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XSAIASS0 Driver Manual

Saia PCD Series S-BUS SS0 Network Protocol Driver

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XSAIASS0 technical specifications

General information

XSAIASS0 driver allows you to connect with SAIA PCD Series PLC, through the SAIA S-BUS network. This network allows you to connect up to 31 PLCs in multidrop. The SS0 communication mode must be set in the PLC.
THE PLC MUST BE SET TO USE SS0 PROTOCOL IN BREAK MODE.

Command list

Read Digital Inputs

Description of this command:
Obtains the current status (ON/OFF) of one or more digital inputs.
Methods used to run this command:
Digital Input
Number of points accepted by this command:
1-128
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
3
Meaning of the DriverP2 parameter:
Start digital input number (0-8191).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Digital Outputs

Description of this command:
Obtains the current status (ON/OFF) of one or more digital outputs.
Methods used to run this command:
Digital Input
Number of points accepted by this command:
1-128
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
5
Meaning of the DriverP2 parameter:
Start digital output number (0-8191).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Flags

Description of this command:
Obtains the current status (ON/OFF) of one or more digital flags.
Methods used to run this command:
Digital Input

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Number of points accepted by this command:
1-128
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
2
Meaning of the DriverP2 parameter:
Start flag number (0-8191).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Registers in Signed Integer Format

Description of this command:
Obtains the current value of one or more registers in signed integer format (-2147483648 to 2147483647).
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
6
Meaning of the DriverP2 parameter:
Start register number (0-4095).
Meaning of the DriverP3 parameter:
0
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Registers in Floating Point Format

Description of this command:
Obtains the current value of one or more registers in floating point format (-9.22337177E18 to 9.22337177E18).
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
6
Meaning of the DriverP2 parameter:
Start register number (0-4095).
Meaning of the DriverP3 parameter:
1
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

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Read Display Registers

Description of this command:
Obtains the current value of display register.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
1
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Counters

Description of this command:
Obtains the current value of one or more counters.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
0
Meaning of the DriverP2 parameter:
Start counter number (0-1599).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Timers

Description of this command:
Obtains the current value of one or more timers.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
7
Meaning of the DriverP2 parameter:
Start timer number (0-450).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read PCD Status

Description of this command:
Obtains the current PCD status.
Methods used to run this command:
Analog Input

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Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
20
Meaning of the DriverP2 parameter:
CPU number (1-7).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.
Values that are returned:
- 67 = Conditional running.
- 68 = Disconnected.
- 72 = Halted.
- 82 = Running.
- 83 = Stopped.

Read Data Block

Description of this command:
Obtains the current value of a data block.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
0-31
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
150
Meaning of the DriverP2 parameter:
Defines the block number (0-8191).
Meaning of the DriverP3 parameter:
Defines the element number to be start (0-16383).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Read Block Addresses

Description of this command:
Obtains the the block addresses.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
0-31
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
155
Meaning of the DriverP2 parameter:
Defines the block number.
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

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Read Block Sizes

Description of this command:
Obtains the the block size.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
0-31
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
156
Meaning of the DriverP2 parameter:
Defines the block number.
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Digital Outputs

Description of this command:
Writes the current status (ON/OFF) of one or more digital outputs.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1-128
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
13
Meaning of the DriverP2 parameter:
Start digital output number (0-8191).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Flags

Description of this command:
Writes the current status (ON/OFF) of one or more digital flags.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1-128
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
11
Meaning of the DriverP2 parameter:
Start flag number (0-8191).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

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Write Registers in Signed Integer Format

Description of this command:
Writes the current value of one or more registers in signed integer format (-2147483648 to 2147483647).
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
14
Meaning of the DriverP2 parameter:
Start register number (0-4095).
Meaning of the DriverP3 parameter:
0
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Registers in Floating Point Format

Description of this command:
Writes the current value of one or more registers in floating point format (-9.22337177E18 to 9.22337177E18).
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
14
Meaning of the DriverP2 parameter:
Start register number (0-4095).
Meaning of the DriverP3 parameter:
1
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Counters

Description of this command:
Writes the current value of one or more counters.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
10
Meaning of the DriverP2 parameter:
Start counter number (0-1599).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.

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Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Timers

Description of this command:
Writes the current value of one or more timers.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
15
Meaning of the DriverP2 parameter:
Start timer number (0-450).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Run Procedure

Description of this command:
Runs one or all CPUs.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
40
Meaning of the DriverP2 parameter:
Defines the CPU Number (0-6) or all (7).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Stop Procedure

Description of this command:
Stops one or all CPUs.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
60
Meaning of the DriverP2 parameter:
Defines the CPU Number (0-6) or all (7).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

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Restart Cold

Description of this command:
Restart cold.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
50
Meaning of the DriverP2 parameter:
Defines the CPU Number (1-6) or all (7).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Restart Warm

Description of this command:
Restart warm.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
100
Meaning of the DriverP2 parameter:
Defines the CPU Number (1-6) or all (7).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Clear All

Description of this command:
Clears all outputs, flags, registers and timers.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
90
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Clear Flags

Description of this command:
Clears all flags.
Methods used to run this command:
Digital Output

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Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
91
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Clear Outputs

Description of this command:
Clears all outputs.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
92
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Clear Registers

Description of this command:
Clears all registers.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
93
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Clear Timers

Description of this command:
Clears all timers.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
94
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.

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Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Write Data Block

Description of this command:
Writes the data block.
Methods used to run this command:
Analog Output
Number of points accepted by this command:
0-31
Meaning of the DriverP0 parameter:
Identifies the number of PLC to communicate (1-254). Number 255 is used for a broadcast-type output message.
Meaning of the DriverP1 parameter:
151
Meaning of the DriverP2 parameter:
Defines the block number (0-8191).
Meaning of the DriverP3 parameter:
Defines the element number to be start (0-16383).
Meaning of the DriverP4 parameter:
Defines the duration in msec. of the initial break signal.
Meaning of the DriverP5 parameter:
Defines the time delay in msec., to wait before sending the command.

Error messages

The following list shows the possible error messages that can be returned by the driver during a failed communication in the 'Status' property.

[1005] DRIVER (Internal): Invalid driver stage
[1300] PROTOCOL (Timeout): No answer
[1400] PROTOCOL (Format): Acknowledge not received
[1433] PROTOCOL (Format): Validation error in device response
[2147] CONFIG (NumValues): Only one value can be read or written
[2186] CONFIG (NumValues): Too many values (max=128)
[2209] CONFIG (NumValues): Too many values (max=32)
[3021] CONFIG (P0): Invalid device address (1-254)
[3022] CONFIG (P0): Invalid device address (1-255)
[3508] CONFIG (P1): Invalid command
[4009] CONFIG (P2): Invalid address (0-8191)
[4023] CONFIG (P2): Invalid block number (0-8191)
[4049] CONFIG (P2): Invalid counter address (0-1599)
[4050] CONFIG (P2): Invalid CPU number (0-7)
[4051] CONFIG (P2): Invalid CPU number (1-7)
[4091] CONFIG (P2): Invalid register address (0-4095)
[4112] CONFIG (P2): Invalid timer address (0-450)
[4509] CONFIG (P3): Invalid block element (0-16383L)
[4560] CONFIG (P3): Invalid read mode (0-1)
[4585] CONFIG (P3): Invalid write mode (0-1)
[8347] CONFIG (Remote): Unknown error

Supported devices

This driver can communicate with these devices, but is not necessarily limited to this list:

SAIA PLC PCD2 Series
SAIA PLC PCD4 Series
SAIA PLC PCD6 Series

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