

**PVN DC 3IF 30 2MPP SW SPD1R CG 10****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)

PV Next combiner boxes for inverters with 1 to 12 MPP trackers are used to protect the DC side of a photovoltaic system. The combiner boxes protect the inverter against overvoltages and thus comply with the European Directive EN 51543-32. In addition, these products offer the possibility to protect the system against reverse currents and the possibility to combine strings to save cables during installation.

**General ordering data**

Version	Photovoltaics, Combiner Box, 1000 V, 2 MPP's, 3 Inputs / 3 Outputs per MPP, With fuse holder, Surge protection I / II, Switch disconnecter, Cable gland
Order No.	<a href="#">2683060000</a>
Type	PVN DC 3IF 30 2MPP SW SPD1R CG 10
GTIN (EAN)	4050118699883
Qty.	1 pc(s).
Replacement parts	<a href="#">2530600000</a> <a href="#">2534300000</a>

Creation date June 5, 2024 1:52:12 AM CEST

Catalogue status 01.06.2024 / We reserve the right to make technical changes.

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**Technical data**
**Dimensions and weights**

Depth	249 mm	Depth (inches)	9.803 inch
Depth with add-on components	250 mm	Height	330 mm
Height (inches)	12.992 inch	Width	558 mm
Width (inches)	21.968 inch	Net weight	6,717 g

**Temperatures**

Ambient temperature	-40 °C...+45 °C	Humidity	5 - 90 %, no condensation
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**Approvals and norms**

Approvals	EN 61439-2, IEC 61439-2
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**Guarantee**

Time interval	5 years
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**Electrical characteristics**

Current per Maximum Power Point, max. 45 A

Rated DC current per connection	Current per string, max.	30 A
Rated short-term current resistance	Rated current	56.25 A
Rated DC voltage	1,000 V	
Switching disconnecter capacity	DC-PV1, IEC 60947-3	

**Enclosure**

Connection type string	Internal terminal (with cable gland feed-through)	Cover	with cover, removeable
Enclosure attachment	Via mounting foots	Impact resistance	IK08 in accordance with IEC 62208, IK10 in accordance with IEC 62262
Insulating material	Polyester glass-fibre reinforced, Polycarbonate	Protection class	II
Switch disconnecter execution	switch in cover	Type of mounting	Wall mounting, 4 screws

**General data**

Installation location	Protected outdoor area (Land and Sea)	Protection degree	IP65
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**Inputs**

Amount of maximum power points	2 MPP		
Cartridge fuse	10 x 38 mm		
DC Input + & -	Wire connection	Type of connection	PUSH IN
		Compatible cable crossection	EN 50618:2015
		Wire cross-section, min.	2.5 mm <sup>2</sup>
		Wire cross-section, max.	16 mm <sup>2</sup>

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Functional earth connector	Cable entry	Number of cable entries	2
		Cable diameter, min.	5 mm
		Cable diameter, max.	10 mm
		Cable glands	M 16
	Wire connection	Type of connection	Screw connection
		Flexible, max. H05(07) V-K	25 mm <sup>2</sup>
		w. wire end ferrule, DIN 46228 pt 1, max.	16 mm <sup>2</sup>
Fuse type	Empty fuse holder		
Fuse-link standard	IEC 60269-1, IEC 60269-6, gPV (EN 60269-6)		
Max. number of DC inputs	per Maximum Power Point 3 inputs connected in parallel		
Surge protection auxiliary contact	Cable entry	Number of cable entries	2
		Cable diameter, min.	5 mm
		Cable diameter, max.	10 mm
		Cable glands	M 16
	Wire connection	Type of connection	Tension clamp connection with actuator
		Flexible, max. H05(07) V-K	1.5 mm <sup>2</sup>
		w. wire end ferrule, DIN 46228 pt 1, max.	1.5 mm <sup>2</sup>

**Outputs**

DC Output + & -	Wire connection	Type of connection	PUSH IN
		Compatible cable cross-section	TÜV 2 Pfg 1169/08.07
		Wire cross-section, min.	2.5 mm <sup>2</sup>
		Wire cross-section, max.	16 mm <sup>2</sup>
Max. number of DC outputs	per Maximum Power Point 3 outputs connected in parallel		

**Surge protection DC side**

Discharge current $I_n$ (8/20 $\mu$ s)	20 kA	Discharge current, max. (8/20 $\mu$ s)	40 kA
Lightning test current $I_{imp}$ (10/350 $\mu$ s)	6.25 kA	Maximum continuous operating voltage DC UCPV mode +/-, -/PE, +/-PE	1,100 V
PV system voltage, max. $U_{cpv}$	1,100 V	Protection level $U_p$ (+/-, -/PE, +/-PE)	$\leq 3.8$ kV
Protection level $U_p$ (+/-)	$\leq 3.8$ kV	Protection level $U_p$ (+/PE)	$\leq 3.8$ kV
Protection level $U_p$ (-/PE)	$\leq 3.8$ kV	Requirements class	Type I/II
Short-circuit current $I_{SCPv}$	11,000 A	Standby power consumption $P_c$	<0.2 W
Total discharge current $I_{total}$ (8/20 $\mu$ s)	50 kA	Total discharge current $I_{total}$ (10/350 $\mu$ s)	12.5 kA

**Classifications**

ETIM 6.0	EC002928	ETIM 7.0	EC002928
ETIM 8.0	EC003857	ETIM 9.0	EC003857
ECLASS 9.0	22-57-92-03	ECLASS 9.1	22-57-02-90
ECLASS 10.0	22-57-02-90	ECLASS 11.0	22-57-02-92
ECLASS 12.0	22-57-02-92	ECLASS 13.0	22-57-02-92

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## Long specification

Combiner box for inverters with 2 MPP tracker, suitable for protecting the DC side of a photovoltaic system according to EN 51543-32.

**MPP1:**

3 inputs, connection via M25 cable gland with 3x7mm Ø cable entry. PUSH IN connection / 2.5 - 6mm<sup>2</sup> single-wire, multi-wire, with/without ferrule.

3 outputs, connection via M25 cable gland with 3x7mm Ø cable entry. PUSH IN connection / 2.5 - 6mm<sup>2</sup> single-wire, multi-wire, with/without ferrule.

**MPP2:**

identical to MPP1

Max. string voltage Uoc: 1000V

1 class/type I + II combined arrester with signal contact

Fuse holders for inputs and outputs (fuses 10x38 to be ordered separately)

With load break switch for safe separation of the string lines

Connection of the signal contact via cable glands (8-12mmØ) max. conductor cross-section: 1.5mm<sup>2</sup>

Connection of the functional earth via cable glands (8-12mmØ) Conductor cross-section: 16-25mm<sup>2</sup>

Protection class: IP65

All built into a glass fibre reinforced polyester housing. Dimensions HxWxD: 330x558x249 mm

Approval according to low voltage switchgear and controlgear IEC 61439-1:2011 and EN 61439-2:2011

**Environmental Product Compliance**

REACH SVHC

Lead 7439-92-1

SCIP

bdab5698-6a20-4370-8e28-8810d882d01a

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## Technical data

### Important note

#### Product information

Fuses are not included The SCIP number was assigned due to a lead content of more than 0.1 % of the net weight.  
Safe use instruction according to ECHA:  
The identification of the hazardous substance is sufficient to allow safe use of the article throughout its life cycle, including the service life, disassembly and waste/recycling phase

### Approvals

#### Approvals



### Downloads

#### Approval/Certificate/Document of Conformity

[EU Declaration of Conformity](#)

#### Engineering Data

[CAD data – PV Next Schematic Diagram](#)

[CAD data – STEP](#)

#### Technical Documentation

[customer drawing](#)

#### User Documentation

[Manual PV Next String Combiner Box](#)

[MANUAL PV NEXT IT/ES/FR](#)

#### White paper

[Fact Sheet DE PV CB Wie man Gebäude gegen Blitzeinschläge schützt](#)  
[Fact Sheet DE PV Wie man die Lebensdauer eines GAK verlängert](#)  
[Fact Sheet DE PV CB Wann Sicherungen zu installieren sind](#)  
[Fact Sheet DE CB PV NEXT](#)  
[Fact Sheet EN PV CB When DC fuses are mandatory to install](#)  
[Fact Sheet EN CB PV NEXT](#)  
[Fact Sheet EN PV How to protect buildings against lightning strikes](#)  
[Fact Sheet EN PV How to extend the life time of a Combiner Box](#)  
[Fact Sheet DE PV CB Lastentrennschalter](#)  
[Fact Sheet DE CB PV Strings kombinieren](#)  
[Fact Sheet DE PV CB Richtig verbinden](#)  
[Fact-Sheet EN PV CB Load break switch](#)  
[Fact Sheet EN CB Combining PV strings](#)  
[Fact Sheet EN PV CB connection](#)  
[Fact Sheet EN PV Combiner Box earthing](#)  
[Fact Sheet DE PV Combiner Box Erdung](#)

#### Catalogues

[Catalogues in PDF-format](#)

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# Drawings

## PCB design



PVN 1 M2 I6 S0 F3 V1 Q1 TX PX 10									
<b>Series</b>		<b>Voltage</b>		<b>Powersupply</b>		<b>Monitoring</b>		<b>Output Type</b>	
PVN - PV Next		10 - 1kV		x = n/a		x = n/a		0 - GG	
VPU - PV Protect		11 - 1.1kV						1 - VMAC	
		15 - 1.5kV						2 - MCA-5m 2	
<b>Level</b>		<b>Inputs</b>		<b>SPD</b>		<b>Fuses</b>			
1 = DC trunk box (L1)		1...12 inputs		0 - TYP II		x = n/a			
<b>Series</b>		<b>Switch</b>		1 = TYP I-II		3 = only fuse holders			
1 = 1 MPP supported		x = n/a		X = No SPD					
2 = 2 MPP supported		0 = manual switch							
3 = 3 MPP supported		1 = remote switch							
4 = 4 MPP supported									
6 = 6 MPP supported									

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## Accessories

## External fixing lugs



The enclosures of the TBF series are made of extremely tough glass fibre-reinforced polyester. These enclosures are ideal for applications that call for low weight coupled with high shock resistance. The weather-resistant TBF enclosures are designed for a wide range of applications. Together with their comprehensive range of accessories, they provide universal solutions for accommodating built-in items such as regulators, measuring instruments, valves and other equipment.

## Features:

- 9 sizes in 2 versions, with grey and transparent lids
- Cover with nylon screws
- Fixing holes outside the sealed area
- Thread for fitting to terminal rails and mounting plates
- Comprehensive accessories
- Weidmüller can manufacture and supply this enclosure to match customer specifications, fitted with all necessary terminals and cable glands.

## General ordering data

Type	MF TBF	Version
Order No.	<a href="#">0360800000</a>	TBF (polyester empty enclosure), Mounting foot, Fixing lugs, Height:
GTIN (EAN)	4008190108595	72.5 mm, Width: 24 mm, Depth: 12 mm, Material: Polyamide, Deep
Qty.	1 pc(s).	black

## 10x38 gPV



The gPV cylindrical fuse cartridges are designed to provide compact, safe and economical protection of photovoltaic modules (field protection) with voltages up to 1,500 DC. They provide protection against both overload and short circuit (gPV class according to the requirements of IEC60269-6 and UL248-19 standards). Made of a ceramic tube with high internal pressure and thermal shock resistance, allowing high switching capacity in a small space. The contacts are made of silver-plated copper and the fusible elements of pure silver to avoid ageing and thus keep the electrical characteristics invariable. They are available in the sizes 10x38 mm, 10x85 mm and 22x58 mm.

## General ordering data

Type	FUSE 10X38 15A 1000 VDC ...	Version
Order No.	<a href="#">2783250000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 15 A
GTIN (EAN)	4064675059974	
Qty.	10 pc(s).	
Type	FUSE 10X38 16A 1000 VDC ...	Version
Order No.	<a href="#">2783260000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 16 A
GTIN (EAN)	4064675059981	
Qty.	10 pc(s).	

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## Accessories

Type	FUSE 10X38 8A 1000 VDC ...	Version
Order No.	<a href="#">2783220000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 8 A
GTIN (EAN)	4064675059943	
Qty.	10 pc(s).	
Type	FUSE 10X38 12A 1000 VDC ...	Version
Order No.	<a href="#">2783240000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 12 A
GTIN (EAN)	4064675059967	
Qty.	10 pc(s).	
Type	FUSE 10X38 20A 1000 VDC ...	Version
Order No.	<a href="#">2783280000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 20 A
GTIN (EAN)	4064675060000	
Qty.	10 pc(s).	
Type	FUSE 10X38 4A 1000 VDC ...	Version
Order No.	<a href="#">2783190000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 4 A
GTIN (EAN)	4064675059912	
Qty.	10 pc(s).	
Type	FUSE 10X38 10A 1000 VDC ...	Version
Order No.	<a href="#">2783230000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 10 A
GTIN (EAN)	4064675059950	
Qty.	10 pc(s).	
Type	FUSE 10X38 3A 1000 VDC ...	Version
Order No.	<a href="#">2783180000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 3 A
GTIN (EAN)	4064675059905	
Qty.	10 pc(s).	
Type	FUSE 10X38 2A 1000 VDC ...	Version
Order No.	<a href="#">2783170000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 2 A
GTIN (EAN)	4064675059691	
Qty.	10 pc(s).	
Type	FUSE 10X38 6A 1000 VDC ...	Version
Order No.	<a href="#">2783210000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 6 A
GTIN (EAN)	4064675059936	
Qty.	10 pc(s).	
Type	FUSE 10X38 1A 1000 VDC ...	Version
Order No.	<a href="#">2783160000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 1 A
GTIN (EAN)	4064675059684	
Qty.	10 pc(s).	
Type	FUSE 10X38 5A 1000 VDC ...	Version
Order No.	<a href="#">2783200000</a>	Photovoltaics, Cartridge fuse, 1000 V, 10x38, gPV, 5 A
GTIN (EAN)	4064675059929	
Qty.	10 pc(s).	



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## Accessories

### SL Set PV NEXT



The **"SL SET PV NEXT"** allows the insertion of up to four cables through one cable gland whilst keeping a tight seal.

#### General ordering data

Type	SL SET PV NEXT	Version
Order No.	<a href="#">2729230000</a>	Photovoltaics
GTIN (EAN)	4050118804508	
Qty.	1 pc(s).	

### PV Sun Covers



#### General ordering data

Type	PV SUN COVER 56/30/21	Version
Order No.	<a href="#">8000087025</a>	Photovoltaics
GTIN (EAN)	4064675845188	
Qty.	1 pc(s).	

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Crosshead screwdriver Phillips**

VDE insulated crosshead screwdriver, for Phillips screws, SDIK PH DIN 7438, ISO 8764/2-PH, output to ISO 8764-PH, SoftFinish grip

**General ordering data**

Type	SDIK PH3 X 150	Version
Order No.	<a href="#">2749910000</a>	Screwdriver, Blade width (B): 3 mm, 150 mm, Blade thickness (A): 3
GTIN (EAN)	4050118897210	
Qty.	1 pc(s).	

**Slotted screwdriver**

VDE insulated slot-head screwdriver, SDI DIN 7437, ISO 2380/2, drive output acc. to DIN 5264, ISO 2380/1. SoftFinish grip

**General ordering data**

Type	SDIS 1.0X5.5X125	Version
Order No.	<a href="#">2749850000</a>	Screwdriver, Blade width (B): 5.5 mm, Blade length: 125 mm, Blade thickness (A): 1 mm
GTIN (EAN)	4050118897050	
Qty.	1 pc(s).	
Type	SDIS 0.6X3.5X100	Version
Order No.	<a href="#">2749810000</a>	Screwdriver, Blade width (B): 3.5 mm, Blade length: 100 mm, Blade thickness (A): 0.6 mm
GTIN (EAN)	4050118897012	
Qty.	1 pc(s).	

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Tools**

- For flexible and solid conductors with special insulating materials
- High-quality stripping for industrial applications (complies with aircraft industry requirements)
- Specially shaped blades enable stripping of special types of insulation and conductor configurations
- Stripping length adjustable via end stop
- Very versatile thanks to interchangeable stripping units
- Stripping results reproduced accurately over and over again
- No damage to the conductor
- A long-lasting, reliable tool thanks to its sturdy design
- Integrated cutting function

**General ordering data**

Type	MULTI-STRIPAX PV	Version
Order No.	<a href="#">1190490000</a>	Photovoltaics, Plug-in connector
GTIN (EAN)	4032248973262	
Qty.	1 pc(s).	

**UV-resistant cable ties**

UV-resistant polyamide 6.6 ensures long durability of our special cable ties even with strong UV radiation. Ideal for continuous outdoor use.

**General ordering data**

Type	CB-UVR 290/4,5 BK	Version
Order No.	<a href="#">2659350000</a>	Cable ties, 4.5 x 290 mm, Polyamide 66, 220 N
GTIN (EAN)	4050118682816	
Qty.	100 pc(s).	

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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Cutting tools**

Cutting tools for conductors up to 8 mm, 12 mm, 14 mm and 22 mm outside diameter. The special blade geometry allows pinch-free cutting of copper and aluminium conductors with minimum physical effort. The cutting tools (KT 8 to KT 22) also come with VDE and GS-tested protective insulation up to 1,000 V in accordance with EN/IEC 60900.

**General ordering data**

Type	KT 14	Version
Order No.	<a href="#">1157820000</a>	Cutting tools, Cutting tool for one-hand operation
GTIN (EAN)	4032248945344	
Qty.	1 pc(s).	

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[www.weidmueller.com](http://www.weidmueller.com)**Replacement parts****Spare Arrester****General ordering data**

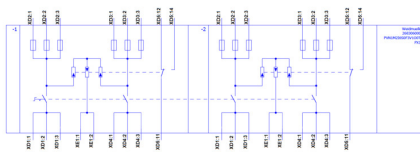
Type	VPU PV I+II O 1000	Version
Order No.	<a href="#">2530600000</a>	Surge voltage arrester, Low voltage, Accessories, Surge protection I /
GTIN (EAN)	4050118540819	II, Spare arrester
Qty.	9 pc(s).	
Type	VPU PV I+II OM 1000	Version
Order No.	<a href="#">2534300000</a>	Surge voltage arrester, Low voltage, Surge protection I / II, Spare
GTIN (EAN)	4050118545906	arrester
Qty.	9 pc(s).	

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# Drawings



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Dimensions without tolerances are no check dimensions

The English version is binding



Darstellung mit Zubehoer  
Shown with accessory 0360800000 MF TBF

Nicht im Lieferumfang enthalten!  
Not included in delivery!

		Prim PLM Part No.: 1214838		Prim ERP Part No.:	
First Issue Date 28.01.2020	Max. nos.		<b>Weidmüller</b> 		<b>71727</b> Drawing no. <span>Issue no.</span>
	Modification				
		Date	Name	<b>PVN TBF 563021</b> COMBINERBOX RESIDENTIAL/COMMERCIAL COMBINERBOX RESIDENTIAL/COMMERCIAL	
	Drawn	28.01.2020	Brüntrup, Anna		
	Responsible		Wohlgemuth, Kl		
Scale: 1/4      Size: A3	Approved	31.01.2020	Püschner, Klau	Sheet 01 of 01 sheets	
Drawings Customer			Product file:		