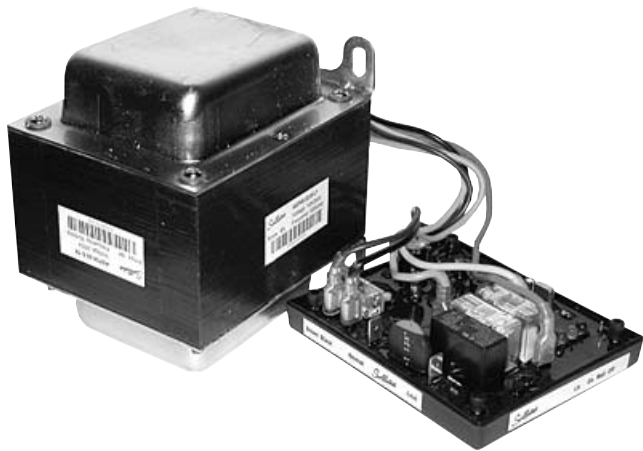


*Sollatek™*

**SOLLATEK**  
**AUTOMATIC STABILISED PROTECTOR (ASP)**  
User instructions



Important: This manual contains important safety instructions.  
Keep this manual handy for reference.

# **Sollatek Automatic Stabilised Protector (ASP)**

## **USER INSTRUCTION ASPXX-VV**

(XX=AMPS vv=INPUT/OUTPUT VOLTAGE

example ASP04-22 is 4Amps at 220V and ASP04-11 is 4Amps at 110V)

The ASP is a device designed for OEM (Original Equipment Manufacture) applications. It will correct the mains voltage in case of over-voltage, brown-outs, dips, sags and surges. The Sollatek ASP has a very wide input range and can therefore provide a clean stable output in very severe voltage conditions. However, in extreme voltages, to protect your appliance the ASP will disconnect the mains.

The ASP has a 3 minute wait time to protect the compressor from fast switch on and off conditions.

### **CONNECTING THE ASP**

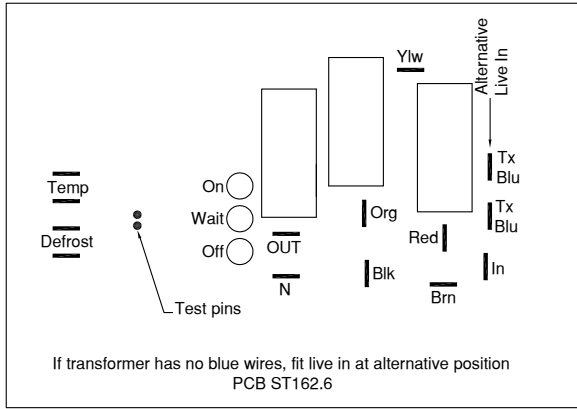
The Sollatek ASP is very simple to connect (please refer to the relevant diagram opposite and connection label beneath unit).

1. Ensure that the mains supply is switched off.
2. Connect the main Live wire to the LIVE IN terminal of the ASP.
3. If the transformer does not have a pair of blue wires, use the alternative LIVE IN position.
4. Connect the main NEUTRAL wire to the NEUTRAL terminal of the ASP.
5. Connect the LIVE OUT terminal of the ASP to your appliance's LIVE IN.
6. Connect the NEUTRAL to your appliance's NEUTRAL. (i.e. the NEUTRAL is shared).
7. Connect the transformer to the correct terminals on the ASP.  
See diagram and label on underside of potted unit.
8. Connect protective earth to the metal work of the ASP transformer.
9. You are now ready to switch the mains on. There may be a delay of around 3 minutes on first switching on. Please refer to the OPERATION section below.

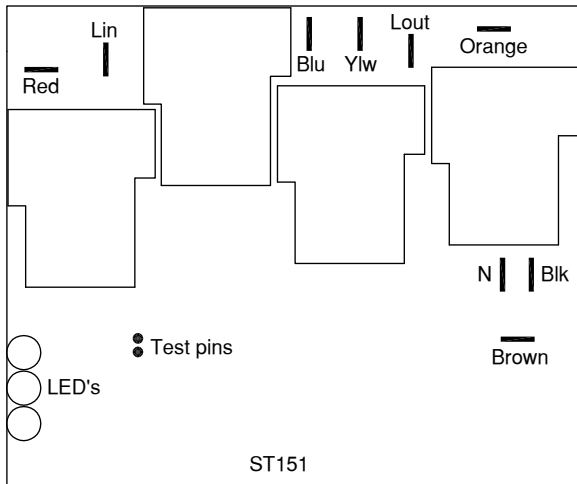
### **OPERATION OF THE ASP**

1. When first switching the mains power on, the ASP will wait (Yellow LED ON) around 3 minutes to ensure the mains is good and stable. The LOAD is OFF at this stage.  
\*\* During test, you can bypass the 3 minute delay by shorting test pins (refer to diagram)
2. If the mains voltage remains good, the ASP will connect the power to the load (Green LED ON).
3. If the mains voltage is below or above the stabilisation range (see next page) then the ASP will switch the power off to your load to protect it (Red LED ON).
4. In case of an internal fault, the red and yellow LEDs will flash alternately. The output of the load will be disconnected.

Please refer to the back page for full evaluation procedure of the Sollatek ASP.



Connection diagram for ST162.6 PCB.



Connection diagram for ASP models from 14A up to 24A.

**CUSTOMER EVALUATION TEST**  
**ASPXX-vv (XX=Amps , vv=Voltage)**

The following test procedure is for both nominal voltages (Vn)110V units and 230V units. Please refer to the tables.

1. Connect the ASP to a variable power source and ensure supply to the ASP is at a good starting voltage (i.e. Vn). The AMBER LED should be ON.
2. Wait for about 3 minutes. The ASP output will switch on. The Green LED is now ON. Measure the Output voltage, this should be the same as the input voltage (please refer to the input/output table.)
3. Slowly decrease the ASP input voltage. The ASP will correct the voltage so that the output voltage will be stabilised. (Please refer to the input/output table to establish the predicted output voltage.)
4. Continue decreasing the ASP input voltage until disconnection (LVD). RED LED is now ON. This is under-voltage disconnect.
5. Increase the voltage slowly until the AMBER LED lights. This is the reconnection voltage. Wait 3 minutes. The output from the ASP will be reconnected.
6. Slowly increase the ASP input voltage above Vn. The ASP will correct the voltage so that the output voltage will be stabilised. (Please refer to the input/output table to establish the predicted output voltage.)
7. Increase the voltage until the RED LED lights and the output is disconnected (HVD). This is over-voltage disconnect.
8. Reduce the voltage until the AMBER LED lights indicating the Wait State. After 3 minutes the output will be re-connected and the GREEN LED will show. This is high voltage reconnect.

If results vary then the following to be checked:

- The unit being tested is not of standard settings. i.e. different settings have been requested from Sollatek.
- The test equipment is correctly calibrated.
- Ensure the units are not being tested on a Generator. Some Gensets produce a vast amount of spikes, which can alter the result or can cause harmonic distortion that can again alter the results.

**USEFUL TIP:**

To bypass the 3-minute wait period, short out the test pins on the PCB as shown in the diagram on previous page.

**INPUT/OUTPUT  
VOLTAGE TABLE  
FOR 230V UNITS**

	Input	Output
	<b>230V</b>	
LVD	144	off
	145	182
	155	196
	165	208
	175	221
	185	233
	195	221
	205	232
	210	237
Vn	215	215
	225	225
	235	235
	240	240
	245	218
	255	228
	265	237
	275	248
	285	255
	290	259
HVD	291	off

**INPUT/OUTPUT  
VOLTAGE TABLE  
FOR 110V UNITS**

	Input	Output
	<b>110V</b>	
LVD	72	off
	73	91
	78	98
	83	104
	88	111
	93	117
	98	111
	103	116
	105	119
Vn	108	108
	113	113
	118	118
	120	120
	123	109
	128	114
	133	119
	138	124
	143	128
	145	130
HVD	146	off

# SPECIFICATIONS

<b>REGULATION RANGE</b>	%	115V	230V
Input	-26 to +19%	86 to 137V	171 to 274V
Output	±6%	108 to 122V	216 to 244V
Input	-29 to +24%	82 to 142V	164 to 284V
Output	±10%	104 to 127V	207 to 253V
<b>VOLTAGE LIMITS</b>			
High Volt Disconnect			
Input	+27%	146V	292V
Output	+13%	130V	260V
Low Volt Disconnect			
Input	-36%	73V	147V
Output	-20%	93V	185V
Max Input	+39%	160V	320V
<b>SPIKE PROTECTION</b>	160J, 6500 Amps (8/20µs). Response time <10 ns		
<b>OUTPUT CURRENT</b>	See Product Selection Table in brochure		
<b>LEDs</b>			
Undervoltage	RED		
Overvoltage	RED		
Wait	AMBER		
Run	GREEN		
<b>CONNECTION DELAY</b>			
Intelligent Delay	Off time is optimised for minimal compressor down time.		
Delay Bypass	Connection delay can be bypassed using jumper on PCB test pins		
<b>TECHNOLOGY</b>			
Zero Voltage Switching	Transformer tap switching takes place at zero point in voltage waveform		
Response time	Within 0.1 second		
<b>PERFORMANCE</b>			
Thermal endurance	Continuously rated at full load at full boost (full boost represents worst case)		
Over-voltage endurance	Runs continuously without damage at maximum permissible input voltage (320V on 220V unit, 160V on 115V unit)		
<b>ENVIRONMENTAL</b>			
Moisture resistance	Circuitry splashproof by encapsulation of circuit board		
<b>TEMPERATURE RANGE</b>	-10 to +55°C		





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