

# Industrial communication solutions for Windows

## XOMRON Driver Manual

### *Omron SYSMAC Host Link C-Mode Protocol Driver*

#### Contents

<b>XOMRON technical specifications .....</b>	<b>2</b>
General information.....	2
Command list .....	2
IR Area Read .....	2
HR Area Read.....	2
RJ Area Read.....	2
RL Area Read .....	3
RD Area Read.....	3
RC Area Read.....	4
SV Read 1.....	4
TC Status Read.....	4
IR Area Write.....	5
HR Area Write .....	5
AR Area Write .....	5
LR Area Write.....	6
DM Area Write.....	6
PV Write.....	6
SV Change 1.....	7
TC Status Write.....	7
K3TS Read Set Value .....	8
K3TS Read Hold Data.....	8
K3TS Read Display Value (PV).....	8
K3TS Write Set Value.....	9
Error messages .....	9
Supported devices.....	10

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## XOMRON technical specifications

### General information

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XOMRON allows you to connect to the OMRON programmable controllers which use the 1:N Host Link C-Mode serial communications protocol.

### Command list

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#### IR Area Read

**Description of this command:**

Reads the contents of the specified number of IR words.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-250

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

0

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

#### HR Area Read

**Description of this command:**

Reads the contents of the specified number of HR words.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-250

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

1

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

#### RJ Area Read

**Description of this command:**

Reads the contents of the specified number of RJ words.

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## **Methods used to run this command:**

Analog Input / Digital Input

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

1-250

## **Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

## **Meaning of the DriverP1 parameter:**

2

## **Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

## **Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

## RL Area Read

### **Description of this command:**

Reads the contents of the specified number of RL words.

### **Methods used to run this command:**

Analog Input / Digital Input

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

1-250

### **Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

### **Meaning of the DriverP1 parameter:**

3

### **Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

### **Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

## RD Area Read

### **Description of this command:**

Reads the contents of the specified number of RD words.

### **Methods used to run this command:**

Analog Input / Digital Input

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

1-250

### **Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

### **Meaning of the DriverP1 parameter:**

4

### **Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

### **Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

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## RC Area Read

**Description of this command:**

Reads the contents of the specified number of RC words.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-250

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

5

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be read.

## SV Read 1

**Description of this command:**

Reads the contents of the specified number of SV 1 words.

**Methods used to run this command:**

Analog Input / Digital Input

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

Analog Input:1 DI:1-16

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

6

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the TC type.

- 0 = For TIM
- 1 = For TIMH
- 2 = For CNT
- 3 = For CNTR

**Meaning of the DriverP4 parameter:**

Number (0 to 47).

## TC Status Read

**Description of this command:**

Reads the contents of the specified number of TC Status.

**Methods used to run this command:**

Analog Input

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

1-250

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

7

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## Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

## Meaning of the DriverP3 parameter:

Defines the address of data to be read.

## IR Area Write

### Description of this command:

Writes the contents of the specified number of IR words.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

### Meaning of the DriverP1 parameter:

10

### Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

### Meaning of the DriverP3 parameter:

Defines the address of data to be written.

## HR Area Write

### Description of this command:

Writes the contents of the specified number of HR words.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

### Meaning of the DriverP1 parameter:

11

### Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

### Meaning of the DriverP3 parameter:

Defines the address of data to be written.

## AR Area Write

### Description of this command:

Writes the contents of the specified number of AR words.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

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**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

12

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be written.

## LR Area Write

**Description of this command:**

Writes the contents of the specified number of LR words.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

13

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be written.

## DM Area Write

**Description of this command:**

Writes the contents of the specified number of DM words.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

14

**Meaning of the DriverP2 parameter:**

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be written.

## PV Write

**Description of this command:**

Writes the contents of the specified number of PV words.

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## Methods used to run this command:

Analog Output / Digital Output

## Number of points accepted by this command:

1

## Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

## Meaning of the DriverP1 parameter:

15

## Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

## Meaning of the DriverP3 parameter:

Defines the address of data to be written.

## SV Change 1

### Description of this command:

Writes the contents of the specified number of SV Change 1.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

### Meaning of the DriverP1 parameter:

16

### Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.
- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

### Meaning of the DriverP3 parameter:

Defines the TC type.

- 0 = For TIM
- 1 = For TIMH
- 2 = For CNT
- 3 = For CNTR

### Meaning of the DriverP4 parameter:

Number (0 to 511).

## TC Status Write

### Description of this command:

Writes the contents of the specified number of TC status.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

### Meaning of the DriverP1 parameter:

17

### Meaning of the DriverP2 parameter:

Indicates the type of read.

- 0 = Reads information in word mode. In the event of using it from DI, it will return 1 if the value is higher than 0 and 0 is less than or equal to 0.

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- 1..16 = Number of bit (0-15) wherefrom the value returned by the PLC is read. For the case of outputs, indicates the number of bit to be modified. It will write 1 if the value to be written is higher than 0 and 0 if less than or equal to 0.

**Meaning of the DriverP3 parameter:**

Defines the address of data to be written.

## K3TS Read Set Value

**Description of this command:**

Reads the set value information from K3TS.

**Methods used to run this command:**

Analog Input

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

1

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

20

**Meaning of the DriverP2 parameter:**

Defines the element to read.

- 0 = For LL set value data.
- 1 = For L set value data.
- 2 = For H set value data.
- 3 = For HH set value data.

## K3TS Read Hold Data

**Description of this command:**

Reads the contents of the hold data.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-2

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

**Meaning of the DriverP1 parameter:**

21

**Meaning of the DriverP2 parameter:**

Indicates the element to read.

- 0 = For maximum hold value.
- 1 = For minimum hold value.

**Values that are returned:**

Value in PointValue (0) = Requested Value.

Value in PointValue (1) = Status Data

- 1 = For Overflow.
- 2 = For Underflow.
- 4 = For Sensor failure.
- 8 = For Zero-shift.
- 16 = For Hold input now ON.
- 32 = For Bank 1.
- 64 = For Bank 2.
- 128 = For Bank 4.

## K3TS Read Display Value (PV)

**Description of this command:**

Reads the contents of the display value.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-2

**Meaning of the DriverP0 parameter:**

Identifies the controller's station number (0-31).

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## Meaning of the DriverP1 parameter:

22

## Values that are returned:

Value in PointValue (0) = Requested Value.

Value in PointValue (1) = Status Data

- 1 (bit 0) = For Overflow.
- 2 (bit 1) = For Underflow.
- 4 (bit 2) = For Sensor failure.
- 8 (bit 3) = For Forced zero.
- 16 (bit 4) = For Hold mode.
- 32 (bit 5) = For Bank 1.
- 64 (bit 6) = For Bank 2.
- 128 (bit 7) = For Bank 4.
- 256 (bit 8) = For LL comparative output.
- 512 (bit 9) = For L comparative output.
- 1024 (bit 10) = For H comparative output.
- 2048 (bit 11) = For HH comparative output.
- 4096 (bit 12) = For PASS output.
- 8192 (bit 13) = For In test mode.

## K3TS Write Set Value

### Description of this command:

Writes the set value.

### Methods used to run this command:

Analog Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Identifies the controller's station number (0-31).

### Meaning of the DriverP1 parameter:

30

### Meaning of the DriverP2 parameter:

Indicates the element to write.

- 0 = For LL set value data.
- 1 = For L set value data.
- 2 = For H set value data.
- 3 = For HH set value data.

## 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
- [2147] CONFIG (NumValues): Only one value can be read or written
- [2189] CONFIG (NumValues): Too many values (max=16)
- [2194] CONFIG (NumValues): Too many values (max=2)
- [3007] CONFIG (P0): Invalid device address
- [3508] CONFIG (P1): Invalid command
- [4072] CONFIG (P2): Invalid mode
- [4074] CONFIG (P2): Invalid mode (0-3)
- [4115] CONFIG (P2): Invalid type (0-2)
- [4116] CONFIG (P2): Invalid type (0-3)
- [4573] CONFIG (P3): Invalid TC type (0-3)
- [5018] CONFIG (P4): Invalid number (0-47)
- [5019] CONFIG (P4): Invalid number (0-511)
- [8004] CONFIG (Remote): Aborted due to entry number data error in transmit data
- [8005] CONFIG (Remote): Aborted due to format error in transmit data
- [8006] CONFIG (Remote): Aborted due to frame length error in transmit data

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[8007] CONFIG (Remote): Aborted due to framing error in transmit data  
[8008] CONFIG (Remote): Aborted due to overrun in transmit data  
[8009] CONFIG (Remote): Aborted due to parity error in transmit data  
[8021] CONFIG (Remote): Address over (data overflow)  
[8114] CONFIG (Remote): Entry number data error  
[8144] CONFIG (Remote): Format error (parameter length error)  
[8146] CONFIG (Remote): Frame checksum error (FCS)  
[8148] CONFIG (Remote): Frame length error  
[8150] CONFIG (Remote): Framing Error  
[8186] CONFIG (Remote): Instruction not found  
[8224] CONFIG (Remote): No memory unit mounted  
[8231] CONFIG (Remote): Not executable  
[8232] CONFIG (Remote): Not executable in MONITOR mode  
[8233] CONFIG (Remote): Not executable in PROGRAM mode  
[8234] CONFIG (Remote): Not executable in RUN mode  
[8235] CONFIG (Remote): Not executable with PROM mounted  
[8256] CONFIG (Remote): Overrun error  
[8259] CONFIG (Remote): Parity error  
[8270] CONFIG (Remote): Probably produced by noise  
[8359] CONFIG (Remote): User memory is write protected

## Supported devices

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

OMRON C-Series PLCs  
OMRON C200H PLCs  
OMRON C1000H PLCs  
OMRON C2000H PLCs  
OMRON CS/CJ-Series CPU Units  
OMRON N-type CP1E CPU Units  
OMRON NSJ Controllers Port C  
OMRON CP-series Option Board Ports 1 and 2  
OMRON PLC model SYSMAC C20H  
OMRON PLC model SYSMAC C28H  
OMRON PLC model SYSMAC C40H  
OMRON PLC model SYSMAC C60H  
OMRON PLC model CPM1A  
OMRON PLC model SRM1  
OMRON PLC model CQM1  
OMRON PLC model C200HX/G/E  
OMRON PLC model CVM1/CPU01  
OMRON PLC model CVM1/CPU11  
OMRON PLC model CVM1/CPU21  
OMRON Panel Indicator K3TS

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