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KATALOG

Spoljne tende za vertikalne prozore VMZ, VMU, VML i tende na namotavanje VMB

Originalna oznaka dokumenta: MDOF/-24/EN/17.09.2025/H031

Prevod uz katalog: tekst svake strane originala preveden je pored njene sličice. Fotografije i grafika nalaze se u originalu iza prevoda.



STRANA 1 ORIGINALA

VERTIKALNE SPOLJNE TENDE



STRANA 2 ORIGINALA

TEMPERATURA U PROSTORIJI ZA VRIJEME VRUĆIH, SUNČANIH DANA ZNATNO ZAVISI OD VRSTE KORIŠĆENIH ZASTORA



STRANA 3 ORIGINALA

8 puta efikasnije od unutrašnjih zastora

Tende – 8 puta efikasnija zaštita od toplotnih dobitaka u poređenju sa unutrašnjim zastorima

OPUSTITE SE

Većina nas željno iščekuje vruće, sunčane dane, ali iako je sunce divno na plaži, u kući ili na radnom mjestu može biti prava smetnja. Sunčevo zračenje koje prodire u prostoriju izaziva znatan porast temperature, ne samo u potkrovlju već u cijeloj zgradi. Najefikasniju zaštitu pružaju spoljne tende i roletne, koje su posebno korisne na krovovima okrenutim ka jugu ili zapadu.

Vertikalne tende pružaju najefikasniju zaštitu od visokih temperatura. Blokiranjem UV zračenja prije nego što stigne do stakla, sprječavaju ulazak toplog vazduha u prostoriju.

Projektujemo, planiramo i proizvodimo vodeći računa o prirodnoj sredini. Ponuda ekološki prihvatljivih i energetski efikasnih proizvoda dio je DNK kompanije. Brinemo da svaki proces, svaka aktivnost i svaka odluka koju donosimo uvijek budu praćeni brigom

o udobnosti i zdravom životu budućih generacija. Sve ove aktivnosti objedinjene su u važnoj filozofiji GO GREEN.


EFFECTIVE PROTECTION AGAINST HEAT

ENERGY-EFFICIENCY

INFLOW OF NATURAL LIGHT

VISIBILITY TO THE OUTSIDE AND PRIVACY

IMPROVED ERGONOMICS

PROTECTION AGAINST UV RADIATION

PROTECTION AGAINST INSECTS

QUICK AND EASY INSTALLATION

STRANA 4 ORIGINALA

EFIKASNA ZAŠTITA OD TOPLOTE

Tende su optimalno rješenje za zaštitu od prekomjerne sunčeve toplote. Apsorbuju sunčevo zračenje prije nego što stigne do ostakljenja i toplotu odvode napolje, pružajući daleko bolju zaštitu od neprijatnih temperatura u prostoriji tokom sunčanih dana. Pošto su do osam puta efikasnije od unutrašnjih zastora, mogu smanjiti temperaturu u prostoriji i do 10°C.

ENERGETSKA EFIKASNOST

Tende pomažu da se smanji potrošnja energije klima-uređaja, čime se snižavaju troškovi rada i smanjuje emisija CO2. Model sa solarnim napajanjem ne zahtijeva električnu energiju, jer ga pokreće fotonaponska ćelija. Pored toga, štiti od gubitka toplote tokom hladnijeg vremena tako što poboljšava koeficijent prolaza toplote do 16%, što dodatno doprinosi nižim računima za grijanje.

PRILIV PRIRODNE SVJETLOSTI

Prozori sa tendama, za razliku od prozora sa spoljnim roletnama, omogućavaju slobodan prolaz prirodne svjetlosti u unutrašnjost. Tende propuštaju dovoljno dnevne svjetlosti, pa nema potrebe za dodatnim vještačkim osvjetljenjem.

VIDLJIVOST NAPOLJE I PRIVATNOST

Spuštena tenda zadržava vizuelni kontakt sa spoljnom sredinom. Omogućava vam da uživate u pogledu, a da pritom sačuvate privatnost od svakoga ko gleda unutra.

BOLJA ERGONOMIJA

Kada je odmotana, tenda poboljšava radno okruženje održavajući ujednačen nivo svjetlosti i obezbjeđujući vizuelni komfor. Smanjuje blještavilo koje može smetati pri radu na laptopu ili gledanju televizije, a istovremeno štiti oči od zamora ravnomjerno raspoređenom svjetlošću.

ZAŠTITA OD UV ZRAČENJA

Tende ograničavaju prodor štetnog UV zračenja u prostoriju. Kada su spuštene, štite namještaj od blijeđenja ili žućenja izazvanog dugotrajnim izlaganjem UV zracima.

ZAŠTITA OD INSEKATA

Pored smanjenja toplotnih dobitaka, električne tende (Z-Wave, Solar WiFi) i izvedba VMZ ZIP služe i kao mreža protiv insekata. Kada je prozor otvoren, spuštena tenda sprječava ulazak neželjenih insekata.

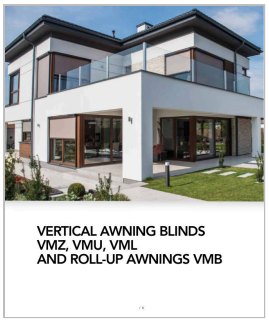
BRZA I JEDNOSTAVNA UGRADNJA

Uz opcioni set za ugradnju VMX, tende može ugraditi jedna osoba, čime se štede i vrijeme i troškovi. Pomoću seta VMX kupci mogu samostalno ugraditi ručne tende u cijelom rasponu dimenzija, dok se električne, solarne i VMZ ZIP tende mogu ugraditi do približno 1.5 m × 1.5 m.



STRANA 5 ORIGINALA

ZAŠTO KORISTIMO VERTIKALNE TENDE?



STRANA 6 ORIGINALA

VERTIKALNE SPOLJNE TENDE VMZ, VMU, VML I TENDE NA NAMOTAVANJE VMB



STRANA 7 ORIGINALA

Tende VMZ, VMU i VML, kao i tende na namotavanje VMB, namijenjene su vertikalnim prozorima. Predviđene su za spoljnu ugradnju i pogodne su za PVC, aluminijumske ili drvene prozore i vrata, uključujući balkone i terase. Ove tende smanjuju upijanje toplote, obezbjeđuju ravnomjernu raspodjelu svjetlosti i povećavaju komfor u prostoriji.

U skladu sa standardom DIN 5034-1, prostorije treba štititi od prekomjerne sunčeve toplote ne unutrašnjim priborom, već spoljnim zaštitama (spoljne tende, spoljne roletne).
„...potrebne su građevinske mjere da bi se spriječila neugodnost koju izaziva sunce, kao što su prekomjerno zagrijavanje vazduha u prostoriji, naročito tokom toplih godišnjih doba, ili pojava blještavila [...] Pogodni pokretni sistemi uključuju spoljne venecijanere, roletne ili tende.“ – DIN 5034-1.

Sunčevo zračenje prolazi kroz staklo i apsorbuje ga unutrašnji zastor. On zatim zrači toplotu u unutrašnjost u obliku dugotalasnog infracrvenog zračenja i time zapravo djeluje kao radijator. Unutrašnji pribor treba prvenstveno koristiti kao sredstvo za zasjenjenje i uređenje enterijera.



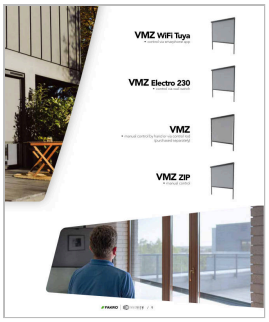
STRANA 8 ORIGINALA

VMZ

Tenda se sastoji od aluminijumskog rama i materijala otpornog na vremenske uslove. Tendama na električni pogon upravlja motor, dok se njihov materijal kreće duž vodilica. Tkanina im se zateže pomoću sistema opruga.

VMZ Z-Wave Solar	Automatsko upravljanje
VMZ Z-Wave	Upravljanje daljinskim upravljačem ili zidnim prekidačem

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STRANA 9 ORIGINALA

VMZ WiFi Tuya	Upravljanje pomoću aplikacije na pametnom telefonu
VMZ Electro 230	Upravljanje zidnim prekidačem
VMZ	Ručno upravljanje rukom ili pomoću šipke za upravljanje (kupuje se posebno)
VMZ ZIP	Ručno upravljanje



STRANA 10 ORIGINALA

VMU

Podžbukne tende VMU, ugrađene u ravni sa fasadom, namijenjene su vertikalnim prozorima i prvenstveno su predviđene za nove objekte. Većina konstruktivnih elemenata može se sakriti u fasadi, što daje elegantno, nenametljivo rješenje koje ne utiče na izgled objekta. Kada je tkanina namotana, tenda je gotovo nevidljiva. Vodilice se mogu uskladiti po boji sa prozorima, pa estetika objekta ostaje neokrnjena.

VMU Z-Wave Solar	Automatsko upravljanje



STRANA 11 ORIGINALA

VMU Z-Wave	Upravljanje daljinskim upravljačem ili zidnim prekidačem
VMU WiFi Tuya	Upravljanje pomoću aplikacije na pametnom telefonu
VMU Electro 230	Upravljanje zidnim prekidačem



STRANA 12 ORIGINALA

VML

Tenda VML ima uzice kojima se upravlja tkaninom namotanom na osovinu. Odsustvo standardnih bočnih vodilica poboljšava estetiku tende ugrađene na prozor, a zadržava njena svojstva zaštite od pregrijavanja.

VML Z-Wave Solar	Automatsko upravljanje

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STRANA 13 ORIGINALA

VML Z-Wave	Upravljanje daljinskim upravljačem ili zidnim prekidačem
VML WiFi Tuya	Upravljanje pomoću aplikacije na pametnom telefonu
VML Electro 230	Upravljanje zidnim prekidačem

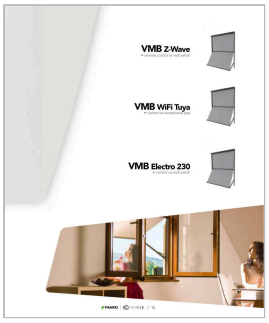


STRANA 14 ORIGINALA

VMB

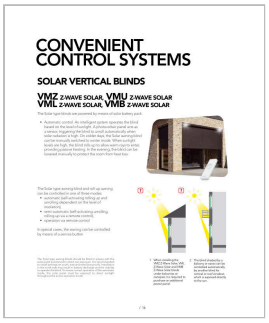
Tenda na namotavanje ima pokretnu, nagibnu šipku koja omogućava pristup prozorskoj klupčici dok je tenda u upotrebi.

VMB Z-Wave Solar	Automatsko upravljanje



STRANA 15 ORIGINALA

VMB Z-Wave	Upravljanje daljinskim upravljačem ili zidnim prekidačem
VMB WiFi Tuya	Upravljanje pomoću aplikacije na pametnom telefonu
VMB Electro 230	Upravljanje zidnim prekidačem



STRANA 16 ORIGINALA

PRAKTIČNI SISTEMI UPRAVLJANJA

SOLARNE VERTIKALNE TENDE

VMZ Z-WAVE SOLAR, VMU Z-WAVE SOLAR, VML Z-WAVE SOLAR, VMB Z-WAVE SOLAR

Tende tipa Solar napajaju se pomoću solarnog paketa baterija.

- Automatsko upravljanje. Inteligentni sistem upravlja tendom na osnovu nivoa sunčeve svjetlosti. Fotonaponski panel djeluje kao senzor i pokreće automatsko odmotavanje tende kada je sunčevo zračenje jako. Na hladnijim danima tenda Solar može se ručno prebaciti u zimski režim. Kada je nivo sunčeve svjetlosti visok, tenda se namotava kako bi propustila tople zrake, obezbjeđujući pasivno grijanje. Uveče se tenda može ručno spustiti da bi se prostorija zaštitila od gubitka toplote.

Tendom tipa Solar i tendom na namotavanje može se upravljati u jednom od tri režima:

- automatski (samostalno namotavanje i odmotavanje u zavisnosti od nivoa osunčanosti),
- poluautomatski (samostalno odmotavanje, namotavanje pomoću daljinskog upravljača),

- upravljanje pomoću daljinskog upravljača

U posebnim slučajevima tendom se može upravljati pomoću servisnog tastera.

Tende tipa Solar treba ugraditi na mjestima na kojima je solarni panel direktno izložen suncu. Preporučuje se ugradnja tendi na krovovima okrenutim ka jugu, istoku i zapadu. Ugradnja na sjevernoj strani može dovesti do pražnjenja baterije i nemogućnosti upravljanja tendom. Da bi automatski režim ispravno radio, solarni panel mora biti izložen direktnoj sunčevoj svjetlosti tokom cijelog perioda aktivnog rada.

1. Pri ugradnji tendi VMZ Z-Wave Solar, VML Z-Wave Solar i VMB Z-Wave Solar ispod balkona ili nadstrešnica potrebno je kupiti dodatni panel za napajanje.
2. Tendom koja je u hladu balkona ili strehe može se automatski upravljati pomoću druge tende za vertikalne ili krovne prozore koja je direktno izložena suncu.



STRANA 17 ORIGINALA

Z-WAVE VERTIKALNE TENDE

VMZ Z-Wave, VMU Z-Wave, VML Z-Wave, VMB Z-Wave

Tende tipa Z-Wave napajaju se iz mreže napajanja od 15V DC, a upravlja se njima daljinskim upravljačem ili zidnim prekidačem u bežičnom Z-Wave sistemu.

WIFI TUYA VERTIKALNE TENDE

VMZ WiFi Tuya, VMU WiFi Tuya, VML WiFi Tuya, VMB WiFi Tuya

Tende tipa WiFi Tuya napajaju se iz mreže napajanja od 15V DC, a upravlja se njima pametnim telefonom pomoću aplikacije FAKRO Smart u bežičnoj kućnoj WiFi mreži.

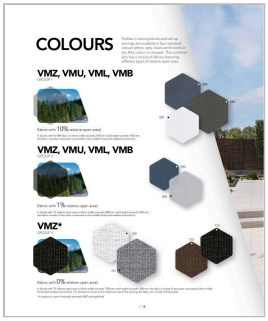
VERTIKALNE TENDE

VMZ

Tendom se upravlja ručno, rukom ili pomoću šipke za upravljanje (kupuje se posebno).

VMZ ZIP

Tendom se upravlja ručno.



STRANA 18 ORIGINALA

BOJE

Profili na tendama i tendama na namotavanje dostupni su u četiri standardne boje (bijela, siva, crna i smeđa) ili u bilo kojoj RAL boji na zahtjev. Kupac takođe može birati između tkanina sa različitim vrstama relativne otvorene površine.

VMZ, VMU, VML, VMB

GRUPA I
(tkanina sa 10% relativne otvorene površine)

Šifre boja tkanine	089, 090, 091

Kod tendi sa tkaninom 089 širine veće od 2100 mm i visine veće od 1950 mm tkanina se sastoji od dva dijela spojena na sredini (horizontalni zavareni spoj).

VMZ, VMU, VML, VMB

GRUPA II
(tkanina sa 1% relativne otvorene površine)

Šifre boja tkanine 092, 093

Kod tendi sa 1% relativne otvorene površine širine veće od 2400 mm i visine veće od 2350 mm tkanina se sastoji od dva dijela spojena na sredini (horizontalni zavareni spoj).

VMZ*

GRUPA V
(tkanina sa 0% relativne otvorene površine)

Šifre boja tkanine 720, 721, 722, 723

Kod tendi sa 1% relativne otvorene površine širine veće od 1700 mm i visine veće od 1600 mm tkanina se sastoji od dva dijela spojena na sredini (horizontalni zavareni spoj). Za dimenzije bliske maksimalnoj veličini tende tkanina se može sastojati od tri dijela.

*ne može se koristiti kod ručno upravljanih tendi VMZ



STRANA 20 ORIGINALA

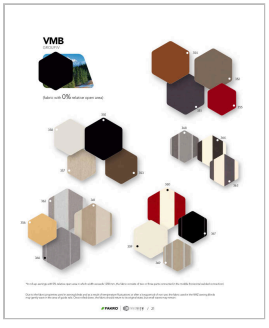
VMZ, VMU, VML, VMB

GRUPA III
(tkanina sa 4% relativne otvorene površine)

Kod tendi sa 4% relativne otvorene površine širine veće od 2600 mm i visine veće od 2500 mm (boje 701-709) te širine veće od 1700 mm i visine veće od 1600 mm (boje 710-716) tkanina se sastoji od dva dijela spojena na sredini (horizontalni zavareni spoj). Za dimenzije bliske maksimalnoj veličini tende (odnosi se na boje 710-716) tkanina se može sastojati od tri dijela.

Šifre boja tkanine 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715

Zbog svojstava tkanine koja se koristi kod tendi i usljed temperaturnih promjena ili nakon dužeg perioda nekorišćenja, tkanina korišćena kod tendi VMZ može blago da se talasa u zoni vodilica. Nakon spuštanja tkanina bi trebalo da se vrati u prvobitno stanje, ali mogu ostati mali talasi.



STRANA 21 ORIGINALA

VMB

GRUPA IV
(tkanina sa 0% relativne otvorene površine)

Šifre boja tkanine 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 366, 367, 368, 369

*Kod tendi na namotavanje sa 0% relativne otvorene površine širine veće od 1250 mm tkanina se sastoji od dva ili tri dijela spojena na sredini (horizontalni zavareni spoj).

Zbog svojstava tkanine koja se koristi kod tendi i usljed temperaturnih promjena ili nakon dužeg perioda nekorišćenja, tkanina korišćena kod tendi VMZ može blago da se talasa u zoni vodilica. Nakon spuštanja tkanina bi trebalo da se vrati u prvobitno stanje, ali mogu ostati mali talasi.



STRANA 22 ORIGINALA

BEŽIČNO UPRAVLJANJE

WIFI TUYA UPRAVLJANJE

- Tehnologija WiFi Tuya zasniva se na radio-bežičnoj komunikaciji. Odlikuje se otpornošću na smetnje, velikom propusnošću i mogućnošću povezivanja uređaja na postojeće infrastrukturne mreže zasnovane na standardnom WiFi Tuya.
- Sistem funkcioniše tako što upravljački uređaj, npr. pametni telefon, šalje signal ruteru, koji zatim distribuira signale pojedinačnim uređajima. Kvar jednog uređaja ne utiče na rad ostalih uređaja, a svi ispravni uređaji ostaju dostupni.
- Mogućnost povezivanja svih uređaja direktno i putem postojeće WiFi mreže (npr. privatne kuće, preduzeća).
- WiFi sistem se lako ugrađuje, proširuje i njime se lako upravlja. Može se koristiti u bilo kojoj fazi korišćenja objekta. Dodatna prednost je mogućnost daljinskog pristupa uređajima preko rutera.
- Ugradnja sistema ne zahtijeva upotrebu nikakvih upravljačkih panela ni kablova za povezivanje električnih uređaja, što očigledno smanjuje troškove i vrijeme ugradnje i obezbjeđuje maksimalan komfor pri korišćenju sistema.
- Svim uređajima u sistemu WiFi Tuya upravlja se pomoću pametnog telefona uz aplikaciju FAKRO. Moguće je njima upravljati i pomoću namjenskog daljinskog upravljača ili zidne tastature.
- Sistem TUYA se lako ugrađuje, proširuje i njime se lako upravlja. Može se koristiti u bilo kojoj fazi korišćenja objekta, jer sistem WiFi Tuya obuhvata i čitav asortiman proizvoda Solar opremljenih baterijom koja se puni pomoću solarnog panela. TUYA je vodeća kompanija u oblasti rješenja za pametne kuće.

ZTG	Gateway za upravljanje proizvodima Tuya WiFi pomoću daljinskog upravljača ZTP3 i tastera ZTK3. Neophodan je za upravljanje uređajima Tuya Solar.
ZTP3	3-kanalni daljinski upravljač za upravljanje uređajima Tuya WiFi. Dodatno je potreban gateway ZTG.
ZTK3	3-kanalni zidni prekidač za upravljanje uređajima Tuya WiFi. Dodatno je potreban gateway ZTG.

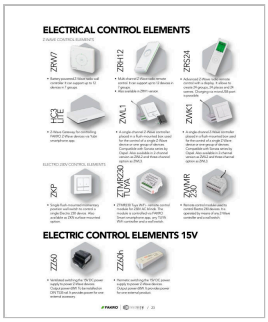
Z-WAVE UPRAVLJANJE

- Sistemsko rješenje namijenjeno inteligentnim zgradama.
- Z-Wave je bežični radio protokol koji se koristi za komunikaciju kućnih električnih uređaja. U mrežu se mogu povezati svi električni uređaji koji imaju Z-Wave modul, kao što su Z-Wave prozori, standardni prozori opremljeni aktuatorima sa Z-Wave modulom, spoljne roletne ARZ Z-Wave, spoljne tende AMZ Z-Wave, kao i unutrašnji pribor, uključujući AJP Z-Wave, ARF Z-Wave i ARP Z-Wave.
- Pored toga, prozori se mogu opremiti senzorima kiše ili prozorskim senzorima i integrisati sa drugim kućnim električnim uređajima.
- Ugradnja sistema ne zahtijeva upotrebu nikakvih komunikacionih kablova između električnih uređaja, što očigledno smanjuje troškove i vrijeme ugradnje.
- Z-Wave sistem se lako ugrađuje, proširuje i njime se lako upravlja. Može se koristiti u bilo kojoj fazi korišćenja objekta. Korisniku omogućava da napravi bežičnu mrežu i

upravlja proizvodima opremljenim Z-Wave modulom pomoću bežične tastature, daljinskog upravljača, mobilnog telefona ili interneta.

- Proizvodi FAKRO opremljeni Z-Wave modulom rade sa uređajem Gateway Z-Wave. Primjer je gateway Home Center 3 Fibaro – kontrolna tabla za pametnu kuću kojom se upravlja pomoću aplikacije na pametnom telefonu.

Za upravljanje Z-Wave uređajima putem aplikacije Yubii mora se kupiti gateway HC3 Lite.



STRANA 23 ORIGINALA

ELEKTRIČNI ELEMENTI ZA UPRAVLJANJE

ELEMENTI ZA UPRAVLJANJE Z-WAVE

ZRW7	Z-Wave radio zidni kontroler na baterije. Može da podrži do 12 uređaja u 7 grupa.
ZRH12	Višekanalni Z-Wave radio daljinski upravljač. Može da podrži do 12 uređaja u 7 grupa. Dostupan je i u verziji ZRH1.
ZRS24	Napredni Z-Wave radio daljinski upravljač sa displejom. Omogućava kreiranje 24 grupe, 24 mjesta i 24 scene. Moguće je punjenje preko microUSB priključka.
HC3 LITE	Z-Wave gateway za upravljanje FAKRO Z-Wave uređajima pomoću aplikacije Yubii na pametnom telefonu.
ZWL1	Jednokanalni Z-Wave kontroler smješten u podžbuknu kutiju, namijenjen za upravljanje jednim Z-Wave uređajem ili jednom grupom uređaja. Kompatibilan je sa serijom Sonata proizvođača Ospel. Dostupan je i u 2-kanalnoj verziji ZWL2 i trokanalnoj verziji ZWL3.
ZWK1	Jednokanalni Z-Wave kontroler smješten u podžbuknu kutiju, namijenjen za upravljanje jednim Z-Wave uređajem ili jednom grupom uređaja. Kompatibilan je sa serijom Sonata proizvođača Ospel. Dostupan je i u 2-kanalnoj verziji ZWL2 i trokanalnoj verziji ZWL3.

ELEMENTI ZA UPRAVLJANJE ELECTRO 230V

ZKP	Jednostruki podžbukni zidni prekidač sa trenutnim položajem (impulsni) za upravljanje jednim uređajem Electro 230. Dostupan je i kao nadžbukna varijanta ZKN.
ZTMR230 TUYA	ZTMR230 Tuya WiFi – modul za daljinsko upravljanje tendama od 230V AC. Modulom se upravlja pomoću pametnog telefona uz aplikaciju FAKRO Smart, bilo kojeg kontrolera TUYA WiFi i zidnog prekidača.
ZWMR 230	Modul za daljinsko upravljanje uređajima Electro 230. Njime se upravlja pomoću bilo kojeg Z-Wave kontrolera i zidnog prekidača.

ELEKTRIČNI ELEMENTI ZA UPRAVLJANJE 15V

ZZ60	Ventilirana impulsna jedinica za napajanje 15V DC za napajanje Z-Wave uređaja. Izlazna snaga 60W. Ugrađuje se na DIN TS35 šinu. Napaja jedan spoljni pribor.
ZZ60h	Hermetična impulsna jedinica za napajanje 15V DC za napajanje Z-Wave uređaja. Izlazna snaga 60W. Napaja jedan spoljni proizvod.



STRANA 24 ORIGINALA

GO GREEN

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FAKRO zadržava pravo da u bilo koje vrijeme izmijeni specifikacije.



FAKRO | INNOVIEW LINE

VERTICAL **AWNING BLINDS**



THE TEMPERATURE INSIDE THE ROOM ON HOT SUNNY DAYS IS AFFECTED GREATLY BY THE TYPE OF BLINDS USED



8 times
more effective
than internal blinds

Awning blinds - 8 times more effective protection
against heat gain compared with internal blinds

RELAX

Most of us look forward to hot, sunny days, but while the sun is delightful on the beach, it can be a real nuisance in the home or workplace. Solar radiation streaming into a room causes a significant rise in temperature, not only in the attic but throughout the building. The most effective protection comes from external awning blinds and shutters, which are especially valuable on south- or west-facing roofs.

Vertical awning blinds provide the most effective protection against high temperatures. By blocking UV radiation before it reaches the glass, they prevent warm air from entering the room.

We design, plan and manufacture with care for the environment. Offering environmentally friendly and energy-efficient products has been encoded in the company's DNA. We ensure that every process, every action and every decision we make is always accompanied by concern for the comfort and healthy life of future generations. All of these activities is encapsulated in the important **GO GREEN** philosophy.

EFFECTIVE PROTECTION AGAINST HEAT

Awning blinds are the optimal solution for protecting against excessive solar heat. They absorb solar radiation before it reaches the glazing and release the heat externally, providing far superior protection from uncomfortable indoor temperatures on sunny days. Offering up to eight times the effectiveness of internal blinds, they can reduce indoor temperatures by as much as 10°C.

ENERGY-EFFICIENCY

Awning blinds help reduce the energy consumption of air conditioning units, lowering operating costs and cutting CO_2 emissions. The solar-powered model requires no electricity, as it is driven by a photovoltaic cell. In addition, it protects against heat loss during colder weather by improving the heat transfer coefficient by up to 16%, further contributing to lower heating bills.

INFLOW OF NATURAL LIGHT

Windows fitted with awning blinds, rather than external roller shutters, allow natural light to flow freely into the interior. The blinds let in sufficient daylight to eliminate the need for additional artificial lighting.

VISIBILITY TO THE OUTSIDE AND PRIVACY

When lowered, the awning blind maintains visual contact with the outside environment. It allows you to enjoy the view while still preserving privacy from anyone looking in.

IMPROVED ERGONOMICS

When unrolled, the awning blind improves the working environment by maintaining consistent light levels and ensuring visual comfort. It reduces glare that can interfere with laptop use or television viewing, while also protecting the eyes from strain by providing evenly distributed light

PROTECTION AGAINST UV RADIATION

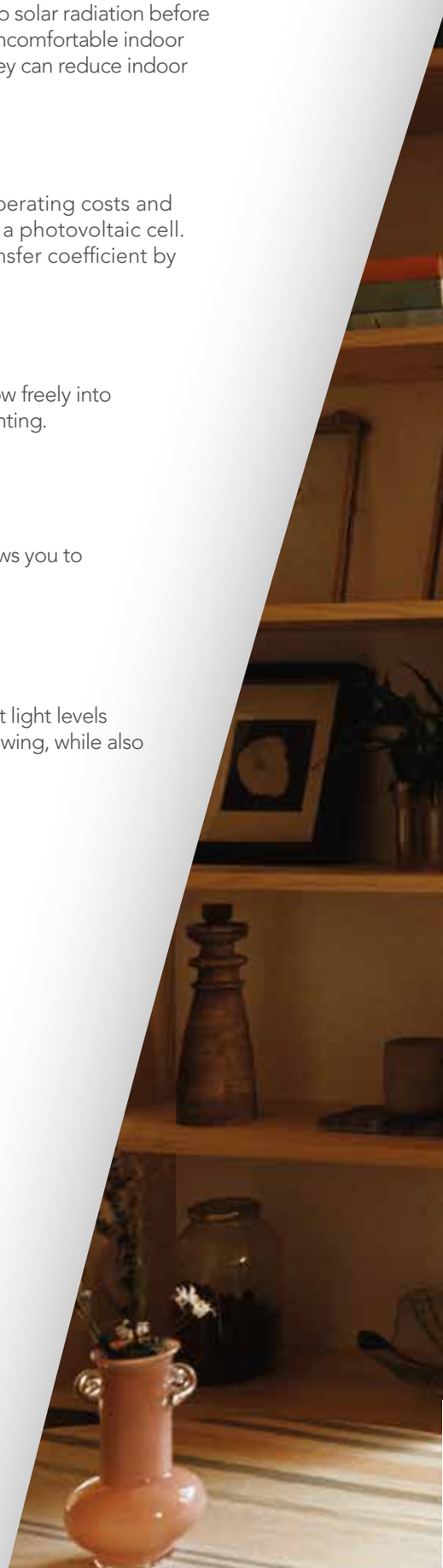
Awning blinds limit the penetration of harmful UV radiation into the room. When lowered, they protect furnishings from fading or yellowing caused by prolonged exposure to UV rays.

PROTECTION AGAINST INSECTS

In addition to reducing heat gain, electric awning blinds (Z-Wave, Solar WiFi) and the VMZ ZIP version also function as insect screens. When the window is open, a lowered awning blind prevents unwanted insects from entering.

QUICK AND EASY INSTALLATION

With the optional VMX installation set, awning blinds can be installed by a single person, saving both time and costs. Using the VMX set, customers can carry out DIY installation of manual awnings across the full size range, while electric, solar, and VMZ ZIP models can be installed up to approximately 1.5 m × 1.5 m.





WHY DO WE USE VERTICAL AWNING BLINDS?



VERTICAL AWNING BLINDS VMZ, VMU, VML AND ROLL-UP AWNINGS VMB



The VMZ, VMU, and VML awning blinds, along with VMB roll-up awnings, are designed for vertical windows. Intended for external installation, they are suitable for PVC, aluminium, or timber windows and doors, including balconies and terraces. These awning blinds reduce heat absorption, provide even light distribution, and enhance indoor comfort.

In accordance with DIN 5034-1 standard, rooms should be protected from excessive heat of the sun not by means of internal accessories, but rather external shields (awning blinds, roller shutters). "...constructional measures are necessary to prevent discomfort caused by the sun, such as excessive heating of the indoor air, especially during warm seasons, or the presence of glare [...] Suitable movable systems include external Venetian blinds, shutters or awnings." - DIN 5034-1.

Solar radiation passes through the pane and is absorbed by an internal blind. It then radiates heat to the interior in the form of long wave infrared radiation, effectively acting as a radiator. Internal accessories should really be used primarily as a means of shading and interior decoration.



VMZ

The awning blind is made of aluminium frame and weather-resistant material. Electrically operated awning blinds are driven by a motor, while their material moves along guide rails. Their fabric is tensioned by means of a spring system.

VMZ Z-Wave Solar

- automatic control



VMZ Z-Wave

- remote control or wall switch





VMZ WiFi Tuya

- control via smarphone app



VMZ Electro 230

- control via wall switch



VMZ

- manual control by hand or via control rod (purchased separately)



VMZ ZIP

- manual control





VMU

Flush-mounted VMU awning blinds are designed for vertical windows and are primarily intended for new buildings. Most of the structural elements can be concealed within the façade, providing a sleek, unobtrusive solution that does not affect the building's appearance. When the fabric is rolled up, the blind is virtually invisible. The guide rails can be colour-matched to the windows, ensuring the aesthetics of the building remain uncompromised.

VMU Z-Wave Solar

- automatic control





VMU Z-Wave

- remote control or wall switch



VMU WiFi Tuya

- control via smarphone app



VMU Electro 230

- control via wall switch







VML

The VML awning blind comes with strings used to operate the fabric rolled up on the shaft. No standard side guide rails enhances aesthetics of the blind fitted onto the window while retaining its features that protect against overheating.

VML Z-Wave Solar

- automatic control





VML Z-Wave

- remote control or wall switch



VML WiFi Tuya

- control via smarphone app



VML Electro 230

- control via wall switch





VMB

The roll-up awning has a movable, tilting bar which allows access to be gained to the sill when the blind is in use.

VMB Z-Wave Solar

- automatic control



VMB Z-Wave

- remote control or wall switch



VMB WiFi Tuya

- control via smarphone app



VMB Electro 230

- control via wall switch





CONVENIENT CONTROL SYSTEMS

SOLAR VERTICAL BLINDS

VMZ Z-WAVE SOLAR, VMU Z-WAVE SOLAR VML Z-WAVE SOLAR, VMB Z-WAVE SOLAR

The Solar type blinds are powered by means of solar battery pack.

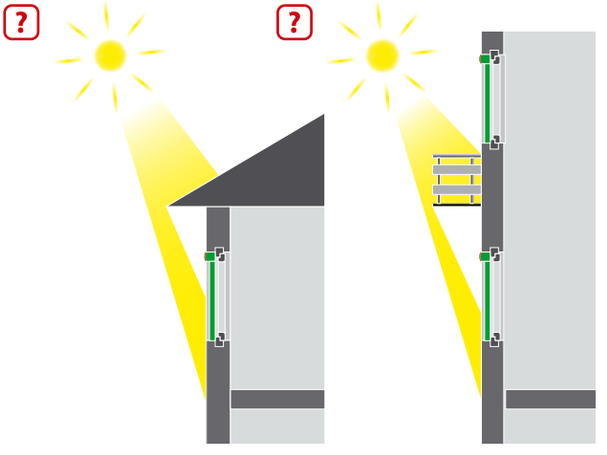
- Automatic control. An intelligent system operates the blind based on the level of sunlight. A photovoltaic panel acts as a sensor, triggering the blind to unroll automatically when solar radiation is high. On colder days, the Solar awning blind can be manually switched to winter mode. When sunlight levels are high, the blind rolls up to allow warm rays to enter, providing passive heating. In the evening, the blind can be lowered manually to protect the room from heat loss.



The Solar type awning blind and roll-up awning can be controlled in one of three modes:

- automatic (self-activating rolling up and unrolling dependent on the level of insolation),
- semi-automatic (self-activating unrolling, rolling-up via a remote control),
- operation via remote control

In special cases, the awning can be controlled by means of a service button



The Solar type awning blinds should be fitted in places with the solar panel positioned to direct sun exposure. It is recommended to install awnings on south, east and west facing roofs. Installation in the north side may result in battery discharge and the inability to operate the blind. To ensure correct operation of the automatic mode, the solar panel must be exposed to direct sunlight throughout the active operation mode.

1. When installing the VMZ Z-Wave Solar, VML Z-Wave Solar and VMB Z-Wave Solar blinds under balconies or canopies it is required to purchase an additional power panel.
2. The blind shaded by a balcony or eaves can be controlled automatically by another blind for vertical or roof windows which is exposed directly to the sun.

Z-WAVE VERTICAL BLINDS

VMZ Z-Wave, VMU Z-Wave
VML Z-Wave, VMB Z-Wave

The Z-Wave type blinds are powered by 15V DC mains supply and operated by means of a remote control or wall switch in a wireless Z-Wave system.

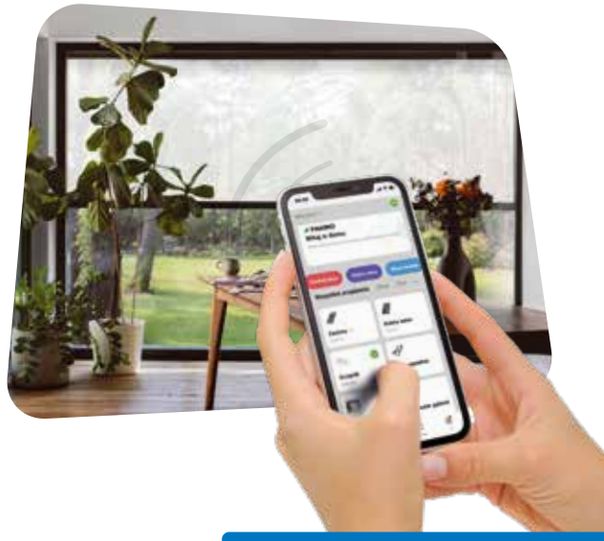




WIFI TUYA VERTICAL BLINDS

VMZ WiFi Tuya, VMU WiFi Tuya
VML WiFi Tuya, VMB WiFi Tuya

The WiFi Tuya type blinds are powered by 15V DC mains supply and operated by means of a smartphone using FAKRO Smart app in a wireless home WiFi network.



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VERTICAL BLINDS

VMZ

The blind is controlled manually by hand or via control rod (purchased separately).

VMZ ZIP

The blind is controlled manually.



COLOURS

Profiles in awning blinds and roll-up awnings are available in four standard colours (white, grey, black and brown) or any RAL colour on request. The customer also has a choice of fabrics featuring different types of relative open area.

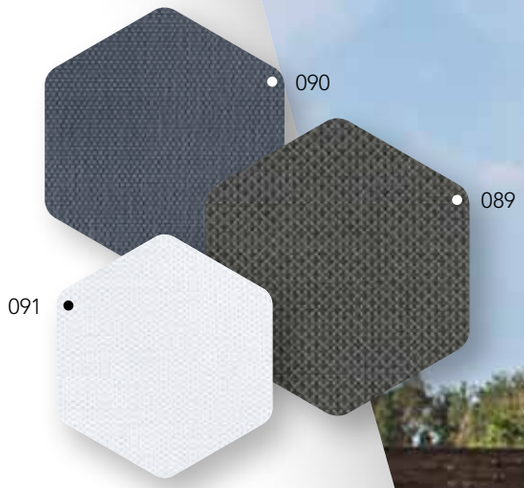
VMZ, VMU, VML, VMB

GROUP I



(fabric with 10% relative open area)

In blinds with the 089 fabric in which width exceeds 2100 mm and height exceeds 1950 mm, the fabric consists of two parts connected in the middle (horizontal welded connection).



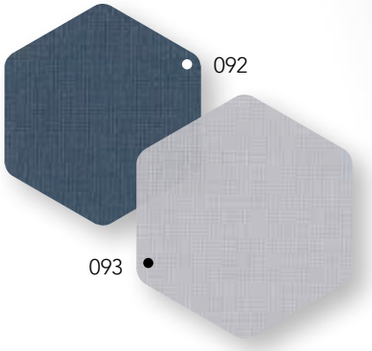
VMZ, VMU, VML, VMB

GROUP II



(fabric with 1% relative open area)

In blinds with 1% relative open area in which width exceeds 2400 mm and height exceeds 2350 mm, the fabric consists of two parts connected in the middle (horizontal welded connection).

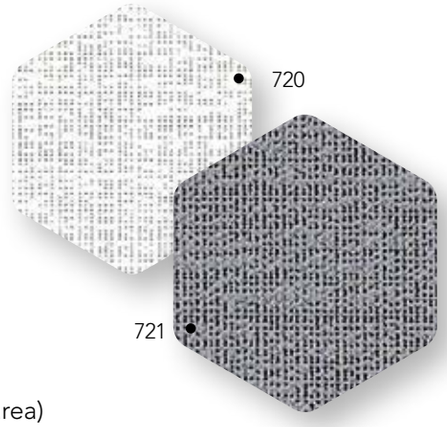


VMZ*

GROUP V



(fabric with 0% relative open area)





In blinds with 1% relative open area in which width exceeds 1700 mm and height exceeds 1600 mm, the fabric consists of two parts connected in the middle (horizontal welded connection). For dimensions close to the maximum size of the awning, the fabric can consist of three parts.

**no option to use in manually operated VMZ awning blinds*



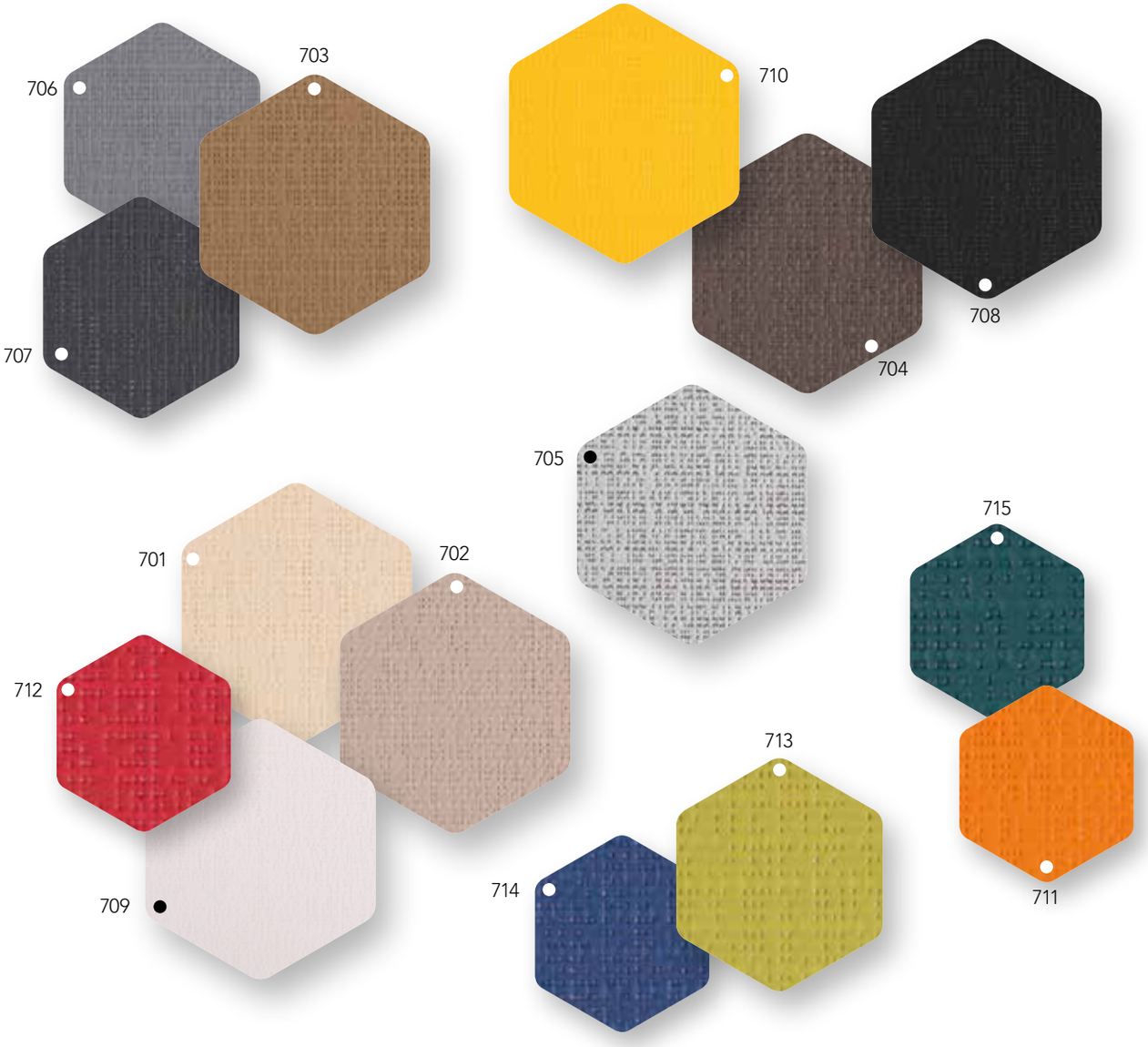
VMZ, VMU, VML, VMB

GROUP III



In blinds with 4% relative open area in which width exceeds 2600 mm and height exceeds 2500 mm (colours 701-709) and width exceeds 1700 mm and height exceeds 1600 mm (colours 710-716) the fabric consists of two parts connected in the middle (horizontal welded connection). For dimensions close to the maximum size of the awning (applying to colours 710-716), the fabric can consist of three parts.

(fabric with 4% relative open area)



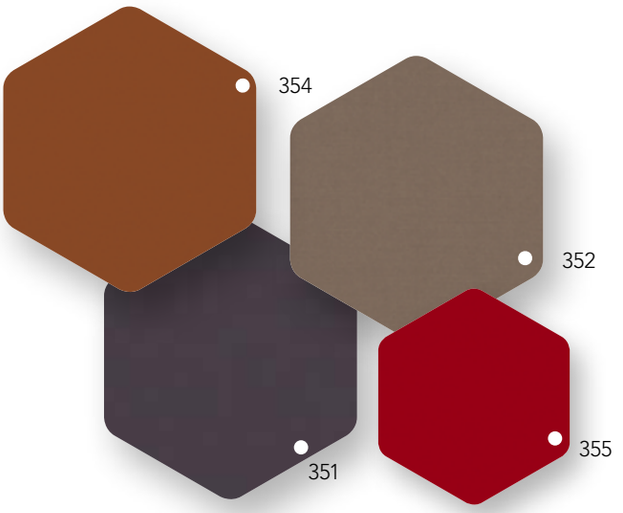
Due to the fabric properties used in awning blinds and as a result of temperature fluctuations or after a long period of non-use, the fabric used in the VMZ awning blinds may gently wave in the area of guide rails. Once rolled down, the fabric should return to its original state, but small waves may remain.

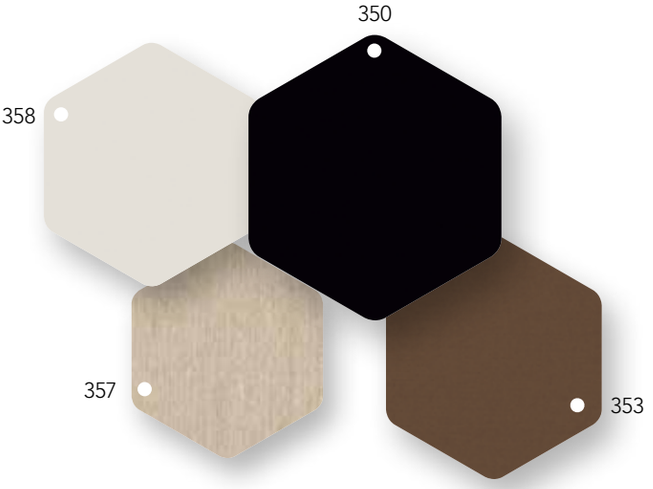
VMB

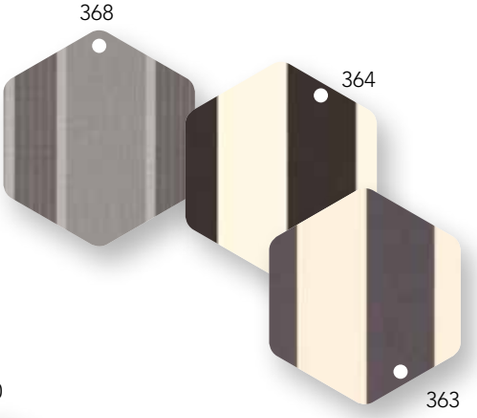
GROUP IV

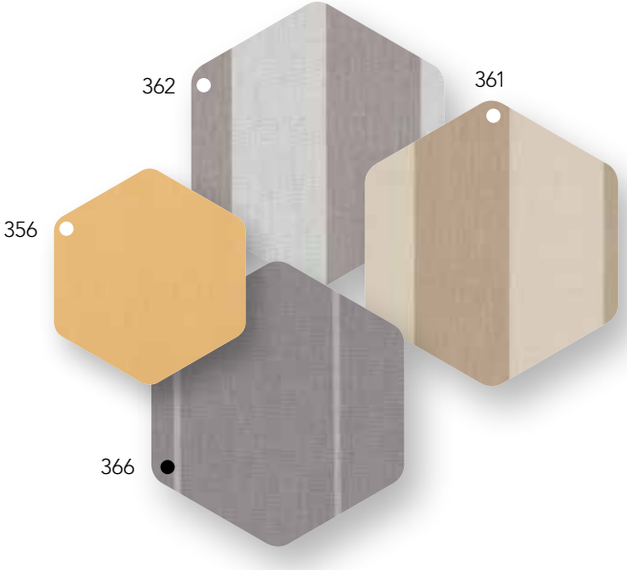


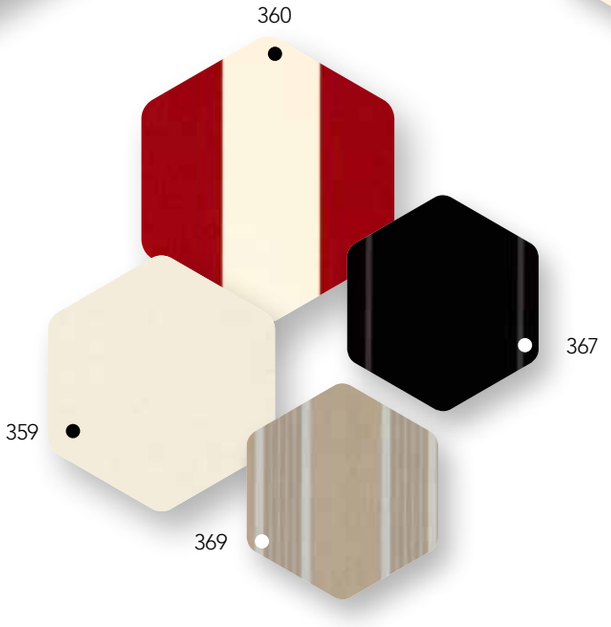
(fabric with 0% relative open area)











*In roll-up awnings with 0% relative open area in which width exceeds 1250 mm, the fabric consists of two or three parts connected in the middle (horizontal welded connection).

Due to the fabric properties used in awning blinds and as a result of temperature fluctuations or after a long period of non-use, the fabric used in the VMZ awning blinds may gently wave in the area of guide rails. Once rolled down, the fabric should return to its original state, but small waves may remain.

WIRELESS CONTROL

WIFI TUYA CONTROL

- The WiFi Tuya technology is based on radio wireless communication. It is characterized by resistance to interference, high throughput and the ability to connect devices to existing infrastructure networks based on standard WiFi Tuya.
- Operation of the system consists in the fact that a control device, eg smartphone sends a signal to the router which then distributes signals to individual devices. The failure of one device does not affect the operation of other devices, with all functional devices still available



- Option for connections with all devices directly and using the existing WiFi network (eg private homes, businesses).
- The WiFi system is easy to install, expand and manage. It can be used at any stage of the building's operation. An additional benefit is the ability to obtain a remote access to devices via a router.
- Installation of the system does not require the use of any control panels or connecting cables between electrical devices, which clearly cuts down costs and installation time and ensures maximum comfort of operating the system.
- All devices in the WiFi Tuya system are operated via a smartphone with FAKRO app. It is also possible to control them by means of dedicated remote control or wall keypad.
- The TUYA system is easy to install, expand and manage. It can be used at any stage of the building's operation as the WiFi Tuya system is also a whole range of Solar products equipped with a battery charged by a solar panel. TUYA is a leading company in smarthome solutions.

FAKRO smartHome

tuya

ZTG



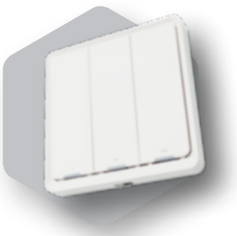
- Gateway for controlling Tuya WiFi products via the ZTP3 remote control and ZTK3 button. Required for controlling Tuya Solar devices.

ZTP3



- 3-channel remote control for controlling Tuya WiFi devices. Additionally, ZTG gateway is required.

ZTK3



- 3-channel wall switch for controlling Tuya WiFi devices. Additionally, ZTG gateway is required.

Z-WAVE CONTROL

- A system solution designed for inteligent buildings.
- The Z-Wave is a wireless radio protocol used for communication of home electrical appliances. All electrical devices that have the Z-Wave module can be connected to the network such as Z-Wave windows, standard windows fitted with actuators with the Z-Wave module, external ARZ Z-Wave roller shutters, AMZ Z-Wave awning blinds as well as internal accessories, including AJP Z-Wave, ARF Z-Wave and ARP Z-Wave.
- In addition, windows can be equipped with rain or window sensors and integrated with other home eletrical appliances.

Z-WAVE PLUS

WORKS WITH FIBARO®

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- Installation of the system does not require the use of any communication cables between electrical devices, which clearly cuts down costs and installation time.
- The Z-Wave system is easy to install, expand and manage. It can be used at any stage of the building's operation. It allows the user to create a wireless network and control products equipped with the Z-Wave module using a wireless keyborad, remote control, mobile phone or the Internet.
- FAKRO products equipped with the Z-Wave module work with Gateway Z-Wave device. An example is the Home Center 3 Fibaro gateway - smart home control panel operated via smartphone app.
  To operate Z-Wave devices via Yubii app, the HC3 Lite gateway must be purchased.



ELECTRICAL CONTROL ELEMENTS

Z-WAVE CONTROL ELEMENTS

ZRW7



- Battery-powered Z-Wave radio wall controller. It can support up to 12 devices in 7 groups.

ZRH12



- Multi-channel Z-Wave radio remote control. It can support up to 12 devices in 7 groups.
- Also available in ZRH1 version.

ZRS24



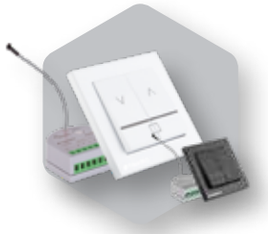
- Advanced Z-Wave radio remote control with a display. It allows to create 24 groups, 24 places and 24 scenes. Charging via microUSB port is possible.

HC3 LITE



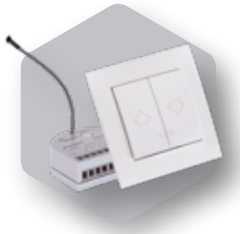
- Z-Wave Gateway for controlling FAKRO Z-Wave devices via Yubii smartphone app.

ZWL1



- A single-channel Z-Wave controller placed in a flush-mounted box used for the control of a single Z-Wave device or one group of devices. Compatible with Sonata series by Ospel. Also available in 2-channel version as ZWL2 and three-channel option as ZWL3.

ZWK1



- A single-channel Z-Wave controller placed in a flush-mounted box used for the control of a single Z-Wave device or one group of devices. Compatible with Sonata series by Ospel. Also available in 2-channel version as ZWL2 and three-channel option as ZWL3.

ELECTRO 230V CONTROL ELEMENTS

ZKP



- Single flush-mounted momentary position wall switch to control a single Electro 230 device. Also available as ZKN surface-mounted option.

ZTMR230 TUYA



- ZTMR230 Tuya WiFi - remote control module for 230V AC blinds. The module is controlled via FAKRO Smart smartphone app, any TUYA WiFi controller and a wall switch.

ZWMR 230



- Remote control module used to control Electro 230 devices. It is operated by means of any Z-Wave controller and a wall switch.

ELECTRIC CONTROL ELEMENTS 15V

ZZ60



- Ventilated switching the 15V DC power supply to power Z-Wave devices. Output power 60W. To be installed on DIN TS35 rail. It provides power for one external accessory.

ZZ60h



- Hermetic switching the 15V DC power supply to power Z-Wave devices. Output power 60W. It provides power for one external product.



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FAKRO reserves the right to change specifications at any time.

MDOF/-24/EN/17.09.2025/H031

Neslužbeni prevod na crnogorski jezik

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Dokument: „Katalog FAKRO spoljnih tendi za vertikalne prozore (ME)“

Ovaj prevod je pripremio Ymalko Montenegro kao pomoć pri čitanju. Nije dokument proizvođača i ne zamjenjuje ga. U slučaju bilo kakve razlike ili nejasnoće važi originalni dokument proizvođača.

Stranice 1–10 su prevod; stranice 11–34 su originalni dokument proizvođača FAKRO, priložen bez izmjena.

Nazivi proizvoda, šifre, standardi, oznake mjernih jedinica i sve brojčane vrijednosti preneseni su tačno kako su odštampani u originalu.

Datum prevoda: 01.10.2026.