

Control of Roof Window Blinds using Z-Wave vs. IO Home Control

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The Danish window manufacturer Velux is one of the leading vendors of high-quality roof windows. Central parts of the product portfolio are roof windows with integrated sunblind.

A 24 V DC blind motor powered by an external control and power supply unit called KUX100 controls the (venetian/roller) blinds inside the roof window.



Velux uses the wireless control technology IO-Homecontrol, a technology defined by 8 different vendors – among them Velux – to control windows, blinds and other motor-moved house installations.

The IO-Homecontrol part of the solution consists of a simple multi button remote control and a wireless receiver within the KUX 100. The control of the blind motors is done using two wires between the KUX 100 and the blind control part inside the window. The remote control can move the window blind up and down or sent the blind to an intermediate position.

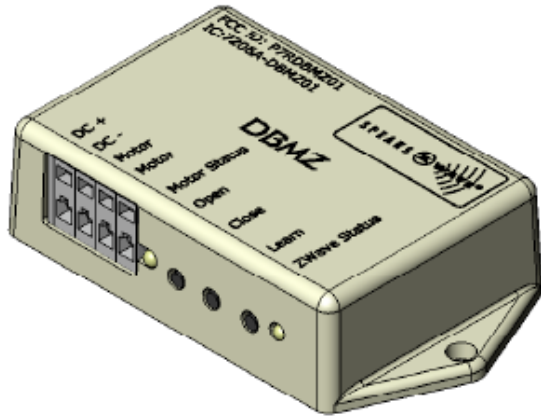
Since IO Homecontrol is a proprietary system users rely on the control devices - such as the remote control supplied with Velux windows – provided by the vendor. There are no enhanced control options such as Internet-Gateways provided at the moment. The intermediate position can be programmed at any position of the blind.

The current Velux control unit KUX 100 is quite heavy and bulky (180mm x 85 mm x 65 mm) and therefore needs major installation effort to conceal the system and still guarantee wireless control.

The by far biggest disadvantage however is the stand by power consumption. Even without any motor movement the unit consumes 22 W in standby (98 mA at 230V). Given a typical house installation of **4 roofs window** and an average energy cost of 23 ct a kWh this results in **annual costs** of more then **160 € for standby power alone**. Over a period of 5 years such an installation generates more then 2 tons of carbon dioxide by doing nothing.

When the blind is moving the power consumption increases to 37 W (120mA at 230V), which is acceptable since the motor moves only during a small period of time.

Hunter Douglas, a specialist in window treatment and member of the Z-Wave Alliance has launched a product called DBMZ, which operates on 24 V DC and can control the Velux window blinds directly without using the proprietary and standby power burning KUX 100. It needs a 24 V DC input, which can be provided by a simple and inexpensive switched power supply (preferably regulated).



The light and small unit (98mm x 53mm x 23mm) takes only 0.3 W in standby power and needs 12 W (0.5 W at 24 V) when operating the motor.

Compared to the IO Home Control unit the DBMZ needs less than 2% of the standby power and about 10 % of the space. The very same installation of 4 Velux roof windows with Z-Wave control cost less than 2.50 € for standby power.

With Z-Wave the Hunter-Douglas DBMZ blind motor control can be controlled by a broad variety of Z-Wave enabled control devices such as remote controls, universal remote or internet ready and programmable IP-gateways. In conjunction with different sensors - e.g. for light, motion or humidity - the window blinds can be moved automatically creating additional value for the temperature regulation resulting in lower energy consumption in the house.

The DBMZ from Hunter Douglas can be ordered at Z-Wave Online Shops and is available and certified in all European countries.

Remark:

The Hunter Douglas is supporting the standard control mechanisms of DC motor control which his called polarity reversal. Velux windows on factory default support polarity reversal. The KUX 100 however will turn the window motor into a different and proprietary control mode. The user needs to reset the Velux windows to factory default in order to use the Hunter Douglas DBMZ Device. Push the test button on the KUX 100 until the motor begins to move to start an initial calibration process. Switch off the power of the KUX 100 when motor is moving. The blind motor is reset to factory default.