

**PVN1M3I9S0FXV101TXPX10****Weidmüller Interface GmbH & Co. KG**

Klingenbergstraße 26

D-32758 Detmold

Germany

[www.weidmueller.com](http://www.weidmueller.com)**Product image**

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, 3 MPP's, 3 Inputs / 3 Outputs per MPP, Surge protection I / II, Switch disconnecter, WM4C
Order No.	<a href="#">2683220000</a>
Type	PVN1M3I9S0FXV101TXPX10
GTIN (EAN)	4050118700084
Qty.	1 pc(s).
Delivery status	<b>This article will no longer be available in the future.</b>
Available until	2024-12-31
Replacement parts	<a href="#">2530600000</a> <a href="#">2534300000</a>

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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	334 mm
Height (inches)	13.15 inch	Width	558 mm
Width (inches)	21.968 inch	Net weight	6,900 g

**Temperatures**

Ambient temperature	-40 °C...+50 °C	Humidity	5 - 90 %, no condensation
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**DC string monitoring**

Monitoring function	Non monitored
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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.	35 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	Plug WM4C	Cover	with cover, removeable
Enclosure attachment		Impact resistance	IK08 in accordance with IEC 62208, IK10 in accordance with IEC 62262
	Via mounting foots		
Insulating material	Polyester glass-fibre reinforced, Polycarbonate	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	3 MPP		
DC Input + & -	Wire connection	Type of connection	WM4C plug-in connector
		Compatible cable crossection	EN 50618:2015, TÜV 2 Pfg1169/08.07
		Wire cross-section, min.	2.5 mm <sup>2</sup>
		Wire cross-section, max.	6 mm <sup>2</sup>

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**Technical data**

Functional earth connector	Cable entry	Number of cable entries	2
		Cable diameter, min.	5
		Cable diameter, max.	10
		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	Neither fuse cartridge nor holder		
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
		Cable diameter, max.	10
		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	WM4C plug-in connector
		Compatible cable crossection	TÜV 2 Pfg 1169/08.07, EN 50618:2015
		Wire cross-section, min.	4 mm <sup>2</sup>
		Wire cross-section, max.	6 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 3 MPP tracker, suitable for protecting the DC side of a photovoltaic system according to EN 51543-32.

**MPP1:**

3 inputs, connection via WM4 C connector, compatible with cable type TÜV 2 Pfg1 169/08.07 / EN 50618:2063

3 outputs, connection via WM4 C connector, compatible with cable type TÜV 2 Pfg1 169/08.07 / EN 50618:2063

MPP2 to 3:  
identical to MPP1

Max. string voltage Uoc:  
1000V

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

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 glas fibre reinforced polyester housing. Dimensions HxWxD: 334x558x249 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

**Important note**

Product information	<p>The SCIP number was assigned due to a lead content of more than 0.1 % of the net weight.</p> <p>Safe use instruction according to ECHA:</p> <p>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</p>
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Creation date May 1, 2024 6:53:57 PM CEST

Catalogue status 20.04.2024 / We reserve the right to make technical changes.

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## Technical data

## 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](#)

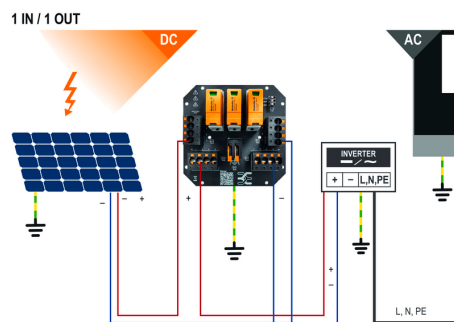
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## Drawings

### PCB design



PVN 1 M2 I6 S0 F3 V1 01 T X P X 10									
<b>Series</b> PVN = PV Next VPV = PV Protect								<b>Voltage</b> 10 = 1kV 11 = 1.1kV 15 = 1.5kV	
<b>Level</b> 1 = DC trunk box (L1)								<b>Powersupply</b> x = n/a	
<b>Series</b> 1 = 1 MPPT supported 2 = 2 MPPT supported 3 = 3 MPPT supported 4 = 4 MPPT supported 6 = 6 MPPT supported								<b>Monitoring</b> x = n/a	
<b>Inputs</b> 1...12 inputs								<b>Output Type</b> 0 = CS 1 = VMAC 2 = MC4-Evo 2	
<b>Switch</b> x = n/a 0 = manual switch 1 = remote switch								<b>SPD</b> 0 = TYP II 1 = TYP I+II x = No SPD	
								<b>Fuses</b> x = n/a 3 = only fuse holders	

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

**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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## Accessories

### PV-Stick field connectors



Faster is better. This also applies to the cabling of solar systems. Our handy connectors stay firmly in your grip even in frosty temperatures and can be installed very quickly and easily without a crimping tool.

You don't need crimp contacts and crimping tools and you avoid assembly errors. This saves up to 50% installation time – without affecting quality. The new photovoltaic connectors are TÜV-approved and comply with IEC 62852.

Our "PUSH IN" technology enables safe connections with minimal effort – insert, turn: current!

- 1.500 V DC (DE) / 1,500 V DC (EN)
- PUSH IN technology
- Standard-compliant quality in accordance with IEC 62852
- Ergonomic, prize-winning design
- Fastest PV connector currently available
- Reliable latching

### General ordering data

Type	PV-STICK- VPE10	Version
Order No.	<a href="#">1303490000</a>	Photovoltaics, Plug-in connector, PUSH IN connection, male
GTIN (EAN)	4050118102529	
Qty.	10 pc(s).	
Type	PV-STICK+ VPE10	Version
Order No.	<a href="#">1303450000</a>	Photovoltaics, Plug-in connector, PUSH IN connection, female
GTIN (EAN)	4050118102468	
Qty.	10 pc(s).	

### 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).	

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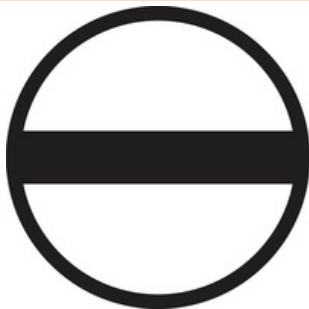
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[www.weidmueller.com](http://www.weidmueller.com)**Accessories****Crosshead screwdriver Phillips**

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****Accessories**

The dust protection cap "Dustcap VSSO" protects the Weidmüller and type 4 solar connectors against dust and dirt.

The "SafetyClip" protects the Weidmüller solar connectors against unintentional opening and can only be released using the special multi-tool.

**General ordering data**

Type	VSSO WM4 C	Version
Order No.	<a href="#">1254870000</a>	Photovoltaics, Flat design
GTIN (EAN)	4050118047479	
Qty.	100 pc(s).	

**Y-Connector Cables**

The Y or X cable is used to connect three or four elements of a PV system, such as the connection between PV panels, inverters and surge protection boxes. The cables are available in different connection variants.

**General ordering data**

Type	PVHYM-M-XXXX6W+15	Version
Order No.	<a href="#">2877850000</a>	Photovoltaics, Y-Connector Cable, 1x WM4 C Female, 2x MC4 Male,
GTIN (EAN)	4064675666417	6mm², 1500 V
Qty.	1 pc(s).	
Type	PVHYM+M-XXXX6W-15	Version
Order No.	<a href="#">2877860000</a>	Photovoltaics, Y-Connector Cable, 1x WM4 C Male, 2x MC4 Female,
GTIN (EAN)	4064675666424	6mm², 1500 V
Qty.	1 pc(s).	

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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

### 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

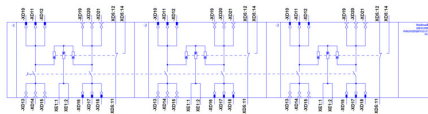
Type	CB-UVR 290/4,5 BK	Version
Order No.	<a href="#">2659350000</a>	Cable ties, 4.5 x 290 mm, Polyamide 66, 220 N
GTIN (EAN)	4050118682816	
Qty.	100 pc(s).	

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## 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> 		71727 <div>0</div>
	Modification				
		Date	Name	<div>PVN TBF 563021</div> <div>COMBINERBOX RESIDENTIAL/COMMERCIAL</div> <div>COMBINERBOX RESIDENTIAL/COMMERCIAL</div>	
	Drawn	28.01.2020	Brüntrup, Anna		
	Responsible		Wohlgemuth, KI		
Scale: 1/4      Size: A3	Approved	31.01.2020	Püschner, Klau		
Drawings Customer			Product file:		

PVN TBF 563021  
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