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XSEMP63X Driver Manual

SCHNEIDER ELECTRIC MiCOM P63x Relays 870-5-ILS Protocol Driver

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XSEMP63X technical specifications

General information

The XSEMP63X driver was developed to communicate with Schneider Electric P63x Transformer Differential Protection Devices that use the IEC 870-5-ILS protocol.

The ILSA interface conforms to the international IEC 60870-5-103 standard.

This driver uses the unbalanced transmission procedure, as it is normally used in SCADA systems in which a master station controls the data traffic by polling outstations sequentially.

The master station is the primary station that initiates all message transfers while secondary stations (slaves) may transmit only when they are polled.

IEC 60870-5-103 protocol standard admits exclusive frame format FT 1.2 defined in IEC 60870-5-1 (Transmission frame formats). Formats with fixed and variable block length are admitted. Also the single control characters E5H are used. The transmission of data bytes takes place after the principle "LSB first". This is an asynchronous protocol with hamming distance = 4. The sequence of user data characters is terminated by a 8 bits checksum. The checksum is the arithmetic sum over all user data octets.

Frame with variable length is used for data transmission of user data between controlling and controlled station.

Link address field is fixed with 1-byte length.

Originator address field is not included in telegrams.

Common address of ASDU is fixed with 1-byte length.

Information object address field is fixed with 2-byte length.

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 IEC 870-5-ILS Commands

Get Disturbance Record

Description of this command:

Requests the protection to send the disturbance record that correspond to a selected record number. Requires a valid driver license. 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 (2001 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 3000 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:

Record index to be downloaded (0-7) where 0=newest and 7=oldest.

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:

Function type:

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128 = Distance protection (typical setting, use with PD-522)
160 = Overcurrent protection
176 = Transformer differential protection (use with PQ-721)
192 = Line differential protection
254 = Generic classification GEN
255 = Global classification GLB

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.uuuuu000', where uuuuu=microseconds.

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, 'XSEMP63X_DisturbanceRecord.Relayxxx.hdr', 'XSEMP63X_DisturbanceRecord.Relayxxx.cfg', 'XSEMP63X_DisturbanceRecord.Relayxxx.dat' and 'XSEMP63X_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

Get Disturbance Record List

Description of this command:

Returns a list of disturbance records available, ordered by date and time, newest first. Record number is returned in PointValue and fault time in PointText. If the number of records found is less than the number of points reserved, remaining pointvalues are set to -1 and pointtexts are set to 'n/a'.

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:

1

Meaning of the DriverP2 parameter:

Not used.

Meaning of the DriverP3 parameter:

Indicates the format for returned dates:

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

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

Meaning of the DriverP4 parameter:

Function type:

128 = Distance protection (typical setting, use with PD-522)

160 = Overcurrent protection

176 = Transformer differential protection (use with PQ-721)

192 = Line differential protection

254 = Generic classification GEN

255 = Global classification GLB

Meaning of the DriverP5 parameter:

Number of data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

Not used.

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Value in PointValue (0) = Newest disturbance record number

Text in PointText (0) = Date and time of newest disturbance record

- ...

Text in PointText (DriverNumPoints-1) = Oldest disturbance record number

Value in PointValue (DriverNumPoints-1) = Date and time of oldest disturbance record

Read All Events

Description of this command:

Requests the protection to send the signal events that correspond to a selected record number, followed by the monitoring signal, operating data and overload recording events.

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:

7

Meaning of the DriverP2 parameter:

Record index to be downloaded (0-7) where 0=newest and 7=oldest.

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:

Function type:

128 = Distance protection (typical setting, use with PD-522)

160 = Overcurrent protection

176 = Transformer differential protection (use with PQ-721)

192 = Line differential protection

254 = Generic classification GEN

255 = Global classification GLB

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

Meaning of the DriverP7 parameter:

Number of previous records to be also downloaded to the same file (0-7). If 0 or empty, only record index indicated in DriverP2 is downloaded. If not 0, the oldest record is read first.

Meaning of the DriverP8 parameter:

Not used.

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Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XSEMP63X_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).

Read Monitoring Signal Recording Events

Description of this command:

Requests the protection to send the monitoring signal recording events.

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:

5

Meaning of the DriverP2 parameter:

Type Identification (0-255). Use 8Ch for P633.

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 data request retries 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:

Not used.

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XSEMP63X_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).

Read Multiple Information Objects

Description of this command:

Reads a number of information objects based on a list of individual address and formats. The addresses need not to be consecutive.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-100

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

Type Identification (0-255). Use 8Ch for P633.

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)

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Meaning of the DriverP4 parameter:

Not used.

Meaning of the DriverP5 parameter:

Number of retries with next information object, before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

Comma-separated list of information object addresses using the format

xxxxyy[:format],xxxxyy[:format],...,xxxxyy[:format] where:

- xxx = Address 1 of information object, as a decimal number (000-255)

- yyy = Address 2 of information object, as a decimal number (000-255)

- format = optional format for data received, where:

- d=return as date value

- t=return as time value

- s=return as text

- B=return as byte value (0 to 255)

- B1=return as scaled byte value (0.0 to 25.5)

- B2=return as scaled byte value (0.00 to 2.55)

- B3=return as scaled byte value (0.000 to 0.255)

- c=return as char value (-128 to 127)

- c1=return as scaled char value (-12.8 to 12.7)

- c2=return as scaled char value (-1.28 to 1.27)

- c3=return as scaled char value (-0.128 to 0.127)

- i=return as integer (-32768 to 32767)

- i1=return as scaled integer/10 (-3276.8 to 3276.7)

- i2=return as scaled integer/100 (-327.68 to 327.67)

- i3=return as scaled integer/1000 (-32.768 to 32.767)

- u=return as unsigned integer (0 to 65535)

- u1=return as scaled unsigned integer/10 (0.0 to 6553.5)

- u2=return as scaled unsigned integer/100 (0.00 to 655.35)

- u3=return as scaled unsigned integer/1000 (0.000 to 65.535)

- @=return as a string from a built-in string list based on the obtained unsigned integer register value

- b[bit]=return bit value as '0' or '1', where [bit] is optional and indicates a specific bit number, other than 1 (see note below).

- a[bit]=return bit value as 'active' or 'inactive'

- A[bit]=return bit value as 'Active' or 'Inactive'

- l[bit]=return bit value as 'high' or 'low'

- L[bit]=return bit value as 'High' or 'Low'

- o[bit]=return bit value as 'on' or 'off'

- O[bit]=return bit value as 'On' or 'Off'

- y[bit]=return bit value as 'yes' or 'no'

- Y[bit]=return bit value as 'Yes' or 'No'

- [bit] = If not given, bit 1 is assumed as the bit containing the flag status and bit 2 is assumed to indicate a 'Without function' condition. If a number between 0 and 7 is given, that will be the only bit considered to establish the flag status.

- Example = 003090:d,003091:t (this list returns date and time from P633)

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Value in PointValue (0) = First information object as number

Text in PointText (0) = First information object as text

Value in PointValue (1) = Second information object as number

Text in PointText (1) = Second information object as text

...

Value in PointValue (DriverNumPoints-1) = Last information object as number

Text in PointText (DriverNumPoints-1) = Last information object as text

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Read Operating Data Recording Events

Description of this command:

Requests the protection to send the operating data recording events.

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:

6

Meaning of the DriverP2 parameter:

Type Identification (0-255). Use 8Ch for P633.

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 data request retries 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:

Not used.

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XSEMP63X_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).

Read Overload Recording Events

Description of this command:

Requests the protection to send the overload recording events.

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:

11

Meaning of the DriverP2 parameter:

Type Identification (0-255). Use 8Ch for P633.

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 data request retries 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:

Not used.

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Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XSEMP63X_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).

Read Signal Events

Description of this command:

Requests the protection to send the signal events that correspond to a selected record 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:

3

Meaning of the DriverP2 parameter:

Record index to be downloaded (0-7) where 0=newest and 7=oldest.

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:

Function type:

128 = Distance protection (typical setting, use with PD-522)

160 = Overcurrent protection

176 = Transformer differential protection (use with PQ-721)

192 = Line differential protection

254 = Generic classification GEN

255 = Global classification GLB

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

Meaning of the DriverP7 parameter:

Number of previous records to be also downloaded to the same file (0-7). If 0 or empty, only record index indicated in DriverP2 is downloaded. If not 0, the oldest record is read first.

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Filename for event file. If empty, 'XSEMP63X_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 for all records.

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

Reset Remote Link

Description of this command:

Sends a Reset Remote Link command to the protection. This command can be sent to IEC870-5-103 based slave devices before they respond, although it is already sent automatically by most commands.

Methods used to run this command:

Digital Output (WriteBooleanValues)

Number of points accepted by this command:

1

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Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

1

Values that are sent:

Value in PointValue (0) = Ignored

Send Short Message

Description of this command:

Sends a custom short message command to the protection.

Methods used to run this command:

Digital Output (WriteBooleanValues)

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 DriverP2 parameter:

Frame type to be sent (0 to 15), where:

- Bit 3 = RES = Reserved (typically 0)
- Bit 2 = PRM = Primary message (typically 1 for master / controlling station)
- Bit 1 = FCB Frame count bit: 0 - 1 = alternating bit for successive SEND/CONFIRM or REQUEST/RESPOND services per station.
- Bit 0 = FCV Frame count bit valid (1 if alternating function of FCB bit is valid)

Meaning of the DriverP3 parameter:

Function code to be sent, where:

- 0 = Reset remote link
- 1 = Reset of user process
- 2 = Reserved for balanced mode
- 3 = User data
- 4 = User data
- 5 = Reserved
- 6 = Reserved for special use agreement
- 7 = Function code sent by Areva Alstom S&R-103
- 8 = Expected response specifies access demand
- 9 = Request status of link
- 10 = Request user data class 1
- 11 = Request user data class 2
- 12 = Reserved
- 13 = Reserved
- 14 = Reserved for special use by agreement
- 15 = Reserved for special use by agreement

Meaning of the DriverP4 parameter:

Expected function code to be received, where:

- 0 = CONFIRM ACK: Positive acknowledgement
- 1 = CONFIRM NACK: message not accepted, link busy
- 2 = Reserved
- 3 = Reserved
- 4 = Reserved
- 5 = Reserved
- 6 = Reserved for special use by agreement
- 7 = Reserved for special use by agreement
- 8 = RESPOND User data
- 9 = RESPOND NACK: requested data not available
- 10 = Reserved
- 11 = RESPOND Status of link or access demand
- 12 = Reserved
- 13 = Reserved for special use by agreement
- 14 = Link service not functioning
- 15 = Link service not implemented

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Values that are sent:

Value in PointValue (0) = Ignored

Synchronize

Description of this command:

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

This command follows this procedure:

- The driver sends the current PC clock date and time (plus the estimated transmission delay indicated in DriverP6) to the protection.
- 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:

1-3

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

4

Meaning of the DriverP2 parameter:

Not used.

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:

Not used.

Meaning of the DriverP6 parameter:

Estimated communication delay when transmitting data to the protection, 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 protection and the moment the telegram is received and processed by the protection.

Values that are returned:

Value in PointValue (0) = 1 if synchronized OK, 2 if error synchronizing.

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

Text in PointText (1) = PC clock date and time at the moment of synchronization.

Text in PointText (2) = PC clock date and time at the moment of synchronization corrected with transmission delay, actually sent to the protection.

[Customized P63x Commands]

Customized P63x Commands

Read MAIN signals 1

Description of this command:

Requests the slave to send MAIN signals 1 information.

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 DriverP2 parameter:

8Ch

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)

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Meaning of the DriverP4 parameter:

Not used.

Meaning of the DriverP5 parameter:

Number of data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

003030:Y,004065:Y,060001:Y,004060:Y

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = MAIN Device on-line/Protection enabled

Text in PointText (1) = MAIN Blocked/faulty

Text in PointText (2) = MAIN Healthy

Text in PointText (3) = MAIN Protect. not ready

Read MAIN signals 2

Description of this command:

Requests the slave to send MAIN signals 2 information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

003012:Y,036017:Y,036155:Y,037071:Y

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = MAIN Test mode USER

Text in PointText (1) = MAIN CB failure

Text in PointText (2) = MAIN Meas. circ.I faulty

Text in PointText (3) = MAIN Test mode

Read SFMON signals

Description of this command:

Requests the slave to send SFMON signals information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-14

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Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

093080:Y,093081:Y,093082:Y,090010:Y,090019:Y,093041:Y,093040:Y,098000:Y,093070:Y,093071:Y,090021:Y,041200:Y,036070:Y,036100:Y

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = SFMON -15V supply faulty

Text in PointText (1) = SFMON +15V supply faulty

Text in PointText (2) = SFMON +24V supply faulty

Text in PointText (3) = SFMON Battery failure

Text in PointText (4) = SFMON Blocking/ HW failure

Text in PointText (5) = SFMON Clock sync. error

Text in PointText (6) = SFMON Hardware clock fail.

Text in PointText (7) = SFMON M.c.b. trip V

Text in PointText (8) = SFMON Module A DPR faulty

Text in PointText (9) = SFMON Module A RAM faulty

Text in PointText (10) = SFMON Protection failure

Text in PointText (11) = SFMON Relay Kxx faulty

Text in PointText (12) = SFMON Warning (LED)

Text in PointText (13) = SFMON Warning (relay)

Read COMM1 settings

Description of this command:

Requests the slave to send COMM1 settings information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-1

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

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Meaning of the DriverP7 parameter:

003167:@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = COMM1 Communicat. protocol

Read phys. state signals INP

Description of this command:

Requests the slave to send phys. state signals INP information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

152162:L,152165:L,152168:L,152171:L,152174:L,152177:L,153086:L,153089:L,153092:L,153095:L

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = INP State U 1001

Text in PointText (1) = INP State U 1002

Text in PointText (2) = INP State U 1003

Text in PointText (3) = INP State U 1004

Text in PointText (4) = INP State U 1005

Text in PointText (5) = INP State U 1006

Text in PointText (6) = INP State U 2001

Text in PointText (7) = INP State U 2002

Text in PointText (8) = INP State U 2003

Text in PointText (9) = INP State U 2004

Read phys. state signals OUP

Description of this command:

Requests the slave to send phys. state signals OUP information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-16

Meaning of the DriverP0 parameter:

Unit Address (1-255).

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Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

150216:A,150219:A,150222:A,150225:A,150228:A,150231:A,150234:A,150237:A,151200:A,151203:A,151206:A,151209:A,151212:A,151215:A,151218:A,151221:A

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = OUTP State K 1001

Text in PointText (1) = OUTP State K 1002

Text in PointText (2) = OUTP State K 1003

Text in PointText (3) = OUTP State K 1004

Text in PointText (4) = OUTP State K 1005

Text in PointText (5) = OUTP State K 1006

Text in PointText (6) = OUTP State K 1007

Text in PointText (7) = OUTP State K 1008

Text in PointText (8) = OUTP State K 2001

Text in PointText (9) = OUTP State K 2002

Text in PointText (10) = OUTP State K 2003

Text in PointText (11) = OUTP State K 2004

Text in PointText (12) = OUTP State K 2005

Text in PointText (13) = OUTP State K 2006

Text in PointText (14) = OUTP State K 2007

Text in PointText (15) = OUTP State K 2008

Read phys. state signals LED

Description of this command:

Requests the slave to send phys. state signals LED information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-15

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

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Meaning of the DriverP7 parameter:

085000:A,085003:A,085006:A,085009:A,085012:A,085015:A,085018:A,085021:A,085024:A,085027:A,085030:A,085033:A,085036:A,085039:A,085042:A

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = LED State H 02
Text in PointText (1) = LED State H 03
Text in PointText (2) = LED State H 04
Text in PointText (3) = LED State H 05
Text in PointText (4) = LED State H 06
Text in PointText (5) = LED State H 07
Text in PointText (6) = LED State H 08
Text in PointText (7) = LED State H 09
Text in PointText (8) = LED State H 10
Text in PointText (9) = LED State H 11
Text in PointText (10) = LED State H 12
Text in PointText (11) = LED State H 13
Text in PointText (12) = LED State H 14
Text in PointText (13) = LED State H 15
Text in PointText (14) = LED State H 16

Read DeviceID Parameters

Description of this command:

Requests the slave to send DeviceID Parameters information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-13

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

000035:u,000036:u,000037:u,000000:u,002120:u2,002122:d,002103:u2,002059:u,002123:u1,002121:u,002131:u2,001000:s,001200:s

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Device ID
Text in PointText (1) = DVICE Substation ID
Text in PointText (2) = DVICE Feeder ID
Text in PointText (3) = DVICE Device type
Text in PointText (4) = DVICE Software version
Text in PointText (5) = DVICE SW date
Text in PointText (6) = DVICE SW version communic.

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Text in PointText (7) = DVICE DM IEC 61850 version
Text in PointText (8) = DVICE Language version
Text in PointText (9) = DVICE Text vers.data model
Text in PointText (10) = DVICE SW version DHMI
Text in PointText (11) = DVICE AFS Order No.
Text in PointText (12) = DVICE PCS Order No.

Read Order ext. Numbers 1-13

Description of this command:

Requests the slave to send Order ext. Numbers 1-13 information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-13

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

000003:u,000004:u,000005:u,000006:u,000007:u,000008:u,000009:u,000010:u,000011:u,000012:u,000013:u,000014:u,000015:u

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Order ext. No. 01

Text in PointText (1) = DVICE Order ext. No. 02

Text in PointText (2) = DVICE Order ext. No. 03

Text in PointText (3) = DVICE Order ext. No. 04

Text in PointText (4) = DVICE Order ext. No. 05

Text in PointText (5) = DVICE Order ext. No. 06

Text in PointText (6) = DVICE Order ext. No. 07

Text in PointText (7) = DVICE Order ext. No. 08

Text in PointText (8) = DVICE Order ext. No. 09

Text in PointText (9) = DVICE Order ext. No. 10

Text in PointText (10) = DVICE Order ext. No. 11

Text in PointText (11) = DVICE Order ext. No. 12

Text in PointText (12) = DVICE Order ext. No. 13

Read Order ext. Numbers 14-27

Description of this command:

Requests the slave to send Order ext. Numbers 14-27 information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-14

Meaning of the DriverP0 parameter:

Unit Address (1-255).

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Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

000016:u,000017:u,000018:u,000019:u,000020:u,000021:u,000022:u,000023:u,000024:u,000025:u,000026:u,000027:u,000028:u,000029:u

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Order ext. No. 14

Text in PointText (1) = DVICE Order ext. No. 15

Text in PointText (2) = DVICE Order ext. No. 16

Text in PointText (3) = DVICE Order ext. No. 17

Text in PointText (4) = DVICE Order ext. No. 18

Text in PointText (5) = DVICE Order ext. No. 19

Text in PointText (6) = DVICE Order ext. No. 20

Text in PointText (7) = DVICE Order ext. No. 21

Text in PointText (8) = DVICE Order ext. No. 22

Text in PointText (9) = DVICE Order ext. No. 23

Text in PointText (10) = DVICE Order ext. No. 24

Text in PointText (11) = DVICE Order ext. No. 25

Text in PointText (12) = DVICE Order ext. No. 26

Text in PointText (13) = DVICE Order ext. No. 27

Read Module slots 1-5

Description of this command:

Requests the slave to send Module slots 1-5 information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

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Meaning of the DriverP7 parameter:

086050:@,086193:@,086051:@,086194:@,086052:@,086195:@,086053:@,086196:@,086054:@,086197:@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Module var. slot 01
Text in PointText (1) = DVICE Module vers. slot 01
Text in PointText (2) = DVICE Module var. slot 02
Text in PointText (3) = DVICE Module vers. slot 02
Text in PointText (4) = DVICE Module var. slot 03
Text in PointText (5) = DVICE Module vers. slot 03
Text in PointText (6) = DVICE Module var. slot 04
Text in PointText (7) = DVICE Module vers. slot 04
Text in PointText (8) = DVICE Module var. slot 05
Text in PointText (9) = DVICE Module vers. slot 05

*Read Module slots 6-10***Description of this command:**

Requests the slave to send Module slots 6-10 information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

086055:@,086198:@,086056:@,086199:@,086057:@,086200:@,086058:@,086201:@,086059:@,086202:@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Module var. slot 06
Text in PointText (1) = DVICE Module vers. slot 06
Text in PointText (2) = DVICE Module var. slot 07
Text in PointText (3) = DVICE Module vers. slot 07
Text in PointText (4) = DVICE Module var. slot 08
Text in PointText (5) = DVICE Module vers. slot 08
Text in PointText (6) = DVICE Module var. slot 09
Text in PointText (7) = DVICE Module vers. slot 09
Text in PointText (8) = DVICE Module var. slot 10
Text in PointText (9) = DVICE Module vers. slot 10

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Read Module slots 11-15

Description of this command:

Requests the slave to send Module slots 11-15 information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

086060:@,086203:@,086061:@,086204:@,086062:@,086205:@,086063:@,086206:@,086064:@,086207:@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Module var. slot 11

Text in PointText (1) = DVICE Module vers. slot 11

Text in PointText (2) = DVICE Module var. slot 12

Text in PointText (3) = DVICE Module vers. slot 12

Text in PointText (4) = DVICE Module var. slot 13

Text in PointText (5) = DVICE Module vers. slot 13

Text in PointText (6) = DVICE Module var. slot 14

Text in PointText (7) = DVICE Module vers. slot 14

Text in PointText (8) = DVICE Module var. slot 15

Text in PointText (9) = DVICE Module vers. slot 15

Read Module slots 16-21

Description of this command:

Requests the slave to send Module slots 16-21 information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-12

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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.

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Meaning of the DriverP5 parameter:

Number of data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

086065:@,086208:@,086066:@,086209:@,086067:@,086210:@,086068:@,086211:@,086069:
@,086212:@,086070:@,086213:@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Module var. slot 16
Text in PointText (1) = DVICE Module vers. slot 16
Text in PointText (2) = DVICE Module var. slot 17
Text in PointText (3) = DVICE Module vers. slot 17
Text in PointText (4) = DVICE Module var. slot 18
Text in PointText (5) = DVICE Module vers. slot 18
Text in PointText (6) = DVICE Module var. slot 19
Text in PointText (7) = DVICE Module vers. slot 19
Text in PointText (8) = DVICE Module var. slot 20
Text in PointText (9) = DVICE Module vers. slot 20
Text in PointText (10) = DVICE Module var. slot 21
Text in PointText (11) = DVICE Module vers. slot 21

Read Modules data

Description of this command:

Requests the slave to send Modules data information.

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 DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

086047:@,086190:@,104061:@,086048:@,086191:@,086049:@,086192:@,086046:@,086189:
@

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Variant of module A
Text in PointText (1) = DVICE Version of module A
Text in PointText (2) = DVICE MAC address module A
Text in PointText (3) = DVICE Variant of module L
Text in PointText (4) = DVICE Version of module L
Text in PointText (5) = DVICE Variant of module B

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Text in PointText (6) = DVICE Version of module B
Text in PointText (7) = DVICE Variant module B (a)
Text in PointText (8) = DVICE Version module B (a)

Read Customer ID data

Description of this command:

Requests the slave to send Customer ID data information.

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:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

000040:u2,000041:u2,000042:u2,000043:u2,000044:u2,000045:u2,000046:u2,000047:u2

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = DVICE Customer ID data 01

Text in PointText (1) = DVICE Customer ID data 02

Text in PointText (2) = DVICE Customer ID data 03

Text in PointText (3) = DVICE Customer ID data 04

Text in PointText (4) = DVICE Customer ID data 05

Text in PointText (5) = DVICE Customer ID data 06

Text in PointText (6) = DVICE Customer ID data 07

Text in PointText (7) = DVICE Customer ID data 08

Read Meas. Operating Data

Description of this command:

Requests the slave to send Meas. Operating Data information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-14

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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)

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Meaning of the DriverP4 parameter:

Not used.

Meaning of the DriverP5 parameter:

Number of data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

003090:d,003091:t,005123:u,005122:u,005121:u,007023:u,007022:u,007021:u,006023:u,006022:u,006021:u,005023:u,005022:u,005021:u

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = MAIN Date
Text in PointText (1) = MAIN Time of day (hh)
Text in PointText (2) = MAIN Current IN c prim. (A)
Text in PointText (3) = MAIN Current IN b prim. (A)
Text in PointText (4) = MAIN Current IN a prim. (A)
Text in PointText (5) = MAIN Current IC c prim. (A)
Text in PointText (6) = MAIN Current IC b prim. (A)
Text in PointText (7) = MAIN Current IC a prim. (A)
Text in PointText (8) = MAIN Current IB c prim. (A)
Text in PointText (9) = MAIN Current IB b prim. (A)
Text in PointText (10) = MAIN Current IB a prim. (A)
Text in PointText (11) = MAIN Current IA c prim. (A)
Text in PointText (12) = MAIN Current IA b prim. (A)
Text in PointText (13) = MAIN Current IA a prim. (A)

Read FT_DA Fault Data 1

Description of this command:

Requests the slave to send FT_DA Fault Data 1 information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-13

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

008010:u1,004021:u2,004198:@,004199:u3,025086:u2,025087:u2,025088:u2,026086:u2,026087:u2,026088:u2,027086:u2,027087:u2,027088:u2

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = FT_DA Fault duration (s)

Text in PointText (1) = FT_DA Running time (s)

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Text in PointText (2) = FT_DA Fault determ. with
Text in PointText (3) = FT_DA Run time to meas. (s)
Text in PointText (4) = FT_DA Fault curr.IP a p.u. (Inom)
Text in PointText (5) = FT_DA Fault curr.IN a p.u. (Inom)
Text in PointText (6) = FT_DA Fault curr.IY a p.u. (Inom)
Text in PointText (7) = FT_DA Fault curr.IP b p.u. (Inom)
Text in PointText (8) = FT_DA Fault curr.IN b p.u. (Inom)
Text in PointText (9) = FT_DA Fault curr.IY b p.u. (Inom)
Text in PointText (10) = FT_DA Fault curr.IP c p.u. (Inom)
Text in PointText (11) = FT_DA Fault curr.IN c p.u. (Inom)
Text in PointText (12) = FT_DA Fault curr.IY c p.u. (Inom)

Read FT_DA Fault Data 2

Description of this command:

Requests the slave to send FT_DA Fault Data 2 information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-18

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

005082:u2,005084:u2,005085:u2,005083:u2,006082:u2,006084:u2,006085:u2,006083:u2,007082:u2,007084:u2,007085:u2,007083:u2,025082:u2,025083:u2,026082:u2,026083:u2,027082:u2,027083:u2

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = FT_DA Diff. current 01 (Iref)

Text in PointText (1) = FT_DA Diff.current 1(2*f0) (Iref)

Text in PointText (2) = FT_DA Diff.current 1(5*f0) (Iref)

Text in PointText (3) = FT_DA Restrain. current 01 (Iref)

Text in PointText (4) = FT_DA Diff. current 02 (Iref)

Text in PointText (5) = FT_DA Diff.current 2(2*f0) (Iref)

Text in PointText (6) = FT_DA Diff.current 2(5*f0) (Iref)

Text in PointText (7) = FT_DA Restrain. current 02 (Iref)

Text in PointText (8) = FT_DA Diff. current 03 (Iref)

Text in PointText (9) = FT_DA Diff.current 3(2*f0) (Iref)

Text in PointText (10) = FT_DA Diff.current 3(5*f0) (Iref)

Text in PointText (11) = FT_DA Restrain. current 03 (Iref)

Text in PointText (12) = FT_DA Diff. current REF_1 (Iref)

Text in PointText (13) = FT_DA Restrain.curr. REF_1 (Iref)

Text in PointText (14) = FT_DA Diff. current REF_2 (Iref)

Text in PointText (15) = FT_DA Restrain.curr. REF_2 (Iref)

Text in PointText (16) = FT_DA Diff. current REF_3 (Iref)

Text in PointText (17) = FT_DA Restrain.curr. REF_3 (Iref)

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Read OL_DA Fault Data

Description of this command:

Requests the slave to send OL_DA Fault Data information.

Methods used to run this command:

Analog Input (ReadNumericValues)

Number of points accepted by this command:

1-13

Meaning of the DriverP0 parameter:

Unit Address (1-255).

Meaning of the DriverP1 parameter:

0

Meaning of the DriverP2 parameter:

8Ch

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 data request retries before discarding the whole communication.

Meaning of the DriverP6 parameter:

Not used.

Meaning of the DriverP7 parameter:

004102:u1,004155:u,004159:u2,004156:u,004157:u,004158:u1,004191:u,004185:u,004189:u2,004186:u,004187:u,004188:u1,004192:u

Meaning of the DriverP8 parameter:

Not used.

Meaning of the DriverP9 parameter:

Not used.

Values that are returned:

Text in PointText (0) = OL_DA Overload duration (s)

Text in PointText (1) = OL_DA Status THRM1 replica (%)

Text in PointText (2) = OL_DA Load current THRM1 (Inom)

Text in PointText (3) = OL_DA Object temp. THRM1 (Deg)

Text in PointText (4) = OL_DA Coolant temp. THRM1 (Deg)

Text in PointText (5) = OL_DA Pre-trip t.leftTHRM1 (min)

Text in PointText (6) = OL_DA Offset THRM1 replica (%)

Text in PointText (7) = OL_DA Status THRM2 replica (%)

Text in PointText (8) = OL_DA Load current THRM2 (Inom)

Text in PointText (9) = OL_DA Object temp. THRM2 (Deg)

Text in PointText (10) = OL_DA Coolant temp. THRM2 (Deg)

Text in PointText (11) = OL_DA Pre-trip t.leftTHRM2 (min)

Text in PointText (12) = OL_DA Offset THRM2 replica (%)

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

[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

[1332] PROTOCOL (Remote): Invalid date received

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[1333] PROTOCOL (Remote): Couldn't decode received date
[1334] PROTOCOL (Remote): Invalid time received
[1338] PROTOCOL (Remote): Couldn't decode reference date

Supported devices

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

SCHNEIDER ELECTRIC P63x Transformer Differential Protection
SCHNEIDER ELECTRIC P631 Transformer Differential Protection
SCHNEIDER ELECTRIC P632 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 605 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 606 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 610 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 611 Transformer Differential Protection
SCHNEIDER ELECTRIC P633 620 Transformer Differential Protection
SCHNEIDER ELECTRIC P634 Transformer Differential Protection

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