selecting the request message according to demanded PGN
45 CASE "RemoteRequest_ID" OF
46
47 1://Request message to receive data from "PGN_8B_RemReq_PDUF_230_Q"
    "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
                                STATUS => "SETIO_RequestMessage_DB".STATUS,
                                OUTPUTS := "Link_1".RequestMessage_1);
48
49 2://Request message to receive data from "PGN_8B_RemReq_PDUF_241_Q"
    "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
                                STATUS => "SETIO_RequestMessage_DB".STATUS,
                                OUTPUTS := "Link_1".RequestMessage_2);
50
51 3://Request message to receive data from "PGN_32B_RemReq_PDUF_231_Q"
    "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
                                STATUS => "SETIO_RequestMessage_DB".STATUS,
                                OUTPUTS := "Link_1".RequestMessage_3);
52
53 4://Request message to receive data from "PGN_32B_RemReq_PDUF_242_Q"
    "SETIO_RequestMessage_DB"(ID := "SETIO_RequestMessage_DB".ID,
                                STATUS => "SETIO_RequestMessage_DB".STATUS,
                                OUTPUTS := "Link_1".RequestMessage_4);
54
55
56
57
58
59
60
61
62
63
64
65
```

4. Enter the program code ①.

The request message is now programmed to assign data from "PGN_32B_RemReq_PDUF_242_Q" to the byte array.

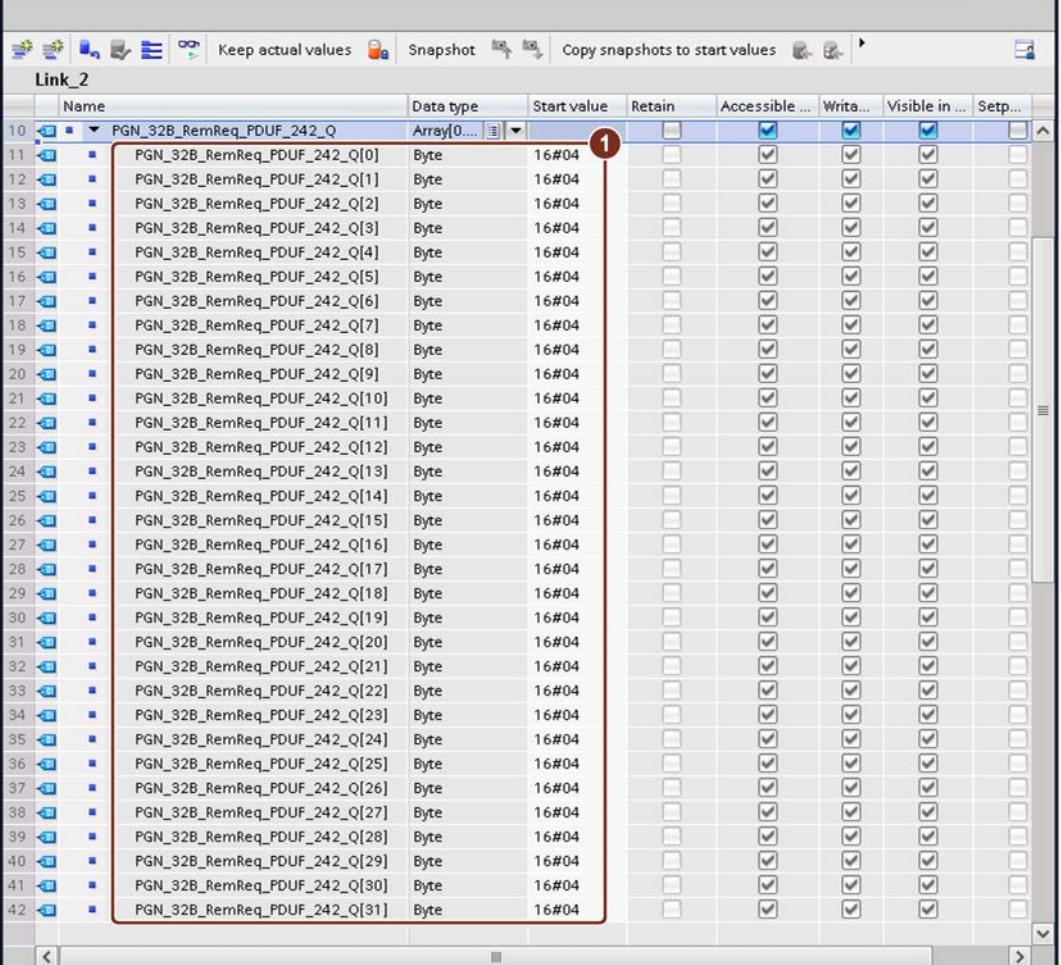
Create output data

The output data that is sent to the request from Link_2 (PGN_32B_RemReq_PDUF_242_Q) is defined below.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_2 [DB2]".

The following dialog box is displayed.



	Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...	Setup...
10	PGN_32B_RemReq_PDUF_242_Q	Array[0...31]			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11	PGN_32B_RemReq_PDUF_242_Q[0]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12	PGN_32B_RemReq_PDUF_242_Q[1]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13	PGN_32B_RemReq_PDUF_242_Q[2]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
14	PGN_32B_RemReq_PDUF_242_Q[3]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
15	PGN_32B_RemReq_PDUF_242_Q[4]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
16	PGN_32B_RemReq_PDUF_242_Q[5]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
17	PGN_32B_RemReq_PDUF_242_Q[6]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
18	PGN_32B_RemReq_PDUF_242_Q[7]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
19	PGN_32B_RemReq_PDUF_242_Q[8]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
20	PGN_32B_RemReq_PDUF_242_Q[9]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
21	PGN_32B_RemReq_PDUF_242_Q[10]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
22	PGN_32B_RemReq_PDUF_242_Q[11]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
23	PGN_32B_RemReq_PDUF_242_Q[12]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
24	PGN_32B_RemReq_PDUF_242_Q[13]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
25	PGN_32B_RemReq_PDUF_242_Q[14]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
26	PGN_32B_RemReq_PDUF_242_Q[15]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
27	PGN_32B_RemReq_PDUF_242_Q[16]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
28	PGN_32B_RemReq_PDUF_242_Q[17]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
29	PGN_32B_RemReq_PDUF_242_Q[18]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
30	PGN_32B_RemReq_PDUF_242_Q[19]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
31	PGN_32B_RemReq_PDUF_242_Q[20]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
32	PGN_32B_RemReq_PDUF_242_Q[21]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
33	PGN_32B_RemReq_PDUF_242_Q[22]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
34	PGN_32B_RemReq_PDUF_242_Q[23]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
35	PGN_32B_RemReq_PDUF_242_Q[24]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
36	PGN_32B_RemReq_PDUF_242_Q[25]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
37	PGN_32B_RemReq_PDUF_242_Q[26]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
38	PGN_32B_RemReq_PDUF_242_Q[27]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
39	PGN_32B_RemReq_PDUF_242_Q[28]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
40	PGN_32B_RemReq_PDUF_242_Q[29]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
41	PGN_32B_RemReq_PDUF_242_Q[30]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
42	PGN_32B_RemReq_PDUF_242_Q[31]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

4. Insert the output data ①.

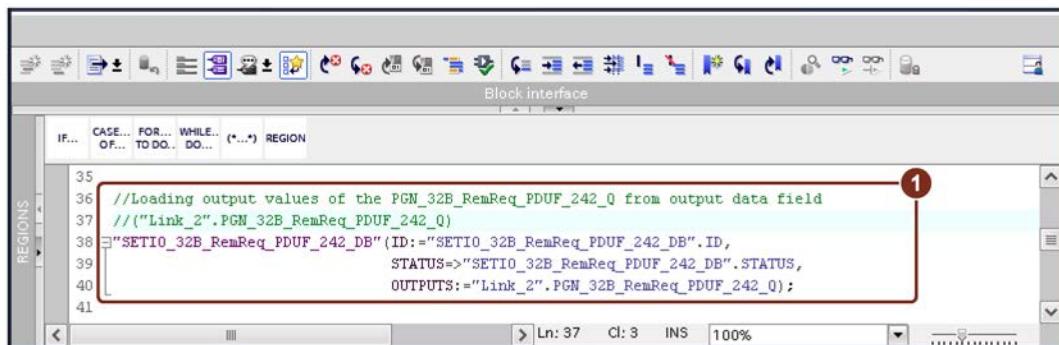
Assigning output data

Use the SETIO function to assign output data from a byte array to the output PGN.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Send_PGN [FC2]".

The following dialog box is displayed.



```
35 //Loading output values of the PGN_32B_RemReq_PDUF_242_Q from output data field
36 //("Link_2",PGN_32B_RemReq_PDUF_242_Q)
37 SETIO_32B_RemReq_PDUF_242_DB"(ID:="SETIO_32B_RemReq_PDUF_242_DB".ID,
38 STATUS=>"SETIO_32B_RemReq_PDUF_242_DB".STATUS,
39 OUTPUTS="Link_2",PGN_32B_RemReq_PDUF_242_Q);
40
41
```

4. Enter the program code ①.

The assignment of the output data of the "PGN_32B_RemReq_PDUF_242_Q" is thus programmed.

6.4.2 Configure Link 1 – PGN_32B_RemReq_PDUF_242_I

Assigning parameters for PGN_32B_RemReq_PDUF_242_I

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view ① → Device overview → PGN_32B_RemReq_PDUF_242_I ②".

The screenshot shows a table titled "Device overview" with columns: Module, Rack, Slot, I address, Q addr..., Type, Article no., and F... . The table lists various modules and their configurations. A specific row for "PGN_32B_RemReq_PDUF_242_I" is highlighted with a blue background and has a red circle with the number 2 over it. This row contains the values: Rack 10, Slot 228...259, Type PGN 32 bytes input.

Module	Rack	Slot	I address	Q addr...	Type	Article no.	F...
PN-J1939-LINK_1	0	0			PN/J1939 LINK	6BK1 623-0AA00-0AA0	
Interface	0	0 X1			PN/J1939-LINK		
Manager_1	0	1	2	2	Manager		
PGN_1792_ValvePressure_I	0	2	68...75		PGN 8 bytes input		
PGN_64900_COV_PDUF_253_I	0	3	76...83		PGN 8 bytes input		
PGN_51200_BAM_PDUF_200_I	0	4	116...179		PGN 64 bytes input		
PGN_62358_BAM_PDUF_243_I	0	5	260...323		PGN 64 bytes input		
PGN_RequestMessage_Q	0	6		112...119	PGN 8 bytes output		
PGN_8B_RemReq_PDUF_230_I	0	7	180...187		PGN 8 bytes input		
PGN_8B_RemReq_PDUF_241_I	0	8	188...195		PGN 8 bytes input		
PGN_32B_RemReq_PDUF_231_I	0	9	196...227		PGN 32 bytes input		
PGN_32B_RemReq_PDUF_242_I	②	10	228...259		PGN 32 bytes input		
PGN input proxy_CMDT	0	11			PGN input proxy		
PGN input proxy_BAM	0	12			PGN input proxy		
	0	13					

3. Click "Properties ① → General → Module parameters".

The screenshot shows the "Properties" dialog for "PGN_32B_RemReq_PDUF_242_I [PGN 32 bytes input]". The "General" tab is selected. In the "Module parameters" section, several fields are set with red circles containing numbers 2 through 5 indicating specific settings:

- Extended Data Page: Extended 0
- Data Page: Page 0
- PDU Format: 242 ②
- PDU Specific: 150 ③
- CA Source Address: 160 ④
- Reception cycle in ms: 0
- PGN data length: 32 ⑤

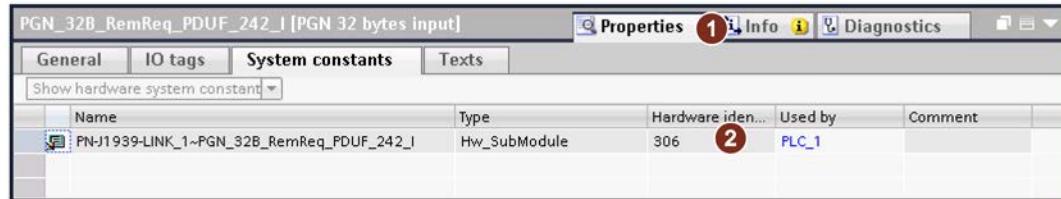
4. Make the following settings:

- PDU Format at "242" ②
- PDU Specific at "150" ③
- CA source address at "160" ④
- PGN data length to "32" ⑤

Displaying the hardware ID

Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click on "Device view → Device overview → PGN_32B_RemReq_PDUF_242_I".
3. Click "Properties ① → System constants".



The hardware ID is displayed at ②.

Show start value

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks → System blocks → Program resources".
3. Double-click "GETIO_32B_RemReq_PDUF_242_DB [DB25]".

The program resource is displayed.

GETIO_32B_RemReq_PDUF_242_DB							
	Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in...
1	Input						
2	ID ①	HW_SUBMODULE	"PN-J1939-LINK_1~PGN_32B_RemReq_PDUF_242_I"	②	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Output						
4	STATUS	DWord	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	LEN	Int	0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	InOut						
7	INPUTS	Variant					
8	Static						

The hardware ID is displayed at ①. The corresponding start value can be found at ②.

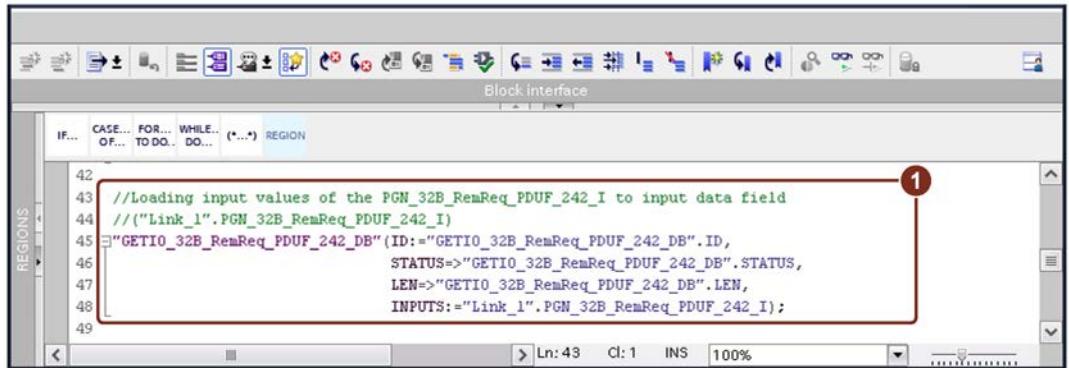
Assign input data

Use the GETIO function to assign data from the input PGN to the byte array.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices ① → Project → PLC_1 → Program blocks".
3. Double-click "Read_PGN [FC3]".

The following dialog box is displayed.



4. Enter the program code ①.

The assignment of the input data of the "PGN_8B_RemReq_PDUF_242_I" to the byte array is thus programmed.

Assigning parameters for PGN_32B_RemReq_PDUF_242_I

Create the structure of the input data block of the PN-J1939-Link_1, which is used to store receive data of the PGN 59030.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Link_1 [DB1]".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Set...
10 PGN_32B_RemReq_PDUF_242_I	Array[0..31] ...						
11 PGN_32B_RemReq_PDUF_242_I[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12 PGN_32B_RemReq_PDUF_242_I[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13 PGN_32B_RemReq_PDUF_242_I[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14 PGN_32B_RemReq_PDUF_242_I[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15 PGN_32B_RemReq_PDUF_242_I[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16 PGN_32B_RemReq_PDUF_242_I[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17 PGN_32B_RemReq_PDUF_242_I[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18 PGN_32B_RemReq_PDUF_242_I[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19 PGN_32B_RemReq_PDUF_242_I[8]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20 PGN_32B_RemReq_PDUF_242_I[9]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21 PGN_32B_RemReq_PDUF_242_I[10]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22 PGN_32B_RemReq_PDUF_242_I[11]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23 PGN_32B_RemReq_PDUF_242_I[12]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24 PGN_32B_RemReq_PDUF_242_I[13]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
25 PGN_32B_RemReq_PDUF_242_I[14]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
26 PGN_32B_RemReq_PDUF_242_I[15]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
27 PGN_32B_RemReq_PDUF_242_I[16]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
28 PGN_32B_RemReq_PDUF_242_I[17]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
29 PGN_32B_RemReq_PDUF_242_I[18]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
30 PGN_32B_RemReq_PDUF_242_I[19]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
31 PGN_32B_RemReq_PDUF_242_I[20]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
32 PGN_32B_RemReq_PDUF_242_I[21]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
33 PGN_32B_RemReq_PDUF_242_I[22]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
34 PGN_32B_RemReq_PDUF_242_I[23]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
35 PGN_32B_RemReq_PDUF_242_I[24]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
36 PGN_32B_RemReq_PDUF_242_I[25]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
37 PGN_32B_RemReq_PDUF_242_I[26]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
38 PGN_32B_RemReq_PDUF_242_I[27]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
39 PGN_32B_RemReq_PDUF_242_I[28]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
40 PGN_32B_RemReq_PDUF_242_I[29]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
41 PGN_32B_RemReq_PDUF_242_I[30]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
42 PGN_32B_RemReq_PDUF_242_I[31]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
43 RequestMessage_1	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
44 RequestMessage_2	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
45 RequestMessage_3	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
46 RequestMessage_4	Array[0..7] of Byte			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

The result of the remote request is saved here ①.

Establish acyclic data communication

7.1 Configuring WRREC - PGN output proxy_CMDT

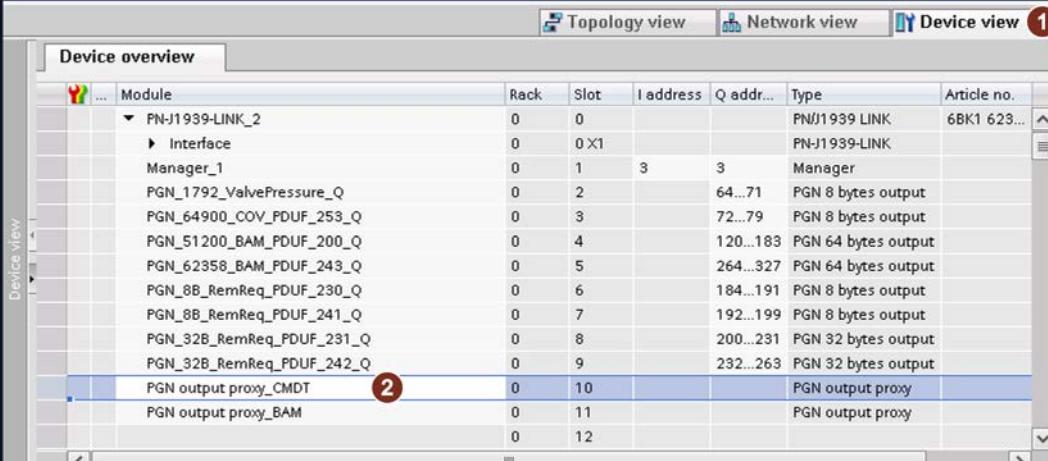
The following description applies to:

- Module PGN output proxy_CMDT
- PDU Format ≤ 239

Inserting and assigning parameters PGN output proxy_CMDT

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view ① → Device overview".
3. Insert the module "PGN output proxy_CMDT" ②.

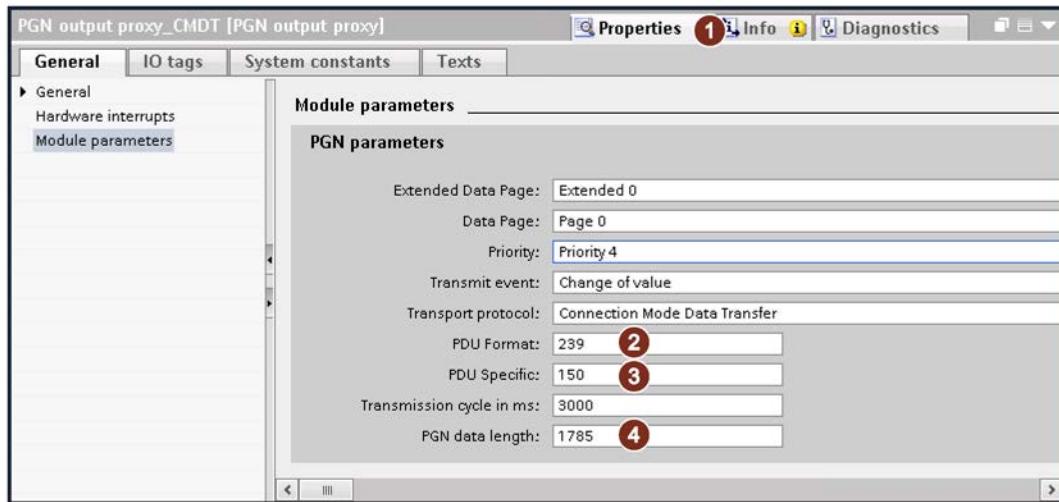


The screenshot shows a software interface for managing network devices. At the top, there are three tabs: 'Topology view', 'Network view', and 'Device view'. The 'Device view' tab is selected, indicated by a red circle with the number '1'. Below the tabs is a table titled 'Device overview'. The table has columns for 'Module', 'Rack', 'Slot', 'I address', 'Q addr...', 'Type', and 'Article no.'. The table lists various modules, including 'PN-J1939-LINK_2' and several PGN output proxy modules. A new row is being inserted at the bottom of the table, highlighted with a blue background. This new row contains the text 'PGN output proxy_CMDT' in the 'Module' column and the number '10' in the 'Slot' column. A red circle with the number '2' is placed over this new row, indicating the step to insert the module. The table also includes a vertical scroll bar on the right side.

Module	Rack	Slot	I address	Q addr...	Type	Article no.
PN-J1939-LINK_2	0	0			PN/J1939 LINK	6BK1 623...
Interface	0	0 X1			PN/J1939-LINK	
Manager_1	0	1	3	3	Manager	
PGN_1792_ValvePressure_Q	0	2	64...71		PGN 8 bytes output	
PGN_64900_COV_PDUF_253_Q	0	3	72...79		PGN 8 bytes output	
PGN_51200_BAM_PDUF_200_Q	0	4	120...183		PGN 64 bytes output	
PGN_62356_BAM_PDUF_243_Q	0	5	264...327		PGN 64 bytes output	
PGN_8B_RemReq_PDUF_230_Q	0	6	184...191		PGN 8 bytes output	
PGN_8B_RemReq_PDUF_241_Q	0	7	192...199		PGN 8 bytes output	
PGN_32B_RemReq_PDUF_231_Q	0	8	200...231		PGN 32 bytes output	
PGN_32B_RemReq_PDUF_242_Q	0	9	232...263		PGN 32 bytes output	
PGN output proxy_CMDT	0	10			PGN output proxy	
PGN output proxy_BAM	0	11			PGN output proxy	
	0	12				

7.1 Configuring WRREC - PGN output proxy_CMDT

4. Click "Properties ① → General → Module parameters".



5. Make the following settings:

- PDU Format at "239" ②
- PDU Specific at "150" ③
- PGN data length at "1785" ④

Assigning parameters for "Output_DataRecord_DB"

Use the following steps to assign parameters for the "Output_DataRecord_DB" program block for the values to be transferred.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Output_DataRecord_DB [DB13]".
4. Open the data block "Proxy_output".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint	C...
1 Static								
2 Proxy_output	Array[0..1784] of...			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
3 Proxy_output[0]	Byte	16#01		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
4 Proxy_output[1]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5 Proxy_output[2]	Byte	16#03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
6 Proxy_output[3]	Byte	16#04		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
7 Proxy_output[4]	Byte	16#05		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
8 Proxy_output[5]	Byte	16#06		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
9 Proxy_output[6]	Byte	16#07		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10 Proxy_output[7]	Byte	16#08		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
11 Proxy_output[8]	Byte	16#01		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
12 Proxy_output[9]	Byte	16#02		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
13 Proxy_output[10]	Byte	16#03		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

5. Insert the output proxies 0 to 1784 ①.

7.1 Configuring WRREC - PGN output proxy_CMDT

Controlling the WRREC program resource

To control the program resource WRREC, you must create the following PLC tags.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → PLC tags".
3. Double-click "Show all tags".

The following dialog box is displayed.

	Name	Tag table	Data type	Address	Retain	Access	Write	Visible	Com
1	Link1_Control_bit	Link1	Byte	%QB2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Link1_Status_bit	Link1	Byte	%IB2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Link2_Control_bit	Link2	Byte	%QB3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Link2_Status_bit	Link2	Byte	%IB3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	ValveLoadSensePressure	Link1	Real	%MD6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	WRREC_REQ_CMDT	Link2	Bool	%M14.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	WRREC_REQ_MEM_CMDT	Link2	Bool	%M14.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	WRREC_BUSY_MEM_CMDT	Link2	Bool	%M14.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	WRREC_SR_OUT_CMDT	Link2	Bool	%M14.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	RDREC_REQ_CMDT	Default tag table	Bool	%M14.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	RDREC_REQ_MEM_CMDT	Default tag table	Bool	%M14.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	RDREC_BUSY_MEM_CMDT	Default tag table	Bool	%M14.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	RDREC_SR_OUT_CMDT	Default tag table	Bool	%M14.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

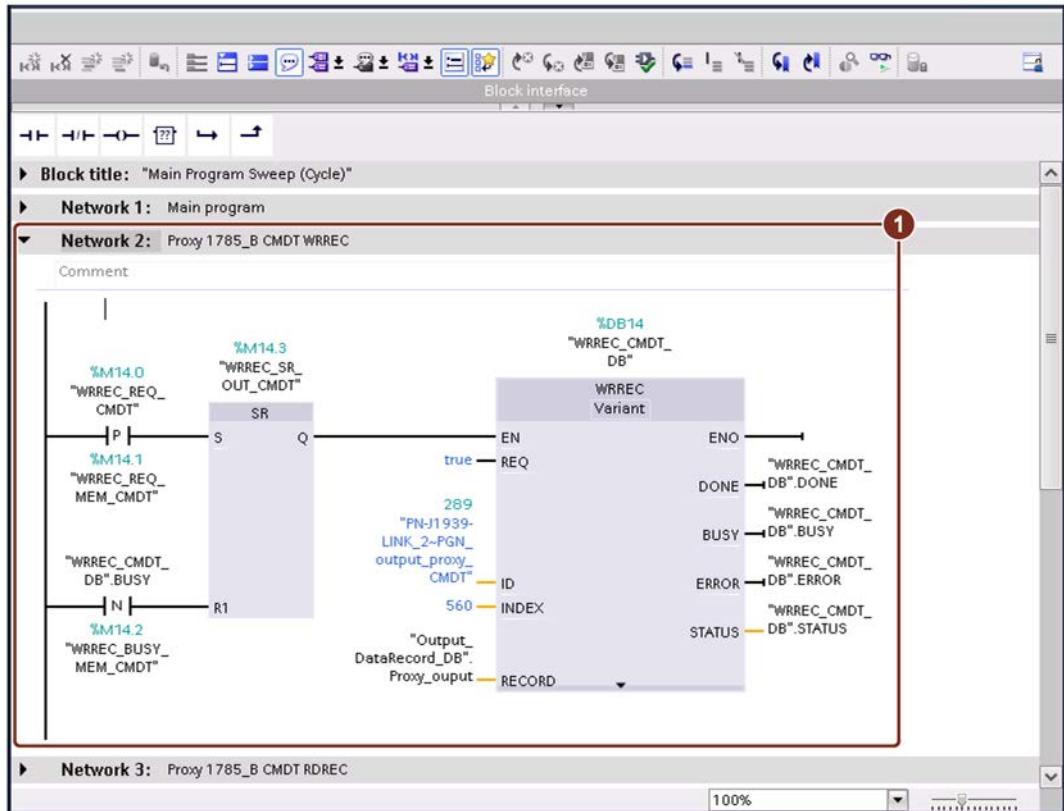
4. Create the marked PLC tags ①.

Integrating and configuring program blocks in the S7 program

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Main [OB1]".

The "Block interface" window is displayed.



4. Switch to "Network 2".

The figure shows how you have to implement the application example in the S7 program.

Meaning of the tags:

ID	System constant or hardware ID of the "Proxy output" module.
INDEX	Defines the data record for writing data. "560" = Write data record
RECORD	Storage of the output data to be transferred via WRREC_REQ_CMDT

Start write operation

Proceed as follows:

1. If you want to start the write operation, change the value of the PLC tag "WRREC_REQ_CMDT" to "1".

Data is only written if its value has changed. As soon as the write operation is completed, the value of the PLC tag automatically changes to "0". The goal is to write the data only once. This process is managed in the program block "DataRecord_StopRequest [FC5]".

The write operation of the PLC tag "WRREC_REQ_CMDT" takes approx. 4 s with a PGN data length of 1785 bytes and 500 kbps.

7.2 Configure RDREC – PGN input proxy_CMDT

The following description applies to:

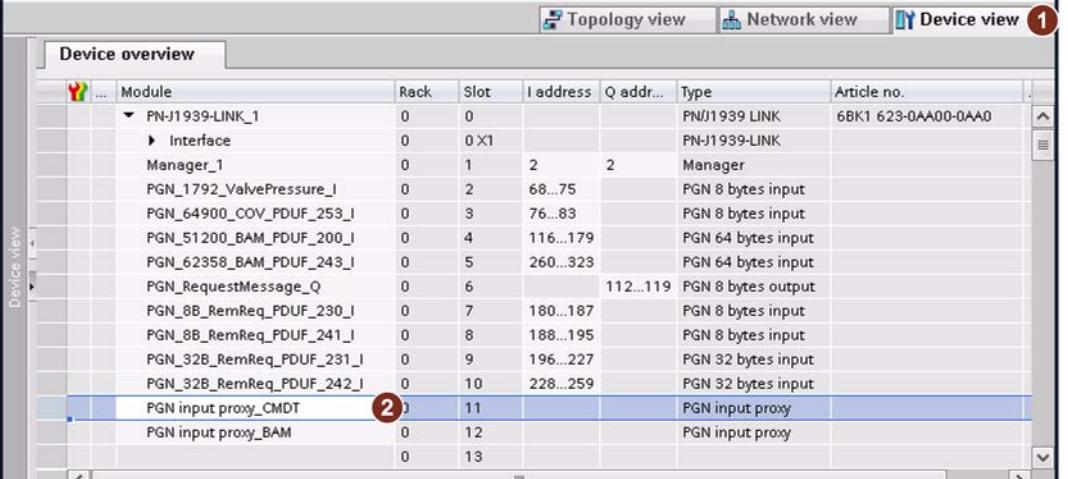
- Module PGN input proxy_CMDT
- PDU Format ≤ 239

The PDU Specific must always be set to 0. Only messages of the destination address of the source of Link_1 can be received - other destination addresses are not received. Messages are only received if the destination address is the same as the source address of Link_1.

Inserting and assigning parameters PGN input proxy_CMDT

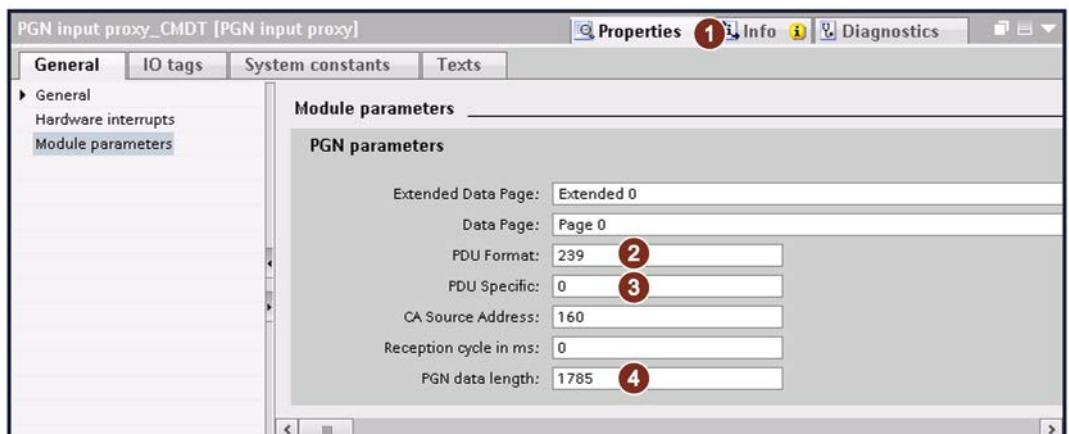
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view → Device overview".
3. Insert the module "PGN input proxy_CMDT" ②.



The screenshot shows a table titled "Device overview" with columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no. A tree view on the left shows a hierarchy under "PN-J1939-LINK_1". The "PGN input proxy_CMDT" module is selected and highlighted with a blue border, indicating it has been inserted at slot 11. A red circle with the number ② is placed over the module's row in the table.

4. Click "Properties ① → General → Module parameters".



5. Make the following settings:

- PDU Format at "239" ②
- PDU Specific to "0" ③
- PGN data length at "1785" ④

7.2 Configure RDREC – PGN input proxy_CMDT

Controlling the RDREC program resource

To control the program resource RDREC, you must create the following PLC tags.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → PLC tags".
3. Double-click "Show all tags".

The following dialog box is displayed.

	Name	Tag table	Data type	Address	Retain	Access...	Write...	Visible...	Com...
1	Link1_Control_bit	Link1	Byte	%QB2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Link1_Status_bit	Link1	Byte	%IB2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
3	Link2_Control_bit	Link2	Byte	%QB3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
4	Link2_Status_bit	Link2	Byte	%IB3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
5	ValveLoadSensePressure	Link1	Real	%MD6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
6	WRREC_REQ_CMDT	Link2	Bool	%M14.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
7	WRREC_REQ_MEM_CMDT	Link2	Bool	%M14.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
8	WRREC_BUSY_MEM_CMDT	Link2	Bool	%M14.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
9	WRREC_SR_OUT_CMDT	Link2	Bool	%M14.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
10	RDREC_REQ_CMDT	Link1	Bool	%M14.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	RDREC_REQ_MEM_CMDT	Link1	Bool	%M14.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	RDREC_BUSY_MEM_CMDT	Link1	Bool	%M14.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	RDREC_SR_OUT_CMDT	Link1	Bool	%M14.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	Start_communication	ControlTable	Bool	%M0.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	RemoteRequest_ID	ControlTable	Int	%MW10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	WRREC_REQ_BAM	Link2	Bool	%M15.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	WRREC_REQ_MEM_BAM	Link2	Bool	%M15.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	WRREC_BUSY_MEM_BAM	Link2	Bool	%M15.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	WRREC_SR_OUT_BAM	Link2	Bool	%M15.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	RDREC_REQ_BAM	Link1	Bool	%M15.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	RDREC_REQ_MEM_BAM	Link1	Bool	%M15.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	RDREC_BUSY_MEM_BAM	Link1	Bool	%M15.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	RDREC_SR_OUT_BAM	Link1	Bool	%M15.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	<Add new>								

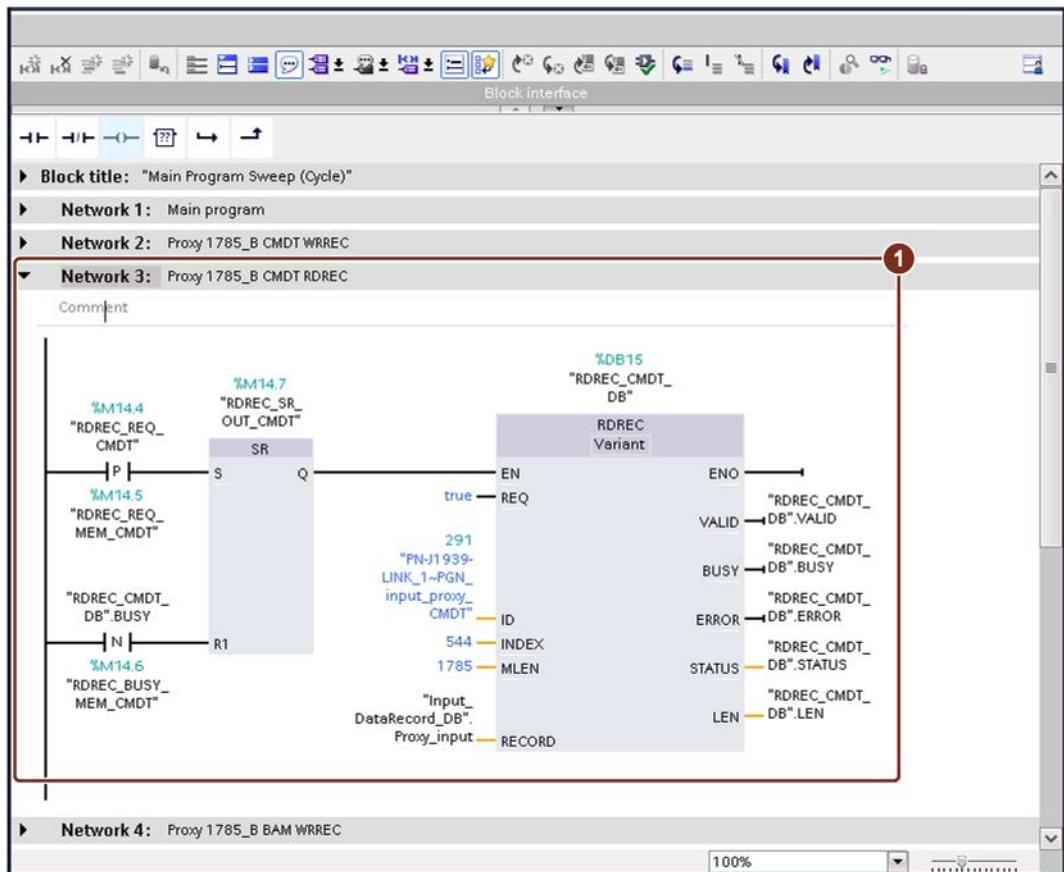
4. Create the marked PLC tags ①.

Integrating and configuring program blocks in the S7 program

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Main [OB1]".

The "Block interface" window is displayed.



4. Switch to "Network 3".

The figure shows how you have to implement the application example in the S7 program.

Meaning of the tags:

ID	System constant or hardware ID of the "Proxy output" module.
INDEX	Defines the data record for reading data. "544" = Read data record
MLEN	Data volume which is read
RECORD	Storage of the output data to be transferred via WRREC_REQ_CMDT

Start read operation

Proceed as follows:

1. If you want to start the read process, change the value of the PLC tag "RDREC_REQ_CMDT" to "1".

As soon as the write operation is completed, the value of the PLC tag automatically changes to "0". This means that the value is read only once. This process is managed in the program block "DataRecord_StopRequest [FC5]".

The result is stored in the "Input_DataRecord_DB" program block.

Show program block "Input_DataRecord_DB"

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Input_DataRecord_DB [DB12]".

The read values are displayed in the "Monitor value" column.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint	C...
1 Static								
2 Proxy_input	Array[0..178...]			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3 Proxy_input[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4 Proxy_input[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5 Proxy_input[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6 Proxy_input[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7 Proxy_input[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8 Proxy_input[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9 Proxy_input[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10 Proxy_input[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11 Proxy_input[8]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12 Proxy_input[9]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13 Proxy_input[10]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
14 Proxy_input[11]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
15 Proxy_input[12]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
16 Proxy_input[13]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
17 Proxy_input[14]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
18 Proxy_input[15]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
19 Proxy_input[16]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
20 Proxy_input[17]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

7.3 Configuring WRREC - PGN output proxy_BAM

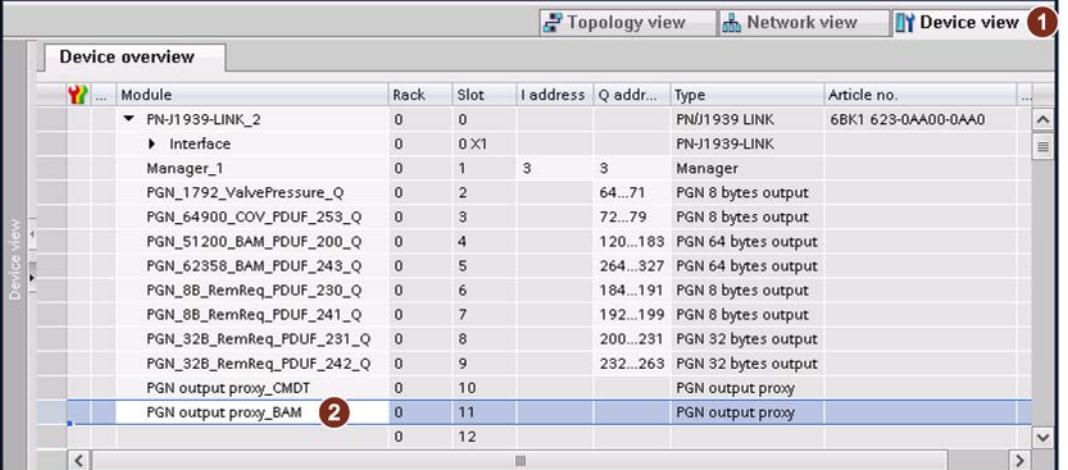
The following description applies to:

- Module PGN output proxy_BAM
- PDU Format > 239

Inserting and assigning parameters PGN output proxy_BAM

Proceed as follows:

1. Click "Network view → PN-J1939-Link_2".
2. Click "Device view → Device overview".
3. Insert the module "PGN output proxy_BAM" ②.

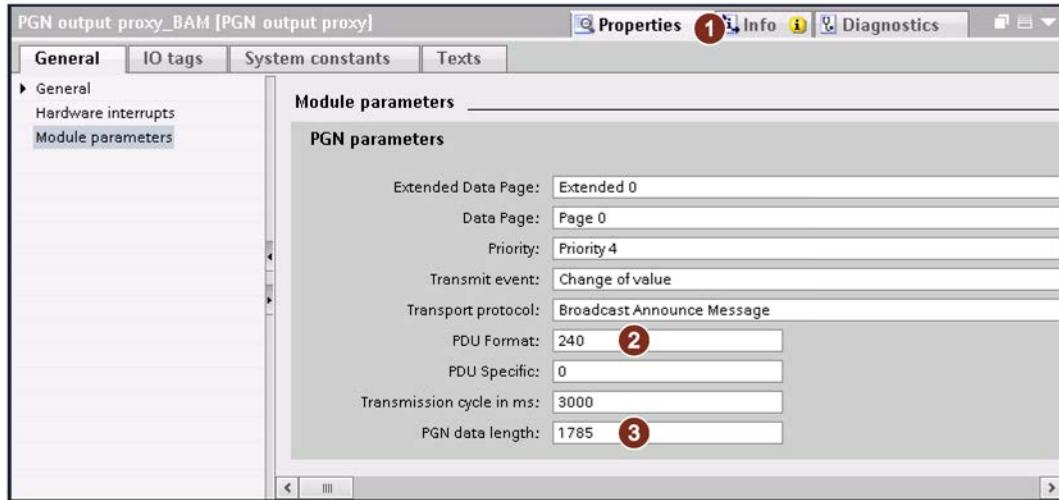


The screenshot shows a software interface for managing network devices. At the top, there are three tabs: 'Topology view', 'Network view', and 'Device view'. The 'Device view' tab is selected, indicated by a red circle with the number 1. Below the tabs is a table titled 'Device overview'. The table has columns for 'Module', 'Rack', 'Slot', 'I address', 'Q addr...', 'Type', and 'Article no.'. The table lists various modules, including 'PNJ1939 LINK', 'Manager_1', and several PGN output proxy modules. One row for 'PGN output proxy_BAM' is highlighted with a blue background and has a red circle with the number 2 placed over it, indicating the target for insertion. The table also includes a vertical 'Device view' sidebar on the left.

Module	Rack	Slot	I address	Q addr...	Type	Article no.	...
▼ PNJ1939-LINK_2	0	0			PNJ1939 LINK	6BK1 623-0AA00-0AA0	
▶ Interface	0	0X1			PNJ1939-LINK		
Manager_1	0	1	3	3	Manager		
PGN_1792_ValvePressure_Q	0	2		64...71	PGN 8 bytes output		
PGN_64900_COV_PDUF_253_Q	0	3		72...79	PGN 8 bytes output		
PGN_51200_BAM_PDUF_200_Q	0	4		120...183	PGN 64 bytes output		
PGN_62358_BAM_PDUF_243_Q	0	5		264...327	PGN 64 bytes output		
PGN_8B_RemReq_PDUF_230_Q	0	6		184...191	PGN 8 bytes output		
PGN_8B_RemReq_PDUF_241_Q	0	7		192...199	PGN 8 bytes output		
PGN_32B_RemReq_PDUF_231_Q	0	8		200...231	PGN 32 bytes output		
PGN_32B_RemReq_PDUF_242_Q	0	9		232...263	PGN 32 bytes output		
PGN output proxy_CMDT	0	10			PGN output proxy		
PGN output proxy_BAM ②	0	11			PGN output proxy		
		12					

7.3 Configuring WRREC - PGN output proxy_BAM

4. Click "Properties ① → General → Module parameters".



5. Make the following settings:

- PDU Format "240" ②
- PGN data length on "1785" ③

Assigning parameters for "Output_DataRecord_DB"

Use the following steps to assign parameters for the "Output_DataRecord_DB" program block for the values to be transferred.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Output_DataRecord_DB [DB13]".
4. Open the data block "Proxy_output".

The following dialog box is displayed.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint	C...
1 Static								
2 Proxy_output	Array[0..1784] of...							
3 Proxy_output[0]	Byte	16#01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
4 Proxy_output[1]	Byte	16#02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
5 Proxy_output[2]	Byte	16#03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
6 Proxy_output[3]	Byte	16#04	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
7 Proxy_output[4]	Byte	16#05	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
8 Proxy_output[5]	Byte	16#06	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
9 Proxy_output[6]	Byte	16#07	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
10 Proxy_output[7]	Byte	16#08	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
11 Proxy_output[8]	Byte	16#01	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
12 Proxy_output[9]	Byte	16#02	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
13 Proxy_output[10]	Byte	16#03	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

5. Insert the output proxies 0 to 1784 ①.

Controlling the WRREC program resource

To control the program resource WRREC, you must create the following PLC tags.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → PLC tags".
3. Double-click "Link_2".

The following dialog box is displayed.

	Name	Tag table	Data type	Address	Retain	Access	Write	Visible	Com
10	RDREC_REQ_CMDT	Default tag table	Bool	%M14.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
11	RDREC_REQ_MEM_CMDT	Default tag table	Bool	%M14.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
12	RDREC_BUSY_MEM_CMDT	Default tag table	Bool	%M14.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
13	RDREC_SR_OUT_CMDT	Default tag table	Bool	%M14.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	Start_communication	ControlTable	Bool	%M0.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	RemoteRequest_ID	ControlTable	Int	%MW10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	WRREC_REQ_BAM	Link2	Bool	%M15.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	WRREC_REQ_MEM_BAM	Link2	Bool	%M15.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	WRREC_BUSY_MEM_BAM	Link2	Bool	%M15.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	WRREC_SR_OUT_BAM	Link2	Bool	%M15.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	RDREC_REQ_BAM	Link1	Bool	%M15.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	RDREC_REQ_MEM_BAM	Link1	Bool	%M15.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	RDREC_BUSY_MEM_BAM	Link1	Bool	%M15.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	RDREC_SR_OUT_BAM	Link1	Bool	%M15.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	<Add new>								

4. Create the marked PLC tags ①.

Integrating and configuring program blocks in the S7 program

Proceed as follows:

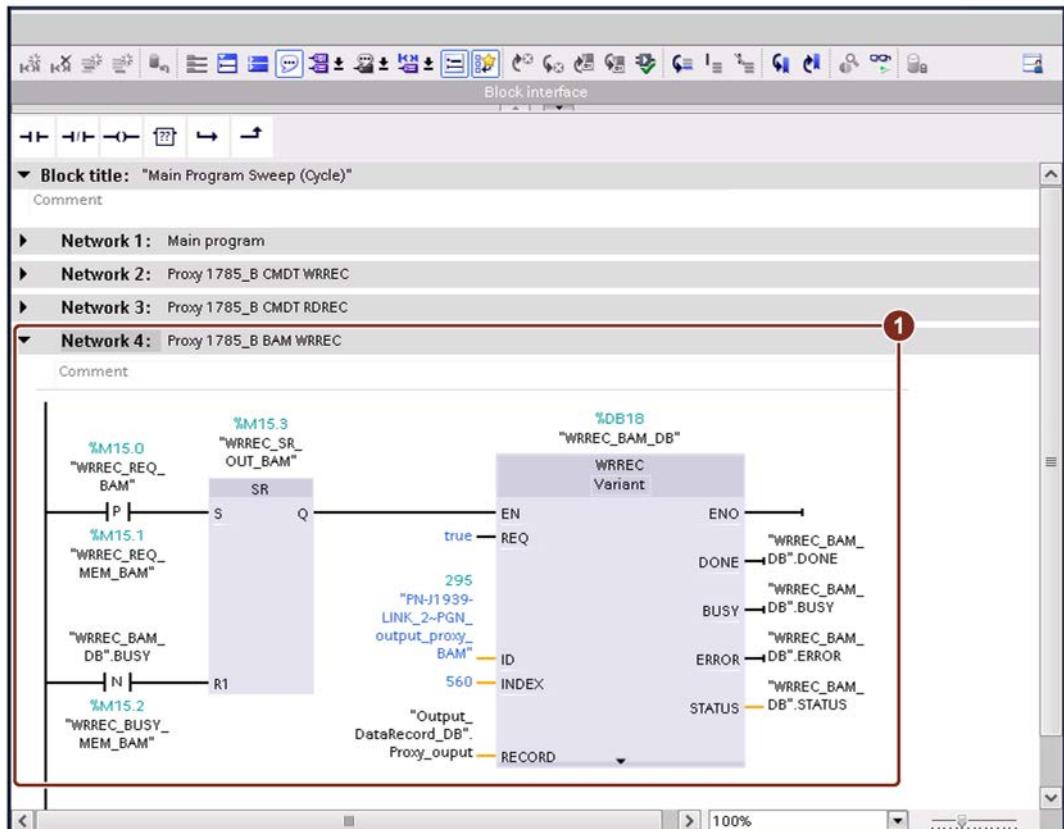
1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".

3. Double-click "Main [OB1]".

The "Block interface" window is displayed.

4. Switch to "Network 2".

The figure shows how you have to implement the application example in the S7 program.



Meaning of the tags:

ID	System constant or hardware ID of the "Proxy output" module.
INDEX	Defines the data record for writing data. "560" = Write data record
RECORD	Storage of the output data to be transferred via WRREC_REQ_BAM

Start write operation

Proceed as follows:

- If you want to start the write operation, change the value of the PLC tag "WRREC_REQ_BAM" to "1".

Data is only written if its value has changed. As soon as the write operation is completed, the value of the PLC tag automatically changes to "0". The goal is to write the data only once. This process is managed in the program block "DataRecord_StopRequest [FC5]".

The write operation of the PLC tag "WRREC_REQ_BAM" takes about 14 s for a PGN data length of 1785 bytes and 500 kbps.

7.4 Configure RDREC – PGN input proxy_BAM

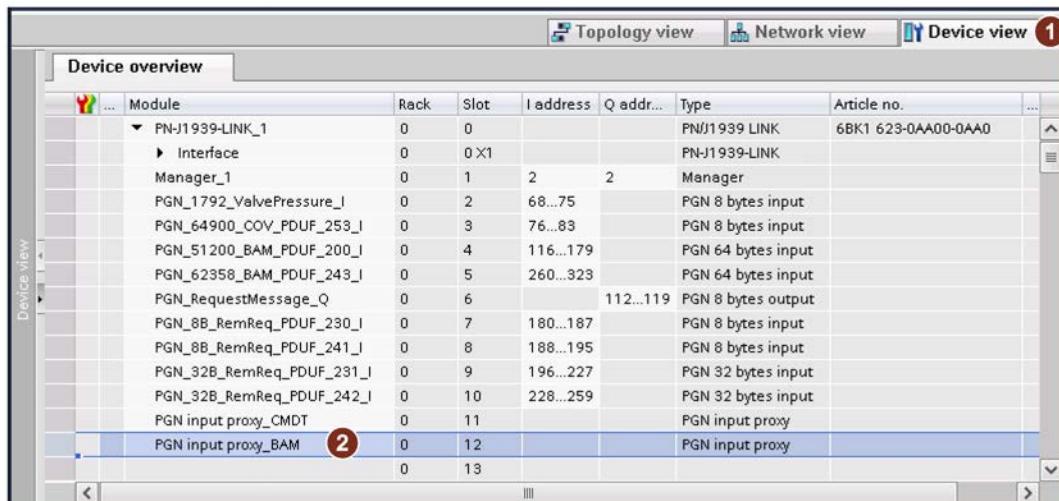
The following description applies to:

- Module PGN input proxy_BAM
- PDU Format > 239

Inserting und assigning parameters PGN input proxy_BAM

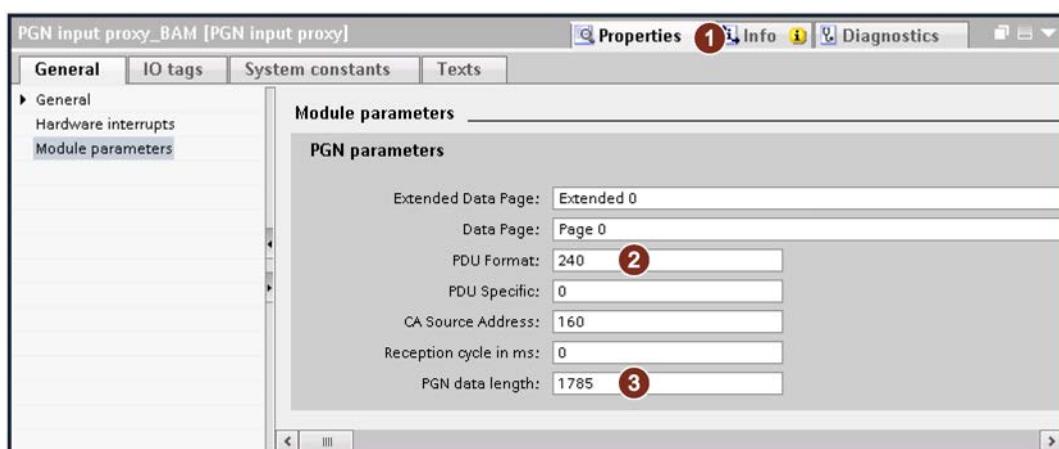
Proceed as follows:

1. Click "Network view → PN-J1939-Link_1".
2. Click "Device view → Device overview".
3. Insert the module "PGN input proxy_BAM" ②.



The screenshot shows a software interface for managing network devices. At the top, there are tabs: 'Topology view', 'Network view', and 'Device view' (which is selected). Below the tabs is a table titled 'Device overview'. The table has columns: Module, Rack, Slot, I address, Q addr..., Type, and Article no. A vertical toolbar on the left is labeled 'Device view'. In the table, under the 'Module' column, the entry 'PGN input proxy_BAM' is highlighted with a blue background and has a red circle with the number '2' over it, indicating it is the target for insertion. Other entries include 'PN-J1939-LINK_1', 'Manager_1', and various PGN message definitions.

4. Click "Properties → General → Module parameters".



5. Make the following settings:
 - PDU Format at "240" ②
 - PGN data length on "1785" ③

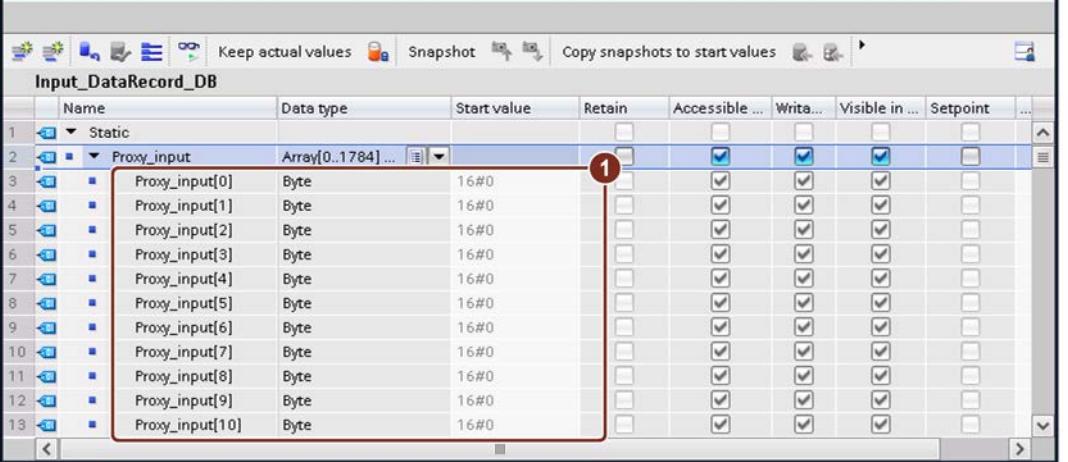
Create Input_DataRecord_DB

Create a DB for values that are to be transferred by data recording.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Input_DataRecord_DB [DB12]".

The following dialog box is displayed.



Name	Data type	Start value	Retain	Accessible ...	Writ...	Visible in ...	Setpoint	...
1 Static								
2 Proxy_input	Array[0..1784] ...							
3 Proxy_input[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4 Proxy_input[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5 Proxy_input[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6 Proxy_input[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7 Proxy_input[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8 Proxy_input[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9 Proxy_input[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10 Proxy_input[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11 Proxy_input[8]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12 Proxy_input[9]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13 Proxy_input[10]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

4. Create the input proxies 0 to 1784 ①.

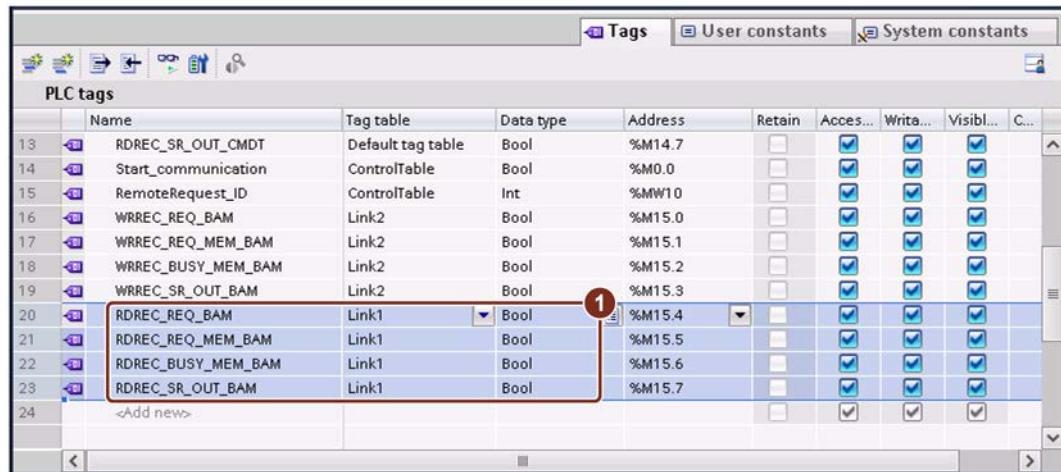
Controlling the RDREC program resource

To control the program resource RDREC, you must create the following PLC tags.

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → PLC tags".
3. Double-click "Link_1".

The following dialog box is displayed.



	Name	Tag table	Data type	Address	Retain	Access	Write	Visible	Config
13	RDREC_SR_OUT_CMDT	Default tag table	Bool	%M14.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
14	Start_communication	ControlTable	Bool	%M0.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
15	RemoteRequest_ID	ControlTable	Int	%MW10	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
16	WRREC_REQ_BAM	Link2	Bool	%M15.0	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
17	WRREC_REQ_MEM_BAM	Link2	Bool	%M15.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
18	WRREC_BUSY_MEM_BAM	Link2	Bool	%M15.2	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
19	WRREC_SR_OUT_BAM	Link2	Bool	%M15.3	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
20	RDREC_REQ_BAM	Link1	Bool	%M15.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
21	RDREC_REQ_MEM_BAM	Link1	Bool	%M15.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
22	RDREC_BUSY_MEM_BAM	Link1	Bool	%M15.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
23	RDREC_SR_OUT_BAM	Link1	Bool	%M15.7	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
24	<Add new>				<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

4. Create the marked PLC tags ①.

Integrating and configuring program blocks in the S7 program

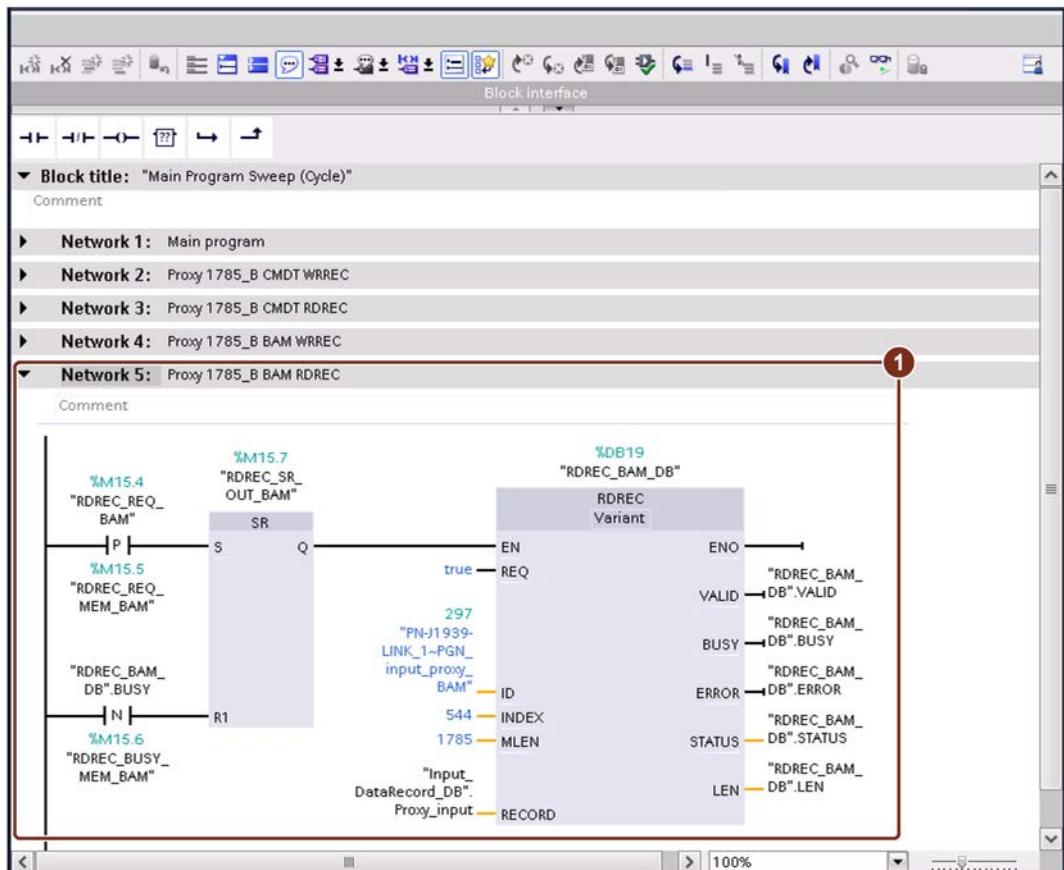
Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Main [OB1]".
4. Switch to "Network 4".

The "Block interface" window is displayed.

4. Switch to "Network 4".

The figure shows how you have to implement the application example in the S7 program.



Meaning of the tags:

ID	System constant or hardware ID of the "Proxy output" module.
INDEX	Defines the data record for reading data. "544" = Read data record
MLEN	Data volume which is read
RECORD	Storage of the output data to be transferred via WRREC_REQ_BAM

Start read operation

Proceed as follows:

1. If you want to start the read process, change the value of the PLC tag "RDREC_REQ_BAM" to "1".

As soon as the write operation is completed, the value of the PLC tag automatically changes to "0". This means that the value is read only once. This process is managed in the program block "DataRecord_StopRequest [FC5]".

The result is stored in the "Input_DataRecord_DB" program block.

Show program block "Input_DataRecord_DB"

Proceed as follows:

1. Switch to the project tree.
2. Click "Devices → Project → PLC_1 → Program blocks".
3. Double-click "Input_DataRecord_DB".

The read values are displayed in the "Monitor value" column.

Name	Data type	Start value	Retain	Accessible ...	Write...	Visible in ...	Setpoint	C...
1 Static								
2 Proxy_input	Array[0..178...]			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3 Proxy_input[0]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
4 Proxy_input[1]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
5 Proxy_input[2]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
6 Proxy_input[3]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7 Proxy_input[4]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
8 Proxy_input[5]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
9 Proxy_input[6]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
10 Proxy_input[7]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
11 Proxy_input[8]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
12 Proxy_input[9]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
13 Proxy_input[10]	Byte	16#0		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	

A

Appendix A

A.1 Internet links

No.	Subject area
1	Entry – SIMATIC PN/J1939 LINK – Configure data communication (https://support.industry.siemens.com/cs/ww/en/view/109760972)
2	SIMATIC gateways SIMATIC PN/J1939 LINK (https://support.industry.siemens.com/cs/de/en/view/109763436)
3	Industry Online Support (https://support.industry.siemens.com/cs/start?lc=en-WW)
4	Mall (https://mall.industry.siemens.com/mall/en/WW/Catalog/Products/10140445?activeTab=ProductInformation&tree=CatalogTree)
5	Industrial communication (https://w3.siemens.com/mcms/automation/en/industrial-communications/Pages/Default.aspx)
6	Your personal contact (https://w3.siemens.com/aspa_app/?cntryid=DE&lang=en)

A.2 History

Edition	Comment
02/2019	First edition

A.3 List of abbreviations

BAM	Broadcast Announce Message
bps	Bits per second
CAN	Controller Area Network
CMDT	Connection Mode Data Transfer
CPU	Central Processor Unit
DB	Data block
DC	Direct Current
FC	Function
GSDML	General Station Description Markup Language
ID	Identifier
PDU	Protocol Data Unit
PDUF	PDU Format
PGN	Parameter Group Number
PLC	Programmable Logic Controller
PM	Power Module
PN	PROFINET
TIA	Totally Integrated Automation
SAE	Society of Automotive Engineers
SPN	Single Path Network