Industrial communication solutions for Windows

XSUCOMA Driver Manual

Klockner-Moeller SUCOM-A Marker-Access Protocol Driver

Contents

CPKSoft Engineering

Industrial communication drivers.

www.cpksoft.com
www.facebook.com/cpksoftengineering
cpksoftengineering@hotmail.com
phone: 54-911-45788354

XSUCOMA technical specifications

General information

XSUCOMA driver allows you to connect to Klockner Moeller PLC's of the PS30 and PS4/40 Series that can handle the Sucom-A protocol for marker- access. SUCOM-A protocol has been developed by Klockner-Moeller as a point-to-point connection method between the PC and Moeller PLCs. The PLC is slaved and responds to request telegrams generated by the PC.
The XSUCOMA driver can give access to the following PLC information:

- Markers
- Diagnostic status words
- Diagnostic counters
- Processor status words

Check the memory ranges which are valid for your particular PLC model.
Use the following transmission parameters: 9600,N,8,2
Marker Ranges for PS316:
---------- Marker range 1: MW0 to MW63 from address 4080 Hex (=16512) Marker range 2: MW64 to MW124 from address 4100 Hex (=16640) Marker range 3: MW125 to MW2172 from address 4200 Hex (=16896)
Marker Ranges for PS4-200:
---------- The marker range is not allocated to static addresses. It is just dynamically set according to the requirements of the program. Therefore, before reading or writing marker data, the current start and end addresses of the marker range must be requested. This takes place via the command 'Read Memory Range as Words (AI)". Read the start address at 0040 hex (=64) and the end address at 004A hex (=74). WARNING!: The marker addresses change with every change in the program.
Note from a XSUCOMA driver user:
---------- 'I found the start memory address for the MM1 201 PLC that it start on 2064 position when you want to add any extension (LE or EM4) you should add 3 to that position to have the right value point.'

Command list

Read Memory Range as Words (AI)

Description of this command:
Reads the contents of a selected region of the PLC memory and returns one word for every two consecutive bytes read (high byte is read first).
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
2
Values that are returned:
Value in PointValue (0) = First word value (0-65535)
Value in PointValue (1) = Second word value (0-65535)
- ...

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Read Memory Range as Bytes (AI)

Description of this command:
Reads the contents of a selected region of the PLC memory and returns each byte read as an individual value in the range 0-255.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-64
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
1
Values that are returned:
Value in PointValue (0) = First byte value (0-255)
Value in PointValue (1) = Second byte value (0-255)
- ...

Read Memory Range as Bits (DI)

Description of this command:
Reads individual bits of the PLC memory as individual On/Off values.
Methods used to run this command:
Digital Input
Number of points accepted by this command:
1-512
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
Starting Bit Offset (0-7)
Values that are returned:
Value in PointValue (0) = First bit at offset in DriverP2
Value in PointValue (1) = Following bit at offset in DriverP2+1
- ...

Write Memory Range as Words (AO)

Description of this command:
Writes the contents of a selected region of the PLC memory, formatting the values to be sent as words which are sent as two bytes with high byte first.
Methods used to run this command:
Analog Output
Number of points accepted by this command:
1-32
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
2
Values that are sent:
Value in PointValue (0) = First word value (0-65535)
Value in PointValue (1) = Second word value (0-65535)

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- ...

Write Memory Range as Bytes (AO)

Description of this command:
Writes the contents of a selected region of the PLC memory, formatting the values to be sent as bytes in the range 0-255.
Methods used to run this command:
Analog Output
Number of points accepted by this command:
1-64
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
1
Values that are sent:
Value in PointValue (0) = First byte value (0-255)
Value in PointValue (1) = Second byte value (0-255)
- ...

Write Memory Range as On/Off Bytes (DO)

Description of this command:
Writes the contents of a selected region of the PLC memory, formatting the values to be sent as bytes with a value of 00h or 01h depending on the corresponding DO value.
Methods used to run this command:
Digital Output
Number of points accepted by this command:
1-64
Meaning of the DriverP0 parameter:
Device Type
3 = PS306/316/416
7 = PS4-201/131/141/151
Meaning of the DriverP1 parameter:
Starting Memory Range (0000h-FFFFh)
Meaning of the DriverP2 parameter:
1
Values that are sent:
Value in PointValue (0) = First byte value (0 or 1)
Value in PointValue (1) = Second byte value (0 or 1)
- ...
Important note:
You cannot set individual bits with this command. The 7 highest order bits are always 0. Only bit 0 value is set to 1 or 0 according to the On/Off value to be sent.

Marker Ranges for PS316

Marker range 1: MW0 to MW63 = starts at address 4080h Marker range 2: MW64 to MW124 = starts at address 4100h Marker range 3: MW125 to MW2172 = starts at address 4200h

Marker Ranges for PS4-200

The marker range is dinamically set according to the requirements
of the program and is placed in the following memory locations:
Start address: 0040h (high byte), 0041h (low byte) End address: 004Ah (high byte), 004Bh (low byte)
Important note:
These are not the markers starting and ending ranges. These are the memory locations where the current starting and ending ranges can be found.

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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
[1433] PROTOCOL (Format): Validation error in device response
[2101] CONFIG (NumValues): Invalid number of bits requested (1-512)
[2103] CONFIG (NumValues): Invalid number of bytes requested (1-64)
[2104] CONFIG (NumValues): Invalid number of bytes to be written (1-64)
[2133] CONFIG (NumValues): Invalid number of words requested (1-32)
[2135] CONFIG (NumValues): Invalid number of words to be written (1-32)
[3033] CONFIG (P0): Invalid device type (3 or 7 only)
[3574] CONFIG (P1): Invalid starting memory range (00000h-FFFFh)
[4019] CONFIG (P2): Invalid bit offset (0-7)
[4052] CONFIG (P2): Invalid data format (1 or 2 only)

Supported devices

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

KLOCKNER MOELLER PS306
KLOCKNER MOELLER PS316
KLOCKNER MOELLER PS4-201-MM1
KLOCKNER MOELLER PS4-141-MM1
KLOCKNER MOELLER PS4-151-MM1
KLOCKNER MOELLER PS4-271-MM1
KLOCKNER MOELLER PS4-341-MM1
KLOCKNER MOELLER PS416-200
KLOCKNER MOELLER PS416-300
KLOCKNER MOELLER PS416-400

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