ZZ60, ZZ60h Power Supplies for FAKRO Roof Windows

Z – closing (automatic control), **Z** – power supply, **60** – power, **h** – hermetic

TYPE: ZZ60, ZZ60h

Figure 1: ZZ60 power supply

Figure 2: ZZ60h power supply

1. DESCRIPTION

The ZZ60, ZZ60h power supplies are designed to power electrical devices in FAKRO roof windows. The have been adapted to work with ZWS 12 actuators, external and internal accessories (e.g. ARF Z-Wave, ARP Z-Wave, ARZ Z-Wave, AJP Z-Wave, AMZ Z-Wave).

The power supplies are installed in different locations. The ZZ60 power supply is mounted in a switchbox on the T35 rail or in a hermetic box, because the power supply unit itself is enclosed in a housing which does not protect it from moisture. The ZZ60h power supply is enclosed in a hermetically sealed housing, the same it can be mounted e.g. in the attic, etc.

The input power brought to the unit is 230V AC, while the output is 12V DC. The ZZ60 power supply has two outputs "+" and two outputs "-". Hence, two devices can be connected. It is also possible to connect another device by plugging into already occupied socket (doubling). The power supply can support up to 3 devices.

The ZZ60h power supply has one 12V DC output.

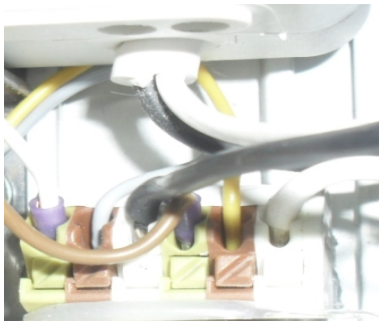


Figure 3: Terminal block

2. ADVANTAGES

BASIC FEATURES

- Constant output voltage regardless of the load.
- Can withstand input surge of 300VAC for 5 seconds.
- Protections: Short circuit / Overload / Overvoltage.
- Low cost, high reliability.

SAFETY

- **Overload protection**

105%÷ 160% of rated power, type of protection – continuous current limiting - automatic restoration of operation after removal of the source of the error.

- **High voltage**

  31.2÷36V,

- type of protection – voltage disconnection and reconnection in order to restore proper operation.

ENERGY-EFFICIENCY

- Low power consumption for the device's own needs (standby).

3. COMPATIBILITY

The power supplies have been adapted to work with:

- actuators (ZWS 12),
- external accessories (ARF Z-Wave, ARP Z-Wave, AJP Z-Wave),
- internal accessories (ARZ Z-Wave, AMZ Z-Wave).

4. PRODUCT AVAILABILITY

The minimum stock levels maintained for the ZZ60 and ZZ60h power supplies in Nowy Sacz are as follows:

- ZZ60 power supply – 850038 – 10 units.
- ZZ60h power supply – 850041 – 10 units.

5. STRUCTURE

ZZ60h

Dimension	ZZ60h
A	42.5
B	32
C	162.5
D	Ø3.6

1 -12VDC cable
2 - 230VAC cable
3 - Mounting brackets

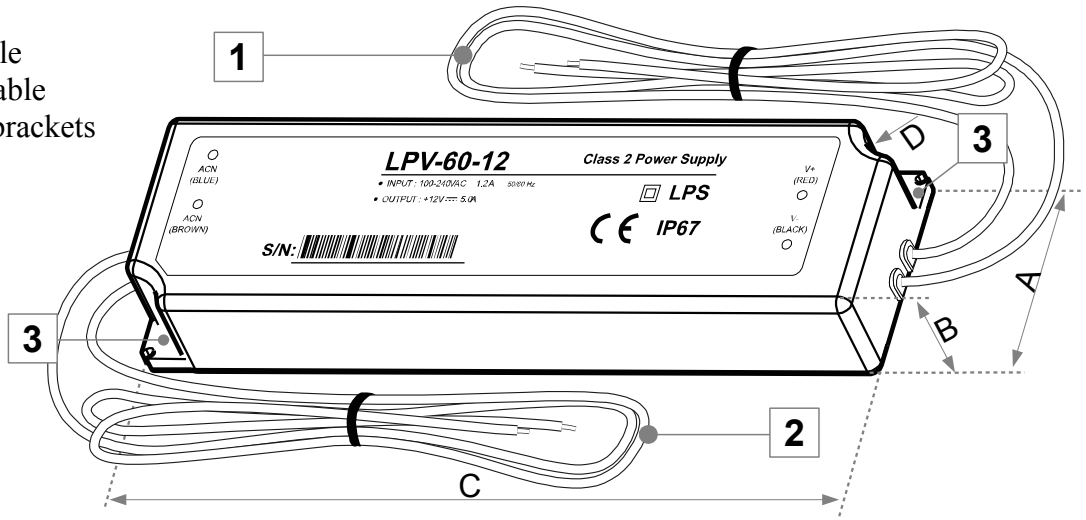


Figure 4: Structure of ZZ60h power supply

Output

Rated voltage	12
Rated current	5A
Current range	0 ~ 5A
Rated power	60W
Ripple and noise (max.)	120mVp-p
Voltage tolerance	+/- 5.0%
Uout stabilization in Uin switching mode	+/- 1.0%
Uout stabilisation in Iout swicthing mode	+/-2.0%
Setup, rise time	230VAC 500ms, 30ms500ms, 20ms / 115VAC (for 5~36V
Hold up time (Typ.)	50ms/230VAC 16ms/115VAC under full load

Input

Uin range	90 ~ 264VAC
Uin frequency range	47 ~ 63Hz
Efficiency (Typ.)	83.00%
Current drawn from the mains (Typ.)	1A/230VAC
Inrush current (Typ.)	60A/230VAC
Leakage current	0.25mA / 240VAC

ZZ60

1 – 230V power supply
2 – 12VDC output
3 – voltage regulation

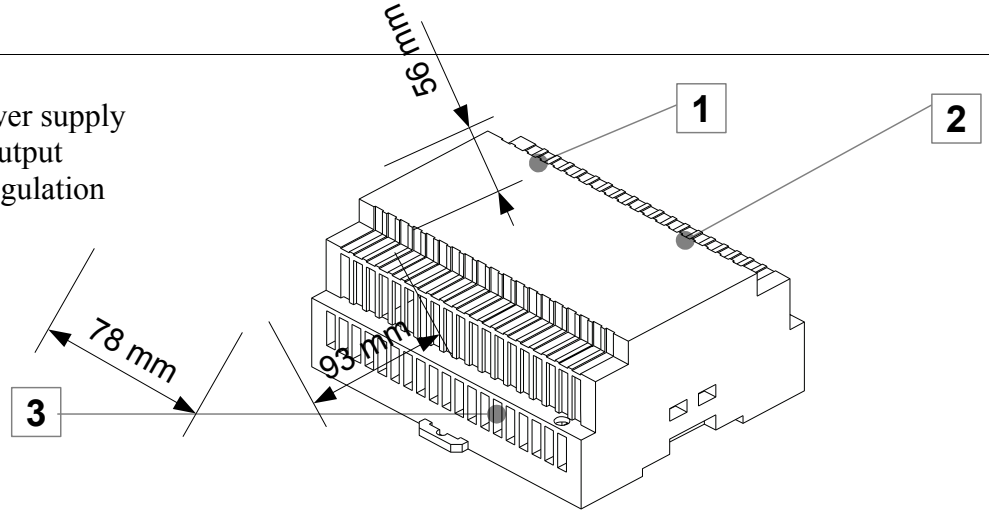


Figure 5: Structure of ZZ60 power supply

Output

DC voltage	12
Rated current	4.5A
Current range	0÷4,5A
Rated power	54W
Ripple and noise (max.)	120mVp-p
Voltage adj. range	11.1÷13.2V
Voltage tolerance	+/-1.0%
Line regulation	+/-1.0%
Load regulation	+/-1.0%
Setup, rise time	100ms & 30ms/230VAC under full load, 200ms & 30ms/115VAC under full load
Hold up time (typ.)	100ms/230VAC under full load, 23ms/115VAC under full load

Input

Voltage range	88÷264VAC, 124÷370VDC
Frequency range	47÷63Hz
Efficiency (typ.)	76,00%
AC current (typ.)	1.2A/115VAC, 0.8A/230VAC
Inrush current (typ.)	18A/115VAC cold start, 36A/230VAC cold start

6. APPLICATION AND CONNECTIONS

In order to be able to control FAKRO accessories or roof windows using, e.g. ZWS12 actuator connect them with the ZZ60 or ZZ60h power supply as shown in Figure 7 and 8.

6.1. ZZ60h Power Supply

The wiring instructions are to be found on the power supply's housing.

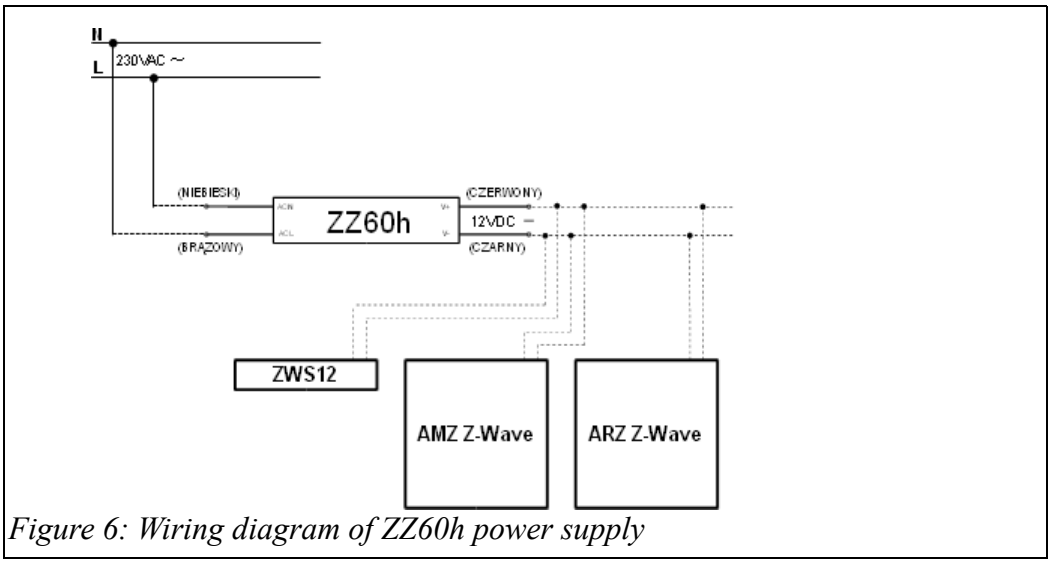


Figure 6: Wiring diagram of ZZ60h power supply

Connecting the system requires bringing 230V power to the ZZ60h power supply from any place with a 2-wire cable (2x1mm²) and then connecting an electrical device (e.g.: ZWS12 actuator) to 12VDC output (fig.6).

6.2. ZZ60 Power Supply

The wiring instructions are to be found on the power supply's housing.

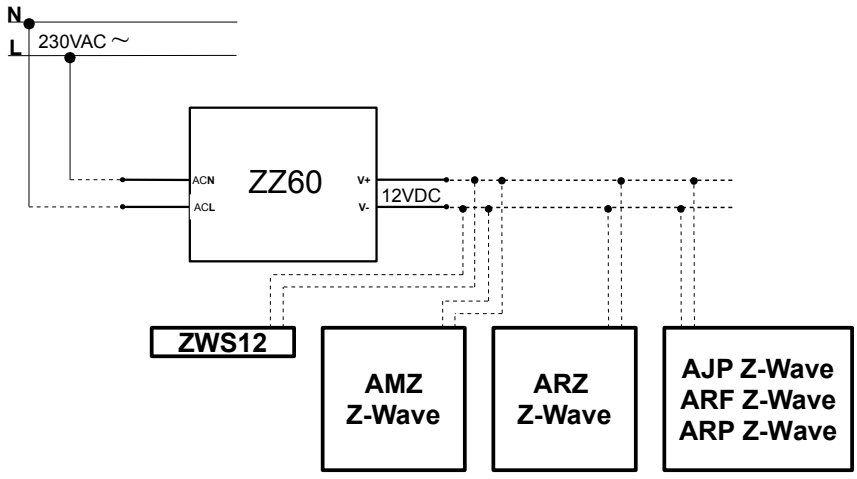


Figure 7: Wiring diagram of ZZ60 power supply

Connecting the system requires bringing 230V power to the ZZ60 power supply from any place with a 2-wire cable (2x1mm²) and then connecting an electrical device (e.g.: ZWS12 actuator) to 12VDC output (fig.7).

7. LOGISTIC DATA

The production labels of the ZZ60h power supply (fig.9, 11) are placed on the side of the package, and of the ZZ60 power supply on the top of the package (fig.10, 12).

Figure 8: ZZ60h power supply package

Figure 9: ZZ60h power supply package

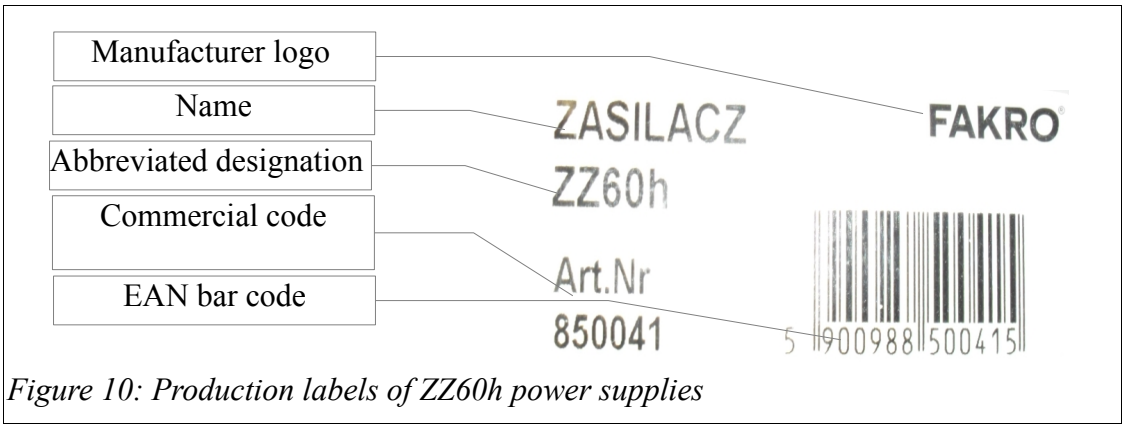


Figure 10: Production labels of ZZ60h power supplies

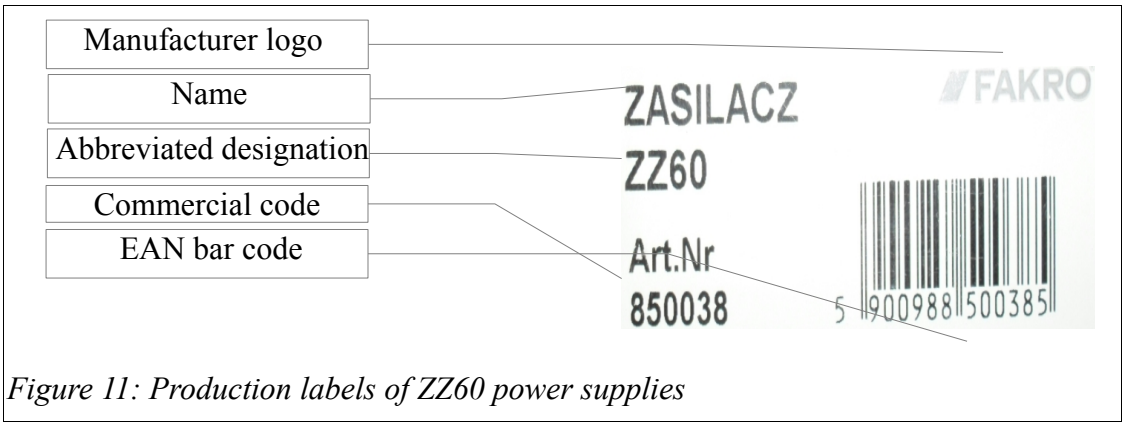


Figure 11: Production labels of ZZ60 power supplies

Detailed logistic data can be found in the logistic card of the ZZ60 and ZZ60h power supplies which is available on the intranet: *http://intranet.fakro.pl/pl/products/automation/ventilation/supply/logistics-cards*

8. CERTIFICATION

The ZZ60 and ZZ60h power supplies are electrical devices certified in accordance with the provisions of the Electromagnetic Compatibility (EMC) Directive 89/336/EEC (2004/108/EC) and the Low Voltage Directive 73/23/EEC, as amended, in the following areas: safety, electromagnetic compatibility and effective use of the radio spectrum. The compliance with the above is confirmed by the CE marking present on the product and the Declaration of Conformity. The Declaration of Conformity is found in every manual and will be also sent on request. The ZWS actuator is also an electrical device which complies with the relevant requirements of the Machinery Directive 98/37/EEC, as amended.

1- DECLARATION OF "CE" CONFORMITY **C20**

TOPP tecnologie del movimento

TOPP SPA - Via Galvani, 59
36066 SANDRIGO (VI) - ITALIA
Tel. +39 0444 656700
Fax +39 0444 656701

Declares that the electric device

Called: **CHAIN ACTUATOR FOR WINDOW AUTOMATION**

Type: **C20** Models: **C20/230V - C20/24V**

Serial No.: see data plate and CE marking applied on the equipment

Year of manufacture: **2004**

complies with the requirements of the following directives:

73/23/EEC

(Low Voltage Directive: electrical equipment destined to be used within given voltage limits)

89/336/EEC

(Electromagnetic Compatibility Directive - on the approximation of the laws of the Member States relating to electromagnetic compatibility)

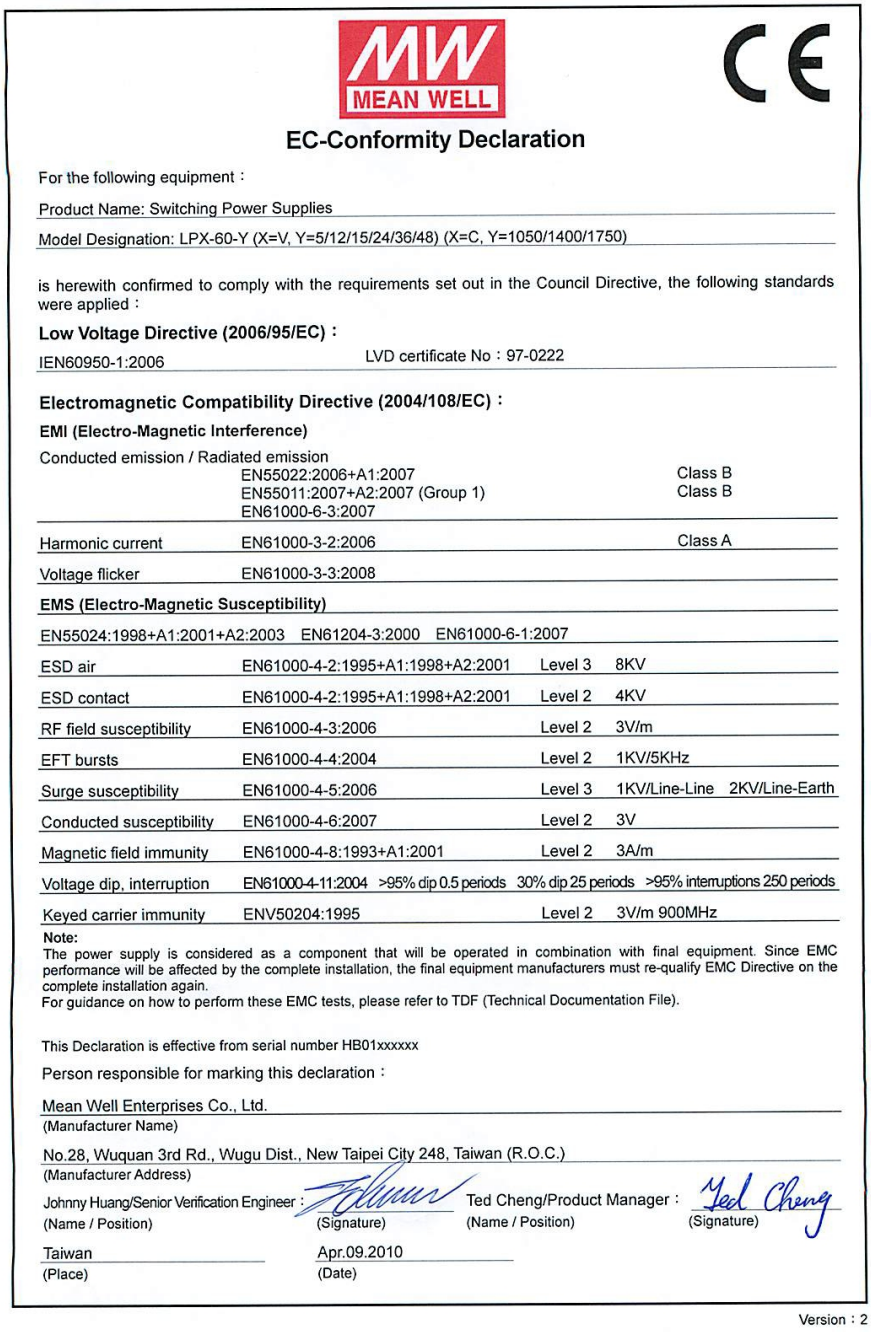
and, besides, it declares that the following harmonized standards have been applied:

EN60335-1:1994; EN60335-1/Ec:1995; EN60335-1/A11:1995; EN60335-1/A1:1996; EN60335-1/A13:1998; EN60335-1:A14:1998; EN60335-1/A15:2000; EN60335-1/A2:2000; EN60335-1/A16:2001; EN55014-1(2000) +EN55014-1/A1(2001) +EN55014-1/A2(2002); EN61000-3-2 (2000); EN61000-3-3 (1995); EN61000-3-3/A1 (2001); EN55014-2 (1997) +EN55014-2/A1 (2001).

Date: ***07/01/2004***

Surname and name: ***Matteo Cavalcante***

Signature:.....



MEAN WELL

CE

EC-Conformity Declaration

For the following equipment :

Product Name: Switching Power Supplies

Model Designation: LPX-60-Y (X=V, Y=5/12/15/24/36/48) (X=C, Y=1050/1400/1750)

is herewith confirmed to comply with the requirements set out in the Council Directive, the following standards were applied :

Low Voltage Directive (2006/95/EC) :

IEN60950-1:2006 LVD certificate No : 97-0222

Electromagnetic Compatibility Directive (2004/108/EC) :

EMI (Electro-Magnetic Interference)

Conducted emission / Radiated emission

	EN55022:2006+A1:2007	Class B
	EN55011:2007+A2:2007 (Group 1)	Class B
	EN61000-6-3:2007	
Harmonic current	EN61000-3-2:2006	Class A
Voltage flicker	EN61000-3-3:2008	

EMS (Electro-Magnetic Susceptibility)

EN55024:1998+A1:2001+A2:2003 EN61204-3:2000 EN61000-6-1:2007

ESD air	EN61000-4-2:1995+A1:1998+A2:2001	Level 3	8KV
ESD contact	EN61000-4-2:1995+A1:1998+A2:2001	Level 2	4KV
RF field susceptibility	EN61000-4-3:2006	Level 2	3V/m
EFT bursts	EN61000-4-4:2004	Level 2	1KV/5KHz
Surge susceptibility	EN61000-4-5:2006	Level 3	1KV/Line-Line 2KV/Line-Earth
Conducted susceptibility	EN61000-4-6:2007	Level 2	3V
Magnetic field immunity	EN61000-4-8:1993+A1:2001	Level 2	3A/m
Voltage dip, interruption	EN61000-4-11:2004 >95% dip 0.5 periods	30% dip 25 periods	>95% interruptions 250 periods
Keyed carrier immunity	ENV50204:1995	Level 2	3V/m 900MHz

Note:
The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.
For guidance on how to perform these EMC tests, please refer to TDF (Technical Documentation File).

This Declaration is effective from serial number HB01xxxxxx

Person responsible for marking this declaration :

Mean Well Enterprises Co., Ltd.
(Manufacturer Name)

No.28, Wuquan 3rd Rd., Wugu Dist., New Taipei City 248, Taiwan (R.O.C.)
(Manufacturer Address)

Johnny Huang/Senior Verification Engineer : (Signature) (Name / Position)

Ted Cheng/Product Manager : (Signature) (Name / Position)

Taiwan (Place)

Apr.09.2010 (Date)

Version : 2

9. WARRANTY

The manufacturer guarantees correct operation of the device and undertakes to repair or replace it if the damage results from defects in materials and construction. The warranty is 24 months from the date of sale.

10. COMPETITION

The ZZ60 and ZZ60h power supplies compete with the following Velux products:

- power supply from the KUX100 system.

11. FAQ

1. What is the power output of the power supply?
The ZZ60 and ZZ60h power supplies have power rating of 60W.

2. How many accessories can be connected to the ZZ60 or ZZ60h power supply?
The power supplies can support up to 3 devices.

3. Why FAKRO uses switching power supplies?
The reason is maintaining a uniform engine speed regardless of the addition of electrical load.

Prepared by:
Michał Hajduga
Product Manager