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XREU523 Driver Manual

ABB REU-523 SPABus Communication Protocol Driver

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XREU523 technical specifications

General information

The XREU523 driver implements the SPA-bus communication protocol V2.5 that was originally designed as a fieldbus in a distributed protection, control and event reporting system, with modifications to support events, last faults and disturbance records for REU 523.

The SPA bus uses an asynchronous serial communications protocol (1 start bit, 7 data bits, even parity, 1 stop bit) with data transfer rate of 9600 b/s. (In some cases a rate of 300, 1200, 2400 or 4800 bit/s can also be used).

Messages on the bus consist of ASCII characters.

The bus can support one master and several slaves.

The basic construction of the protocol assumes that the slave has no self-initiated need to talk to the master but the master is aware of the data contained in the slaves and, consequently, can request required data. In addition, the master can send data to the slave. Requesting by the master can be performed either by sequenced polling (e.g. for event information) or only on demand. The master requests slave information using request messages and sends information to the slave in write messages. Furthermore, the master can send all slaves in common a broadcast message containing time or other data.

This driver supports RS485 networking to connect multiple slave devices to a single computer.

This driver supports direct communication to a serial port.

Also supports tcp/ip communication through an ethernet-to-serial converter such as Moxa or Exemys, without needing to install a COM port redirector or creating a virtual COM port.

Command list

Generic Read Command

Description of this command:

Reads information from the slave.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-250

Meaning of the DriverP0 parameter:

Unit Address (1-999, except 900).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

Indicates if the checksum must be omitted in telegrams (0=no, 1=yes).

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:
0 = Use English format (MM/DD/YYYY)
1 = Use Spanish format (DD/MM/YYYY)

Meaning of the DriverP4 parameter:

Not used.

Meaning of the DriverP5 parameter:

Number of retries reading each item, before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

Comma-separated list of SPAid items to be read, using the format

"fpp:e/eXm/m,fpp:e/eXm/m,fpp:e/eXm/m,..." where:

- f = item data format to be applied to all values returned by the item, where:
- d=date
- t=time
- s=string/text

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- f=floating point number
- u=unsigned integer
- i=integer
- b=bit value as 0 or 1
- a=bit value as active or inactive (example: a1)
- A=bit value as Active or Inactive (example: A1)
- l=bit value as high or low (example: l1)
- L=bit value as High or Low (example: L1)
- o=bit value as on or off (example: o1)
- O=bit value as On or Off (example: O1)
- y=bit value as yes or no (example: y1)
- Y=bit value as Yes or No (example: Y1)
- k=bit value as fail or ok (example: k1)
- K=bit value as FAIL or OK (example: K1)
- R=integer value 0=No direction,1=Forward,2=Reverse (example: R1)
- pp = number of points affected to this item (if the item returns more values than points, extra values are discarded. If it returns less values, points are filled with -1 and empty texts).
- e[/e] = first[/last] channel (optional). Range is 1-999 for each channel number. Use 0 for information common to all channels.
- X = Data category, where:
 - I=Input data
 - O=Output data
 - S=Setting values
 - V=Variables (internal)
 - M=Memory data
 - C=Slave status (conditions)
 - F=Slave identification
 - T=Time
 - D=Date and time
 - L=Last events
 - A=Alarms valid
- m[/m] = first[/last] data number (optional). Range is 1-999 for each data number.
- Example = s01:F,f01:0V205,s01:3V20

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Important note:

Consider that each item may return several values, so DriverNumPoints should be big enough to receive all values.

Values that are returned:

Value in PointValue (0) = First numeric data returned by first item

Text in PointText (0) = First text data returned by first item

...

Value in PointValue (DriverNumPoints-1) = Last numeric data returned by last item

Text in PointText (DriverNumPoints-1) = Last text data returned by last item

Read Events

Description of this command:

Requests the slave to send events 1 to 5. This command automatically forces a minimum timeout of 10000 ms.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Unit Address (1-999, except 900).

Meaning of the DriverP1 parameter:

7

Meaning of the DriverP2 parameter:

Not used

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Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP4 parameter:

Last internal event index to be downloaded (1-5). Use 0 for all events.

Meaning of the DriverP5 parameter:

Number of retries reading each event, before discarding the whole communication.

Meaning of the DriverP6 parameter:

Indicates the path where the event file will be generated. If this property is empty, the local driver folder is used by default.

Meaning of the DriverP7 parameter:

Delete event file if it exists (0=No, 1=Yes).

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XREU523_Events.Relayxxx.txt' will be used, where xxx is the protection unit address given in DriverP0.

Values that are returned:

Value in PointValue (0) = Indicates how many events have been extracted.

Text in PointText (0) = Description of last event extracted (n/a if no events extracted).

Download Disturbance Record

Description of this command:

Requests the slave to send the complete disturbance record information (.cfg and .dat ASCII files). Format of output files is COMTRADE ASCII. Both .cfg and .dat are generated according to IEEE Standard Common Format for Transient Data Exchange (COMTRADE) for Power Systems (1991 format). Additional .hdr and .inf files are generated, and can include user-supplied information through the DriverP8 parameter. This command automatically forces a minimum timeout of 10000 ms.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-8

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

2

Meaning of the DriverP2 parameter:

Indicates if the disturbance record must be deleted from the relay memory:

0 = Keep disturbance record in memory after reading (can be read multiple times until a new record appears)

1 = Delete disturbance record after reading (successive readings will fail until a new record appears)

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP4 parameter:

Extra displacement of the start time in milliseconds. Use 1 to match CAP505 displacement. Use 0 to obtain the real start time.

Meaning of the DriverP5 parameter:

Number of data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Indicates the path where the COMTRADE files will be generated. If this property is empty, the local driver folder is used by default.

Meaning of the DriverP7 parameter:

Indicates a TriggerTime that should not be downloaded if it happens to be the last TriggerTime available in the protection. If empty, the last TriggerTime available is downloaded. Format must be 'YYYY-MM-DD hh:mm:ss.uuuuuu000', where uuuuuu=microseconds.

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Meaning of the DriverP8 parameter:

Comma-separated list with additional information about the protection to be used in the .hdr and .inf files. Format: FieldName1=value1,FieldName2=value2,etc. Example: ID=123456,SerialNumber=A55GH77,Port=Ethernet

Meaning of the DriverP9 parameter:

Filename root for .hdr, .cfg, .dat and .inf files. If empty, 'XREU523_DisturbanceRecord.Relayxxx.hdr', 'XREU523_DisturbanceRecord.Relayxxx.cfg', 'XREU523_DisturbanceRecord.Relayxxx.dat' and 'XREU523_DisturbanceRecord.Relayxxx.inf' will be used, where xxx is the protection unit address. Existing files with same name are overwritten.

Values that are returned:

Value in PointValue (0) = Number of channels downloaded
Value in PointValue (1) = Record number
Value in PointValue (2) = Frequency
Value in PointValue (3) = First sample (always 0)
Value in PointValue (4) = Trigger point
Value in PointValue (5) = Number of samples
Value in PointValue (6) = Number of analog channels
Value in PointValue (7) = Number of digital channels
Text in PointText (0) = Download status
Text in PointText (1) = Record number (text version, can be 'n/a' when report is not available))
Text in PointText (2) = Device Identification
Text in PointText (3) = First sample time
Text in PointText (4) = Trigger time
Text in PointText (5) = Last sample time
Text in PointText (6) = Comma-separated list of analog channel names
Text in PointText (7) = Comma-separated list of first 10 digital channel names

Synchronize

Description of this command:

Sets a new time in the slave using the PC clock date and time.

If the minute-pulse synchronization or the second-pulse synchronization is activated, the relay's real-time clock will be rounded to the nearest whole second or minute, depending on whether second- or minute-pulse synchronization is used. In this case, only year-month-day-hour-minute or year-month-day-hour-minute-second will be written.

Following are the tested v1.x settings to allow full synchronization through SPABUS, that are set through the Configuration+Time HMI menu and/or CAP540:

- TimeSyncSource=None

Following are the tested v2.0 settings to allow full synchronization through SPABUS, that are set through the Configuration+Time HMI menu and/or CAP540:

- TIME-MINSYNC=NoneSignals NONE-SIGNAL

- TimeSyncSource=SPA

- Time Format =yy-mm-dd hh.mm.ss.mmm

This command follows this procedure:

- Reads the current date and time from the slave.
- Compares the received slave date and time (plus the estimated reading delay indicated in DriverP6) against the current PC clock date and time.
- Based on the allowed time difference given in the P2 parameter, the driver determines if a synchronization is necessary.
- If a synchronization is required, the driver sends the current PC clock date and time (plus the estimated transmission delay indicated in DriverP7) to the slave.
- After synchronization, reads back the new date and time from the slave.
- Compares the received slave date and time (plus the estimated reading delay indicated in DriverP6) against the current PC clock date and time.
- Based on the allowed time difference given in the P2 parameter, the driver determines if the synchronization was successful or not.
- Returns status or error information about the synchronization result.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-9

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Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

Synchronization mode, that sets the type of driver reaction when a synchronization resulted in the slave clock to be out of the allowed difference:

10 = If not successful, the driver call is considered successful and the unsuccessful situation is reported in PointValue(0) and PointText(0).

11 = If not successful, the driver call is considered as failed and a driver error is returned.

12 = If not successful, a broadcast synchronization command is sent to all slaves (using slave address 900) and after that synchronization is automatically retried, reporting the final situation in PointValue(0) and PointText(0).

Meaning of the DriverP2 parameter:

Allowed difference, in milliseconds.

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP4 parameter:

Not used.

Meaning of the DriverP5 parameter:

Number of retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Estimated communication delay when reading date and time from the slave, in milliseconds. This delay has to do with the communication link and compensates the elapsed time between the moment the slave transmits the telegram with its date and time and the moment the telegram is received and processed by the driver.

Meaning of the DriverP7 parameter:

Estimated communication delay when transmitting date and time to the slave, in milliseconds. This delay has to do with the communication link and compensates the elapsed time between the moment the driver transmits the telegram with the PC clock date and time to the relay and the moment the telegram is received and processed by the slave.

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Value in PointValue (0) = 0 if synchronization not needed, 1 if synchronized OK, 2 if error synchronizing.

Value in PointValue (1) = Returns how many retries were done with the broadcast command sent to all slaves (if it was necessary).

Value in PointValue (3) = Time difference before synchronization in milliseconds.

Value in PointValue (8) = Time difference after synchronization in milliseconds (also returns previous difference if synchronization was not needed).

Text in PointText (0) = Returned status or error message.

Text in PointText (1) = PC clock date and time obtained when starting communication.

Text in PointText (2) = Slave date and time received when starting communication.

Text in PointText (3) = Slave date and time received when starting communication, corrected with reading delay.

Text in PointText (4) = PC clock date and time obtained before synchronization (empty if synchronization was not needed).

Text in PointText (5) = Actual PC clock date and time used for synchronization, corrected with transmitting delay (empty if synchronization was not needed).

Text in PointText (6) = PC clock date and time obtained after synchronization (empty if synchronization was not needed).

Text in PointText (7) = Slave date and time received after synchronization (previous date and time if synchronization was not needed).

Text in PointText (8) = Slave date and time received after synchronization, corrected with reading delay (previous date and time if synchronization was not needed).

[Read Status / Outputs Actual State](#)

Description of this command:

Requests the driver to Read Status / Outputs Actual State.

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Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-9

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000O041,s01:000O001,s01:000O002,s01:000O003,s01:000O004,s01:000O005,s01:000O006,s01:000O007,s01:000O008

Values that are returned:

Text in PointText (0) = Ena. outp. rel.

Text in PointText (1) = U> Start

Text in PointText (2) = t> Trip

Text in PointText (3) = U>> Start

Text in PointText (4) = t>> Trip

Text in PointText (5) = U< Start

Text in PointText (6) = t< Trip

Text in PointText (7) = U<< Start

Text in PointText (8) = t<< Trip

Read Status / Disturb. rec / Control param.

Description of this command:

Requests the driver to Read Status / Disturb. rec / Control param..

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-7

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V241,s01:000V242,s01:000V243,s01:000V244,s01:000V240,s01:000M015,s01:000V246

Values that are returned:

Text in PointText (0) = Int. trig. sign.

Text in PointText (1) = Int. trig. edge.

Text in PointText (2) = Ext. trig. sign.

Text in PointText (3) = Ext. trig. edge.

Text in PointText (4) = Post trigger rec (%)

Text in PointText (5) = Sampling rate (Hz)

Text in PointText (6) = Trig. state ctrl

Read I/O

Description of this command:

Requests the driver to Read I/O.

Methods used to run this command:

Analog Input (ReadNumericValues)

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Number of points accepted by this command:

1-6

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000O009,s01:000O010,s01:000O011,s01:000O012,s01:000O041,s01:000I004

Values that are returned:

Text in PointText (0) = Output PO1

Text in PointText (1) = Output PO2

Text in PointText (2) = Output SO1

Text in PointText (3) = Output SO2

Text in PointText (4) = Ena. outp. rel.

Text in PointText (5) = Binary input

Read Serial Number

Description of this command:

Requests the driver to Read Serial Number.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V230

Values that are returned:

Text in PointText (0) = Serial No

Read Identification Data

Description of this command:

Requests the driver to Read Identification Data.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

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Meaning of the DriverP7 parameter:

s01:000V231,s01:000V232,s01:000V233,s01:000V234,s01:000F,s01:000V235,s01:000V236,s01:000M018,s01:000M020,s01:000M080

Values that are returned:

Text in PointText (0) = CPU serial No
Text in PointText (1) = Hardware No
Text in PointText (2) = Final test date
Text in PointText (3) = Software No
Text in PointText (4) = Type designation
Text in PointText (5) = Software rev.
Text in PointText (6) = Sw build number
Text in PointText (7) = Station ID
Text in PointText (8) = Station Name
Text in PointText (9) = Rated prim. volt (Kv)

Read Date/Time

Description of this command:

Requests the driver to Read Date/Time.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-2

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V250,s01:000V251

Values that are returned:

Text in PointText (0) = Date (yy-mm-dd)

Text in PointText (1) = Time (hh-mm-ss.fff)

Read Measurements Group 1

Description of this command:

Requests the driver to Read Measurements Group 1.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-4

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000I001,s01:000I002,s01:000I003,s01:000I005

Values that are returned:

Text in PointText (0) = U12 (*Un)

Text in PointText (1) = U23 (*Un)

Text in PointText (2) = U31 (*Un)

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Text in PointText (3) = U1s (*Un)

Read Fault Values 1

Description of this command:

Requests the driver to Read Fault Values 1.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V011,s01:000V012,s01:000V013,s01:000V014,s01:000V015,s01:000V016,s01:000V017,
s01:000V018,s01:000V019,s01:000V020

Values that are returned:

Text in PointText (0) = Fault 1 Max volt U> U>> (*Un)

Text in PointText (1) = Fault 1 Min volt U< U<< (*Un)

Text in PointText (2) = Fault 1 Voltage at trip (*Un)

Text in PointText (3) = Fault 1 Lowest U1s value (*Un)

Text in PointText (4) = Fault 1 Duration U> (%)

Text in PointText (5) = Fault 1 Duration U>> (%)

Text in PointText (6) = Fault 1 Duration U< (%)

Text in PointText (7) = Fault 1 Duration U<< (%)

Text in PointText (8) = Fault 1 Date (yy-mm-dd)

Text in PointText (9) = Fault 1 Time (hh.mm.ss.mss)

Read Fault Values 2

Description of this command:

Requests the driver to Read Fault Values 2.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V031,s01:000V032,s01:000V033,s01:000V034,s01:000V035,s01:000V036,s01:000V037,
s01:000V038,s01:000V039,s01:000V040

Values that are returned:

Text in PointText (0) = Fault 2 Max volt U> U>> (*Un)

Text in PointText (1) = Fault 2 Min volt U< U<< (*Un)

Text in PointText (2) = Fault 2 Voltage at trip (*Un)

Text in PointText (3) = Fault 2 Lowest U1s value (*Un)

Text in PointText (4) = Fault 2 Duration U> (%)

Text in PointText (5) = Fault 2 Duration U>> (%)

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Text in PointText (6) = Fault 2 Duration U< (%)
Text in PointText (7) = Fault 2 Duration U<< (%)
Text in PointText (8) = Fault 2 Date (yy-mm-dd)
Text in PointText (9) = Fault 2 Time (hh.mm.ss.mss)

Read Fault Values 3

Description of this command:

Requests the driver to Read Fault Values 3.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V051,s01:000V052,s01:000V053,s01:000V054,s01:000V055,s01:000V056,s01:000V057,
s01:000V058,s01:000V059,s01:000V060

Values that are returned:

Text in PointText (0) = Fault 3 Max volt U> U>> (*Un)

Text in PointText (1) = Fault 3 Min volt U< U<< (*Un)

Text in PointText (2) = Fault 3 Voltage at trip (*Un)

Text in PointText (3) = Fault 3 Lowest U1s value (*Un)

Text in PointText (4) = Fault 3 Duration U> (%)

Text in PointText (5) = Fault 3 Duration U>> (%)

Text in PointText (6) = Fault 3 Duration U< (%)

Text in PointText (7) = Fault 3 Duration U<< (%)

Text in PointText (8) = Fault 3 Date (yy-mm-dd)

Text in PointText (9) = Fault 3 Time (hh.mm.ss.mss)

Read Fault Values 4

Description of this command:

Requests the driver to Read Fault Values 4.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V071,s01:000V072,s01:000V073,s01:000V074,s01:000V075,s01:000V076,s01:000V077,
s01:000V078,s01:000V079,s01:000V080

Values that are returned:

Text in PointText (0) = Fault 4 Max volt U> U>> (*Un)

Text in PointText (1) = Fault 4 Min volt U< U<< (*Un)

Text in PointText (2) = Fault 4 Voltage at trip (*Un)

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Text in PointText (3) = Fault 4 Lowest U1s value (*Un)
Text in PointText (4) = Fault 4 Duration U> (%)
Text in PointText (5) = Fault 4 Duration U>> (%)
Text in PointText (6) = Fault 4 Duration U< (%)
Text in PointText (7) = Fault 4 Duration U<< (%)
Text in PointText (8) = Fault 4 Date (yy-mm-dd)
Text in PointText (9) = Fault 4 Time (hh.mm.ss.mss)

Read Fault Values 5

Description of this command:

Requests the driver to Read Fault Values 5.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V091,s01:000V092,s01:000V093,s01:000V094,s01:000V095,s01:000V096,s01:000V097,
s01:000V098,s01:000V099,s01:000V100

Values that are returned:

Text in PointText (0) = Fault 5 Max volt U> U>> (*Un)

Text in PointText (1) = Fault 5 Min volt U< U<< (*Un)

Text in PointText (2) = Fault 5 Voltage at trip (*Un)

Text in PointText (3) = Fault 5 Lowest U1s value (*Un)

Text in PointText (4) = Fault 5 Duration U> (%)

Text in PointText (5) = Fault 5 Duration U>> (%)

Text in PointText (6) = Fault 5 Duration U< (%)

Text in PointText (7) = Fault 5 Duration U<< (%)

Text in PointText (8) = Fault 5 Date (yy-mm-dd)

Text in PointText (9) = Fault 5 Time (hh.mm.ss.mss)

Read Recorded Values

Description of this command:

Requests the driver to Read Recorded Values.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-10

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

0 = Use English format (MM/DD/YYYY hh:mm:ss.000)

1 = Use Spanish format (DD/MM/YYYY hh:mm:ss.000)

Meaning of the DriverP5 parameter:

1

Meaning of the DriverP7 parameter:

s01:000V001,s01:000V002,s01:000V003,s01:000V004,s01:000V005,s01:000V006,s01:000V007,
s01:000V008,s01:000V009,s01:000V010

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Values that are returned:

Text in PointText (0) = Max U after rst (*Un)
Text in PointText (1) = Min U after rst (*Un)
Text in PointText (2) = 1 min. average (*Un)
Text in PointText (3) = 10 min. average (*Un)
Text in PointText (4) = Starts of U>
Text in PointText (5) = Starts of U>>
Text in PointText (6) = Starts of U<
Text in PointText (7) = Starts of U<<
Text in PointText (8) = Operation ind.
Text in PointText (9) = Operation stage

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
[1007] DRIVER (Internal): Code logic error
[1008] DRIVER (Internal): Command execution requires a valid license
[1010] DRIVER (Internal): Error calculating elapsed milliseconds
[1201] DRIVER (System): Error closing %s
[1202] DRIVER (System): Error creating %s
[1208] DRIVER (System): Error seeking end of %s
[1210] DRIVER (System): Error writing to %s
[1214] DRIVER (System): Error deleting %s
[1300] PROTOCOL (Timeout): No answer
[1313] PROTOCOL (Timeout): No answer from meter after retrying with a Start Communications message
[1318] PROTOCOL (Remote): Unexpected response from remote device
[1319] REPLY (Remote): Too many NAK BUSY or unexpected telegrams received
[1331] REPLY (Remote): Disturbance index out of range 0-200
[1332] PROTOCOL (Remote): Invalid date received
[1333] PROTOCOL (Remote): Couldn't decode received date
[1334] PROTOCOL (Remote): Invalid time received
[1338] PROTOCOL (Remote): Couldn't decode reference date
[1344] REPLY (Remote): Unexpected null data received
[1350] PROTOCOL (Remote): Reply from different unit address
[1433] PROTOCOL (Format): Validation error in device response
[2001] CONFIG (DataType): Analog outputs are not supported by this driver
[2002] CONFIG (DataType): Digital inputs are not supported by this driver
[2311] CONFIG (List): Invalid format of item list
[2311] CONFIG (List): Invalid item format in item list
[2313] CONFIG (List): Invalid number of points in item list (1-99)
[3508] CONFIG (P1): Invalid command
[5052] CONFIG (P4): Invalid event number (1-5)

Supported devices

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

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ABB REU 523 B

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