



Quick Programming Manual Rev.3.6

Solar Ready Inverter

يأخذ طاقة مباشرة من الشمس

iPower Series Inverter / Charger

Single Conversion Online UPS

Pure sine wave

Extra Heavy Duty

iPS-4000/6000/8000/10000-48V



Extra Heavy Duty

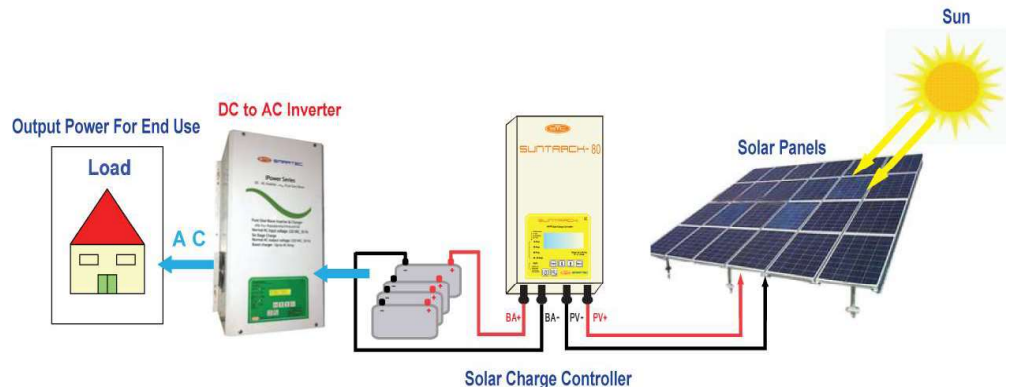
iPS-3700-24/48V-32bit

iPS-1600-12/24V-32bit



يأخذ طاقة مباشرة من الشمس من خلال
الألواح الشمسية عند توصيله مع Suntrack

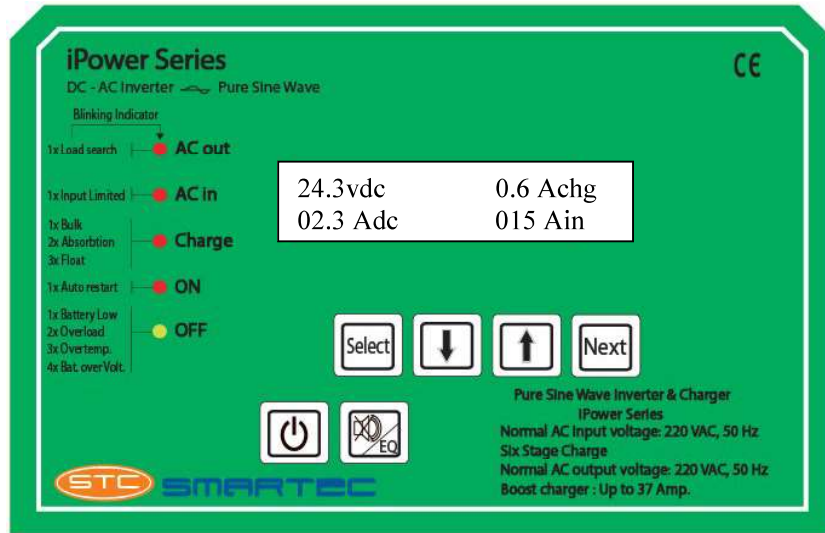
**When connecting iPS to
Suntrack, takes Power directly
from Sun through Solar Panels**



1. Inverter Screen

شاشة الإنفيرتر

Main screen


Press **(ON/OFF)** button for 5 sec then release to toggle inverter ON/OFF.

إضغط على كبسة **ON/OFF** لمدة 5 ثواني لتشغيل الجهاز.

Press **(EQ)** for 5 sec to disable the acoustic alarm.

إضغط كبسة (EQ) لمدة 5 ثواني لإلغاء صوت الإنذار

Press **(EQ)** for 10 sec to start equalization, so "LCD back light blinks"

إضغط على كبسة (EQ) لمدة 10 ثواني لغيلان البطارية. ستبدأ الشاشة (LCD) بالوميض
يجب فقط غليان بطاريات الأسيد مرة كل شهر لغيلان الأسيد
لتوقيف عملية الغليان إضغط على كبسة (EQ) لمدة 10 ثواني

- **Ac Out** (LED): Voltage present on the output of the inverter .

ضوء الفولتاج الخارج من اليو بي أس

Ac Out (LED) blinks/ flash **one time** → Load search mode

إضاءة مرة واحدة ← حالة البحث عن الحمولة

Ac Out (LED) blinks/ flash **two times** → Feedback disabled.

Ac Out (LED) blinks/ flash **3 times** → input/ output connection error.

إضاءة 3 مرات ← خطأ في توصيل المدخل و المخرج

- **Ac IN** (LED): Voltage present on the input of the inverter.

ضوء الفولتاج الداخل إلى اليو بي أس

Ac IN (LED) blinks/flash **one time** → Input limited mode.

- **Charge** (LED): is on, charging batteries.

ضوء شاحن البطاريات اذا كان مضيئاً فالبطاريات يتم شحنها

Charge (LED) blinks/flash **one time** → Bulk charging stage. إضاءة مرة واحدة يعني أن البطارية في مرحلة التشريح الأولى.

Charge (LED) blinks/flash **2 times** → Absorption charging stage. إضاءة مرتين يعني أن البطارية في مرحلة الإمتصاص

Charge (LED) blinks/flash **3 times** → Float charging stage. إضاءة ثلاث مرات يعني أن البطارية مشرحة كلياً

- **ON** (LED) : Inverter is on .

ضوء تشغيل اليو بي أس. أي عند انقطاع الكهرباء

ON (LED) blinks/flash **one time** → Auto restart from shut down sequence.

- **OFF** (LED): Inverter and charger are off.

ضوء إطفاء الجهاز

OFF (LED) is on → Inverter is off.

إذا كان مضيئاً فهذا يعني أن الجهاز مطفأ

OFF (LED) blinks/flash **one time** → Battery is low.

إضاءة مرة واحدة يعني إقتراب تفريغ البطارية

OFF (LED) blinks/flash **two times** → Ac current overload.

إضاءة مرتين يعني وجود ضغط على التيار الكهربائي

OFF (LED) blinks/flash **3 times** → Inverter is over heated.

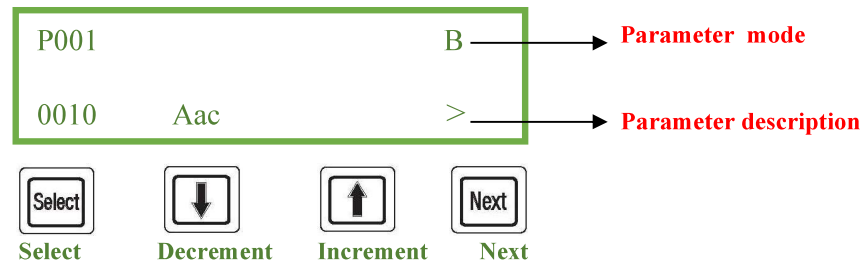
إضاءة ثلاث مرات يعني حرارة الجهاز عالية

OFF (LED) blinks/flash **4 times** → Battery over volt.

إضاءة أربع مرات يعني وجود فولتاج عالي على البطارية

2. To Enter Programming للدخول إلى البرنامج

Press on **Select** and **Decrement** buttons together for 10 sec to enter parameter screen.



Press on **Decrement** or **Increment** button to move to the desired parameter.

إضغط على كبسة (Dec) أو (Inc) للتنقل بين رمز الرقم

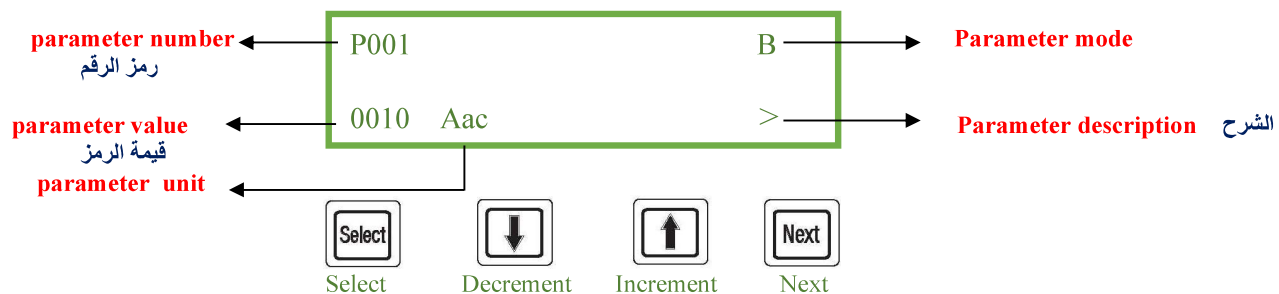
(*) **Note:** If you don't press any buttons for 1 minute, the screen leaves the program and return to main screen

ملاحظة: إذا لم تضغط على أي كبسة لمدة دقيقة ستعود إلى الشاشة الأولية و تخرج من شاشة الأرقام

2.1 To View the Parameter description and Parameter Value:

Press on **Next** button for 2 sec to switch between parameter value and parameter description.

إضغط على **Next** لمدة ثانيتين عند الدخول الى رمز رقم معين للتنقل بين شرحها وقيمتها



For example press on **Next** button to see parameter description then press **Next** button another time to see the parameter value.

إضغط على كبسة (Next) للدخول الى شرح (P001) ثم إضغط على كبسة (Next) مرة أخرى للدخول الى قيمة (P001)



: Decrement parameter number.



: Increment parameter number.

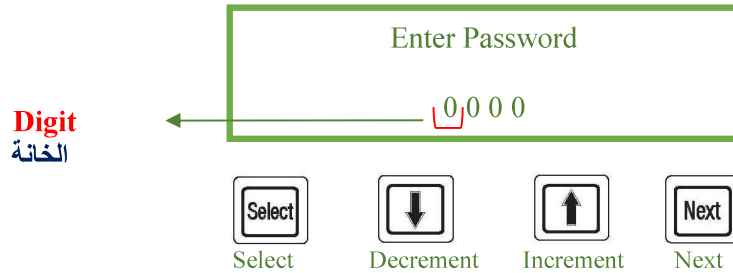
***Takes Power directly from the Sun through Solar Panels when connecting to SUNTRACK**

يأخذ طاقة مباشرة من الشمس من خلال الألواح الشمسية عند توصيله مع Suntrack

2.2 To Enter the password: للدخول الى كلمة السر

Press on **Select** button and wait until password appears.

إضغط على كبسة **Select** حتى تظهر كلمة السر



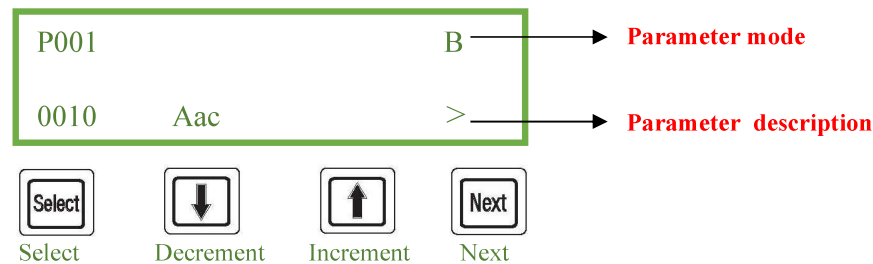
Default password: 0000

Inc button is used to increase number
Dec button is used to decrease number
Next button is used to move to the next digit
Select button is used to save the password

كبسة **(Inc)** تستعمل لزيادة الرقم
كبسة **(Dec)** تستعمل لتقصي الرقم
كبسة **(Next)** تستعمل للانتقال من خانة الى أخرى
كبسة **(Select)** تستعمل لتخفيف الرقم السري

(Note): Installer, Expert and Advanced password: must be obtained from manufacture

2.3 To Edit the Parameter Value: لتغيير قيمة رمز الرقم



Press on **Select** button until parameter value flashes
Press on **Inc** or **Dec** button to change the value
Press on **Inc** button to increase value
Press on **Dec** button to decrease value
Press **Next** to move the cursor from one digit to another
Press on **Select** button to save the value

إضغط على كبسة **(Select)** حتى تبدأ قيمة الرقم تُضيء وتُطفئ
إضغط على كبسة **(Inc or Dec)** لتغيير القيمة
إضغط على كبسة **(Inc)** لزيادة القيمة
إضغط على كبسة **(Dec)** لتقصي القيمة
إضغط على كبسة **(Next)** للانتقال من خانة الى أخرى
إضغط على كبسة **(Select)** لتخفيف القيمة

Repeat for any parameter

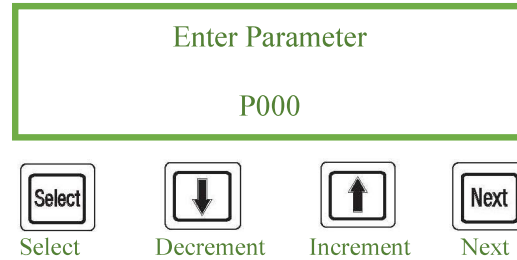
إضغط **[Select]** حتى يبدأ الرقم بالوميض. و يمكنك أن تغيره عبر سهم الطلوع و النزول. وإذا كان به فواصل اضغط **NEXT** للانتقال من خانة إلى

أخرى. لتثبيت الرقم اضغط **[Select]**

2.4 To Enter a direct Parameter: للدخول الى رمز رقم معين

Press on **Dec** and **Inc** buttons together for 3 sec to enter a certain parameter.

إضغط على كبسة (Dec) و (Inc) مع بعضهما لمدة 3 ثواني للدخول الى رمز رقم معين



Press on **Next** button to move from one digit to another.

Press on **Inc** button to increase number.

Press on **Dec** button to decrease number

Press on **Select** button to save the parameter you entered.

إضغط على كبسة (Next) للانتقال من خانة الى أخرى

إضغط على كبسة (Inc) لزيادة الرقم

إضغط على كبسة (Dec) لتقصي الرقم

إضغط على كبسة (Select) لتخفيض رمز الرقم الذي وضعته

2.5 To change the password: لتغيير كلمة السر

If you entered the password 0000 and you save it, then you want to change the password, you must press on **Select**, **Dec** and **Inc** buttons together until the password appear

إذ وضعت رقم سري وحفظته في الجهاز ثم بعد ذلك أردت ان تغيره, يجب أن تضغط على (Select) و (Dec) و (Inc) مع بعضهما حتى يظهر الرقم السري

Press on **Inc** button to increase number.

Press on **Dec** button to decrease number.

Press on **Next** button to move from one digit to another.

Press on **Select** button to save the password you entered.

إضغط على كبسة (INC) لزيادة الرقم

إضغط على كبسة (Dec) لتقصي الرقم

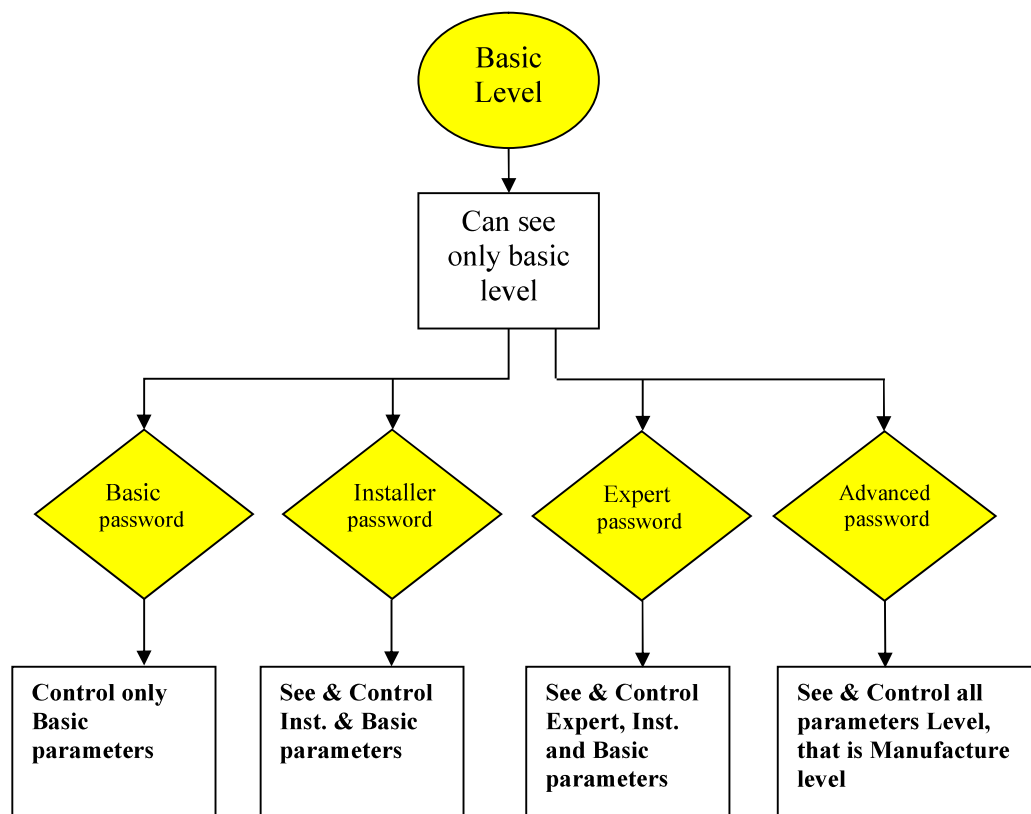
إضغط على كبسة (Next) للانتقال من خانة الى أخرى

إضغط على كبسة (Select) لتخفيض الرقم السري الذي وضعته

***Takes Power directly from the Sun through Solar Panels when connecting to SUNTRACK**

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3. Parameter Mode



1. **Basic mode (B):** This user has the privilege to change basic parameters.
2. **Installer mode (I):** This user has the privilege to change and view installer and basic parameters.
3. **Expert mode (E):** This user has the privilege to change and view expert, installer and basic parameters
4. **Advanced mode (A):** This user has the privilege to change and view advanced, expert, installer and basic parameters.

**Takes Power directly from the Sun through Solar Panels when connecting to SUNTRACK*

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4. Default Settings Values

Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Basic	P002	Max source AC current (Power Sharing)	Aac	30	1 → 32	30	1 → 50
Custom	P003	Battery charger current	Adc	20	0 → 45	20	0 → 50
Basic	P004	Battery Capacity	AH	200	100 → 400	200	100 → 400
Basic	P005	Battery type	-----	Tubular	0: Tubular 1: Car Battery 2: Gel 3: Lithium 4: AGM	Tubular	0: Tubular 1: Car Battery 2: Gel 3: Lithium 4: AGM
Basic	P006	Enable Inverter	-----	Yes	Yes/No	Yes	Yes/No
Basic	P007	Immediate detection of input voltage loss (UPS)	text	none	0: none 1: medium 2: fast(See P36)	none	0: none 1: medium 2: fast(See P36)
Expert	P008	Inverter 380 Volt	-----	No	Yes/No	No	Yes/No
Expert	P009	Restore installer settings	-----	0000	0000	0000	0000
Expert	P010	Restore factory settings	-----	No	Yes/No	No	Yes/No
Expert	P011	Enable Charger	-----	Yes	Yes/No	Yes	Yes/No
Basic	P012	AC under volt to inverter	Vac	150	100 → 200	150	100 → 200
Basic	P013	AC over volt to inverter	Vac	260	240 → 280	260	240 → 280
Custom	P014	AC inverter Output	Vac	220	190 → 240	220	190 → 240
Custom	P015	Battery under voltage level no load	Vdc	20.4	18 → 36	40.8	36 → 72
Expert	P016	Battery under voltage dynamic compensation	-----	Yes	Yes/No	Yes	Yes/No
Expert	P017	Kind of dynamic compensation	Text	Automatic	Manual → Automatic	Automatic	Manual → Automatic
Custom	P018	Battery under voltage level at full load	Vdc	20	18 → 36	40	36 → 72
Expert	P019	Battery under voltage duration before turn off	min	0	0 → 60	0	0 → 60
Expert	P020	Restart voltage after batteries under voltage	Vdc	25.4	18.96 → 36	50.8	37.92 → 72
Custom	P021	Battery low level for acoustic alarm	Vdc	21	18.96 → 36	42	37.92 → 72
Custom	P022	Acoustic alarm duration	min	10	0 → 10	10	0 → 10
Basic	P023	Max Ac charge Current (from Main Grid)	Aac	10	0 → 20	10	0 → 20
Basic	P024	Ac charging Current stage 1(from Subscription)	Aac	2	0 → 5.0	2	0 → 5
Basic	P025	Max source AC Current stage 1	Aac	10	1 → 15	10	1 → 15
Custom	P026	Ac inverter under volt	Vac	150	100 → 160	150	100 → 160
Expert	P027	Battery over volt level	Vdc	34	18.96 → 37.2	68	37.92 → 74.4
Expert	P028	Restart voltage level after battery over volt	Vdc	32.4	18.96 → 36	64.8	37.92 → 72
Custom	P029	Battery floating level	Vdc	26.8	18.96 → 36	53.6	37.92 → 72
Basic	P030	Truncate	-----	No	Yes/No	No	Yes/No
Basic	P031	Battery under volt to immediate turn off	Vdc	15	10 → 20	30	20 → 40
Basic	P032	Enable of temperature compensation	-----	No	Yes/No	No	Yes/No
Basic	P033	Temperature compensation	^c	3	45 → 60	3	45 → 60
Basic	P034	UPS Detection on Low	-----	18	16 → 22	18	16 → 22
Basic	P035	UPS Detection on High	-----	26	23 → 28	26	23 → 28
Basic	P036	AC Detection Sensitivity	%	15	5 → 50	15	5 → 50
Basic	P037	Delay transfer relay	sec	5	0 → 60	3	0 → 60
Expert	P038	Minimal delay between cycles	hours	3	0 → 540	3	0 → 540
Expert	P039	Enable absorption stage	-----	Yes	Yes/No	Yes	Yes/No
Custom	P040	Battery Absorption Voltage	Vdc	28	18.96 → 36	56	37.92 → 72
Expert	P041	Absorption Duration	hours	2	1 → 18	2	1 → 18
Expert	P042	End of absorption triggered with current	-----	Yes	Yes/No	Yes	Yes/No
Expert	P043	Current limit to quit the absorption phase	Adc	10	4 → 200	10	4 → 200
Basic	P044	Firmware Version	Text	Text	Version	Text	Version
Basic	P045	Hardware Version	Text	Text	Version	Text	Version
Basic	P046	Serial number	Number	number	number	number	number
Expert	P048	Equalization after absorption stage	-----	No	Yes/No	No	Yes/No
Expert	P049	Enable Equalization	-----	Yes	Yes/No	Yes	Yes/No
Basic	P050	Force Equalization	-----	none	None → Force	none	None → Force
Basic	P051	Equalize at absorption stage	-----	After	After/Before	After	After/Before
Expert	P052	Equalization current	Adc	10	0 → 50	10	0 → 50
Custom	P053	Equalization voltage	Vdc	30	26.04 → 36	60	52.08 → 72



Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Expert	P054	Equalization duration	Min	30	5 → 300	30	5 → 300
Expert	P055	Number of cycles before an equalization	-----	50	0 → 100	50	0 → 100
Expert	P056	Equalization at fixed interval	-----	No	Yes/No	No	Yes/No
Expert	P057	Weeks between equalizations	weeks	5	1 → 104	5	1 → 104
Expert	P058	End of equalization triggered with current	-----	No	Yes/No	No	Yes/No
Expert	P059	Current limit to quit the equalization phase	Adc	10	4 → 30	10	4 → 30
Expert	P060	Equalization Cycle Voltage	Vdc	22.5	20 → 36	45	30 → 72
Expert	P061	Enable Reduced floating	-----	Yes	Yes/No	Yes	Yes/No
Expert	P062	Duration before Floating Current stage	Hours	1	1 → 720	1	1 → 720
Expert	P063	Reduced floating voltage	Vdc	26.4	26.4 → 36	52.8	52.08 → 72
Expert	P065	Enable Periodic absorption	-----	Yes	Yes/No	Yes	Yes/No
Expert	P066	Periodic absorption voltage	Vdc	28.8	26.04 → 36	57.6	52.08 → 72
Expert	P067	Duration before reduced Floating Current stage	hour	168	1 → 720	168	1 → 720
Expert	P068	Periodic absorption duration	Minutes	30	5 → 600	30	5 → 600
Basic	P069	AC/DC Current Alarm	Yes/No	No	Yes/No	No	Yes/No
Basic	P070	Over load AC Current Alarm	A	15	0 → 20	15	0 → 20
Basic	P071	Over load DC Current Alarm	A	100	0 → 250	100	0 → 250
Basic	P072	AC/DC Current duration before turn off acoustic alarm	min	1	0 → 15	1	0 → 15
Basic	P073	Battery Voltage 1	Vdc	23.16	18 → 36	46.32	36 → 72
Basic	P074	Battery Voltage1 Timer	Hours	1	0 → 5	1	0 → 5
Basic	P075	Battery Voltage2	Vdc	23.16	18 → 36	46.32	36 → 72
Basic	P076	Battery Voltage 2 Timer	min	10	0 → 45	10	0 → 45
Basic	P077	Battery Voltage 3	Vdc	23.16	18 → 36	46.32	36 → 72
Basic	P078	Battery Voltage 3 Timer	Sec	15	0 → 45	15	0 → 45
Basic	P079	Select stage*1	text	absorption	0: bulk 1: absorption 2: floating	absorption	0: bulk 1: absorption 2: floating
Basic	P080	Equalization Timeout	hours	2	0 → 30	2	0 → 30
Basic	P081	Rate battery charged temperature	^	25	20 → 40	25	20 → 40
Basic	P082	Battery temperature compensation	Mv/C^/Cell	3	0 → 8	3	0 → 8
Basic	P083	On / Off Delay	Yes/No	No	Yes/No	No	Yes/No
Basic	P084	On / Off Time	sec	5	5 → 25	5	5 → 25
Basic	P085	Floating Battery under volt restart changing	-----	1000	1 → 1024	1000	1 → 1024
Basic	P086	Enable Watt Accumulator	Yes/No	No	Yes/No	No	Yes/No
Basic	P087	Increase watt change %	%	15	5 → 50	15	5 → 50
Expert	P088	Time delay before transfer relay	sec	8	0 → 30	8	0 → 30
Expert	P089	Input voltage giving an immediate opening of the transfer relay (UPS)	Vac	120	50 → 230	120	50 → 230
Expert	P090	Absolute max limit for input voltage	Vac	260	250 → 290	260	250 → 290
Advanced	P091	Feedback	rms	570	0 → 1000	570	0 → 1000
Advanced	P092	Eco-subscribe debouncing time	sec	1	1 → 50	1	1 → 50
Basic	P093	Under/over volt buzzer	-----	Yes	Yes/No	Yes	Yes/No
Basic	P094	Under/over volt buzzer Timer	sec	10	0.1 → 5.0	10	0.1 → 5.0
Basic	P095	UPS Buzzer		No	Yes/No	No	Yes/No
Basic	P096	Bulk time Out	hours	4	0 → 30	4	0 → 30
Basic	P097	Hysteresis	-----	5	0 → 30	5	0 → 30
Custom	P098	Enable Buzzer	-----	Yes	Yes/No	Yes	Yes/No
Basic	P099	Line type	-----	none	Mono-phase 3Ph R – line 1 3Ph S – line 2 3Ph T – line 3 2Ph R – line 1 2Ph S – line 2 Parallel	none	Mono-phase 3Ph R – line 1 3Ph S – line 2 3Ph T – line 3 2Ph R – line 1 2Ph S – line 2 Parallel
Basic	P100	3 Phase Action	-----	Normal 3 Phase	Normal 3-ph 1 to 3- Ph convert	Normal 3 Phase	Normal 3-ph 1 to 3- Ph convert
Basic	P101	Enable # phase error charge	-----	-----	-----	-----	-----



Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Expert	P102	Fan Auto Speed	-----	Yes	Yes/No	Yes	Yes/No
Expert	P103	Fan Speed 1	^c	42	40 → 44	42	40 → 44
Expert	P104	Fan Speed 2	^c	44	42 → 45	45	42 → 45
Expert	P105	Fan Fast Speed	^c	46	45 → 50	47	45 → 50
Expert	P106	Temp shutdown	^c	55	45 → 60	55	45 → 60
Expert	P107	Temp Fan hi	^c	45	40 → 55	45	40 → 55
Expert	P108	Temp Fan Low	^c	39	25 → 40	39	25 → 40
Expert	P109	Temp Hysteresis	^c	3	1 → 10	3	1 → 10
Basic	P110	RMS Adjust	-----	No	Yes/No	No	Yes/No
Basic	P111	Load Hysteresis	-----	10	0 → 30	10	0 → 30
Basic	P112	3 Phase Error Charge	-----	No	Yes/No	No	Yes/No
Basic	P113	Load Search Enable	-----	No	Yes/No	No	Yes/No
Basic	P114	Load Search	mAac	500	100 → 1500	500	100 → 1500
Basic	P115	Load Search Duration	min	1	1 → 255	1	1 → 255
Basic	P116	Load Search Retry	sec	30	5 → 300	30	5 → 300
Basic	P117	Auto AC Output regulation	-----	No	Yes/No	No	Yes/No
Basic	P118	Minimum Auto AC Regulation	Vac	200	190 → 210	200	190 → 210
Basic	P119	Maximum Auto AC Regulation	Vac	230	220 → 240	230	220 → 240
Basic	P120	Turn On / OFF button	-----	No	Yes/No	No	Yes/No
Basic	P121	Overload Current to shutdown	Aac	18	3 → 25	18	3 → 30
Basic	P122	HW Shutdown	-----	4	1 → 10	4	1 → 10
Basic	P123	Overload Retry Time	number	4	0 → 10	4	0 → 10
Basic	P124	Overload time between Retry	sec	10	0 → 30	10	0 → 30
Basic	P125	APS mode	-----	No	Yes/No	No	Yes/No
Basic	P126	APS switch timer	sec	2	2 → 50	2	2 → 50
Basic	P127	Charging speed at startup	-----	5	0 → 5	5	0 → 5
Basic	P128	Under AC current out	Aac	7	1 → 50	7	1 → 50
Basic	P129	Under AC current debounce time	Sec	5	0 → 180	5	0 → 180
Basic	P130	Time 12/24 o'clock	-----	12	12/24	12	12/24
Basic	P131	Time	Day	1	1 → 31	1	1 → 31
Basic	P132	Day	Mon	1	1 → 12	1	1 → 12
Basic	P133	Month	Year	12	0 → 99	12	0 → 99
Basic	P134	Year	-----	08:00	00:00 → 23:59	08:00	00:00 → 23:59
Basic	P135	Display Date/ time on LCD	-----	No	Yes/No	No	Yes/No
Expert	P136	Enable Floating Current stage	-----	Yes	Yes/No	Yes	Yes/No
Expert	P137	Floating Current stage Current	Adc	3	1 → 20	3	1 → 20
Expert	P138	Floating Current stage duration before reduced floating	hours	24	1 → 720	24	1 → 720
Expert	P139	Enable Reduce Floating Current stage	-----	Yes	Yes/No	Yes	Yes/No
Expert	P140	Reduce Floating Current stage Current	Adc	3	1 → 20	3	1 → 20
Expert	P141	Reduce Floating Current stage duration before periodic Absorption	days	1	1 → 30	1	1 → 30
Custom	P143	Sleep	hrs	0	0 → 5	0	0 → 5
Expert	P150	Input1	-----	yes	Yes/No	yes	Yes/No
Expert	P151	Input1 Delay time	Sec	2	1 → 600	2	1 → 600
Expert	P152	Input1 Function1*2	-----	Max Charge P024	None – action	Max Charge P024	None – action
Expert	P153	Input1 Function2*2	-----	none	None – action	none	None – action
Expert	P154	Input1 Function3*2	-----	none	None – action	none	None – action
Expert	P155	Input1 ignore time	min	0	1 → 3000	0	1 → 3000
Expert	P156	Input2	-----	yes	Yes/No	yes	Yes/No
Expert	P157	Input2 Delay time	Sec	2	1 → 600	2	1 → 600
Expert	P158	Input2 Function1*2	-----	Off output 2	None – action	Turn Off All	None – action
Expert	P159	Input2 Function2*2	-----	none	None – action	none	None – action
Expert	P160	Input2 Function3*2	-----	none	None – action	none	None – action
Expert	P161	Input2 ignore time	min	0	1 → 3000	0	1 → 3000
Expert	P162	Output1	-----	Yes	Yes/No	Yes	Yes/No
Expert	P163	Output1 Delay time	Sec	0	1 → 600	0	1 → 600
Expert	P164	Output1 Function1*3	-----	Rescue On	None – action	P077	None – action
Expert	P165	Output1 Function2*3	-----	none	None – action	none	None – action



Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Expert	P166	Output1 Function3*3	-----	P079	None – action	P079	None – action
Expert	P167	Output1 ignore time	min	10	1 → 3000	10	1 → 3000
Expert	P168	Output2	-----	Yes	Yes/No	Yes	Yes/No
Expert	P169	Output2 Delay time	Sec	0	1 → 600	0	1 → 600
Expert	P170	Output2 Function1*3	-----	P075	None – action	P075	None – action
Expert	P171	Output2 Function2*3	-----	none	None – action	none	None – action
Expert	P172	Output2 Function3*3	-----	P079	None – action	P079	None – action
Expert	P173	Output2 ignore time	min	180	1 → 3000	180	1 → 3000
Advanced	P175	Max. Combined Charging Current	Adc	35	0 → 45	45	0 → 50
Expert	P176	Enable Switch to Inverter When Solar get Max. Charging Current	-----	No	Yes/No	No	Yes/No
Advanced	P177	Disable P176 before the end of Solar Day Mode	hour	1	0 → 4	1	0 → 4
Expert	P178	Enable Bus Combined Charging Current	-----	No	Yes/No	No	Yes/No
Expert	P179	Bus Combined Charging Current	Adc	100	60 → 500	100	60 → 500
Expert	P180	Solar Mode	-----	No	Yes/No	No	Yes/No
Custom	P181	Battery Under volt to ignore solar mode	Vdc	23	20 → 29.5	48	40 → 59
Custom	P182	Battery volt to start solar mode	Vdc	27	18.96 → 36	56	37.92 → 72
Expert	P183	Solar mode action	-----	Dis-charger	Dis-charger Dis-Main	Dis-charger	Dis-charger Dis-Main
Expert	P186	Solar Mode Smart Charge	-----	No	Yes/No	No	Yes/No
Expert	P187	Solar Charge Per hour	Watt	3000	500 → 10000	3000	500 → 10000
Expert	P188	Load Watt Factor	-----	0.75	0.5→1.00	0.75	0.5→1.00
Expert	P189	Charge Watt Factor	-----	0.90	0.5→1.00	0.75	0.5→1.00
Expert	P190	Smart Solar Mode	-----	Yes	Yes/No	Yes	Yes/No
Expert	P191	Battery % to Start charge	%	80	30 → 95	80	30 → 95
Expert	P192	AC Input Hour	hour	4	2 → 10	4	2 → 10
Expert	P193	Charge By Time AC In	-----	Yes	Yes/No	Yes	Yes/No
Expert	P194	AC Charge Hour	hour	1	1 → P192	1	1 → P192
Expert	P195	Enable Solar Day Mode Time Limit	-----	Yes	Yes/No	Yes	Yes/No
Expert	P196	Start Day Mode Time	Date	8	6 → 12	8	6 → 12
Expert	P197	End Day Mode Time	Date	16	13 → 21	16	13 → 21
Expert	P200	Battery Absorption %	%	90	70→95	90	70→95
Expert	P900	Fan always ON	-----	No	Yes/No	No	Yes/No
Expert	P901	Turn on output	-----	No	Yes/No	No	Yes/No
Expert	P902	Erase Logs	-----	No	Yes/No	No	Yes/No
Expert	P903	Fan Voltage	Volt	24	12 : 24	24	12 : 24
Expert	P904	Fan Speed 1 Volt	Volt	10	8 → 10	10	8 → 10
Expert	P905	Fan Speed 2 Volt	Volt	11	9 → 12	11	9 → 12
Expert	P906	Fan high speed Volt	Volt	13	11→13	13	11→13
Expert	P907	Charge current to turn on Fan	A	20	10→40	20	10→40
Expert	P908	Inverter ON after hardware Reset	-----	No	Yes/No	No	Yes/No
Expert	P909	Time for Inverter ON after hardware Reset	sec	10	5→500	10	5→500
Expert	P910	Rescue Fan	-----	No	Yes/No	No	Yes/No
Expert	P911	Rescue Enable	-----	No	Yes/No	No	Yes/No
Expert	P912	Rescue Time	min	2	1 → 60	2	1 → 60
Expert	P913	Rescue Min Current	Aac	2.5	2.5 → 5	2.5	2.5 → 5
Expert	P914	Rescue Trip	-----	5	5 → 100	5	5 → 100
Expert	P917	On Relay Timer	msec	10	5 → 20	10	5 → 20
Expert	P918	Engage NTR relay	-----	Yes	Yes/No	Yes	Yes/No
Basic	P919	Software Reset	-----	No	Yes/No	No	Yes/No
Basic	P920	Phase Adjustment	-----	No	Yes/No	No	Yes/No
Basic	P921	Tadj	-----	117	0 → 320	117	0 → 320
Basic	P922	Sadj	-----	64	0 → 320	64	0 → 320
Basic	P923	ST Adjust	-----	No	Yes/No	No	Yes/No
Basic	P925	Logs record time	min	6	1 → 15	6	1→15
Expert	P930	Vdc Reading Volt (Calibration)	Vdc	(read)	10 → 70	(read)	10 → 70
Expert	P931	Vin Reading Volt (Calibration)	Vac	(read)	160 → 260	(read)	160 → 260
Expert	P932	Vout Reading Volt (Calibration)	Vac	(read)	160 → 260	(read)	160 → 260
Expert	P933	Ain Reading Volt (Calibration)	Aac	(read)	1→10	(read)	1→10
Expert	P934	Achg Reading Volt (Calibration)	Aac	(read)	1→10	(read)	1→10



Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Advanced	P940	Update Parameter	-----	No	Yes/No	No	Yes/No
Advanced	P945	Enable AC Inverter Under Volt	-----	No	Yes/No	No	Yes/No
Advanced	P950	Battery Voltage	Vdc	24	-----	48	-----
Advanced	P955	Timing speed	-----	0	0 → 1000	0	0 → 1000
Basic	P960	Test Input / Output	-----	No	Yes/No	No	Yes/No
Basic	P961	ADC restart time delay	Sec	1	-----	1	-----
Expert	P962	Phase - Neuter Reverse Detection	-----	Enable	0:Disable this function 1:Enable this function with Alarm 2:Enable this function without Alarm	Enable	0:Disable this function 1:Enable this function with Alarm 2:Enable this function without Alarm
Advanced	P965	LCD 4 line	-----	No	Yes/No	No	Yes/No
Advanced	P970	First Unlock	-----	Unlock	Lock /Unlock	Unlock	Lock / Unlock
Advanced	P971	Second Unlock	-----	Unlock	Lock / Unlock	Unlock	Lock / Unlock
Advanced	P981	UPS type	-----	-----	-----	-----	iPS-4000 iPS-6000 iPS-8000 iPS-10000
Installer	P998	Installer Password	-----	-----	-----	-----	-----
Expert	P999	Expert Password	-----	-----	-----	-----	-----

Note: Technical Parameters are subjected to change due to continuous improvements and R&D

4.1 Most Commonly Used Parameters

Modes	Parameters	Description	Units	24 V battery		48 V battery	
				Default	Range	Default	Range
Basic	P002	Max source AC current (Power Sharing)	Aac	30	1 → 32	30	1 → 50
Custom	P003	Battery charger current	Adc	20	0 → 45	20	0 → 50
Basic	P005	Battery type	-----	Tubular	0:Tubular 1: Car Battery 2: Gel 3: Lithium 4: AGM	Tubular	0:Tubular 1: Car Battery 2: Gel 3: Lithium 4: AGM
Basic	P007	Immediate detection of input voltage loss (UPS)	text	none	0: none 1: medium 2: fast(See P36)	none	0: none 1: medium 2: fast(See P36)
Custom	P015	Battery under voltage level no load	Vdc	20.4	18 → 36	40.8	36 → 72
Custom	P018	Battery under voltage level at full load	Vdc	20	18 → 36	40	36 → 72
Custom	P022	Acoustic alarm duration	min	10	0 → 10	10	0 → 10
Basic	P023	Max Ac charge Current (from Main Grid)	Aac	10	0 → 20	10	0 → 20
Basic	P025	Max source AC Current stage 1	Aac	10	1 → 15	10	1 → 15
Basic	P036	AC Detection Sensitivity	%	15	5 → 50	15	5 → 50
Custom	P040	Battery Absorption Voltage	Vdc	28	18.96 → 36	56	37.92 → 72
Expert	P041	Absorption Duration	hours	2	1 → 18	2	1 → 18
Expert	P042	End of absorption triggered with current	-----	Yes	Yes/No	Yes	Yes/No
Basic	P044	Firmware Version	Text	Text	Version	Text	Version
Basic	P069	AC/DC Current Alarm	Yes/No	No	Yes/No	No	Yes/No
Basic	P070	Over load AC Current Alarm	A	15	0 → 20	15	0 → 20
Basic	P072	AC/DC Current duration before turn off acoustic alarm	min	1	0 → 15	1	0 → 15
Basic	P093	Under/over volt buzzer	-----	Yes	Yes/No	Yes	Yes/No
Basic	P094	Under/over volt buzzer Timer	sec	10	0.1 → 5.0	10	0.1 → 5.0
Basic	P096	Bulk time Out	hours	4	0 → 30	4	0 → 30
Basic	P097	Hysteresis	-----	5	0 → 30	5	0 → 30
Custom	P098	Enable Buzzer	-----	Yes	Yes/No	Yes	Yes/No
Basic	P125	APS mode	-----	No	Yes/No	No	Yes/No
Expert	P918	Engage NTR relay	-----	Yes	Yes/No	Yes	Yes/No
Basic	P919	Software Reset	-----	No	Yes/No	No	Yes/No
Basic	P126	APS switch timer	sec	2	2 → 50	2	2 → 50
Advanced	P940	Update Parameter	-----	No	Yes/No	No	Yes/No
Expert	P962	Phase - Neuter Reverse Detection	-----	Enable	0:Disable this function 1:Enable this function with Alarm 2:Enable this function without Alarm	Enable	0:Disable this function 1:Enable this function with Alarm 2:Enable this function without Alarm

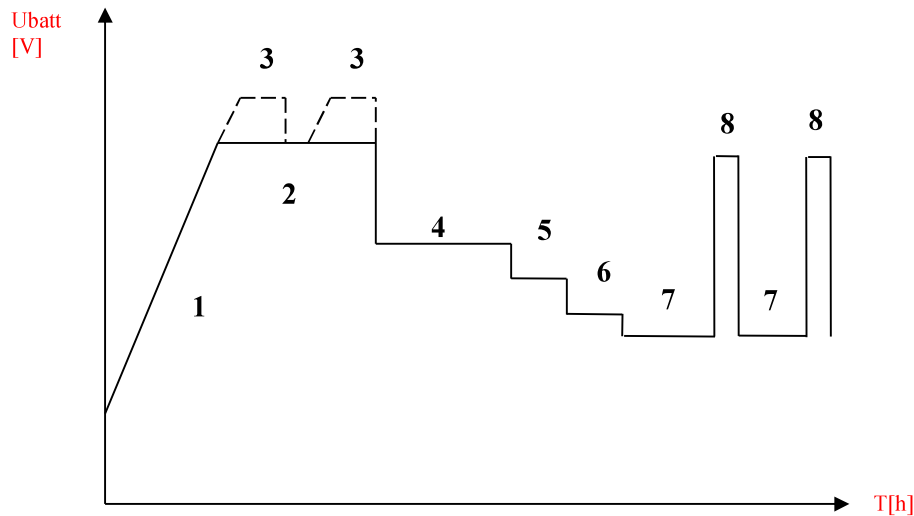
Volt-Ampere Adjusting (For Expert Only):

1. Choose the fault Volt or Ampere to be changed from parameters **P930** to **P931**
2. Measure the real value by Volt meter or Ampere meter and place it in the parameter value to be changed
3. Click select to save the parameter value

**** Important Note:** Ain, Ach, and Vdc can **only be incremented by 0.5 at a time.**

(Example Vdc reading 23V on LCD, and 24V on volt meter, so you must change P930 to **24 Vdc**. Put **23.5 Vdc** in P930 then click on **select** Button, then put **24 Vdc** in P930 then click on **select** button again).

5. Smart Charging Stages



- 1 : Bulk charge
- 2 : Absorption stage (**P039,P040,P041,P042,P043**)
- 3 : Equalization stage (**P049 → P060**)
- 4 : Floating volt (**P029**)
- 5 : Floating current (**P136,P137,P138**)
- 6 : Reduce Floating volt (**P061,P062,P063,P067**)
- 7 : Reduce Floating current Stage (**P139,P140,P141**)
- 8 : Periodical Absorption (**P065,P066,P068**)

***Takes Power directly from the Sun through Solar Panels when connecting to SUNTRACK**

يأخذ طاقة مباشرة من الشمس من خلال الألواح الشمسية عند توصيله مع Suntrack

6. Battery Management

Parameter numbers	Description	Default values of iPS Series 24V	Default values of iPS Series 48V
P003	Battery charger current تيار شحن البطارية	20 Adc	20 Adc
P004	Battery capacity حجم البطارية	200 AH	200 AH
P005	Battery type نوع البطارية	Tubular	Tubular
P015	Battery under voltage level with no load الحد الأدنى لفولتاج البطارية من غير حمولة	20.4 Vdc	40.8 Vdc
P016	Battery under voltage dynamic compensation الحد الأدنى لفولتاج البطارية	yes	yes
P017	Kind of dynamic compensation	Automatic	Automatic
P018	Battery under voltage level at full load الحد الأدنى لفولتاج البطارية مع حمولة قصوى	20 Vdc	40 Vdc
P019	Battery under voltage duration before turn off وقت إطفاء الجهاز بعد وصول البطارية للحد الأدنى من الطاقة	0 min	0 min
P020	Restart voltage after batteries under voltage الفولتاج الذي يبدأ العمل به بعد الوصول للحد الأدنى من الطاقة	25.4 Vdc	50.8 Vdc
P021	Battery low level for acoustic alarm عند وصول فولت البطارية الى الحد الأدنى يبدأ صوت الإنذار	21 Vdc	42 Vdc
P022	Acoustic alarm duration وقت صوت الإنذار	10 min	10 min
P023	Max Ac charge Current (from main grid) أقصى تيار شحن من شركة الكهرباء	10 Aac	10 Aac
P024	Ac charging Current (from subscription) تحديد تيار الشحن من الاشتراك	2 Aac	2 Aac
P027	Battery over voltage level الحد الأقصى لفولتاج البطارية	34 Vdc	68 Vdc
P029	Battery floating level أعلى مستوى لتعبئة البطارية	26.8 Vdc	53.6 Vdc
P061	Reduce floating enabled تباطؤ سرعة الشحن	Yes	Yes
P063	Reduced floating voltage فولتاج تباطؤ الشحن	26.4 Vdc	52.8 Vdc
P039	Enable absorption stage تشغيل امتصاص الطاقة	Yes	Yes
P040	Battery absorption voltage فولتاج مرحلة امتصاص الطاقة	28 Vdc	56 Vdc
P041	Absorption duration وقت مرحلة الإمتصاص	2 hours	2 hours
P042	End of absorption triggered by current عند وصول التيار لقيمة معينة يتوقف الإمتصاص	Yes	Yes
P043	Current limit to quit the absorption phase قيمة التيار التي تحدد انتهاء مرحلة الإمتصاص	10 Adc	10 Adc
P049	Enable equalization تشغيل الغليان	Yes	Yes
P050	Force equalization تشغيل الغليان حالاً	None	None
P052	Equalization current تيار الغليان	10 Adc	10 Adc
P053	Equalization voltage فولت الغليان	30 Vdc	60 Vdc
P054	Equalization duration وقت الغليان	30 min	30 min
P055	Number of cycles before equalization عدد الدورات قبل الغليان	50	50
P057	Weeks between equalizations عدد الأسابيع بين كل غليان	5 weeks	5 weeks
P058	End of equalization triggered with current إنهاء الغليان عند الوصول الى قيمة معينة من التيار	No	No
P059	Current limit to quit the equalization phase تحديد التيار لتوقيف الغليان	10 Adc	10 Adc

***Takes Power directly from the Sun through Solar Panels when connecting to SUNTRACK**

يأخذ طاقة مباشرة من الشمس من خلال الألواح الشمسية عند توصيله مع Suntrack



7. iPS Programming Requested When Choosing Kind Of Batteries

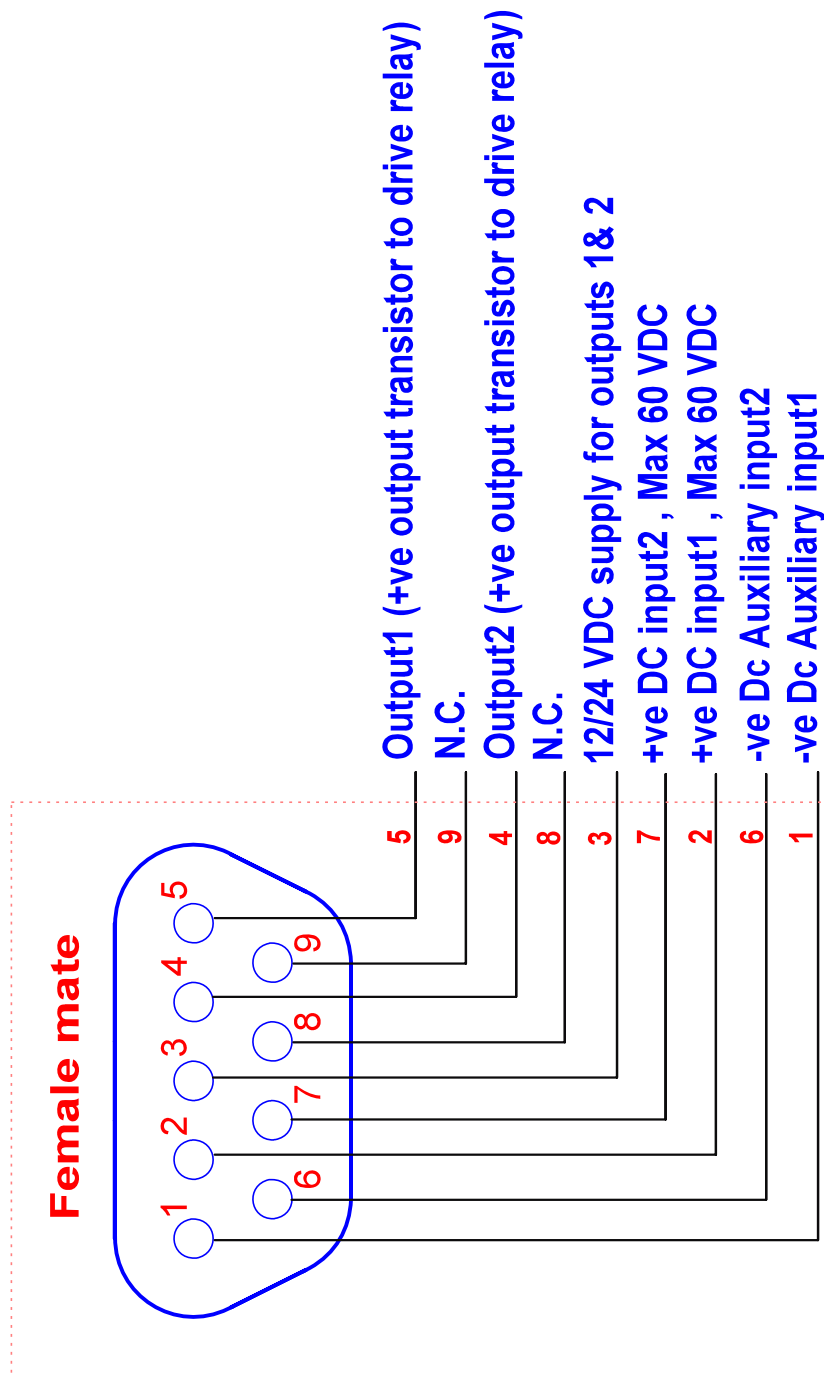
Gel Battery Settings			
Parameters	Description	24V Battery	48V Battery
P003*	Battery charger current	20A	20A
P005	Battery type	Gel	Gel
P029	Battery floating level	27.2V	54.4V
P040	Battery Absorption Voltage	27.8V	55.6V
P041	Absorption Duration	1 Hour	2 Hours
P059	Current limit to quit the equalization phase	25 Amp	28 Amp
Flooded Acid Battery (Deep Cycle)			
Parameters	Description	24V Battery	48V Battery
P003*	Battery charger current	25A	25A
P029	Battery floating level	27.8V	54.48V
P040	Battery Absorption Voltage	28.8V	57.6V
P041	Absorption Duration	2 Hour	2 Hours
P059	Current limit to quit the equalization phase	8 Amp	10 Amp
Car Battery (Flooded Acid Battery)			
Parameters	Description	24V Battery	48V Battery
P005	Battery type	Car Battery	Car Battery
P029	Battery floating level	27.4V	54.8V
P040	Battery Absorption Voltage	28 V	56V
P041	Absorption Duration	1 Hour	2 Hours
P059	Current limit to quit the equalization phase	8 Amp	10 Amp
Tubular Acid Battery (Deep Cycle) / India			
Parameters	Description	24V Battery	48V Battery
P003*	Battery charger current	25A	25A
P005	Battery type	Tubular	Tubular
P029	Battery floating level	27.8V	55.6V
P040	Battery Absorption Voltage	29.6 V	59.2V
P041	Absorption Duration	2 Hour	2 Hours
P059	Current limit to quit the equalization phase	8 Amp	10 Amp
AGM Battery			
Parameters	Description	24V Battery	48V Battery
P005	Battery type	AGM	AGM
P029	Battery floating level	27.2V	54.4V
P040	Battery Absorption Voltage	27.8V	55.6V
P059	Current limit to quit the equalization phase	25 Amp	28 Amp
Lithium Battery			
Parameters	Description	24V Battery	48V Battery
P003*	Battery charger current	40A	40A
P005	Battery type	Lithium	Lithium
P015/P018	Battery under voltage level at no load / Full Load	25.5V	51V
P019	Battery under voltage duration before turn off	2 min	2 min
P020	Restart voltage after batteries under voltage	26V	52V
P021	Battery low level for acoustic alarm	25.9V	51.7V
P023	Max Ac charge Current (from Main Grid)	7A	15A
P029	Battery floating level	28.4V	54.4V
P040	Battery Absorption Voltage	29V	58V

*P003 is programmed according to size of batteries

Batteries Capacity (P004)	Charger Amps (P003)
100AH	15 Amps
150AH	20 Amps
200AH	25 Amps



How to Build Female Connector (DB9) of the UPS I/O (iPS Series 3700-24/48V) (iPS Series 4000-10000/48V)



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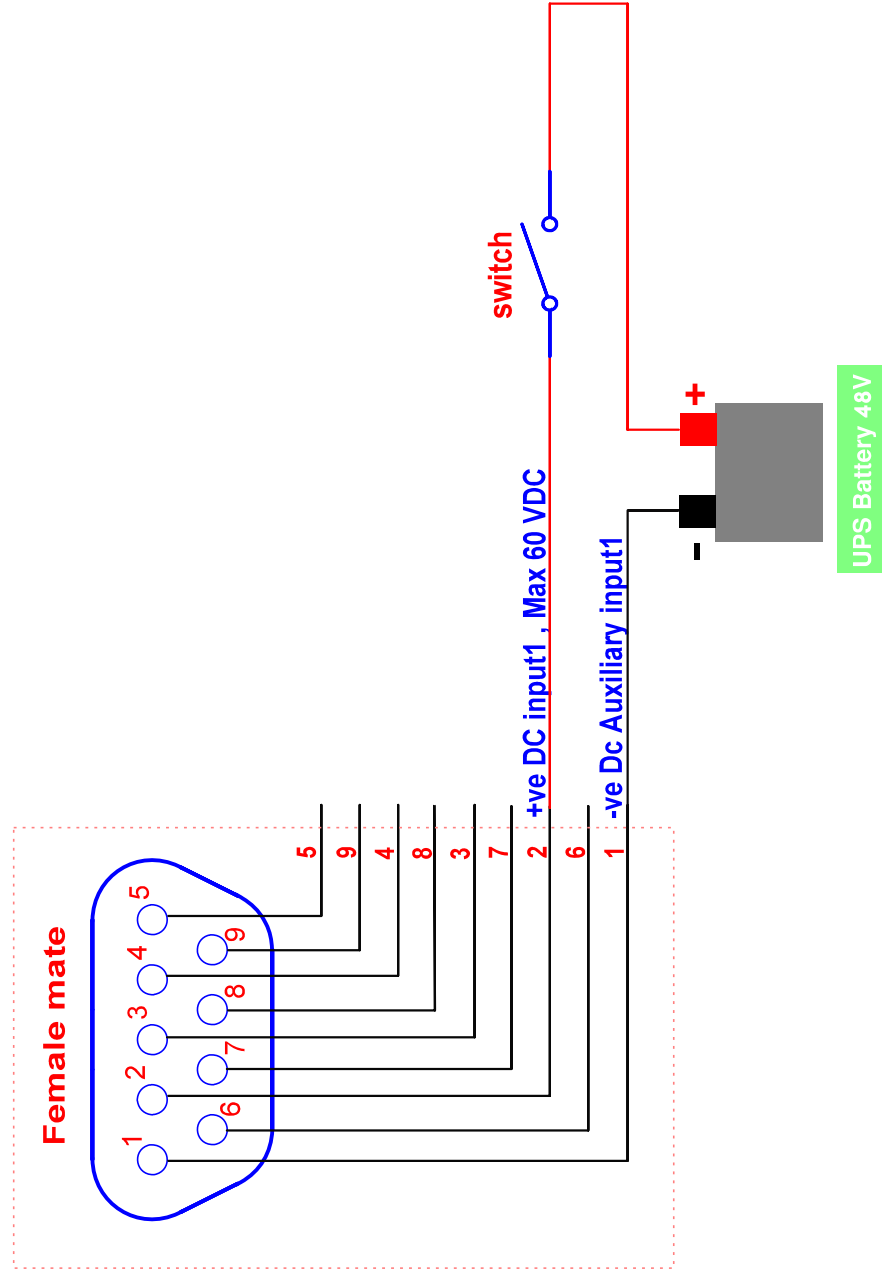
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Turn ON/OFF Inverter by using an Auxiliary switch (iPS Series 3700-24/48V) (iPS Series 4000-10000/48V)

- 1- connect an auxiliary switch to pin 2 of the female connector (db9) of ups I/O
- 2- connect pin 1 of the female connector of ups I/O to the negative voltage of the battery
- 3- connect the positive voltage of the battery to the switch
- 4- Set P150 to (Yes)
- 5- Set P152 to (disable inverter)

To activate Input 1, Input 2 (P156) must set to (No)



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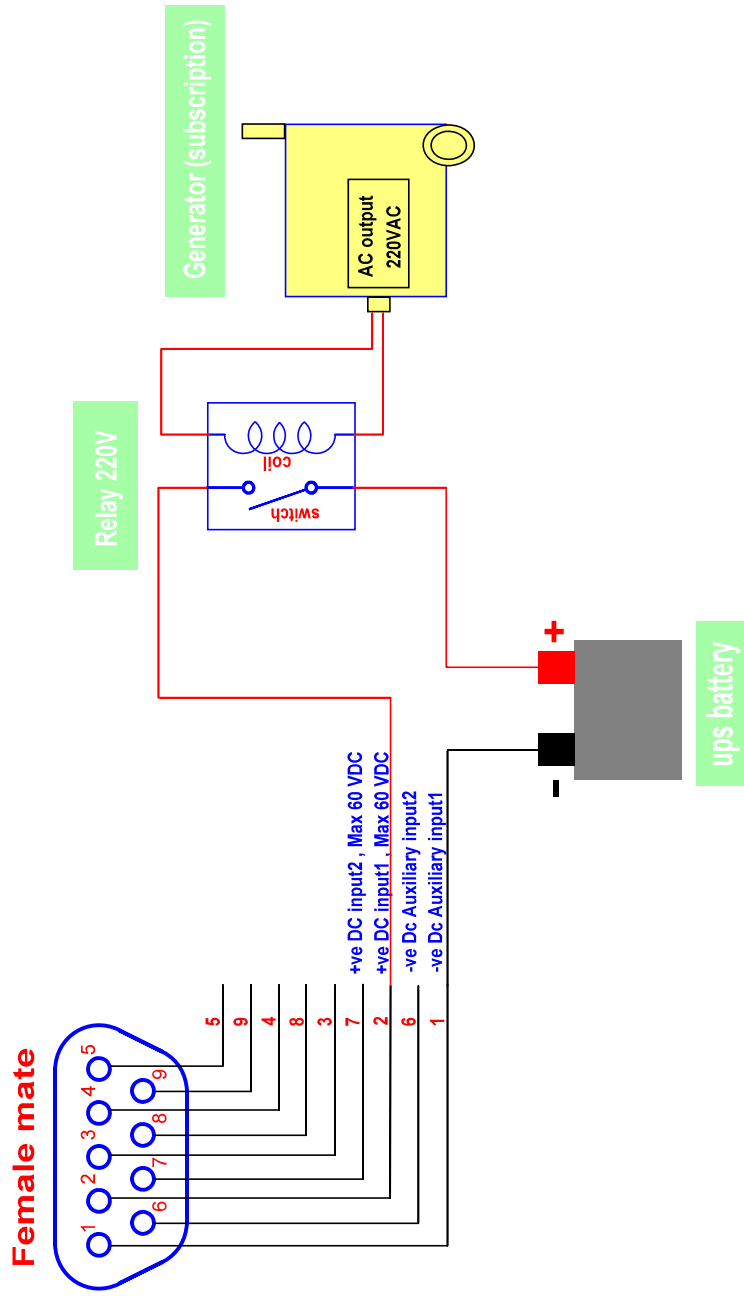


Decreasing Charging Ampere When Generator is ON (IPS Series 3700-24/48V) (IPS Series 4000-10000/48V)

- 1- Set P150 to (Yes)
- 2- Set P151 to (0)
- 3- Set P152 to (max charge P024)
- 4- Set P023 to (5A)
- 5- Set P024 to (2A)

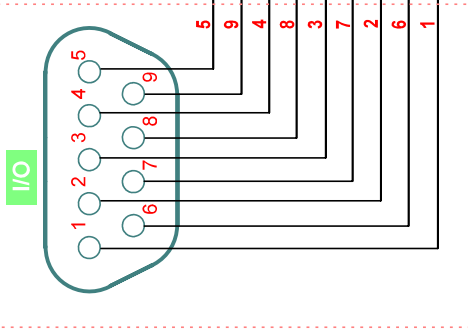
When the relay is engaged , the UPS will take the value of(P024) and charge the battery from generator(subscription) by 2A
Else the UPS will take the value of(P023) and charge the battery from main grid by 5A

To activate **Input 1**, **Input 2 (P156) must set to (No)**



Parameters	Description
P150	Input 1
P151	Input 1 delay time
P152	Input1 function1
P023	Max AC charge current (from main grid)
P024	AC charging current (from subscription)

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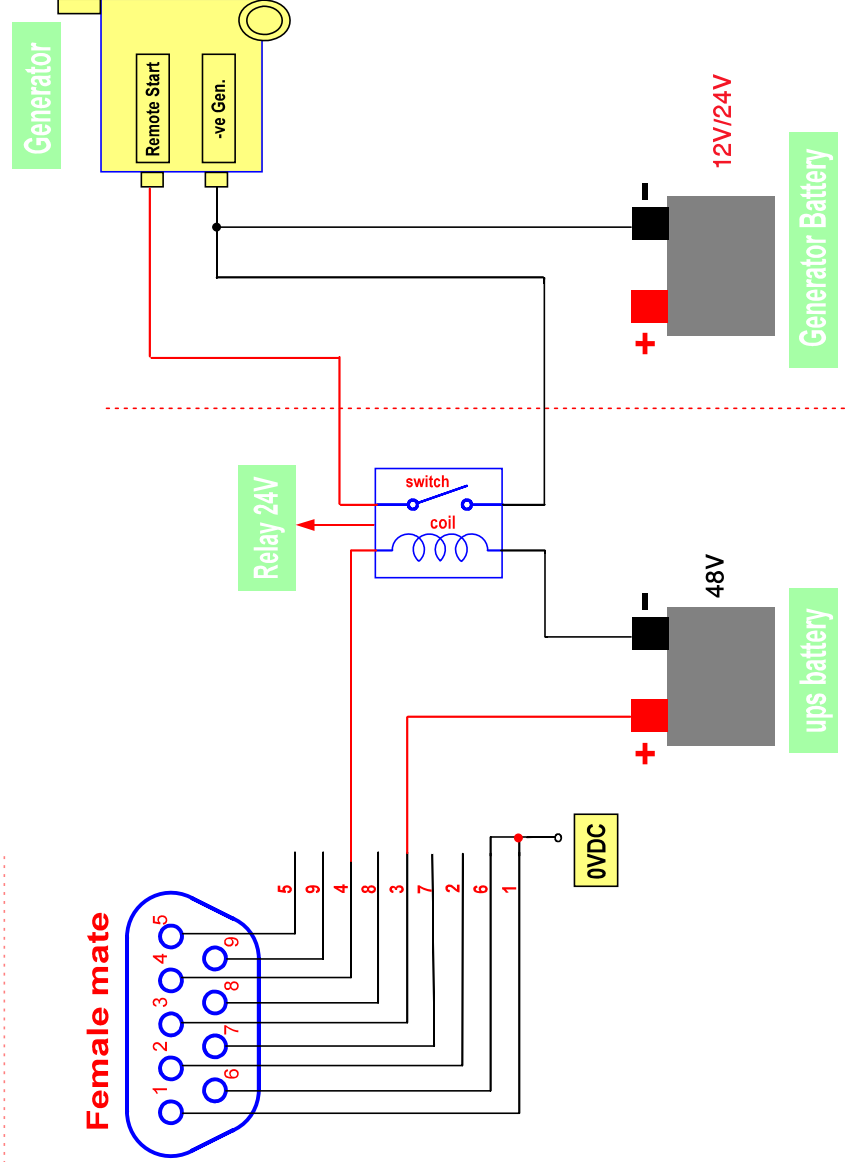


How to Activate Power Generator (iPS Series 3700-24/48V) (iPS Series 4000-10000/48V)



Parameters	Description	Default Value
P073	Battery Voltage 1 to turn on Generator	22Vdc
P074	Battery Voltage1 timer	0
P075 *	Battery Voltage 2	46 Vdc
P076	Battery Voltage2 timer	2 min
P079	Stage Select	Absorption
P168	Output 2	Yes
P169	Output 2 delay time	0 sec
P170	Output 2 function1	P073
P171	Output 2 function2	none
P172	Output 2 function3	P079
P173	Output 2 ignore timer	180 min

*P075: Maximum Voltage to turn OFF Generator and return back to UPS mode



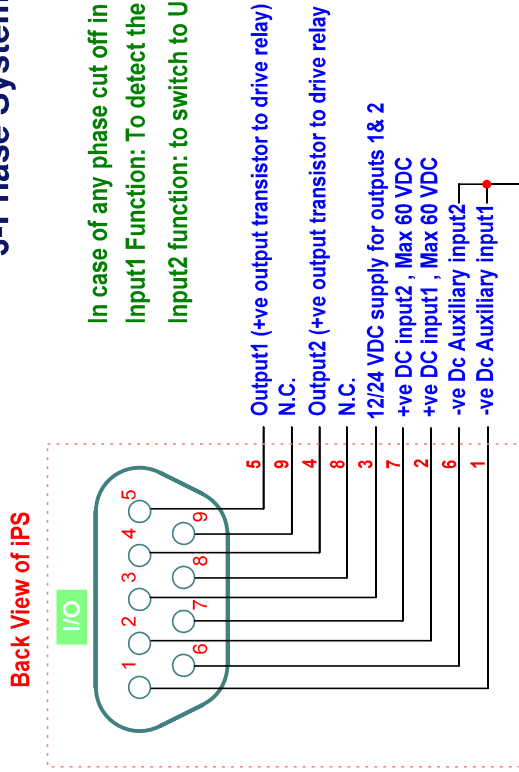
3-Phase System For Elevator (iPS Series 3700-24/48V) (iPS Series 4000-10000/48V)



In case of any phase cut off in the electricity, the system will enable charging and powering up from 1 or 2 IPS

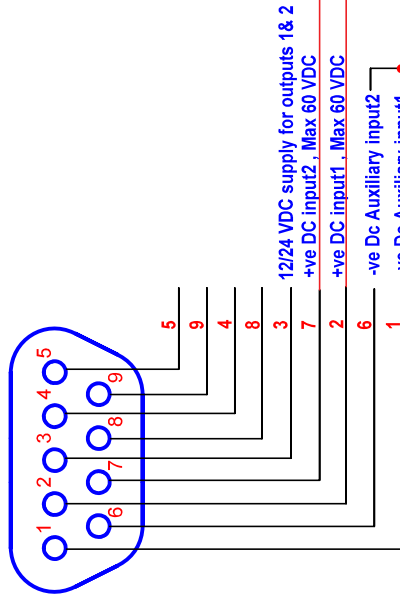
Input1 Function: To detect the phase cut-off and enable charging from 1 or 2 IPS

Input2 function: to switch to UPS mode by generating 3 phases when a request is being made

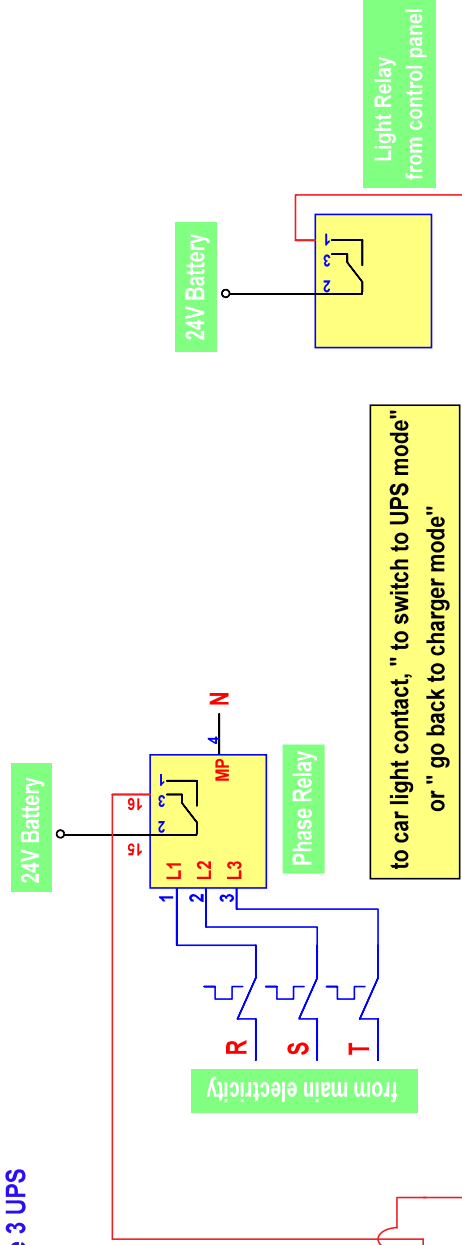


Make the following connections to 3 I/O connectors of the 3 UPS

Female mate



use the same relay phase on the panel ,but disconnect N and 380V on it and connect it to 24V battery and input1 as follows



Connect all Inputs1 in the 3 IPS together, and all Inputs2 together in their I/O connectors

Change the following Parameters in the 3 IPS:

1. Change P152 to " 3 Phase error"
2. Change P157 to " 0 sec"
3. Change P158 to " Request exist"

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