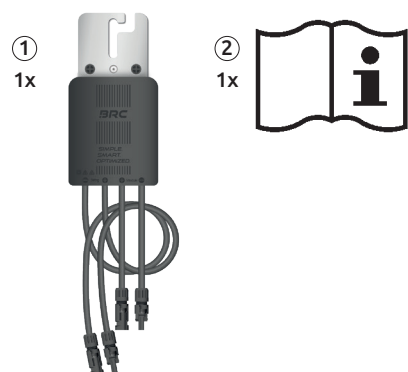


# Uputstvo za upotrebu M600-M

Instruction manual M600-M

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## 1. SADRŽAJ ISPORUKE / SCOPE OF DELIVERY

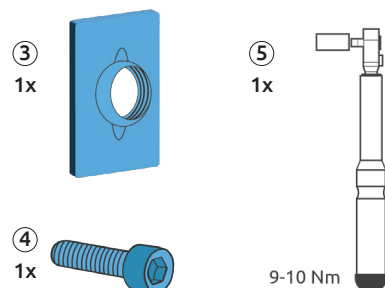


### Sadržaj isporuke

① M600-M ② Uputstvo za upotrebu

### Scope of supply

① M600-M ② Instruction manual



### Potrebni pribor

③ Prirubna matica ④ M8 vijak

⑤ Moment ključ

### Required accessories

③ Flange nut ④ M8 screw

⑤ Torque spanner

## 2. SIGURNOSNE UPUTE / SAFETY INSTRUCTIONS

### A) OPŠTE

- M600-M smije se koristiti isključivo u skladu s namjenskom upotrebom i specificiranim tehničkim podacima.
- Prilikom puštanja u rad, održavanja ili popravka fotonaponskog sustava ne smiju se provoditi kratki spojevi na nizu modula ili na Power Optimizeru.
- Molimo vas da obratite pažnju na sve upute navedene u uputstvu za upotrebu BRC Solar GmbH, kao i na upozorenja na M600-M. Upozorenja na M600-M moraju uvijek biti dobro čitljiva i ne smiju se uklanjati, mijenjati ili manipulirati.
- Važeći lokalni zakoni, propisi, smjernice i norme moraju se prvenstveno poštovati pri radu, kao i prilikom instalacije, deinstalacije i održavanja. Sigurnosne upute u uputstvu za upotrebu nisu potpune i služe samo kao dopuna.

### B) ELEKTRO STRUČNJACI

- Sve radove povezane s proizvodom smiju obavljati samo kvalificirani elektro stručnjaci. Elektro stručnjak mora poštovati nacionalne i regionalne propise.
- Molimo vas da pažljivo pročitate sve upute prije instalacije i da ih slijedite. Ako postoje nejasnoće ili vam trebaju detaljne informacije, nazovite našu servisnu liniju.
- Električni radovi smiju se izvoditi samo uz poštovanje 5 sigurnosnih pravila elektrotehnike.
- Kako biste izbjegli opekline, elektro stručnjak bi prilikom demontaže ili zamjene M600-M trebao pričekati nekoliko minuta nakon isključivanja sustava dok se optimizatori dovoljno ne ohlade.
- Instalirajte M600-M s dovoljno udaljenosti od krova ili drugih podloga kako biste osigurali odgovarajuće odvođenje topline.
- Instalirajte isključivo neoštećene M600-M s kompletnim sadržajem isporuke.
- Nemojte vršiti nikakve modifikacije na M600-M.
- Posebno pazite da uspostavite čvrstu električnu vezu između M600-M i modula i/ili PV-niza.

### C) KRAJNI KORISNIK

- Ni pod kojim okolnostima nemojte samostalno obavljati radove na M600-M. Ne otvarajte kućište.
- Neovlaštene osobe ne smiju prilaziti fotonaponskom sustavu ili Power Optimizeru.
- Molimo vas da sačuvate uputstvo za upotrebu kako bi bilo dostupno za sve aktivnosti povezane s proizvodom.

DODATNI JEZICI U PREUZIMANJU/  
ADDITIONAL LANGUAGES AVAILABLE FOR DOWNLOAD  
Website [www.brc-solar.de](http://www.brc-solar.de)



## 2. SIGURNOSNE UPUTE / SAFETY INSTRUCTIONS

### A) GENERAL

- The M600-M may only be operated in accordance with the intended use and the specified technical data.
- When commissioning, maintaining or repairing the PV system, do not short-circuit the module string or the Power Optimizer.
- Please observe all BRC Solar GmbH instructions given in the instruction manual as well as the warning notices on the M600-M. The warning notices on the M600-M must always be clearly legible and must not be removed, changed or manipulated.
- Applicable local laws, regulations, directives and standards must be observed as a matter of priority for operation and during installation, uninstallation and maintenance. The safety instructions in the instruction manual are not complete and serve only as a supplement.

### B) ELECTRICAL SPECIALISTS

- All work related to the product may only be carried out by qualified electricians. The electrician must comply with national and regional regulations.
- Please read all instructions carefully before installation and follow them during installation. If there are any uncertainties or you need detailed information call our service hotline.
- Electrical work may only be carried out in compliance with the 5 safety rules of electrical engineering.
- To prevent burns, the electrician should wait a few minutes after switching off the system until the optimizers have cooled down sufficiently before dismantling or replacing the M600-M.
- Install the M600-M with adequate spacing to the roof or other surfaces to ensure sufficient heat dissipation.
- Only install intact M600-M with a complete scope of delivery.
- Do not make any modifications to the M600-M.
- Take particular care to establish a firm electrical connection between the M600-M and the modules and/or the PV string.

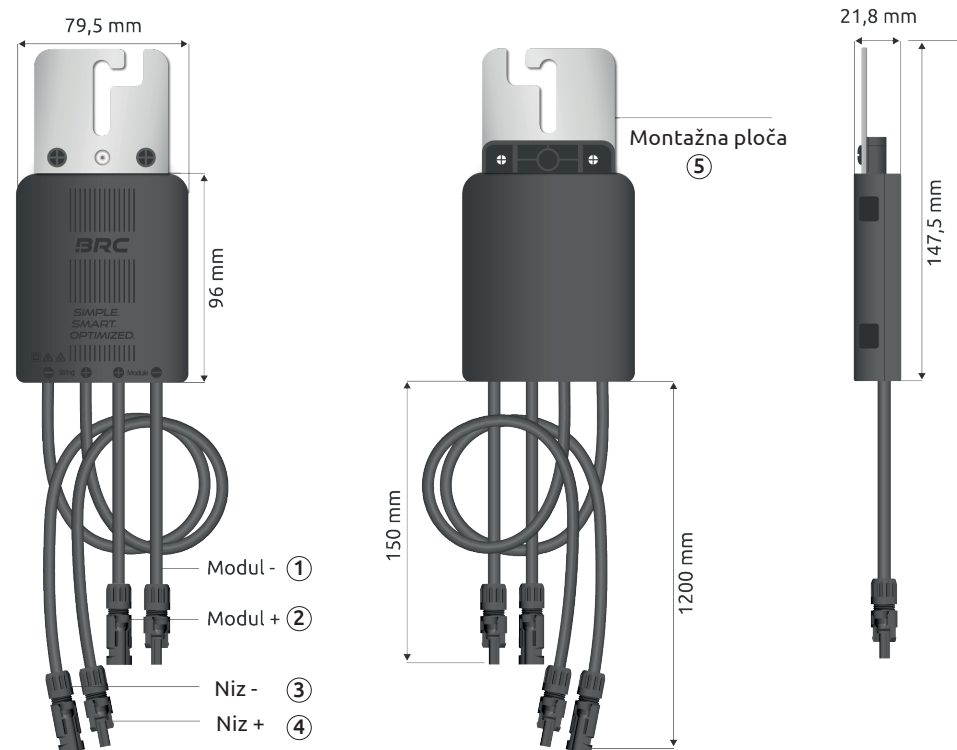
### C) END USER

- Do not under any circumstances carry out any work on the M600-M yourself. Do not open the housing.
- Unauthorised persons must not be allowed to enter the vicinity of the PV system or the Power Optimizer.
- Please keep the instruction manual so that it is available for all activities related to the product.

EN

## 3. PREGLED PROIZVODA / PRODUCT OVERVIEW

### A) SASTAV / ASSEMBLY



### BA Struktura M600-M

- ① Modul - ② Modul + ③ Niz -  
④ Niz + ⑤ Montažna ploča

### EN Assembly of the M600-M

- ① Module - ② Module + ③ String -  
④ String + ⑤ Mounting Plate



Molimo obratite pažnju na uputstvo za upotrebu.  
Please observe the instruction manual.



Pažnja, vruća površina.  
Warning, hot surface.

IP68

Uređaj ima potpunu zaštitu protiv dodira, otporan je na prašinu i zaštićen je pri potapanju.  
The device is fully protected against contact, is dust-tight and can withstand immersion.



Uređaj je u skladu s CE standardima.  
The device is CE compliant.



Zaštitna klasa II – Uređaj je zaštićen dvostrukom ili pojačanom izolacijom.  
Protection class II – The device is protected by double or reinforced insulation.



Nije dozvoljeno odlaganje u kućni otpad.  
No disposal with household waste permitted.



Pažnja, rizik od električnog udara!  
Warning, risk of electric shock!

## B) NAMJENSKA UPOTREBA

BA

- M600-M je pretvarač istosmjerne struje koji se putem Plug-and-Play spaja paralelno s modulom. Kako biste mogli koristiti funkciju nadgledanja, potrebno je postaviti BRConnect i BRC Power Manager aplikaciju.
- U slučaju zasjenjenja, sličan bypass diodi, automatski ga aktivira pretvarač. Pri aktivaciji, Power Optimizer smanjuje izlazni napon i povećava izlaznu struju, tako da odgovara struji niza. Na taj način, BRC Power Optimizer M600-M može i dalje isporučivati dostupnu snagu modula u PV sustav.
- Proizvod se postavlja na montažni sustav PV modula. Za pravilnu upotrebu proizvoda potrebna je fiksna instalacija koju mora izvesti kvalificirani elektro stručnjak prema uputama iz točke 4.
- Molimo vas da prilikom instalacije optimizatora obratite pažnju na poštivanje specificiranih tehničkih podataka. Posebno obratite pažnju na sljedeće upute:
  - Proizvod se može instalirati na otvorenom i odgovara IP zaštitnoj klasi IP68. Kao rezultat toga, optimizator može raditi i pri vlažnim uvjetima, kao i kod relativne vlažnosti zraka do 100%. Međutim, imajte na umu da se radi o električnom uređaju i stoga, iz sigurnosnih razloga, ne smije biti uronjen u tekućine.
  - Proizvod je dizajniran za rad pri temperaturama okoline od -40°C do +85°C.
  - Proizvod je odobren za rad na visinama do 2.000 metara nadmorske visine.
- Ako se upotreba razlikuje od ovdje objašnjene namjene i specificiranih tehničkih podataka, to se smatra nepravilnom upotrebom. Proizvođač ne preuzima odgovornost za štete nastale nepravilnom upotrebom. Primjenjuju se odredbe ograničene garancije proizvoda (<https://brc-solar.de/downloads/>)



### NAPOMENA

Ne provodite ispitivanje kratkog spoja ili ispitivanje otpora izolacije ako bi to ispitivanje moglo izazvati kratki spoj stringa. Povratno napajanje Power Optimizer-a isključeno je iz namjeravane upotrebe.

## B) INTENDED USE

EN

- The M600-M is a DC/DC converter that is connected in parallel to the module via plug-and-play. To enable the monitoring function, you must set up the BRConnect and BRC Power Manager App.
- In the event of shading, it is automatically activated by the inverter, comparable to the bypass diode. When activated, the Power Optimizer reduces the output voltage and increases the output current so that it corresponds to the string current. Thus, the BRC Power Optimizer M600-M can continue to feed the available module power into the PV system.
- The product is attached to the mounting system of the PV modules. For the intended use of the product, a stationary installation is required, which must be carried out by a qualified electrician according to the explanations in section 4.
- When setting up the optimizer, please ensure compliance with the specified technical data. Pay particular attention to the following information:
  - The product can be installed outdoors and complies with the IP68 protection class. As a result, the optimizer can operate in both wet conditions and relative humidity up to 100%. Please note, however, that this is an electrical device and therefore it should not be immersed in liquids for safety reasons.
  - The product is designed for operation at ambient temperatures of -40°C to +85°C.
  - The product is only approved for operation up to 2,000m above sea level.
- If the use deviates from the use explained here and the specified technical data, this is considered improper use. The manufacturer assumes no liability for damage caused by improper use. The information in the limited product warranty applies (<https://brc-solar.de/downloads/>).



### NOTE

Do not perform a short circuit test or an isolation test if this short-circuits the string during testing. The reverse current supply of the Power Optimizer is excluded from intended use.

## 4. MONTAŽA I PUŠTANJE U RAD / INSTALLATION AND COMMISSIONING

### NAPOMENA:

BA

- Ne instalirajte u paralelnim nizovima.
- Tokom rada Power Optimizer-a, površina kućišta može se jako zagrijati. Kako ne bi došlo do ometanja odvođenja toplote, Power Optimizer mora biti slobodno i dovoljno prozračno montiran. Ne smije se montirati na zapaljive površine.
- Osigurajte da tokom montaže, puštanja u rad i demontaže ne može doći do pojave električnog luka. Pažljivo provjerite priključke na konektorima.
- Power Optimizer treba montirati tako da voda/vlaga može nesmetano oticati.
- Kod ulaza invertera sa strujom MPP (IMPP) većom od 16 A, samo 50% modula u nizu smije biti opremljeno optimizatorima.

### Note:

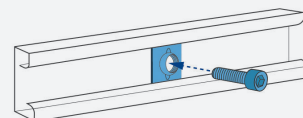
EN

- Do not install in parallel strings.
- During operation, the surface of the Power Optimizer can become very hot. To ensure proper heat dissipation, the Power Optimizer must be installed with adequate ventilation and clearance. It must not be mounted on flammable surfaces.
- Ensure that no arcs can occur during installation, commissioning, and dismantling. Carefully check the plug connections.
- The Power Optimizer must be mounted in a way that allows water/moisture to drain freely.
- For inverter inputs with an MPP current (IMPP) of more than 16 A, only 50% of the modules in the string may be equipped with optimizers.

### Korak 1: Pričvršćivanje M600-M na nosač PV modula

EN

#### Step 1: Fastening the M600-M to the PV module support



1

Postavite prirubnu maticu s M8 vijkom u montažni okvir.



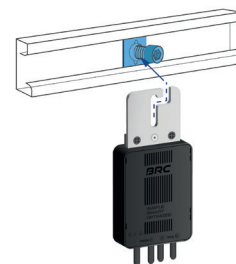
Prirubna mat /  
Flange nut



M8 vijak /  
M8 screw

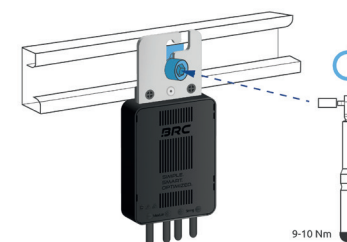
EN

Place the flange nut with an M8 screw in the mounting frame.



2

Montirajte M600-M na montažni okvir.



3

Zategnite vijak moment ključem (9-10 Nm) kako biste pričvrstili M600-M

EN

Mount the M600-M on the mounting frame.

EN

Tighten the screw with a torque spanner (9-10 Nm), to fasten the M600-M.

## Korak 2: Zaštitne mjere protiv električnog udara

Obratite pažnju na sigurnosne upute na stranici 2 i 5 sigurnosnih pravila za rad na električnim instalacijama. Prije nego što povežete M600-M sa stringom, provjerite da nema strujnog toka kroz string.

### EN Step 2: Protective measures against electric shock

*Observe the safety instructions on page 3 and the 5 safety rules for electrical engineering. Before connecting the M600-M to the string, check that no string current is flowing.*

## Korak 3: Priključivanje Power Optimizer-a

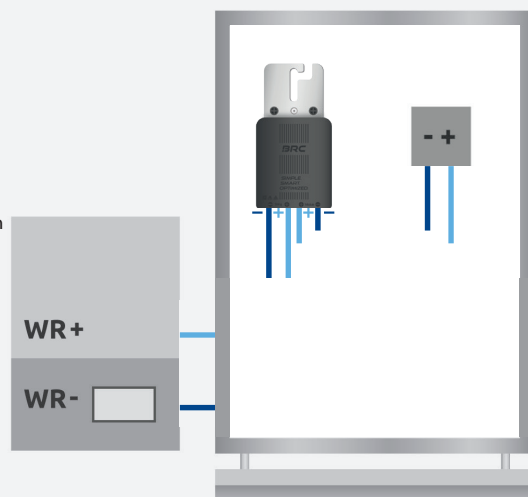
**NAPOMENA** M600-M standardno dolazi sa Stäubli MC4 konektorima. Oni se ne smiju povezivati s drugim tipovima konektora.

### EN Step 3: Connecting the Power Optimizer

**NAPOMENA** The M600-M is fitted with Stäubli MC4 connectors as standard. These must not be connected to other connector types.

**1** Ukoliko je modul već povezan na strani stringa, odvojite priključke od susjednih modula.

**EN** If the module is already connected on the string side, disconnect the connections from the neighbouring modules.



**2** Prvo priključite kratke kablove na PV modul. **Obratite pažnju na polaritet.**

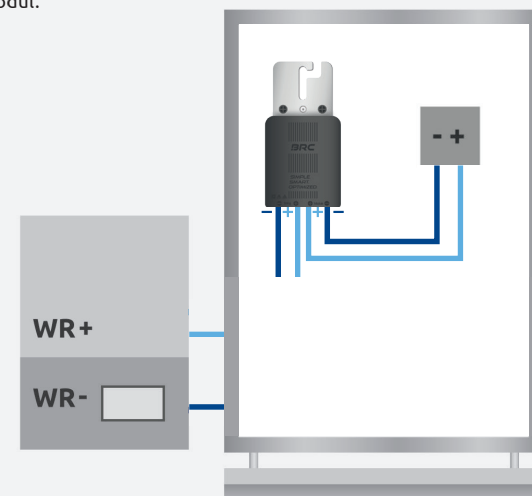
### NAPOMENA:

Možete provjeriti izlaze optimizatora pomoću mjerača napona. Nakon pravilnog pokretanja optimizatora, trebate očitati približan napon otvorenog kola modula.

**EN** First, connect the short cables to the PV module. Pay attention to the polarity.

### Note:

You can measure the output of the optimizer with a voltmeter. After the optimizer has booted correctly, the approximate open-circuit voltage of the module must be present.



**3** Dugi kablovi se povezuju na strani stringa. **Obratite pažnju na polaritet.**

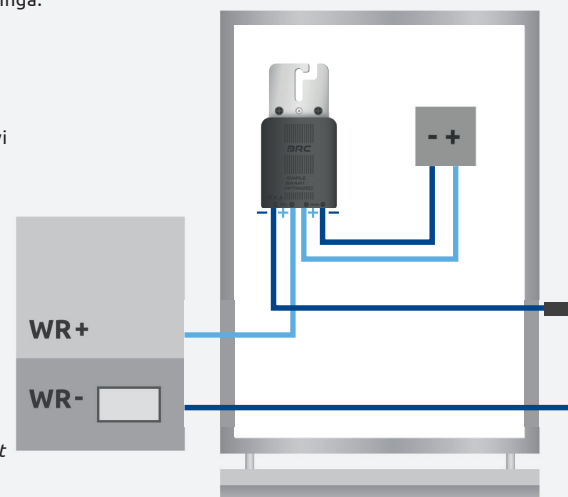
**EN** The long cables are connected on the string side. Pay attention to the polarity.

**NAPOMENA** Obratite pažnju da su kablovi pričvršćeni i osigurani na montažnom okviru (npr. od klizanja snijega).

Osigurajte da kablovi nisu prekomjerno savijeni ili presavijeni. Izbjegavajte napetost na kablovima.

**NAPOMENA** Ensure that the cables are secured to the mounting system to protect them (e.g. from sliding snow).

Ensure that the cables are not excessively bent or kinked. Avoid tension on the cables.



#### Korak 4: Postavite QR kod na plan stringa.

Odvojite QR kod i zalijepite ga na plan stringa. Plan stringa se razlikuje po stringovima 1, 2 i 3. Obratite pažnju na pravilno dodjeljivanje. Ako se QR kod izgubi, skenirajte QR kod na tipskoj pločici kako biste dobili ID optimizatora (npr. FAC1AA02).

**NAPOMENA:** Za svaki slučaj, napravite fotografiju gotovog plana šeme.

#### EN Step 4: Attach QR code to string plan

Remove the QR code and stick it onto the string plan. The string plan is divided into string 1, 2, and 3. Ensure the correct assignment. If the QR code is lost, scan the QR code on the nameplate to display the Optimizer ID (e.g., FAC1AA02).

**Note:** To be safe, take a photo of the completed string plan.

Plan stringa za preuzimanje na našoj web stranici.  
String plan for download on our website.

Shema / String plan

| Korisnik:<br>Naziv postrojenja: |    | Instalater:<br>Vod: |   | Stranica:<br>BRC |   |   |   |   |   |
|---------------------------------|----|---------------------|---|------------------|---|---|---|---|---|
| A                               | B  | C                   | D | E                | F | G | H | I | J |
| 1                               | QR |                     |   |                  |   |   |   |   |   |
| 2                               |    |                     |   |                  |   |   |   |   |   |
| 3                               |    |                     |   |                  |   |   |   |   |   |
| 4                               |    |                     |   |                  |   |   |   |   |   |
| 5                               |    |                     |   |                  |   |   |   |   |   |

Stranica: \_\_\_\_\_

#### Korak 5: Provjera montaže

Provjerite nakon toga pričvršćenje M600-M na montažni okvir, kao i ispravnu električnu vezu priključaka.

#### EN Step 5: Checking the installation

Afterwards, check the fastening of the M600-M to the mounting frame and the correct electrical connection of the plugs.

#### Korak 6: Puštanje u rad uključivanjem pretvarača

Povežite vod s DC ulazom pretvarača i postavite DC razvodni prekidač na ON.

**Obratite pažnju na polaritet.**

**Napomena:** Možete provjeriti napon u praznom hodu cijelog voda pomoću mjerača napona prije nego što je vod povezan s pretvaračem

#### EN Step 6: Commissioning by switching on the inverter

Connect the string to the DC input of the inverter and turn the DC switch to ON.  
Pay attention to the polarity.

**Note:** You can measure the open-circuit voltage of the entire string with a voltmeter before connecting the string to the inverter.

#### Korak 7: Povezivanje s BRConnect i BRC Power Manager aplikacijom

Prilikom korištenja BRConnect uređaja s BRC Power Manager aplikacijom, molimo vas da obratite pažnju na uputstvo za upotrebu BRConnect Gateway uređaja. Tamo ćete pronaći sve daljnje korake.

#### EN Step 7: Connection with BRConnect and BRC Power Manager App

When using a BRConnect with the BRC Power Manager App, please refer to the instruction manual for the BRConnect Gateway. There you will find all further steps.

## 5. RAD I ODRŽAVANJE

- Isključite PV postrojenje na pretvaraču prije početka čišćenja. Ne čistite pod visokim pritiskom, čišćenje vršite isključivo čistom vodom. Ne primjenjujte mehanički pritisak na Power Optimizer.
- M600-M ne zahtijeva održavanje; u slučaju dugotrajnih kvarova obratite se podršci.

## 6. ZAMJENA I POPRAVAK

Radne korake demontaže M600-M potrebno je izvesti obrnutim redoslijedom od montaže (vidi poglavlje 4):

- Isključite pretvarač
- Odvojite stranu voda optimizatora
- Odvojite stranu modula optimizatora
- Demontirajte optimizator

**Popravak se ne smije provoditi.**

## 7. ODLAGANJE

- Transportno pakovanje može se reciklirati u okviru lokalnog sistema za zbrinjavanje otpada.
- M600-M i sve pripadajuće komponente moraju se nakon upotrebe zbrinuti kao elektronski otpad prema važećim zakonima u zemlji.

## 8. USKLAĐENOST PROIZVODA I KONTAKT

BRC Solar GmbH sa sjedištem u Gehrstraße 7, D-76275 Ettlingen, izjavljuje da proizvod M600-M, uz pridržavanje uputa za instalaciju i pravilnu upotrebu, ispunjava osnovne zahtjeve nacionalnih smjernica. Potpunu izjavu o sukladnosti možete pronaći na web stranici BRC Solar GmbH ([www.brc-solar.de](http://www.brc-solar.de)).

## 5. OPERATION AND MAINTENANCE

- Turn off the system at the inverter before starting the cleaning process. Do not clean with a high-pressure; clean exclusively with clear water. Do not apply mechanical pressure to the Power Optimizer.
- The M600-M is maintenance-free; contact support if a persistent issue occurs.

## 6. REPLACEMENT AND REPAIR

The steps for dismantling the M600-M should be carried out in the reverse order of installation (see chapter 4):

- Turn off the inverter
- Disconnect the string side of the Power Optimizer
- Disconnect the module side of the Power Optimizer
- Dismount the Power Optimizer

**Repairs must not be carried out.**

## 7. DISPOSAL

- The transport packaging can be recycled under local waste disposal.
- After use, the M600-M and all associated components must be disposed of as electronic waste in accordance with the laws applicable in the country.

## 8. PRODUCT COMPLIANCE AND CONTACT

BRC Solar GmbH, located at Gehrstraße 7 in D-76275 Ettlingen, Germany, declares that the product M600-M complies with the basic requirements of the national directives if the installation instructions are observed and the product is used as intended. A complete declaration of conformity can be found on the website ([www.brc-solar.de](http://www.brc-solar.de)) of BRC Solar GmbH.