

WBS xxM

# Smoke control panel BACnet MotorLink®



2.30

## Application

- for smoke ventilation combined with comfort ventilation via BACnet or Modbus
- one smoke / more comfort ventilation groups
- control of window actuators with MotorLink®
- the windows can also be operated individually via keypads when comfort ventilation

Smoke control panel for control of 24 VDC actuators with MotorLink® for smoke extraction and daily comfort ventilation controlled via BACnet or Modbus.

The windows are controlled individually via the integrated BACnet or Modbus modules. It is possible to connect individual keypads, so a user at any time can open and close a window via a keypad if more or less fresh air is desired.

The smoke control panel contains motor lines. The number of motor lines depends on the variant of the smoke control panel – see the item table. Each motor line has a max. load of 4A and is able to control up to 4 MotorLink® actuators. The total max power consumption of the motor lines depends on the variant of the smoke control panel – see technical information, "Output".

WBS xxM supports BACnet IP and Modbus CTP plus BACnet MS/TP or Modbus RTU and contains more than 100 BACnet data objects or Modbus registers to ensure a flexible integration in BMS systems. The panel contains BACnet/Modbus modules, the number of modules depends on the type of the panel – see technical data "Bus connection".

## Description

The smoke control panel controls the window actuators. The communication between the smoke control panel and the individual window actuators are done digitally via MotorLink® in a 3-core wire (power and communication wire).

### The smoke control panel controls the window actuators in such a way that:

- the actuators have three different opening/closing speeds:
  - a slow and almost soundless speed, when controlled automatically
  - a faster and audible speed when manually operated
  - a fast speed by smoke ventilation and security functions
- the position of the windows is controlled with millimetre accuracy. This is done via the position feedback from the actuators to the smoke control panels. Via this communication the system continuously registers the extent of the window opening.
- the smoke control panel immediately registers if a malfunction occurs on one of the actuators or cables

## Special technical features

- for smoke extraction combined with comfort ventilation via BACnet or Modbus
- integrated BACnet or Modbus modules
- smoke control panel for window actuators and espagnolette actuators with MotorLink®
- the number of motor lines depends of the the variant of the panel
- three different opening/closing speeds on the actuators
- position feedback
- millimetre-by-millimetre control of the actuators

## Special technical features (continued)

- built-in uninterruptible power supply min. 72h for smoke ventilation (back-up batteries to be ordered separately)
- cable surveillance on break glass unit
- cable surveillance on smoke detector input (if used)
- immediate indication if malfunction on an actuator or cable
- fault display via diagnostic LEDs
- grey metal housing for surface mounting
- IP rating IP54

## Connection options

- actuators with MotorLink®
- tripping by BMS via potential-free contact (ASV module WSA 306 required)
- total power consumption max. 16A
- in connection with comfort ventilation signals from BMS units can be received via BACnet or Modbus
- wind/rain sensor without additional plug in module
- 10 smoke detectors type WSA 300 61 or WSA 310
- 10 break glass units (primary) type WSK 320 or WSK 321
- 10 break glass units (secondary) type WSK 330
- keypads for comfort ventilation

## Technical specifications

<b>Field bus</b>	BACnet IP and Modbus TCP plus BACnet MS/TP or Modbus RTU		
<b>Field bus tool support</b>	<b>BACnet</b> Device type: Application Specific Controller (B-ASC) BIBB: DS-RP-B, DS-RPM-B, DS-WP-B, DS-WPM-B, DS-COV-A, DS-COV-B, AE-ACK-B, AE-N-I-B, AE-INFO-B, DM-DDB-A, DM-DDB-B, DM-DOB-B, DM-DCC-B, DM-TS-B, DM-RD-B Object Types (Static): AI, BI, MI, AV, BV, MV, AO, BO (see PICS for further information)		
<b>Actuator control module</b>	WBA 11M number of BACnet/Modbus modules: 041A: 1pcs., 081B: 2pcs., 121J: 3pcs., 161K: 4pcs.		
<b>Primary voltage</b>	WBS 16M: 1x230 VAC, ±10%, 1x500VA, 50Hz WBS 32M: 2x230 VAC, ±10%, 2x500VA, 50Hz WBS 48M: 3x230 VAC, ±10%, 3x500VA, 50Hz		
<b>Secondary voltage</b>	24 VDC, 4A per motor line, total max output see "Output"		
<b>Inrush current</b>	max. 20A < 5msek		
<b>Standby consumption</b>	WBS 16M 041A: ca. 14W without actuators ca. 22W with 16 actuators (power consumption when the actuator is not running) WBS 16M 081B: ca. 18W without actuators ca. 26W with 16 actuators (power consumption when the actuator is not running) WBS 32M 081B: ca. 23W without actuators ca. 39W with 32 actuators (power consumption when the actuator is not running) WBS 32M 161K: ca. 31W without actuators ca. 47W with 32 actuators (power consumption when the actuator is not running) WBS 48M 121J: ca. 32W without actuators ca. 56W with 48 actuators (power consumption when the actuator is not running)		
<b>Open circuit voltage</b>	33V at 253VAC		
<b>Ripple</b>	5Vpp at 24V = 10%		
<b>Connection</b>	<b>primary side</b>	screw joints up to:	4 mm <sup>2</sup> flexible cable 6 mm <sup>2</sup> solid cable
	<b>secondary side</b>	screw joints up to:	<b>Keypads / sensors</b>
			<b>Actuators</b>
			1.5 mm <sup>2</sup> flexible cable
		2.5 mm <sup>2</sup> solid cable	6 mm <sup>2</sup> solid cable
max voltage drop 2V however max 50m actuator cable			

## Technical specifications – continued

<b>Bus connection</b>	<p><b>Ethernet connection</b>  041A: &lt; 1 x RJ 45 (1 MAC address/Node ID)  081B: &lt; 2 x RJ 45 (2 MAC addresses/Node ID)  121J: &lt; 3 x RJ 45 (3 MAC addresses/Node ID)  161K: &lt; 4 x RJ 45 (4 MAC addresses/Node ID)</p> <p><b>RS 485 connection</b>  041A: &lt; 1 x RS 485 LU (load unit)  081B: &lt; 2 x RS 485 LU (load unit)  121J: &lt; 3 x RS 485 LU (load unit)  161K: &lt; 4 x RS 485 LU (load unit)</p> <p>3 way phoenix connector  Baud rate: 2.400, 4.800, 9.600, 19.200, 38.400, 76.100, 115.200 to be selected on dipswitch.  Number of Node ID (1-255 to be selected on dipswitch):  041A: 1pcs., 081B: 2pcs., 121J: 3pcs., 161K: 4pcs.  BACnet MS/TP or Modbus RTU protocol selected on the dipswitch</p>
<b>Local manual signal input</b>	one for each motor line
<b>Output</b>	16M: max. 16A, 32M: max. 32A, 48M: max. 48A
<b>Safety transformer</b>	the smoke control panel contains a safety transformer according to EN 61558
<b>Battery back-up</b>	> 72t (2 pcs. back-up batteries - to be ordered separately)
<b>Operating conditions</b>	-5°C - +40°C, for indoor installation, the controller may not be covered
<b>Material</b>	steel cabinet, lacquered, for surface mounting
<b>Colour</b>	grey (RAL 7035)
<b>Size</b>	see item table
<b>IP rating</b>	IP54
<b>Delivery includes</b>	smoke control panel
<b>To be ordered separately</b>	2 pcs. back-up batteries type WSA – see item number in the item table
<b>Note</b>	we reserve the right to make technical changes

Items	Size (BxHxD)	Battery	Item no.
Smoke control panel 16A, 4 motor lines, 1 smoke group	600 x 600 x 210mm	WSA 024	WBS 16M 041A
Smoke control panel 16A, 8 motor lines, 1 smoke group	600 x 600 x 210mm	WSA 024	WBS 16M 081B
Smoke control panel 32A, 8 motor lines, 1 smoke group	600 x 600 x 210mm	WSA 024	WBS 32M 081B
Smoke control panel 32A, 16 motor lines, 1 smoke group	600 x 760 x 210mm	WSA 024	WBS 32M 161K
Smoke control panel 48A, 12 motor lines, 1 smoke group	600 x 760 x 210mm	WSA 033	WBS 48M 121J

Accessories	Item no.
Battery 1 pcs. (always use two similar batteries)	see item table
ASV module (line surveillance module for ASV connection)	WSA 306
Smoke detector	WSA 300 61
Different heat detector	WSA 310
Rain sensor	WLA 331
Break glass unit WSK 320, WSK 321, WSK 329 or WSK 320	see product sheet
Ventilation keypad e.g. WSK 100, WSK 102 or WSK 300	see product sheet

**For further information, see the respective product sheets in this chapter and the chapter "Sensors" and "Accessories"**

		Max. number of window actuators which can be connected on max. numbers of motor lines																
		Possible connections																
Type of actuator	Actuator current consumption	Variant of actuator	WBS 16M 041A			WBS 16M 081B			WBS 32M 081B			WBS 32M 161K			WBS 48M 121J			
			Windows	actuators	motor lines	Windows	actuators	motor lines	Windows	actuators	motor lines	Windows	actuators	motor lines	Windows	actuators	motor lines	
WMX 802/804-n WMX 820/824-n WMU 836/861-n WMS 306/309-n		-1	16	16	4	16	16	8	32	32	8	32	32	16	48	48	12	
		-2	4	8	4	8	16	8	use WBS 16M 081A	16	32	16	16	32	16	24	24	12
		-3	4	12	4	5	15	5	8	24	8	10	30	10	12	36	36	12
		-4	4	16	4	use WBS 16M 041A	8	8	8	32	8	use WBS 32M 081B	16	16	12	48	48	12
WMX 802/804-n WMX 820/824-n WMU 836/861-n WMS 306/309-n + WMB*		-1	4	4	4	8	8	8	use WBS 16M 081A	16	16	16	16	16	12	12	12	12
		-2	4	8	4	8	16	8	use WBS 16M 081A	16	32	16	16	32	24	24	12	
		-3	4	12	4	5	15	5	8	24	8	10	30	10	12	36	36	12
		-4	4	16	4	use WBS 16M 041A	8	8	8	32	8	use WBS 32M 081B	16	16	12	48	48	12
WMU 862-n WMS 409-n WMU 862-n WMS 409-n + WMB*		-1	8	8	4	8	8	8	16	16	8	16	16	16	24	24	12	12
		-2	4	8	4	8	16	8	use WBS 16M 081A	16	32	16	16	32	24	24	12	
		-1	4	4	4	8	8	8	use WBS 16M 081A	16	16	16	16	16	12	12	12	12
		-2	4	8	4	8	16	8	use WBS 16M 081A	16	32	16	16	32	24	24	12	
WMU 863/883-n WMU 863/883-n + WMB*		-1	4	4	4	5	5	5	8	8	8	8	10	10	12	12	12	12
		-1	4	4	4	5	5	5	8	8	8	8	10	10	12	12	12	12
WMU 864/884-n WMU 864/884-n + WMB*		-1	4	4	4	use WBS 16M 041A	8	8	8	8	8	8	use WBS 32M 081B	12	12	12	12	12
		-1	4	4	4	use WBS 16M 041A	8	8	8	8	8	8	use WBS 32M 081B	12	12	12	12	12
WMU 885-n WMU 885-n + WMB*		-1	3	3	3	use WBS 16M 041A	6	6	6	6	6	6	use WBS 32M 081B	9	9	9	9	9
		-1	3	3	3	use WBS 16M 041A	6	6	6	6	6	6	use WBS 32M 081B	9	9	9	9	9

Actuator variants: -1 = single actuator, -2 = synchro actuator, -3 = triple actuator, -4 = quad actuator

In the MotorController each motorline can have a max load of 4A. The total max current consumption of all motorlines must not exceed 16A, 32A or 48A.

\*A WMB 01M, WMX 02M, WMB 811-n or WMB 812-n espagnolette actuator can be connected to one window and each window must have its own motorline.

## Actuator variants on one motor line

1. The smoke control panel has motor lines:

- WBS 16M 041A – 4 motor lines
- WBS 16M 081B and WBS 32M 081B – 8 motor lines
- WBS 32M 161K – 16 motor lines
- WBS 48M 121J – 12 motor lines

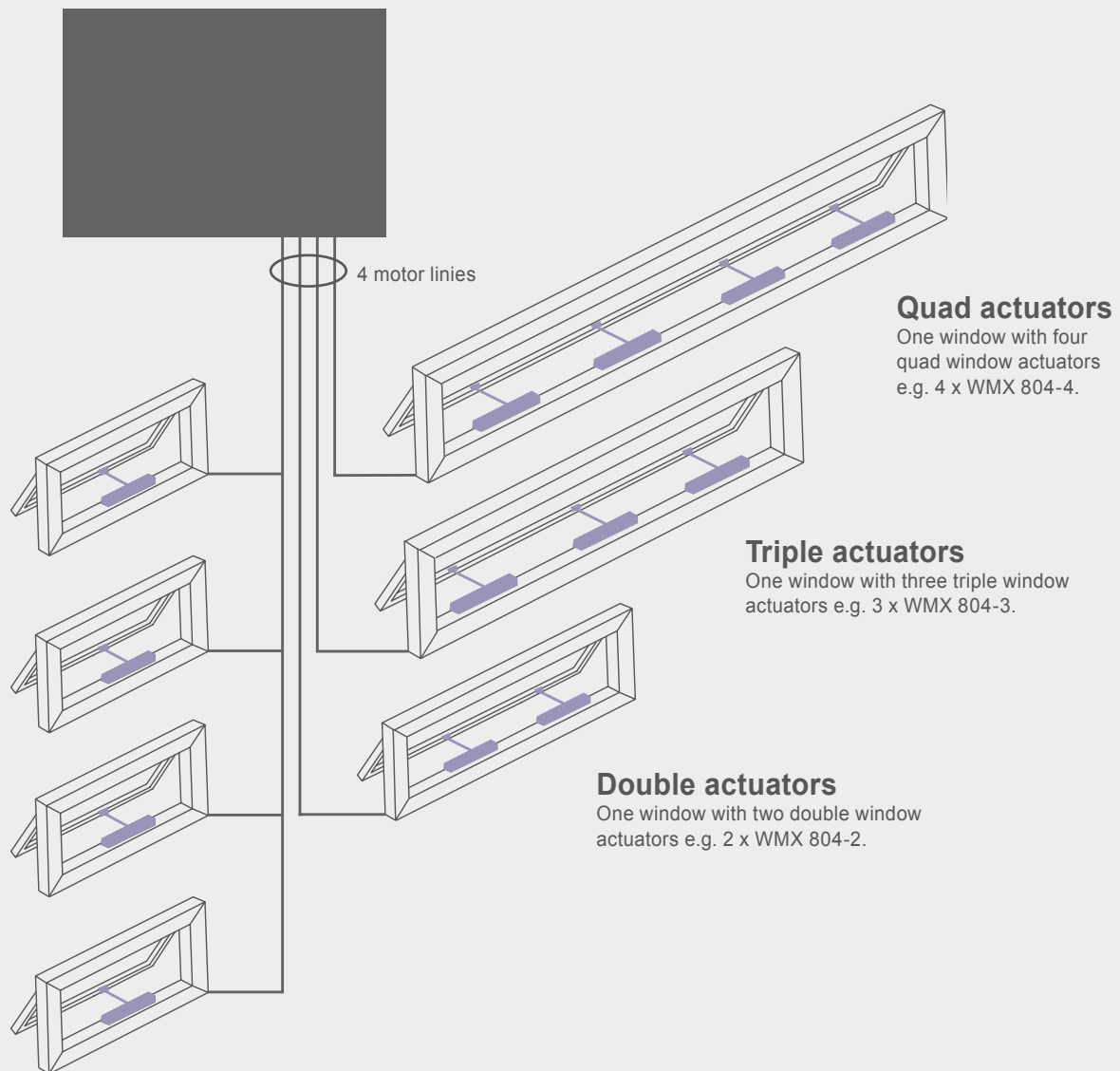
2. When connecting window actuators one should pay attention to:

- the max current load of the smoke control panel:  
the max load on the smoke control panel is 4A per motor line (simultaneously load). The simultaneously max current consumption of all motor lines must not exceed max 16A.

• the cable length and cross section:

- max voltage drop 2V in the cable, however max distance between the smoke control panel and the window actuators is 50m

3. Aside from window actuators; espagnolette actuators type WMB 01M or WMB 02M can be connected to the window. When connecting an espagnolette actuator each window must have its own motor line.



### Single actuator

One window with one single window actuator  
e.g. 1 x WMX 804-1.

Up to four windows with each one window actuator  
can be connected e.g. 4 x WMX 804-1.

### Double actuators

One window with two double window  
actuators e.g. 2 x WMX 804-2.

### Triple actuators

One window with three triple window  
actuators e.g. 3 x WMX 804-3.

### Quad actuators

One window with four  
quad window actuators  
e.g. 4 x WMX 804-4.

WBS xxM

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