Industrial communication solutions for Windows

XIONDRLR Driver Manual

ION Protocol Read Data Recorder Log Records Driver

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CPKSoft Engineering

Industrial communication drivers.

www.cpksoft.com
www.facebook.com/
cpksoftengineering
cpksoftengineering@
hotmail.com
phone: 54-911-45788354

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XIONDRLR technical specifications

General information

XIONDRLR driver allows you to read Data Recorder Log Records from Power Measurement/Schneider/Power Logic ION 7300 Series, ION 7700 Series, ION 8000 Series, 8300/8400/8500 meters, using the native ION protocol version 1.3, revision January 2000.
7300 series of ION devices can support up to 38400 baudrate. The other 7000 and all 8000 series of ION can operate up to 115200 baudrate
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.
Up to 32 meters are allowed in a single RS-485 loop over a total cable length of 120 meters (4000 feet) on a half-duplex two-wire balanced transmission method.
Make sure that the meter station address, baudrate, parity, databits and stop bits are correctly configured in the driver.
This driver can be used over TCP/IP to a meter ethernet port.

Command list

Read ION Data Recorder Log Records

Description of this command:
Extracts the available historic information from an ION device for a given number of channels from the ION meter's memory starting at a given starting register and stores the collected values in an ASCII file with a predefined format in the hard disk.

Methods used to run this command:
Analog Input

Number of points accepted by this command:
1

Meaning of the DriverP0 parameter:
Identifies the meter's device ID (0-9999)

Meaning of the DriverP1 parameter:
1

Meaning of the DriverP2 parameter:
Indicates how many meter channels must be read from the meter (1-16). If left to 0, a value of 1 will be assumed.

Meaning of the DriverP3 parameter:
Indicates if the date specification must be detailed for each sample (0=NO, 1=YES). If 1 is selected, the file will contain 'full date information'.

Meaning of the DriverP4 parameter:
Indicates how many times the communication must be retried before abandoning it. A communication is retried when any of these two errors appear:
- A checksum error is detected in the incoming message.
- The timeout period elapsed without receiving a reply.

Meaning of the DriverP5 parameter:
Indicates the Data Recorder to be read (1-40).

Meaning of the DriverP6 parameter:
Not used.

Meaning of the DriverP7 parameter:
Indicates the full filename where the meter configuration file is located, i.e. "C:\\METERS\\MET0001.DAT". This directory entry will be also used by default to store the .PRN log files only if the HMITalk1.DriverP8 property is left empty.

Meaning of the DriverP8 parameter:
Indicates a valid file name with full path specification for the output .PRN log file (containig Data Records historic data). If this property is left empty, the driver will search for a valid filename with a

full path specification inside the .DAT configuration file. If that entry is ommited, the log file will be created with the same file name and directory entry of the .DAT file but with a .PRN extension. See a description of the .DAT file at the end of this help.

Values that are returned:
Value in PointValue (0) = Ignored.

Configuration .DAT file format description

This file is read by the driver and is used to supply the following information as topics under the [HistoricInfo] section name (see the example at the end
of this explanation):
LogFile:
*Name of the historic file (also called 'log file'), where the sequence of values for the meter channels will be stored. This field can be any valid filename with a full path specification if required. If this field is ommited or if an asterisk * is used as the filename, the driver will search for a valid filename with a full path specification in the "HMITalk1.DriverP8" property. If this property is not properly set then a log file will be created with the same file name and directory entry of the .DAT file but with a .PRN extension.*
Header:
Header to be used when creating the log file. Can be any ASCII string of up to 246 characters. If omitted, the default header "Time" will be used. Multiline headers are allowed by spliting each line with a sequence of ' || ' characters. Besides, if you are having trouble with ' " ' characters, you can use ' { ' or ' } ' instead which will be automatically replaced with ' " '.
User:
User that connects to the meter (1-16)
TimeCorrection:
Hours to be added or substracted to the time saved in the historic file.
Synchronize:
Indicates if the meter date must be synchronized with the PC time when the memory collection takes place.
Password:
Indicates the password to be used as a four-digits hexadecimal value. If omited, the password default used is 0000.
Decimals1...16 These values indicate how many decimals should be used when writing each meter channel to the log-file. Can range from 0 to 4 decimals. If omitted, 3 decimals are assumed.
Factor1...16 These values are read from the meter memory and indicate the factors to divide the meter channel values with before they are sent to the log-file. Can range from 0 to 32767.
LastSecondsCounter:
Value automatically mantained where the driver stores a number of seconds that is related to the date of the last record collected.
LastLogPosition:
Value automatically mantained where the driver stores the last memory position read from the meter.
The format used to give this information is similar to the
one used in a tipical Windows .INI file:
Example:
[[HistoricInfo] User=1 Synchronize=1 TimeCorrection=0 LogFile=C:\\METERS\\MET0001.PRN

Data Records file format description

The format of the historic ASCII file generated is as follows:
Header "Date+Time",Channel1,...,ChannelN "Time",Channel1,...,ChannelN
"Time",Channel1,...,ChannelN "Time",Channel1,...,ChannelN "Time",Channel1,...,ChannelN
"Time",Channel1,...,ChannelN "Time",Channel1,...,ChannelN "Time",Channel1,...,ChannelN etc.
Values that are sent:
Header = is an optional line that is defined in the DAT file "Date+Time" = date and time information as "MM/DD/YY HH:MM" "Time" = time information as "HH:MM"
If DriverP3 is set to 0, "Date+Time" is only used when storing the first and last samples of the day, or when a new memory collection starts.
Example1:
"Time","TRNGR51P","TRNGR51S" "19/05/95 00:15",287,224 "00:30",289,229 "00:45",293,227 "01:00",296,225 "01:15",295,232 "01:30",268,229 "01:45",264,230 etc.
Example2:

" 1/09/04 14:30",0.000,0.000,619077.625,214.333 " 1/09/04 14:45",2.877,1.201,619113.188,119.983 " 1/09/04 15:00",2.878,1.201,619159.938,120.000 etc.
Remarks:
Those intervals that do not exist in the meter's memory are automatically filled with 0 values. The number of decimals for each channel value is defined in the DAT file.

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
[1101] DRIVER (Port): Error manipulating baud-rate for opto port communication
[1102] DRIVER (Port): Error reading current baud-rate from port
[1300] PROTOCOL (Timeout): No answer
[1433] PROTOCOL (Format): Validation error in device response
[1434] PROTOCOL (Format): Error in status byte
[2001] CONFIG (DataType): Analog outputs are not supported by this driver
[2002] CONFIG (DataType): Digital inputs are not supported by this driver
[2003] CONFIG (DataType): Digital outputs are not supported by this driver
[3031] CONFIG (P0): Invalid device address (1-9999)
[3508] CONFIG (P1): Invalid command
[8131] CONFIG (Remote): Error restoring setting original baud-rate for Opto port
DataRec invalido
Error de timeout
Excepcion ION: Error interno
Excepcion ION: Invalido
Excepcion ION: Metodo invalido
Excepcion ION: No disponible
Excepcion ION: No existe
Excepcion ION: No soportado
Excepcion ION: Overflow
Excepcion ION: Perdida de precision
Excepcion ION: Posible clave invalida
Excepcion ION: Underflow
Fecha o DataRec invalidos
Formato o DataRec invalidos
Internal error:Invalid stage
Posicion o DataRec invalidos (a)
Posicion o DataRec invalidos (b)

Supported devices

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

POWER MEASUREMENT Ltd ION 7300 Series Meters
POWER MEASUREMENT Ltd ION 7700 Series Meters
POWER MEASUREMENT Ltd ION 8000 Series Meters
POWER MEASUREMENT Ltd ION 8300 Meters
POWER MEASUREMENT Ltd ION 8400 Meters
POWER MEASUREMENT Ltd ION 8500 Meters
POWER LOGIC ION 7300 Series Meters
POWER LOGIC ION 7700 Series Meters
POWER LOGIC ION 8000 Series Meters
POWER LOGIC ION 8300 Meters
POWER LOGIC ION 8400 Meters
POWER LOGIC ION 8500 Meters
SCHNEIDER ION 7300 Series Meters
SCHNEIDER ION 7700 Series Meters
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