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ClipX Class

The ClipX class is the virtual representation of the ClipX device.

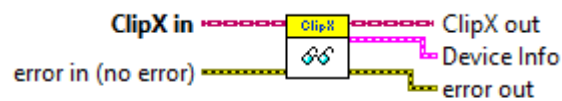


It includes the following parameters:

-  **Cluster of class private data** (Cluster aus 3 Elemente)
 -  **Ethernet** (Cluster aus 6 Elemente)
 -  **IP Address** (String)
 -  **Port** (Vorzeichenloses Word [16-Bit Integer (0 bis 65535)])
 -  **Write Timeout** (Long [32-Bit Integer (-2147483648 bis 2147483647)])
 -  **connection ID** (TCP-Netzwerkverbindung)
 -  **IsConnected** (Boolesch (TRUE oder FALSE))
 -  **Read Timeout** (Long [32-Bit Integer (-2147483648 bis 2147483647)])
 -  **Device Info** (Cluster aus 3 Elemente)
 -  **Type** (String)
 -  **FW Version** (String)
 -  **UP Version** (String)
 -  **FIFO** (Cluster aus 2 Elemente)
 -  **Process start time** (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 -  **IsFillFifoActive** (Boolesch (TRUE oder FALSE))

Properties

Get Device Info



Short description:

Returns the device information.

Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- Device Info consisting of:
 - Type (String)
 - Firmware Version (String)
 - UP Version (String)
- Error out

Is ConnectedShort description:

Returns the Boolean information, whether the device is connected or not.

Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- IsConnected (Boolean)
- Error out

Is Fill Fifo ActiveShort description:

Returns the Boolean information, whether filling the fifo is activated or not.

Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- IfFillFifoActive (Boolean)
- Error out

Methods

Connect Device



Short description:

Establishes the connection to ClipX.

Inputs:

- ClipX in
- IP Address (Type: String)
- Error in (no error)

Outputs:

- ClipX out
- IfFillFifoActive (Boolean)
- Error out

Disconnect Device



Short description:

Disconnects ClipX.

Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- IfFillFifoActive (Boolean)
- Error out

Get FiFo Fill Rate



Short description:

Disconnects ClipX.

Inputs:

- ClipX in
- Error in (no error)

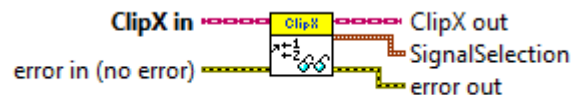
Outputs:

- ClipX out
- FiFoFillRate (Type: SGD – 32 Bit, real (~6 digits accuracy))
- Error out

Description:

With the fifo of ClipX, measured values can be read via Ethernet or fieldbus. The memory is limited to 1000 values for each of the six signals. As soon as this limit is exceeded (the values are not fetched), the oldest values are overwritten and the overflow bit is set (FIFO control flag). The maximum recording rate of the FIFO memory is 1000 values per second. A rate of 0.1 / s means that a value is recorded only every 10 seconds.

Get Signal Selection



Short description:

Disconnects ClipX.

Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- SignalSelection (6 signals, each is an 8bit integer value) → for correspondences see chapter 'Signal Correspondences'
- Error out

Description:

ClipX can write measured values of up to six signals into the fifo storage and transmit them. This method returns the signals that are currently selected for the transmission.

Get Transducer Settings



Short description:

Returns the sensor scaling and the sensor type which are set in ClipX.

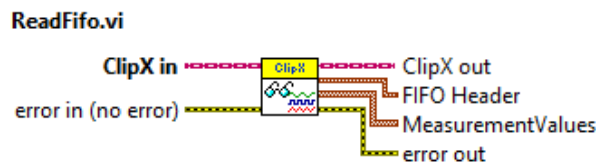
Inputs:

- ClipX in
- Error in (no error)

Outputs:

- ClipX out
- TransducerSettings (consisting of four 32bit values (scaling) and the transducer key) → for correspondences see chapter 'Transducer Correspondences'
- Error out

Read Fifo



Short description:

Reads values from the fifo storage of ClipX.

Inputs:

- ClipX in
- Error in (no error)

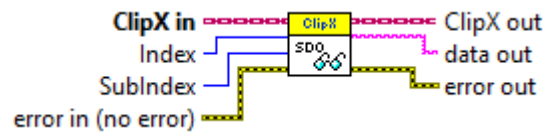
Outputs:

- ClipX out
- FIFO Header – consisting of:
(points to TypeDef 'FifoHeaderData')
 - ProtocolVersion (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - System Status (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - DigitalFlags lower32bits (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - DigitalFlags upper32bits (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - Fifo Control Flags (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - Number of Data bytes (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - reserved 1 (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
 - reserved 2 (Vorzeichenloses Long [32-Bit Integer (0 bis 4,294,967,295)])
- MeasurementValues – consisting of:
(points to TypeDef 'FifoDataLine')
 - Timestamp (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 1 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 2 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 3 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 4 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 5 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
 - Signal 6 (Double [64-Bit Reell (~15 Stellen Genauigkeit)])
- Error out

Description:

With the fifo of ClipX, measured values can be read via Ethernet or fieldbus. The memory is limited to 1000 values for each of the six signals. As soon as this limit is exceeded (the values are not fetched), the oldest values are overwritten and the overflow bit is set (FIFO control flag). The maximum recording rate of the FIFO memory is 1000 values per second. A rate of 0.1 / s means that a value is recorded only every 10 seconds.

Read SDO



Short description:

Reads Properties from the object directory of ClipX.

Inputs:

- ClipX in
- Index (Data Type = U16, Format = Hexadecimal)
- Subindex (Data Type = U16, Format = Hexadecimal)
- Error in (no error)

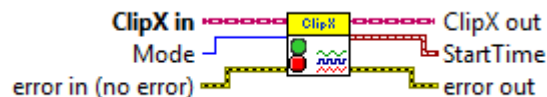
Outputs:

- ClipX out
- Data out
- Error out

Description:

The method "ReadSDO" can be read directly from the object directory of ClipX. Herewith, different values or settings, e.g. current gross value, used filter, signal names, ... are read out. The parameters to be used (index, subindex) can be transferred to the object directory of ClipX. (e.g. index = 0x4401, subindex = 1, returns the currently used filter)

Start Stop Fill Fifo



Short description:

Starts/stops filling the fifo storage.

Inputs:

- ClipX in
- Mode (see chapter 'Mode')
- Error in (no error)

Outputs:

- ClipX out
- StartTime
- Error out

Description:

With the fifo of ClipX, measured values can be read via Ethernet or fieldbus. The memory is limited to 1000 values for each of the six signals. As soon as this limit is exceeded (the values are not fetched), the oldest values are overwritten and the overflow bit is set (FIFO control flag). The maximum recording rate of the FIFO memory is 1000 values per second. A rate of 0.1 / s means that a value is recorded only every 10 seconds.

Set Fifo Fill Rate



Short description:

Sets the rate for filling the fifo storage.

Inputs:

- ClipX in
- Mode (see chapter 'Mode')
- Error in (no error)

Outputs:

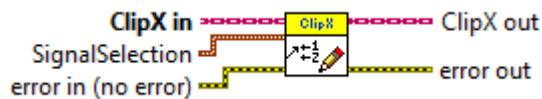
- ClipX out
- Error out

Example:

Rate 0,1 (1/s) → every 10 seconds a reading

Rate 10 (1/s) → every 100 milli seconds a reading

Set Signal Selection



Short description:

Sets the rate for filling the fifo storage.

Inputs:

- ClipX in
- SignalSelection (6 signals, each is an 8bit integer value) → for correspondences see chapter 'Signal Correspondences'
- Error in (no error)

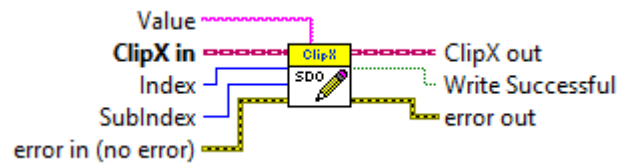
Outputs:

- ClipX out
- Error out

Description:

This method sets the (six) signals to be written in the fifo storage. For example, the value 3 corresponds to the gross value.

Write SDO



Short description:

Sets the rate for filling the fifo storage.

Inputs:

- ClipX in
- Index (Data Type = U16, Format = Hexadecimal)
- Subindex (Data Type = U16, Format = Hexadecimal)
- Value (Data Type = String)
- Error in (no error)

Outputs:

- ClipX out
- Error out

Description:

With the method "WriteSDO" can be written directly into the object directory of ClipX. Settings such as signal names, used filter, sensor type, ... can be changed here. (Index = 0x4401, Subindex = 1, Value = 2 sets the filter to Bessel, for example)

Correspondences

Signal Correspondences

Index	Signal	Index	Signal
0	ADC Value	24	Calculated Value 4
1	Filtered ADC Value	25	Calculated Value 5
2	Field Value	26	Calculated Value 6
3	Gross Value	27	Ethernet API 1
4	Net Value	28	Ethernet API 2
5	Minimum Value	29	Fieldbus Value 1
6	Maximum Value	30	Fieldbus Value 2
7	Peak to Peak Value	31	Analog Out Value
8	Captured Value 1	32	Constant: -1
9	Captured Value 2	33	Constant: 0
10	ClipX Bus Value 1	34	Constant: 1
11	ClipX Bus Value 2	35	Constant: PI/2
12	ClipX Bus Value 3	36	Constant: PI
13	ClipX Bus Value 4	37	Constant: 2*PI
14	ClipX Bus Value 5	38	User Constant 1
15	ClipX Bus Value 6	39	User Constant 2
16		40	User Constant 3
17		41	User Constant 4
18		42	User Constant 5
19		43	User Constant 6
20		44	User Constant 7
21	Calculated Value 1	45	User Constant 8
22	Calculated Value 2	46	User Constant 9
23	Calculated Value 3	47	User Constant 10

Mode

Index	Mode
1	Continuously filling with measurement rate
2	State-controlled filling, if digital flags equal the bitmask
4	State-controlled filling on edge change of digital flags and bitmask

Transducer Correspondences

Index	Sensortype
0	Voltage + / - 10V
1	Current 4...20mA
2	Current + / - 20 mA
3	Temperature Sensor PT100
4	Potentiometer
5	Full Bridge 5mV/V (DC)
6	Full Bridge 2.5mV/V (DC)
7	Full Bridge 5mV/V (CF)
8	Full Bridge 2.5mV/V (CF)
9	Half Bridge 5mV/V (DC)
10	Half Bridge 2.5mV/V (DC)
11	Half Bridge 5mV/V (CF)
12	Half Bridge 2.5mV/V (CF)
13	Half Bridge 100mV/V (DC)
14	Half Bridge 800mV/V (DC)

Disclaimer

These examples are for illustrative purposes only. They cannot be used as the basis for any warranty or liability claims.