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## XSAIADAT Driver Manual

*Saia PCD3 Series S-BUS DATA MODE Network Protocol Driver*

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## XSAIADAT technical specifications

### General information

XSAIADAT driver allows you to connect with SAIA PCD3 Series PLC, through the SAIA S-BUS network. This network allows you to connect up to 31 PLCs in multidrop. The SS1 DATA MODE communication mode must be set in the PLC.  
THE PLC MUST BE SET TO USE SS1 PROTOCOL IN DATA MODE.  
Serial port must be set to NO PARITY, 8 DATA BITS and 1 STOP BIT.

### 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 PLC station number (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).

#### 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 PLC station number (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).

#### 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

**Number of points accepted by this command:**

1-128

**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

2

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**Meaning of the DriverP2 parameter:**

Start flag number (0-8191).

## 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 PLC station number (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

## 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 PLC station number (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

## 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 PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

1

## 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

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**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (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).

## 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 PLC station number (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).

## Read PCD Status

**Description of this command:**

Obtains the current PCD status.

**Methods used to run this command:**

Analog Input

**Number of points accepted by this command:**

1

**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (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).

**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 PLC station number (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).

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## 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 PLC station number (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.

## 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 PLC station number (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.

## 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 PLC station number (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).

## 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 PLC station number (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).

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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 PLC station number (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

## 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 PLC station number (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

## 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 PLC station number (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).

## 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

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**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (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).

## 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 PLC station number (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).

## 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 PLC station number (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).

## 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 PLC station number (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).

## Restart Warm

**Description of this command:**

Restart warm.

**Methods used to run this command:**

Digital Output

**Number of points accepted by this command:**

1

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**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (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).

## 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 PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

90

## Clear Flags

**Description of this command:**

Clears all flags.

**Methods used to run this command:**

Digital Output

**Number of points accepted by this command:**

1

**Meaning of the DriverP0 parameter:**

Identifies the PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

91

## 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 PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

92

## 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 PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

93

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## 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 PLC station number (1-254). Number 255 is used for a broadcast-type output message.

**Meaning of the DriverP1 parameter:**

94

## 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 PLC station number (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.

## 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 (0-254)  
[3022] CONFIG (P0): Invalid device address (0-255)  
[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:

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