



3.10

## WCC 310 / 320 STANDARD MotorController



Natural  
ventilation

230V

Rated voltage



MotorLink®

KNX

KNX product

### Application

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

MotorController for the control of  $\pm 24V$  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 separate 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 communication 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:

- $\pm 24V$  DC standard actuator – 1 speed (speed B)
- MotorLink® actuator – 3 speeds  
(safety / manually operated / automatically)

### The different speeds

- automatically control speed – actuators run slowly and almost soundlessly.
- manual control speed – actuators run faster and more audibly.
- 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](http://www.windowmaster.com).

### Specifications

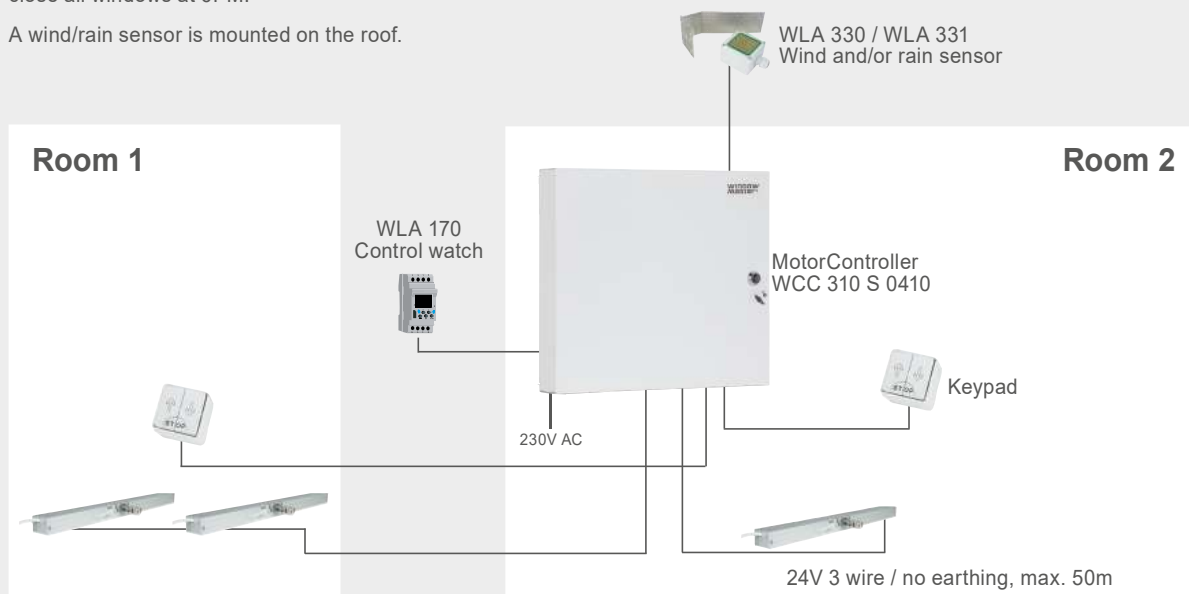
- 4 motor lines (comfort ventilation groups) up to 10A or 8 motor lines (comfort ventilation groups) up to 20A
- max. 10A/motor line
- supplied with or without KNX
- one comfort input "Close all"
- max. output voltage 27.6VDC @230VAC
- simple and fast installation

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.

#### Example: WCC 310 S 0410 with timer control and wind/rain sensor

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.



| Technical specifications                    |                                                                                                                                                                                                                                   |                                                     |
|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| Output current                              | WCC 310: 10A / WCC 320: 20A                                                                                                                                                                                                       |                                                     |
| Motor lines                                 | 4 or 8 motor lines<br>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<br>Open circuit voltage at 230V AC (no load)<br>Ripple at max load                                                                                                                                                | 24V DC (±15%)<br>27.6V DC @ 20°C<br>max 6% (3,5Vpp) |
| Power consumption                           | WCC 310: min 1.1W¹, typ. 3W². At max load 305W<br>WCC 320: min 1.1W¹, typ. 3.5W³. At max load 605W<br><br>1) min.: 1 actuator<br>2) typ.: 16 MotorLink® actuators + rain sensor<br>3) typ.: 32 MotorLink® actuators + rain sensor |                                                     |
| Inrush current on primary site              | 70A < 5ms<br>Max 3 x WCC 310/320 per 10 A supply group.<br>Circuit breaker “C” characteristic.                                                                                                                                    |                                                     |
| Leakage current                             | max 1.2mA @ 240VAC                                                                                                                                                                                                                |                                                     |
| AUX                                         | 24V DC, 230 mA                                                                                                                                                                                                                    |                                                     |
| 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                            | <b>Actuators</b><br>Flexible max 6mm² / solid max 10mm², max. 2V power loss.<br>MotorLink® actuator however cables max. 50m<br><br><b>Other components</b><br>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 <a href="http://www.windowmaster.com">www.windowmaster.com</a> under "Products"                                                                                                            |                                                     |
| Note                                        | We reserve the right to make technical changes and correct typing errors                                                                                                                                                          |                                                     |
| 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 ( $\pm 24V$  standard or MotorLink<sup>®</sup> actuator) and MotorController.

**Notice:** For actuators with MotorLink<sup>®</sup> 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 |                |                        |                    |                        |                    |                        |
|-----------------------------------------------------------|----------------|------------------------|--------------------|------------------------|--------------------|------------------------|
| Actuator type                                             | Per motor line |                        | Per WCC 310 S 0410 |                        | Per WCC 320 S 0810 |                        |
|                                                           | $\pm 24V$      | MotorLink <sup>®</sup> | $\pm 24V$          | MotorLink <sup>®</sup> | $\pm 24V$          | MotorLink <sup>®</sup> |
| WMD 820-1                                                 | 10             | 4                      | 10                 | 10                     | 20                 | 20                     |
| WMD 820-2                                                 | 10             | 4                      | 10                 | 8                      | 20                 | 16                     |
| WMD 820-3                                                 | 9              | 3                      | 9                  | 9                      | 18                 | 18                     |
| WMD 820-4                                                 | 8              | 4                      | 8                  | 8                      | 20                 | 20                     |
| 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              | -                      | 5                  | -                      | 10                 | -                      |
| 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 831 / 836 / 851-1                                     | 10             | 4                      | 10                 | 10                     | 20                 | 20                     |
| WMU 831 / 836 / 851-2                                     | 10             | 4                      | 10                 | 8                      | 20                 | 16                     |
| WMU 831 / 836 / 851-3                                     | 9              | 3                      | 9                  | 9                      | 18                 | 18                     |
| WMU 831 / 836 / 851-4                                     | 8              | 4                      | 8                  | 8                      | 20                 | 20                     |
| WMU 861-1                                                 | 8              | 4                      | 8                  | 8                      | 16                 | 16                     |
| WMU 861-2                                                 | 8              | 2                      | 8                  | 8                      | 16                 | 16                     |
| WMU 861-3                                                 | 6              | 3                      | 6                  | 6                      | 15                 | 15                     |
| WMU 861-4                                                 | 8              | 4                      | 8                  | 8                      | 16                 | 16                     |
| WMU 842 / 852 / 862 / 882-1                               | 4              | 4                      | 4                  | 4                      | 8                  | 8                      |
| WMU 842 / 852 / 862 / 882-2                               | 4              | 2                      | 4                  | 4                      | 8                  | 8                      |
| WMU 842 / 852 / 862 / 882-3                               | 3              | 3                      | 3                  | 3                      | 6                  | 6                      |
| WMU 842 / 852 / 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                                           | -              | -                      | -                  | -                      | -                  | -                      |
| WMU 864 / 884-1                                           | 2              | 2                      | 2                  | 2                      | 4                  | 4                      |
| WMU 864 / 884-2                                           | 2              | 2                      | 2                  | 2                      | 4                  | 4                      |
| WMU 864 / 884-3                                           | -              | -                      | -                  | -                      | -                  | -                      |
| WMU 864 / 884-4                                           | -              | -                      | -                  | -                      | -                  | -                      |
| WMU 885 / 895-1                                           | 2              | 2                      | 2                  | 2                      | 4                  | 4                      |
| WMU 885 / 895-2                                           | 2              | 2                      | 2                  | 2                      | 4                  | 4                      |
| WMU 885 / 895-3                                           | -              | -                      | -                  | -                      | -                  | -                      |
| WMU 885 / 895-4                                           | -              | -                      | -                  | -                      | -                  | -                      |

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# WCC 310 / WCC 320 STANDARD – maximum numbers of actuators (continued)

| Actuator type                           | Per motor line                                                                |            | Per WCC 310 S 0410 |            | Per WCC 320 S 0810 |            |
|-----------------------------------------|-------------------------------------------------------------------------------|------------|--------------------|------------|--------------------|------------|
|                                         | ±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 / 813 / 814 / 823 / 826-1 | 10                                                                            | 4          | 10                 | 10         | 20                 | 20         |
| WMX 803 / 804 / 813 / 814 / 823 / 826-2 | 10                                                                            | 2          | 10                 | 8          | 20                 | 16         |
| WMX 803 / 804 / 813 / 814 / 823 / 826-3 | 9                                                                             | 3          | 9                  | 9          | 18                 | 18         |
| WMX 803 / 804 / 813 / 814 / 823 / 826-4 | 8                                                                             | 4          | 8                  | 8          | 20                 | 20         |
| WML 820 / 825                           | 10                                                                            | -          | 10                 | -          | 20                 | -          |
| 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         |

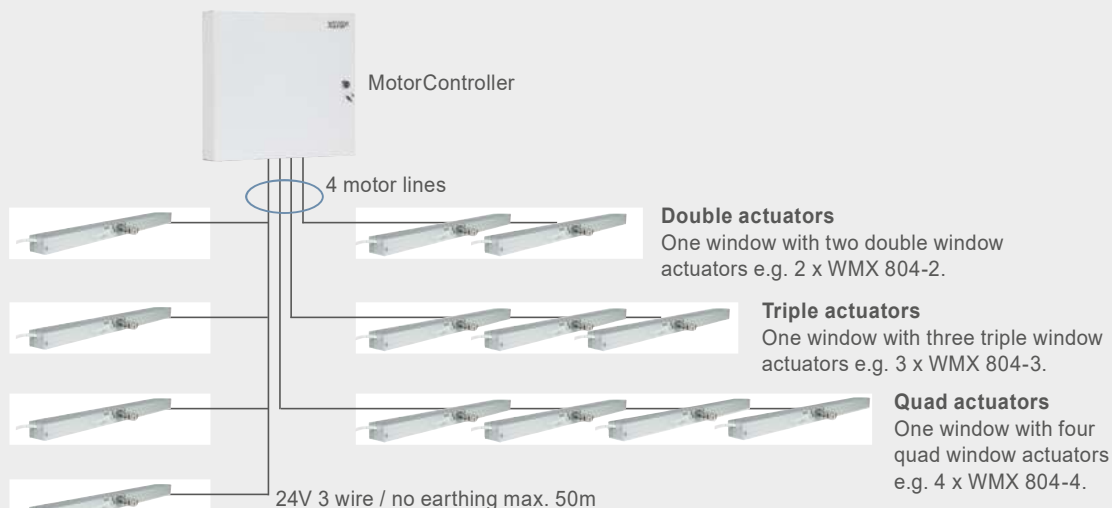
\* Do not exceed the total power consumption of the motor line

\*\* 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

- 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

- 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.



## WCC 310 / 320 STANDARD

# MotorController

| Variants            | Number of motor lines                      | Number of inputs | Item no.           |
|---------------------|--------------------------------------------|------------------|--------------------|
| MotorController 10A | 4 motor lines each 10A (in total max. 10A) | 10 input         | WCC 310 S 0410     |
| MotorController 10A | 4 motor lines each 10A (in total max. 10A) | 10 KNX input     | WCC 310 S 0410 KNX |
| MotorController 20A | 8 motor lines each 10A (in total max. 20A) | 10 input         | WCC 320 S 0810     |
| MotorController 20A | 8 motor lines each 10A (in total max. 20A) | 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           |
| USB stick for log-data, back-up and firmware updates                          | WCA 304           |
| 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 |