

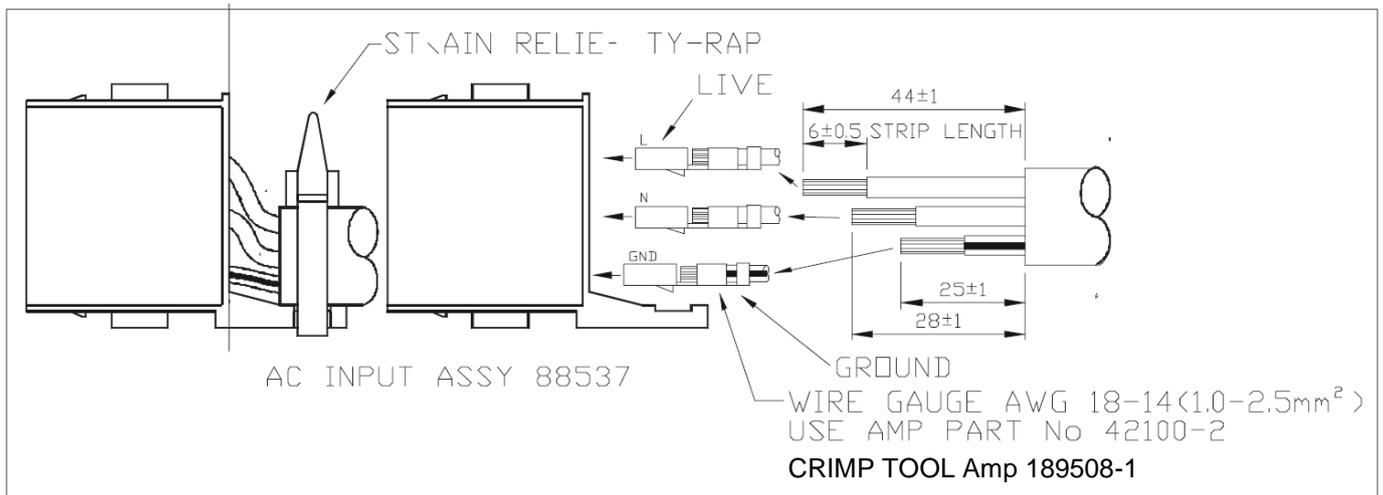
### AC Input



The AC input connection is situated adjacent to the cooling fan inlet as shown above. The 'faston' tabs are tin plated 6.3 x 0.8mm at 9mm centres. Connection is made using insulated 6.35mm 'faston' connectors. Rated at 15amps each.

- e.g. Wire size 22-18AWG = Amp 2-520407-2
- (Red) Wire size 16-14AWG = Amp 3-520408-2 (Blue)

A moulded connector housing is available which accepts 3 low insertion force 'faston' connectors (Amp 42100-2). The housing incorporates two locking tabs and a ty-wrap may be used for additional strain relief of the AC cable.



Single slot module connection.

Single output modules (B,C,D,K,L,M,N,Q,W,Z) have two 6.35mm faston tabs per output terminal rated at 15Amps each. Connection is made with insulated 6.35mm faston connectors.

- e.g. Wire size 22-18AWG = AMP 2-520407-2
- (Red) Wire size 16-14AWG = AMP 3-520408-2 (Blue)

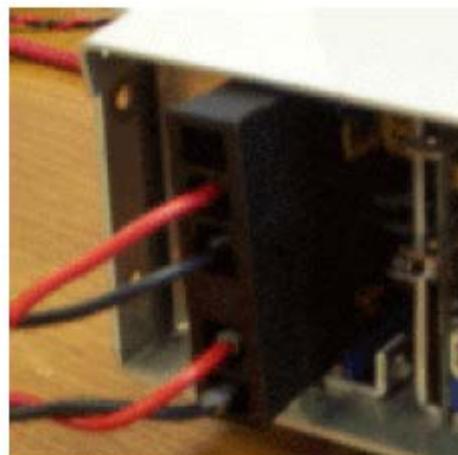
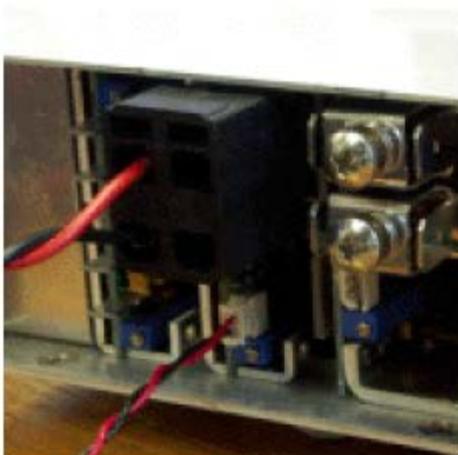
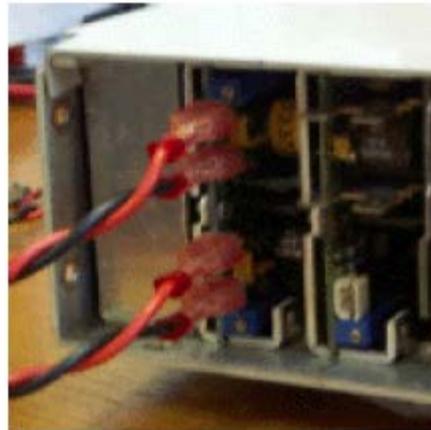
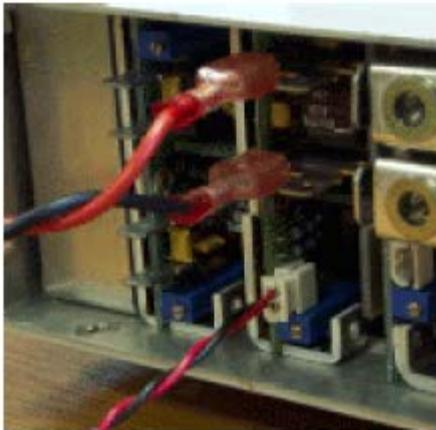
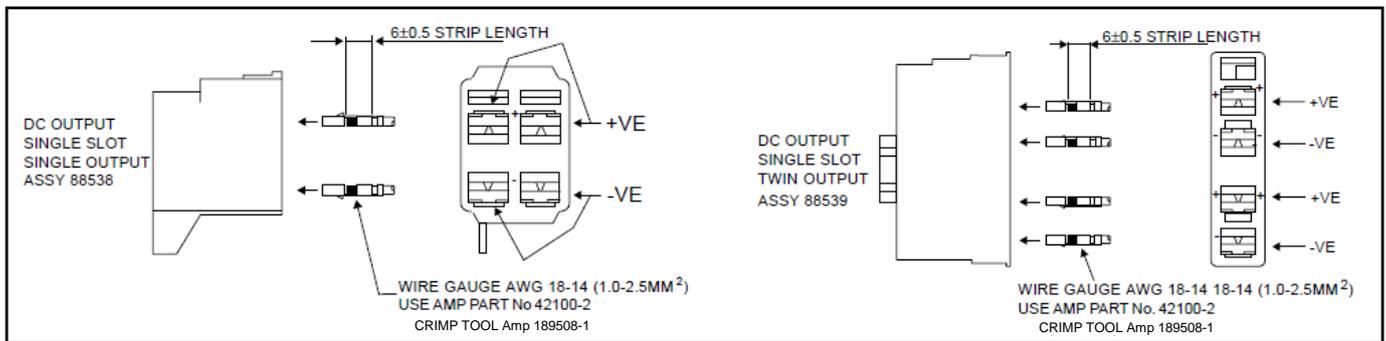
A moulded connector housing is available which accepts two or four low insertion force faston connectors (AMP 42100-2).

Connection for remote sense is made via a separate two way Molex 5264 series connector (housing 50-37-5023, crimp pin 08-07-6040 crimp tool).

Twin output modules (E,H,P) have one 6.35mm faston tab per output terminal rated at 15 amps each. Use insulated faston connectors as per single output module above.

Remote sense facility is not available on twin output modules.

A moulded connector housing is available which accepts four low insertion force faston connectors (AMP 42100-2). Hand crimp tool for 6.35mm faston : AMP 189508-1.



### Dual slot module connection

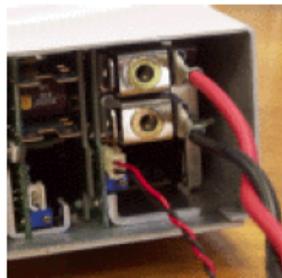
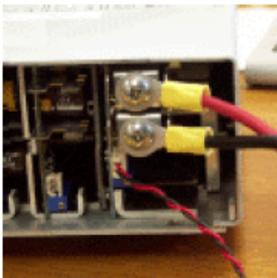
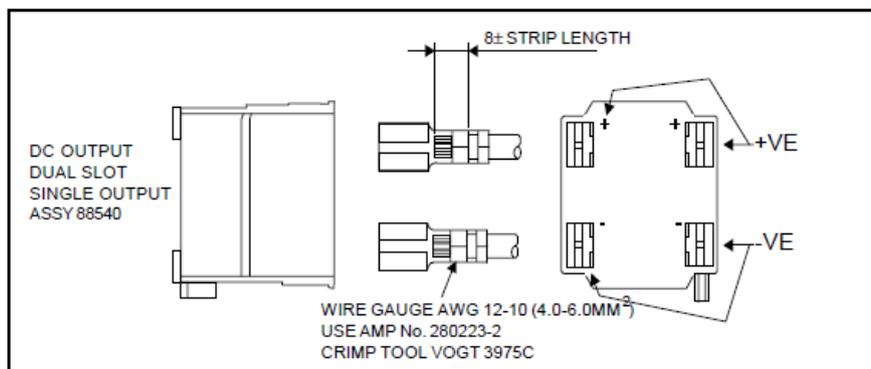
Output terminals on dual slot modules (A,F,G,J,R,S,T) provide two 9.5mm faston terminals rated at 32 Amps each and one M5 threaded insert, rated up to 100A depending on wire gauge.

Connection is made with either 9.5mm faston connector (wire size 12-10AWG - AMP 280223-2) or M5 ring tags (wire size 8AWG - AMP 323197, wire size 12-10AWG AMP 34854).

A M5x12mm fixing screw should be used to secure ring tag connectors. (Max. torque 2.5 - 3.0Nm).

Connection for remote sense is made via a separate two way Molex 5264 series connector (housing 50-37-5023, crimp pin 08-07-6040), hand crimp tool Molex 11010194, Auto Crimp Tool Molex 690371058.

A moulded connector housing is available which accepts two or four 9.5mm faston terminals. (AMP 280223-2). Hand crimp tool for 9.5mm faston : VOGT 3975C (available from nortronic).



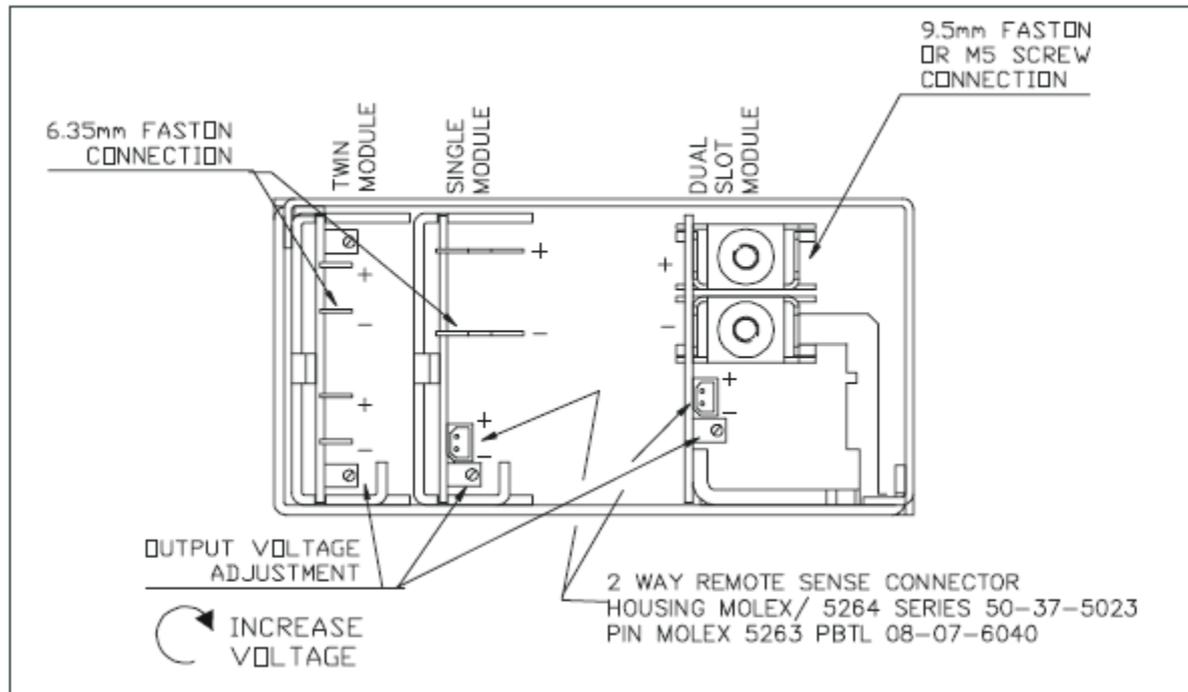
### Output Voltage Adjustment

Output voltages are factory set according to customer requirement. Adjustment can be made via multiturn potentiometers at the front of each module - see diagram below.

Refer to the handbook for module adjustment range and ensure that max power and max ampere - turns are not exceeded.

Modules fitted with PA or INH options will require re-adjustment of the 'Module Good' threshold following a change in output voltage. Refer to section 2 (paralleling) or section 3 (Inhibit) for details.

Modules paralleled together with PP options require special adjustment, refer to section 2 for details.



**Connecting Alpha to the mains**

Alpha imposes no special requirements over and above standard good practice in using switched mode power supplies:

1. Use either twisted cable at about 1 twist per centimeter or standard sheathed mains cable. Efficiency of an Alpha power supply will vary from 65% to over 75% depending of the configuration. Efficiency is worse with many low voltage, high current outputs and better with high voltage outputs. Input current will be 1 / (efficiency) times greater than output power suggests.
2. Avoid running the input mains cable near the DC output cables. This is likely to cause noise pick-up which can result either in generally high levels of noise on the system power rails or worse, random system errors which can be very hard to trace and solve.
3. Pay special care to the design of the system earthing to prevent earth loops - see 2 above. The system earthing should be connected in a "star" network, with all earth connections joining at the system earth starpoint at the input filter.
4. Alpha power supplies are designed to meet EN55022 conducted RFI emissions. However this may not remove the requirement for a system RFI filter. Cable runs within the system can pick up noise which can degrade the overall RFI performance. Also, when connecting power supplies in parallel, each power supply will add its own contribution to the total emitted RFI.

**Connecting Alpha to the load**

When connecting Alpha by means of a cable harness, run the REMOTE SENSE and POWER outputs as separate pairs twisted tightly together with at least 1 twist per centimetre. Keep cable runs as short as possible.

When connecting Alpha to the load by means of a PCB backplane, run the outputs "back to back" on the PCB to minimise the projected area of loop connecting the positive and negative outputs. Run the REMOTE SENSE and POWER connections as separate pairs, avoiding close parallel runs and only coming together at the load.

The load should be decoupled with a minimum of 10 $\mu$ F per Amp of load current. The greater the amount of decoupling, the better the transient response of the system will be. (N.B. Max recommended decoupling is 1000 $\mu$ F/ Amp).

When using REMOTE SENSE ensure that the voltage drops down the POWER leads do not exceed the limit for regulation, either 0.5 of 1.0V depending on module type.

**Permanent PSU failure may be caused if the remote sense is connected incorrectly. Care should be taken to ensure that remote sense is connected in the correct polarity and is disconnected from the load before the power connections are removed.**

**Current handling capability of Copper Multi-Stranded Tri-Rated Cable.**

Cross Sectional Area/mm <sup>2</sup>	Cable Gauge AWG	Typical Rated Current/Amps	Suggested Terminal
0.5 0.75 1.0	22 20 18	11 14 17	AMP Faston 2-520407-2 (Red)
1.5 2.5	16 14	21 30	AMP Faston 3-520408-2 (Blue)
4 6	12 10	41 53	AMP Faston 280223-2 AMP Ring Tag 130191
10 16	8 6	75 100	AMP Ring Tag 130552