Renewable energies meeting Derek Lu MADE FOR REAL

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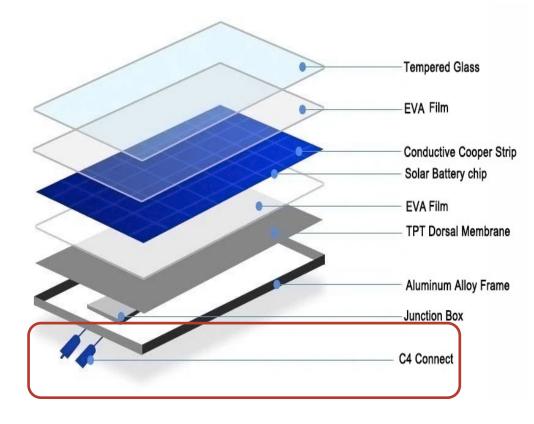
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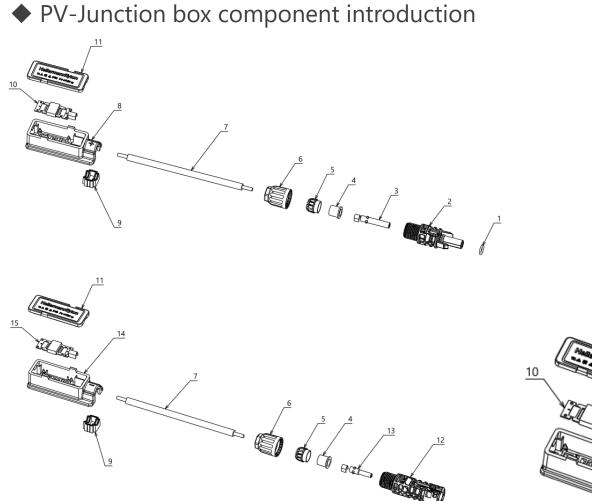
◆ PV-Junction box application principle





- PV junction box is a connecting device between the solar cell array composed of solar cell modules and the solar charging control device.
- Its main function is to connect and protect the solar photovoltaic modules, connect the power generated by the solar cells with the external lines, and conduct the current generated by the photovoltaic modules.
- Products include three parts, lower plate of pressing line, upper cover of sealing and diode.

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No.	Product Type	Name	Material	Color	Qty	Remark	
1	PVP-HT20_SR	Sealing Ring 密封圈	Silica Gel	RD	1		
2	PVP-HT20_PP	Positive Plug 正极连接器	PA66	ВК	1		
3	PVP-HT20_MS	Metal Socket 金属插套			1		
4	PVP-HT20_SP	Sealing Plug 密封堵头	Silica Gel	RD	2		
5	PVP-HT20_CR	Clamping Ring 夹紧卡爪	PA66	ВК	2		
6	PVP-HT20_CC	Connector Cap 紧回螺帽 PA66		вк	2		
7	PV-HT20_CB	Cable 线缆	-	ВК	2		
8	PV-HT20xy_PB	Positive Bottom 正极接线盒	PPE	ВК	1		
9	PV-HT20xy_PSB	Pressing Block 压线块	PPE	вк	2		
10	Diode A	HellermannTyton GFT4050SM	-				25A
		HellermannTyton GFT5050CT		-	2	30A	
11	PV-HT20xy_JC	Junction Cover 接线盒盖	PPE	ВК	3		
12	PVP-HT20_NP	Negative Plug 负极连接器	PA66	ВК	1		
13	PVP-HT20_MP	Metal Pin 金属插针	-	-	1		
14	PV-HT20xy_NB	Negative Bottom 负极接线盒	PPE	ВК	1		
15	Diode B	HellermannTyton GFT4050SM				25A	
		HellermannTyton GFT5050CT		-	1	30A	
16	PV-HT20xy_MB	Middle Bottom 中间接线盒	PPE	ВК	1		

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◆ How to use PV-Junction box



A: Photovoltaic module

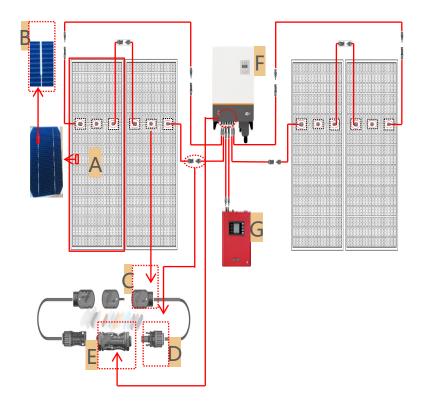
• Grey part

B: The battery in the component, and the copper cable in the battery

• Smaller white parts

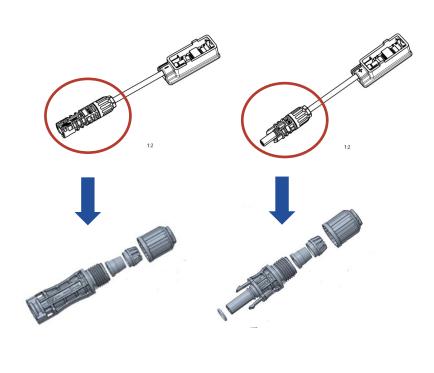
C: Junction box and modular Schottky diode

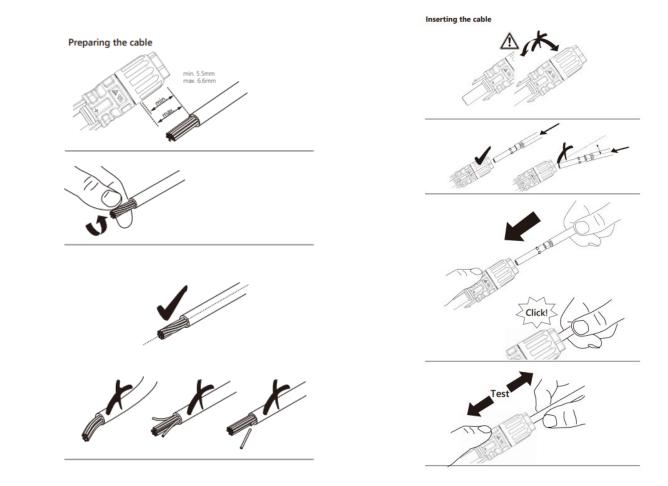
- D: Terminal junction box
- E: board terminal box
- F: Bus box
- The role of combining the electricity generated by many photovoltaic modules
- G: inverter



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PV-connector





PV-HT20 Connectors can be sold separately.

Operating instructions for connectors

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PV-Junction box market situation

Forecast of domestic junction box market demand (100 million sets)



• Why we want to develop this business

• The market demand for junction boxes has maintained a growth of over 10%

- Important auxiliary materials Relatively
- Low equipment investment
- Common to Laboratory equipment
- Main end customers are located near HTC
- Large market capacity and rapid market growth

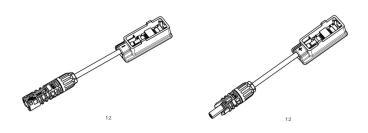
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Existing products

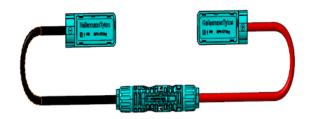


Purchased parts(Continuous 1-2years) PV-HT10 TUV Certification Used to develop new customers

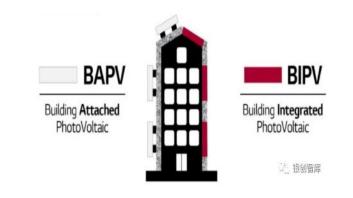


Self-produced parts PV-HT20 TUV,UL Certification Equipment testing

◆ 2024 New Product development -- BIPV Junction Box



Self-produced parts Y24 plan Self-produced parts PV-HT30 BIPV&Low-cost scheme



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◆ 2023 completed -- TUV Certification



Test program requested:

- IEC 62790:2020 (Junction box for PV modules)
- IEC 62852:2014/AMD1:2020 (Connector for PV systems)
- IEC 62852:2014 (Connector for PV systems)
- 2024 -- TUV&UL Certification
 PV-HT20
 - PV-HT20 TUV Rheinland certification have completed PV-HT20 UL certification – will complete in Q2
 - Looking for partners within the HT group, and some customers are supplied by overseas factories.



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PV-Junction box project existing customers



* 紫创光科集团





New Customers	Area	Y23.Oct-Dec A YTD	Y24 Potential demand(kset)
Tianyi(Xinyu)添翼新能源(新余)	CN	85,882	200
Reesun(yancheng)瑞晶(盐城)	CN	109,179	800
KinseSolar(Maanshan)晶盛(马鞍山)	CN	110,365	200
Ziguang(Chuzhou)紫光(滁州)	CN	184,071	120
Reesun(lishui)瑞晶(丽水)	CN	725,734	1,600
TopSolar(Xuancheng)宏润泰阳(宣城)	CN	770,528	800
		CNY¥ 1,985,759	Total 3,720
		USD \$ 276,020	

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PV-Junction box project potential customers



Customers	Area	Y24 potential demand(kset)
		· - · p · · · · · · · · · · · · · · · ·
Lessosolar Indonesia Hope HT SG deliver and provide COO	CN/ID	1,600
Yingli Group	CN	1,200
AE Solar Hope HT EMEA deliver and provide COO	CN/EMEA	600
CC-SOLA	CN	600
Helios-power	CN	500
GREEN WING SOLAR	CN	500
Ronma Soalr	CN	800
Jiangsu Green Power Technology	CN	500
Ningbo OSDA Solar	CN	500
Total		6,800

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PV-Junction box production line





- ➢ PV-HT20
- Target Capacity: 8000set/day(8H)
- Actual Capacity: 3000-5000set/day



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◆ PV-Junction box production line-problems we meet

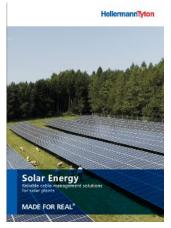


- When the vibrating disc releases materials, it will get stuck and needs to be adjusted.
- When assembling finished products, the base fixture may cause scratches on the surface of the shell.
- After the feeding machine feeds, the product tilts, causing a shortage alarm.
- We are new to this type of product and require continuous testing in production

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PV-Junction box promotional materials





> Specification

➤ Catalogue

HellermannTyton

Specification	Ver: 00			
型号名称: Model No.:	PV-HT20 Series	认证: Certifications:	🔺 🔊 💿	
额定系统电压: Rated System Voltage:	DC 1500V	最大工作电压(组件): Max. Working (Module) Voltage:	100V	
额定电流	25A	二极管型号:	Integrated Diodes 4050 (If=40A;Vrrm=50V)	
Rated Current:	30A	Model of Diodes:	Integrated Diodes 5050 (If=60A:Vrrm=45V)	
温度范围: Temperature Range:	~40°C ~ 85°C	防护等级: Degree of Protection:	IP65/ IP68 (1m, 1h)	
应用等级: Application Class:	Class A	防水结构: Waterproofing Structure:	Potting Sealant	
胆燃等级: Flammability Class:	5VA	灌胶量: Volume of Potting Silicone:	Appr. 3*6ml=18ml	
污染等级: Pollution Degree:	Class I	二极管数量: Numbers of Diodes:	3	
汇流条连接方式: Connection of Bus Ribbons:	Soldering	汇流条方向: Diectrion of Bus Ribbons:	Vertical	
绝缘材料: Insulation Material:	PPO/PPE	导电体材料: Material of Contact Rails:	C19210	
线缆规格: Cable Wire:	1*4 mm ²	连接器: Connector:	PVP-HT10/PVP- HT20//MC4/EVO2/etc.	



qualified personnel familiar with the national d standards that apply to this filed of	NEG-CONNECTOER			X000000C28U	
photovoltaic systems within the specifications of for convections within one string. In may only be used together with cables that are a cas lead to serious personal insury and	Male contact:Pin		1	X0000000:20U	
his installation inst-nuctions is part of the					
tallation. If reconsary please use the dust cap (
ited directly on the roof panel. osed to permanent mechanical load. All or any kind of strain reliaf.					
t the following C 42930.2017 rding to IIC 60228.2005 denial group II according to IEC 60664-1.2020		multi-stripus PV Stripping and cutting tool	7	ute:3000000X	
		MULTITOOL PV SET	ALC:	0000000canu	

> Operation instructions

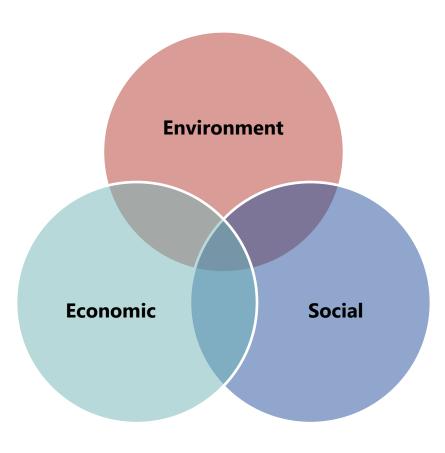
Exhibition 2023SNEC

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Sustainability

What Does Sustainability Mean?



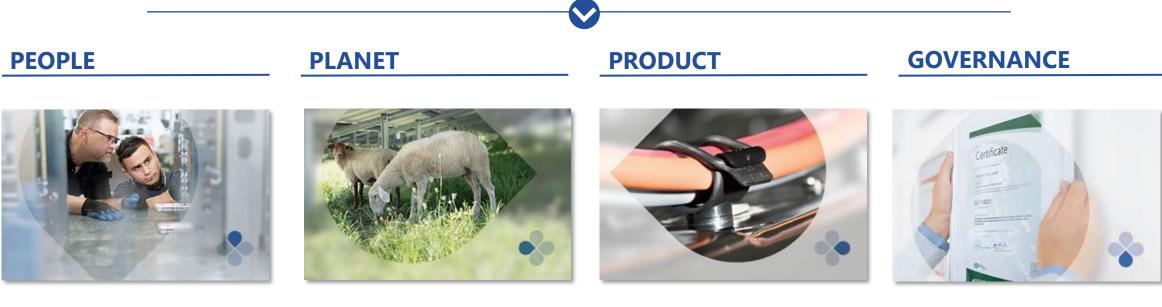
- The definition of sustainability is to "meet our own needs without compromising the ability of future generations to meet their own needs" - Brundtland Commission (1983)
- A sustainable organisation is one that is able to balance its financial performance and growth while managing the long-term impact on the environment and society.
- HellermannTyton is committed to reducing the emissions generated by our business operations, actively supporting our customers ambitions and the communities in which we operate.

Sustainability

◆ HTC Sustainability Framework

Making Positive Differences

Sustainability is an integral part of our mission, we have committed to making a positive impact.



Foster equal opportunities and wellbeing

Minimise our environmental impact Driving the innovation of sustainable solutions

Maintain high ethical business standards

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Sustainability

Product

Provide more sustainable solutions!

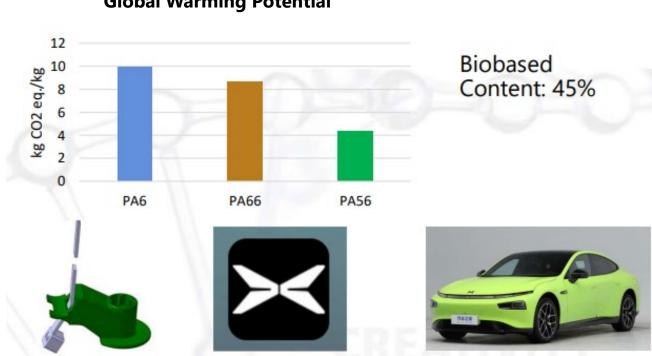
PA56/Bio-base material -

PA56 HIRHS for Clips

OEM: Xiaopeng (China NEV) **Current Status: Mass Production**







Global Warming Potential

HellermannTyton

Sustainability

- Activities-China International Petroleum & Petrochemical Technology and Equipment Exhibition(CIPPE)
 - We participated in this exhibition from March 25th to 27th. We pasted cards in the blank space of the booth display board as booth decorations.
 - > The cards are made of renewable and environmentally friendly paper and contain seeds.
 - > Cards are distributed as small gifts for exhibitions, conveying environmental protection concepts.



China

Sustainability

- Activities-The World Earth Day
- In response to World Earth Day, we will hold a spring plant "adoption" event in mid April, aiming to promote the concept of low-carbon environmental protection, encourage everyone to participate in environmental practice activities, participate in plant planting and maintenance, cultivate awareness of caring for plants, and work together to add greenery to the earth.
- We are preparing various small plants for everyone to adopt.
 You can receive one plant and an adoption agreement card by posting likes on your social media. After a period of time, we will collect photos of your plants and your maintenance experience.





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