

# Industrial communication solutions for Windows

## XMCCDAQ Driver Manual

### *Measurement Computing CB Modules Driver*

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[cpksoftengineering@hotmail.com](mailto:cpksoftengineering@hotmail.com)

phone: 54-911-45788354

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## XMCCDAQ technical specifications

### General information

The XMCCDAQ driver allows you to connect with the CB-7000 Family Network Data Acquisition and Control Modules manufactured by Measurement Computing (<http://www.mccdaq.com>). An RS-232/485 converter must be used at the PC side.

If you cannot communicate or if you are using RS-485 to connect to the device, you should set the RTS signal during the communication. This can be done by setting the RTSEnable argument when calling the read and write methods. If you still cannot communicate, check that your RS-485 cables are not inverted.

*Default factory settings for these modules are:*

- Address: 01.
- Analog Input Type: Type 05, -2.5 to +2.5 V.
- Baud rate: 9600 bps.
- Checksum disable, 60 Hz rejection, engineering unit format.
- CB-7018/18P set as INIT\* mode; there are six differential and two single-ended analog inputs.

### Command list

#### Read Analog Inputs

**Description of this command:**

Returns the input values from a specified analog input module in the currently configured data format.

**Methods used to run this command:**

Analog Input

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

1-8

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages
- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

0

**Meaning of the DriverP3 parameter:**

Indicates the data format to be used.

- 0 = Engineering Units
- 1 = % of FSR
- 2 = 2's complement
- 3 = Ohms.

**Values that are returned:**

Value in PointValue (0) = First Input value

Value in PointValue (1) = Second Input value

- ...

Value in PointValue (DriverNumPoints-1) = Last Input value

#### Read Analog Input from Channel N

**Description of this command:**

Returns the input value from channel number N of the specified analog input module in the currently configured data format.

**Methods used to run this command:**

Analog Input / Digital Input

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## Number of points accepted by this command:

1

## Meaning of the DriverP0 parameter:

Module Address (0-255).

## Meaning of the DriverP1 parameter:

Indicates if messages must include checksum

- 0 = Use checksum in messages
- 1 = No checksum in messages

## Meaning of the DriverP2 parameter:

17

## Meaning of the DriverP3 parameter:

Indicates the data format to be used.

- 0 = Engineering Units
- 1 = % of FSR
- 2 = 2's complement
- 3 = Ohms.

## Meaning of the DriverP4 parameter:

Identifies the channel you want to read (0-7).

## Values that are returned:

Value in PointValue (0) = Input value from channel N

## Set Digital Output Values

### Description of this command:

Sets the values of the module's digital outputs (ON or OFF).

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

2 (or 4 for 4016)

### Meaning of the DriverP0 parameter:

Module Address (0-255).

### Meaning of the DriverP1 parameter:

Indicates if messages must include checksum

- 0 = Use checksum in messages
- 1 = No checksum in messages

### Meaning of the DriverP2 parameter:

24

### Values that are sent:

Value in PointValue (0) = New status of digital output 0 . .

Value in PointValue (n-1) = New status of last digital output

## Enable Alarm

### Description of this command:

Enables the alarm in either latching or momentary mode.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Module Address (0-255).

### Meaning of the DriverP1 parameter:

Indicates if messages must include checksum

- 0 = Use checksum in messages
- 1 = No checksum in messages

### Meaning of the DriverP2 parameter:

25

### Meaning of the DriverP3 parameter:

Indicates the mode to enable.

- 0 = Momentary mode
- 1 = Latching mode

### Values that are sent:

Value in PointValue (0) = Not used

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## Set High Alarm Value

**Description of this command:**

Sets the high alarm limit value.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

26

**Values that are sent:**

Value in PointValue (0) = New high alarm limit value

## Set Low Alarm Value

**Description of this command:**

Sets the low alarm limit value.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

27

**Values that are sent:**

Value in PointValue (0) = New low alarm limit value

## Disable Alarm

**Description of this command:**

Disables all alarm functions.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

28

**Values that are sent:**

Value in PointValue (0) = Not used

## Clear Latched Alarm

**Description of this command:**

Resets the module's latch alarm to zero. Both alarm states are set to OFF, no alarm.

**Methods used to run this command:**

Analog Output / Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

29

**Values that are sent:**

Value in PointValue (0) = Not used

## Read High Alarm Value

**Description of this command:**

Obtains the current high alarm limit value.

**Methods used to run this command:**

Analog Input / Digital Input

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

5

**Values that are returned:**

Value in PointValue (0) = High alarm limit value.

## Read Low Alarm Value

**Description of this command:**

Obtains the current low alarm limit value.

**Methods used to run this command:**

Analog Input / Digital Input

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

- 0 = Use checksum in messages

- 1 = No checksum in messages

**Meaning of the DriverP2 parameter:**

6

**Values that are returned:**

Value in PointValue (0) = Low alarm limit value.

## Read Event Counter

**Description of this command:**

Obtains the current event counter value.

**Methods used to run this command:**

Analog Input / Digital Input

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

1

**Meaning of the DriverP0 parameter:**

Module Address (0-255).

**Meaning of the DriverP1 parameter:**

Indicates if messages must include checksum

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- 0 = Use checksum in messages
- 1 = No checksum in messages

## Meaning of the DriverP2 parameter:

7

## Values that are returned:

Value in PointValue (0) = Event counter value.

## Clear Event Counter

### Description of this command:

Resets the module's event counter to zero.

### Methods used to run this command:

Analog Output / Digital Output

### Number of points accepted by this command:

1

### Meaning of the DriverP0 parameter:

Module Address (0-255).

### Meaning of the DriverP1 parameter:

Indicates if messages must include checksum

- 0 = Use checksum in messages
- 1 = No checksum in messages

### Meaning of the DriverP2 parameter:

30

### Values that are sent:

Value in PointValue (0) = Not used

## 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
- [1410] PROTOCOL (Format): Invalid device id in response
- [1433] PROTOCOL (Format): Validation error in device response
- [2106] CONFIG (NumValues): Invalid number of channels (max=4)
- [2107] CONFIG (NumValues): Invalid number of channels (min=2)
- [2109] CONFIG (NumValues): Invalid number of channels (must be 3)
- [2111] CONFIG (NumValues): Invalid number of channels (must be 6)
- [2112] CONFIG (NumValues): Invalid number of channels (must be 8)
- [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)
- [2206] CONFIG (NumValues): Too many values (max=3)
- [2216] CONFIG (NumValues): Too many values (max=4)
- [2223] CONFIG (NumValues): Too many values (max=5)
- [2235] CONFIG (NumValues): Too many values (max=8)
- [3014] CONFIG (P0): Invalid device address (0-255)
- [3023] CONFIG (P0): Invalid device address (-1-255)
- [4030] CONFIG (P2): Invalid command
- [4528] CONFIG (P3): Invalid counter number (0 or 1)
- [4530] CONFIG (P3): Invalid data format
- [4539] CONFIG (P3): Invalid first channel number (0-7)
- [4540] CONFIG (P3): Invalid first group (0-1)
- [4543] CONFIG (P3): Invalid mode
- [4584] CONFIG (P3): Invalid write mode
- [5004] CONFIG (P4): Invalid channel number (0-7)
- [5011] CONFIG (P4): Invalid first channel (0-7)
- [5012] CONFIG (P4): Invalid first output
- [8060] CONFIG (Remote): Command is invalid or not supported
- [8248] CONFIG (Remote): Operation is not supported

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## Supported devices

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

MEASUREMENT COMPUTING CB-7000 Family Modules  
MEASUREMENT COMPUTING CB-7011 Modules  
MEASUREMENT COMPUTING CB-7011D Modules  
MEASUREMENT COMPUTING CB-7011P Modules  
MEASUREMENT COMPUTING CB-7011PD Modules  
MEASUREMENT COMPUTING CB-7018 Modules  
MEASUREMENT COMPUTING CB-7018P Modules

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