JCI N2 Bus

Version: SP2.6.151

JCI N2 Bus communication

With this FBox family JCI N2 modules can be connected via N2 Bus. The PCD is able to work as Master, as Slave or both. Each mode (Master/Slave) needs an own serial interface.

To parameterize a datapoint a combination of N2 Bus address (station number), Item and data type is necessary. This information is normally available in the manuals of JCI modules.

JCI N2-Bus

JCI N2-Bus

Version: 1.4.250

The FBox family JCI N2 Bus communication is spliitted into two groups.

One group implements the Master functionalities. Configured as Master the PCD is able to read and write Items from JCI modules.

The second group is necessary to implement the Slave functionallity into the PCD. In this case the PCD will react on read and write command via N2 Bus. The Slave functionallity will react for all staion addresses and Item which are defined in the program. So one PCD can emulate more slaves at the same time.

Acting/Emulating e.g. as JCI unit to be connected to a JCI SCADA is unfortunately not possible.

A PCD can be Master and Slave at the same time, each function needs an own serial interface.

It's also possible to implement more than one Master in one PCD, e.g. in a bigger network. In that case each Master has to use a seperate serial interface.

Floating point values from N2 modules are automatically formatted into HLK format.

Master

Master config

Master receive

Master send

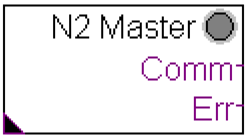
Slave

Slave Item

Master

Family: JCI N2-Bus

Name:	Master
Macro:	_JN2_Master
Version:	1.4.500



Description

Initialization FBox to implement an JCI N2 Bus communication. With this FBox the PCD will work as N2 Bus Master and is able to read or write any Items from different modules.

This FBox must be placed before using other FBoxes for Master functionallities (e.g. "Master Config"). Those FBoxes have to be connected via the reference to this Master FBox and will communicate via this serial interface.

Output

Comm One cycle High if a read or write command has been succsessfull terminated

Err High if a communication error has been detected

LED

LED Became RED if a communication error has been detected, will fall back to green if everything is OK

Adjust

Serial interface Serial interface to comminicate to other N2 modules

Baudrate Baudrate for communication. Actual only 9600 baud available

Timeout in seconds

----- Online information

Station actual N2 Bus station address communicating

Access Kind of communication, read or write

Item Item in N2 modul wich is accessed actual by Master FBox

Type Type of Item, e.g. Float, 8 Bits ..

Value Value of Item to be written or read

Functional

This Fbox implements the basic mechanis to communicate as N2 Bus Master. All other FBoxes reading or writing Items from/into connected N2 modules must be connected with Name/Ref mechanis to this FBox.

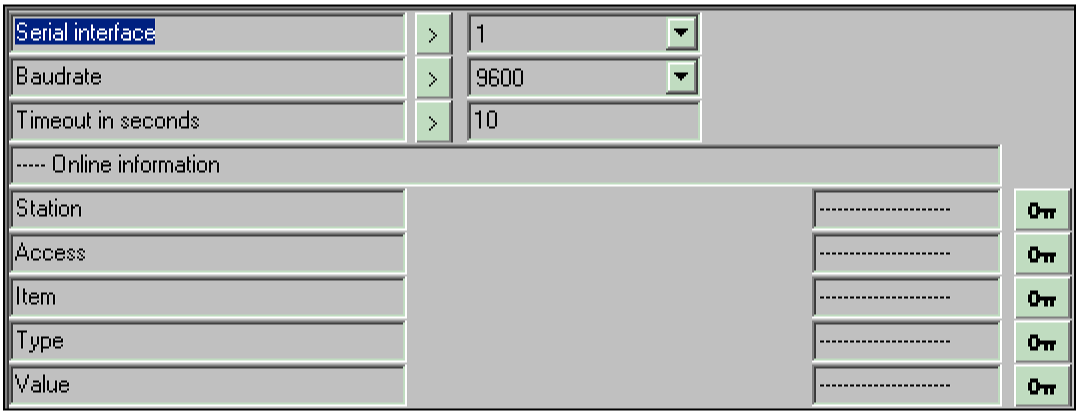
The output "Comm" is set High for one cycle is a communication (read or write) has been successfull. When connecting e.g. a counter it's possible to calculate e.g. the transmition telegramms per second or minute.

The output "Err" is set to Hihgh (also indicating red LED) if a communication has been terminated without success. The output "Err" is automatically set to Low if a successfull commonication has been deteced.

The parameter "Max timeout in seconds" defines the maximal duraration until the answer of an request (read or write) must be returned to the Master. If after this delay no response has be been detected the communication is terminated as unsuccessfull.

Predefined

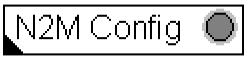
Station	Station	R
Access	Access	R 0 = None 128 = Read 192 = Write
Item	Item	R
Type	Type	R 0 = Float 1 = 1 Byte 2 = 8 Bits 3 = 2 Bytes 4 = 16 Bits 5 = 4 Bytes
Value	Value	R



Serial interface	>	1
Baudrate	>	9600
Timeout in seconds	>	10
----- Online information		
Station		---------------------
Access		---------------------
Item		---------------------
Type		---------------------
Value		---------------------

Master config

Family:	JCI N2-Bus
Name:	Master config
Macro:	_JN2_CONFIG
Version:	1.4.200



Description

Configuration FBox for online parameterizing or reading of any Items.

LED

LED	Red if the defined Station, Item or Type could not be accessed

Adjust

Station	Station address to communicate
Item	Item number of module
Type	Type of Item, e.g. Float, 8 Bits ...
Access	Defines the communication mode, read or write
Value	Value to be written or read from Item
Command	Activates the parameterized communications

Functional

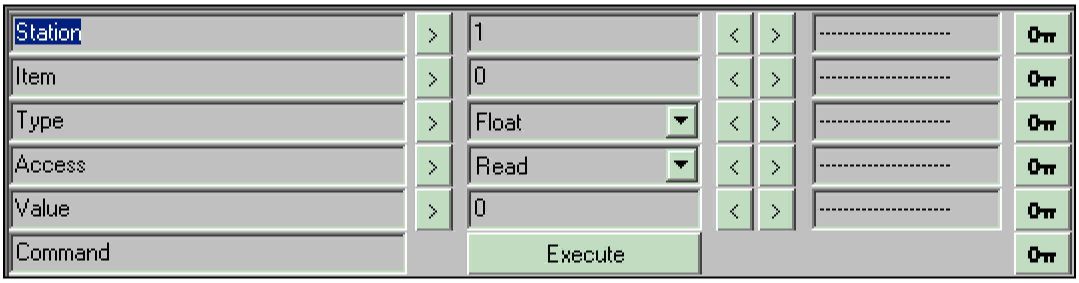
This FBox is able to communicate with all connected N2 modules onlie. It's possible to read or write single Items.

The configuration FBox can be used as a kind of cinfig tool. The access (Station, Item, Data type, read or write) is parameterized online and therefore also available e.g. in a visualization or HMI.

This FBox uses functionallities from "N2 Master" FBox and must be connected via Name/Ref.

Predefined

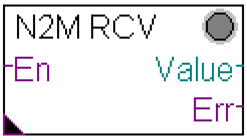
Station	Station	R	1..255
Item	Item	R	0..65535
Type	Type	R	0 = Float 1 = 1 Byte 2 = 8 Bits 3 = 2 Bytes 4 = 16 Bits 5 = 4 Bytes
Access	Access	R	128 = Read 192 = Write
Value	Value	R	
Command	Command	F	0 = Start 1 = Execute



Station	1	---------------------
Item	0	---------------------
Type	Float	---------------------
Access	Read	---------------------
Value	0	---------------------
Command	Execute	

Master receive

Family:	JCI N2-Bus
Name:	Master receive
Macro:	_JN2_RCV_ANY
Version:	1.4.200



Description

Reads an Item from a N2 module and returns the value.

Input

En	Enables the communication to read the defined Item

Output

Value	Value from Item
Err	High if a communiacation error has been detected

LED

LED	RED if a communication error has been detected

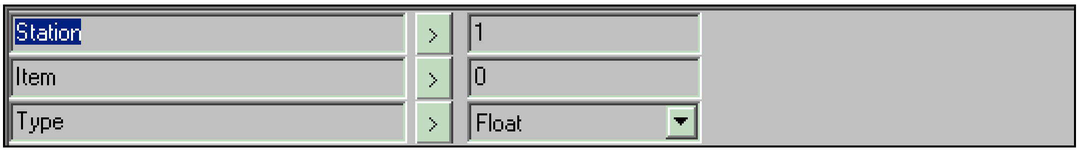
Adjust

Station	Station address of N2 module
Item	Item number in N2 module (decimal)
Type	Type of Item, e.g. Float, 8 Bits ...

Functional

This FBox uses functionallities from "N2 Master" FBox and must be connected via Name/Ref.

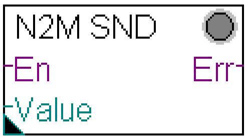
Predefined



Station	>	1
Item	>	0
Type	>	Float

Master send

Family:	JCI N2-Bus
Name:	Master send
Macro:	_JN2_SND_ANY
Version:	1.4.200



Description

Writes

Schreibt einen Wert in ein Item eines N2 Modul.

Input

En	Enables the communication
Value	Value to be writen into the Item

Output

Err	High if a communication error has been detected

LED

LED	RED if a communication error has been detected

Adjust

Station	Station address of N2 module
Item	Item number in N2 module (decimal)
Type	Type of Item, e.g. Float, 8 Bits ...
Send data	Defines the way when the value should be written into the Item

Functional

The value wcan be written ino the N2 module always or after a change of value.

If change of value is selected the value will be written into the N2 module if

·The input "En" toggels from Low to High, even when no change of value has been detected

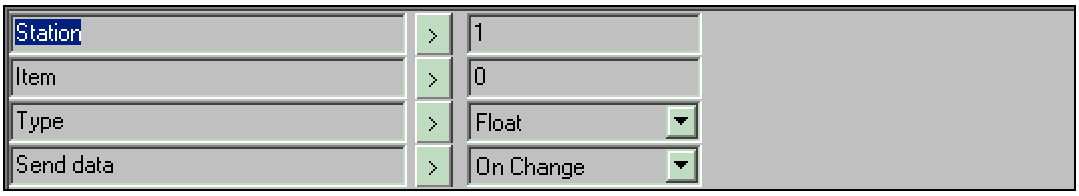
·Input "En" has been already High but the value given by input "Value" has been changed

·After restart of controller and input "En" is still High

If the write command was not successfull (e.g. module offline or powered off) it will be cyclically repeated until the module accepts the new value.

This FBox uses functionallities from "N2 Master" FBox and must be connected via Name/Ref.

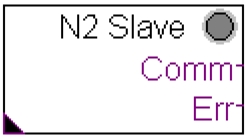
Predefined



Station	>	1
Item	>	0
Type	>	Float
Send data	>	On Change

Slave

Family:	JCI N2-Bus
Name:	Slave
Macro:	_JN2_Slave
Version:	1.4.200



Description

Initialization FBox to implement an JCI N2 Bus communication. With this FBox the PCD will work as N2 Bus Slave and is able to react on read or write commands.

Acting/Emulating e.g. as JCI unit to be connected to a JCI SCADA is unfortunately not possible.

This FBox must be placed before using other FBoxes for Slave functionallities (e.g. "slave Item"). Those FBoxes have to be connected via the reference to this Slave FBox and will communicate via this serial interface.

Output

Comm	High for one cycle if a read or write command has been successfull and the accessed Item was programmed in the PCD
Err	High if a incomplete communication has been detected

LED

LED	RED if a incomplete communication has been detected

Adjust

Serial line	Serial interface to comminicate to other N2 modules
Baudrate	Baudrate for communication. Actual only 9600 baud available
----- Online information	
Station	N2 Station number accessed with actual communication
Access	Type of communication, 0=none, 128=read, 192=write
Item	Item address (dezimal) accessed in actual communication
Type	Typ of Items, e.g.. Float, 8 Bits etc.
Value	Value of Item

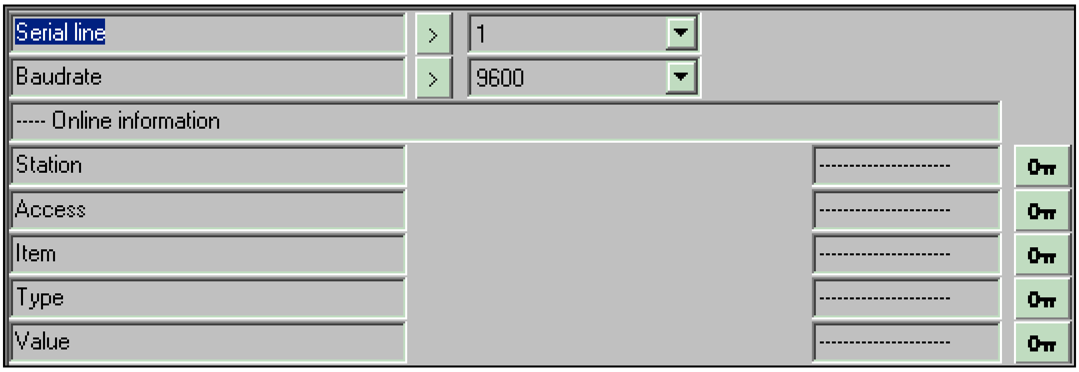
Functional

This Fbox implements the basic mechanis to communicate as N2 Bus Slave. All other FBoxes representing Items must be connected with Name/Ref mechanis to this FBox.

The output "Comm" is set High for one cycle is a communication (read or write) has been detected and the Item is present in this PCD (e.g. in a "Slave Item" FBox). When connecting e.g. a counter it's possible to calculate e.g. the transmition telegramms per second or minute.

The output "Err" is set to Hihgh (also indicating red LED) if a incomplete communication has been detected. The output "Err" is automatically set to Low if a successfull commonication has been deteced.

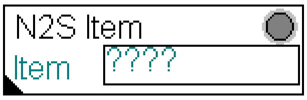
Predefined



Serial line	>	1
Baudrate	>	9600
----- Online information		
Station		---------------------
Access		---------------------
Item		---------------------
Type		---------------------
Value		---------------------

Slave Item

Family:	JCI N2-Bus
Name:	Slave Item
Macro:	_JN2_ITEM
Version:	1.4.200



Description

Implementing an Item in the PCD in mode Slave.

Const

Item Container which represents the value of the defined Item.

LED

LED RED indicates an internal error

Adjust

Station	Station address
Item	Item address (dezimal)
Type	Type of Item, e.g. Float, 8 Bits ..

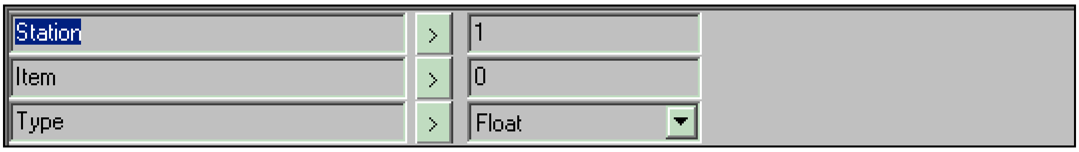
Functional

The N2 Bus parameter for Slave mode must be entered in parameter "Item". This Item will be available for read and write access via N2 Bus for a Master.

This FBox does not have any defualt intialisation mechanism, e.g. after download, like the HLK Init FBox. A basic initialisiation (first time initialisation) must be forced by SI.

This FBox uses functionallities from "N2 Slave" FBox and must be connected via Name/Ref.

Predefined



Station	>	1
Item	>	0
Type	>	Float