

# XCORSAN Driver Manual

IG Instrumentos CORSAN RTU Protocol Driver



**Corsan RTUs**



## CPKSoft Engineering Process Monitoring and Industrial Automation Software

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# 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 xcorsan.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 xcorsan.tlk driver is available in plain-C language for additional USD 599 if you own a license of TAS-HMITalk 8.04 or higher.

Refer to the following link to visit the xcorsan driver page at CPKSoft Engineering website: <http://www.cpksoft.com/tabid/55/ProductID/22/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

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XCORSAN driver implements a modified version of the Modbus RTU protocol where after the messages are prepared, each byte is transmitted as two hexa-ascii bytes. It also includes 4 additional synchronism bytes in the header and footer sections.

**Important note:**

When connecting via modem, the following HMITalk properties

*must be set:*

- CommHoldRTSWhileTransmitting = True
- CommHoldRTSWhileReceiving = True

A minimum of 5000ms in the CommTimeout property is also recommended.

### 2.2. Supported devices

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

IG INSTRUMENTOS CORSAN RTUs

## 3. Command list

### 3.1. Download RTU Memory

**Description of this command:**

Reads RTU memory contents.

**Type of data handled by this command:**

Analog Input

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

48

**Meaning of the DriverP0 parameter:**

RTU address (1-255)

**Meaning of the DriverP1 parameter:**

0

**Meaning of the DriverP2 parameter:**

0 for direct connection. 1 for RS-485 connection. 2 for radio connection. 3 for modem connection.

**Meaning of the DriverP3 parameter:**

Number of retries for each request (usually 10) (0-100).

**Meaning of the DriverP4 parameter:**

Number of records in each request (usually 4) (1-7).

**Meaning of the DriverP5 parameter:**

Dialling timeout in seconds when using modem connection (P3=3).

**Meaning of the DriverP6 parameter:**

Dial string when using modem connection (P3=3).

**Meaning of the DriverP7 parameter:**

Hang-up string when using modem connection (P3=3).

**Meaning of the DriverP8 parameter:**

RTU modem initialization string. Use "<" to indicate <CR> characters. Use ">" to indicate <LF> characters.

**Meaning of the DriverP9 parameter:**

Local filename where memory contents are stored.

**Values that are returned:**

Value in PointValue (0) = YEAR IN RTU CLOCK  
Value in PointValue (1) = MONTH IN RTU CLOCK  
Value in PointValue (2) = DAY IN RTU CLOCK  
Value in PointValue (3) = HOUR IN RTU CLOCK  
Value in PointValue (4) = MINUTES IN RTU CLOCK  
Value in PointValue (5) = SECONDS IN RTU CLOCK  
Value in PointValue (6) = NUMRECORDS  
Value in PointValue (7) = MEMORYSTART  
Value in PointValue (8) = MEMORYEND  
Value in PointValue (9) = MEMORYPOINTER  
Value in PointValue (10) = RECORDLENGTH  
Value in PointValue (11) = ANALOG INPUT 1  
Value in PointValue (12) = ANALOG INPUT 2  
Value in PointValue (13) = ANALOG INPUT 3  
Value in PointValue (14) = ANALOG INPUT 4  
Value in PointValue (15) = ANALOG INPUT 5  
Value in PointValue (16) = ANALOG INPUT 6  
Value in PointValue (17) = ANALOG INPUT 7  
Value in PointValue (18) = ANALOG INPUT 8  
Value in PointValue (19) = FLOW 1  
Value in PointValue (20) = FLOW 2  
Value in PointValue (21) = FLOW 3  
Value in PointValue (22) = FLOW 4  
Value in PointValue (23) = FLOW 5  
Value in PointValue (24) = FLOW 6  
Value in PointValue (25) = FLOW 7  
Value in PointValue (26) = FLOW 8  
Value in PointValue (27) = ACCUM 1  
Value in PointValue (28) = ACCUM 2  
Value in PointValue (29) = ACCUM 3  
Value in PointValue (30) = ACCUM 4  
Value in PointValue (31) = ACCUM 5  
Value in PointValue (32) = ACCUM 6  
Value in PointValue (33) = ACCUM 7  
Value in PointValue (34) = ACCUM 8  
Value in PointValue (35) = DIGITAL INPUT 0  
Value in PointValue (36) = DIGITAL INPUT 1  
Value in PointValue (37) = DIGITAL INPUT 2  
Value in PointValue (38) = DIGITAL INPUT 3  
Value in PointValue (39) = DIGITAL INPUT 4  
Value in PointValue (40) = DIGITAL INPUT 5  
Value in PointValue (41) = DIGITAL INPUT 6  
Value in PointValue (42) = DIGITAL INPUT 7  
Value in PointValue (43) = DIGITAL OUTPUT 0  
Value in PointValue (44) = DIGITAL OUTPUT 1  
Value in PointValue (45) = DIGITAL OUTPUT 2  
Value in PointValue (46) = DIGITAL OUTPUT 3

Value in PointValue (47) = TOTAL DOWNLOAD TIME (SEC)

**RECORD FORMAT:**

- 1) RECORD INDEX (1-888)
- 2) YEAR (0-99)
- 3) MONTH (1-12)
- 4) DAY (1-31)
- 5) HOURS (0-23)
- 6) MINUTES (0-59)
- 7) ANA#1 (0-4095)
- 8) ANA#2 (0-4095)
- 9) ANA#3 (0-4095)
- 10) ANA#4 (0-4095)
- 11) PULSER#1 (0-FFFFFFFF)
- 12) PULSER#2 (0-FFFFFFFF)
- 13) PULSER#3 (0-FFFFFFFF)
- 14) PULSER#4 (0-FFFFFFFF)
- 15) DIGITAL INPUTS (0-255)
- 16) DIGITAL OUTPUTS (0-255)

## 3.2. Write RTU Coils

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**Description of this command:**

Updates the status of the 4 RTU coils.

**Type of data handled by this command:**

Digital Output

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

4

**Meaning of the DriverP0 parameter:**

RTU address (1-255)

**Meaning of the DriverP1 parameter:**

0

**Meaning of the DriverP2 parameter:**

0 for direct connection. 1 for RS-485 connection. 2 for radio connection. 3 for modem connection.

**Meaning of the DriverP3 parameter:**

Number of retries for each request (usually 10).

**Meaning of the DriverP4 parameter:**

Not used.

**Meaning of the DriverP5 parameter:**

Dialling timeout in seconds when using modem connection (P3=3).

**Meaning of the DriverP6 parameter:**

Dial string when using modem connection (P3=3).

**Meaning of the DriverP7 parameter:**

Hang-up string when using modem connection (P3=3).

**Values that are sent:**

Value in PointValue (0) = Status of coil #0

Value in PointValue (1) = Status of coil #1

Value in PointValue (2) = Status of coil #2

Value in PointValue (3) = Status of coil #3

## 4. Appendices

### 4.1. Error messages

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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
- [1206] DRIVER (System): Error opening file specified in P9
- [1300] PROTOCOL (Timeout): No answer
- [1307] PROTOCOL (Timeout): No answer when dialing
- [1421] PROTOCOL (Format): Negative acknowledge received from device
- [2001] CONFIG (DataType): Analog outputs are not supported by this driver
- [2002] CONFIG (DataType): Digital inputs are not supported by this driver
- [2123] CONFIG (NumValues): Invalid number of values (must be 37)
- [2125] CONFIG (NumValues): Invalid number of values (must be 4)
- [2126] CONFIG (NumValues): Invalid number of values (must be 48)
- [3022] CONFIG (P0): Invalid device address (1-255)
- [3509] CONFIG (P1): Invalid command (0 only)
- [4024] CONFIG (P2): Invalid block size (1-7)
- [4048] CONFIG (P2): Invalid connection mode (0 to 3 only)
- [4549] CONFIG (P3): Invalid number of retries (0-100)
- [5022] CONFIG (P4): Invalid number of records (1-7)
- [5504] CONFIG (P5): Invalid dialing timeout (5-180)
- [6005] CONFIG (P6): Dial string is empty
- [6503] CONFIG (P7): Hang-up string is empty
- [7004] CONFIG (P8): RTU modem string is empty
- [7005] CONFIG (P8): RTU modem string too long (max=63 chars)
- [7503] CONFIG (P9): Local filename undefined
- [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

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

"CORSAN, IG, INSTRUMENTOS, RTU, RTUs".

