

Modular High Power System

Data Sheet

Total Power:	Up to 24 KW
Input Voltage:	180-264 Vac
	342-528 Vac
	Single or 3-Phase for
	iHP12
	3-Phase for iHP24
	540-660 Vac
	3-Phase for iHP24C
# of Outputs:	Up to 8

SPECIAL FEATURES

- 5 years manufacturer's warranty
- Multi output intelligent and modular high power system
- Standard 19" rack
- Outputs parallel up to 1600 A
- Outputs series up to 1000 V
- 100% digital control
- Outputs program as voltage or current source
- Versatile input configurable to:
- Low line 180-264 Vac single phase and 3-phase
- High line 342-528 Vac 3-phase
- High line 540-660 Vac 3-phase (iHP24C)
- Medical safety approved NO ISOLATION XFMR NEEDED
- Analog Interface either 0-5 V or 0-10 V for both current and voltage.
 Compatible with, but not limited to Priva, Argus, TrollMaster and Hortimax controllers
- Flexible digital control interfaces (Note 1)
- Air cooled
- Semi F47 compliance
- Field upgradeable firmware
- Programmable slew rate
- Fast current slew rate up to 200 Hz
- Active power factor correction
- User defined command profiles

SAFETY

- UL 60950-1 2nd Edition; EN60950-1; IEC60950-1/EN60950
- CSA C22.2 No. 60950-1-07, 2nd Edition
- EN60601-1; IEC60601-1; IEC60601
- UL 60601-1 1st Edition; ANSI/AAMI ES60601-1 (2005 + C1:09 + A2:10) 3rd Ed
- CAN/CSA-C22.2 No. 60601-1 (2008)
- CB Certificate and Report
- CE (LVD+RoHS), EN60950-1



Up to 24000 Watts

iHP24 Elec	ctrical Specificatio	ns				
Input Parameter	19" Rack 24 KW strapped as 3-phase 380/480 Vac Nominal (iHP24H3A)	19" Rack 24 KW strapped as 3-phase 208/240 Vac Nominal (iHP24L3A)	19" Rack 24 KW strapped as 3-phase 600 Vac Nominal (iHP24C3A)			
Input range	342 Vac to 528 Vac (Nominal rating 380/480 Vac)	187.5 Vac to 264 Vac (Nominal rating 208/240 Vac)	540 Vac to 660 Vac (Nominal rating 600 Vac)			
Number of phases	3-phase (Wye or Delta) 4 protective ea		3-phase Wye 5 wire total (3-phases, neutral and protective earth ground)			
Frequency		47-63 Hz				
Phase detection		oss of phase will inhibit unit off ng/comms must continue with				
Max current/ phase	51 A @ 342 Vac 40 A @ 432 Vac	84 A @ 187.5 Vac	29 A @ 312 Vac			
Undervoltage detection	Nominal input locked on at turn-on. Undervoltage shutdown at 15% below nominal. Turn-on at 12% below nominal. Not to interfere with SEMI F47 specs.					
Current inrush		2.5 x Max input current				
Power factor	>	0.98 @ full load and nominal lir	10			
Harmonic distortion	THD < 13%	%, PWHD < 22% (refer to EN 6 ⁻	1000-3-12)			
Line interruption	Designed to meet SE	MI F47-0706, 53, 58, S14 at n	ominal input voltages			
Input leakage current	< 2.5 mA (Note	for fixed condition 3rd edition le	eakage = 5 mA)			
Power switch	Fre	ont panel power switch provide	ed			
Input protection	In	ternal fuse (not user serviceable	e)			
Input overvoltage protection	Up to 115	Up to 115% of nominal input shall not damage unit				
Phase imbalance	≤ 5%					
Rack parallel		Up to 6 racks (144 KW)				
Efficiency	> 90% @ 3P 380 Vac full load > 91% @ 3P 480 Vac full load > 90% @ 3P 240 Vac full load > 90% @ 3P 208 Vac 3P full load					
Standby voltage		5 V				
Standby regulation	4.75 - 5.25 V					
Standby max current	1 A					

Note 1: Digital Ethernet UDP, RS485, CAN or Ethernet TC/IP with PowerPro Connect Module option. Command protocol is patterned to PMBus specification using a proprietary transaction protocol.



An Advanced Energy Company



Safety Table							
Model Number	Model Code	Module Nominal Voltage	Safety Compliance	Maximum Total Voltage Allowed			
73-936-0012	SL	≤ 48 V	Medical 2MOPP*	300 V			
73-936-0024	SQ		Medical 2MOOP**, ITE	400 V			
73-936-0048	SW						
73-936-0080	S8	> 80 V	Medical 2MOPP	600 V			
73-936-0125	S1		Medical 2MOOP	800 V			
73-936-0200	SA		Medical 2MOOP	800 V			
73-936-0250	S2		ITE	1000 V			
Note: * -2MOPP or 2	× MOPP (Means of Pati	ent Protection)					

Note: * -2MOPP or 2 × MOPP (Means of Patient Protection) ** -2MOOP or 2 × MOOP (Means of Operator Protection)

iHP12 Electrical S	Specifications					
Input Parameter	19" Rack 12 KW strapped as 1-phase 200/220/230/240 Vac Nominal (iHP12L1A)	Type: 19" Rack 12 KW strapped as 3-phase 200/208/240 Vac Nominal (iHP12L3A)	Type: 19" Rack 12 KW strapped as 3-phase 380/480 Vac Nominal (iHP12H3A)			
Input range	180 Vac to 264 Vac (Nominal rating 200/220/230/240 Vac)	180 Vac to 264 Vac (Nominal rating 200/208/240 Vac)	342 Vac to 528 Vac (Nominal rating 380/480 Vac)			
Number of phases	1-phase 3-wire total (2-phase and 1 protective earth ground)	3-phase (Wye or Delta) 4-wire total (3-	phase and 1 protective earth ground)			
Frequency		47-63 Hz				
Phase detection	NA	Loss of phase w Housekeeping/comms mus				
Max current/phase	75 A @ 180 Vac	44 A @ 180 Vac	23 A @ 342 Vac 19 A @ 432 Vac			
Undervoltage detection	Nominal input locked on at turn-on. Undervoltage shutdown at 15% below nominal. Turn-on at 12% below nominal. Not to interfere with SEMI F47 specs.					
Current inrush		2.5 x Max input current				
Power factor	> 0.99 @ full load and nominal line	> 0.98 @ full load	and nominal line			
Harmonic distortion	THE	0 < 3.5%, PWHD < 22% (refer to EN 61000-3	-12)			
Line interruption	Designed to n	neet SEMI F47-0706, 53, 58, S14 at nominal	input voltages			
Input leakage current	< 1.2	5 mA	<2.5 mA			
Power switch		Front panel power switch provided				
nput protection		Internal fuse (not user serviceable)				
nput overvoltage protection	Up	to 115% of nominal input shall not damage u	init			
Phase imbalance	NA	≤ 5%	≤ 5%			
Rack parallel		Up to 6 racks (72 KW)				
Efficiency	> 91% @ 1P 240 Vac full load > 90% @ 1P 208 Vac/200 Vac full load	> 91% @ 3P 240 Vac full load > 90% @ 3P 208 Vac/200 Vac full load	> 90% @ 3P 380 Vac full load > 91% @ 3P 480 Vac full load			
Standby voltage		5 V				
Standby regulation	4.75 - 5.25 V					
Standby max current		1 A				

EMC/Immunity					
Parameter	All Models (Unless otherwise specified)				
ESD	EN61000-4-2 (IEC1000-4-2)				
Fast Transients	EN61000-4-4 (IEC1000-4-4)				
Surge Immunity	EN61000-4-5 (IEC1000-4-5)				
Conducted Immunity	EN61000-4-6 (IEC1000-4-6)				
Radiated Immunity	EN61000-4-3 (IEC1000-4-3)				
Power Frequency Magnetic Field	EN61000-4-8				
Voltage Dips, Short Interruptions and Voltage Variations	EN 61000-4-34				
Conducted Emission	EN55011, FCC CFR 47, Part 15, Subpart B				
Radiated Emission	EN55011, FCC CFR 47, Part 15, Subpart B				

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Electromagnetic Compatibility/Input Transient							
Category	Standard	Frequency	Level/Limits	PSU Performance Criteria ¹			
Radiated Emissions ³	EN 55011/CISPR11	30 M - 1 GHz	Class A	5 dB Margin			
	FCC CFR 47, Part 15, Subpart B	30 M - 1 GHz >1 GHz (see standard)	Class A	5 dB Margin			
Conducted Emissions ³	EN 55011/CISPR11	150 k - 30 MHz	Class A	5 dB Margin			
Power Line Harmonics ²	EN 61000-3-12	See standard	See standard				
Voltage Fluctuations ²	EN 61000-3-11	See standard	See standard				
Radiated Immunity	EN 61000-4-3	EN 61000-4-3 80 M - 2 GHz 10 V/meter		A			
ESD	EN 61000-4-2		8 KV contact, 15 KV Air	A			
Electrical Fast Transient	EN 61000-4-4		+/- 4 KV	A			
Surge AC	EN 61000-4-5		2 KV DM, 2 KV CM	A			
	IEEE C62.41		2 KV DM, 2 KV CM 6 KV, CM & DM	A Fail Safe			
Conducted Susceptibility	EN 61000-4-6	150 KHz – 80 MHz	10 Vrms	A			
Voltage Dips and Sags ²	EN 61000-4-34 SEMI F47	>95% reduction for >30% reduction for >95% reduction for 20% reduction for 30% reduction for 50% reduction for 60% reduction for	10 mS 500 mS 500 mS 5000 mS 500 mS 200 mS 200 mS	A A C A A B			

Notes: ¹ Performance Criteria as defined by EN 300 386 V1.3.3 ² Applies to AC power supplies only. ³ Conducted and radiated emissions are measured using a typical set-up. In an actual end system, additional EMI filters may be required.

OUTPUT – General Specs								
Parameter								
MODULE CODE	SL	SQ	ST	SW	S8	S1	SA	S2
# Outputs	1	1	1	1	1	1	1	1
Nominal O/P (V)	12.0 V	24.0 V	32.0 V	48.0 V	80.0 V	125.0 V	200.0 V	250.0 V
Max Power (W)	2400 W	2880 W	2880 W	3000 W	3000 W	3000 W	3000 W	3000 W
O/P Current Range (A)	0.0 A - 200 A	0.0 A - 120 A	0.0 A - 90 A	0.0 A - 62.5 A	0.0 A - 37.5 A	0.0 A -24 A	0.0 A - 15.0 A	0.0 A -12 A
Power Density (W/cu-in)	32.5	39.0	39.0	40.6	40.6	40.6	39	40.6
Efficiency (%)	93.5	93.5	93.5	93.5	93.5	93.5	93.5	93.5
Module Input Voltage				400) V			
Module Operating Temp		-0 °C to +65 °C; Baseplate Temp TBD						
Series Operation	250 V modules can be connected in series up to 800 V for Medical and 1000 V for ITE							
Parallel Operation					k, with up to 6 rad be provided as pa		1	

OUTPUT – General Specs							
Parameter							
MODULE CODE	TW	T3					
# Outputs	1	1					
Nominal O/P (V)	50 V 300 V						
Max Power (W)	12000 W 12000 W						
O/P Current Range (A)	0 -270 A 0 -50 A						
Power Density (W/cu-in)	тва тва						
Efficiency (%)	93.2 94						
Module Input Voltage	395V ± 5V						
Module Operating Temp	0°C to +65°C						
Series Operation	No series operation offering						
Parallel Operation	Up to two (2) modules can be paralleled in one (1) ra Single Wire Parallel connection will be						

OUTPUT – Module in Voltage Source Mode

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Voltage Source								
MODULE CODE	SL	SQ	ST	SW	S8	S1	SA	S2
Nominal Output (V)	12	24	32	48	80	125	200	250
Setting Range (V)	0.6 V - 14.4 V	1.2 V - 28.8 V	1.6 V - 38.4 V	2.4 V - 57.6 V	4.0 V - 96.0 V	6.25 V - 150.0 V	10.0 V - 240.0 V	12.5 V - 300.0 V
Low Frequency RMS Ripple (mV)	24	48	64	96	160	250	500	500
Line Regulation (mV)	12	24	32	48	80	125	200	250
Load Regulation (mV)	24	48	64	96	160	250	400	500
P-P Ripple (mV)	60	120	160	240	400	625	1250	1250
Drift (Temp Stability)		±0.05% of lout Rated over 8 hours, after 30 minute warm up, constant Line, Load and Temp						
Temp Coefficient (PPM/°C)		200						
Pgm Accuracy (mV)		Digita	al: 0.1% of Nomi	nal Output Voltaç	ge; Analog: 1.0%	of Nominal Outpu	t Voltage	
Pgm Resolution (mV)		SL=TBD; SQ=1; SW=2; S8=8; S1=6; S2=21						
Meas Accuracy (mV)		0.2% + 0.2% of Nominal Output Voltage						
Meas Resolution	SL=TBD; SQ=1; SW=2; S8=8; S1=6; S2=21							
Transient Response		Max 5.0	% deviation from	current set poin	t must recover w	ithin 1mS for a 509	% step load.	
Current Sense Method		lr	nternal Shunt; Ex	ternal Shunt can	be used for bett	er temperature sta	bility.	

OUTPUT – Module in Voltage Source Mode

Voltage Source					
MODULE CODE	TW	ТЗ			
Nominal Output (V)	50	300			
Setting Range (V)	2.5 -60	15.0 -360			
Low Frequency RMS Ripple (mV)	100	600			
Line Regulation (mV)	50	300			
Load Regulation (mV)	100	600			
P-P Ripple (mV)	250	1500			
Drift (Temp Stability)	±0.05% of Vout rated over 8 h	nours, constant line and load.			
Temp Coefficient (PPM/°C)	200				
Pgm Accuracy (mV)	Digital: 0.1% of Nominal Output Voltage /	Analog: 1.0% of Nominal Output Voltage			
Pgm Resolution (mV)	2 TBA				
Meas Accuracy (mV)	0.2% of Set Output + 0.2% of Nominal Output Voltage				
Meas Resolution	ТВА				
Transient Response	Recovery time of 1mS (See Section	n 5.4.2 for the transient conditions)			
Current Sense Method					

OUTPUT – Module in Current Source Mode

Current Source - Programmable load compensation available for resistive and inductive loads; capacitive load applications; and									
LED drive applications									
MODULE CODE	SL	SL SQ SW S8 S1 SA S2							
Nominal Output (V)	12	24	48	80	125	200	250		
Setting Range (A)	0.0 A - 200 A	0.0 A - 120 A	0.0 A - 62.5 A	0.0 A - 37.5 A	0.0 A - 24 A	0.0 A - 15 A	0.0 A - 12 A		
RMS Ripple (mA)	200	120	62.5	37.5	24	15	12		
Line Regulation (mA)	200	120	125	93.75	48	50	24		
Load Regulation (mA)	800	480	250	150	96	56	48		
P-P Ripple (mA)	N/A								
Drift (Temp Stability)		$\pm 0.05\%$ of I _{aut} Rated over 8 hours, after 30 minute warm up, constant Line, Load and Temp							
Temp Co-efficient (PPM/°C)		SL, SQ = 300 PPM; All other modules are 200 PPM. Temp Co-efficient at rack level is [Temp Co-efficient (module level)] + [4500 PPM of lout-max]							
Pgm Accuracy (A)			0.7% digital, 1	.3% analog of rate	d output max				
Pgm Resolution (mA)	79.2	26.4	13.2	10	5.2	2.6	2.6		
Meas Accuracy	0.7% + 0.7% of Rated Output Max								
Meas Resolution	79.2	26.4	13.2	10	5.2	2.6	2.6		
Transient Response		0-63% output current change in 7.5 mSec, residual value 1%, settling time 35 mSec							
Current Sense Method			Interna	al Shunt / External S	Shunt				
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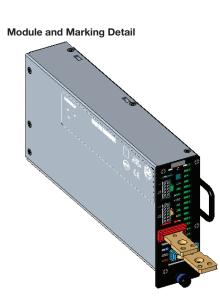
OUTPUT – Module in Current Source Mode

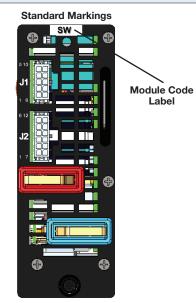
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Current Source - Programmable load compensation available for resistive and inductive loads; capacitive load applications; and LED drive applications

MODULE CODE	TW	ТЗ			
Nominal Output (V)	50	300			
Setting Range (A)	0 -270	0 -50			
RMS Ripple (mA)	270	50			
*Line Regulation (mA)	270	100			
*Load Regulation (mA)	1200	200			
Pgm Resolution (mA)	20	TBA			
Meas Resolution (mA)	TBA	ТВА			
*Pgm Accuracy (A)	Digital: 0.7% of Rated Output Max / Analog: 1.3% of Rated Output Max (1% to 100% O/P Current adjustability)				
*Meas Accuracy	0.7% + 0.7% of Rated Output Max				
*Drift (Temp Stability)	±0.05% of lout-max over 8 h	ours, constant line and load.			
Temp Coefficient – Module Level (PPM of lout-max / °C)	300	300			
Temp Coefficient – Rack Level	[Temp Coefficient (module level)] + [4500ppm of lout-max]				
Current Overshoot-Undershoot	+/- 5% of lout-max (See Section 5.4.2 for the transient conditions)				
**Transient Response Time	Recovery time of 35mS (See Section 5.4.2 for the transient conditions)				
Current Sense Method	Internal	Shunt			

Environmental Specifications			
Operating Conditions	ALL MODELS (Unless Otherwise Specified)		
Operating Temperature	0 °C to +50 °C at 100% rated load.		
Storage Temperature	-40 °C to +85 °C. For Liquid Cooled models, liquid must be drained before storage		
Operating Humidity	20% - 90% non condensing		
Storage Humidity	10% - 95% non condensing		
Operating Altitude	Up to 9,842 feet above sea level (3,000 meters)		
Storage Altitude	Up to 30,000 feet above sea level (9,144 meters)		
Vibration	Operating Sinusoidal Vibration MIL-STD-810G Method 528 Procedure I (Type 1): NEBS Office Vibration Environment, Alternate Procedure Operating Random Vibration: IPC-9592B Class 1 Non-Operating Vibration (Packaged): IPC-9592B Class 1; MIL-STD-810G, Method 514.6, Procedure 1, Category 7, Table 514.6C-VII General Exposure		
Shock	MIL-STD-810G Method 516.6 Procedures I, II, IV, VI		
Shipping and Handling	NSTA for <100 lbs; MIL-STD-2073-1 >100 lbs		
Cooling and Audible Noise	<65 dBA with 80% load @ 30 °C at nominal input voltage with Smart Fan algorithm to be optimized based on module and rack thermal sensors. When modules are inhibited via software control, the fan speed is reduced to idle and acoustic noise is <46 dBA. With modules off via front panel switch fans are at idle for 1 min, and off for 9 min.		
Ingress Protection	Fan Cooled = IP20		
Pollution Degree	2		
RoHS Compliance	Yes		





Label

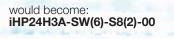


	CASE CODE	MOE	OULE CODES	PARALLEL/SERIE	S CASE CODE	CONF CODE	MOD COD
iHP**XYA-		-X	(YZ* (x4/x8)	-XX-*	*	-X	-XXX
Case Decoder	iHP**XYA	Module Decoder	xvz	First Digit	Second Digit	Blank = Ship as a kit	Factory Assigned
* = Case Po	ower	X = Output	Гуре	0 = None	0 = None	C = Ship Configured	
	12 = 12 KW 19" Rack		S = Single O/P (1-Slot)	1 = Slot 1&2	P = Parallel	Any other Alpha Character =	
	24 = 24 KW 19" Rack				O Ocuier	Special set-up configuration	
	24S = 24KW 19" Rack Short		T = Single O/P (3-Slot)	2 = Slot 2&3	S = Series	-	
V = Voltage I		V = Nominal		3 = Slot 3&4	1 = Combo 2 P/S	-	
	L = Low Range*180-264		A = 200V	4 = Slot 4&5	2 = Combo 2 S/P	-	
	H = High Range 342-528		B = Future	5 = Slot 5&6	3 = Combo 3 P/P/S	-	
	C = Canadian 540-660		C = Future	6 = Slot 6&7	4 = Combo 3 P/S/P	-	
Y = Input Ph	nase		D = Future	7 = Slot 7&8	5 = Combo 3 P/S/S	-	
	1 = Single Phase		L = 12 V	8 = Slot 1,2&3	6 = Combo 3 S/P/P	_	
	3 = 3-Phase		Q = 24 V	9 = Slot 1,2,3&4	7 = Combo 3 S/P/S		
z = Cooling			T = 32 V	A = Slot 1,2,3,4&5	8 = Combo 3 S/S/P		
	A = Air Cooled		W = 48 V	B = Slot 1,2,3,4,5&6	9 = Combo 4 P/P/P/S		
			8 = 80 V	C = Slot 1,2,3,4,5,6&7	A = Combo 4 P/P/S/P		
A = Accesso	nry Options		1 = 125 V	D = Slot 1,2,3,4,5,6,7&8	B = Combo 4 P/P/S/S	1	
1 - 7 1000000	Blank = Full control		2 = 250 V	E = Slot 1&2; 3&4	C = Combo 4 P/S/P/P		
	1-9 = Future		3 = 300 V	F = Slot 1&2; 3&4; 5&6	D = Combo 4 P/S/P/S		
		-	(12 KW ONLY)	G = Slot 1&2; 3&4; 5&6; 7&8	E = Combo 4 P/S/S/P	-	
			5 = 500 V	H = Slot 1,2&3; 4&5	F = Combo 4 P/S/S/S		
			(12 KW ONLY)	J = Slot 1,2&3; 4&5; 6&7	G = Combo 4 S/P/P/P	-	
			9 = 825 V	K = Slot 1,2&3; 4,5&6	H = Combo 4 S/P/P/S		
			(12 KW ONLY)	L = Slot 1,2&3; 4,5&6; 7&8	J = Combo 4 S/P/S/P	-	
		Z=Mode	Blank = Standard	M = Slot 1,2,384;586	K = Combo 4 S/P/S/S	-	
			P = Precision	N = Slot 1, 2, 3&4; 5&6; 7&8	L = Combo 4 S/S/P/P	-	
				P = Slot 1,2,3&4; 5,6&7	M = Combo 4 S/S/P/S	-	
				R = Slot 1,2,384; 5,6,788	N = Combo 4 S/S/S/P	-	
				S = Slot 1,2,3,485; 687			
			T = Slot 1,2,3,4&5; 6,7&8	-			
			U = Slot 1, 2, 3, 4, 35, 6, 788	-			
				-			
Lowest possible input for the 24 kW version is 187.5 Vac		Z=Special Defined by MOD Code					
		-** is allowed for secondary s	eries/parallel code]			
		1 = Groups 1&2	P = Parallel	1			
				8 = Groups 1,2&3	S = Series		
				9 = Groups 1,2,3&4	1 = Combo 2 P/S		

MODEL NUMBER SHORTCUT

For repeated like modules in parallel or series, instead of listing all the same modules separated by a "-", you can simply list the module once and then follow by the number of times it repeats enclosed in parenthesis.

For example: iHP24H3A-SW-SW-SW-SW-SW-SW-S8-S8-00





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Part Number Information

	mormation	
Rack/Module	Description	Status
	RACK	
73-958-0001	19" 12KW Case High Line 3-Phase Air (iHP12H3A)	Released
73-958-0001L	19" 12KW Case Low Line 3-Phase Air (iHP12L3A)	Released
73-958-0001S	19" 12KW Case Low Line 1-Phase Air (iHP12L1A)	Released
73-959-0001	19" 24KW Case High Line 3-Phase Air (iHP24H3A)	Released
73-959-0001L	19" 24KW Case Low Line 3-Phase Air (iHP24L3A)	Released
73-959-0001Z	19" 24KW Case 600V Canadian 3-Ph Y Air (iHP24C3A)	Released
73-969-0001	19" 24KW SHORT Case High Line 3-Phase Air (iHP24SH3A)	Coming Soon
73-969-0001L	19" 24KW SHORT Case Low Line 3-Phase Air (iHP24SL3A)	Coming Soon
73-303-000TL	3KW MODULES	Conning Soon
72.026.0010		Delegand
73-936-0012	12V 2400W Output Module (SL)	Released
73-936-0024	24V 2880W Output Module (SQ)	Released
73-936-0032	32V 3000W Output Module (ST)	Released
73-936-0048	48V 3000W Output Module (SW)	Released
73-936-0080	80V 3000W Output Module (S8)	Released
73-936-0125	125V 3000W Output Module (S1)	Released
73-936-0200	200V 3000W Output Module (SA)	Released
73-936-0250	250V 3000W Output Module (S2)	Released
	12KW MODULES	
73-938-0050	50V 12000W Output Module (TW)	Released
73-938-0300	300V 12000W Output Module (T3)	Coming Soon
	ACCESSORIES	1
73-778-000A	PPCM (PowerPro Connect Module) Kit	Released
73-778-001	3-Phase Low Line Config Kit	Released
73-778-002	1 Phase Low Line Config Kit	Released
73-778-003	Module Accessory Kit	Released
73-778-004	2X Parallel Module Accessory Kit	Released
73-778-005	3X Parallel Module Accessory Kit	Released
73-778-006	4X Parallel Module Accessory Kit	Released
73-778-007	5X Parallel Module Accessory Kit	Released
73-778-008	6X Parallel Module Accessory Kit	Released
73-778-009	7X Parallel Module Accessory Kit	Released
73-778-010	8X Parallel Module Accessory Kit	Released
73-778-011	Initial Series Module Accessory Kit	Released
73-778-012	Subsequent Series Module Accessory Kit	Released
73-778-013	CAN/RS485 Terminator	Released
73-778-016	3-Phase High Line Config Kit	Released
73-778-022	Blank Panel 73-778-022	Released
73-778-023	iHP12 Isocomm board	Released
73-778-024	iHP24 Isocomm board	Released
73-778-026	iHP24 Cover Kit	Released
73-778-027	iHP12 Cover Kit	Released
73-778-029	iHP 8X IPROG Cable Assembly	Released
73-778-030	iHP 4X IPROG Cable Assembly	Released

Model	Weight
73-959-0001 iHP24	36.0 KG
73-959-0001Z iHP24C	35.0 KG
73-958-0001 iHP12	22.2 KG
73-936-0012 Module 3KW	2.2 KG
All other 3KW Module	2.0 KG
73-938-0050 Module 12KW	5.95 KG



Case Specs - Outline Detail

Front Panel Standard Markings (Standard for both 12 KW and 24 KW)





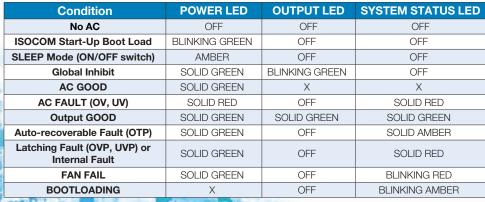
Module Specs - Outline Detail

Module J1 Signals				
Pin #	Function	Function	Pin #	
5	4-20mA_IPROG	SYS_M_FAULT#	10	
4	0-5V_IPROG	SYS_M_ENABLE#	9	
3	0-10V_IPROG	SYS_RTN	8	
2	0-5V_VPROG	SYS_M_INHIBIT	7	
1	0-10V_VPROG	4-20mA_VPROG	6	

Module J2 Signals

	· · · · · · · · · · · · · · · · · · ·		
Pin #	Function	Function	Pin #
6	NOT CONNECTED	ISHARE	12
5	IMON	VMON	11
4	D_RTN	ISHARE	10
3	EXT_ISENSE+	EXT_ISENSE-	9
2	D_RTN	V_SNS-	8
1	V_SNS+	D_RTN	7

J1 mating housing Molex Micro-fit MPN: 43025-1000 J2 mating housing Molex Micro-fit MPN: 43025-1200 Crimp Terminal AWG 20-24 Crimp Terminal Molex MPN: 43030-0002

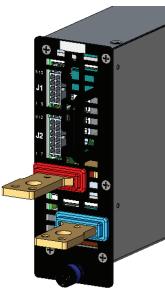


Input and Comms Standard Markings

View of iHP24L/H and iHP12L/H shown on top, iHP24C sown on bottom. Comms interface is horizontal on the iHP12L/H. See mechanical drawings for more details.



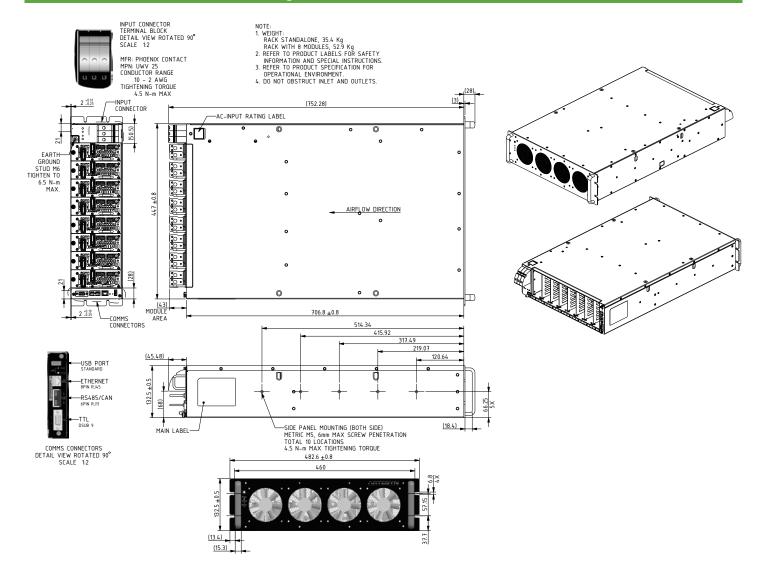








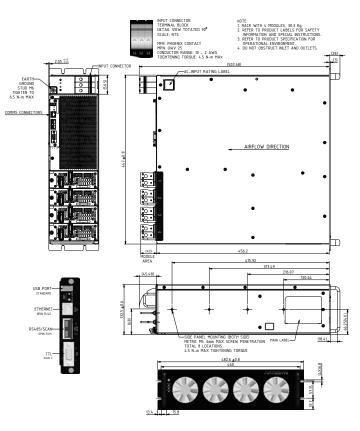
i HP24 Series - Mechanical Drawings

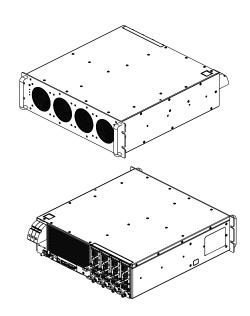






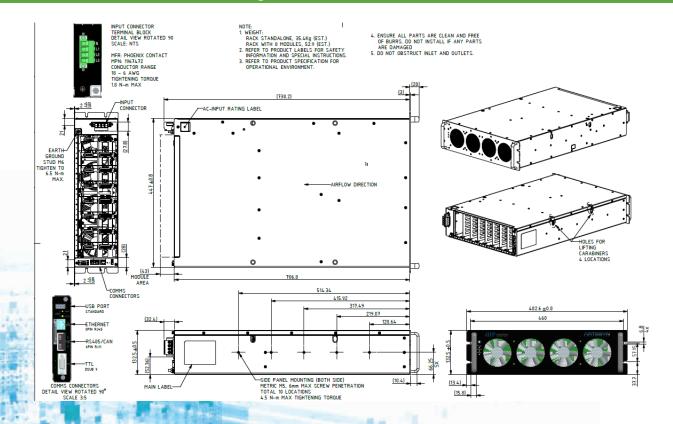
i HP12 Series - Mechanical Drawings





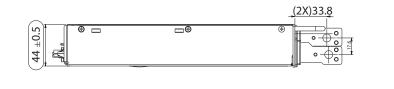
i HP24C Series - Mechanical Drawings

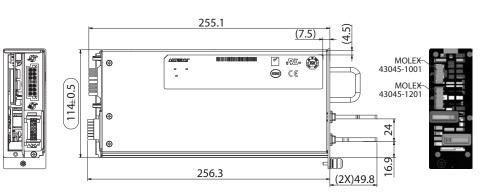
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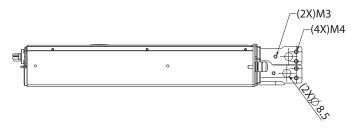




i HP Modules - Mechanical Drawings





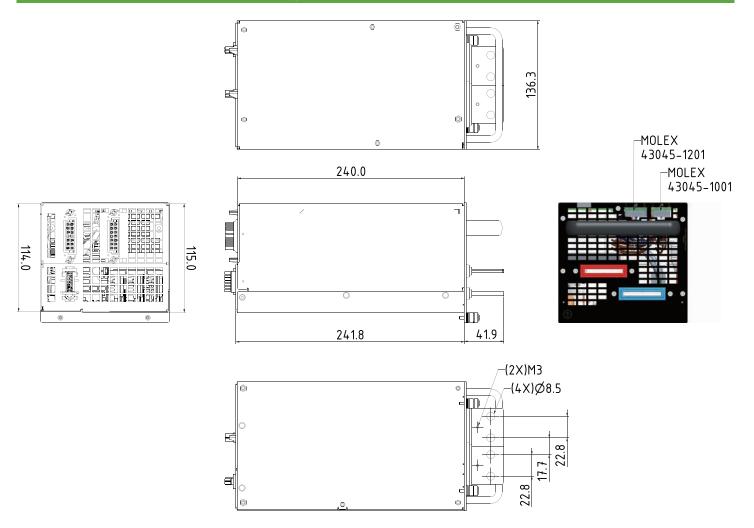








12KW Modules - Mechanical Drawings



PowerPro Connect Module



Americas

Suite B100

2900 South Diablo Way

Tempe, AZ 85282, USA

+1 888 412 7832

P@WERPRO

Part number:73-778-000A

The PowerPro Connect Module (purchased separately) can provide standard Ethernet interface via the internet to a cloud- and dashboard-based user-configurable GUI.

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