WINDOW
MASTER ®
Fresh Air. Fresh People.

WCC 310 / 320 STANDARD
MotorController

Natural ventilation	230V Rated voltage	MotorLink®	KNX KNX product

Application
- for daily comfort ventilation
- to be used with ±24V standard window actuators and window atuators with MotorLink®
- 4 or 8 motor lines
- 10A or 20A
- with or without KNX

MotorController for the control of ±24V DC standard actuators and actuators with MotorLink® for daily comfort ventilation. It can also control espagnolette/locking actuators.

The MotorController is used for control of 4 or 8 individual motor lines. The number of actuators which can be connected on each motor line depends on the type of actuator – see the table "Max numbers of actuators per motor line and MotorController" for type and number.

Versions
The MotorController is supplied in 4 variants:

With 10A:
- WCC 310 S 0410: 10A, 4 motor lines, 10 inputs
- WCC 310 S 0410 KNX: 10A, 4 motor lines, 10 KNX-inputs

With 20A:
- WCC 320 S 0810: 20A, 8 motor lines, 10 inputs
- WCC 320 S 0810 KNX: 20A, 8 motor lines, 10 KNX-inputs

In the MotorController each motor line can have a max load

of 10A. The total max current consumption of all motor lines must not exceed 10A / 20A.

The MotorController is also supplied as a PLUS version where the configuration is done on the build in touchscreen – please see the seperate product sheet for further information.

Description
The MotorController controls (opens/closes) the window actuators based on the signals from the connected components e.g. keypads, room sensor, weather sensor and BUS commands.

We recommend keypads are used in conjunction with ventilation automation to allow local manual user override.

Communication
The communication between the MotorController and each window actuator is done via a 2 or 3 wire cable this depends, if the actuator has MotorLink® or not.

Actuators without MotorLink®
The communication is controlled via a 2 wire cable.
The positioning of the windows is based on time control with a limited precision.

Actuators with MotorLink®
The communication is controlled digitally via MotorLink® in a 3-core (power and comunication wire).
The position of the window is controlled with millimetre

accuracy. This is done via the position feedback from the actuators to the MotorController. Via this communication the system continuously registers the extent of the window opening.
The MotorController immediately reports if a malfunction occurs on one of the motor lines.

Actuator speeds
This MotorController gives the possibility of up to three window actuator speeds depending on the type of actuator connected:
- ±24V DC standard actuator – 1 speed (speed B)
- MotorLink® actuator – 3 speeds
  (safety / manually operated / automatically)

The different speeds
A. automatically control speed – actuators run slowly and almost soundlessly.
B. manual control speed – actuators run faster and more audibly.
C. safety control speed – actuators run fastest.

Common input
The actuators can be controlled via four common inputs. All switch contacts must be potential free.

When connecting sensors the auxiliary power from the built-in 24V DC 0.23A power supply can be used.

Option 1
Common CLOSE ALL/safety (rain) function
Actuator speed: B.

Option 2
Self-hold function on all actuator groups.
Switch closed = self-hold.

Option 3
Common "OPEN" function for all actuator groups.
No self-hold.
Actuator speed: B.

Option 4
Common "CLOSE" function for all actuator groups.
No self-hold.
Actuator speed: B.

MotorController with KNX
The MotorController is integrated into KNX projects using the relevant application. In the application there are a number of communication objects and parameters, which help ensure a flexible integration with other KNX products and control units.

For further information on available objects see "KNX Application Program Description" on our web site www.windowmaster.com.
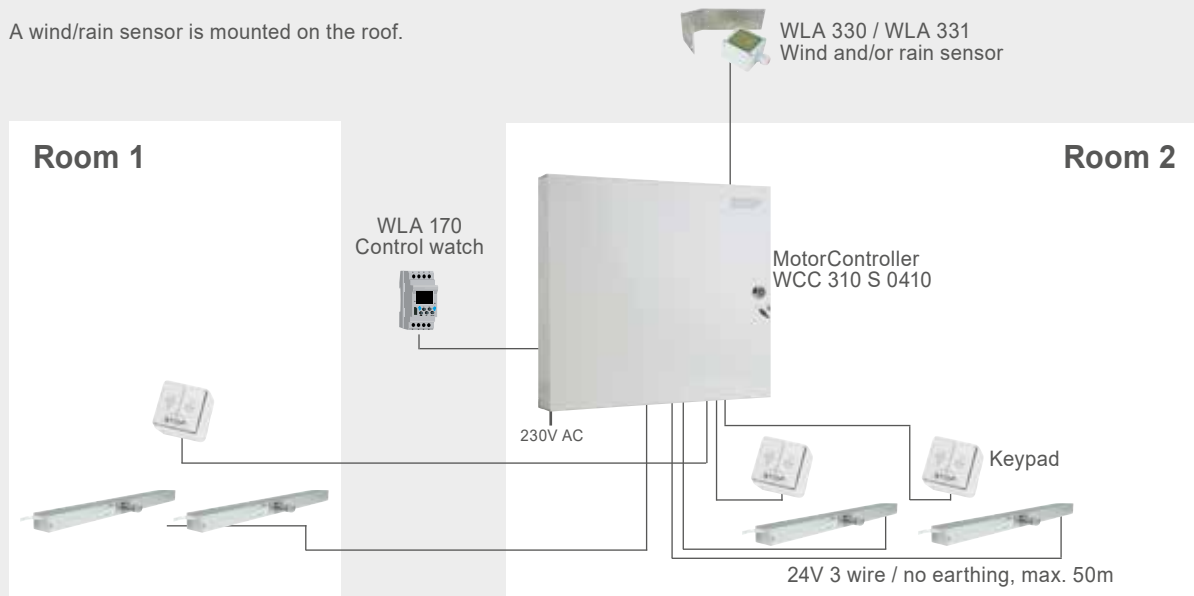
Specifications
- 4 motor lines (comfort ventilation groups) up to 10A or 8 motor lines (comfort ventilation groups) up to 20A
- max. 10A/motor line
- supplied with or without KNX
- one comfort input "Close all"
- max. output voltage 27.6VDC @230VAC
- simple and fast installation

Actuator and power supply cables are quickly and easily connected to the MotorController. The cable access can be made from the top or from underneath the MotorController, which can be mounted vertically or horizontally on the wall.

In each room actuators with MotorLink® have been connected as well as individual keypads for individual operation of the windows. A control timer is mounted for opening/closing windows in room 1 and 2 at predefined times e.g. open/close during lunch time and close all windows at 6PM.

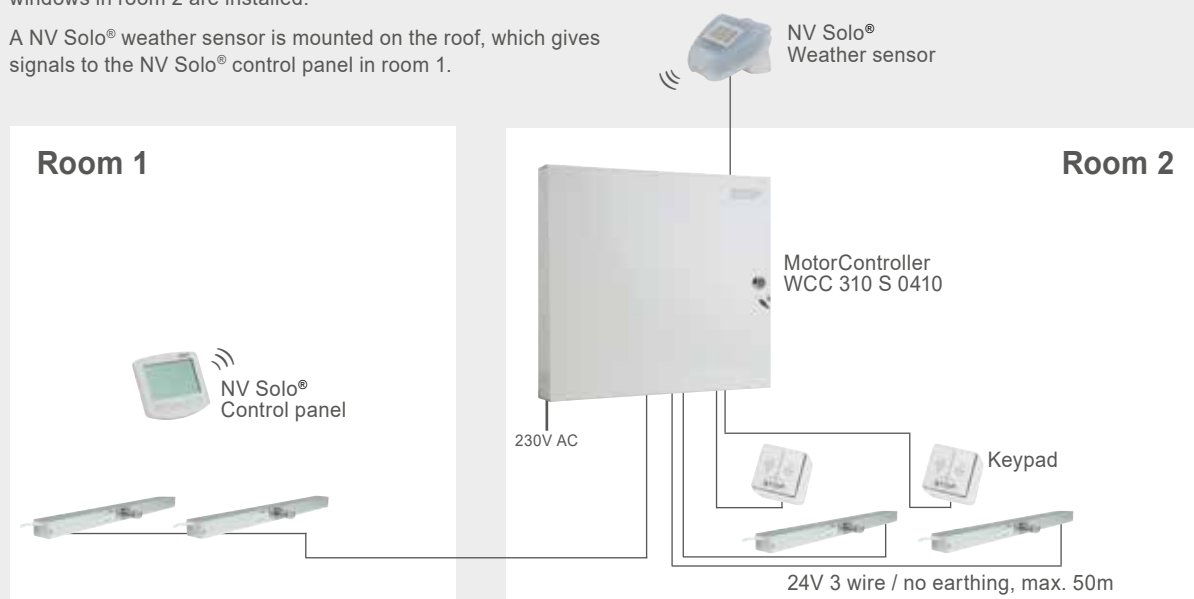A wind/rain sensor is mounted on the roof.

WLA 330 / WLA 331
Wind and/or rain sensor

Room 1

WLA 170
Control watch

Room 2

MotorController
WCC 310 S 0410

230V AC

Keypad

24V 3 wire / no earthing, max. 50m

In each room actuators with MotorLink® have been connected.
In room 1 a NV Solo® a control panel with built in temperature sensor and keypads for individual operation of the actuators in room 1 is installed.
In room 2 individual keypads for individual operation of the windows in room 2 are installed.

A NV Solo® weather sensor is mounted on the roof, which gives signals to the NV Solo® control panel in room 1.

NV Solo®
Weather sensor

Room 1

NV Solo®
Control panel

Room 2

MotorController
WCC 310 S 0410

230V AC

Keypad

24V 3 wire / no earthing, max. 50m

Technical specifications	
Output current	WCC 310: 10A / WCC 320: 20A
Motor lines	4 or 8 motor lines A line can be either a ±24V standard motor line or a MotorLink® motor line.
Primary voltage	230V AC, 50Hz (85-264V AC, 47-63Hz)
Actuator secondary voltage	Nominal voltage 24V DC (±15%) Open circuit voltage at 230V AC (no load) 27.6V DC @ 20°C Ripple at max load max 6% (3,5Vpp)
Power consumption	WCC 310: min 1.1W[1], typ. 3W[2]. At max load 305W WCC 320: min 1.1W[1], typ. 3.5W[3]. At max load 605W 1) min.: 1 actuator 2) typ.: 16 MotorLink® actuators + rain sensor 3) typ.: 32 MotorLink® actuators + rain sensor
Inrush current on primary site	70A < 5ms Max 3 x WCC 310/320 per 10 A supply group. Circuit breaker "C" characteristic.
Operating conditions	-5°C – +45°C, for indoor installation, the controller may not be covered
Switch-on duration	ED 40% (4 min. per 10 min.)
Connection cable	**Actuators** Flexible max 6mm² / solid max 10mm², max. 2V power loss. MotorLink® actuator however cables max. 50m **Other components** Min 0.2mm² / max 1.5mm²
Size	355 x 320 x 76mm (BxHxD)
Material	Lacquered metal housing for surface mounting
Colour	White (RAL 9010)
Weight	WCC 310: 4kg / WCC 320: 4.8kg
IP rating	IP20
Delivery includes	MotorController
Spare parts	See the spare part list on our website www.windowmaster.com under "Products"
Note	We reserve the right to make technical changes
Technical specifications – KNX version only	
Field bus	KNX TP1
Engineering software tool	ETS 4 / 5 application
BUS connection	KNX bus connection terminal
Current consumption KNX	< 1 x 10mA (1 physical address))

Max numbers of actuators per motor line and MotorController

The table shows the maximum number of actuators, which can be connected per motor line and MotorController depending on the type of actuator (±24V standard or MotorLink® actuator) and MotorController.
Notice: For actuators with MotorLink® always max. 4 actuators per motor line. The total power consumption of all the connected actuators must not exceed 10A for WCC 310 and 20A for WCC 320.

WCC 310 / WCC 320 STANDARD – maximum numbers of actuators						
	Per motor line		Per WCC 310 S 0410		Per WCC 320 S 0810	
Actuator type	±24V	MotorLink®	±24V	MotorLink®	±24V	MotorLink®
WMS 306-1	10	4	10	10	20	20
WMS 306-2	10	2	10	8	20	16
WMS 306-3	9	3	9	9	18	18
WMS 306-4	8	4	8	8	20	20
WMS 309-1	10	4	10	10	20	20
WMS 309-2	10	2	10	8	20	16
WMS 309-3	9	3	9	9	18	18
WMS 309-4	8	4	8	8	20	20
WMS 409 xxxx 01	5	0	5	0	10	0
WMS 409-1	5	4	5	5	10	10
WMS 409-2	4	2	4	4	10	10
WMS 409-3	3	3	3	3	9	9
WMS 409-4	4	4	4	4	8	8
WMU 836-1	10	4	10	10	20	20
WMU 836-2	10	4	10	8	20	16
WMU 836-3	9	3	9	9	18	18
WMU 836-4	8	4	8	8	20	20
WMU 861-1	6	4	6	6	12	12
WMU 861-2	6	2	6	6	12	12
WMU 861-3	6	3	6	6	12	12
WMU 861-4	4	4	4	4	12	12
WMU 842 / 862 / 882-1	4	4	4	4	8	8
WMU 842 / 862 / 882-2	4	2	4	4	8	8
WMU 842 / 862 / 882-3	3	3	3	3	6	6
WMU 842 / 862 / 882-4	4	4	4	4	8	8
WMU 863 / 883-1	3	3	3	3	6	6
WMU 863 / 883-2	2	2	2	2	6	6
WMU 863 / 883-3	3	3	3	3	6	6
WMU 863 / 883-4	0	0	0	0	0	0
WMU 864 / 884-1	2	2	2	2	4	4
WMU 864 / 884-2	2	2	2	2	4	4
WMU 864 / 884-3	0	0	0	0	0	0
WMU 864 / 884-4	0	0	0	0	0	0
WMU 885 / 895-1	2	2	2	2	4	4
WMU 885 / 895-2	2	2	2	2	4	4
WMU 885 / 895-3	0	0	0	0	0	0
WMU 885 / 895-4	0	0	0	0	0	0
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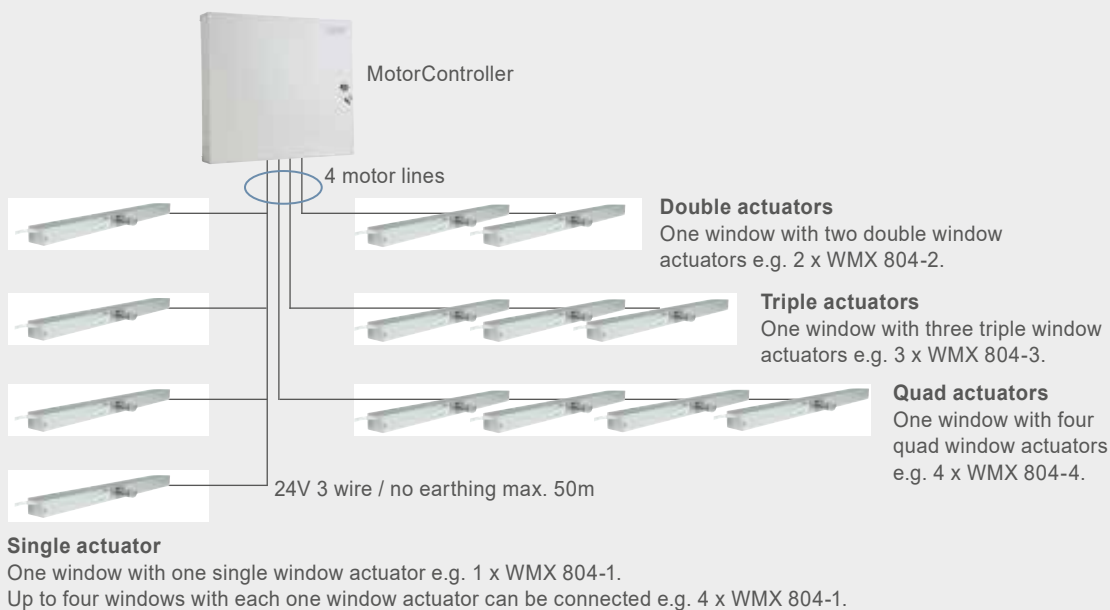| WCC 310 / WCC 320 STANDARD – maximum numbers of actuators (continued)						
	Per motor line		Per WCC 310 S 0410		Per WCC 320 S 0810	
Actuator type	±24V	MotorLink®	±24V	MotorLink®	±24V	MotorLink®
WMX 503 / 504 / 523 / 526-1	20	4	20	16	40	32
WMX 503 / 504 / 523 / 526-2	20	2	20	8	40	16
WMX 503 / 504 / 523 / 526-3	18	3	18	12	39	24
WMX 503 / 504 / 523 / 526-4	20	4	20	16	40	32
WMX 803 / 804 / 823 / 826-1	10	4	10	10	20	20
WMX 803 / 804 / 823 / 826-2	10	2	10	8	20	16
WMX 803 / 804 / 823 / 826-3	9	3	9	9	18	18
WMX 803 / 804 / 823 / 826-4	8	4	8	8	20	20
WML 820/825	10	0	10	0	20	0
WML 860-1	10	4	10	10	20	20
WML 860-2	10	2	10	8	20	16
WML 860-3	9	3	9	9	18	18
WML 860-4	8	4	8	8	20	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	8	20	16

* 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

MotorLink® combinations: Actuator variants on one MotorLink® motor line

1. When connecting window actuators one should pay attention to:
   – The max current load of the MotorControllers is 10A per motor line. The simultaneously max current consumption of all motor lines must not exceed 10A on a WCC 310 and 20A on a WCC 320. Actuators with MotorLink®: max 4 actuators per motor line.
   – The cable length and cross section:
   max voltage drop 2V in the cable, however max distance between the MotorController and the window actuators is 50m

2. Aside from window actuators; espagnolette actuators type WMB 811 / 812 (one single or two double actuators) can be connected to the window. When connecting an espagnolette actuator each window must have its own motor line.

MotorController

4 motor lines

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.

24V 3 wire / no earthing max. 50m

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.

WCC 310 / 320 STANDARD
MotorController

Variants	Item no.
MotorController 10A, 4 motor lines 10A each, max. 10A total, 10 input	WCC 310 S 0410
MotorController 10A, 4 motor lines 10A each, max. 10A total, 10 KNX input	WCC 310 S 0410 KNX
MotorController 20A, 8 motor lines 10A each, max. 20A total, 10 input	WCC 320 S 0810
MotorController 20A, 8 motor lines 10A each, max. 20A total, 10 KNX input	WCC 320 S 0810 KNX

Accessories	Item no.
Keypad, flush mounting	WSK 100 1161
Keypad, type FUGA, surface mounting (DK version)	WSK 102
Keypad, flush mounting (CH version)	WSK 300
Keypad KNX – for one window / window group, connection via KNX (DK version)	WEK 112
Keypad KNX – for two windows / window groups, connection via KNX (DK version)	WEK 122
Room thermostat	WLA 110
Rain and wind sensor	WLA 330
Rain sensor	WLA 331

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