



APsystems (USA) Accessories

Rev 1.5

ALTENERGY POWER SYSTEM Inc.
usa.APsystems.com

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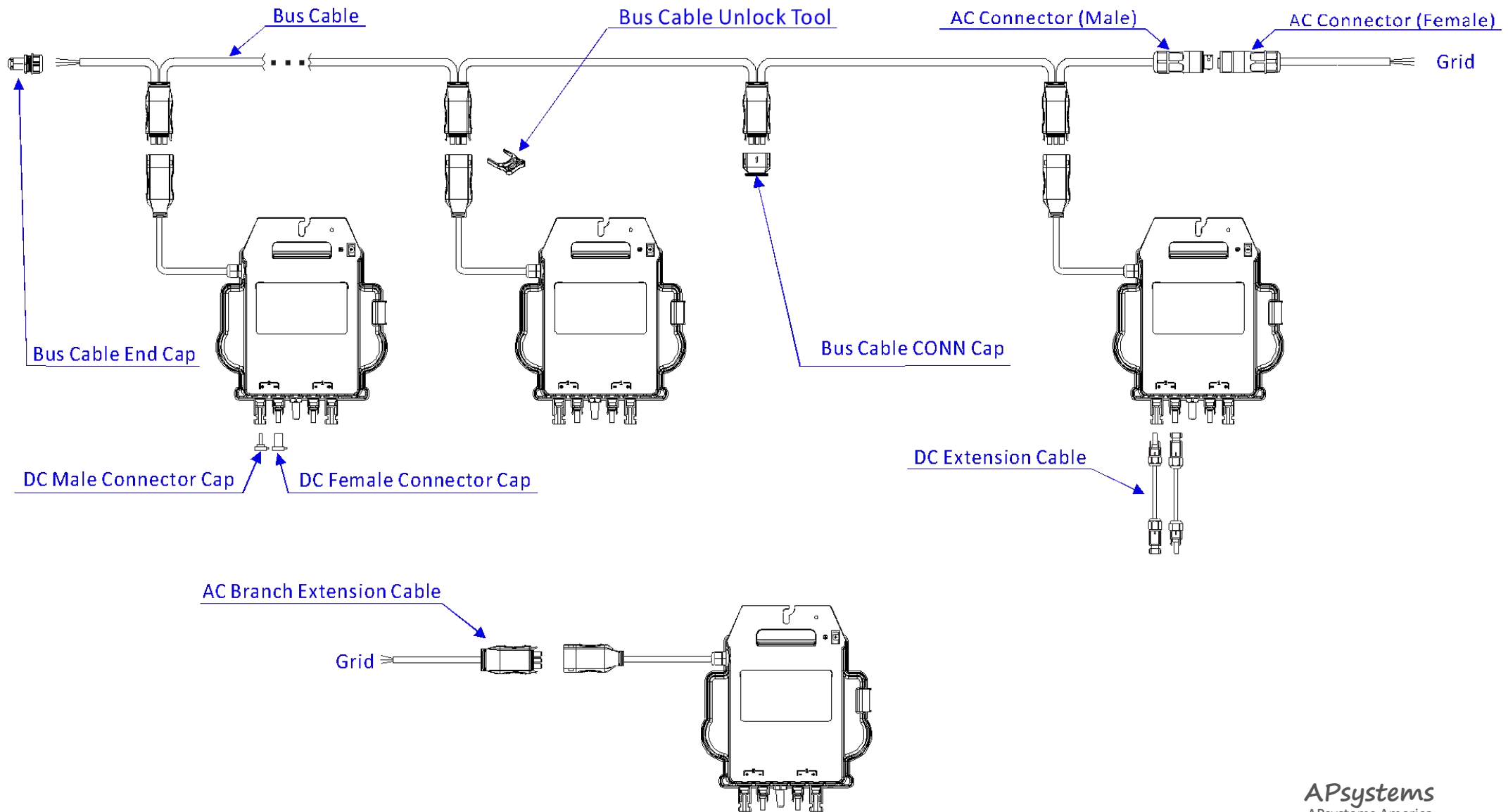
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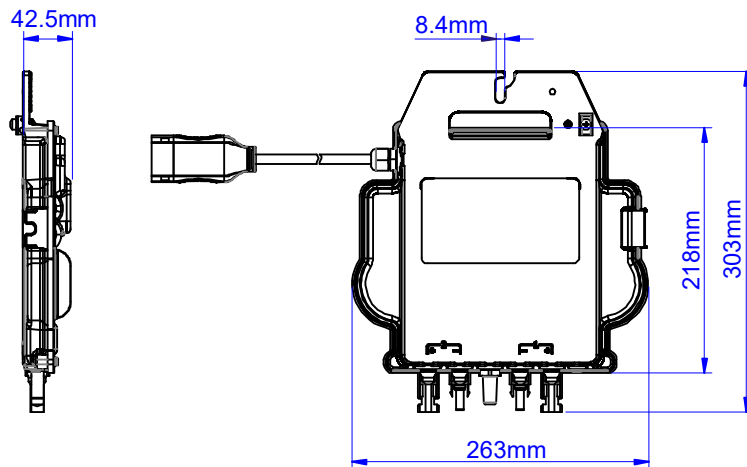
DS3 Series Accessories

1. Wiring Diagram

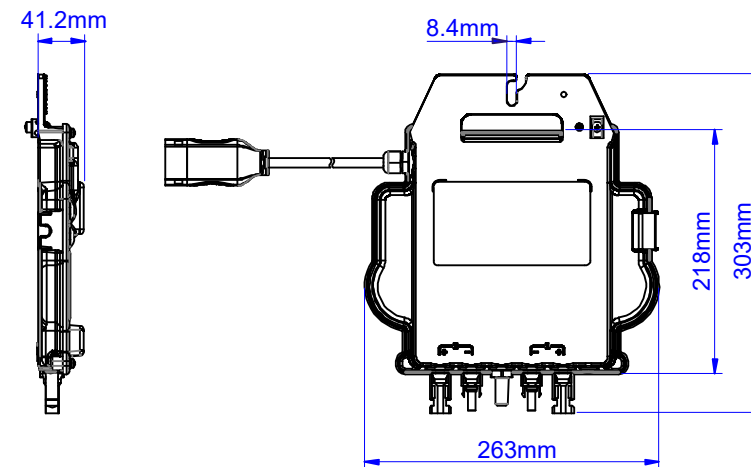


2. Dimensions

DS3 Dimensions



DS3-L/DS3-S Dimensions



3. Accessories Summary

Region	Accessories									
	Bus Cable (Mandatory)	AC Branch Extension Cable (Optional)	Bus Cable End Cap (Mandatory)	Bus Cable CONN Cap (Optional)	Bus Cable Unlock Tool (Mandatory)	DC Male Connector Cap (Optional)	DC Female Connector Cap (Optional)	AC Connector (Male) (Optional)	AC Connector (Female) (Optional)	DC Extension Cable (Optional)
America -NA (117001) -L-NA (118001) -S-NA (119001)	2322301303_Split Phase Bus Cable (12AWG,TC,2m) (See Pic. A)	2334075242_Split Phase Br. Ext-cable (18AWG,TC, 2m) (See Pic. B)	2060700017_ 3-wire Bus Cable End Cap (See Pic. C)	2061702007_ Bus Cable Y-CONN Cap (See Pic. D)	2352000001_ Y Bus Cable Unlock Tool (See Pic. E)	2060401006_ DC Male Connector Cap (MC4) (See Pic. F)	2060402006_ DC Female Connector Cap (MC4) (See Pic. G)	2300931212_ AC Connector (3 core, two seals, male) (See Pic. H)	2300932212_ AC Connector (3 core, two seals, female) (See Pic. I)	2310310274_1m DC Extension Cable (MC4) 2310360214_2m DC Extension Cable (MC4) 2310360224_3m DC Extension Cable (MC4) (See Pic. J)
	2322600403_Split Phase Bus Cable (10AWG,TC,2.4m) (See Pic. A)									

Notes: The cables in this table are recommended by APsystems, and the O.D. and length of the cable can be customized according to customer needs.

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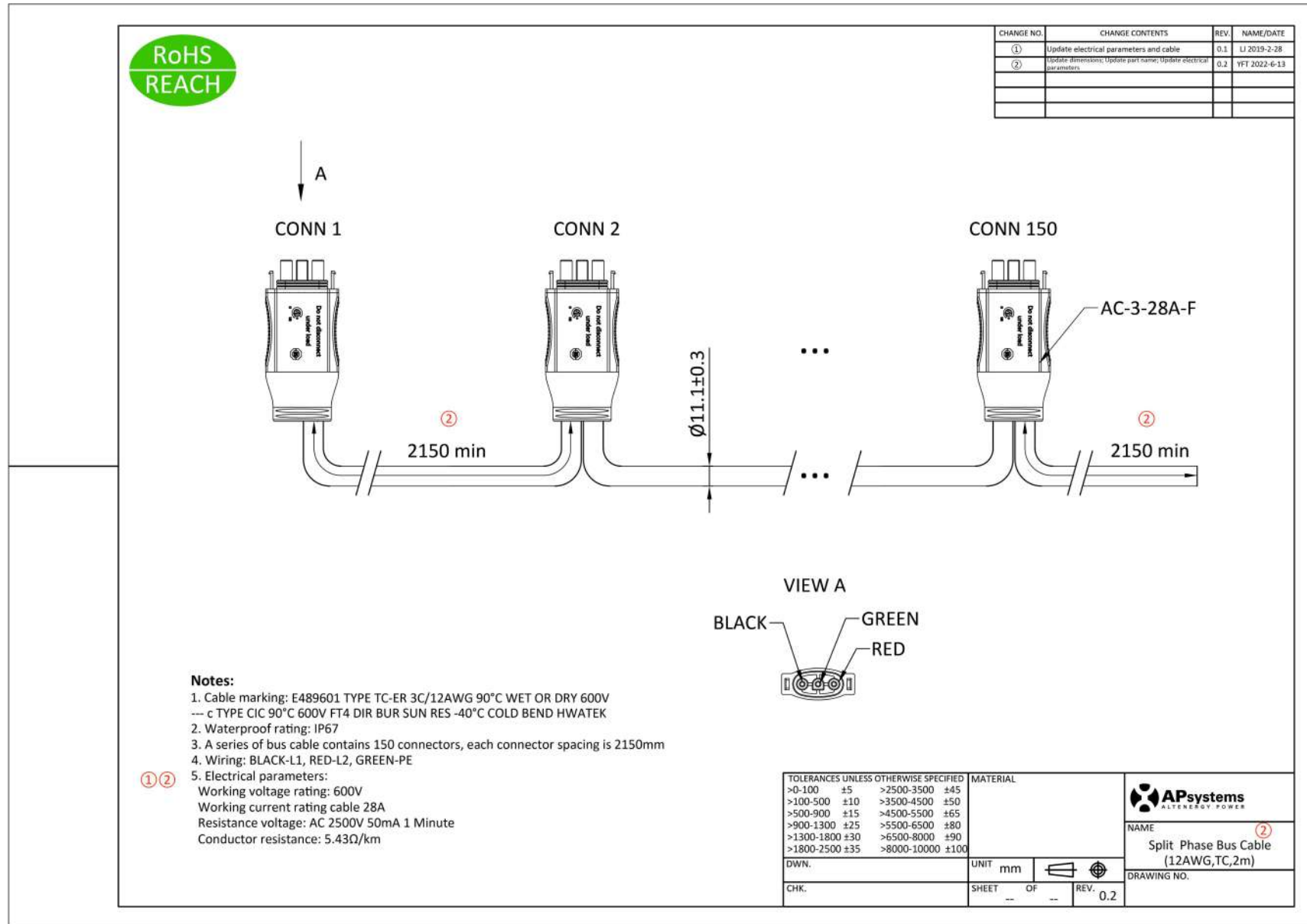
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4. Physical Picture

Bus Cable	AC Branch Extension Cable	Bus Cable End Cap	Bus Cable CONN Cap	Bus Cable Unlock Tool	DC Male Connector Cap
 <p data-bbox="199 576 268 600">Pic. A</p>	 <p data-bbox="546 576 616 600">Pic. B</p>	 <p data-bbox="891 576 960 600">Pic. C</p>	 <p data-bbox="1240 576 1310 600">Pic. D</p>	 <p data-bbox="1588 576 1657 600">Pic. E</p>	 <p data-bbox="1935 576 2004 600">Pic. F</p>
DC Female Connector Cap	AC Connector (Male)	AC Connector (Female)	DC Extension Cable		
 <p data-bbox="199 995 268 1019">Pic. G</p>	 <p data-bbox="546 995 616 1019">Pic. H</p>	 <p data-bbox="898 995 967 1019">Pic. I</p>	 <p data-bbox="1240 995 1310 1019">Pic. J</p>		

5. Accessories information

2322301303_Split Phase Bus Cable (12AWG,TC,2m)

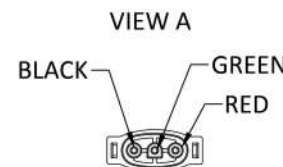
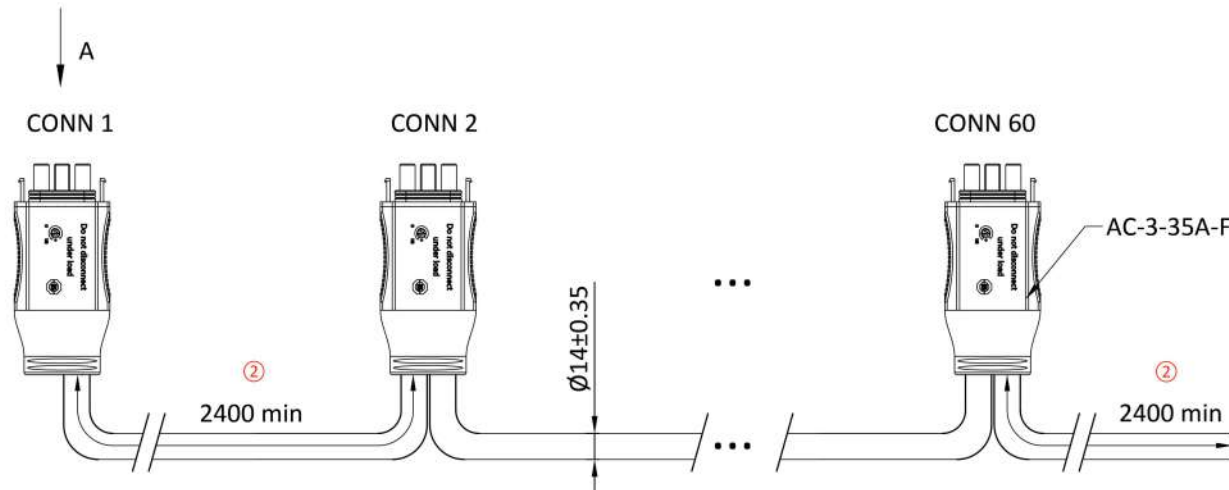


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2322600403_Split Phase Bus Cable (10AWG,TC,2.4m)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Update number of connectors	0.1	YFT 2021-9-24
②	Update dimensions; Update electrical parameters	0.2	YFT 2022-4-15
③	Update part name	0.3	YFT 2022-6-13
④	Update electrical parameters	0.4	YFT 2022-6-30



Notes:

1. Cable marking: E489601 (UL)TYPE TC-ER 3C/10AWG 90°C WET OR DRY 600V
 --- c(UL) TYPE CIC 90°C 600V FT1 XLPE 3C/10AWG FT4 DIR BUR SUN RES COLD BEND HWATEK CE
2. Waterproof rating: IP67
3. A series of bus cable contains 60 connectors, each connector spacing is 2400mm
4. Wiring: BLACK-L1, RED-L2, GREEN-PE
5. Electrical parameters:
 Working voltage rating: 600V
 Working current rating cable 35A
 Resistance voltage: AC 2500V 50mA 1 Minute
 Conductor resistance: 3.409Ω/km

①

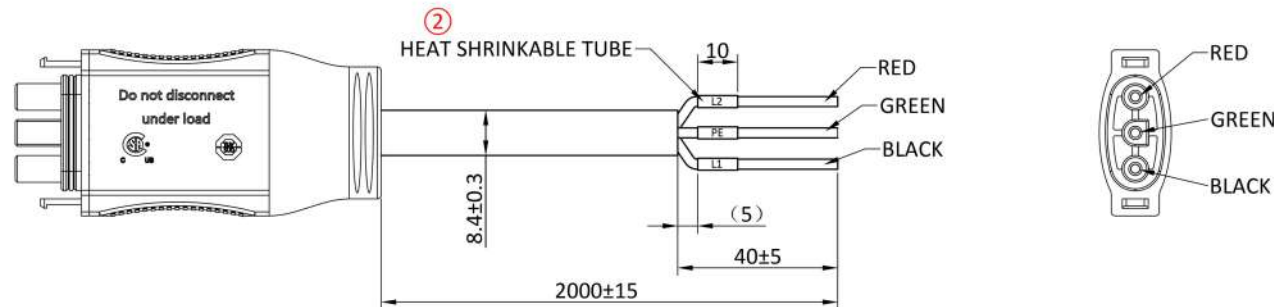
② ④

TOLERANCES UNLESS OTHERWISE SPECIFIED			MATERIAL		
>0-100	±5	>2500-3500	±45		
>100-500	±10	>3500-4500	±50		Split Phase Bus Cable (10AWG,TC,2.4m) ③
>500-900	±15	>4500-5500	±65		DRAWING NO.
>900-1300	±25	>5500-6500	±80		
>1300-1800	±30	>6500-8000	±90		
>1800-2500	±35	>8000-10000	±100		
DWN.	UNIT	mm			
CHK.	SHEET	OF	REV.	0.4	

2334075242_ Split Phase Br. Ext-cable (18AWG,TC, 2m)






CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Update electrical parameters and cable	0.1	LI 2019-2-28
②	Change the label to heat shrinkable tube	0.2	YFT 2020-5-22
③	Update part name; Update electrical parameters	0.3	YFT 2022-6-13



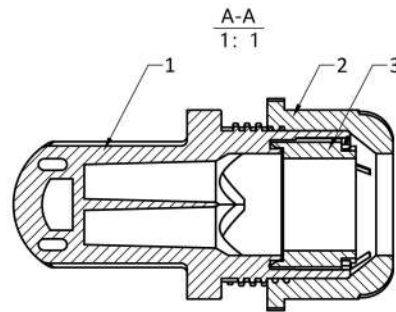
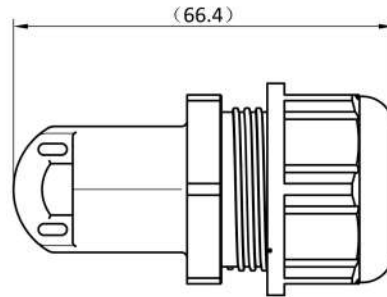
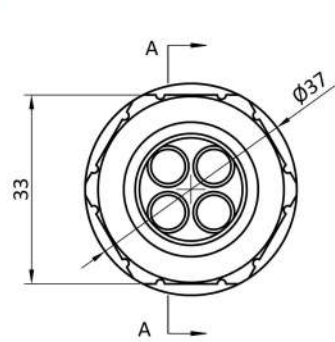
WIRE RUN LIST		
AWG	COLOR	LABEL
18	BLACK	L1
	RED	L2
	GREEN	PE

Notes:

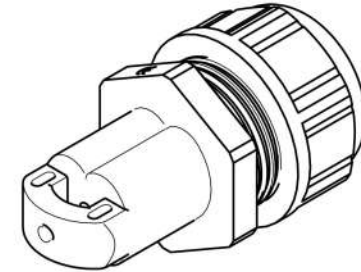
- ① 1. Cable: E489601 TYPE TC-ER 3C/18AWG 90°C WET OR DRY 600V OIL RES
--- c TYPE CIC 90°C 600V FT4 DIR BUR SUN RES -40°C COLD IMPACT AND COLD BEND HWATEK
2. Waterproof rating: IP67;
3. Wiring: BLACK-L1, RED-L2, GREEN-PE;
- ①③ 4. Electrical parameters:
Working voltage rating: 600V
Working current rating cable 10A
Resistance voltage: AC 2500V 50mA 1 Minute
Conductor resistance: 21.8Ω/km

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		 NAME Split Phase Br. Ext-cable (18AWG,TC,2m)
>0-100 ±5	>2500-3500 ±45			
>100-500 ±10	>3500-4500 ±50			
>500-900 ±15	>4500-5500 ±65			
>900-1300 ±25	>5500-6500 ±80			
>1300-1800 ±30	>6500-8000 ±90			
>1800-2500 ±35	>8000-10000 ±100			
DWN.	UNIT mm			DRAWING NO.
CHK.	SHEET -- OF --	REV. 0.3		

2060700017_ 3-wire Bus Cable End Cap



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Change the name	0.2	ZZH 2023-6-9



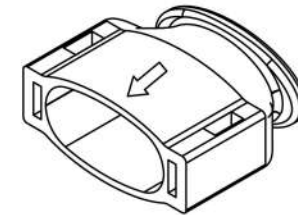
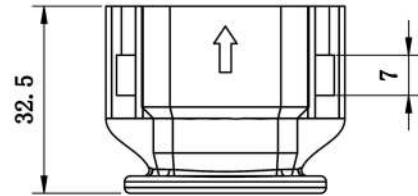
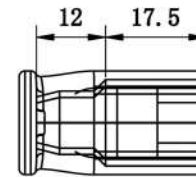
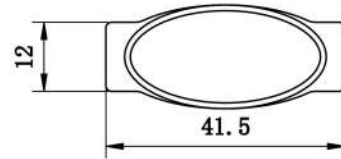
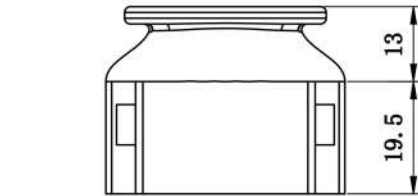
- Notes:
 1. Cable Size: 10~16mm;
 2. Nut Torque: 3.0~5.0N·m;
 3. Waterproof Rating: IP68;
 4. Operating Temperature Range: -40~105°C;

3	Sealing bushing		Rubber	1	
2	Round nut		PA6	1	
1	Joint body		PA6	1	
NO.	NAME	TYPE	MAT.	QTY.	REMARK
TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		 NAME ① 3-wire Bus Cable End Cap	
±0.5					
DWN.	UNIT	mm			
CHK.	SHEET	OF	REV.	DRAWING NO.	
	--	--	2.1	-	


2061702007_Bus Cable Y-CONN Cap



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



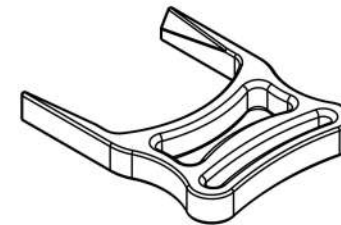
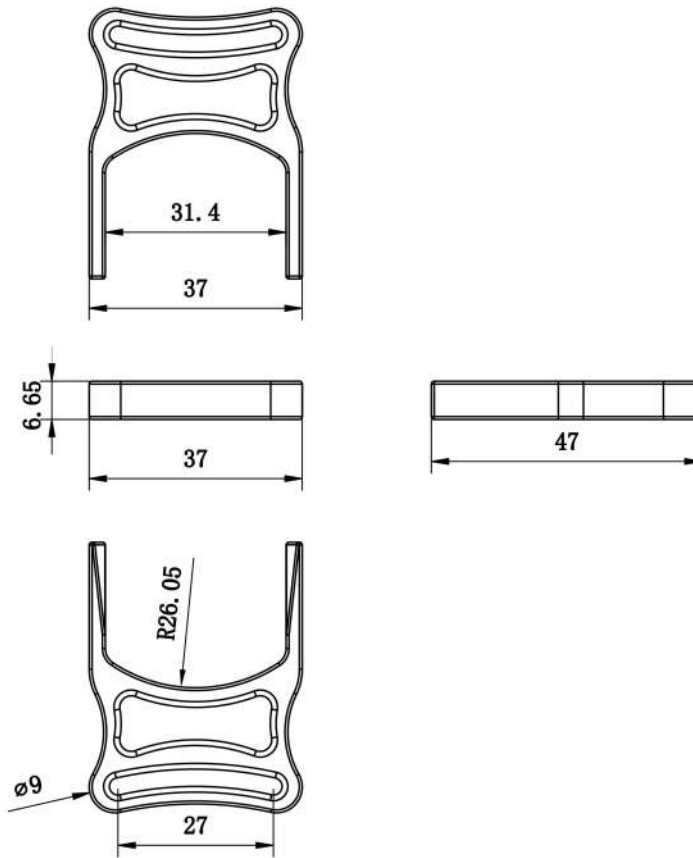
Notes:
1. Type: DU00050

TOLERANCES UNLESS OTHERWISE SPECIFIED > 0.5~3: ±0.15 > 3~6: ±0.2 > 6~30: ±0.5 > 30~120: ±0.8 > 120~315: ±1.2 ANGLES: ±1°	MATERIAL		 NAME Bus Cable Y-CONN Cap
	PPE		
DWN.	UNIT	mm	DRAWING NO.
CHK.	SHEET	OF	REV.
			0.0


2352000001_Y Bus Cable Unlock Tool

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CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



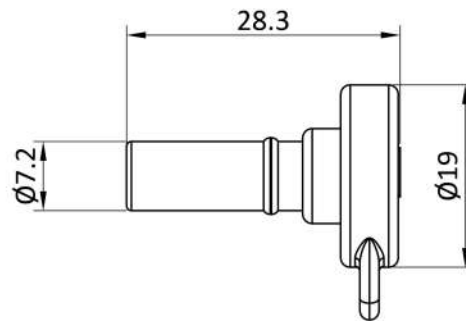
Notes:
1.Type: PPO

TOLERANCES UNLESS OTHERWISE SPECIFIED > 0.5~3: ±0.15 > 3~6: ±0.2 > 6~30: ±0.5 > 30~120: ±0.8 > 120~315: ±1.2 ANGLES: ±1°	MATERIAL PPE		 NAME Y Bus Cable Unlock Tool
	DWN.	UNIT mm	
CHK.	SHEET -- OF --	REV. 0.0	DRAWING NO.


2060401006_DC Male Connector Cap (MC4)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



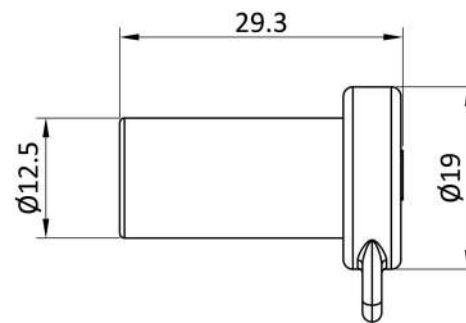
- Notes:
 1. Type: PV-SVK4;
 2. Degree of protection: IP67;

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.5	MATERIAL TPE	 NAME DC Male Connector Cap (MC4)
DWN.	UNIT mm	
CHK.	SHEET OF REV. 0.0	DRAWING NO. -



2060402006_DC Female Connector Cap (MC4)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



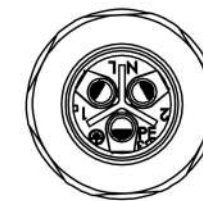
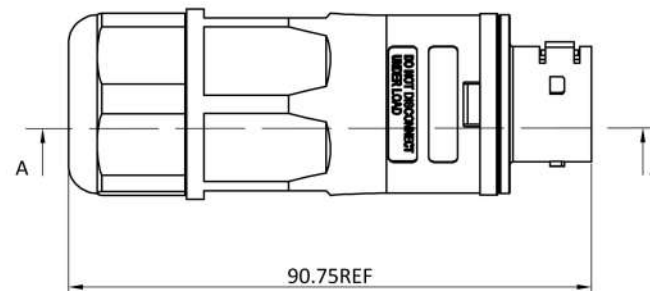
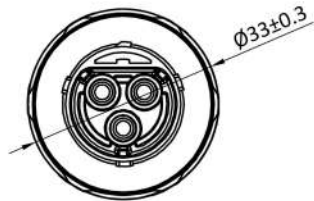
- Notes:
 1. Type: PV-BVK4;
 2. Degree of protection: IP67;

TOLERANCES UNLESS OTHERWISE SPECIFIED ±0.5		MATERIAL TPE		 NAME DC Female Connector Cap (MC4)	
DWN.	UNIT mm			DRAWING NO.	
CHK.	SHEET -- OF --	REV.	0.0	-	

2300931212_AC Connector (3 core, two seals, male)

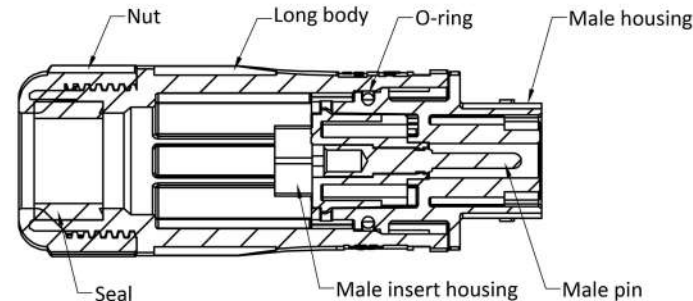


CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add seal, update cable O.D; update current; update name.	1.0	YFT 2022-8-9



Single-phase connect to L/N/PE
Three-phase connect to 1/2/3

A-A
1: 1



① Two seals
Seal inner diameter $\phi 17$ (black)
For cable size: 4mm² or 10AWG

Seal inner diameter $\phi 13$ (grey)
For cable size: 2.5mm² or 12AWG

Notes:

Electrical

1. Rated Voltage: 250V AC;
2. Rated Impulse Voltage: 4000V;
3. Rated Current: CSA 32A, TUV 35A;
4. Contact Resistance: $\leq 5m\Omega$;
5. Insulation Resistance: $\geq 500M\Omega$;

Mechanical:

1. Mating Cycle: ≥ 500 ;
2. Cable Retention Force: $\geq 120N$;
3. Pin Retention Force: $\geq 80N$;
4. Cable O.D: $10 \sim 15mm$;
5. Wire Size: $\leq 6.0mm^2$ (10AWG);

Environmental:

1. Waterproof Rate: IP68 1m24H;
2. Application Temperature: $-40^{\circ}C \sim +105^{\circ}C$;
3. Flaming Level: UL94-V0;

Material:

1. Plastic Material: PC&PBT(f1)
2. Pin Material: Copper Alloy, Silver Plating;
3. Sealing Material: Silicone Rubber;
4. Screw Material: SUS, Torque 0.8N.m

Others:

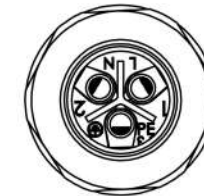
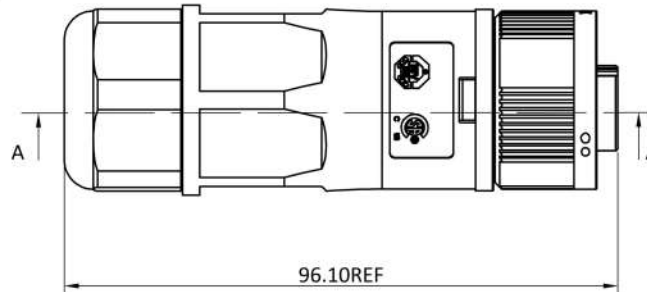
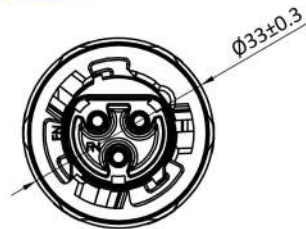
1. Type : EN034-2103-101;

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL	
X.: ± 0.20	X*: $\pm 2.00^{\circ}$	 NAME AC Connector (3 core,two seals,male) DRAWING NO. -	
.X: ± 0.10	.X*: $\pm 1.00^{\circ}$		
.XX: ± 0.05	.XX*: $\pm 0.50^{\circ}$		
.XXX: ± 0.03	.XXX*: $\pm 0.30^{\circ}$		
DWN.	UNIT mm		
CHK.	SHEET OF	REV. 1.0	

2300932212_AC Connector (3 core, two seals, female)

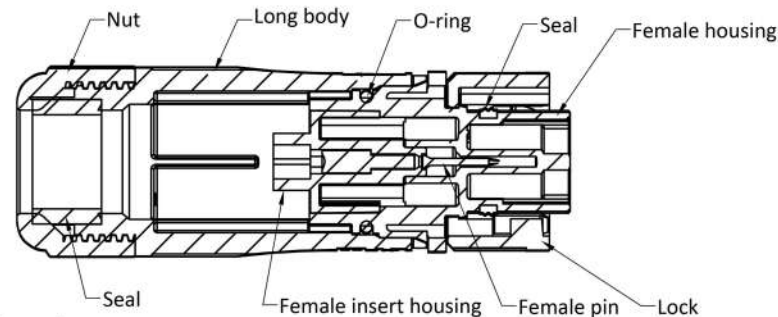


CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add seal; update Cable O.D.; update current; update name	1.0	YFT 2022-8-9



Single-phase connect to L/N/PE
Three-phase connect to 1/2/3

A-A
1: 1



Notes:

Electrical

1. Rated Voltage: 250V AC;
2. Rated Impulse Voltage: 4000V;
3. Rated Current: CSA 32A, TUV 35A;
4. Contact Resistance: ≤5mΩ;
5. Insulation Resistance: ≥500MΩ;

Mechanical:

1. Mating Cycle: ≥500;
2. Cable Retention Force: ≥120N;
3. Pin Retention Force: ≥80N;
4. Cable O.D.: 10~15mm;
5. Wire Size: ≤6.0mm²(10AWG);

Environmental:

1. Waterproof Rate: IP68 1m24H;
2. Application Temperature: -40°C~+105°C;
3. Flaming Level: UL94-V0;

Material:

1. Plastic Material: PC&PBT(f1)
2. Pin Material: Copper Alloy, Silver Plating;
3. Sealing Material: Silicone Rubber;
4. Screw Material: SUS, Torque 0.8N.m

Others:

1. Type: EN034-2203-101;

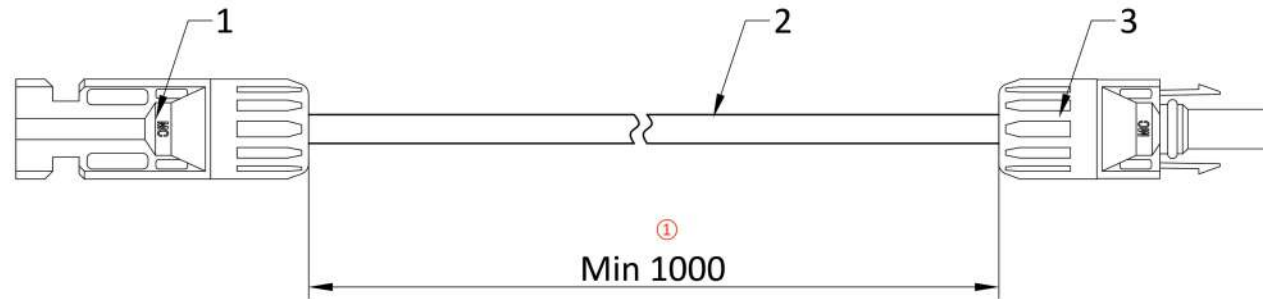
- ① Two seals
Seal inner diameter Ø17 (black)
For cable size: 4mm² or 10AWG
- Seal inner diameter Ø13 (grey)
For cable size: 2.5mm² or 12AWG



TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL	
X.: ±0.20	X°: ±2.00°	 NAME AC Connector (3 core, two seals, female) DRAWING NO. -	
.X: ±0.10	.X°: ±1.00°		
.XX: ±0.05	.XX°: ±0.50°		
.XXX: ±0.03	.XXX°: ±0.30°		
DWN.	UNIT mm		REV. 1.0
CHK.	SHEET -- OF --	REV. 1.0	

2310310274_1m DC Extension Cable (MC4)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Update cable type; Update dimensions	0.1	YFT 2022-9-14



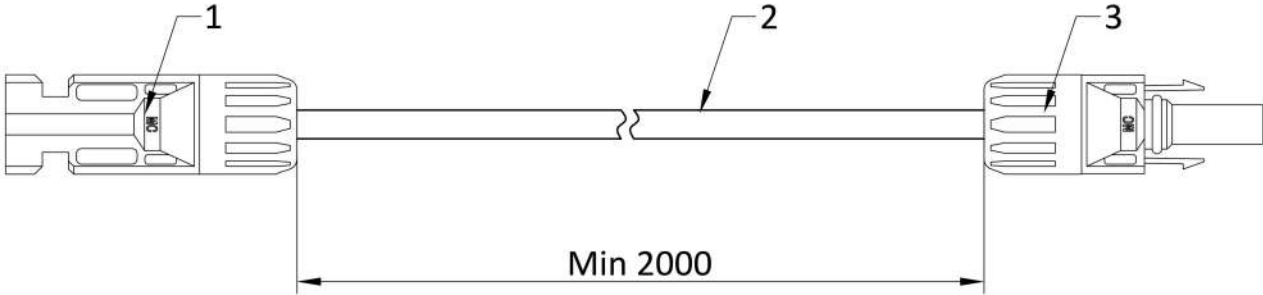
3	DC Connector (female)	MC4 PV-KBT4/6II	1	Female, STAUBLI		
① 2	DC Cable	FLEX-SOL-EVO-DX 4.0	1	4.0mm ² , TUV/UL certification		
		62930 IEC 131/PV	1	4.0mm ² /12AWG, TUV/UL certification	Alternative	
1	DC Connector (male)	MC4 PV-KST4/6II	1	Male, STAUBLI		
NO.	NAME	TYPE	MAT.	QTY.	DESCRIPTION	REMARK
TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		 NAME 1m DC Extension Cable (MC4) DRAWING NO.		
>0-100	±5	>2500-3500	±45			
>100-500	±10	>3500-4500	±50			
>500-900	±15	>4500-5500	±65			
>900-1300	±25	>5500-6500	±80			
>1300-1800	±30	>6500-8000	±90			
>1800-2500	±35	>8000-10000	±100			
DWN.		UNIT	mm			
CHK.		SHEET	OF	REV.	0.1	

Notes:
 1. The DC cable and connector connect firmly, can sustain 100N-60s tension
 2. The pin concentric with plastic parts, ensure that there is no contradict phenomenon when male connector inserts into female connector

2310360214_2m DC Extension Cable (MC4)

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CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
②	Add alternative cable	0.2	YFT 2022-9-14



3	DC Connector (female)	MC4 PV-KBT4/6II	1	Female, STAUBLI	
① 2	DC Cable	FLEX-SOL-EVO-DX 4.0	1	4.0mm ² , TUV/UL certification	
		62930 IEC 131/PV	1	4.0mm ² /12AWG, TUV/UL certification	Alternative
1	DC Connector (male)	MC4 PV-KST4/6II	1	Male, STAUBLI	

Notes:

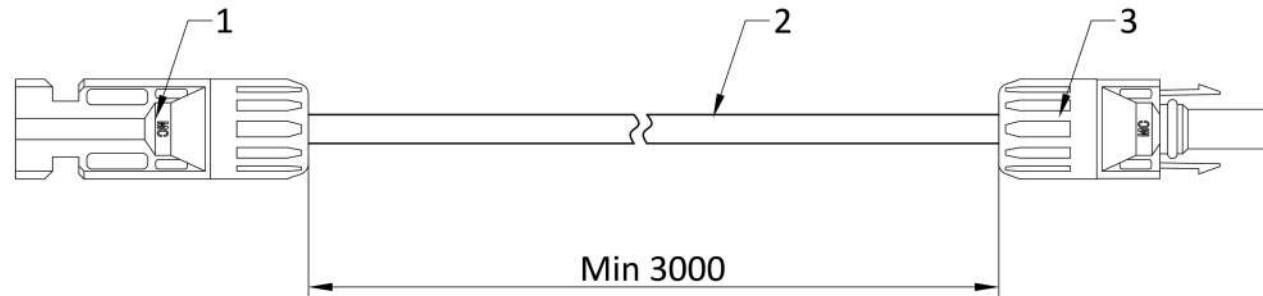
1. The DC cable and connector connect firmly, can sustain 100N-60s tension
2. The pin concentric with plastic parts, ensure that there is no contradict phenomenon when male connector inserts into female connector

NO.	NAME	TYPE	MAT.	QTY.	DESCRIPTION	REMARK
TOLERANCES UNLESS OTHERWISE SPECIFIED						
> 0-100	±5	> 2500-3500	±45	 NAME 2m DC Extension Cable (MC4) DRAWING NO.		
> 100-500	±10	> 3500-4500	±50			
> 500-900	±15	> 4500-5500	±65			
> 900-1300	±25	> 5500-6500	±80			
> 1300-1800	±30	> 6500-8000	±90			
> 1800-2500	±35	> 8000-10000	±100			
DWN.						
CHK.				SHEET	OF	REV. 0.2

2310360224_3m DC Extension Cable (MC4)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add alternative cable	0.1	YFT 2022-9-14

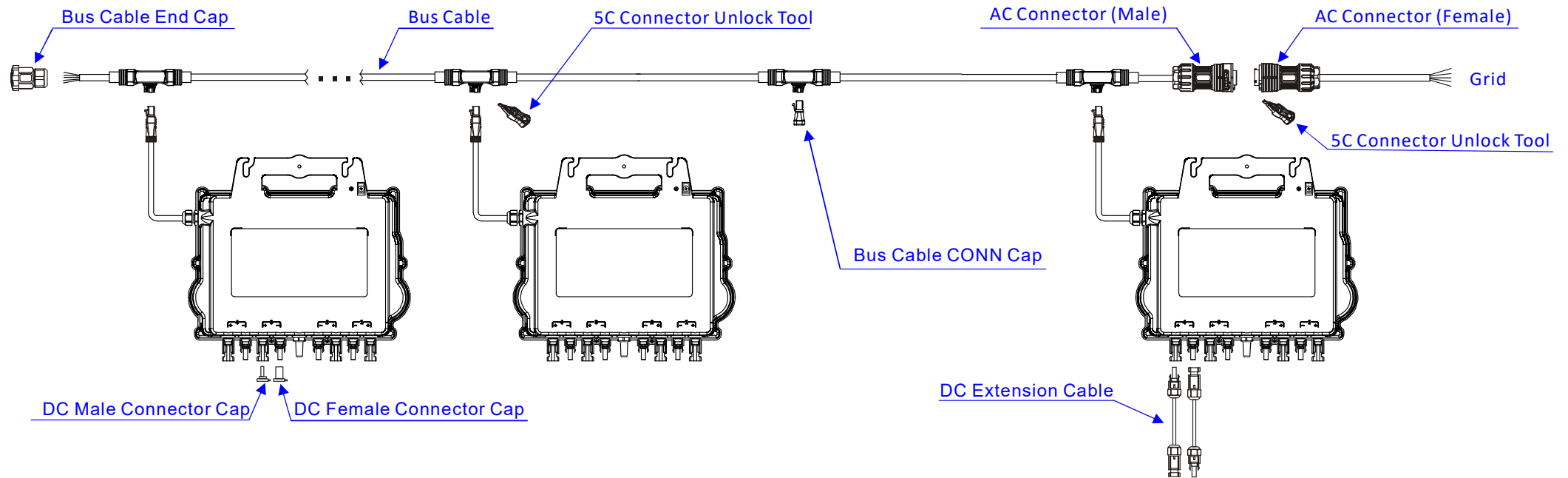


3	DC Connector (female)	MC4 PV-KBT4/6II		1	Female, STAUBLI	
2	DC Cable	FLEX-SOL-EVO-DX 4.0		1	4.0mm ² , TUV/UL certification	
		62930 IEC 131/PV		1	4.0mm ² /12AWG, TUV/UL certification	Alternative
1	DC Connector (male)	MC4 PV-KST4/6II		1	Male, STAUBLI	
NO.	NAME	TYPE	MAT.	QTY.	DESCRIPTION	REMARK
TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL				
>0-100	±5	>2500-3500	±45	 NAME 3m DC Extension Cable (MC4)		
>100-500	±10	>3500-4500	±50			
>500-900	±15	>4500-5500	±65			
>900-1300	±25	>5500-6500	±80			
>1300-1800	±30	>6500-8000	±90			
>1800-2500	±35	>8000-10000	±100			
DWN.		UNIT	mm			
CHK.		SHEET	OF	REV.	0.1	DRAWING NO.

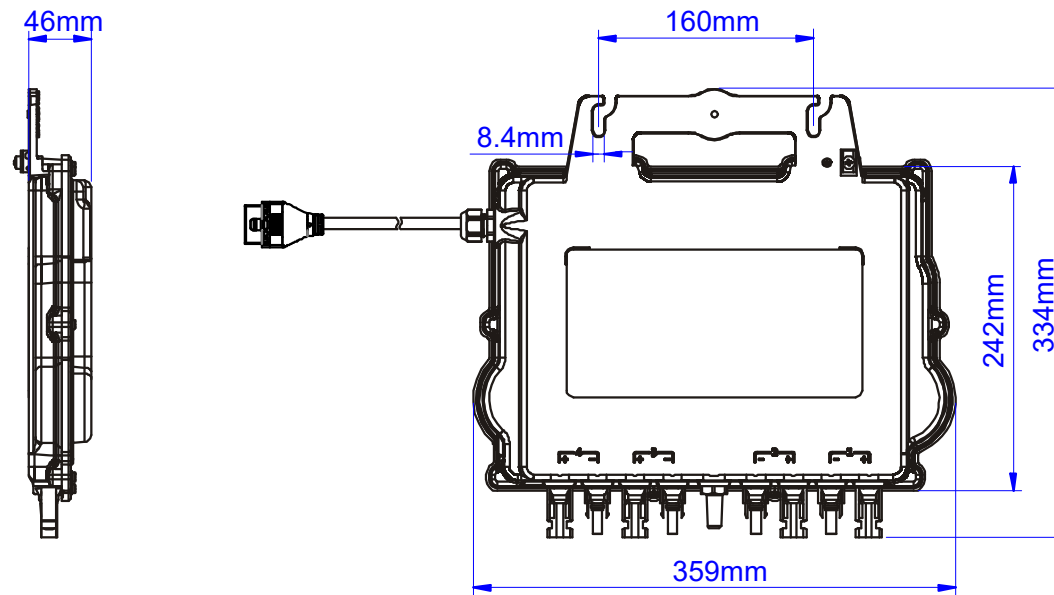
- Notes:
1. The DC cable and connector connect firmly, can sustain 100N-60s tension
 2. The pin concentric with plastic parts, ensure that there is no contradict phenomenon when male connector inserts into female connector

QT2 Accessories

1. Wiring Diagram



2. QT2 Dimensions





3. Accessories Summary

Region	Accessories								
	Bus Cable (Mandatory)	Bus Cable End Cap (Mandatory)	Bus Cable CONN Cap (Optional)	5C Connector Unlock Tool (Mandatory)	DC Male Connector Cap (Optional)	DC Female Connector Cap (Optional)	AC Connector (Male) (Optional)	AC Connector (Female) (Optional)	DC Extension Cable (Optional)
America -208 (124062) -480 (124063)	2322604502_3-phase 5C Bus Cable (12AWG,TC,2.4m) <i>(See Pic. A)</i>	2062050002_5-wire Bus Cable End Cap <i>(See Pic. B)</i>	2061252032_5-wire Bus Cable T-CONN Cap <i>(See Pic. C)</i>	2353000002_ 5C Connector Unlock Tool <i>(See Pic. D)</i>	2060401006_DC Male Connector Cap (MC4) <i>(See Pic. E)</i>	2060402006_DC Female Connector Cap (MC4) <i>(See Pic. F)</i>	2301511002_AC Connector (5C,40A,male) <i>(See Pic. G)</i>	2301512002_AC Connector (5C,40A,female) <i>(See Pic. H)</i>	2310310274_1m DC Extension Cable (MC4) 2310360214_2m DC Extension Cable (MC4) 2310360224_3m DC Extension Cable (MC4) 2310370236_4m DC Extension Cable (MC4) <i>(See Pic. I)</i>
	2322609202_3-phase 5C Bus Cable (10AWG,TC,2.4m) <i>(See Pic. A)</i>								
	2322904502_3-phase 5C Bus Cable (12AWG,TC,4.6m) <i>(See Pic. A)</i>								
	2322909202_3-phase 5C Bus Cable (10AWG,TC,4.6m) <i>(See Pic. A)</i>								
	2322969212_3-phase 5C Bus Cable (10AWG,TC, 9.5m) <i>(See Pic. A)</i>								

Notes: The cables in this table are recommended by APsystems, and the O.D. and length of the cable can be customized according to customer needs.

4. Physical Picture

Bus Cable	Bus Cable End Cap	Bus Cable CONN Cap	5C Connector Unlock Tool	DC Male Connector Cap	DC Female Connector Cap
 <p data-bbox="212 566 280 590">Pic. A</p>	 <p data-bbox="560 566 627 590">Pic. B</p>	 <p data-bbox="907 566 974 590">Pic. C</p>	 <p data-bbox="1243 566 1310 590">Pic. D</p>	 <p data-bbox="1601 566 1668 590">Pic. E</p>	 <p data-bbox="1948 566 2016 590">Pic. F</p>
AC Connector (Male)	AC Connector (Female)	DC Extension Cable			
 <p data-bbox="212 989 280 1013">Pic. G</p>	 <p data-bbox="560 989 627 1013">Pic. H</p>	 <p data-bbox="907 989 974 1013">Pic. I</p>			

5. Accessories information

2322604502_3-phase 5C Bus Cable (12AWG,TC,2.4m)

CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE

Notes:

Electric testing:

- Cable: 5C×12AWG TC-ER, UV resistance.
Cable marking: E489601 (UL) TYPE TC-ER 5C/12AWG 90°C WET OR DRY 600V--C(UL) TYPE CIC 90°C 600V FT1 XLPE 5C/12AWG DIR BUR SUN RES COLD BEND HWATEK
- Dielectric withstand voltage test: DC 4000V, leakage current 5mA, duration 60s;
- Working voltage rating: 600V;
- Working current rating: 30A;
- Contact resistance: ≤20mΩ;
- Insulation resistance: ≥500MΩ;
- Wiring: BLACK--L1, RED-L2, BLUE--L3, WHITE--N, GREEN--PE;

Mechanical property:

- Insert and draw frequency: ≥50 times;

Environmental performance:

- Waterproof rating: IP67;
- Environmental requirements: comply with rohs requirements;

Others:

- A series of bus cable contains 38T, each connector spacing is 2400mm;
- The 200N-60S tension at the t connector does not affect electrical and waterproof performance;
- The surface has no abrasion, scratches, deformation and other defects.

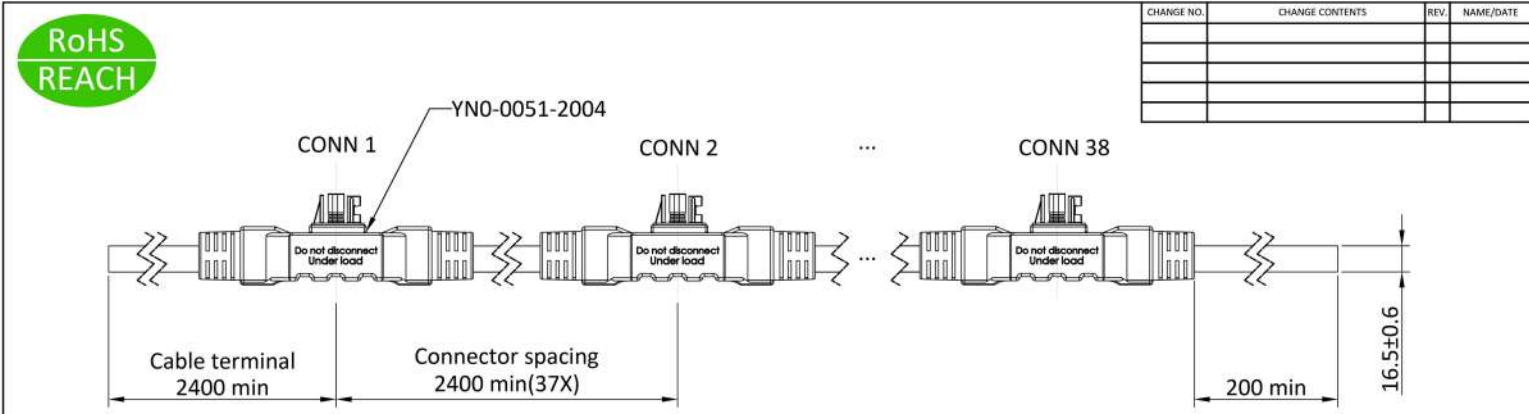
Connector pin view
2:1

PE N L3 L2 L1
GREEN WHITE BLUE RED BLACK

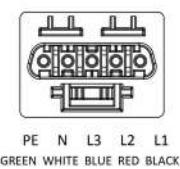
Connector back view

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		 ALTERNATIVE POWER
X. ±3.00	X° ±3.00°			
.X ±2.00	.X° ±2.00°			3-phase 5C Bus Cable (12AWG,TC,2.4m)
.XX ±1.00	.XX° ±1.00°			DRAWING NO.
.XXX ±0.50	.XXX° ±0.50°			
DWN.	UNIT mm		REV. 0.0	
CHK.	SHEET -- OF --			

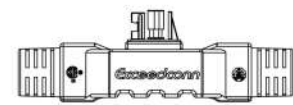
2322609202_3-phase 5C Bus Cable(10AWG,TC, 2.4m)



Connector pin view
2:1



Connector back view



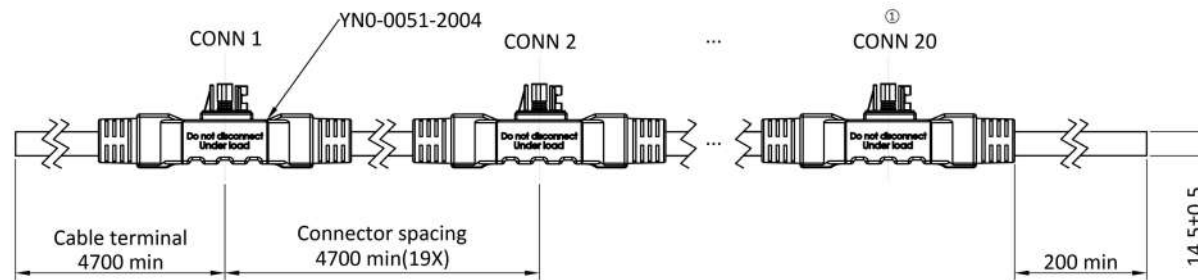
- Notes:
- Electric testing:
1. Cable: 5C×10AWG TC-ER, UV resistance.
Cable marking: E489601 (UL) TYPE TC-ER 5C/10AWG 90°C WET OR DRY 600V--C(UL) TYPE CIC 90°C 600V FT1 XLPE 5C/10AWG DIR BUR SUN RES COLD BEND HWATEK **CE**
 2. Dielectric withstand voltage test: DC 4000V, leakage current 5mA, duration 60s;
 3. Working voltage rating: 600V;
 4. Working current rating: 40A;
 5. Contact resistance: ≤20mΩ;
 6. Insulation resistance: ≥500MΩ;
 7. Wiring: BLACK--L1, RED-L2, BLUE--L3, WHITE--N, GREEN--PE;
- Mechanical property:
1. Insert and draw frequency: ≥50 times;
- Environmental performance:
1. Waterproof rating: IP67;
 2. Environmental requirements: comply with rohs requirements;
- Others:
1. A series of bus cable contains 38T, each connector spacing is 2400mm;
 2. The 200N·60S tension at the t connector does not affect electrical and waterproof performance;
 3. The surface has no abrasion, scratches, deformation and other defects.

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		
X. ±3.00	X° ±3.00°			
.X ±2.00	.X° ±2.00°			3-phase 5C Bus Cable
.XX ±1.00	.XX° ±1.00°			(10AWG,TC,2.4m)
.XXX ±0.50	.XXX° ±0.50°			DRAWING NO.
DWN.	UNIT mm			
CHK.	SHEET -- OF --	REV. 0.0		

2322904502_3-phase 5C Bus Cable(12AWG,TC,4.6m)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Change the number of Connector 18-20	0.1	ZZH 2023/5/8



Notes:

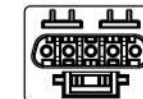
Electric testing:

1. Cable: 5C×12AWG TC-ER, UV resistance.
Cable marking: E489601 (UL) TYPE TC-ER 5C/12AWG 90°C WET OR DRY 600V---C(UL) TYPE CIC 90°C 600V FT1 XLPE 5C/12AWG DIR BUR SUN RES COLD BEND HWATEK \llcorner
2. Dielectric withstand voltage test: DC 4000V, leakage current 5mA, duration 60s;
3. Working voltage rating: 600V;
4. Working current rating: 30A;
5. Contact resistance: $\leq 20m\Omega$;
6. Insulation resistance: $\geq 500M\Omega$;
7. Wiring: BLACK--L1, RED-L2, BLUE--L3, WHITE--N, GREEN--PE;

Mechanical property:

1. Insert and draw frequency: ≥ 50 times;
- Environmental performance:
1. Waterproof rating: IP67;
 2. Environmental requirements: comply with rohs requirements;
- Others:
1. A series of bus cable contains 20T, each connector spacing is 4700mm;
 2. The 200N·60S tension at the t connector does not affect electrical and waterproof performance;
 3. The surface has no abrasion, scratches, deformation and other defects.

Connector pin view
2:1



PE N L3 L2 L1
GREEN WHITE BLUE RED BLACK

Connector back view



TOLERANCES UNLESS OTHERWISE SPECIFIED	MATERIAL
X. ± 3.00 X° $\pm 3.00^{\circ}$	
.X ± 2.00 .X° $\pm 2.00^{\circ}$	
.XX ± 1.00 .XX° $\pm 1.00^{\circ}$	
.XXX ± 0.50 .XXX° $\pm 0.50^{\circ}$	

DWN.	UNIT mm	
CHK.	SHEET -- OF --	REV. 0.1

 ALTERNATIVE POWER NAME 3-phase 5C Bus Cable (12AWG,TC,4.6m)

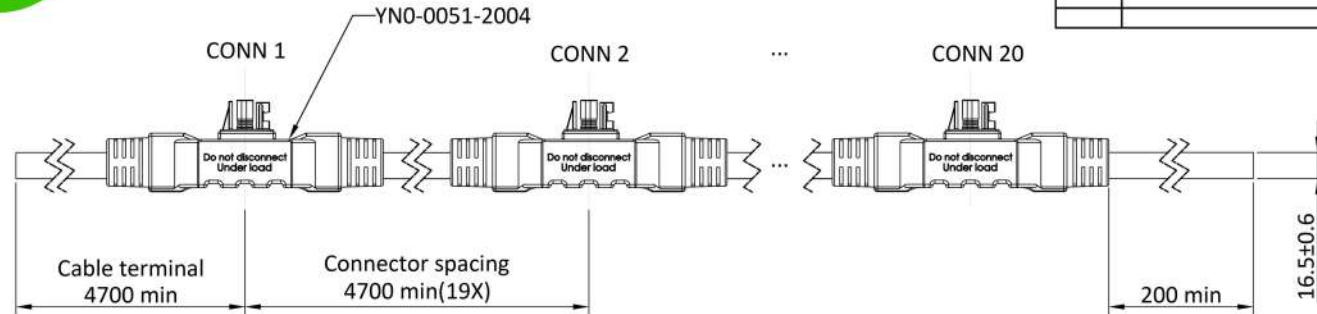
systems
tems America

8627 N. Mopac Expy, Suite 150, Austin, TX 78759
usa.APsystems.com

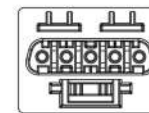
2322909202_3-phase 5C Bus Cable(10AWG,TC,4.6m)



CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



Connector pin view
2:1



PE N L3 L2 L1
GREEN WHITE BLUE RED BLACK

Connector back view



Notes:

Electric testing:

- Cable: 5C×10AWG TC-ER, UV resistance.
Cable marking: E489601 (UL) TYPE TC-ER 5C/10AWG 90°C WET OR DRY 600V---C(UL) TYPE CIC 90°C 600V FT1 XLPE 5C/10AWG DIR BUR SUN RES COLD BEND HWATEK CE
- Dielectric withstand voltage test: DC 4000V, leakage current 5mA, duration 60s;
- Working voltage rating: 600V;
- Working current rating: 40A;
- Contact resistance: $\leq 20\text{m}\Omega$;
- Insulation resistance: $\geq 500\text{M}\Omega$;
- Wiring: BLACK--L1, RED--L2, BLUE--L3, WHITE--N, GREEN--PE;

Mechanical property:

- Insert and draw frequency: ≥ 50 times;

Environmental performance:

- Waterproof rating: IP67;
- Environmental requirements: comply with rohs requirements;

Others:

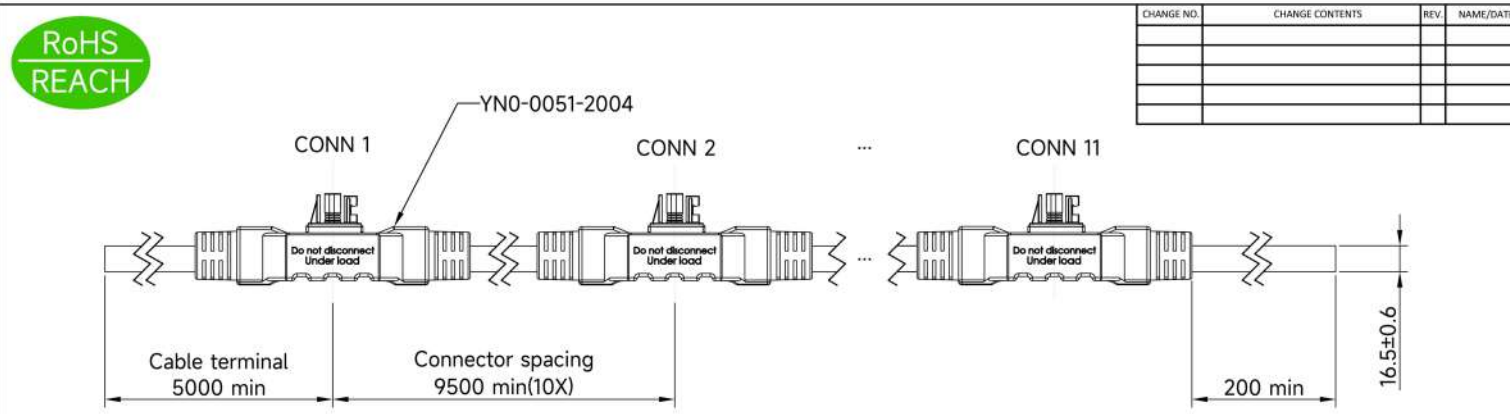
- A series of bus cable contains 20T, each connector spacing is 4700mm;
- The 200N-60S tension at the t connector does not affect electrical and waterproof performance;
- The surface has no abrasion, scratches, deformation and other defects.

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL	
X. ± 3.00	X° $\pm 3.00^\circ$		
.X ± 2.00	.X° $\pm 2.00^\circ$		
.XX ± 1.00	.XX° $\pm 1.00^\circ$		
.XXX ± 0.50	.XXX° $\pm 0.50^\circ$		
DWN.	UNIT mm		
CHK.	SHEET -- OF --	REV. 0.0	

NAME	
3-phase 5C Bus Cable (10AWG,TC,4.6m)	
DRAWING NO.	

APsystems
Systems America
Austin, TX 78759
usa.APsystems.com

2322969212_ 3-phase 5C Bus Cable (10AWG,TC, 9.5m)

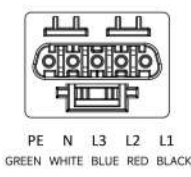


CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE

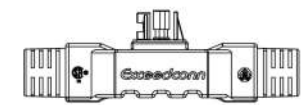


- Notes:
- Electric testing:
1. Cable: 5C×10AWG TC-ER, UV resistance.
Cable marking: E489601 (UL) TYPE TC-ER 5C/10AWG 90°C WET OR DRY 600V---C(UL) TYPE CIC 90°C 600V FT1 XLPE 5C/10AWG DIR BUR SUN RES COLD BEND HWATEK cε
 2. Dielectric withstand voltage test: DC 4000V, leakage current 5mA, duration 60s;
 3. Working voltage rating: 600V;
 4. Working current rating: 40A;
 5. Contact resistance: ≤20mΩ;
 6. Insulation resistance: ≥500MΩ;
 7. Wiring: BLACK--L1, RED-L2, BLUE--L3, WHITE--N, GREEN--PE;
- Mechanical property:
1. Insert and draw frequency: ≥50 times;
- Environmental performance:
1. Waterproof rating: IP67;
 2. Environmental requirements: comply with rohs requirements;
- 其它Others:
1. A series of bus cable contains 11T, each connector spacing is 9500mm;
 2. The 200N·60S tension at the t connector does not affect electrical and waterproof performance;
 3. The surface has no abrasion, scratches, deformation and other defects.

Connector pin view
2:1



Connector back view



TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL	
.X	±3.00	X°	±3.00°
.X	±2.00	.X°	±2.00°
.XX	±1.00	.XX°	±1.00°
.XXX	±0.50	.XXX°	±0.50°

NAME
3-phase 5C Bus Cable (10AWG,TC,9.5m)

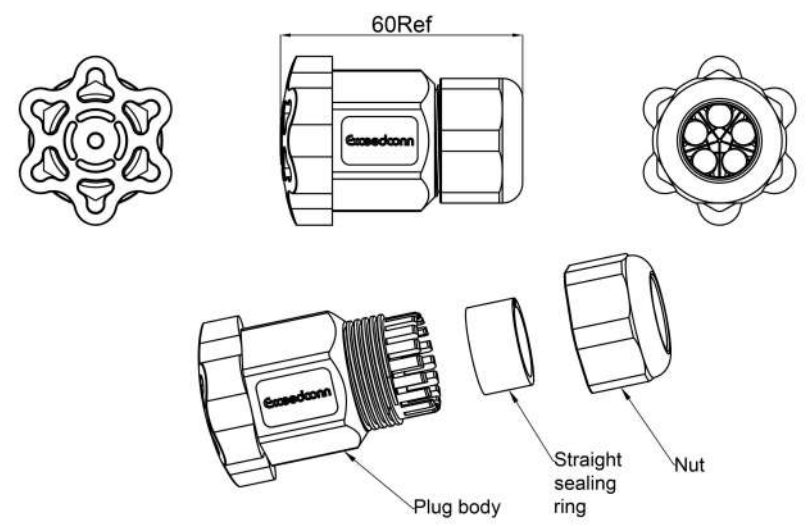
DRAWING NO.

DWN.	UNIT	mm		
CHK.	SHEET	OF	REV.	0.0

2062050002_5-wire Bus Cable End Cap





CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE



Notes:
 Mechanical property:
 1. Cable Gauge:14-17.5mm
 Environmental performance:
 1. Protection class: IP68 1m-2H(After mating);
 2. Operating Temperature: -40°C~105°C
 Others:
 1.Type No:EN050-1423-00

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL	
.X	±3.00	X°	±3.00°
.X	±2.00	.X°	±2.00°
.XX	±1.00	.XX°	±.00°
.XXX	±0.50	.XXX°	±0.50°

DWN.	UNIT	mm	
CHK.	SHEET	OF	REV. 0.0




ALTERNATIVE POWER


NAME
5-wire Bus Cable End Cap

DRAWING NO.

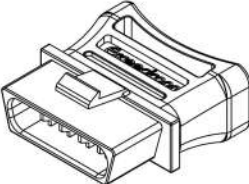
2061252032_5-wire Bus Cable T-CONN Cap

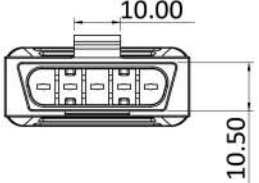


CHANGE NO.	CHANGE CONTENTS	REV	NAME/DATE

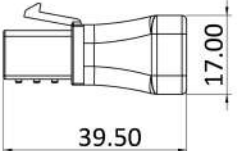


34.49
40.00

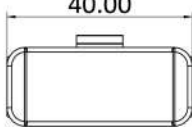





10.00
10.50



17.00
39.50



40.00




29.87


Notes:

1. Type: MIH-1-01;
2. Waterproof Rate: IP67;
3. Mating Cycle: ≥50;
4. Part Retention Force: 100N;

TOLERANCES UNLESS OTHERWISE SPECIFIED	
X.	±2.00
.X	±1.00
.XX	±0.64
.XXX	±0.38

MATERIAL	

DWN.	UNIT	mm		REV.	0.0
CHK.	SHEET	OF	REV.	0.0	



APsystems
ALTERNATE POWER

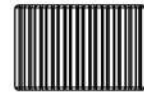
NAME
5-wire Bus Cable T-CONN Cap

DRAWING NO.

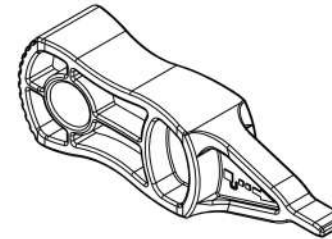
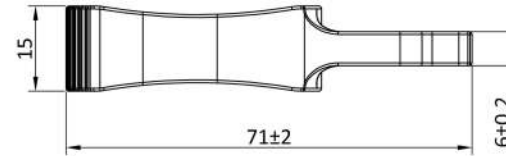
235300002_5C Connector unlock tool






CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Appearance change, name change.	1.0	ZH 2022/3/31



①



Technical Data;
1. Material: PBT
2. Color: Black

TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL	
X.	±1.00	X°	±3.00°	PBT	 NAME 5C Connector Unlock Tool DRAWING NO.
.X	±0.50	.X°	±2.00°		
.XX	±0.20	.XX°	±.00°		
.XXX	±0.10	.XXX°	±0.50°		
DWN.	UNIT	mm	 	SHEET -- OF -- REV. 1.0	
CHK.					

2301511002_AC Connector(5C,40A,male)



①

Instruction

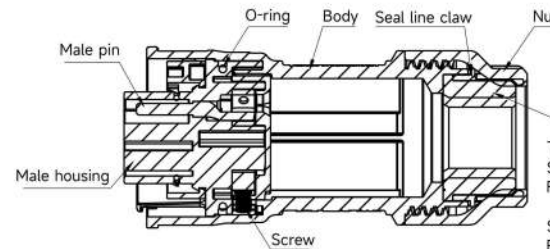
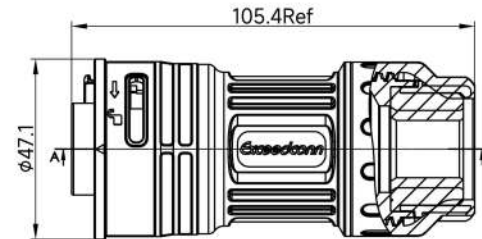


①

Wrench

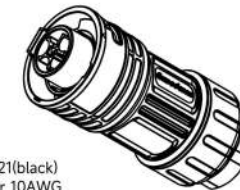


CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add instruction, wrench, seal instruction	0.1	ZZH 2023-4-20



①

Two seals
 Seal inner diameter $\phi 21$ (black)
 For cable size:4mm² or 10AWG
 Seal inner diameter $\phi 16$ (grey)
 For cable size:2.5mm² or 14AWG



Notes:
 Electric testing:
 1.Rated Voltage:600V;
 2.Rated Current:40A;
 3.Contact Resistance: $\leq 50\text{m}\Omega$;
 4.Dielectric Withstanding Voltage:3000V
 5.Insulation resistance: $\geq 500\text{M}\Omega$;
 Mechanical property:
 1.Mating Cycle: ≥ 500 次;
 2.Cable Gauge:2.5-10mm²
 Environmental performance:
 1.Waterproof: IP67 1m-30min(After mating);
 2.Operating Temperature: -40°C-105°C
 Others:
 1.Type No:EN200-2105-101-02

TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL		
X.	± 1.00	X	$\pm 3.00^{\circ}$			
.X	± 0.50	.X	$\pm 2.00^{\circ}$			AC Connector (5C,40A,male)
.XX	± 0.20	.XX	$\pm 1.00^{\circ}$			DRAWING NO.
.XXX	± 0.10	.XXX	$\pm 0.50^{\circ}$			
DWN.	UNIT	mm				
CHK.	SHEET	OF	REV.	0.1		

2301512002_AC Connector(5C,40A,female)

RoHS REACH

① Instruction

CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add instruction ,wrench , seal instruction	0.1	ZZH 2023-4-20

ASSEMBLY INSTRUCTIONS

1.CABLE CHOPPING REFERENCE

2.SEALING SELECTION

3.INSTALLATION ORDER

① Wrench

Notes:

Electric testing:

- 1.Rated Voltage:600V;
- 2.Rated Current:40A;
- 3.Contact Resistance:≤50mΩ;
- 4.Dielectric Withstanding Voltage:3000V
- 5.Insulation resistance: ≥500MΩ;

Mechanical property:

- 1.Mating Cycle: ≥500次;
- 2.Cable Gauge:2.5-10mm²

Environmental performance:

- 1.Waterproof: IP67 1m-30min(After mating);
- 2.Operating Temperature: -40°C-105°C

Others:

- 1.Type No:EN200-2205-101

① Two seals

Seal inner diameter φ21(black)
For cable size:4mm² or 10AWG

Seal inner diameter φ16(grey)
For cable size:2.5mm² or 14AWG

TOLERANCES UNLESS OTHERWISE SPECIFIED				MATERIAL	
X.	±1.00	X	±3.00°	<p>NAME AC Connector (5C,40A,female)</p> <p>DRAWING NO.</p>	
X	±0.50	X	±2.00°		
.XX	±0.20	.XX	±1.00°		
.XXX	±0.10	.XXX	±0.50°		
DWN.		UNIT	mm		
CHK.		SHEET	OF		

2310370236_4m DC Extension Cable (MC4)

RoHS
REACH

CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE
①	Add alternative cable	D.1	YFT 2022-9-14

Notes:

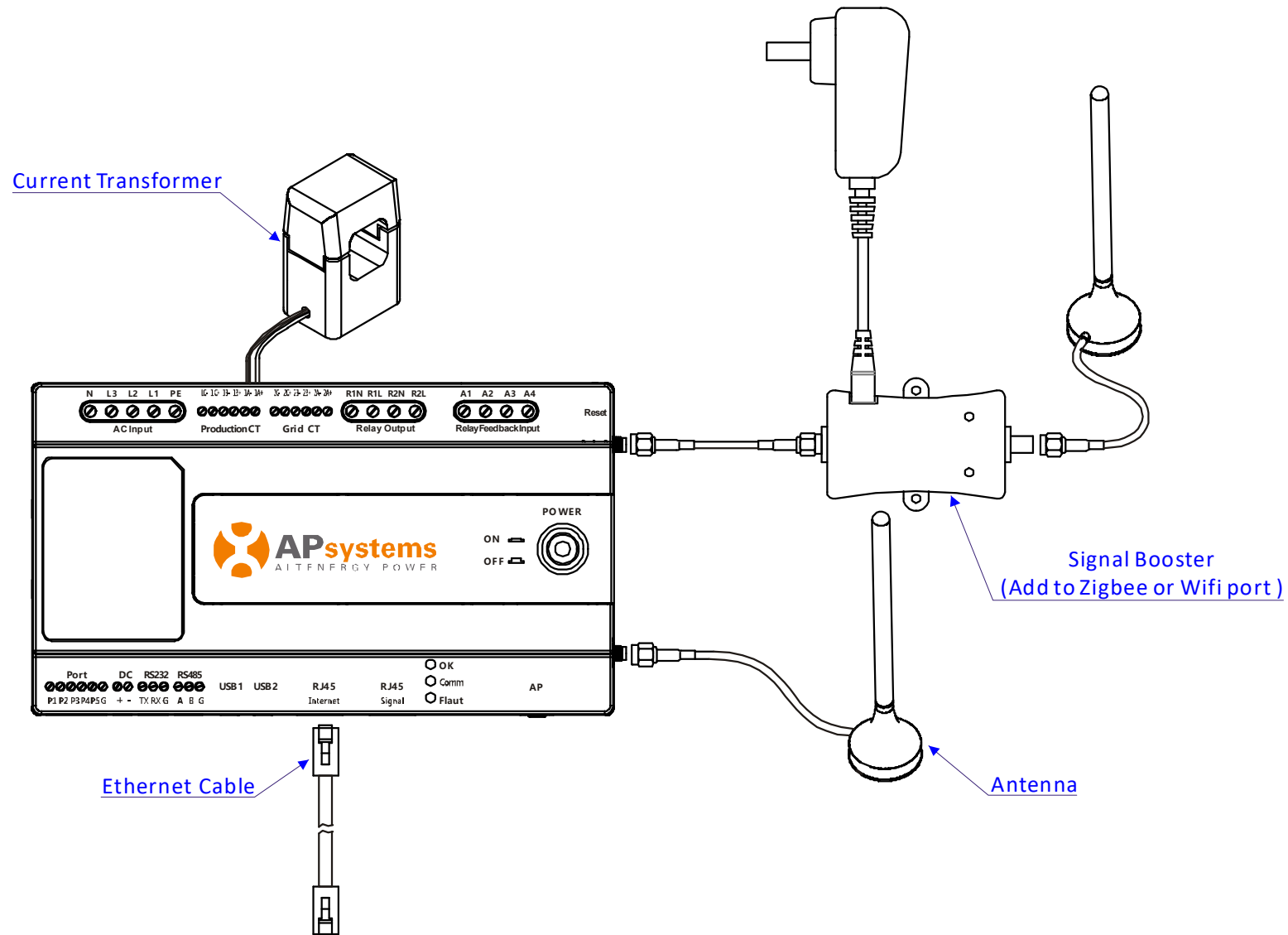
- The DC cable and connector connect firmly, can sustain 100N-60s tension
- The pin concentric with plastic parts, ensure that there is no contradict phenomenon when male connector inserts into female connector

3	DC Connector (female)	MC4 PV-KBT4/6II	1	Female, STAUBLI	
① 2	DC Cable	FLEX-SOL-EVO-DX 4.0	1	4.0mm ² , TUV/UL certification	
		62930 IEC 131/PV	1	4.0mm ² /12AWG, TUV/UL certification	Alternative
1	DC Connector (male)	MC4 PV-KST4/6II	1	Male, STAUBLI	

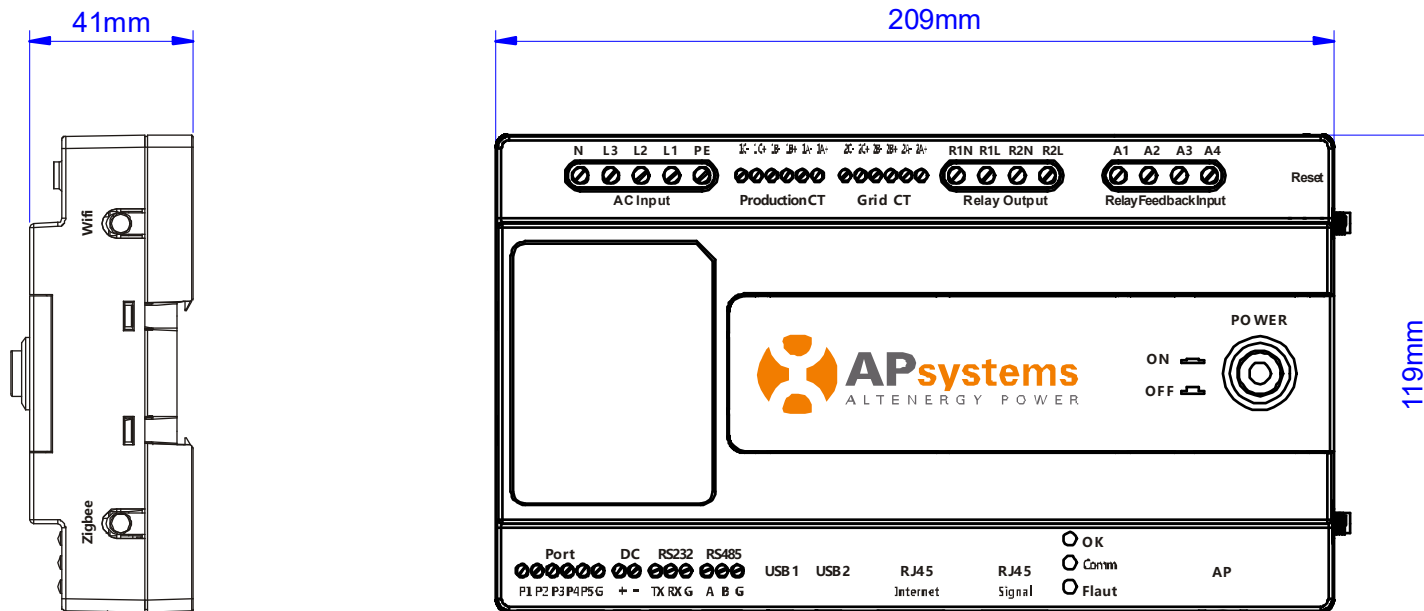
NO.	NAME	TYPE	MAT.	QTY.	DESCRIPTION	REMARK
TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL				
>0-100	±5	>2500-3500	±45	<p>NAME 4m DC Extension Cable (MC4)</p>		
>100-500	±10	>3500-4500	±50			
>500-900	±15	>4500-5500	±65			
>900-1300	±25	>5500-6500	±80			
>1300-1800	±30	>6500-8000	±90			
>1800-2500	±35	>8000-10000	±100			
DWN.	UNIT	mm				
CHK.	SHEET	OF	REV.	0.1		

ECU-C Accessories

1. Wiring Diagram








2. ECU-C Dimensions



3. Accessories Summary

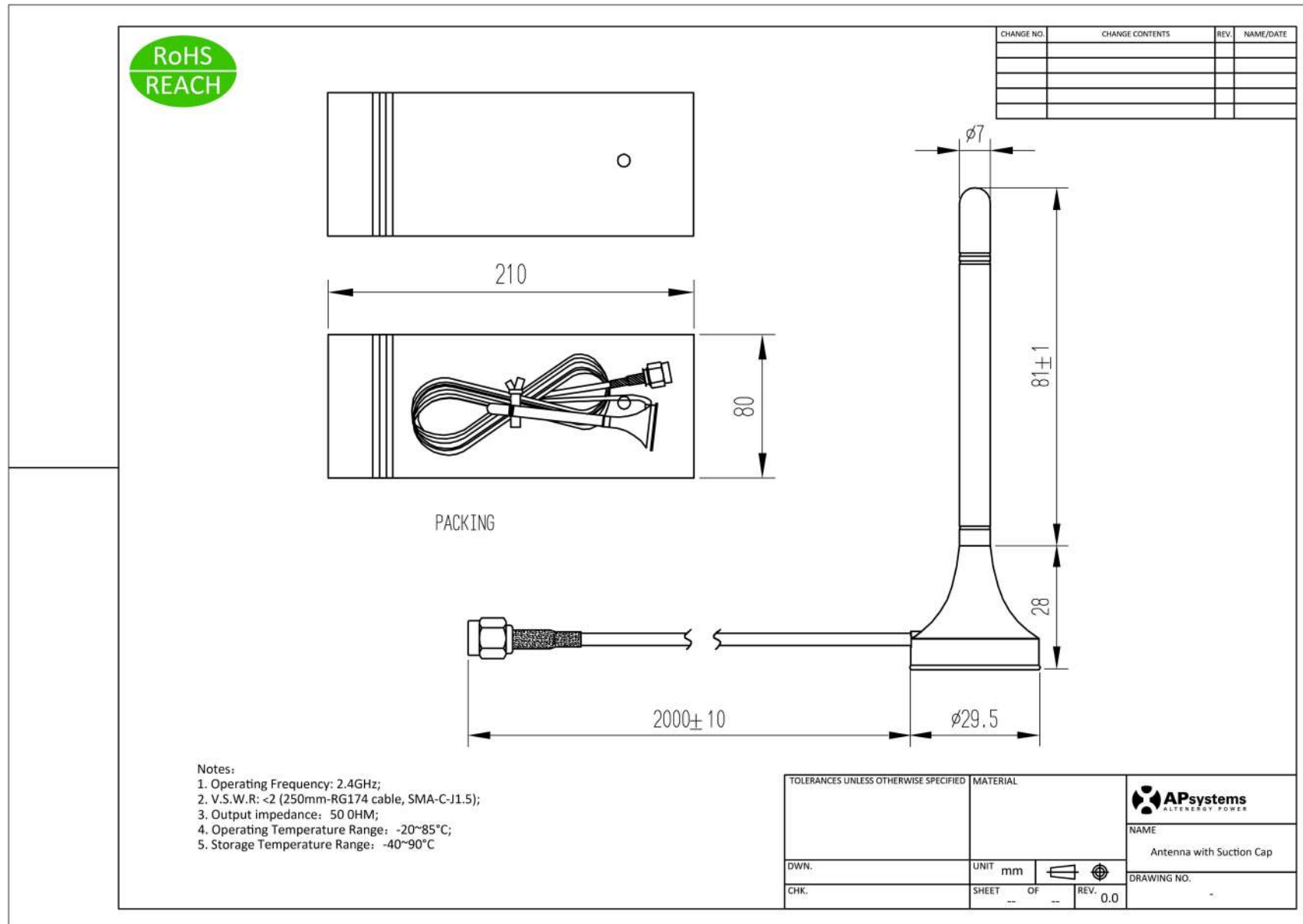
Region	Accessories			
	Antenna (Supply)	Ethernet Cable (Supply)	Current Transformer (Optional)	Signal Booster (Optional)
America -NA (205001)	Antenna with Suction Cap (See Pic. A)	Ethernet cable (See Pic. B)	18083020112_Current Transformer (80A/26.6mA) (See Pic. C) 18083020012_Current Transformer (200A/66.6mA) (See Pic. D)	2376000003_Signal Booster (American Standard) (See Pic. E)

4. Physical Picture

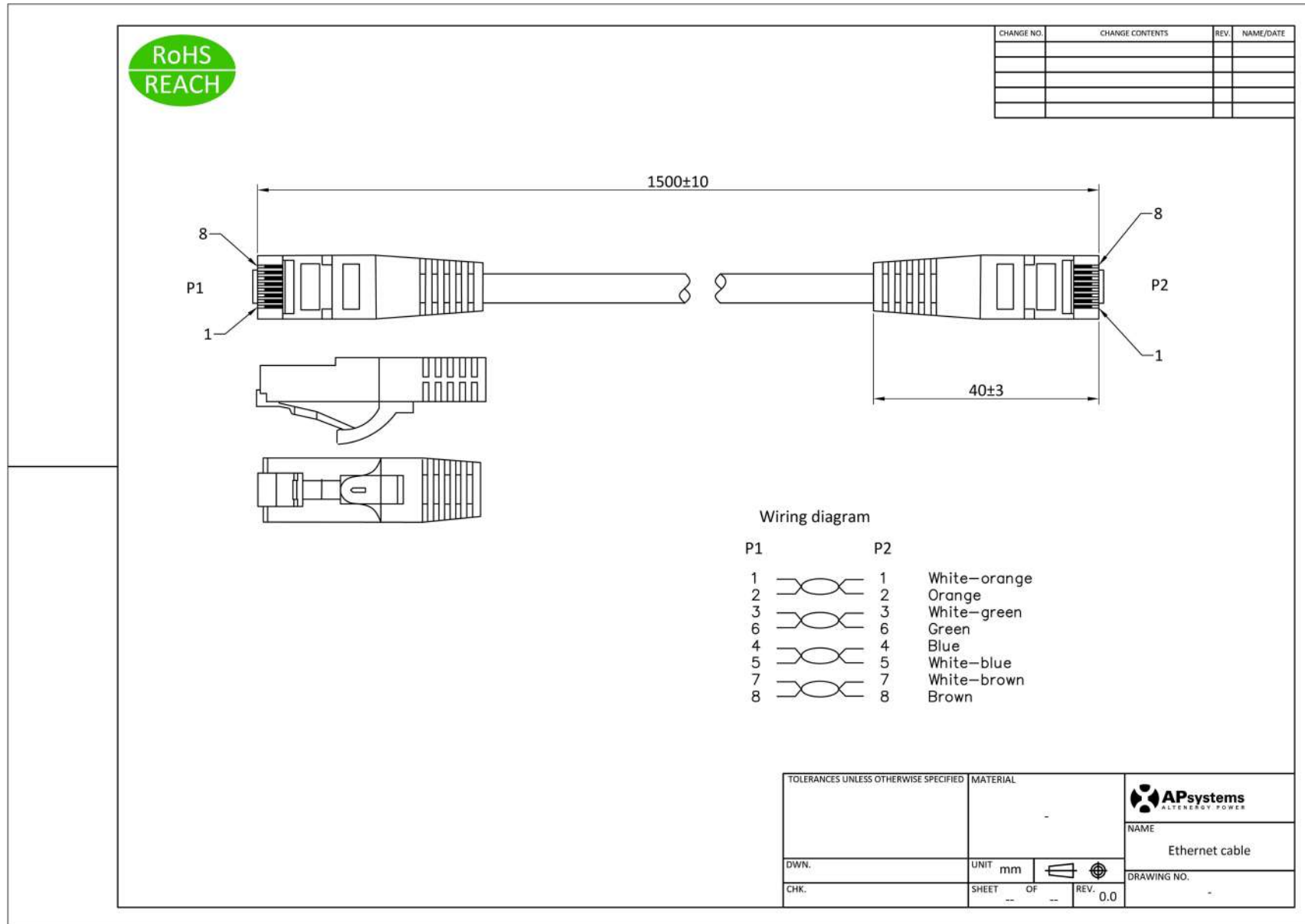
Antenna	Ethernet Cable	Current Transformer		Signal Booster
 <p data-bbox="286 774 358 798">Pic. A</p>	 <p data-bbox="696 774 768 798">Pic. B</p>	 <p data-bbox="1099 774 1171 798">Pic. C</p>	 <p data-bbox="1496 774 1568 798">Pic. D</p>	 <p data-bbox="1906 774 1977 798">Pic. E</p>

5. Accessories information

Antenna with Suction Cap



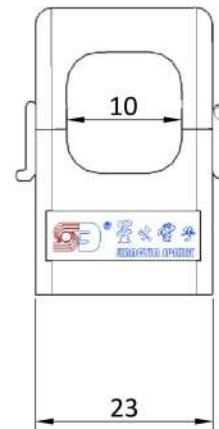
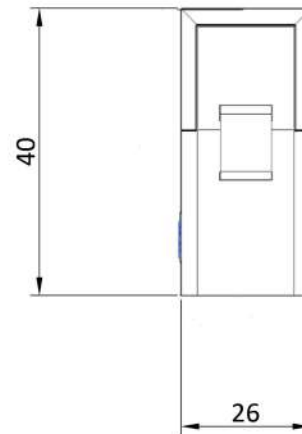
Ethernet cable



18083020112_Current Transformer (80A/26.6mA)






CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE

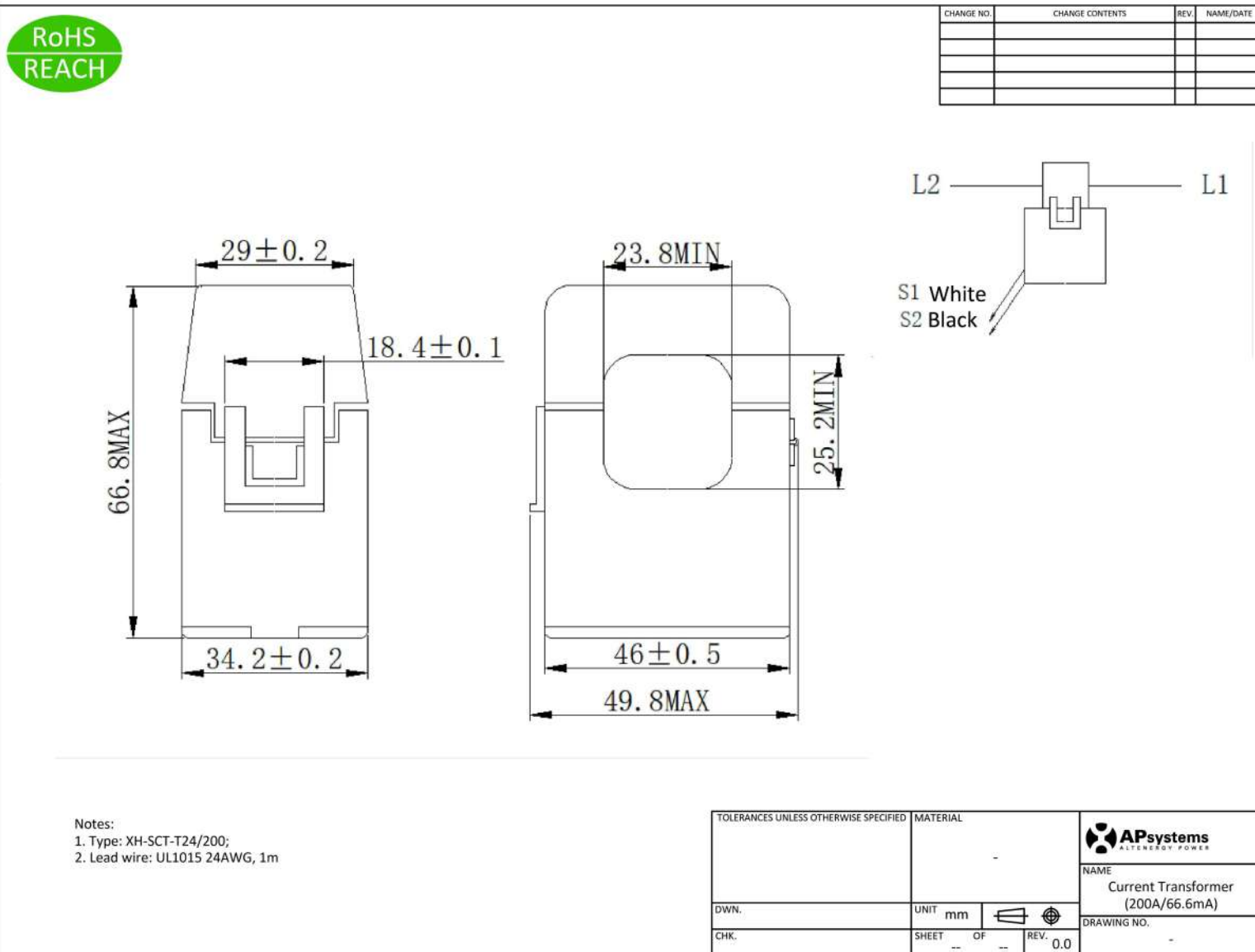


SCT-T10		
Input current(A)	Turn ratio(T)	output voltage(mV)
5-80	1000-3000 Recommended value 3000	333-5000 Recommended value 333

- Notes:
 1. Type: SCT-T10;
 2. Primary current range: 10-3000Arms;
 3. Lead wire: UL1007 24AWG, 1m;
 4. Working temperature: -25°C~50°C;

TOLERANCES UNLESS OTHERWISE SPECIFIED		MATERIAL		 NAME Current Transformer (80A/26.6mA)	
DWN.	UNIT mm			DRAWING NO.	
CHK.	SHEET -- OF --	REV. 0.0	-		

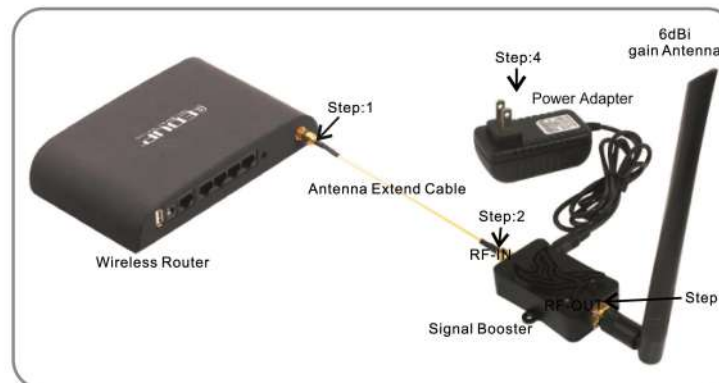
18083020012_Current Transformer (200A/66.6mA)



237600003_Signal Booster (American Standard)

Wifi booster instruction Manual

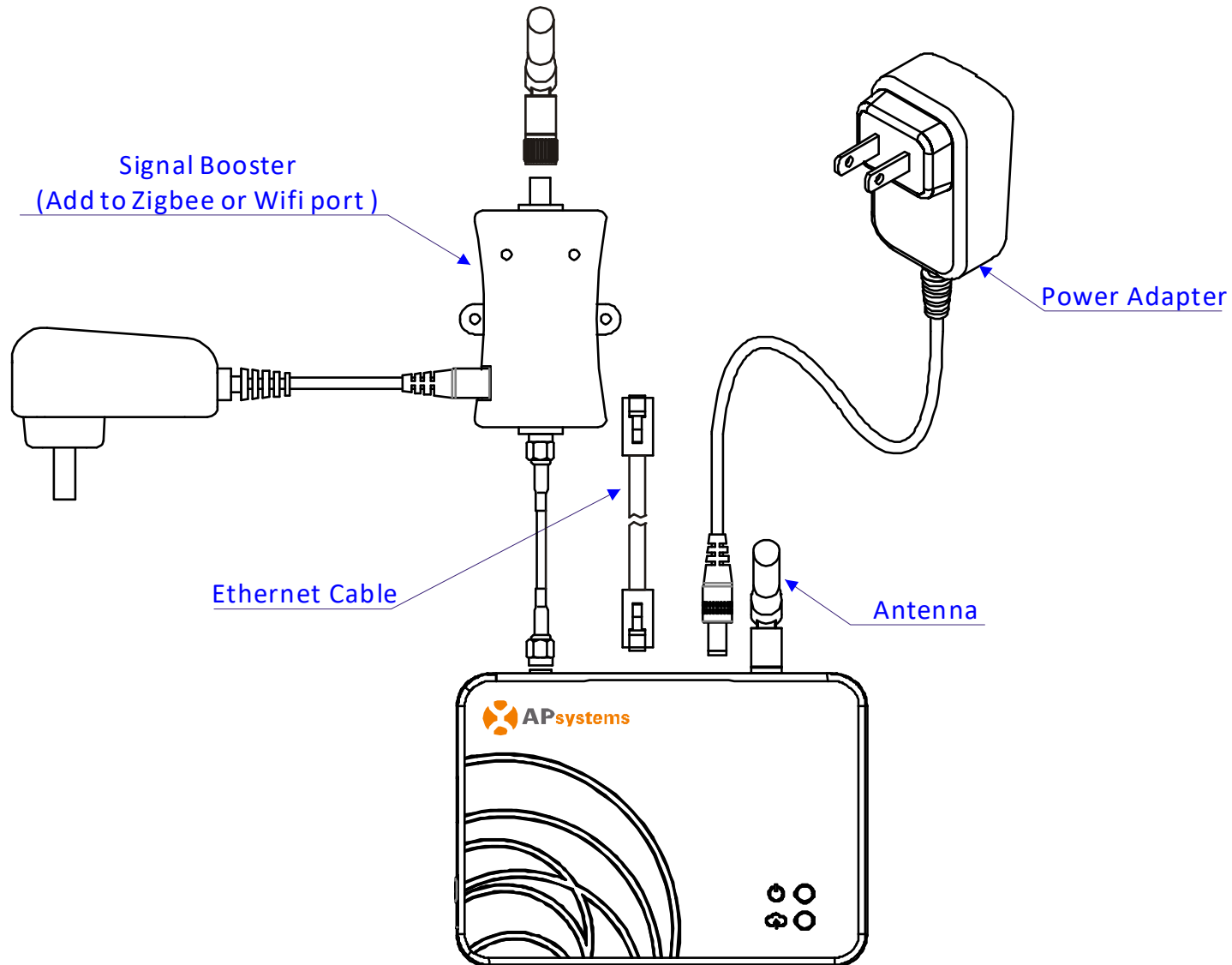
- 1.Support Standards:IEEE 802.11b/g/n
- 2.Frequency:2400~2500MHz
- 3.Working Pattern:TDD
- 4.RF Output Power:36dBm[4W]
- 5.Input Trigger Power:Min:3dBm Max:20dBm
- 6.Transmit Gain:13 dB±1
- 7.Receiver Gain:10 dB±1
- 8.TX/RX Switch Time Delay: < 1us
- 9.Noise Figure: < 2.5dB(typical)
- 10.Operating Temp:-40°C~+70°C
- 11.Working Voltage:6-18VDC
- 12.Operating Humidity:up to 95% rel humidity



- Step1:Remove the Antenna from the wireless Router (Access Point)
- Step2:Use cable to connect the Booster and AP
- Step3:Connect the Antenna to the other end of Booster
- Step4:Plug in the Power Adapter

ECU-R Accessories

1. Wiring Diagram



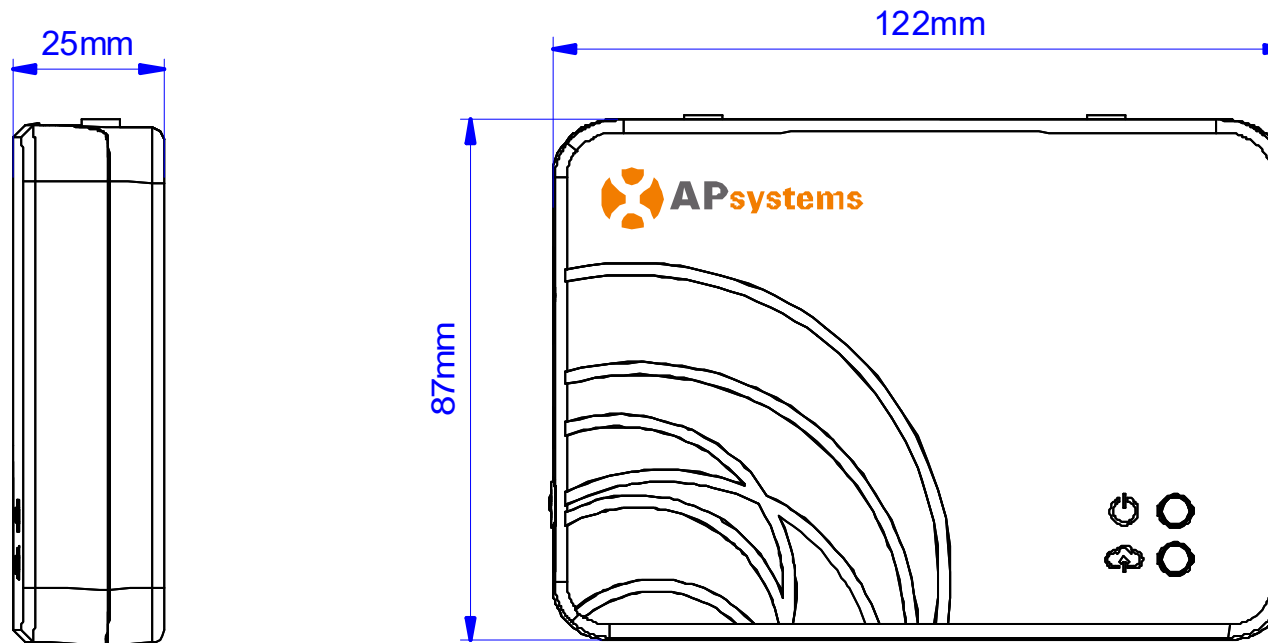
APsystems

APsystems America

8627 N. Mopac Expy, Suite 150, Austin, TX 78759

usa.APsystems.com

2. ECU-R Dimensions



3. Accessories Summary

Region	Accessories			
	Antenna (Supply)	Ethernet Cable (Supply)	Power Adapter (Supply)	Signal Booster (Optional)
America -NA (209001)	Antenna (See Pic. A)	Ethernet cable (See Pic. B)	Power Adapter (US) (See Pic. C)	2376000003_Signal Booster (American Standard) (See Pic. D)





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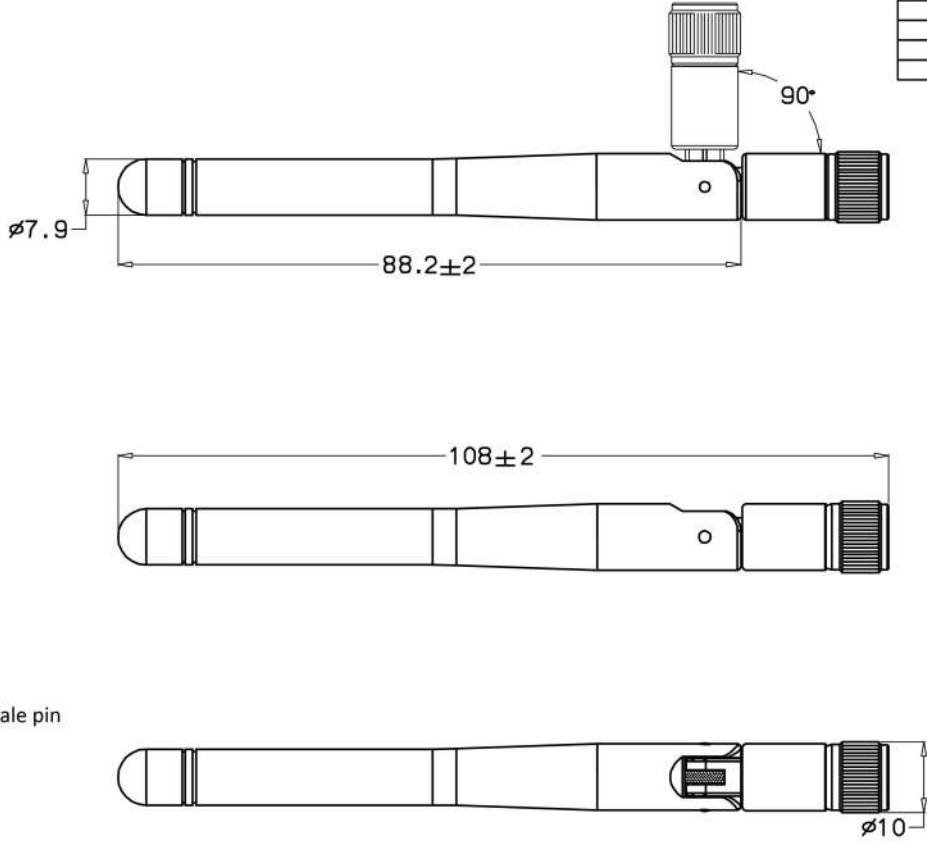
4. Physical Picture

Antenna	Ethernet Cable	Power Adapter	Signal Booster
 <p data-bbox="347 766 414 798">Pic. A</p>	 <p data-bbox="851 766 918 798">Pic. B</p>	 <p data-bbox="1355 766 1422 798">Pic. C</p>	 <p data-bbox="1859 766 1926 798">Pic. D</p>

5. Accessories information

Antenna







CHANGE NO.	CHANGE CONTENTS	REV.	NAME/DATE


Electrical parameters:

1. Frequency range: 2400-2500 MHz;
2. Gain: 2dBi;
3. VSWR: <2:1;
4. Polarization: linear.Vertical;
5. Max power rating: 50W;
6. Impedance: 50 OHM

TOLERANCES UNLESS OTHERWISE SPECIFIED		ANGLES:	
0°-1	±0.1	x°	±1°
1°-10	±0.3	x.x°	±0.5°
10°-30	±0.8		
30°-100	±1		
100°-300	±2		

MATERIAL	

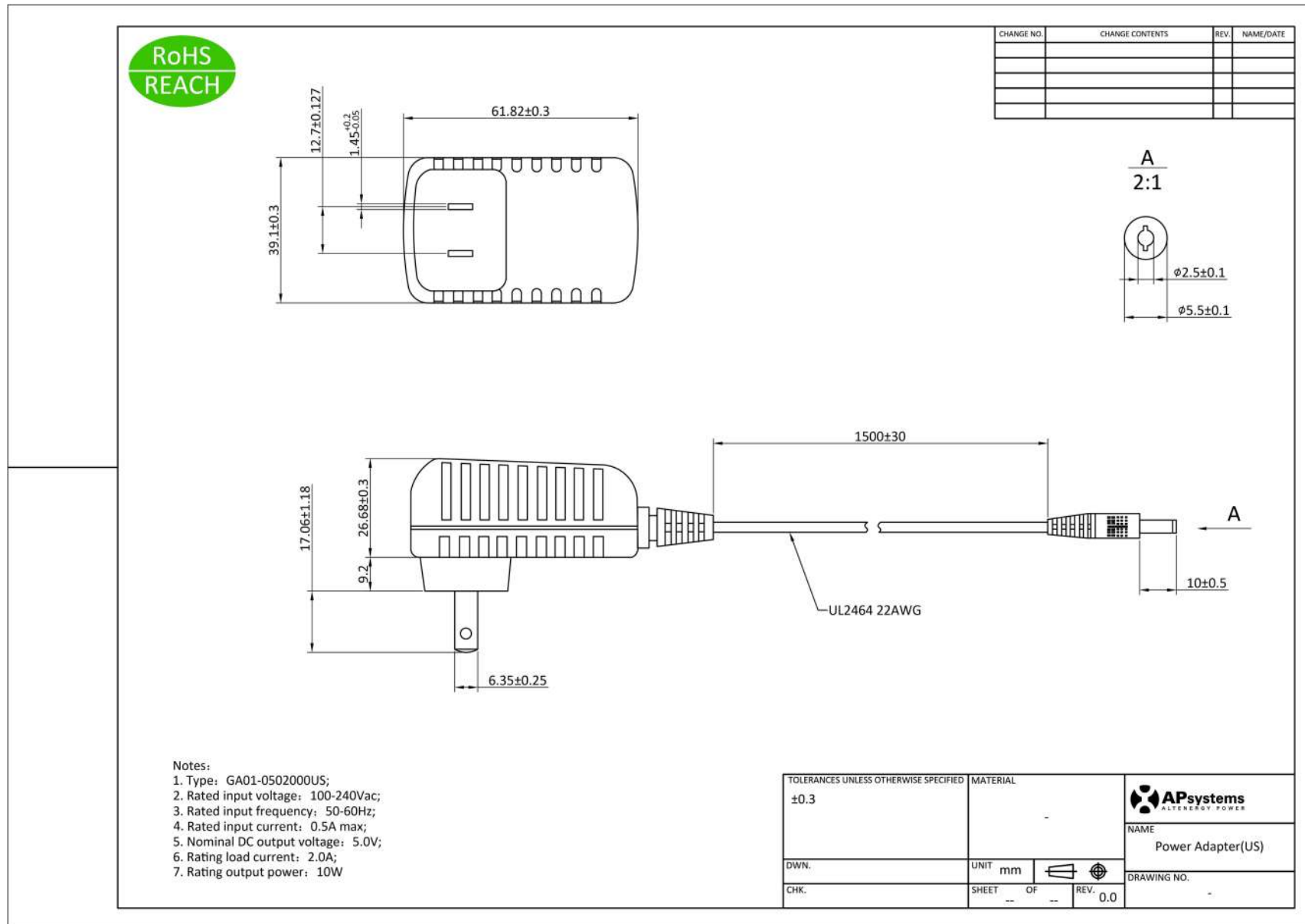
DWN.	UNIT	mm		
CHK.	SHEET	OF	REV.	0.0



NAME
Antenna

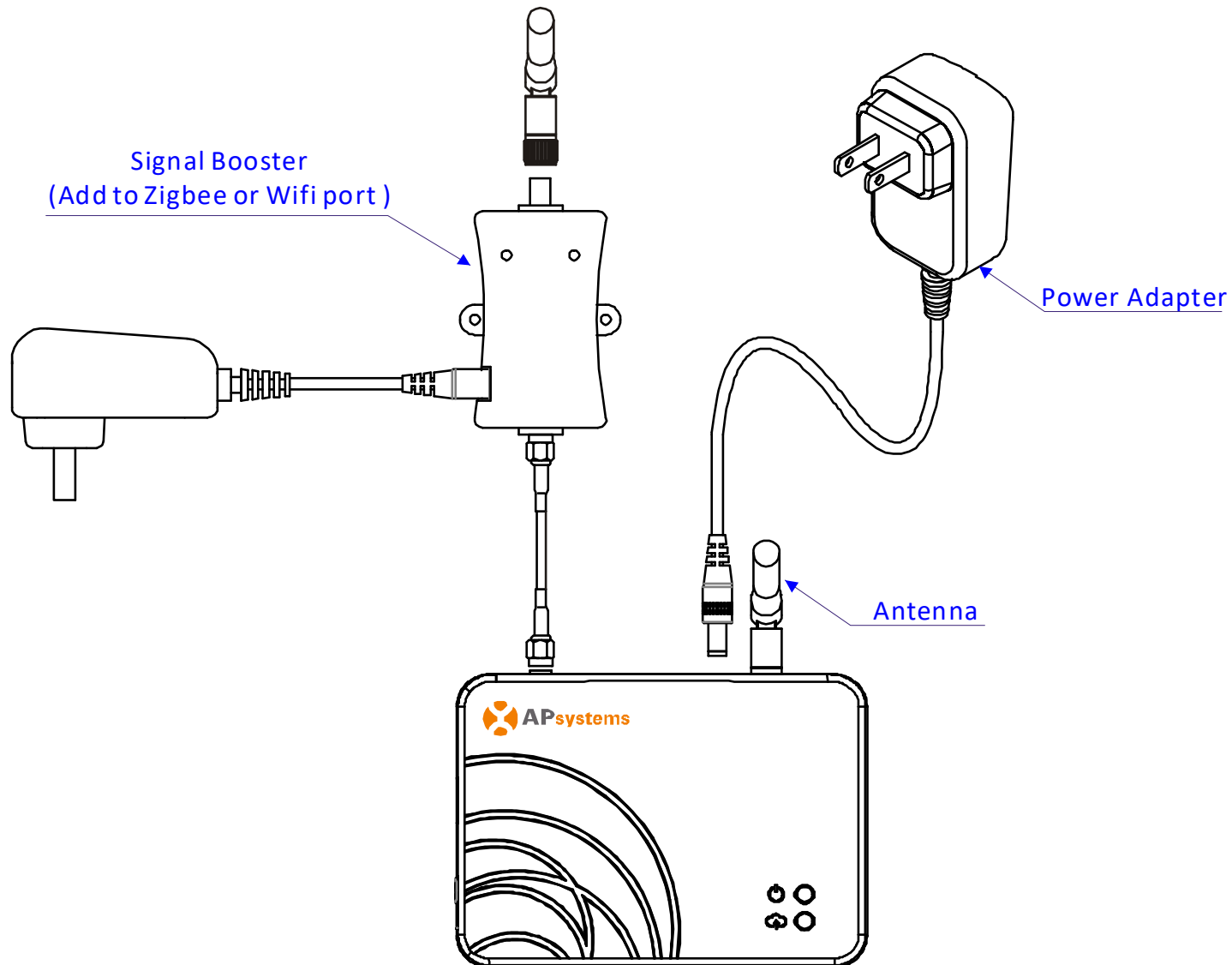
DRAWING NO.
-

Power Adapter (US)



ECU-B Accessories

1. Wiring Diagram



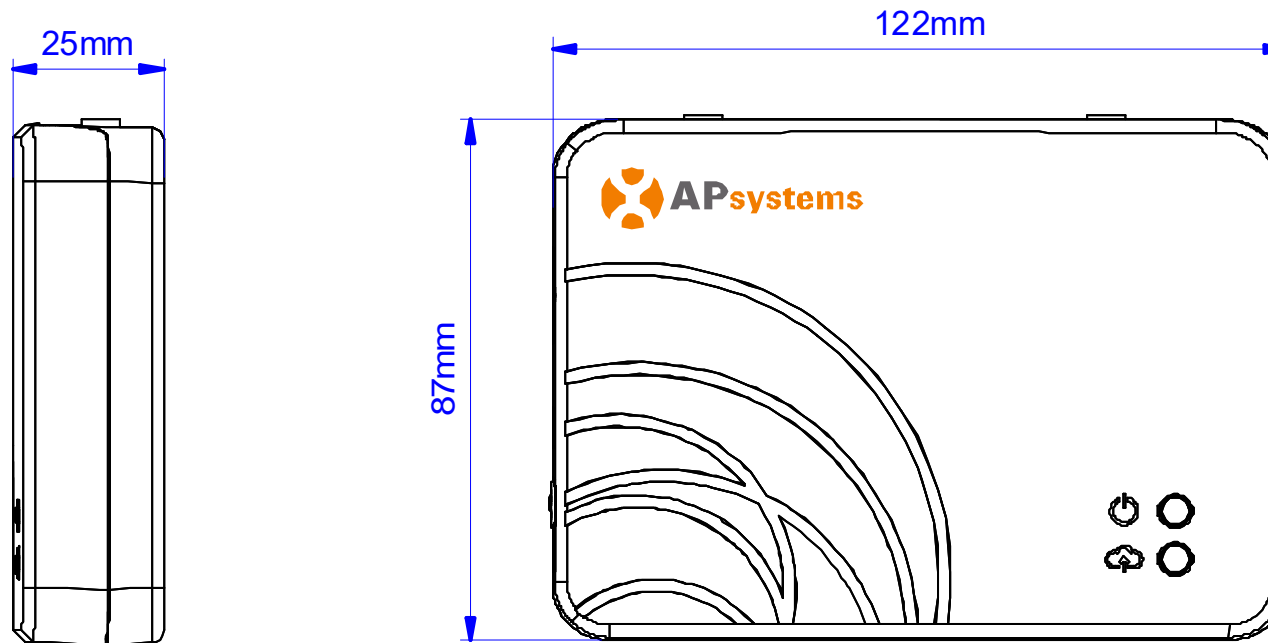
APsystems

APsystems America

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usa.APsystems.com




2. ECU-B Dimensions



3. Accessories Summary

Region	Accessories		
	Antenna (Supply)	Power Adapter (Supply)	Signal Booster (Optional)
America -NA (211001)	Antenna (See Pic. A)	Power Adapter (US) (See Pic. B)	2376000003_Signal Booster (American Standard) (See Pic. C)

4. Physical Picture

Antenna	Power Adapter	Signal Booster
 <p data-bbox="344 719 409 740">Pic. A</p>	 <p data-bbox="853 719 918 740">Pic. B</p>	 <p data-bbox="1357 719 1422 740">Pic. C</p>

Revision history		
Version	Change contents	Date
REV1.0	First edition	2022-08-23
REV1.1	Update DS3 wiring diagram; DS3 add AC branch extension cable; DS3/QT2 add DC extension cable(MC4); Delete Tel	2022-12-03
REV1.2	Update DS3 dimensions; Delete QT2 6m DC extension cable(MC4); Update ECU-C/ECU-R/ECU-B wiring diagram	2022-12-08
REV1.3	Update DS3/QT2 wiring diagram; Update QT2 accessories	2023-02-25
REV1.4	Update QT2 wiring diagram; Update QT2 accessories; Update the name of DS3/DS3D bus cable end cap	2023-06-16
REV1.5	Update address;Update all drawings;QT2 update 9.5m Bus Cable	2023-09-11