

# Industrial communication solutions for Windows

## XMODBUS Driver Manual

### *Modbus ASCII Protocol Driver*

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## XMODBUSA technical specifications

### General information

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XMODBUSA driver allows you to connect to any equipment which uses the Gould Modicon MODBUS ASCII Protocol (Use the XMODBUS driver if you need the binary version and XMODBTCP for the TCP version).

### Command list

---

#### Read Coil Status

**Description of this command:**

Obtains current status (ON/OFF) in a group of logic coils.

**Methods used to run this command:**

Digital Input

1-250. It is convenient to handle groups in multiples of 8 elements.

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

1

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

#### Read Input Status

**Description of this command:**

Obtains current status (ON/OFF) in a group of discrete inputs.

**Methods used to run this command:**

Digital Input

1-250. It is convenient to handle groups in multiples of 8 elements.

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

2

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

#### Read Holding Registers as Unsigned

**Description of this command:**

Obtains current values in one or more holding registers as unsigned 2-bytes integer numbers from 0 to 65535.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-125

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

3

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

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## Read Input Registers as Unsigned

**Description of this command:**

Obtains current values in one or more input registers as unsigned 2-bytes integer numbers from 0 to 65535.

**Methods used to run this command:**

Analog Input

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

1-125

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

4

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as Signed

**Description of this command:**

Obtains current values in one or more holding registers as signed 2-bytes integers numbers from -32768 to 32767.

**Methods used to run this command:**

Analog Input / Digital Input

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

1-125

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

74

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Input Registers as Signed

**Description of this command:**

Obtains current values in one or more input registers as signed 2-bytes integers numbers from -32768 to 32767.

**Methods used to run this command:**

Analog Input

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

1-125

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

79

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Force Single Coil

**Description of this command:**

Forces a single logic coil to a state ON or OFF.

**Methods used to run this command:**

Digital Output

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

1

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

5

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**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Single Register

**Description of this command:**

Places a specified value into a holding register as an unsigned 2-bytes integer value.

**Methods used to run this command:**

Analog Output

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

1

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

6

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Force Multiple Coils

**Description of this command:**

Forces a series of consecutive logic coils to selected ON or OFF states.

**Methods used to run this command:**

Digital Output

1-125. It is convenient for the groups to be multiple of 8 elements.

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

15

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Multiple Registers

**Description of this command:**

Places specified values into a series of consecutive holding registers, as unsigned 2-bytes integer values.

**Methods used to run this command:**

Analog Output

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

1-125

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

16

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers reading 8 of each 16 bits

**Description of this command:**

Obtains current values in one or more holding registers reading 8 bits out of every 16 bits, as unsigned 2-bytes integer values.

**Methods used to run this command:**

Digital Input

1-250. It is convenient to handle groups in multiples of 8 elements.

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

-3

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**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Multiple Registers as IEEE floats

**Description of this command:**

Places specified values into a series of consecutive holding registers, as 4-bytes IEEE floating point values.

**Methods used to run this command:**

Analog Output

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

-16

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers skipping 2 bytes

**Description of this command:**

Obtains current values in one or more holding registers skipping 2 bytes between every data read (starts skipping 2), as unsigned 2-bytes integer values.

**Methods used to run this command:**

Analog Input

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

65

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as IEEE floats

**Description of this command:**

Obtains current values in one or more holding registers, as 4-bytes IEEE floating point values.

**Methods used to run this command:**

Analog Input

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

66

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as IEEE floats skipping 2 bytes

**Description of this command:**

Obtains current binary value in one or more holding registers skipping 2 bytes between every data read (starts skipping 2), as 4-bytes IEEE floating point values.

**Methods used to run this command:**

Analog Input

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

1-62

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**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

67

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as inverted IEEE floats

**Description of this command:**

Obtains current values in one or more holding registers as 4-bytes inverted IEEE floating point values.

**Methods used to run this command:**

Analog Input

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

68

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as inverted IEEE floats skipping 2 bytes

**Description of this command:**

Obtains current values in one or more holding registers as 4-bytes inverted IEEE floating point values and skipping 2 bytes between every data read (starts skipping 2).

**Methods used to run this command:**

Analog Input

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

69

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Single/Multiple Registers as IEEE floats

**Description of this command:**

Places specified values into a series of consecutive holding registers as 4-bytes IEEE floating point values.

**Methods used to run this command:**

Analog Output

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

70

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Single/Multiple Registers as IEEE floats skipping 2 bytes

**Description of this command:**

Places specified values into a series of consecutive holding registers as 4-bytes IEEE floating point values and skipping 2 bytes between every data read (starts skipping 2).

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**Methods used to run this command:**

Analog Output

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

71

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Single/Multiple Registers as inverted IEEE floats

**Description of this command:**

Places specified values in inverse mode into a series of consecutive holding registers as 4-bytes inverted IEEE floating point values.

**Methods used to run this command:**

Analog Output

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

72

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Preset Single/Multiple Registers as inverted IEEE floats skipping 2 bytes

**Description of this command:**

Places specified values in inverse mode into a series of consecutive holding registers as 4-bytes inverted IEEE floating point values and skipping 2 bytes between every data read (starts skipping 2).

**Methods used to run this command:**

Analog Output

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

73

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

## Read Holding Registers as Signed 32 Bits Integer

**Description of this command:**

Obtains current values in one or more holding registers as signed 4-bytes integer numbers.

**Methods used to run this command:**

Analog Input

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

1-62

**Meaning of the DriverP0 parameter:**

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

**Meaning of the DriverP1 parameter:**

75

**Meaning of the DriverP2 parameter:**

Indicates the memory address of the selected element.

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## Read Holding Registers as Unsigned 32 Bits Integer

### Description of this command:

Obtains current values in one or more holding registers as unsigned 4-bytes integer numbers.

### Methods used to run this command:

Analog Input

### Number of points accepted by this command:

1-62

### Meaning of the DriverP0 parameter:

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

### Meaning of the DriverP1 parameter:

76

### Meaning of the DriverP2 parameter:

Indicates the memory address of the selected element.

## Preset Multiple Registers as Signed 32 Bits Integer

### Description of this command:

Places specified values into a series of consecutive holding registers, as signed 4-bytes integer values.

### Methods used to run this command:

Analog Output

### Number of points accepted by this command:

1-62

### Meaning of the DriverP0 parameter:

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

### Meaning of the DriverP1 parameter:

77

### Meaning of the DriverP2 parameter:

Indicates the memory address of the selected element.

## Preset Multiple Registers as Unsigned 32 Bits Integer

### Description of this command:

Places specified values into a series of consecutive holding registers, as unsigned 4-bytes integer values.

### Methods used to run this command:

Analog Output

### Number of points accepted by this command:

1-62

### Meaning of the DriverP0 parameter:

Station Number (0-255). If the station is 0 this implies a broadcasting message, only valid to send outputs.

### Meaning of the DriverP1 parameter:

78

### Meaning of the DriverP2 parameter:

Indicates the memory address of the selected element.

## 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
- [1408] PROTOCOL (Format): Invalid amount of data bytes received
- [1410] PROTOCOL (Format): Invalid device id in response
- [1421] PROTOCOL (Format): Negative acknowledge received from device
- [1433] PROTOCOL (Format): Validation error in device response
- [2147] CONFIG (NumValues): Only one value can be read or written
- [2185] CONFIG (NumValues): Too many values (max=125)

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[2229] CONFIG (NumValues): Too many values (max=62)  
[2274] CONFIG (NumValues): Too many values to write (max=600)  
[3014] CONFIG (P0): Invalid device address (0-255)  
[3022] CONFIG (P0): Invalid device address (1-255)  
[3508] CONFIG (P1): Invalid command  
[4001] CONFIG (P2): Invalid address  
[8013] CONFIG (Remote): Acknowledge  
[8034] CONFIG (Remote): Busy (rejected message)  
[8138] CONFIG (Remote): Failure in associated device  
[8168] CONFIG (Remote): Illegal data address  
[8170] CONFIG (Remote): Illegal data value  
[8172] CONFIG (Remote): Illegal function  
[8347] CONFIG (Remote): Unknown error

## Supported devices

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

AEG MODICON A984-120 PLC  
AEG MODICON A984-130 PLC  
AEG MODICON A984-145 PLC  
ARCOM CONTROL SYSTEMS M1 Mini RTU  
CONTROL MICROSYSTEMS TeleSafe 16EX RTU  
CONTROL MICROSYSTEMS TeleSafe Micro16 RTU  
ITT BARTON 1140 Flow Meter

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