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# String combiners for solar photovoltaic systems



# String combiners

## Unmatched protection and control

In a photovoltaic system the modules are arranged in strings and fields depending on the type of inverter used, the total power and the technical characteristics of the modules. The connection of modules in series is made on the modules themselves, while the parallel connection of the strings is made inside string boxes that accommodate, along with the interconnection systems, also the overcurrent protection devices, disconnectors and surge protection devices.

The string boxes form subsystems that can be standardized according to the number of strings, voltage and rated current. ABB offers different product ranges, each dedicated to specific installation conditions with typical configurations.

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## 01 String boxes

The installation of a photovoltaic system often occurs in complex logistic situations, critical from the environmental and time perspective. The availability of tested and certified pre-assembled components allows the installer to avoid unnecessary on site assembly, wiring and certification activities for the string boxes. String boxes enclose functions such as string protection, protection against overvoltage and disconnect, with components suitable for the string's various voltage levels and the number of connected strings.

## 02 Multi-output string boxes

The development and the increasingly frequent adoption of multi-string inverters has made it necessary to reduce the costs and the space occupied by the string boxes, to bring together in a single switchboard the protective devices and disconnectors of multiple strings intended to be connected to a specific inverter input. Multi-string inverters resolve in an easy and cost-effective way system conditions characterized by modules installed in different leaning and exposure positions or minimize the problems related to systematic shading of parts of the system.

## 03 String boxes for monitoring

The string monitoring is an important function in running medium and large size installations, since it allows to improve the manufacturability and maintenance of the system. ABB offers a series of pre-wired string boxes for all installation conditions: they are equipped both with devices necessary for string protection, surge protection and disconnection, and with useful devices for string monitoring.

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# A complete set of information, a touch away from your fingers

Value added services in combination with products and solutions make ABB offer unique. ABB also provides a wide range of documents and information intended for the renewable energy industry. With services like publications, catalogs, websites, blogs and video tutorials, in digital or printed versions, you can always find a tailor made solution for your requirement and for your applications.

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## Catalog

Solutions for solar energy. Low- and medium- voltage components and systems.



A valuable technical resource accompanying the designer during the engineering stage for implementation of a photovoltaic installation, from initial specifications to commissioning. This publication describes in depth the aspects concerning not only the basic architectures, but also the specific components required for engineering, inspection and management of a photovoltaic system, both on the DC and AC sides. In addition to schematics and detailed circuit diagrams, the catalog illustrates the complete offer for photovoltaic

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## BIM (Building information Modeling)

Objects for String Combiners.



ABB BIM Objects for String Combiners are just one click away. You can find them stored in our ABB Download Center, together with the whole product documentation.

BIM is a collaborative design process that by means of software allows to integrate into one single model all the useful information concerning the whole project design.





## Video

String combiner boxes.

## Video tutorials

Garage Nuggets.



GEMINI  
challenges the sun.



Multipurpose  
outdoor enclosures.



A video that shows how string combiner boxes are the best plug&play solution for photovoltaic systems, ensuring top protection through high quality components, maximum flexibility thanks to a wide range of models and sizes, and fast installation with ready-to-use configurations.

These video tutorials provide the user with a clear and direct approach to the applications of the solar energy industry, taking advantage of a large impact audiovisual communication. Information on installations, products and regulations are offered in a graphically attractive appearance for a quick learning. In Garage Nugget No. 5 and 6 “Multipurpose outdoor enclosures” and “Gemini challenges the sun” the narrating voice describes the ABB product portfolio for photovoltaic market. Specifically, the videos provide a detailed description of Gemini enclosure features, manufactured with techniques and materials conceived to withstand the environmental conditions and safety of photovoltaic systems, both outdoor and indoor.

# A complete set of information, a touch away from your fingers

A website gathering all of the digital resources related to low-voltage products for photovoltaic applications. Product specifications, Application Notes, regulatory studies, case studies, social network groups, newsletters... a contribution towards the culture of renewable energies, capitalizing not only the know-how of the experts of our group, but also the expertise of installers and designers who use ABB products worldwide.

## Website

Low-voltage products  
for solar power.

## Blog

Conversations.



An online resource providing the opportunity to navigate through the wide portfolio of products, system and low-voltage solutions by ABB. A valuable tool for an in-depth analysis of the aspects related to the value of photovoltaic chain, with dedicated contents concerning creation, transmission and distribution of energy in both on-grid and off-grid applications.

Join the conversation on the current changes in trends and technologies. In this tagged blog you can subscribe the channel dedicated to renewable energies or any thematic channel to ask questions, share your opinions with other users of the community and download documentation concerning solar and wind-power applications.

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**Website**

Solar power solutions.



ABB provides the widest portfolio of products, solutions and services available in the photovoltaic industry. The “Solar power solutions” website is a portal which provides access to every information resources of the ABB group, giving the opportunity to navigate among case histories, references of projects, catalogs, news, service proposals and much more.

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**Website**

Solar inverters.



A link dedicated to the widest and most complete portfolio of photovoltaic inverters in the industry. From the small string inverters in single-phase to three-phase inverters and up to the multi megawatt for centralized installations. Product specifications, informational resources, but also the ABB technical and the sales support services are just a click away.

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**Website**

Medium-voltage products.



A portal dedicated to medium-voltage photovoltaic applications, specifically to systems related to networks and micro-networks. The medium-voltage product range for solar applications includes a complete range of switchgear solutions, energy storage modules, compact secondary substations, outdoor apparatus and components and indoor air-insulated load break switches, specifically designed to meet the most stringent specifications of medium-voltage photovoltaic applications.

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**Website**

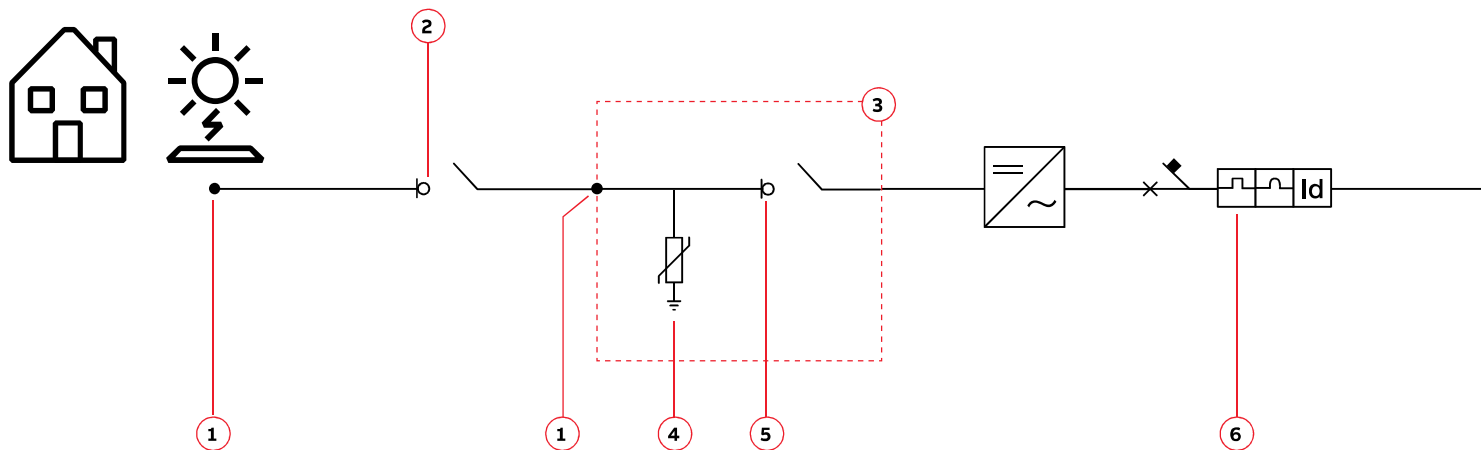
Turnkey stations.



In an increasingly dynamic and challenging context, ABB “turnkey” solutions allow the users to implement plug-and-play photovoltaic stations, already equipped with all of the active and passive components required for one-click commissioning. This website is specifically dedicated to low voltage cabinets, components and inverters for indoor and outdoor applications in the range between 440 kW and 3.1 MW.

## Examples of photovoltaic applications

Residential system  $\leq 20$  kW LV

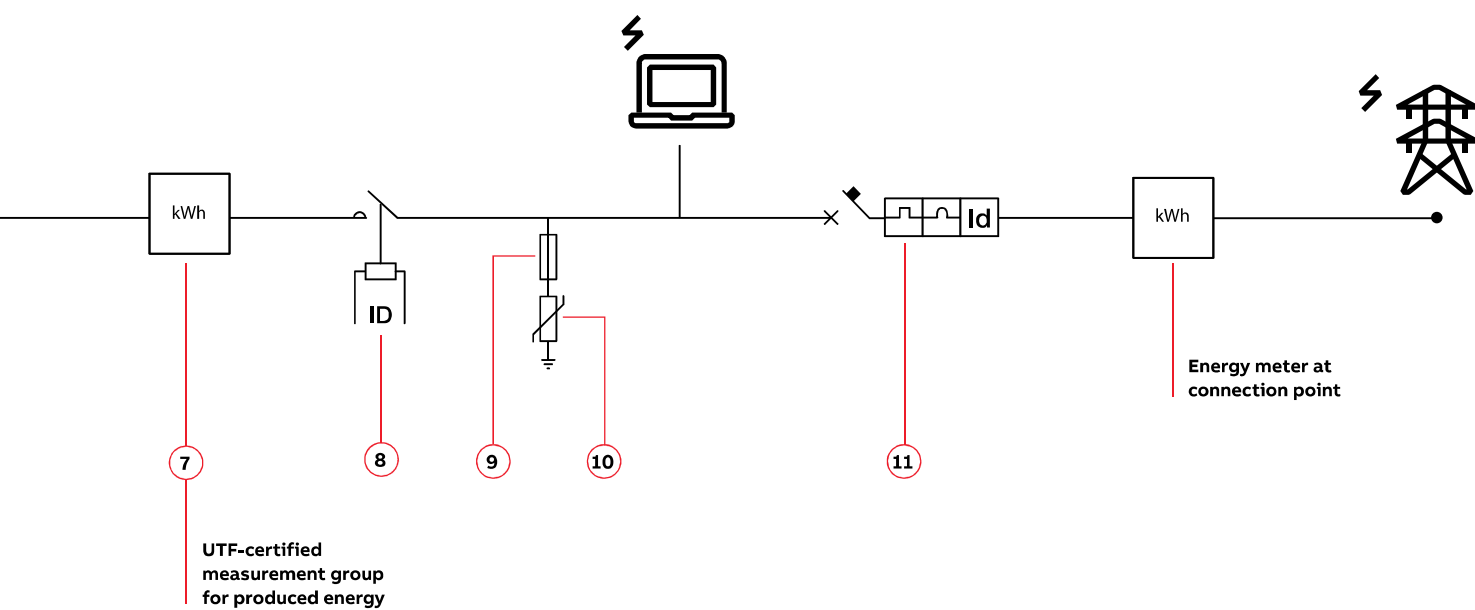


### Low-voltage products:

1. Connectors: MC4-EVO2 PV
2. PV Vault rapid shutdown
3. String boxes
  - Switchboards: Gemini
  - Consumer units: Europa
  - Circuit breakers: S200 M UC Z, S800 PV-SP
  - Fuse disconnectors: E 90 PV
  - Fuses: E 9F PV
  - Spring and screw terminal blocks: SNK PI
4. Surge protection devices: OVR PV QS
5. Switch-disconnectors: OTDC, S800 PV-SD
6. Residual current devices: F202B, F204B
7. Energy meters: EQmeters and current transformers
8. Contactors: AF Series
- Grid-feeding monitoring relays: CM-UFD.Mxx
- Power supplies: CP-x
9. Fuse disconnectors: E 90
10. Surge protective devices: OVR T1 / T1-T2 / T2 QS
11. Residual current circuit breakers: DS202C







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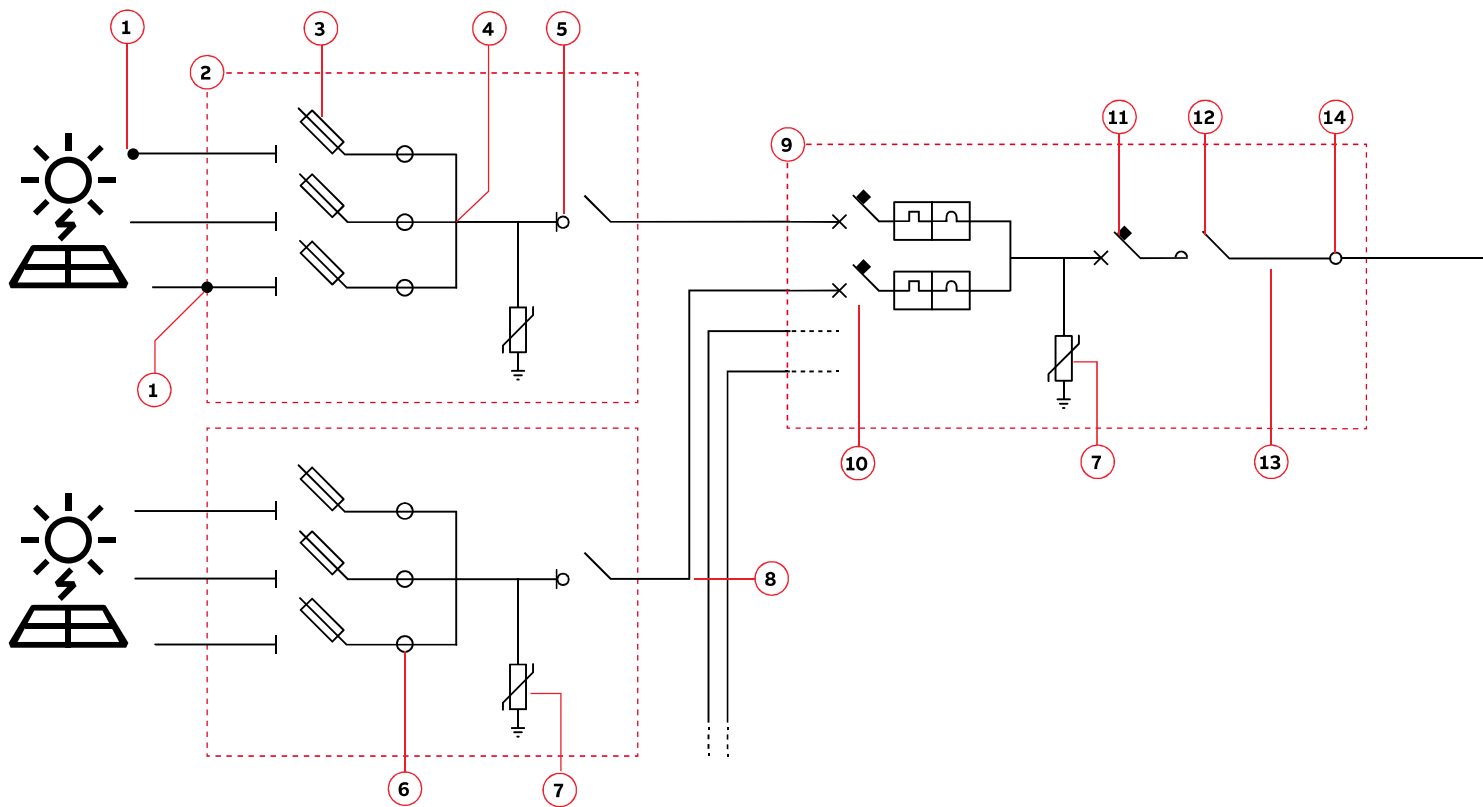
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## Examples of photovoltaic applications

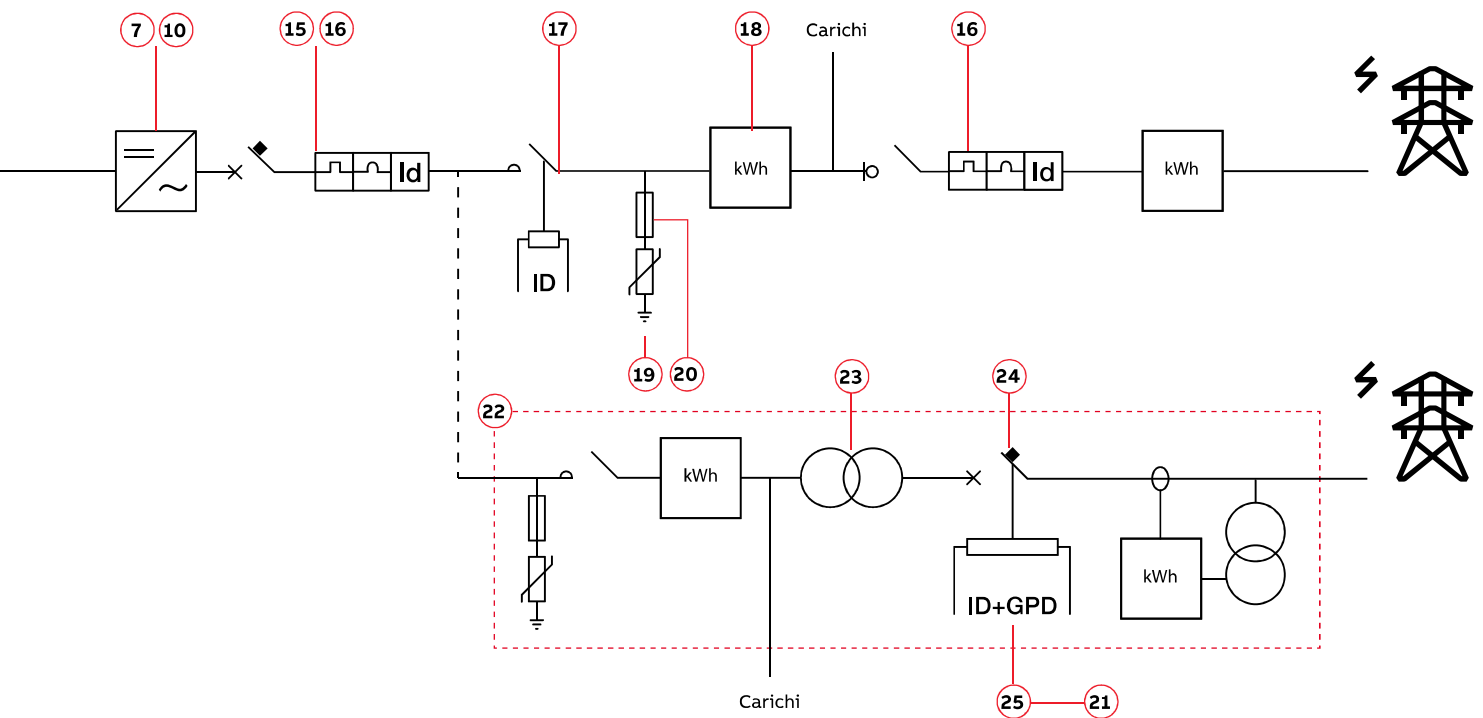
Commercial system 20 - 1000 kW LV/MV



### Low-voltage products:

1. Connectors: MC4-EVO2 PV
  2. **String combiners 1000 VDC**  
Switchboards: Gemini; Consumer units: Europa, Gemini
  3. Fuse disconnectors: E 90 PV; Fuses: E 9F PV
  4. Distribution blocks: DBL
  5. Switch-disconnectors: OTDC; S800 PV-SD
  6. Current measurement system: CMS; Power supplies: CP-x
  7. Surge protection devices: OVR PV QS
  8. String monitoring controller
  9. Recombiner
  10. Miniature circuit breakers: S200 M UC Z, S800 PV-SP
  11. Switch-disconnectors: Tmax PV, OTDC series
  12. Contactors: GAF Series + IOR Series rail contactor
  13. Insulation monitoring devices: CM-IWx
  14. GFDI Application: S804U-PVS5
  15. Residual current devices: F202B, F204B
  16. Residual current blocks: DDA 200 B
- Residual current circuit breakers: F200 type B  
Miniature circuit breakers: S 200  
Moulded case circuit breakers: Tmax XT, Tmax T





- 17. Contactors: AF Contactor Series  
Grid-feeding monitoring relays: CM-UFD.Mxx  
Power supplies: CP-x
- 18. Energy meters: EQ meters and current transformers
- 19. Surge protective devices: OVR T1 / T1-T2 / T2 Q5
- 20. Fuse disconnecter: E 90
- 21. GSM telephone actuator: ATT

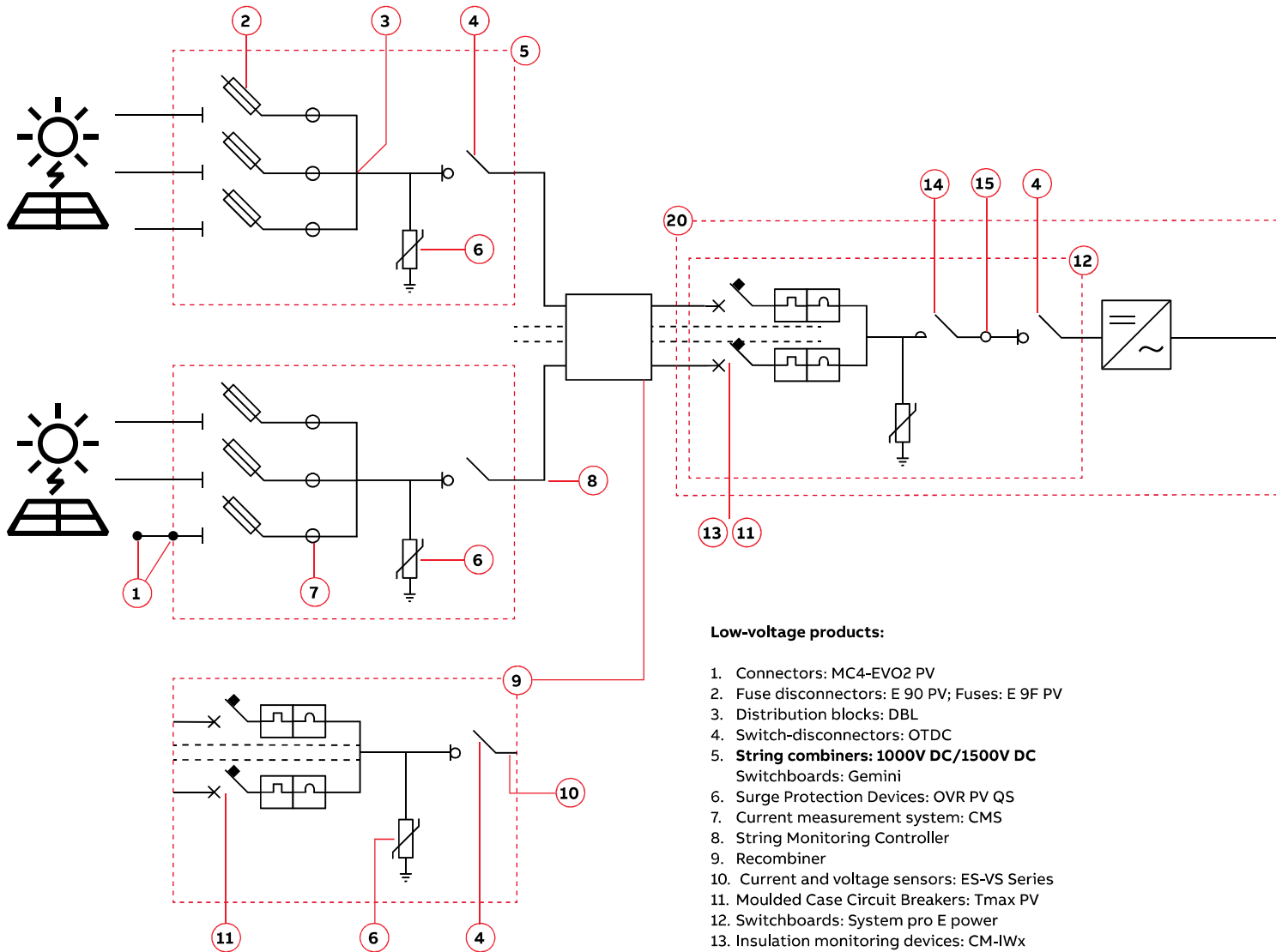
#### Medium-voltage products:

- 22. Modular Systems: Compact Secondary Substation, Secondary Skid Unit, Secondary Enclosed Unit
- 23. Transformers: Dry-type transformers, oil-immersed transformers
- 24. Gas-insulated secondary switchgear: SafeRing / Safeplus  
Air-insulated secondary switchgear: UniSec  
Air-insulated switch-disconnector: NALF  
Recloser: Gridshield®  
Circuit breaker: VD4
- 25. Interface protection system: ABB Relion® Family



## Examples of photovoltaic applications

Sistemi utility scale > 1000 kW MT/AT

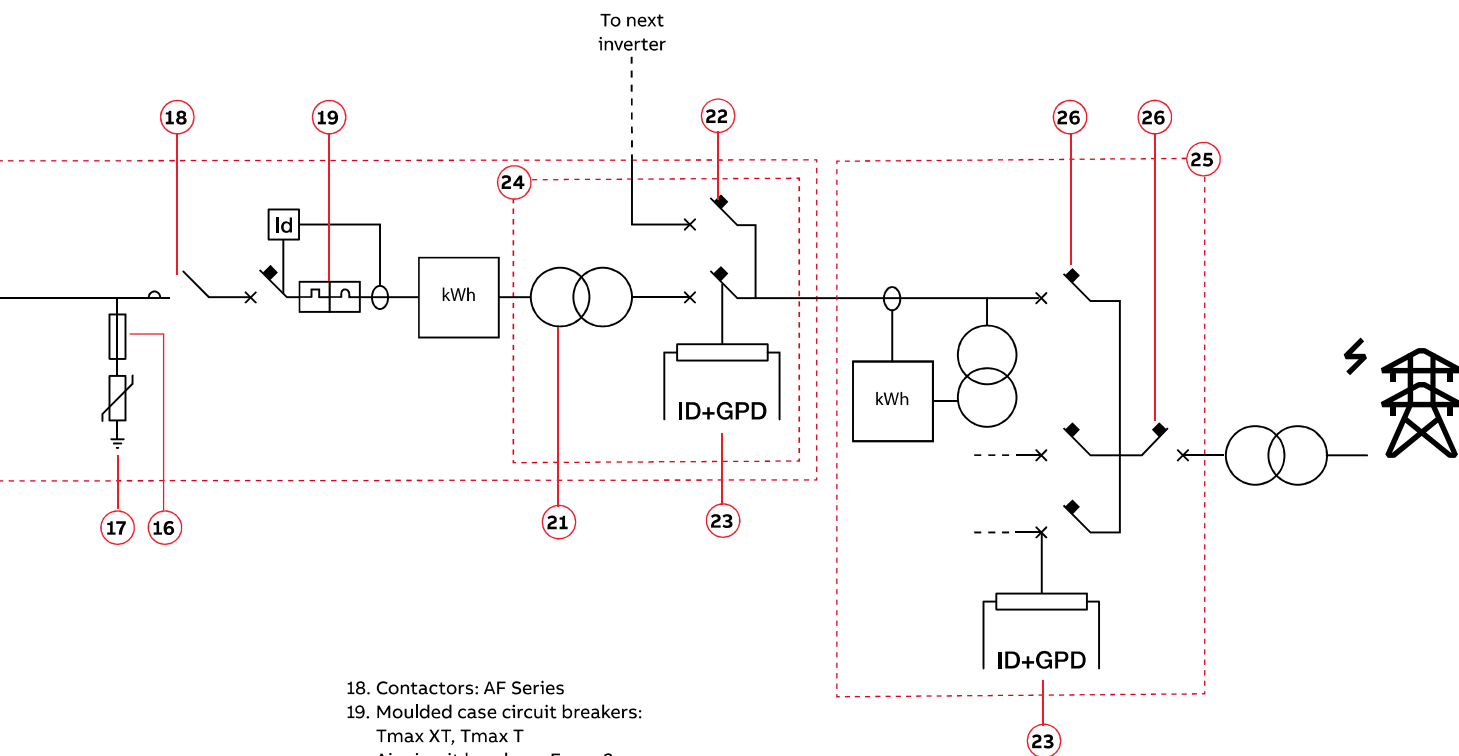


### Low-voltage products:

1. Connectors: MC4-EVO2 PV
2. Fuse disconnectors: E 90 PV; Fuses: E 9F PV
3. Distribution blocks: DBL
4. Switch-disconnectors: OTDC
5. **String combiners: 1000V DC/1500V DC**  
Switchboards: Gemini
6. Surge Protection Devices: OVR PV QS
7. Current measurement system: CMS
8. String Monitoring Controller
9. Recombiner
10. Current and voltage sensors: ES-VS Series
11. Moulded Case Circuit Breakers: Tmax PV
12. Switchboards: System pro E power
13. Insulation monitoring devices: CM-IWx
14. Contactors: GAF Series, IOR Series rail contactors
15. GFDI Application: S804U-PVS5
16. Fuse disconnectors: E 90
17. Surge protection devices: OVR T1 / T1-T2 / T2 QS







#### Medium-voltage products:

- 20. Megawatt station
- 21. Transformers: Dry-type transformers, oil-immersed transformers
- 22. Gas-insulated secondary switchgear: SafeRing / Safeplus  
 Air-insulated secondary switchgear: UniSec  
 Air-insulated switch-disconnector: NALF  
 Recloser: Gridshield  
 Circuit breaker: VD4
- 23. Interface protection system: ABB Relion® Family, REG615

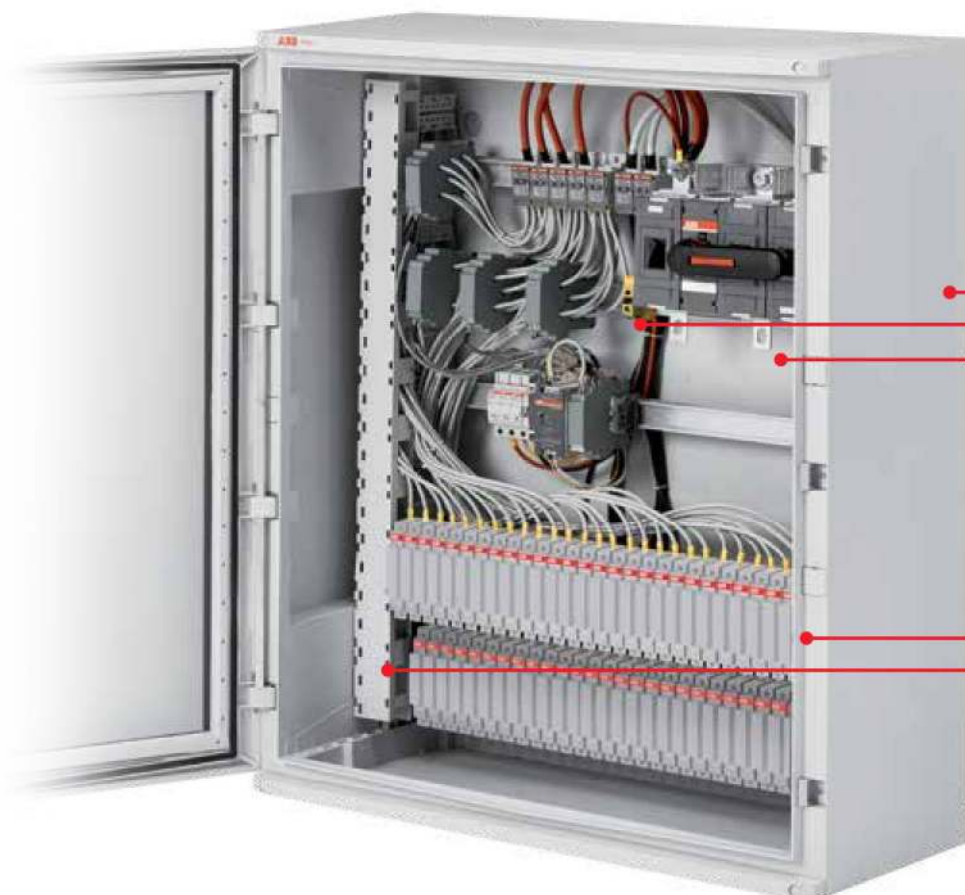
- 24. Modular Systems: Compact Secondary Substation, Secondary Skid Unit, Secondary Enclosed Unit
- 25. eHouse, skid-mounted substation
- 26. Gas-insulated switchgear: ZX product family  
 Air-insulated primary switchgear: UniGear product family, UniGear Digital  
 Air-insulated secondary switchgear: UniSec  
 Outdoor breakers: R-MAG® (dead tank), OVB-VBF (life tank)  
 Recloser: Gridshield



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## String combiner

### Features and benefits



Complete range to address the requirements in residential, commercial and utility scale projects in 1000V DC and 1500V DC applications.



To meet the demands of extreme climatic conditions up to 50 °C.

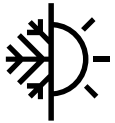


Thermoplastic manufactured with co-injection technique ensuring highest sturdiness but very lite in total weight as compared to metal enclosures.

## Design, production, quality and service

An essential factor in determining the success of a photovoltaic system is the accurate selection of its components, with particular attention to connections, and protections from the modules to the inverters. As the photovoltaic system has to perform for more than 20 years in harsh environments, the products used should be considered of high quality and as a good investment for long lasting performance. The string combiners are particularly important as they are usually installed under the photovoltaic panels and therefore exposed to the most harsh environment.

- ABB combiners host ABB components specifically made for photovoltaic applications, making it easy during maintenance to rely on one single producer and supplier, from components to the whole system.
- Capacity to deliver all over the world at your site.
- Comprehensive documentation for easy assembly at site.
- Service and support through ABB local sales organization worldwide.



— IP66 enclosures for extreme outdoor conditions resistant to atmospheric conditions and dusty environments.



— Components selected for protection are based on best in class photovoltaic products (OTDC Disconnectors, OVR PV SPDs, E 90 PV Fuse Holders, Gemini thermoplastic outdoor enclosures).



— Thermoplastic material, 100% recyclable make it environmentally friendly.



— IP20 protection of components inside the combiner - No live parts are accessible directly inside the combiners ensuring safety of the installers.



— Efficient design enabling to have configurations from 1 to 32 strings in a single enclosure, making it easy for logistics and installation at site.



— Development and assembly process in accordance to the latest IEC Standards.



— 100% quality Inspection before dispatch, ensuring highest level of reliability.



— String combiner box with monitoring options. Available with monitoring of current, voltage, temperature and status of disconnectors and/or surge protection devices. Communication over RS485 ensuring easy integration with the plant / inverter monitoring systems.

# String combiner 1000V DC

## Technical features

String combiner type	1 st.	2 st.	3 st.	4 st.	6 st.	8 st.	10 st.	12 st.	14 st.	16 st.	18 st.	20 st.	24 st.	28 st.	32 st.
General Data															
Maximum Voltage	1000V DC														
No of DC Input (+ & -, optional)	1	2	3	4	6	8	10	12	14	16	18	20	24	28	32
SPD protection	Type 2 Pluggable														
String protection	No	Per each incoming string													
Monitoring	No							Optional							
Monitoring Parameters	No							Current, temperature and SPD signal as standard. Optional to include Voltage and Disconnecter signal							
Communication Protocol	No							Modbus RS485							
Enclosure Type															
Model	Europa				Gemini										
Material Type	Thermoplastic														
Door Type/ Opening	Transparent, Hinged Door				Opaque, Hinged Door openable 180 Deg										
Lock Type	Click on push to lock				Doors supplied with 2 standard double bit locks (3 for sizes 5 and 6)										
Number of incoming strings	From 1 to 4				From 6 to 32										
Rated Service Voltage	1000V DC														
Degree of resistance to impacts	IK 10														
Degree of protection	IP65				IP66										
Recyclable					100%										
Environmental data															
Operating Temperature °C	-20°C upto +50°C														
Storage temperature °C	-20°C upto +60°C														
Resistance to Abnormal heat and fire	upto 750°C														
Height above Sea level	Up to 2000m														
Humidity	up to 95%														
DC Input															
Input Cable entry	M16 Cable Gland, 2,5 - 16 mm²														
Input Connection	Terminals		Directly on the Fuse Holder												
Fuse Type	No fuse		Cylindrical 10x38 gPV												
Fuse Size			15A												
DC Output															
Output Cable gland +/-	M16	M16	M16	M16	M25	M25	M25	M32	M32	M32	M32	M40	M40	M40	M40
Clamping cable diameter (m²)	2,5-16				25-50			70-120			150-240				
Conductor material	Cupper/Alluminium														
Terminal Type	Pipe terminal				Ring Terminal										
Voltage DC	1000V DC														
Maximun current output	10A	20A	30A	40A	60A	80A	100A	120A	140A	160A	180A	200A	240A	280A	320A



# String combiner 1000V DC

## Order codes

1000V DC without monitoring (No fuses) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order code
1	EUROPA65	12M	275x242x140	String box DC 1 str 1000V (no fuse)	1SLM300100A0790
2	EUROPA65	12M	275x242x140	String box DC 2 str 1000V (no fuses)	1SLM300200A0790

1000V DC without monitoring (2 fuses + - ) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order code
3	EUROPA65	18M	380x242x140	Stringbox DC 3str 1000V 2F 15A	1SLM300300A0740
4	EUROPA65	36M2F	380x392x140	Stringbox DC 4str 1000V 2F 15A	1SLM300400A0740
6	Gemini	2	460x583x260	Stringbox DC 6str 1000V 2F 15A	1SLM300600A0740
8	Gemini	2	460x583x260	Stringbox DC 8str 1000V 2F 15A	1SLM300800A0740
10	Gemini	2	460x583x260	Stringbox DC 10str 1000V 2F 15A	1SLM301000A0740
12	Gemini	3	460x742x260	Stringbox DC 12str 1000V 2F 15A	1SLM301200A0740
14	Gemini	3	460x742x260	Stringbox DC 14str 1000V 2F 15A	1SLM301400A0740
16	Gemini	4	590x742x260	Stringbox DC 16str 1000V 2F 15A	1SLM301600A0740
18	Gemini	4	590x742x260	Stringbox DC 18str 1000V 2F 15A	1SLM301800A0740
20	Gemini	4	590x753x260	Stringbox DC 20str 1000V 2F 15A	1SLM302000A0740
24	Gemini	6	840x1058x360	Stringbox DC 24str 1000V 2F 15A	1SLM302400A0740
28	Gemini	6	840x1058x360	Stringbox DC 28str 1000V 2F 15A	1SLM302800A0740
32	Gemini	6	840x1058x360	Stringbox DC 32str 1000V 2F 15A	1SLM303200A0740

1000V DC with monitoring (2 fuses + - ) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order code
12	Gemini	4	590x742x260	Stringbox DC 12str Monitor 1000V 2F 15A	1SLM301200A3740
14	Gemini	4	590x742x260	Stringbox DC 14str Monitor 1000V 2F 15A	1SLM301400A3740
16	Gemini	4	590x742x260	Stringbox DC 16str Monitor 1000V 2F 15A	1SLM301600A3740
18	Gemini	6	840x1047x360	Stringbox DC 18str Monitor 1000V 2F 15A	1SLM301800A3740
20	Gemini	6	840x1058x360	Stringbox DC 20str Monitor 1000V 2F 15A	1SLM302000A3740
24	Gemini	6	840x1058x360	Stringbox DC 24str Monitor 1000V 2F 15A	1SLM302400A3740
28	Gemini	6	840x1058x360	Stringbox DC 28str Monitor 1000V 2F 15A	1SLM302800A3740
32	Gemini	6	840x1058x360	Stringbox DC 32str Monitor 1000V 2F 15A	1SLM303200A3740

# String combiner 1000V DC

## Order codes

### 1000V DC without monitoring (1 fuse + ) for grounded earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)		Description	Order code
3	EUROPA65	18M	380x242x140	M16	Stringbox DC 3str 1000V 1F 15A	1SLM300300A4740
4	EUROPA65	36MF2	380x392x140	M16	Stringbox DC 4str 1000V 1F 15A	1SLM300400A4740
6	Gemini	2	460x583x260	M25	Stringbox DC 6str 1000V 1F 15A	1SLM300600A4740
8	Gemini	2	460x583x260	M25	Stringbox DC 8str 1000V 1F 15A	1SLM300800A4740
10	Gemini	2	460x583x260	M25	Stringbox DC 10str 1000V 1F 15A	1SLM301000A4740
12	Gemini	3	460x742x260	M32	Stringbox DC 12str 1000V 1F 15A	1SLM301200A4740
14	Gemini	3	460x742x260	M32	Stringbox DC 14str 1000V 1F 15A	1SLM301400A4740
16	Gemini	3	460x742x260	M32	Stringbox DC 16str 1000V 1F 15A	1SLM301600A4740
18	Gemini	3	460x742x260	M32	Stringbox DC 18str 1000V 1F 15A	1SLM301800A4740
20	Gemini	3	460x753x260	M40	Stringbox DC 20str 1000V 1F 15A	1SLM302000A4740
24	Gemini	4	590x753x260	M40	Stringbox DC 24str 1000V 1F 15A	1SLM302400A4740
28	Gemini	6	840x1058x360	M40	Stringbox DC 28str 1000V 1F 15A	1SLM302800A4740
32	Gemini	6	840x1058x360	M40	Stringbox DC 32str 1000V 1F 15A	1SLM303200A4740

### 1000V DC with monitoring (1 fuse + ) for grounded earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)		Description	Order code
12	Gemini	4	590x742x260	M32	Stringbox DC 12str Monitor 1000V 1F 15A	1SLM301200A5740
14	Gemini	4	590x742x260	M32	Stringbox DC 14str Monitor 1000V 1F 15A	1SLM301400A5740
16	Gemini	4	590x742x260	M32	Stringbox DC 16str Monitor 1000V 1F 15A	1SLM301600A5740
18	Gemini	4	840x1047x360	M32	Stringbox DC 18str Monitor 1000V 1F 15A	1SLM301800A5740
20	Gemini	6	840x1058x360	M40	Stringbox DC 20str Monitor 1000V 1F 15A	1SLM302000A5740
24	Gemini	6	840x1058x360	M40	Stringbox DC 24str Monitor 1000V 1F 15A	1SLM302400A5740
28	Gemini	6	840x1058x360	M40	Stringbox DC 28str Monitor 1000V 1F 15A	1SLM302800A5740
32	Gemini	6	840x1058x360	M40	Stringbox DC 32str Monitor 1000V 1F 15A	1SLM303200A5740

### 1000V DC multioutput without monitoring (2 fuses + - ) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)		Description	Order code
2	EUROPA65	36MF2	380x392x140		Stringbox Multi output 2 IN-2 OUT 1000Vdc 2 Fuses 15A	1SLM300200A1740
4	EUROPA65	36MF2	380x392x140		Stringbox Multi output 4 IN-2 OUT 1000Vdc 2 Fuses 15A	1SLM300400A1740
6	EUROPA65	36MF2	424x392x140		Stringbox Multi output 6 IN-2 OUT 1000Vdc 2 Fuses 15A	1SLM300600A1740

# String combiner 1500V DC

## Technical features

String combiner type	16 st.	18 st.	20 st.	24 st.	28 st.	32 st.
General Data						
Maximum Voltage (VDC)	1500					
No of DC Input	16	18	20	24	28	32
DC input for + & -	Optional available					-
SPD protection	Type 2 Pluggable					
Monitoring	Optional					-
Monitoring Parameters	Current, temperature and SPD signal as standard. Optional to include Voltage and Disconnecter signal					-
Communication Protocol	Modbus RS485					-
Enclosure Type						
Model	Gemini					
Material Type	Thermoplastic					
Door Type/ Opening	Opaque, Hinged Door openable 180 Deg					
Lock Type	Doors supplied with 2 standard double bit locks (3 for sizes 5 and 6)					
Number of incoming strings	From 6 to 32					
Rated Service Voltage	1500V DC					
Degree of resistance to impacts	IK10					
Degree of protection	IP66					
Recylable	100%					
Environmental data						
Operating Temperature °C	-20°C upto +50°C					
Storage temperature °C	-20°C upto +60°C					
Resistance to Abnormal heat and fire	upto 750°C					
Height above Sea level	Up to 2000m					
Humidity	up to 95%					
DC Input						
Input Cable entry	M16 Cable Gland, 2,5 - 16 mm <sup>2</sup>					
Input Connection	Directly on the Fuse Holder					
Fuse Type	Cylindrical 10x85 gPV					
Fuse Size (A)	15					
DC Output						
Output Cable gland	M32	M32	M40	M40	M40	M40
Clamping area	70-120		150-240			
Conductor material	Cupper/Alluminium					
Terminal Type	Ring Terminal					
Voltage DC	1500					
Maximum Current Output (A)	160A	180A	200A	240A	280A	320A

# String combiner 1500V DC

## Order codes

### 1500V DC without monitoring (2 fuses + - ) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order codes
16	Gemini	5	590x897x360	Stringbox DC 16str 1500V 2F 15A	1SLM301600A0940
18	Gemini	5	590x897x360	Stringbox DC 18str 1500V 2F 15A	1SLM301800A0940
20	Gemini	6	840x1058x360	Stringbox DC 20str 1500V 2F 15A	1SLM302000A0940
24	Gemini	6	840x1058x360	Stringbox DC 24str 1500V 2F 15A	1SLM302400A0940
28	Gemini	6	840x1058x360	Stringbox DC 28str 1500V 2F 15A	1SLM302800A0940

### 1500V DC with monitoring (2 fuses + - ) for ungrounded or floating earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order codes
16	Gemini	6	840x1047x360	Stringbox DC 16str Monitor 1500V 2F 15A	1SLM301600A3940
18	Gemini	6	840x1047x360	Stringbox DC 18str Monitor 1500V 2F 15A	1SLM301800A3940
20	Gemini	6	840x1058x360	Stringbox DC 20str Monitor 1500V 2F 15A	1SLM302000A3940
24	Gemini	6	840x1058x360	Stringbox DC 24str Monitor 1500V 2F 15A	1SLM302400A3940
28	Gemini	6	840x1058x360	Stringbox DC 28str Monitor 1500V 2F 15A	1SLM302800A3940

### 1500V DC without monitoring (1 fuse + ) for grounded earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order codes
16	Gemini	6	840x1047x360	Stringbox DC 16str 1500V 1F 15A	1SLM301600A4940
18	Gemini	6	840x1047x360	Stringbox DC 18str 1500V 1F 15A	1SLM301800A4940
20	Gemini	6	840x1058x360	Stringbox DC 20str 1500V 1F 15A	1SLM302000A4940
24	Gemini	6	840x1058x360	Stringbox DC 24str 1500V 1F 15A	1SLM302400A4940
28	Gemini	6	840x1058x360	Stringbox DC 28str 1500V 1F 15A	1SLM302800A4940
32	Gemini	6	840x1058x360	Stringbox DC 32str 1500V 1F 15A	1SLM303200A4940

### 1500V DC with monitoring (1 fuse + ) for grounded earthing systems

Strings incoming	Enclosure	Size	External dimension, including cable glands WxHxD (mm)	Description	Order codes
16	Gemini	6	840x1047x360	Stringbox DC 16str Monitor 1500V 1F 15A	1SLM301600A5940
18	Gemini	6	840x1047x360	Stringbox DC 18str Monitor 1500V 1F 15A	1SLM301800A5940
20	Gemini	6	840x1058x360	Stringbox DC 20str Monitor 1500V 1F 15A	1SLM302000A5940
24	Gemini	6	840x1058x360	Stringbox DC 24str Monitor 1500V 1F 15A	1SLM302400A5940
28	Gemini	6	840x1058x360	Stringbox DC 28str Monitor 1500V 1F 15A	1SLM302800A5940