Control terminals on lower power board numbers 41 to 53 (NC signifies no connection)

REMOTE AVF **RA+ RA-** used for remote sensing of armature volts
(Note, when using remote AVF, the Armature volts signal is read 3.3% high)

CON1 and CON2 Volt free contact for main contactor coil up to 240V 500VA.
Operated by START/JOG function, when CSTOP is high

LATCH1 and LATCH2 Volt free contact operates at same time as CON1/2 240V 500VA.

RA+	41	
NC	42	
RA-	43	
NC	44	
CON1	45	
CON2	46	
LAT1	47	
LAT2	48	

EARTH on 51 is used for dirty earth connection of control supply

L and **N** are for control power 100-240V, 50 - 60Hz +/-10%, 50VA

EARTH	51	
N	52	
L	53	

Note. The control supply is required to power the PL/X electronics and must be applied before running.

3.4 Control terminals overview.

3.4.1 General requirements

The general requirements of industrial process equipment are that apart from performing their intrinsic function, they must interface with external systems. The most common requirements are for 4 types of interface.

Analogue inputs, able to accept linear bi-polar reference or feedback signals.
Analogue outputs able, to provide linear bi-polar signals.
Digital inputs able, to recognise logic levels using 24V logic.
Digital inputs for encoders signals of various amplitudes and type.
Digital outputs able, to drive 24V relays, lamps, sensors etc.

System requirements are variable. Some require a lot of one type of interface, others a selection of all types. The designers of the PL/X series of drives have attempted to provide sufficient of all types to meet all conceivable requirements. This has been achieved by making many of the terminals dual function. The possible boundaries are as follows.

Up to 17 digital inputs, 8 analogue inputs 7 digital outputs 4 analogue outputs

This is achieved by allowing the 8 analogue inputs to also be used as digital inputs, and 4 digital outputs that can be independently programmed as inputs.
The analogue outputs do not usually need to be so numerous, as software connections can be made by the user. Even so 4 analogue outputs are available of which 3 are programmable. The analogue outputs are individually short circuit protected to 0V. However they are not protected for simultaneous shorts.

3.4.2 Digital inputs and outputs

An important consideration is the ability of the equipment to survive a harsh environment. The most frequent types of problem are short circuits and excessive voltages being applied to the digital inputs and outputs. All the digital inputs and outputs can withstand up to +50V applied continuously. All digital outputs, including the 24V customer supply have been designed to withstand a direct short circuit to 0V. If a short circuit or overload occurs on one or more of the digital outputs, then all digital outputs are disabled and the short circuit condition is flagged. It is possible to enable or disable a drive trip in this event. Providing the fault has not caused external user relay logic to interrupt normal running, then the drive will continue to run if the trip is disabled. The short circuit condition may be signalled on one of the outputs by a low state if desired. If the short circuit is removed the digital outputs will recover to their original state. See 8.1.4 MOTOR DRIVE ALARMS / Digital OP short circuit trip enable PIN 174 and 8.1.11.14 DRIVE TRIP MESSAGE / Short circuit digital outputs and 7.5 DIAGNOSTICS / DIGITAL IO MONITOR.
Note. The DIP digital inputs on T14-17 are also characterised for use as encoder inputs **(hence low noise immunity**). The DIO digital input/outputs on T18-21 are characterised for 24V logic **(standard noise immunity)**. The UIP analogue inputs on T2-9 can also be used as digital inputs. **(optimum noise immunity).**