

INSTRUCTION MANUAL



KEPCO An ISO 9001 Company.

**KIT
219-0594**

WIRING KIT FOR SERIES HWS

1. DESCRIPTION.

HWS 300W, 600W, 1000W and 1500W HWS Series power supplies are shipped with a mating connector installed on CN1 with preinstalled jumpers that select local sensing and power supply ON (no remote on/off) as shown in Figure 1. Kepco KIT, Model 219-0594 supplies a mating connector and preterminated wires that allow convenient wiring of CN2 which is connected in parallel with CN1.

2. MATERIAL SUPPLIED (SEE TABLE 1.)

Table 1 lists the contents of this kit.

TABLE 1. MATERIAL SUPPLIED

ITEM	DESCRIPTION	KEPCO PART NUMBER	QUANTITY
Mating Connector	Mates with 12-pin power supply connector, CN1 and CN2.	142-0575	1
Wire	24 AWG. Nine wires (two each, black, white/black, violet and three red), 36" long, terminated at one end with a connector contact.	N/A	9 wires
Instruction Sheet	Describes the contents and use of KIT 219-0594.	228-1854	1

3. INSTALLATION

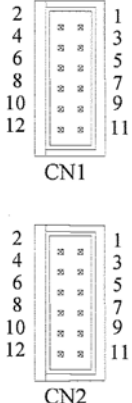
1. Refer to the appropriate chapter of the instruction manual for connection and operation details applicable to the desired function. The instruction manual covering all models is available for download at www.tdk-lambda.com/products/sps/catalog/eng/hws.pdf
2. Install terminated ends of wires into mating connector provided in this kit as specified in Table 3 to activate desired power supply function. Refer to Figure 1 for pin locations (observe key location to identify proper pin).

NOTE: Functions enabled by the default configuration of the CN1 mating connector supplied with the power supply (local sensing, power supply enabled, and local voltage control via the internal trimmer) must be removed if the corresponding remote function is to be used. Because CN1 and CN2 are in parallel, this can be most conveniently accomplished by removing the CN1 mating connector, then using the components of this kit (wires and mating connector) to configure CN2 with the desired functions. Table 2 presents the function of each pin. Table 3 is a guide as to which pins/connections are required to activate specific functions.

3. After connections are made, install mating connector on CN1 or CN2,

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TABLE 2. CN1, CN2, PIN FUNCTIONS

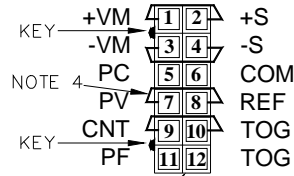
Connector	Pin No.	Designation	Model	Function
	1	+Vm	All	+Output monitor terminal. Connected to +Output terminal. (+Vm terminal can not supply load current.)
	2	+S	All	Remote sensing terminal for +output. Remote sensing compensates for line drop between power supply terminals and load terminals. Connect to +Vm terminal when remote sensing function unnecessary.
	3	-Vm	All	-Output monitor terminal. Connected to -Output terminal. -Vm terminal can not supply load current.
	4	-S	All	Remote sensing terminal for -output. Remote sensing compensates for line drop between power supply terminals and load terminals. Connect to -Vm terminal when remote sensing function unnecessary.
	5	PC	All	Current balance terminal. For output current balancing in parallel operation.
	6	COM	All	Return for PC, PV, and REF signals (internally connected to -S).
	7	N.C.	HWS300, HWS600 (Note 4)	No Connection.
		PV	HWS1000, HWS1500	Remote programming voltage (PV) input; presents about 5 Kohm impedance with respect to pin 6 (COM). Pin 6 (COM) is internally connected to pin 4 (-S). (See Notes 1, 2 and 3.)
	8	N.C.	HWS300, HWS600 (Note 4)	No Connection.
		REF	HWS1000, HWS1500	Reference voltage source of about 4 to 7V @ 5 mA max, adjustable from the internal potentiometer. (See Notes 1, 2 and 3.)
	9	CNT	All	Remote ON/OFF control terminal. Power supply requires TTL low for ON.
	10	TOG	All	Return for CNT and PF signals. Isolated from unit output. (Same as Pin No.12.)
11	PF	All	Power fail signal (PF signal) output terminal. If the output voltage drops, or FAN stops and AC input voltage down, Power Fail terminal will output High.	
12	TOG	All	Return for CNT and PF signals. Isolated from unit output. (Same as Pin No.10.)	

NOTES:

1. Voltage Control using Internal Potentiometer Vadj. If pin 7 (PV) is connected to pin 8 (REF), Vadj can adjust HWS output voltage from 80% to 120% of nominal.
2. Voltage Control using External Resistance. An external potentiometer (5 to 20 Kohms) can be connected between pin 8 (REF) and pin 6 (COM), with wiper connected to pin 7 (PV) to adjust output voltage from 20% to 120% of nominal when (REF) voltage is adjusted to about 6V using HWS internal potentiometer.
3. Voltage Control using External Voltage Source. An external programming voltage from 0 to +6V applied between pin 7 (PV) and pin 6 (COM) adjusts output voltage from 20% to 120% of nominal. A +5V programming voltage programs the HWS module to nominal output voltage ±2%.
4. For the models listed in Table 4, configuration and function of pins 7 and 8 is the same as shown above for HWS1000 and HWS1500 models:

NOTES:

1. OBSERVE LOCATION OF KEYS TO ENSURE PIN NUMBERS ARE CORRECT.
2. WIRES SHOWN INSTALLED FOR LOCAL SENSING: PINS 1-2 AND 3-4.
3. WIRE SHOWN INSTALLED FOR REMOTE OPERATION INHIBITED (POWER SUPPLY ON): PINS 9-10.
4. WIRE BETWEEN PINS 7-8 SHOWN INSTALLED FOR VOLTAGE PROGRAMMING (HWS1000 AND HWS1500).



3044036

(1), P/N 142-0575
12 PIN CONNECTOR
(NOTE LOCATION OF KEYS)

FIGURE 1. MATING CONNECTOR FOR CN1 (SUPPLIED WITH UNIT)

TABLE 3. FUNCTIONS SUPPORTED BY KIT 219-0594

Function Supported	Power Supply Connector CN1 ⁽¹⁾		Power Supply Connector CN2	
	From Pin	To Pin	From Pin	To
Local Sense ^{(1) (2)}	1 (+VM)	2 (+S)		
	3 (-VM)	4 (-S)		
Remote Sense ^{(1) (2)}			2 (+S)	load +
			4 (-S)	load -
Power Supply ON (no remote enable)	9 (CNT)	10 (TOG) ⁽³⁾		
Remote Enable ⁽⁵⁾			9 (CNT)	User equipment ⁽⁴⁾
			12 (TOG) ⁽³⁾	Return ⁽⁴⁾
Current Share			5 (PC)	Paralleled unit ⁽⁴⁾
			6 (COM)	Paralleled unit ⁽⁴⁾
Voltage Programming ⁽⁶⁾	7 (PV) ⁽⁶⁾	8 (REF) ⁽⁶⁾	7 (PV) ⁽⁶⁾	User equipment ⁽⁴⁾
Resistance Programming ⁽⁶⁾			8 (REF) ⁽⁶⁾	User equipment ⁽⁴⁾
			6 (COM)	Common ⁽⁴⁾
Power Fail Monitor			11 (PF)	User equipment ⁽⁴⁾
			12 (TOG) ⁽³⁾	Return ⁽⁴⁾

- (1) Mating connector for CN1 with jumpers preinstalled is supplied with the unit.
 (2) Local sensing connections must be removed when using remote sensing.
 (3) Alternate pins for TOG (10, 12) are available. See Figure 1.
 (4) See referenced Instruction Manual for connections.
 (5) Power Supply ON connection between pins 9 and 10 must be removed when using remote ON/OFF function.
 (6) Voltage or resistance programming available only for HWS1000 and HWS1500 models and the additional models listed in Table 4. Refer to Notes 1, 2, and 3 of Table 2 for connection details.
 (7) HWS1000 and HWS1500 models shipped with jumper on CN1 mating connector preinstalled between pins 7 and 8.

TABLE 4. HWS300 AND HWS600 MODELS WITH VOLTAGE PROGRAMMING

Voltage	HWS300	HWS600
5V	HWS300-5-27311	N/A
12V	HWS300-12-27312	HWS600-12-27316
15V	HWS300-15-27313	HWS600-12-27317
24V	HWS300-24-27314	HWS600-24-27318
48V	HWS300-48-27315	HWS600-48-27319