

XDUCATI Driver Manual

Ducati Mach-Smart Analyzer Protocol Driver



MACH SMART



MACH SMART 96

CPKSoft Engineering

Process Monitoring and Industrial Automation Software

Copyright 1990-2008, CPKSoft Engineering. All rights reserved.

Index

1.	Introduction	3
2.	Driver details	4
2.1.	Driver overview	4
2.2.	Supported devices.....	4
3.	Command list	5
3.1.	Read Holding Registers as Unsigned 32 Bits	5
3.2.	Preset Single Register.....	7
3.3.	Read Exception Status.....	7
4.	Appendices	9
4.1.	Error messages	9
4.2.	Keywords list.....	9

1. Introduction

CPKSoft Engineering assumes no responsibility for any errors that may appear in this document. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

This driver is included with all unlimited licenses of TAS-HMITalk. It is not sold separately. It requires the TAS-HMITalk ActiveX to work, therefore it cannot be used as a stand-alone driver.

If you use this driver in your applications, you need to include the xducati.tlk in the set of files that you distribute. This file must be located in the same folder where the hmitalk.ocx file is registered in order to be found by the activex when the applications are executed.

The source-code for the xducati.tlk driver is available in plain-C language for additional USD 299 if you own a license of TAS-HMITalk 8.04 or higher.

Refer to the following link to visit the xducati driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/31/PageIndex/1/Default.aspx>.

Visit this link if you want to see a complete list of drivers that are currently available for TAS-HMITak: <http://www.cpksoft.com/Drivers/tabid/55/Default.aspx>.

Also, refer to this link if you are interested in purchasing a license of the most recent version of TAS-HMITalk: <http://www.cpksoft.com/Products/tabid/54/Default.aspx>.

We welcome your comments about this document. You can reach us by e-mail at [contact @ cpksoft.com](mailto:contact@cpksoft.com).

2. Driver details

2.1. Driver overview

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).

2.2. 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

3. Command list

3.1. 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.

Type of data handled by 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]
- 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

3.2. Preset Single Register

Description of this command:

Presets parameters in the instrument's setup.

Type of data handled by 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.

PARAMETERS TABLE:

Position	Parameter	-----
- 0	TV Constant, External Transformer	(Min=1, Max=400)
- 1	TA Constant, External Transformer	(Min=1, Max=600)
- 2	Averaging Period	(Min=1, Max=60)

3.3. Read Exception Status

Description of this command:

Reads the instrument's current exception status. It returns a two-bits answer.

Type of data handled by 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.

4. Appendices

4.1. Error messages

The following list shows all the possible error messages that can be returned by the protocol driver during a failed communication in the 'DriverStatus' property.

This list does not include some error messages that can be returned by the activex component while attempting to establish a connection.

- [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

4.2. Keywords list

The following list shows a set of words directly related to this driver.

"30A, Analyzer, Dark, DUCATI, Mach, Mach-Smart, Monofase, Series, Smart, Trifase".