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CompactSmoke™ WSC 310 / WSC 320 PLUS
Smoke control panel 10-20A

⌂	⌂ EN 12101	**230V**	**MAX 20A**	▭	**KNX**	**BACnet**
Natural ventilation	Smoke ventilation EN 12101	Rated voltage	Maksimal output current	MotorLink®	KNX product	BACnet product

Application

- smoke extraction and daily comfort ventilation
- up to 10 smoke zones / 10 daily ventilation groups
- 10A and 20A versions
- to be used with ±24V standard actuators and/or actuators with MotorLink®
- comfort ventilation via bus communication KNX, BACnet IP or BACnet MS/TP
- less cabling as the panel uses bus technology
- wind direction depending H&S ventilation
- more panels can be linked (master/slave)
- low power consumption

Smoke control panel for the control of ±24V DC actuators and actuators with MotorLink® for smoke ventilation and daily comfort ventilation. The panel can be used in small and medium sized buildings as well as in building sections e.g. stair cases and restaurants.

Easy configuration via the built-in touch screen.

Panel types
The PLUS panel is supplied in three versions:

- 10A, 2 smoke zones / 2 daily ventilation groups
  WSC 310 P 0202
- 20A, 2 smoke zones / 2 daily ventilation groups
  WSC 320 P 0202
- 20A, 10 smoke zones / 10 daily ventilation groups
  WSC 320 P 1012

The number of smoke zones and ventilation groups is the max number possible. These are to be configured via the built-in touch screen and thus be fitted to the building.

The panel is also supplied as a STANDARD version where the configuration is done on DIP switches – please see the separate product sheet for further information.

Communication card
The panel can be expanded with a communication card thus comfort ventilation will be possible via bus communication KNX, BACnet IP or BACnet MS/TP together with e.g. NV Advance®. The card is to be bought separately.

Card types:
- WCA 3FK with KNX
- WCA 3FM with BACnet MS/TP
- WCA 3FB with BACnet IP

Break glass unit

Break glass units from the WSK 5 series are to be used together with this panel. The units are configured and assigned to smoke zones via the build in touch screen

On each line up to five break glass units type WSK 503 or WSK 504 can be connected.
If keypads and smoke detectors are to be connected to the break glass unit, break glass unit type WSK 501 or WSK 502 is to be used. Only one of these types can be connected per line, the remaining (up to four) break glass units must be type WSK 503 or WSK 504.

Smoke zone / ventilatilon group / motor line

A ventilation group (motor group) consists of one or more motor lines and all the motor lines in the group are operated simultaneously.

A ventilation group can contain motor lines with ±24V standard actuators and MotorLink® actuators, whereas a motor line can only have ±24V standard actuators or MotorLink® actuators connected.
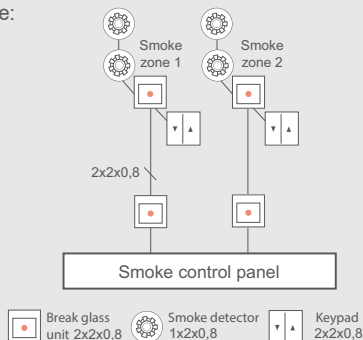
Cabling

The panel uses bus technology and the overall cabling for break glass units, smoke detectors and keypads is significantly reduced compared to other types of smoke panels.

The panel has 1 input for a smoke detector, 2 inputs for break glass units (where up to 10 break glass units can be connected) and 2 or 12 inputs for ventilation keypads (no max number of keypads).

Use break glass unit WSK 503 or WSK 504 when smoke detectors are connected to the smoke detector input in the panel.

Use break glass unit WSK 501 or WSK 502 when smoke detectors are connected to the break glass unit – see example:

Linking smoke panels

By linking several panels together the panels can be used in large buildings. Max total master/slave cable length between two panels is 200m.

Commissioning

The PLUS panel is configured, commissioned and maintained via the built in LCD touch screen – easy and simple without the use of an external PC.
For easy commissioning and quick troubleshooting when maintaining the system, faults in the system will be showned on the touch screen.

Back-up batteries

Built-in uninterruptible power supply for min. 72h in case of power loss (batteries are supplied).

Specifications

- approval according to EN 12101-10
- automatically limited opening for comfort ventilation – no additional modules required
- simple installation due to substantially less cabling
- field bus cards are available for KNX, BACnet IP and BACnet MS/TP
- max. output voltage 27.6VDC @230VAC
- flexible open system design
- easy configuration at start up / expanding / rebuilding on the 2½" LCD built in touch screen in the panel – this can also be done on a PC without any additional modules
- the touch screen is also used for quick troubleshooting when maintaining the system
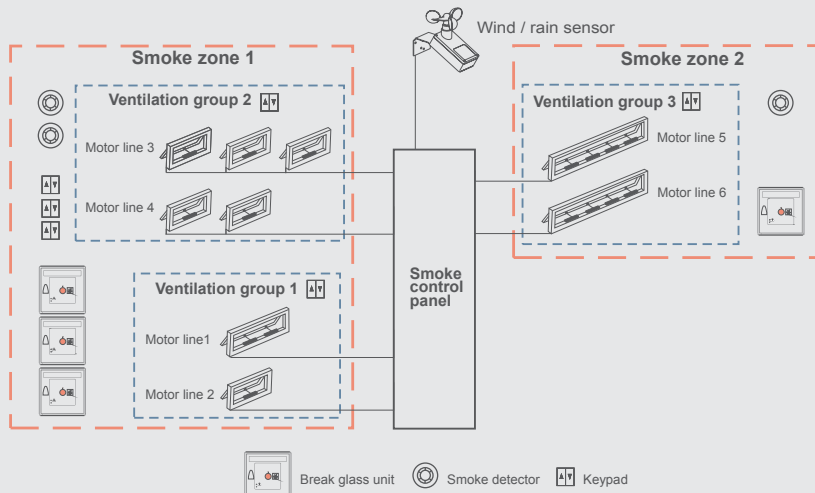
Connection options

- triggering by BMS via potential-free contact – no additional modules required
- magnetic clamps – for further information see the installation guide

System example with WSC 320 P 1012

The keypads and smoke detector units are cabled directly to the break glass units in the smoke zones, which means that the need for cabling in the building is significantly reduced.

A wind/rain sensor is connected to close the windows during comfort ventilation in case of high wind and/or rain.
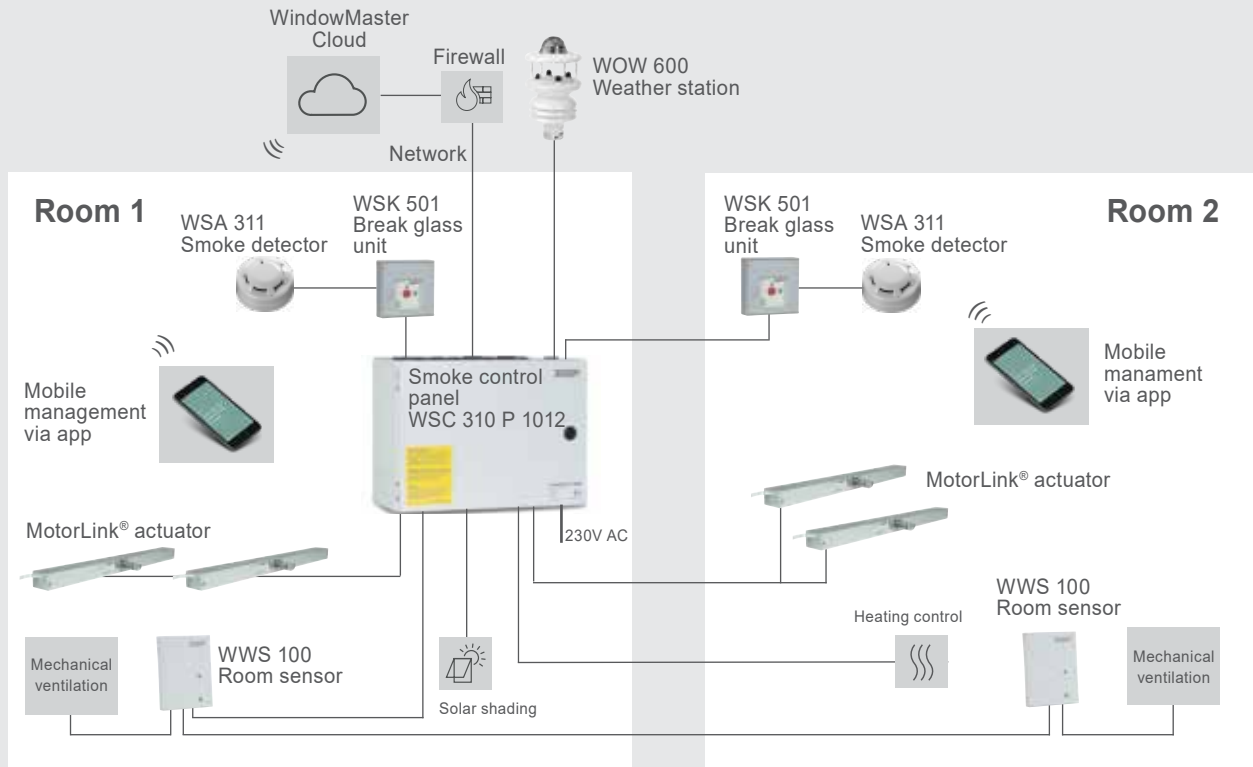
The smoke ventilation panel is connected to the Fire Alarm System (common for both smoke zones).

WSC 310/320 Plus smoke control panels can be used in NV Embedded® indoor climate solutions.

- Control of natural ventilation, mixed mode ventilation (incl. mechanical ventilation), heating and solar shading.
- The indoor sensors ae connected directly to the smoke control panel via WSK-Link™.
- The weather station is connected directly to the smoke control panel.
- The log data is stored in the Cloud.

- The configuration is performed on the smoke control panel and/or from the PC.
- Cloud based remote monitoring
- Mobil app
- Break glass units are connected directly to the smoke control panel and smoke detectors are connected to the break glass units

For more information please see the NV Embedded® data sheet

Description of the panel

Each panel includes a power supply unit WCA 3P1 (10A) or WCA 3P2 (20A), which is to be connected to the mains, a main control card WCA 3PS with a build in touch screen as well as two back-up batteries.

If the panel has more than two motor lines, the card type WCA 3M8 is also included.

If the panel has more than two keypad input, the cards type WCA 3KI and WCA 3M8 are also included.
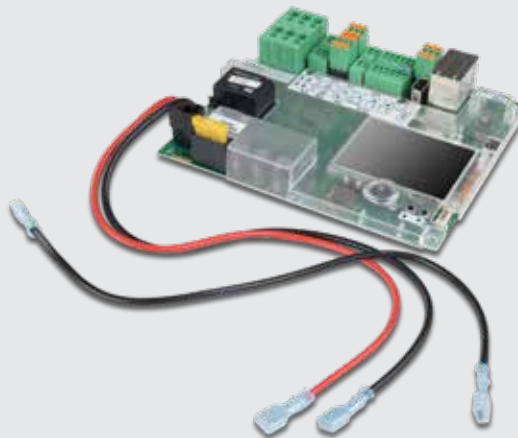
A communication card for bus communication KNX, BACnet IP or BACnet MS/TP can be ordered seperately.

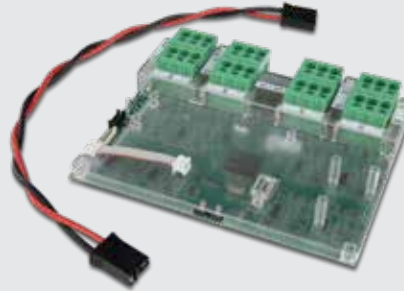## Description of cards

Main card WCA 3SP

The card contains:
- 2 motor lines for ±24V standard actuators or MotorLink® actuators
- 2 inputs for keypads for comfort ventilation
- 2 inputs for break glass units
- 1 input for smoke detector
- 1 input for 24V/48V
- output for fault signal to Fire Alarm System
- input for weather station incl. wind direction (WLA 330/331/340 + WOW 201/202)
- Input for master/slave connection (WSK-Link™)
- 2 ethernet connections
- connection for USB host and USB device
- connection for fieldbus card
- touch screen for configuration, commissioning and maintenance

Motor line card WCA 3M8 (only WSC 320 1012)

The card contains:
8 motor lines for ±24V standard actuators or MotorLink® actuators

Input card WCA 3KI (only WSC 320 1012)

The card contains:
connections for 10 keypads

The connection of a fieldbus card enables communication and access to the available bus-objects depending on the chosen system.Smoke extraction function has always higher priority than comfort commands from the field bus and it is recommended only to use field bus for comfort purposes.

There is a set of KNX and BACnet objects available for each motor line, ventilation group and smoke zone, which provides the options for status and commands. For further information on available objects see "KNX Application Programming Description" and BACnet PICS" on our web site www.windowmaster.com

Status options
E.g. actual position, fault and operation status and the max opening angle (degrees).

Command options
This will mostly be used for target position commands with different priority and MotorLink® actuator speed.

Fieldbus cards
- WCA 3FK   Fieldbus card with KNX interface
- WCA 3FM   Fieldbus card with BACnet MS/TP interface
- WCA 3FB   Fieldbus card with BACnet IP key

Max numbers of actuators per motor line and panel
The table shows the maximum number of actuators, which can be connected per motor line and panel depending on the type of the actuator, panel and connected card.

The total power consumption of all the connected actuators must not exceed 10A for WSC 310 and 20A for WSC 320.

WSC 310 / WSC 320 PLUS							
	Per motor line		**WSC 310 PLUS**		**WSC 320 PLUS**		
	± 24V actuators	MotorLink® actuators	± 24V actuators	MotorLink® actuators	± 24V actuators	MotorLink® actuators	
Actuator type				2 motor lines		2 motor lines	10 motor lines
WMD 820-1	10	4	10	8	20	8	20
WMD 820-2	10	4	10	8	20	4	20
WMD 820-3	9	3	9	6	18	6	18
WMD 820-4	8	4	8	8	20	8	20
WMS 306-1	10	4	10	8	20	8	20
WMS 306-2	10	2	10	4	20	4	20
WMS 306-3	9	3	9	6	18	6	18
WMS 306-4	8	4	8	8	20	8	20
WMS 309-1	10	4	10	8	20	8	20
WMS 309-2	10	2	10	4	20	4	20
WMS 309-3	9	3	9	6	18	6	18
WMS 309-4	8	4	8	8	20	8	20
WMS 409 xxxx 01	5	0	5	0	10	0	0
WMS 409-1	5	4	5	4	10	8	10
WMS 409-2	4	2	4	4	8	4	10
WMS 409-3	3	3	3	3	6	6	9
WMS 409-4	4	4	4	4	8	8	8
WMU 831 / 836 / 851-1	10	4	10	8	20	8	20
WMU 831 / 836 / 851-2	10	4	10	8	20	4	20
WMU 831 / 836 / 851-3	9	3	9	6	18	6	18
WMU 831 / 836 / 851-4	8	4	8	8	20	8	20

Continued (WSC 310 / WSC 320 PLUS)							
WMU 861-1	6	4	6	4	12	8	12
WMU 861-2	6	2	6	4	12	4	12
WMU 861-3	6	3	6	3	12	6	12
WMU 861-4	4	4	4	4	12	8	12
WMU 842 / 852 / 862 / 882-1	4	4	4	4	8	8	8
WMU 842 / 852 / 862 / 882-2	4	2	4	2	8	4	8
WMU 842 / 852 / 862 / 882-3	3	3	3	3	6	6	6
WMU 842 / 852 / 862 / 882-4	4	4	4	4	8	8	9
WMU 863 / 883-1	2	2	2	2	6	6	6
WMU 863 / 883-2	2	2	2	2	6	4	4
WMU 863 / 883-3	0	0	0	0	6	6	6
WMU 863 / 883-4	0	0	0	0	4	4	4
WMU 864 / 884-1	2	2	2	2	4	4	4
WMU 864 / 884-2	2	2	2	2	4	4	4
WMU 864 / 884-3	0	0	0	0	3	3	3
WMU 864 / 884-4	0	0	0	0	4	4	4
WMU 885 / 895-1	2	2	2	2	4	4	4
WMU 885 / 895-2	2	2	2	2	4	4	4
WMU 885 / 895-3	0	0	0	0	3	3	3
WMU 885 / 895-4	0	0	0	0	4	4	4
WMX 503 / 504 / 523 / 526-1	20	4	20	8	40	8	40
WMX 503 / 504 / 523 / 526-2	20	2	20	4	40	4	20
WMX 503 / 504 / 523 / 526-3	18	3	18	6	39	6	30
WMX 503 / 504 / 523 / 526-4	20	4	20	8	40	8	40
WMX 803 / 804 / 813 / 814 / 823 / 826-1	10	4	10	8	20	4	20
WMX 803 / 804 / 813 / 814 / 823 / 826-2	10	2	10	4	20	8	20
WMX 803 / 804 / 813 / 814 / 823 / 826-3	9	3	9	6	18	6	18
WMX 803 / 804 / 813 / 814 / 823 / 826-4	8	4	8	8	20	8	20
WML 820 / 825	10	0	10	0	20	0	0
WML 860-1	10	4	10	8	20	8	20
WML 860-2	10	2	10	4	20	8	20
WML 860-3	9	3	9	6	18	6	18
WML 860-4	8	4	8	8	20	8	20
WMB 801 / 802*	Actuators with a total of max. of 4A can be connected to the locking actuator						
WMB 811 / 812 * **	10	2	10	4	20	4	20

* Do not exceed the total power consumption of the motor line
** When having two locking actuators on one motor line use: 1 x WMB 811 and 1 x WMB 812

Actuator type / number of speeds

This smoke ventilation panel gives the possibility of up to three window actuator speeds depending on the type of connected actuator:

- ±24V DC standard actuator – 1 speed (H&S)
- MotorLink® actuator – 3 speeds
  (H&S / manually operated / automatically)

The different speeds:
- automatically control speed – actuators run slowly and almost soundlessly.
- manual control speed – actuators run faster and more audibly.
- H&S and safety control speed – actuators run fastest. H&S control always has highest priority.

Technical specifications	
Output current (nominal)	WSC 310: 10A / WSC 320: 20A
Motor lines	WSC 310 / 320 0202: max 2, WSC 320 1012: max 10 A motor line can contain either ±24V standard actuators or MotorLink® actuators
Ventilation groups	WSC 310 / 320 0202: max 2, WSC 320 1012: max 10 Via the software more motor lines can be connected in the same group
Smoke zones	WSC 310 / 320 0202: max 2, WSC 320 1012: max 10
Primary voltage	230V AC, 50Hz (85-264V AC, 47-63Hz
Actuator secondary voltage	Motor voltage $\quad$ 24V DC (±15%) Open circuit voltage at 230V AC (no load) $\quad$ 27.6V DC @ 20°C Ripple at max load $\quad$ max 6% (3.5Vpp)
Power consumption	WSC 310: min 3.2W[1+2], typ. 4.8W[1+3]. At max load 300W WSC 320: min 5.0W[1+2], typ. 5.6W[1+3]. At max load 600W 1) no load: $\quad$ system operational but no motors are running 2) min: $\quad$ with 1 x WSK 501 break glass unit and 1 x WSA 311 smoke detector 3) max load: with 1 x WSK 501 break glass unit, 4 x WSK 503 break glass unit and $\qquad$ 10 x WSA 311 smoke detector
Inrush current on primary site	70A < 5ms Max 3 x WSC 310/320 per 10 A supply group. Circuit breaker "C" characteristic.
Operating condition	-5°C - +40°C, max. 95% relative humidity (not condensing) EN 12101-10: Operation class A, Environmental class 1, with IP value increased to IP 54 (according to EN 12101-10 is min. IP 30 required)
Emergency power supply	>72 hours in accordance with EN 12101-10
Switch-on duration	ED 40% (4 min. per 10 min.)
Cable connection	Actuator: flexible max. 6mm² / solid max. 10mm² Other components: min. 0.2mm² / max. 1.5mm²
Size and weight	WSC 310: 400 x 300 x 120mm (WxHxD), 6kg no batteries, 10.8kg with batteries (2xWSA 007) WSC 320: 400 x 300 x 210mm (WxHxD), 8.6kg no batteries, 16.6kg with batteries (2xWSA 012)
Material	Metal housing for surface mounting
Colour	Grey (RAL 7035)
IP rating	IP54
Certification	EN 12101-10.
Delivery includes	10A or 20A smoke ventilation panel. Supplied with: • WSA 510 end of line module: WSC 310 / 320 0202: 2 pcs., WSC 320 1012: 10 pcs. • WSA 501 10kΩ resistors (package of 10 pcs.) • Back-up battery type, 2 pcs. WSA 007 (WSC 310) or WSA 012 (WSC 320)
Spare parts	See the spare part list on our website www.windowmaster.com under "Products"
Note	We reserve the right to make technical changes

CompactSmoke™ WSC 310 / WSC 320 PLUS
Smoke control panel 10-20A

Items	Item number
Smoke control panel 10A, 2 smoke zones / 2 daily comfort groups, 2 inputs for keypads, 2 back-up batteries type WSA 007, programmable, can be expanded with fieldbus	WSC 310 P 0202
Smoke control panel 20A, 2 smoke zones / 2 daily comfort groups, 2 inputs for keypads, 2 back-up batteries type WSA 012, programmable, can be expanded with fieldbus	WSC 320 P 0202
Smoke control panel 20A, 10 smoke zones / 10 daily comfort groups, 12 inputs for keypads, 2 back-up batteries type WSA 012, programmable, can be expanded with fieldbus	WSC 320 P 1012

Accessories	Item number
Fieldbus card with KNX interface	WCA 3FK
Fieldbus card with BACnet MS/TP interface	WCA 3FM
Fieldbus card with BACnet IP key	WCA 3FB
Break glass unit with signal, plastic housing. With data communication and input for smoke detector. Max. one break glass unit on each line. Colour of the housing = x: red = 1, yellow = 2, grey = 3, blue = 4, orange = 5	WSK 501 000x
Break glass unit with signal, metal housing. With data communication and input for smoke detector. Max. one break glass unit on each line. Colour of the housing = x: yellow = 2, grey = 3, orange = 5	WSK 502 000x
Break glass unit with signal, plastic housing. With data communication. No input for smoke detector or keypad. Max five units per line. Colour of the housing = x: red = 1, yellow = 2, grey = 3, blue = 4, orange = 5	WSK 503 000x
Break glass unit with signal, metal housing. With data communication. No input for smoke detector or keypad. Max five units per line. Colour of the housing = x: yellow = 2, grey = 3, orange = 5	WSK 504 000x
Smoke detector	WSA 311
Rain sensor	WLA 331
Rain/wind sensor	WLA 330
Rain/wind sensor, with pulse output	WLA 340
Weather station	WOW 600
End of line motor module with resistance	WSA 510
10kΩ resistance, 10 pcs.	WSA 501
Fire Alarm System module	WSA 306
Cable for wind / rain sensor WLA 340, 4m UV resistant, 4 x 2 x 0.75mm^2	WLL 604
Cables for smoke ventilation – see separate product sheet for further information	WLL 8xx
USB stick for log-data, back-up and firmware updates	WCA 304
USB stick for NV Embedded®	NVE Dongle
Comfort keypad for 1 window or 1 window group	WSK 110 0A0B
Comfort keypad for 2 windows or 2 window groups	WSK 120 0A0B 0A0B

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