

# Amphenol



**Amphenol Industrial Sustainable Technologies**

Photovoltaic Interconnection Systems

# About us

## Solar Connectors and Cable Assemblies

### **DURABLE AND RELIABLE**

Founded in 1932, Amphenol Corporation in America, is a leading manufacturer of connectors and related products and one of top 500 companies in the world. There are 83 divisions with more than 40,000 employees around the world. Amphenol Corporation is divided into 8 Business Units based on product markets.

Amphenol Technology (Shenzhen) co., Ltd. is one of Amphenol's divisions, Located in Shenzhen, China, A leading manufacturer of Stamping & form terminals, Over-molded interconnectors, Connectors for harsh environment, Cable assembly design & development, including Solar connectors and cable assemblies.

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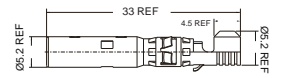
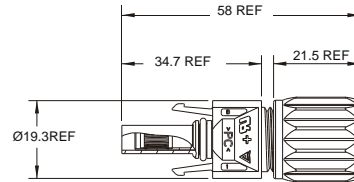
**15**

**Tools and Accessories**

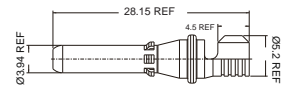
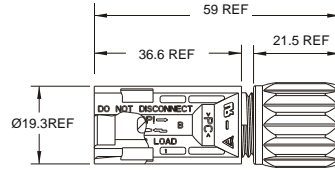
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### H4 series PV Cable Connector



Part Number: H4CF.....



Part Number: H4CM.....



### Technical Data

Rated voltage	1500V DC per UL 6703 1000V DC per TÜV IEC62852	Cable OD range	Ø5.3mm – 7.65mm
Rated current (per IEC 62852, 85°C)	25A ( 2.5mm <sup>2</sup> /14AWG) 35A ( 4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> /10AWG)	Unlock options	Tool unlock type(TÜV/UL) or Manually unlock type(TÜV only)
Rated current (per UL 6703)	15A (2.5mm <sup>2</sup> /14AWG) 20A (4.0mm <sup>2</sup> /12AWG) 30A (6.0mm <sup>2</sup> /10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated impulse voltage	12kV(1000V DC per TÜV)	Ambient temperature range	-40°C to +85°C
Typical contact resistance	≤0.3mΩ	Upper limiting temperature	+120°C
Contact material	Tin-plated Copper Alloy	Flame class	UL 94 V-0
Contact system options	Cold Formed (CF) or Stamped & Formed (S&F)*1	Overvoltage category/Pollution degree	CAT III/2
Insulation material	PC/PA	Material safety	RoHS, REACH compliant
Type of termination	Crimping	Approvals:	 TÜV certified to IEC 62852  UL certified to UL6703 R50388083 E339277

### How to Order a Connector (please choose one code per position, below)

Part Number Coding: **H4 C F C 4 D M S**

Product Line	Product Type	Gender	Connector Type	Cable Size		Certifications	Packaging	Contact Type	
H4 (H4 series)	C (Connector)	F Female	C Cable gland Tool unlock	0	Without Contact	D Dual UL/TÜV Certified	I	1 pc/bag	
				2	2.5mm <sup>2</sup> / 14AWG		C	100 pcs/bag	
				4*2	4.0mm <sup>2</sup> /12 AWG & 6.0mm <sup>2</sup> /10AWG(S&F)			M	500 pcs/bag
		M Male	D Cable gland Manually unlock	4*2	4.0mm <sup>2</sup> /12AWG(CF)	T*3 Only TÜV Certified	(Blank)		CF
				6	6.0mm <sup>2</sup> / 10AWG(CF)				

\*2. When ordering a S&F contact, please use cable size order code "4" for both 4.0mm<sup>2</sup>/ 12AWG & 6.0mm<sup>2</sup>/ 10AWG.

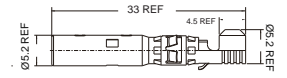
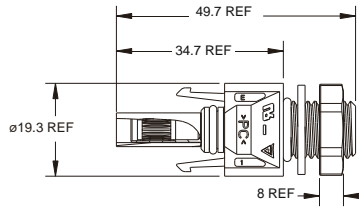
\*3. When ordering cable connectors, please use certifications order code "T" for Manually unlock type cable gland connectors.

\*1: when ordering S&F contacts in reel vision, page 7

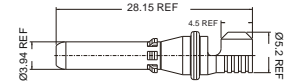
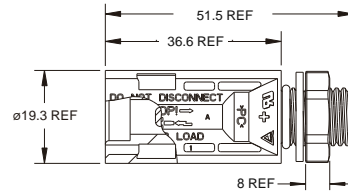
\*Crimping Tool, Page 15  
Sealing caps, Wrench Tools, page 16

### H4 series PV Panel Connector



Part Number: H4CF.....



Part Number: H4CM.....



#### Technical Data

Rated voltage	1500V DC per UL 6703 1500V DC per TÜV IEC62852	Type of termination	Crimping
Rated current (per IEC 62852, 85°C)	25A (2.5mm <sup>2</sup> / 14AWG) 35A (4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> / 10AWG)	Unlock options	Tool unlock type(TÜV/UL) or Manually unlock type(TÜV only)
Rated current (per UL 6703)	15A (2.5mm <sup>2</sup> / 14AWG) 20A (4.0mm <sup>2</sup> / 12AWG) 30A (6.0mm <sup>2</sup> / 10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated impulse voltage	16kV(1000V DC per TÜV)	Ambient temperature range	-40°C to +85°C
Typical contact resistance	≤0.3mΩ	Upper limiting temperature	+120°C
Contact material	Tin-plated Copper Alloy	Flame class	UL 94 V-0
Contact system options	Cold Formed (CF) or Stamped & Formed (S&F)*1	Overvoltage category/Pollution degree	CAT III/2
Insulation material	PC/PA	Material safety	RoHS, REACH compliant
		Approvals:	
		TÜV certified to IEC 62852	
		UL certified to UL6703	
			R50388083 E339277

#### How to Order a Connector (please choose one code per position, below)

Part Number Coding: **H4 C F M 4 D M S**

Product Line	Product Type	Gender	Connector type	Cable Size	Certifications	Packaging	Contact Type
<b>H4</b> (H4 series)	<b>C</b> (Connector)	<b>F</b> Female	<b>B</b> Bulkhead M12 Manually unlock	<b>0</b> Without Contact	<b>D</b> Dual UL/TÜV Certified	<b>I</b> 1 pc/bag	<b>S</b> S&F
			<b>M</b> Bulkhead M12 Tool unlock	<b>2</b> 2.5mm <sup>2</sup> / 14AWG			
		<b>M</b> Male	<b>N</b> Bulkhead M14 Tool unlock	<b>4</b> *2 4.0mm <sup>2</sup> / 12 AWG & 6.0mm <sup>2</sup> / 10AWG(S&F)	<b>T</b> *3 Only TÜV Certified	<b>C</b> 100 pcs/bag	<b>(Blank)</b> CF
				<b>6</b> 6.0mm <sup>2</sup> / 10AWG(CF)			

\*2. When ordering a S&F contact, please use cable size order code "4" for both 4.0mm<sup>2</sup> / 12AWG & 6.0mm<sup>2</sup> / 10AWG.

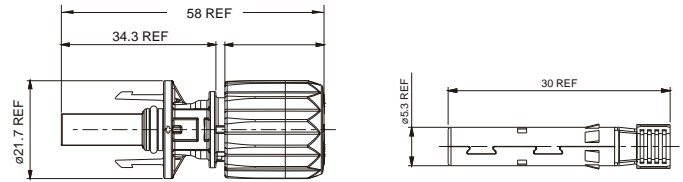
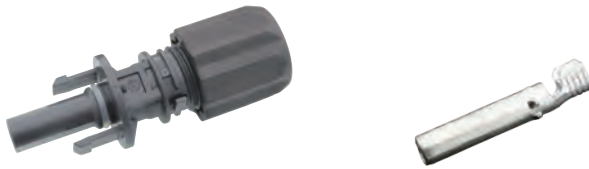
\*3. When ordering panel connectors, please use certifications order code "T" for Manually unlock type bulkhead M12 connectors.

\*1: when ordering S&F contacts in reel vision, page 7

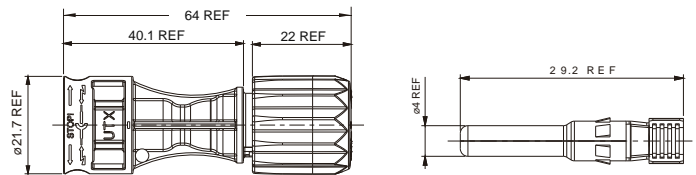
\*Crimping Tool, Page 15  
Sealing caps, Wrench Tools, page 16

### UTX series PV Cable Connector

Part Number: UTXCF.....



Part Number: UTXCM.....



### Technical Data

Rated voltage	1500V DC per UL 6703 1500V DC per TÜV IEC62852 1500V DC per JET IEC61730	Cable OD range	Ø5.3mm – 7.65mm
Rated current (per IEC 62852,85°C)	25A ( 2.5mm <sup>2</sup> /14AWG) 35A ( 4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> /10AWG)	Unlock options	Tool unlock type(TÜV/UL/JET) or Manually unlock type(TÜV only)
Rated current (per UL6703)	15A ( 2.5mm <sup>2</sup> /14AWG) 20A ( 4.0mm <sup>2</sup> / 12AWG) 30A (6.0mm <sup>2</sup> /10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated impulse voltage	16kV(1500V DC per TÜV)	Ambient temperature range	-40°C to +85°C
Typical contact resistance	≤0.3mΩ	Upper limiting temperature	+105°C
Contact material	Tin-plated Copper Alloy	Flame class	UL 94 V-0
Contact system options	Cold Formed (CF) or Stamped & Formed (S&F)*1	Overvoltage category/Pollution degree	CATIII/2
Insulation material	PPE/PA	Material safety	RoHS, REACH compliant
Type of termination	Crimping	Approvals:	TÜV certified to IEC 62852 UL certified to UL6703 JET certified to IEC61730



### How to Order a Connector (please choose one code per position, below)

Part Number Coding: UTX C F A 4 A M

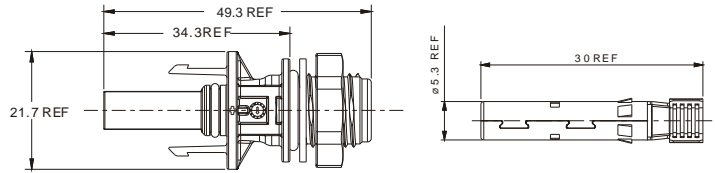
Product Line	Product Type	Gender	Contact type	Cable Size	Certifications	Packaging
UTX (UTX series)	C (Connector)	F Female	A Stamped and Formed contact (S&F)	0 Without Contact	A Triple UL/TÜV/JET Certified	I 1 pc/bag
				2 2.5mm <sup>2</sup> / 14AWG		C 100 pcs/bag
		M Male	B Cold Formed contact (CF)	4*2 4.0mm <sup>2</sup> /12 AWG & 6.0mm <sup>2</sup> /10AWG(S&F)	B*3 Only TÜV Certified	M 400 pcs/bag
				6 6.0mm <sup>2</sup> / 10AWG(CF)		

\*2, When ordering a S&F contact, please use cable size order code "4" for both 4.0mm<sup>2</sup>/ 12AWG & 6.0mm<sup>2</sup>/ 10AWG.  
\*3, When ordering cable connectors, please use certifications order code "B" for Manually unlock type cable gland connectors.

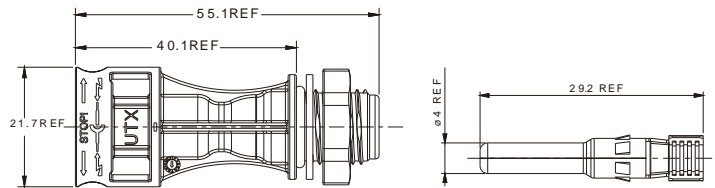
\*1: when ordering S&F contacts in reel vision, page 8  
\*Crimping Tool, Page 15  
Sealing caps, Wrench Tools, page 16

### UTX series PV Panel Connector



Part Number: UTX.....



Part Number: UTX.....



#### Technical Data

Rated voltage	1500V DC per UL 6703 1500V DC per TÜV IEC62852	Type of termination	Crimping
Rated current (per IEC 62852, 85°C)	25A (2.5mm <sup>2</sup> /14AWG) 35A (4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> /10AWG)	Unlock options	Tool unlock type(TÜV/UL) or Manually unlock type(TÜV only)
Rated current (per UL6703)	15A (2.5mm <sup>2</sup> /14AWG) 20A (4.0mm <sup>2</sup> / 12AWG) 30A (6.0mm <sup>2</sup> /10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated impulse voltage	16kV(1500V DC per TÜV)	Ambient temperature range	-40°C to +85°C
Typical contact resistance	≤0.3mΩ	Upper limiting temperature	+105°C
Contact material	Tin-plated Copper Alloy	Flame class	UL 94 V-0
Contact system options	Cold Formed (CF) or Stamped & Formed (S&F)*1	Overvoltage category/Pollution degree	CATIII/2
Insulation material	PPE/PA	Material safety	RoHS, REACH compliant
		Approvals: TÜV certified to IEC 62852 UL certified to UL6703	 R50340393  E469330

#### How to Order a Connector (please choose one code per position, below)

Part Number Coding: **UTX** **M** **F** **A** **4** **A** **M**

Product Line	Product Type	Gender	Contact Type	Cable Size		Certifications	Packaging
<b>UTX</b> (UTX series)	<b>M</b> Bulkhead M12	<b>F</b> Female	<b>A</b> Stamped and Formed contact (S&F)	<b>0</b>	Without Contact	<b>A</b> Triple UL/TÜV/JET Certified	<b>I</b> 1 pc/bag
				<b>2</b>	2.5mm <sup>2</sup> / 14AWG		<b>C</b> 100 pcs/bag
	<b>N</b> Bulkhead M14	<b>M</b> Male	<b>B</b> Cold Formed contact (CF)	<b>4</b> *2	4.0mm <sup>2</sup> /12 AWG & 6.0mm <sup>2</sup> /10AWG(S&F)	<b>B</b> *3 Only TÜV Certified	
				<b>6</b>	6.0mm <sup>2</sup> / 10AWG(CF)		

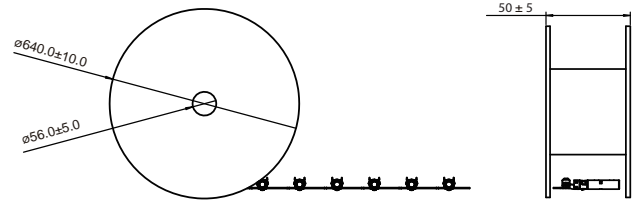
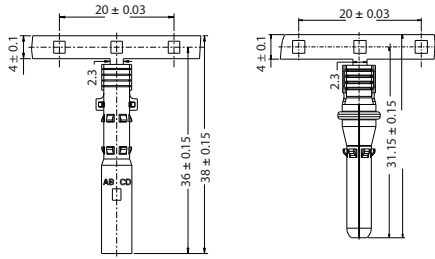
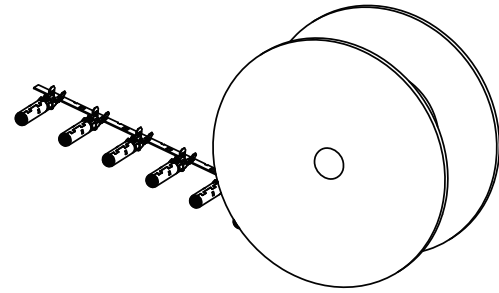
\*2. When ordering a S&F contact, please use cable size order code "4" for both 4.0mm<sup>2</sup>/ 12AWG & 6.0mm<sup>2</sup>/ 10AWG.

\*3. When ordering panel connectors, please use certifications order code "B" for Manually unlock type bulkhead connectors.

\*1: when ordering S&F contacts in reel vision, page 8

\*Crimping Tool, Page 15  
Sealing caps, Wrench Tools, page 16

**H4 Stamped and Formed Contacts for automatic assembly use**



**Technical Data**

Rated voltage	1500V DC per UL 6703 1000V DC per TÜV IEC62852	Cable OD range	Ø4.5mm - 7.8mm
Rated current (per IEC 62852, 85°C)	25A (2.5mm <sup>2</sup> /14AWG) 35A (4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> /10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated current (per UL 6703)	15A (2.5mm <sup>2</sup> /14AWG) 20A (4.0mm <sup>2</sup> / 12AWG) 30A (6.0mm <sup>2</sup> /10AWG)	Ambient temperature range	-40°C to +85°C
Rated impulse voltage	12kV(1000V DC per TÜV)	Upper limiting temperature	+120°C
Typical contact resistance	≤0.3mΩ	Flame class	UL 94 V-0
Contact material	Tin-plated Copper Alloy	Overshoot category/Pollution degree	CAT III/2
Type of termination	Crimping	Material safety	RoHS, REACH compliant

Approvals:  
**TÜV** certified to IEC 62852  
**UL** certified to UL6703

R50388083

E339277

**How to Order S&F contacts on Reels (please choose one code per position, below)**

Part Number Coding: H4 F F 4 R

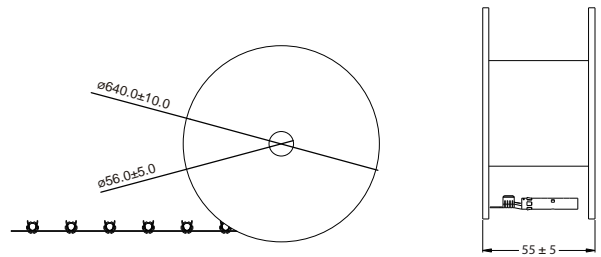
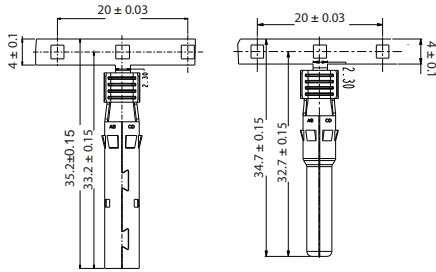
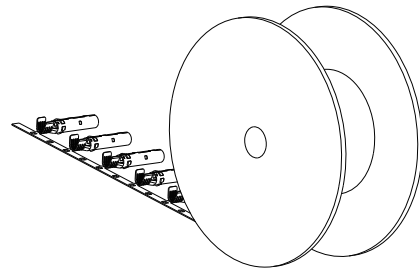
Product Line	Product Type	Gender	Cable Size	Packaging
<b>H4</b> (H4 series)	<b>F</b> (S&F contact)	<b>F</b> Female	2 2.5mm <sup>2</sup> / 14AWG	<b>R</b> 2000pcs/reel
		<b>M</b> Male	4 4.0mm <sup>2</sup> /12 AWG & 6.0mm <sup>2</sup> /10AWG	

Note: if ordering contacts in 2000pcs/reel version, need to order contact and plastic housing separately. Contact's ordering code refers to this table, plastic housing should be chosen as H4CFC0DM for female housing and H4CMC0DM for male housing.

\*H4 S&F contacts in Reel vision is designed for fully automatic assembly.  
 \*Crimping Tool, Page 15



**UTX Stamped and Formed Contacts for automatic assembly use**



**Technical Data**

Rated voltage	1500V DC per UL 6703 1500V DC per TÜV IEC62852 1500V DC per JET IEC61730	Cable OD range	Ø5.3mm – 7.65mm
Rated current (per IEC 62852, 85°C)	25A ( 2.5mm <sup>2</sup> /14AWG) 35A ( 4.0mm <sup>2</sup> / 12AWG) 45A (6.0mm <sup>2</sup> /10AWG)	Ingress protection rating	IP68, mated (1 m, 1 h) & IP2X touch-proof, unmated
Rated current (per UL6703)	15A ( 2.5mm <sup>2</sup> /14AWG) 20A ( 4.0mm <sup>2</sup> / 12AWG) 30A (6.0mm <sup>2</sup> /10AWG)	Ambient temperature range	-40°C to +85°C
Rated impulse voltage	16kV(1500V DC per TÜV)	Upper limiting temperature	+105°C
Typical contact resistance	≤0.3mΩ	Flame class	UL 94 V-0
Contact material	Tin-plated Copper Alloy	Overvoltage category/Pollution degree	CATIII/2
Type of termination	Crimping	Material safety	RoHS, REACH compliant

Approvals:  
TÜV certified to IEC 62852  
UL certified to UL6703  
JET certified to IEC61730



R50340393

E469330

B14T0080

**How to Order S&F contacts on Reels (please choose one code per position, below)**

Part Number Coding: **UTX** **F** **F** **4** **R**

Product Line	Product Type	Gender	Cable Size	Packaging
<b>UTX</b> (UTX series)	<b>F</b> (S&F contact)	<b>F</b> Female	<b>2</b> 2.5mm <sup>2</sup> / 14AWG	<b>R</b> 2000pcs/reel
		<b>M</b> Male	<b>4</b> 4.0mm <sup>2</sup> /12 AWG & 6.0mm <sup>2</sup> /10AWG	

Note: if ordering contacts in 2000pcs/reel version, need to order contact and plastic housing separately. Contact's ordering code refers to this table, plastic housing should be chosen as UTXCFA0AM for female housing and UTXCMA0AM for male housing.

\* UTX S&F contacts in Reel vision is designed for fully automatic assembly.

\* Crimping Tool, Page 15

### Crimping Tool

- \* Both machined contacts, stamped and formed contacts can be crimped.
- \* Apply to cable sizes of 2.5mm<sup>2</sup>/ 14AWG, 4.0mm<sup>2</sup>/12 AWG, 6.0mm<sup>2</sup>/10AWG.
- \* The die set and locator can be ordered separately.
- \* For flexible cable use only.



#### Crimping Tool

Appearance	Order number <sup>*1</sup>	Cable Range	Suitable for type of contacts			
			H4 S&F	H4 CF	UTX S&F	UTX CF
	H4TC0003	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG	x			
	UTXTC0003	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG			x	
	UTXTC0004	4.0mm <sup>2</sup> / 12AWG ;6.0mm <sup>2</sup> /10 AWG 10.0mm <sup>2</sup> /8AWG		x		x
	UTXTC0005 <sup>*2</sup>	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG		x		x

\*1 Die set and locator are included in the crimping tool.

\*2 UTXTC0005 is specifically used for cable size of 4.0mm<sup>2</sup>/12 AWG&6.0mm<sup>2</sup>/10AWG with Amphenol's H4 and UTX special version of 4&6 mm<sup>2</sup> Cold Formed contacts.

#### Individual Parts to be ordered separately

Appearance Locators & Crimping dies	Order number	Designation	Cable Range	Suitable for type of contacts			
				H4 S&F	H4 CF	UTX S&F	UTX CF
	H4TP0002	Locator	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG	x			
	UTXTP0002	Locator	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG			x	
	UTXTP0004	Double-Locator	4.0mm <sup>2</sup> / 12AWG ;6.0mm <sup>2</sup> /10 AWG 10.0mm <sup>2</sup> /8AWG		x		x
	UTXTP0003 <sup>*3</sup>	Double-Locator	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12AWG 6.0mm <sup>2</sup> /10AWG		x		x
	UTXTD0003	Crimping Die	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG	x		x	
	UTXTD0005	Crimping Die	4.0mm <sup>2</sup> / 12AWG ;6.0mm <sup>2</sup> /10 AWG 10.0mm <sup>2</sup> /8AWG		x		x
	UTXTD0004 <sup>*3</sup>	Crimping Die	2.5mm <sup>2</sup> / 14AWG ;4.0mm <sup>2</sup> /12 AWG 6.0mm <sup>2</sup> /10AWG		x		x

\*3 Locator UTXTP0003 and crimping die UTXTD0004 is specifically used for cable size of 4.0mm<sup>2</sup>/12 AWG&6.0mm<sup>2</sup>/10AWG with Amphenol's H4 and UTX special version of 4&6 mm<sup>2</sup> Cold Formed contacts.

**Tools and Accessories**

**Tools and Accessories**



Strip Tool

**Order number:** H4TS0000

**Description**

Designed with a locator to set a certain striped cable length, guarantees a consistent strip of PV cable, this strip tool is suitable for Cable OD range of 14AWG to 10AWG, properly suited for solar connector's assembly.



Wrench Tool for H4 Connectors

**Order number:** H4TW0001

**Description**

H4 Wrench Tool is used to tighten the caps of H4 Cable connectors and to unlock the locked H4 series connectors.



Wrench Tool for H4-R connectors

**Order number:** H4TW0003

**Description**

H4-R Wrench Tool is used to tighten the caps of H4-R series Cable connectors and to unlock the locked H4 series connectors.



Wrench Tool for UTX connectors

**Order number:** UTXTWA001

**Description**

UTX Wrench Tool is used to tighten the caps of UTX Cable connectors and to unlock the locked UTX series connectors.



Sealing caps for connectors

**Order number:** UTXPF      UTXPM

**Description**

Sealing caps for tight sealing of the unplugged connectors, suitable for Amphenol's H4 and UTX series connectors, preventing moisture and dust from getting into the unplugged connectors.



Universal Unlock Tool

**Order number:** H4TU0000

**Description**

This universal unlock tool is used to unlock mated connectors, compatible with all Amphenol's H4 series and UTX series connectors, also suited for MC4 connectors.



Inspection Tool for UTX connectors

**Order number:** UTXTT0001

**Description**

This inspection tool is for testing the UTX contact's insertion depth, to control the correct and proper engagement of the UTX contact in the insulation.



Inspection Tool for H4 connectors

**Order number:** H4TT0001

**Description**

This inspection tool is for testing the H4 contact's insertion depth, to control the correct and proper engagement of the H4 contact in the insulation.

# Amphenol Industrial Sustainable Technologies

## Contact us

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