



SOLAR GUARDIAN

Smart Safety and Automatic Restart for PV Systems



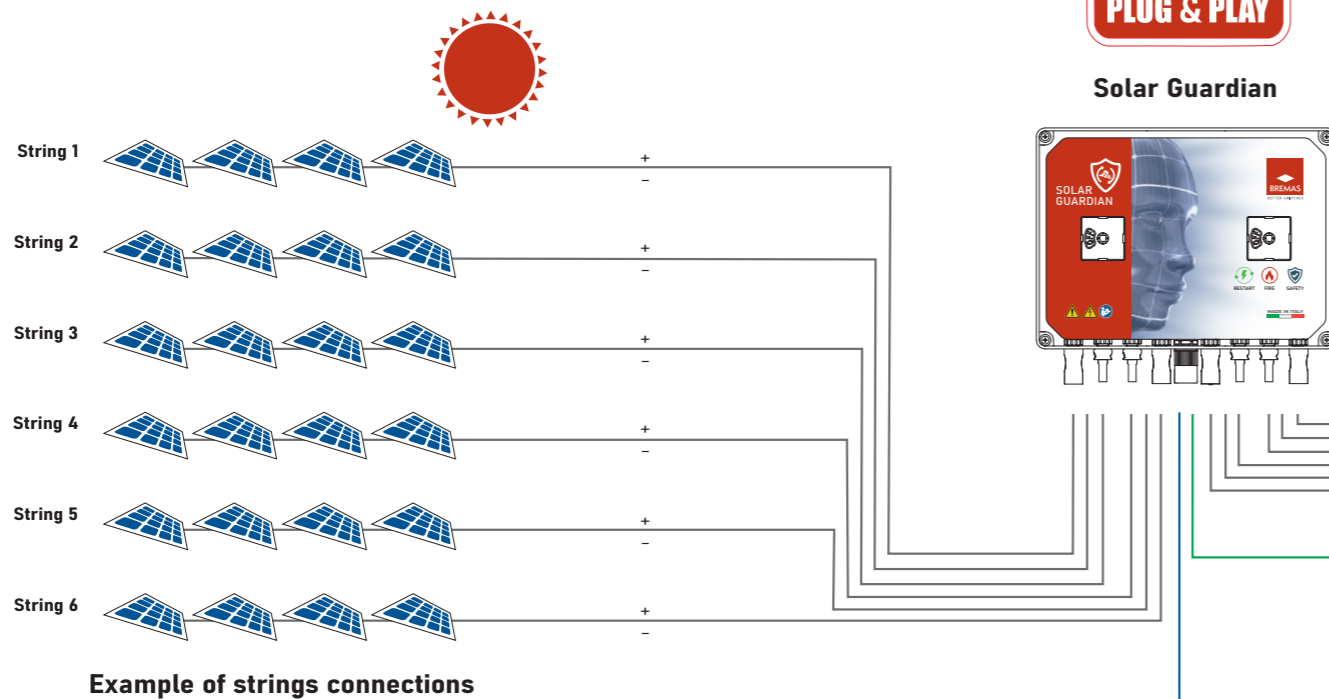
MADE IN ITALY



bremas.it/en



Solar Guardian



FB SERIES - UP TO 6 INPUTS

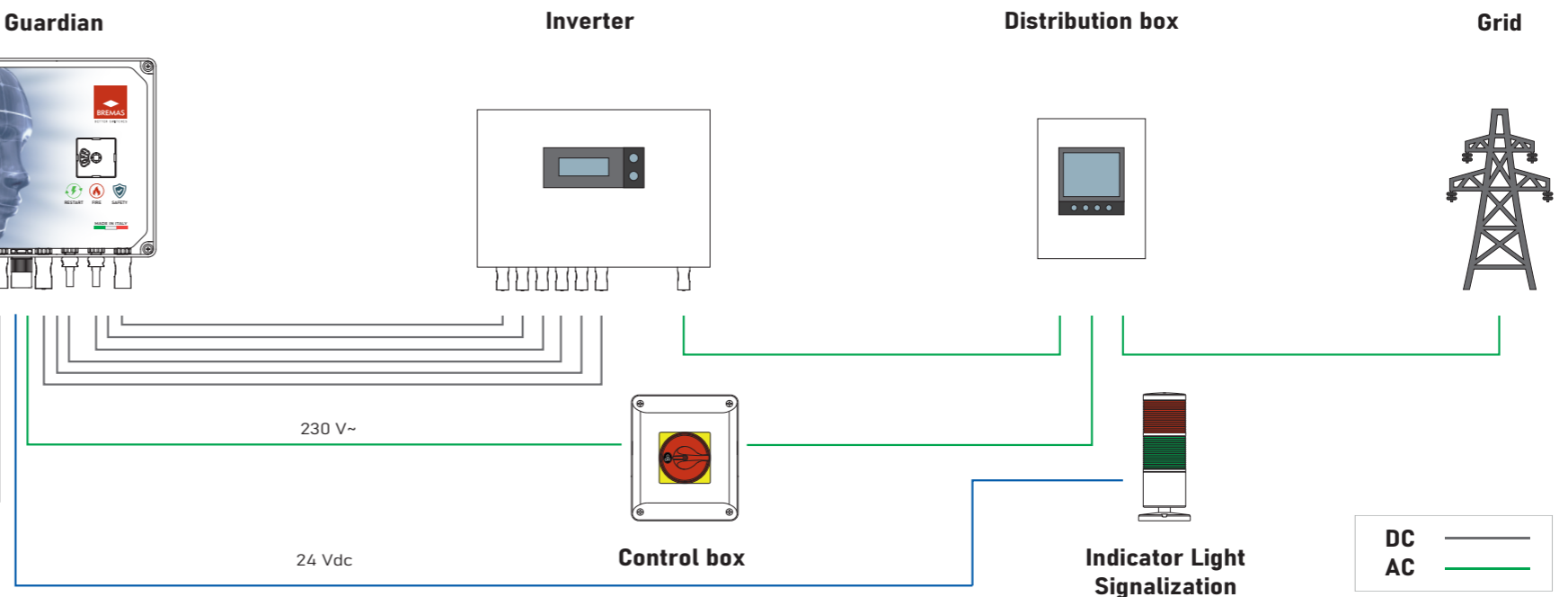
PLUG & PLAY Ready to use



| PV inputs | PV1 cat. per input | PV1 cat. per input | Code | PV inputs | PV1 cat. per input | PV1 cat. per input | Code |
|-----------|--------------------|--------------------|----------------|-----------|--------------------|--------------------|----------------|
| 1 | 700V - 40A | 1000V - 20A | FB100201M0A2MC | 4 | 700V - 40A | 1000V - 20A | FB100204N0A2MC |
| 2 | | | FB100202M0A2MC | 5 | | | FB100205N0A2MC |
| 3 | | | FB100203M0A2MC | 6 | | | FB100206N0A2MC |
| 1 | 1000V - 50A | 1500V - 20A | FB150301MUA2MC | 4 | 1000V - 50A | 1500V - 20A | FB150304NUA2MC |
| 2 | | | FB150302MUA2MC | 5 | | | FB150305NUA2MC |
| 3 | | | FB150303MUA2MC | 6 | | | FB150306NUA2MC |

We are available for additional custom configurations. Feel free to reach out to discuss your specific needs.

Technical specifications



SOLAR GUARDIAN KIT

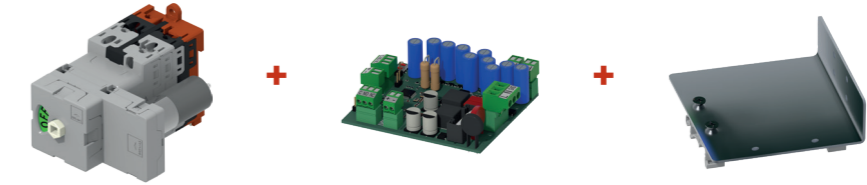


DISCONNECT SWITCH
From 1 to 6 couple of inputs

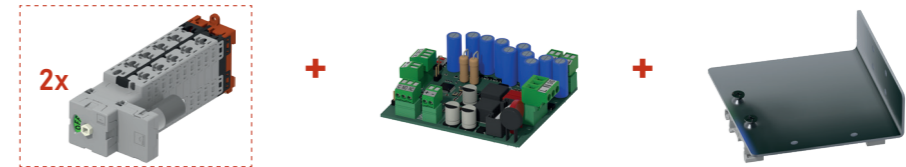
ELECTRONIC BOARD
For Fire, Safety & Restart management



KA AND KB SERIES – SOLAR GUARDIAN KIT UP TO 12 INPUTS



| PV inputs | PV1 cat. per input | PV1 cat. per input | Code | PV inputs | PV1 cat. per input | PV1 cat. per input | Code |
|-----------|--------------------|--------------------|----------------|-----------|--------------------|--------------------|----------------|
| 1 | 700V - 40A | 1000V - 20A | KA1002001M0AEC | 1 | 1000V - 50A | 1500V - 20A | KA1503001MUAEC |
| 2 | | | KA1002002M0AEC | 2 | | | KA1503002MUAEC |
| 3 | | | KA1002003M0AEC | 3 | | | KA1503003MUAEC |
| 4 | | | KA1002004M0AEC | 4 | | | KA1503004MUAEC |
| 5 | | | KA1002005M0AEC | 5 | | | KA1503005MUAEC |
| 6 | | | KA1002006M0AEC | 6 | | | KA1503006MUAEC |



| PV inputs | PV1 cat. per input | PV1 cat. per input | Code | PV inputs | PV1 cat. per input | PV1 cat. per input | Code |
|-----------|--------------------|--------------------|----------------|-----------|--------------------|--------------------|----------------|
| 8 | 700V - 40A | 1000V - 20A | KB1002008M0AEC | 8 | 1000V - 50A | 1500V - 20A | KB1503008MUAEC |
| 10 | | | KB1002010M0AEC | 10 | | | KB1503010MUAEC |
| 12 | | | KB1002012M0AEC | 12 | | | KB1503012MUAEC |

■ We are available for additional custom configurations. Feel free to reach out to discuss your specific needs.

■ Technical specifications



DISCONNECTION MODES



AUTOMATIC DISCONNECTION AND RECONNECTION

Automatic OFF: The DC lines disconnect automatically if the AC line is interrupted for more than 3 seconds.

Automatic ON: The DC lines reconnect automatically once the AC line is restored and stable for at least 5 seconds.



MAINTAINED AUTOMATIC DISCONNECTION

Automatic OFF: DC lines disconnect and remain inactive after a manual remote command.

Automatic ON: DC lines reconnect when the manual command is released, after verifying AC line status.



AUTOMATIC DISCONNECTION FOR OVERTEMPERATURE

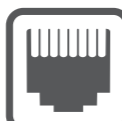
Automatic OFF: DC lines disconnect if the cabinet temperature exceeds 100°C.

ADDITIONAL FUNCTIONS



STATUS SIGNALING

The electronic board uses relay contacts to indicate the disconnect switch's status, enabling remote visual indicators (e.g., near the manual safety switch).



CABLE-ENABLED CONTROL

Easily monitor and manage your photovoltaic system with integrated Ethernet connectivity for stable and reliable remote access.



4G CONNECTIVITY

Ensure reliable monitoring and management of your photovoltaic system with 4G connectivity, offering seamless access even in remote locations.

Technical data IEC EN 60947-3

| | | | SOLAR GUARDIAN | | SOLAR GUARDIAN KIT | | | | | |
|--------------------------------------------|-------|-----------------|------------------------|---------|--------------------|------------|-----------------|-----|-----|-----|
| | | | FB10020 | FB15030 | KA/KB10020 | KA/KB15030 | | | | |
| Rated insulation voltage | Ui | V | 1500 | | | | | | | |
| Rated impulse withstand voltage | Uimp | kV | 8 | | | | | | | |
| Rated thermal current | Ith | A | 50 | | | | | | | |
| Power loss per layer at 20 A / 50 A | | W | 0,2 / 1,25 | | | | | | | |
| DC inputs | | | | | | | | | | |
| Utilization category | | | PV1 | PV2 | PV1 | PV2 | PV1 | PV2 | PV1 | PV2 |
| Rated operational current at 1500 V | Ie | A | - | - | 20 | 8 | - | - | 20 | 8 |
| Rated operational current at 1300 V | Ie | A | - | - | 25 | 10 | - | - | 25 | 10 |
| Rated operational current at 1250 V | Ie | A | - | - | 30 | 12 | - | - | 30 | 12 |
| Rated operational current at 1100 V | Ie | A | 12 | 5 | - | - | 12 | 5 | - | - |
| Rated operational current at 1000 V | Ie | A | 20 | 10 | 50 | 20 | 20 | 10 | 50 | 20 |
| Rated operational current at 800 V | Ie | A | - | - | - | 30 | - | - | - | 30 |
| Rated operational current at 750 V | Ie | A | 32 | 18 | - | - | 32 | 18 | - | - |
| Rated operational current at 700 V | Ie | A | 40 | 20 | - | 40 | 40 | 20 | - | 40 |
| Rated operational current at 600 V | Ie | A | - | - | - | - | - | - | - | - |
| Rated operational current at 500 V | Ie | A | 50 | - | - | - | 50 | - | - | - |
| Short circuit protection | | | | | | | | | | |
| Rated conditional short-circuit current | | kA | 5 | | | | | | | |
| Max fuse size for short circuit protection | gPV | A | 50 | | | | | | | |
| Rated short-time withstand current (1 s) | Icw | A | 780 | | | | | | | |
| Rated short-circuit making capacity | Icm | kA | 1,4 | | | | | | | |
| Terminals | | | | | | | | | | |
| Cross-section of flexible/solid wires | Max. | mm ² | - | | | | 2 x 6 | | | |
| | | AWG | - | | | | 2 x 10 | | | |
| Cross-section of wires with fork lug | Max. | mm ² | - | | | | 1 x 16 | | | |
| | | AWG | - | | | | 1 x 6 | | | |
| Connection type | | | MC4 plug-in connectors | | | | Screws M4 - PH2 | | | |
| Screw tightening torque | Nm | | - | | | | 1,7 ±10% | | | |
| | lb.in | | - | | | | 12 ±10% | | | |
| Protection degree IEC EN 61439-2 | | | | | | | | | | |
| Solution in box | | | IP56 | | | | - | | | |
| Protection degree IEC 529 EN 60529 | | | | | | | | | | |
| To the terminals | | | - | | | | IP20 | | | |
| Ambient conditions | | | | | | | | | | |
| Pollution degree | | | 2 | | | | | | | |
| Operational ambient temperature | | °C | -30 ÷ +50 | | | | -30 ÷ +85 | | | |
| Storage ambient temperature | | | -30 ÷ +85 | | | | | | | |
| Damp heat test IEC 60068-2-30 | | | 90-100% RH at +55 °C | | | | | | | |

Motor characteristics

| | | | | |
|------------------------------------|----|-----|---|--------|
| Rated operational voltage | Ue | Vdc | - | 24 ±5% |
| Rated operational current | Ie | A | - | 0,3 |
| Terminal type | | | - | Solder |
| Protection degree to the terminals | | | - | IP00 |



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ISO 9001 Certified Quality System

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