Industrial communication solutions for Windows

XDUCATI Driver Manual

Ducati Mach-Smart Analyzer Protocol Driver

Contents

CPKSoft Engineering

Industrial communication drivers.

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XDUCATI technical specifications

General information

XDUCATI driver allows you to connect to DUCATI energia s.p.a. MACH-SMART Analyzers.
IMPORTANT NOTES:
The Protocol must be configured to 1, through the panel setup.
The most common communication parameters are:
Parity: None Data Bits: 8 Stop Bits: 1 Baudrate: Configurable through the panel setup (usually 9600).

Command list

Read Holding Registers as Unsigned 32 Bits

Description of this command:
Obtains current values of holding registers as unsigned 4-bytes long numbers. The table listed below indicates the parameters to be read and their units.
Methods used to run this command:
Analog Input
Number of points accepted by this command:
1-77
Meaning of the DriverP0 parameter:
Station Number (1-255).
Meaning of the DriverP1 parameter:
3
Meaning of the DriverP2 parameter:
Indicates the position of the starting element.
PARAMETERS TABLE:

Position	Parameter
- 0	Frequency [0.1 Hz]
- 1	Three-Phase Equivalent L-L Voltage [V]
- 2	L-L Voltage Phase AB [V]
- 3	L-L Voltage Phase BC [V]
- 4	L-L Voltage Phase CA [V]
- 5	L-N Voltage Phase A [V]
- 6	L-N Voltage Phase B [V]
- 7	L-N Voltage Phase C [V]
- 8	Three-Phase Equivalent Amperage [A]
- 9	Amperage Phase A [A]
- 10	Amperage Phase B [A]
- 11	Amperage Phase C [A]
- 12	Three-Phase Equivalent Power Factor [%]
- 13	Power Factor Phase A [%]
- 14	Power Factor Phase B [%]
- 15	Power Factor Phase C [%]
- 16	W Three-Phase Equivalent [W]
- 17	W Average Three-Phase Equivalent [W]
- 18	W Maximum Three-Phase Equivalent [W]
- 19	W Phase A [W]
- 20	W Phase B [W]
- 21	W Phase C [W]
- 22	W Average Phase A [W]
- 23	W Average Phase B [W]
- 24	W Average Phase C [W]
- 25	W Maximum Phase A [W]
- 26	W Maximum Phase B [W]

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- 27 W Maximum Phase C [W]
- 28 VA Three-Phase Equivalent [VA]
- 29 VA Average Three-Phase Equivalent [VA]
- 30 VA Maximum Three-Phase Equivalent [VA]
- 31 VA Phase A [VA]
- 32 VA Phase B [VA]
- 33 VA Phase C [VA]
- 34 VA Average Phase A [VA]
- 35 VA Average Phase B [VA]
- 36 VA Average Phase C [VA]
- 37 VA Maximum Phase A [VA]
- 38 VA Maximum Phase B [VA]
- 39 VA Maximum Phase C [VA]
- 40 VAR Three-Phase Equivalent [VAr]
- 41 VAR Average Three-Phase Equivalent [VAr]
- 42 VAR Maximum Three-Phase Equivalent [VAr]
- 43 VAR Phase A [VAr]
- 44 VAR Phase B [VAr]
- 45 VAR Phase C [VAr]
- 46 VAR Average Phase A [VAr]
- 47 VAR Average Phase B [VAr]
- 48 VAR Average Phase C [VAr]
- 49 VAR Maximum Phase A [VAr]
- 50 VAR Maximum Phase B [VAr]
- 51 VAR Maximum Phase C [VAr]
- 52 Active Energy Three-Phase Equivalent [10 Wh]
- 53 Active Energy Phase A [10 Wh]
- 54 Active Energy Phase B [10 Wh]
- 55 Active Energy Phase C [10 Wh]
- 56 Reactive Energy Three-Phase Equivalent [10 VArh]
- 57 Reactive Energy Phase A [10 VArh]
- 58 Reactive Energy Phase B [10 VArh]
- 59 Reactive Energy Phase C [10 VArh]
- 60 Not used
- 61 Not used
- 62 Not used
- 63 Not used
- 64 Not used
- 65 Not used
- 66 Not used
- 67 Not used
- 68 Not used
- 69 Not used
- 70 Not used
- 71 Not used
- 72 Not used
- 73 Not used
- 74 KV Constant
- 75 KA Constant
- 76 Averaging Period

Preset Single Register

Description of this command:
Presets parameters in the instrument's setup.
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.

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Meaning of the DriverP1 parameter:
6
Meaning of the DriverP2 parameter:
Indicates the memory address of the selected element.
PARAMETERS TABLE:
Position Parameter ----------
- 0 TV Constant, External Tansformer (Min=1, Max=400)
- 1 TA Constant, External Tansformer (Min=1, Max=600)
- 2 Averaging Period (Min=1, Max=60)

Read Exception Status

Description of this command:
Reads the instrument's current exception status. It returns a two-bits answer.
Methods used to run this command:
Digital Input
Number of points accepted by this command:
1-2
Meaning of the DriverP0 parameter:
Station Number (1-255).
Meaning of the DriverP1 parameter:
7
Values that are returned:
Value in PointValue (0) = Indicates if the instrument was hardware reset since last read.
Value in PointValue (1) = Indicates if the instrument's Setup Menu is active.

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
[1421] PROTOCOL (Format): Negative acknowledge received from device
[2147] CONFIG (NumValues): Only one value can be read or written
[2233] CONFIG (NumValues): Too many values (max=77)
[3014] CONFIG (P0): Invalid device address (0-255)
[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

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

DUCATI Series Mach-Smart Analyzer
DUCATI Mach Smart Trifase 5A
DUCATI Mach Smart Trifase 30A
DUCATI Mach Smart Dark 5A
DUCATI Mach Smart Dark 30A
DUCATI Mach Smart Monofase 5A
DUCATI Mach Smart Monofase 30A

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