Excel B-port Driver

Description

Supported local PLCs:

- XL50 / Panther (from firmware version 2.06.12 with access to C-bus)
- XL100
- XL500 (from firmware version 2.06.12 with access to C-bus)
- XL600
- XL800 / Lion

Supported PLCs through C-bus:

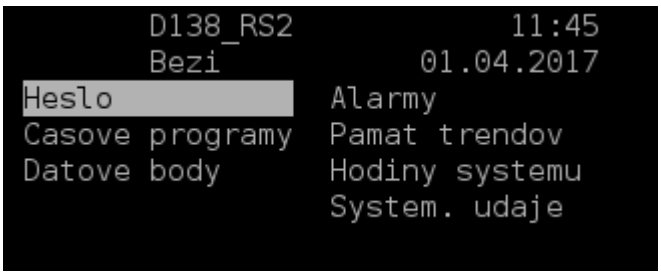
- XL50 / Panther
- XL100
- XL500/600
- XL800 / Lion
- Q7750A Zone Manager

MMI emulator

Converter can retain MMI functionality even with B-port in use. Converter emulates on second RS-232 XL50 where communication packets from MMI can be sent or received from connected Excel.

Virtual MMI

Converter includes integrated emulator of virtual MMI via telnet protocol on port **2222**
It is recommended to use putty on windows.



Time programs

Time programs in C-bus have different structure from Bacnet/IP.
Program consists of daily programs. Daily program entry defines value and time at which will be value applied. Their number is not limited.
Created day programs can be then assigned to specific days in week.
Converter converts time programs to structure compatible with Bacnet. On first save, daily programs

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Bacnet1, Bacnet2, ... Bacnet7 will be created and assigned for each day. Time programs are updated every hour. It is possible to export BV point to Bacnet in order to trigger manual update of time programs from connected Excels.

Bacnet implementations

Excel	Bacnet
Analog Input	AnalogInput
Analog Output	AnalogOutput
Pseudo Analog	AnalogValue
Digital Input	BinaryInput
Digital Output	BinaryOutput
Pseudo Digital	BinaryValue
CounterInput	AnalogValue
Pseudo Counter	AnalogValue
XRegister	AnalogValue
YRegister	AnalogValue
FlexiblePoint	AnalogValue
Universal	AnalogValue

Properties:

- objectName
- objectType
- presentValue
- statusFlags
- outOfService
- covIncrement
- priorityArray
- relinquishDefault

 Excel Points with enabled manual mode will be marked with property outOfService.

 Allowed characters for Bacnet point name:
`0123456789abcdefghijklmnopqrstuvwxyzABCDEFGHIJKLMNOPQRSTUVWXYZ-_!%&~#@$%^`.

Protocol implementation

B-ports transfer rate must be set to 9600 baud. Converter will temporarily set transfer rate to 38400 baud in initialization procedure. Transfer rate will return back to 9600 baud 10 seconds after converter is disconnected. On connection, first converter reads list of connected Excels on C-Bus, then reads list of points and time programs. Implementation supports MMI emulation; reading and writing of points, time programs, date and time.

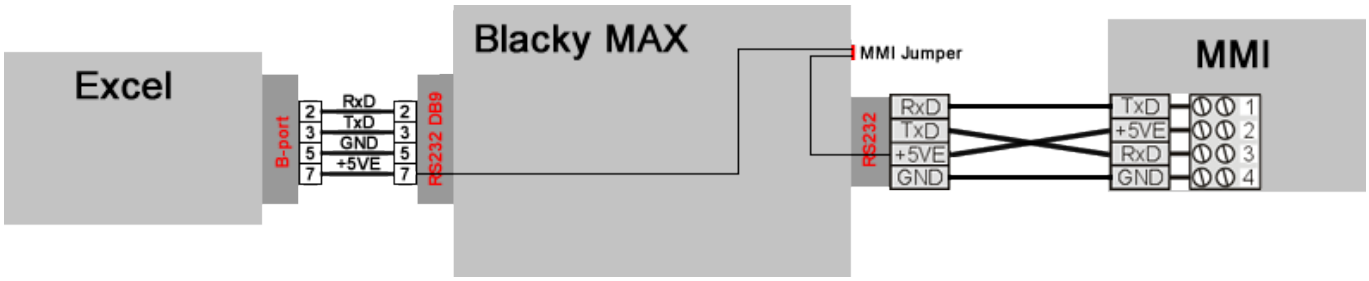
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Issues

All version of Excel firmware, except latest XL50, contains bug causing B-port to freeze. This bug occurs approximately twice a year and requires restarting of Excel device.
In case of power failure to Excel while Converter keeps running, there is possibility that Excel will switch to bootstrap mode.

😎 Modem application is activated in XL50 by default. With this modem application, Converter can detect Excel initialization and start communication. This feature can be enabled in Converter settings with entry **Enable ATZ detector**.

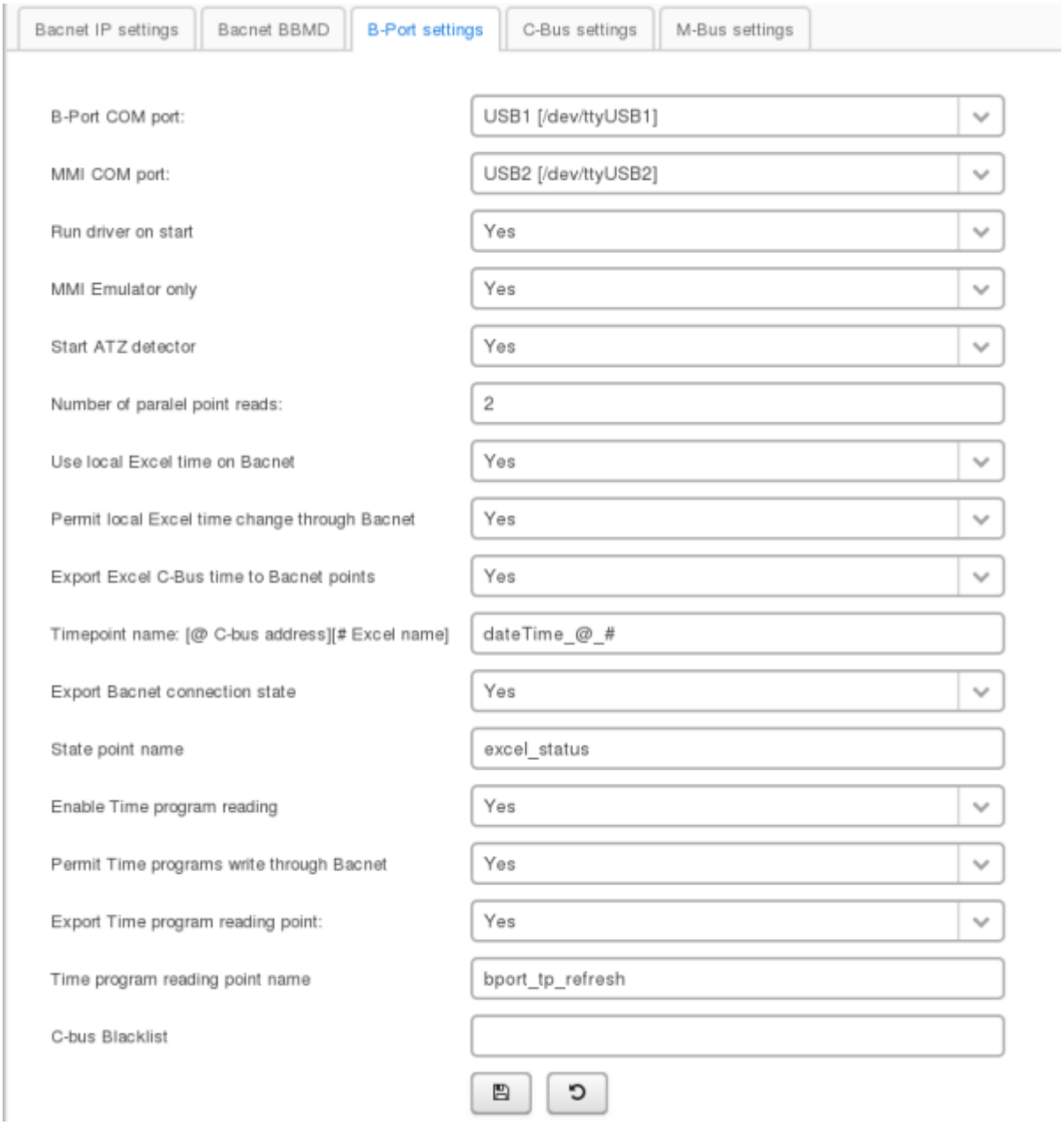
Connection



Configuration



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B-Port COM port:
Communication port for connection with Excel
MMI COM port:
Communication port for connection with MMI
Enable ATZ detector:
Enables protection preventing Excel from switching to bootstrap mode in the event of power failure. This function is available when Modem Application is enabled in Excel.
Number of parallel readings:
Parallel reading of points can increase reading speed significantly. Optimal value is in range from 1 to 5.
Use local Excel time on Bacnet:
Enable change of local Excel time through Bacnet:
These options allows time and date from local Excel to be used as return value of Device Object from Bacnet.
Export C-bus time from Excel to points on Bacnet:
Name of time point:
These options allows export time and date of all connected Excels to Bacnet Analog value points.

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Value can be calculated as [long timeMs = value * 1000000], where timeMs is defined as number of miliseconds from Unix Epoch on January 1st, 1970 at UTC. Point name, Character @ is replaced with C-Bus address and character # is replaced with Excel name.

Export Bacnet connection state:

Name of state point:

Exports Analog Value point with current connection stateExportuje AnalogValue bod v ktorom je aktuálny stav pripojenia.

0 - Disconnected

1 - Initializing Connection

2 - Connected

Enable time programs reading:

Enale time programs writing trough Bacnet:

Export point for reading time programs:

Name of point for reading time programs

Controles for read and write of time programs. Time programs are automatically refreshed from Excel every hour. It is possible to force manual refresh by writing any value to this point.

Summary of connection status



It displays the current status of the driver.

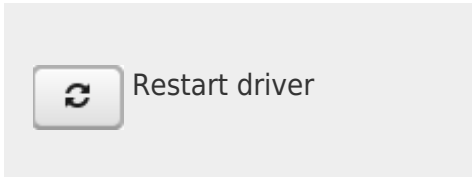
The nice part is an overview of connected devices:



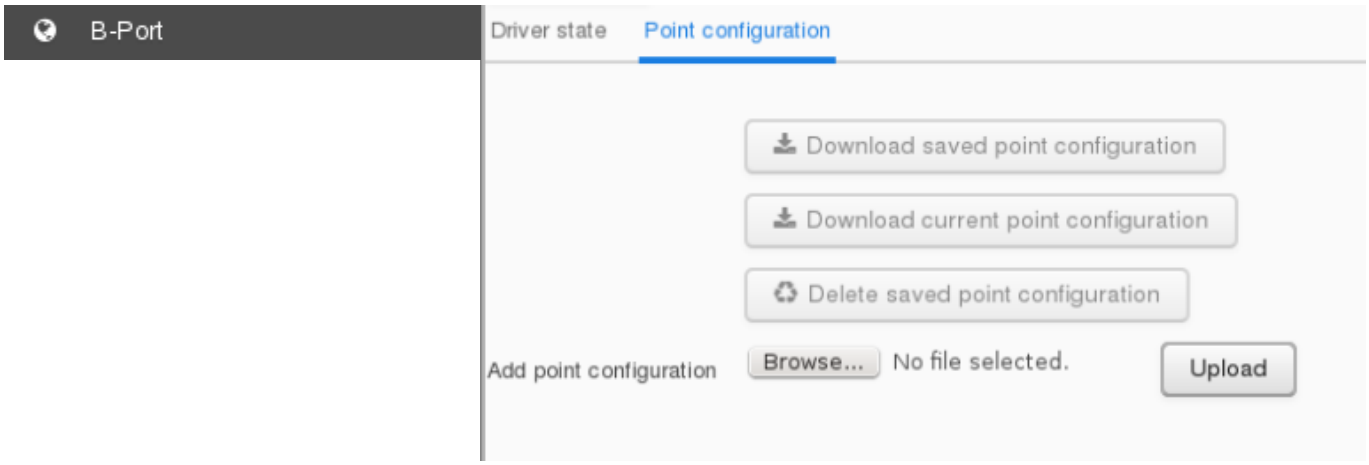
- **green** - device is active
- **orange** - address of Blacky Max
- **gray** - no device

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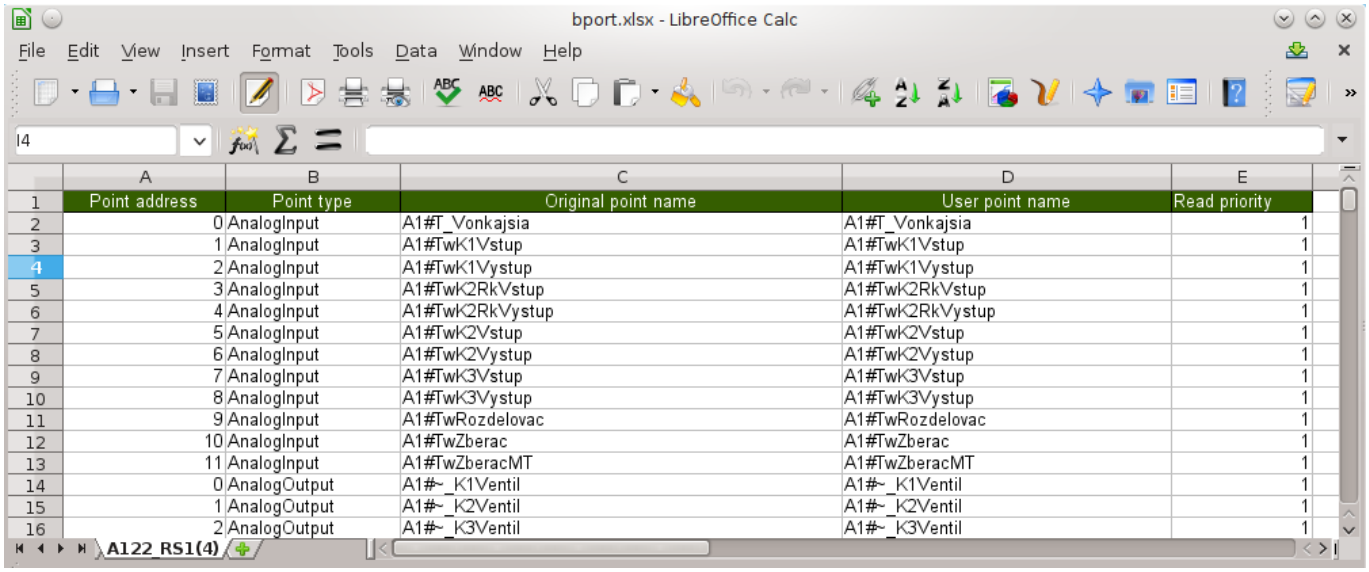
- **blue** - the device was attached after discorery of points



Point Reading Configuration



Current points can be exported to xlsx file. Exported file contains one sheet with list of points for each connected Excel. It is possible to rename or change priority of point.



	A	B	C	D	E
1	Point address	Point type	Original point name	User point name	Read priority
2	0	AnalogInput	A1#T_Vonkajsia	A1#T_Vonkajsia	1
3	1	AnalogInput	A1#TwK1Vstup	A1#TwK1Vstup	1
4	2	AnalogInput	A1#TwK1Vystup	A1#TwK1Vystup	1
5	3	AnalogInput	A1#TwK2RkVstup	A1#TwK2RkVstup	1
6	4	AnalogInput	A1#TwK2RkVystup	A1#TwK2RkVystup	1
7	5	AnalogInput	A1#TwK2Vstup	A1#TwK2Vstup	1
8	6	AnalogInput	A1#TwK2Vystup	A1#TwK2Vystup	1
9	7	AnalogInput	A1#TwK3Vstup	A1#TwK3Vstup	1
10	8	AnalogInput	A1#TwK3Vystup	A1#TwK3Vystup	1
11	9	AnalogInput	A1#TwRozdelovac	A1#TwRozdelovac	1
12	10	AnalogInput	A1#TwZberac	A1#TwZberac	1
13	11	AnalogInput	A1#TwZberacMT	A1#TwZberacMT	1
14	0	AnalogOutput	A1#~_K1Ventil	A1#~_K1Ventil	1
15	1	AnalogOutput	A1#~_K2Ventil	A1#~_K2Ventil	1
16	2	AnalogOutput	A1#~_K3Ventil	A1#~_K3Ventil	1

By modifying **User Point name** (column D) you can change the name of point on export to Bacnet. **Priority** (column E) defines reading priority. If priority is set to 0, point will not be exported to Bacnet and its reading will be disabled. If priority is set to value greater than 0, on every reading the value decrements and if resulting value is 0, point value will be read and and priority value will be set back to original value defined in xlsx file.
Columns **F..XXX** can be used for notes.

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