

1) CORRECT OPERATION OF MAIN CONTACTOR

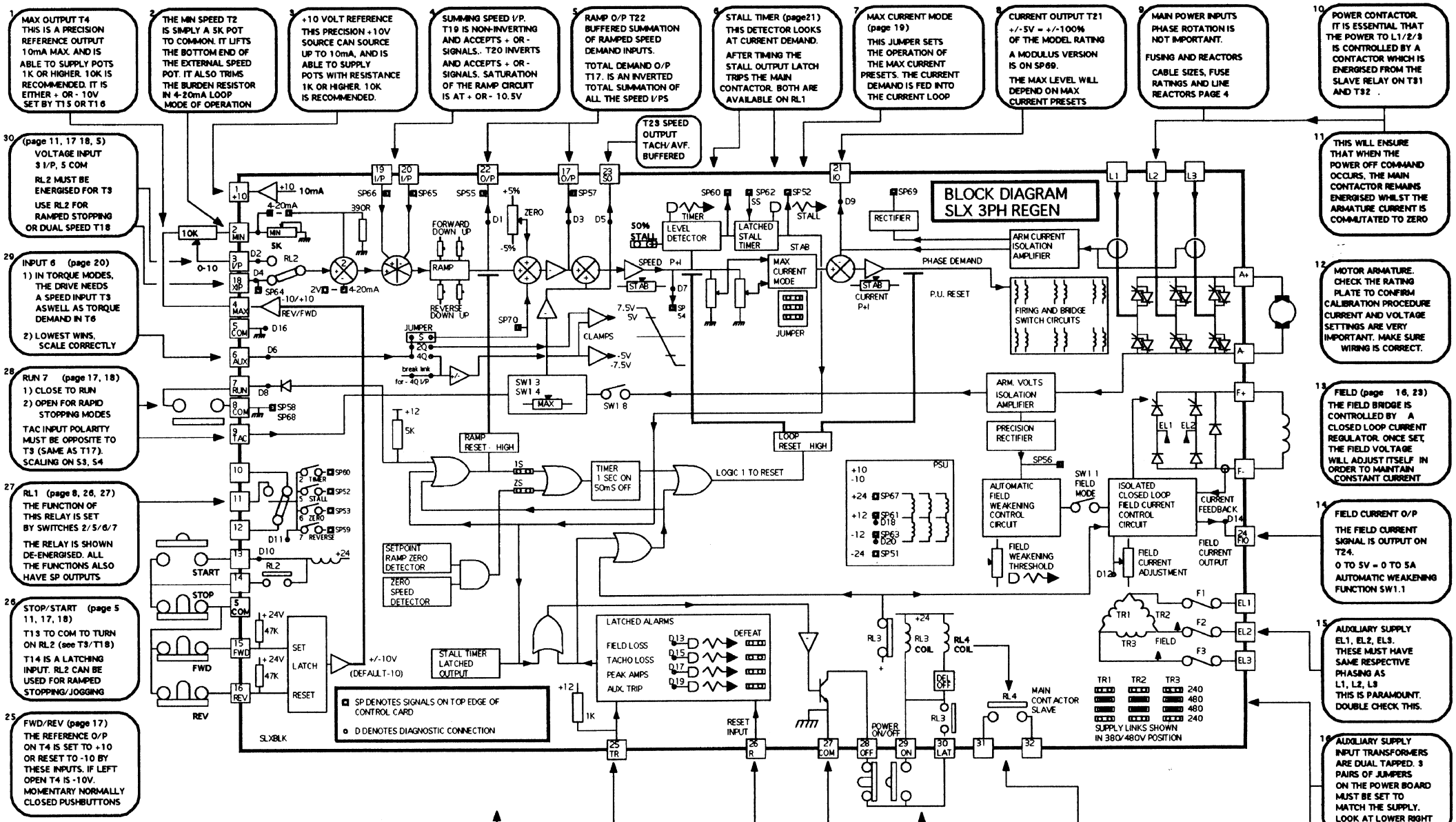
2) CORRECT SCALING OF SPEED AND CURRENT

3) ARMATURE WIRING FIELD WIRING

4) SPEED DEMAND OK, CURRENT DEMAND OK

5) RUN LINE, START STOP, POWER ON/OFF

6) SAFETY PRECAUTIONS!



1) MAX OUTPUT T4 THIS IS A PRECISION REFERENCE OUTPUT 10mA MAX. AND IS ABLE TO SUPPLY POTS 1K OR HIGHER. 10K IS EITHER + OR - 10V SET BY T15 OR T16

2) THE MIN SPEED T2 IS SIMPLY A 5K POT TO COMMON. IT LIFTS THE BOTTOM END OF THE EXTERNAL SPEED POT. IT ALSO TRIMS THE BURDEN RESISTOR IN 4-20mA LOOP MODE OF OPERATION

3) +10 VOLT REFERENCE THIS PRECISION +10V SOURCE CAN SOURCE UP TO 10mA, AND IS ABLE TO SUPPLY POTS WITH RESISTANCE 1K OR HIGHER. 10K IS RECOMMENDED.

4) SUMMING SPEED I/P. T19 IS NON-INVERTING AND ACCEPTS + OR - SIGNALS. T20 INVERTS AND ACCEPTS + OR - SIGNALS. SATURATION OF THE RAMP CIRCUIT IS AT + OR - 10.5V

5) RAMP O/P T22 BUFFERED SUMMATION OF RAMPED SPEED DEMAND INPUTS. TOTAL DEMAND O/P T17. IS AN INVERTED TOTAL SUMMATION OF ALL THE SPEED I/P'S

6) STALL TIMER (page 21) THIS DETECTOR LOOKS AT CURRENT DEMAND. AFTER TIMING THE STALL OUTPUT LATCH TRIPS THE MAIN CONTACTOR. BOTH ARE AVAILABLE ON RL1

7) MAX CURRENT MODE (page 19) THIS JUMPER SETS THE OPERATION OF THE MAX CURRENT PRESETS. THE CURRENT DEMAND IS FED INTO THE CURRENT LOOP

8) CURRENT OUTPUT T21 +/-5V = +/-100% OF THE MODEL RATING A MODULUS VERSION IS ON SP69. THE MAX LEVEL WILL DEPEND ON MAX CURRENT PRESETS

9) MAIN POWER INPUTS PHASE ROTATION IS NOT IMPORTANT. FUSING AND REACTORS CABLE SIZES, FUSE RATINGS AND LINE REACTORS PAGE 4

10) POWER CONTACTOR. IT IS ESSENTIAL THAT THE POWER TO L1/2/3 IS CONTROLLED BY A CONTACTOR WHICH IS ENERGISED FROM THE SLAVE RELAY ON T31 AND T32

11) (page 11, 17, 18, 5) VOLTAGE INPUT 3 I/P, 5 COM RL2 MUST BE ENERGISED FOR T3 USE RL2 FOR RAMPED STOPPING OR DUAL SPEED T18

12) INPUT 6 (page 20) 1) IN TORQUE MODES, THE DRIVE NEEDS A SPEED INPUT T3 AS WELL AS TORQUE DEMAND IN T6 2) LOWEST WINS, SCALE CORRECTLY

13) RUN 7 (page 17, 18) 1) CLOSE TO RUN 2) OPEN FOR RAPID STOPPING MODES TAC INPUT POLARITY MUST BE OPPOSITE TO T3 (SAME AS T17), SCALING ON S3, S4

14) RL1 (page 8, 26, 27) THE FUNCTION OF THIS RELAY IS SET BY SWITCHES 2/5/6/7 THE RELAY IS SHOWN DE-ENERGISED. ALL THE FUNCTIONS ALSO HAVE SP OUTPUTS

15) STOP/START (page 5 11, 17, 18) T13 TO COM TO TURN ON RL2 (see T3/T18) T14 IS A LATCHING INPUT. RL2 CAN BE USED FOR RAMPED STOPPING/JOGGING

16) FWD/REV (page 17) THE REFERENCE O/P ON T4 IS SET TO +10 OR RESET TO -10 BY THESE INPUTS. IF LEFT OPEN T4 IS -10V. MOMENTARY NORMALLY CLOSED PUSHBUTTONS

THE COMMENT BOXES SURROUNDING THE BLOCK DIAGRAM ARE INTENDED TO GIVE A BRIEF DESCRIPTION ONLY OF THE KEY FEATURES. PLEASE REFER TO THE MANUAL FOR A MORE COMPLETE DESCRIPTION. THE CHECKLIST AT THE TOP OF THE PAGE HIGHLIGHTS THE KEY AREAS OF CONCERN FOR COMMISSIONING.

17) THIS WILL ENSURE THAT WHEN THE POWER OFF COMMAND OCCURS, THE MAIN CONTACTOR REMAINS ENERGISED WHILST THE ARMATURE CURRENT IS COMMUTATED TO ZERO

18) MOTOR ARMATURE. CHECK THE RATING PLATE TO CONFIRM CALIBRATION PROCEDURE CURRENT AND VOLTAGE SETTINGS ARE VERY IMPORTANT. MAKE SURE WIRING IS CORRECT.

19) FIELD (page 16, 23) THE FIELD BRIDGE IS CONTROLLED BY A CLOSED LOOP CURRENT REGULATOR. ONCE SET THE FIELD VOLTAGE WILL ADJUST ITSELF IN ORDER TO MAINTAIN CONSTANT CURRENT

20) FIELD CURRENT O/P THE FIELD CURRENT SIGNAL IS OUTPUT ON T24. 0 TO 5V = 0 TO 5A AUTOMATIC WEAKENING FUNCTION SW1.1

21) AUXILIARY SUPPLY EL1, EL2, EL3. THESE MUST HAVE SAME RESPECTIVE PHASING AS L1, L2, L3 THIS IS PARAMOUNT. DOUBLE CHECK THIS.

22) AUXILIARY SUPPLY INPUT TRANSFORMERS ARE DUAL TAPPED. 3 PAIRS OF JUMPERS ON THE POWER BOARD MUST BE SET TO MATCH THE SUPPLY. LOOK AT LOWER RIGHT EDGE TO CONFIRM

23) NOTE. THE MAIN POWER INPUTS NEED NOT BE THE SAME AS THE AUXILIARY SUPPLY AS LONG AS THEY HAVE THE SAME PHASING. EG BATTERY CHARGING SYSTEMS

24) 1S JUMPER (page 17 18) THIS IS USED TO ALLOW THE RUN LINE TO QUENCH THE DRIVE. IF REMOVED, THE RUN LINE T7 WILL ONLY BE ABLE TO RESET THE SETPOINT RAMP.

25) ZS JUMPER (page 17 18) THIS IS USED TO QUENCH THE DRIVE AT ZERO SPEED. THE THRESHOLD IS +/-1% QUENCHING IS DELAYED BY 1 SEC. TO PREVENT QUENCHING REMOVE THE ZS JUMPER

26) ALARMS (page 15) CLOSE T26 TO COM TO RESET. (EXCEPT PEAK AMPS AND STALL) AUX. TRIP ON T25 FOR THERMISTOR INPUT. ALARMS MAY BE DEFEATED BY JUMPER

27) THIS TRANSISTOR IS TURNED OFF BY A STALL OR ALARM CONDITION. IT OPENS THE POWER OFF LINE WHICH CAUSES THE MAIN CONTACTOR TO DE-ENERGISE. NOTE, ALARMS LATCH

28) POWER ON/OFF (page 11, 15) RL3 ENERGISED BY T29 RL3 LATCHED BY T30 RL4 DE-ENERGISED T28 RL4 IS DELAYED OFF TO ALLOW CURRENT COMMUTATION

29) MAIN CONTACTOR SLAVE T31 T32. THIS MUST BE USED TO CONTROL THE MAIN POWER SUPPLY CONTACTOR WARNING. DAMAGE MAY OTHERWISE OCCUR USE T28 T29 T30

30) AUXILIARY SUPPLY IS FUSED WITH 20mm 6.3 AMP FUSES WHICH CAN BE FOUND AT THE TOP RIGHT HAND CORNER OF THE UNIT. F2 AND F3 ALSO FEED THE FIELD BRIDGE