

VARIABLE SPEED DRIVES OPERATION

SILCON C DRIVE SYSTEM

GENERAL NOMENCLATURE

THE FOLLOWING NOMENCLATURE IS NORMALLY USED. PREFIXES OR SUFFIXES MAY BE ADDED TO DESIGNATE A PARTICULAR UNIT, SECTION OR DRIVE OR MERELY TO DIFFERENTIATE BETWEEN SIMILAR DEVICES.

A	AMMETER	LS	LIMIT SWITCH
BMC	BLOWER MOTOR STARTER	MA	AC LINE CONTACTOR OR STARTER
CAP	CAPACITOR	MD	DC LOOP CONTACTOR
CB	CIRCUIT BREAKER	MRH	MOTOR OPERATED RHEOSTAT
CVT	CONTROL VOLTAGE TRANSFORMER	MTH	MOTOR THERMAL SWITCH
CT	CURRENT TRANSFORMER	OL	OVERLOAD
DBC	DYNAMIC BRAKING CONTACTOR	POT	POTENTIOMETER
DBRES	DYNAMIC BRAKING RESISTOR	PL	PILOT LIGHT
		PB	PUSHBUTTON
		RC OR RR	REVERSE CONTACTOR OR RELAY
ESR	EMERGENCY STOP RELAY	RES	RESISTOR
EXC	(STATIC) EXCITER	SUP	COIL SUPPRESSION
F	SCR MODULE FAULT RELAY	SH	(AMMETER) SHUNT
FTR	FIELD TRIM RESISTOR	SS	SELECTOR SWITCH
FLR	FIELD LOSS RELAY	TI	TACHO INDICATOR
FS	FUSE	TG	TACHO GENERATOR
FC OR FR	FORWARD CONTACTOR OR RELAY	TR	TIMING RELAY
HTH	HEATSINK THERMAL SWITCH	UVR	UNDERVOLTAGE RELAY
IVT	ISOLATION TRANSFORMER	V	VOLTMETER
IOC	INSTANTANEOUS OVER CURRENT RELAY	VR	VOLTAGE SENSING RELAY
IR	INCH RELAY		
IFR	INCH FORWARD RELAY		
IRR	INCH REVERSE RELAY		

SYMBOLS

	- SCREENED LEADS
	- TWISTED LEADS
	- TERMINAL BOARD JUMPER
	- MOUNTED IN MOTOR
	- REMOTE MOUNTED DEVICE
	- DEVICES IN OPERATOR STATION

THE TABLE BELOW LISTS CONNECTIONS THAT HAVE BEEN MADE IN THE DRIVER/REGULATOR TO PROVIDE THE REQUIRED SYSTEM OPERATION. REFER TO THE SYSTEM INSTRUCTION BOOK FOR CIRCUIT AND OPERATING DETAILS OF THE DRIVE REGULATOR.

FOR MULTIPLE DRIVE EQUIPMENTS, DRIVER/REGULATOR OPERATING TABLES ARE ON SHEETS 1A, 2A, 3A ETC.

DRIVER/REGULATOR OPERATING TABLE (LEFT BLANK FOR MULTIPLE DRIVES)

LINE FREQUENCY	DRIVER CURRENT LIMIT	REGULATING LOOP
60HZ ☒ 50HZ ☒	NONE ☐ 0-75HP ☒ 75HP ☐	VOLTAGE ☐ CURRENT ☐ DC TACH ☐ AC TACH ☒
SYSTEM REFERENCE	LINEAR TIMING	TACHOMETER VOLTAGE
20V ☒ 10V ☐ 3V ☐	0 SEC ☐ 0.5-3SEC ☒ 3-30SEC ☐ 30- SEC ☐	43-62 VDC, 26-48 VAC ☐ 60-115 VDC, 47-85VAC ☐ 100-200VDC, 82-152VAC ☒ 180-380VDC, 151-275VAC ☐
AUXILIARY PRESET REFERENCE	AUXILIARY PRESET REF DIRECTION	REGULATOR COMPENSATION
NONE ☐ TIMED ☐ UNTIMED ☒	FWD ☒ REV ☐ EXTERNAL ☐	NONE ☒ LOAD ☐
		RESPONSE
		NORMAL ☒ LOW ☐
		CURRENT LIMIT
		69A (150%)
SEE SYSTEM ELEMENTARY FOR ADDITIONAL REGULATOR CIRCUITRY ☒		TOP SPEED/BASE SPEED
		0.9-1.0 ☐ 1.0-1.1 ☐ 1.1-1.2 ☐ 1.2-1.2 ☐ 1.3-1.5 ☐ 1.5-1.6 ☐ 1.6-1.8 ☐ 1.8-2.0 ☐ 2.0-2.2 ☐ 2.2-2.5 ☐ 2.5-2.7 ☐ 2.7-3.0 ☐ 3.0-3.3 ☒ 3.3-3.7 ☐
DRIVER/REGULATOR INCLUDES INSTRUMENT FUNCTION ☒		
	DIAGNOSTIC FUNCTION ☒	
	SIGNAL LEVEL DET. ☒	

902HM100AE SHEET 1

DATE
14-12-77

ISSUED

APPD.

ALLENWEST

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

CONT. ON SH. NO.
SH. 2 1

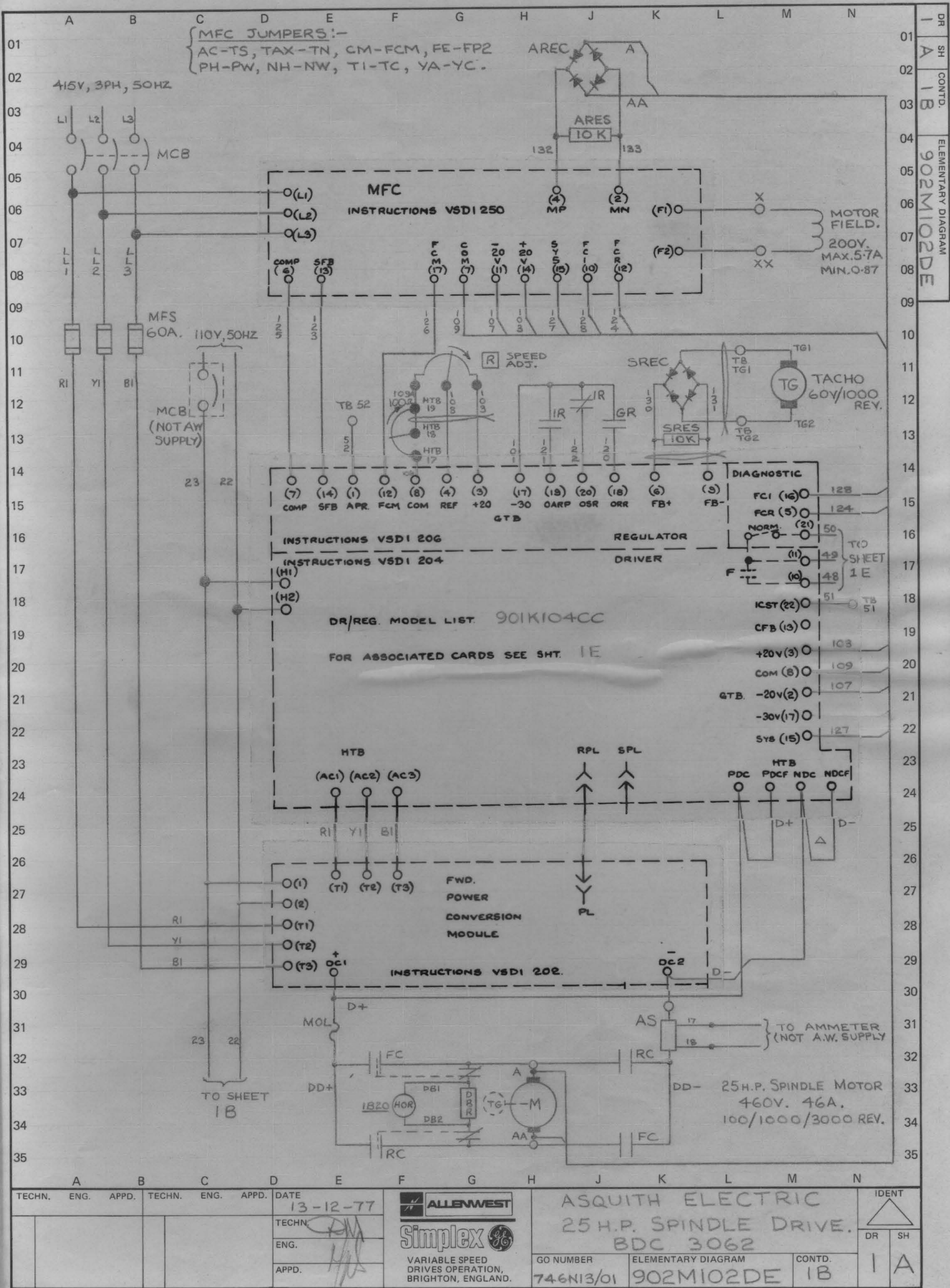
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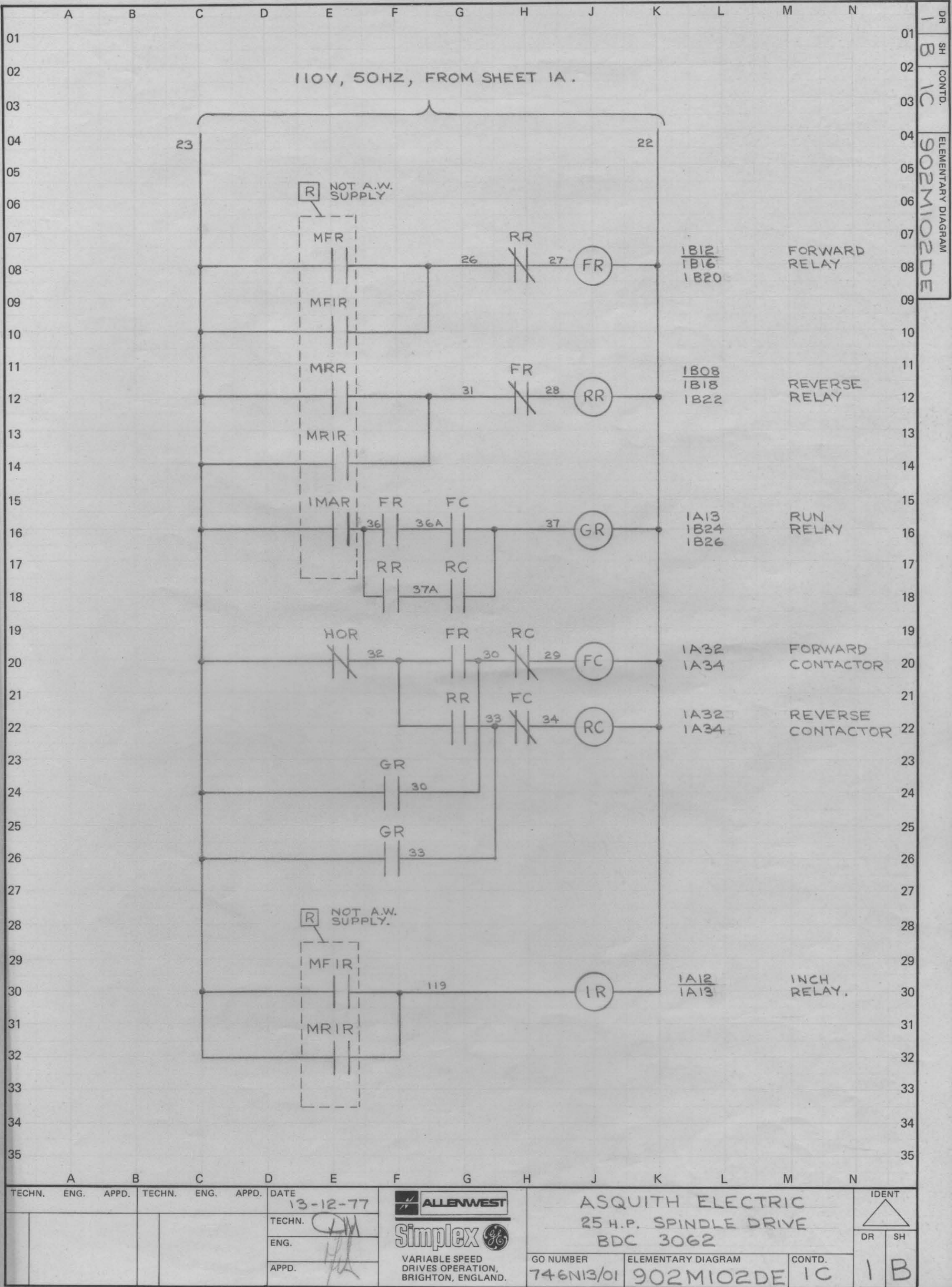
ELEMENTARY DIAGRAM NOTES
ASQUITH ELECTRIC
25 H.P. SPINDLE DRIVE.
BDC 3062

902M102DE
SH. No
CONT. ON

FIRST MADE FOR
746N13/01A

RE-DRAWN 14-12-77







VARIABLE SPEED DRIVES OPERATION

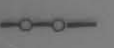
SILCON DRIVE SYSTEM

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		RESPONSE
		NORMAL ☒ LOW ☐
		CURRENT LIMIT
		150% ☒
SEE SYSTEM ELEMENTARY FOR ADDITIONAL REGULATOR CIRCUITRY ☒		TOP SPEED/BASE SPEED
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DRIVER/REGULATOR INCLUDES INSTRUMENT FUNCTION ☒		
	DIAGNOSTIC FUNCTION ☒	

SIGNAL LEVEL
DETECTOR

902HM100AE SHEET 1

DATE 8-7-77
ISSUED RKW
APPD.VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

FIRST MADE FOR 717N07

CONT. ON SH. NO.
SH. 2 1

902M102XB

ELEMENTARY DIAGRAM NOTES

50 HP REGENERATIVE BDC 3062

CONTROLLER FOR ASQUITH ELECTRICS

902M102XB

SH. NO.

CONT. ON
CN 2

DRIVE NUMBERING SYSTEM

1. TO BREAK THE ELEMENTARY DIAGRAM INTO EASY-TO-USE SECTIONS, A SERIES OF ARBITRARY "DRIVES" HAS BEEN ESTABLISHED, WITH THE ELEMENTARY SHEETS ALPHABETICALLY NUMBERED IN EACH DRIVE. FOR EXAMPLE: SHEETS 3A, 3B AND 3C ARE THE FIRST THREE ELEMENTARY SHEETS IN DRIVE NO.3.
2. THE DRIVE CONCEPT IS ESTABLISHED TO CONVENIENTLY SECTIONALIZE THE ELEMENTARY DIAGRAM, AND NOT NECESSARILY TO DENOTE SEPARATE PHYSICAL EQUIPMENTS. HOWEVER, ALL THE SYSTEM ELEMENTS INCLUDED IN A DRIVE WILL BEAR AN OBVIOUS FUNCTIONAL RELATIONSHIP.

WIRE NUMBERING SYSTEM

1. CONTROL WIRES:

WIRE NUMBERS ARE SHOWN ON EACH SHEET AS TWO-DIGIT NUMBERS (E.G. 01, 02, 10, 42 ETC.) EXCEPT FOR WIRES ORIGINATING ON ANOTHER SHEET, WHICH ARE SHOWN AS 4-DIGIT OR 5-DIGIT NUMBERS. IN ALL CASES, THE COMPLETE WIRE NUMBER (WHICH APPEARS ON THE ACTUAL WIRES IN THE EQUIPMENT AND ON THE TERMINAL BOARDS) IS A 4-DIGIT OR 5-DIGIT NUMBER. THE FIRST TWO OR THREE DIGITS INDICATE THE NUMBER OF THE ELEMENTARY DIAGRAM SHEET ON WHICH THE WIRE ORIGINATES AND THE LAST TWO DIGITS INDICATE THE WIRE ON THAT SHEET. THUS 2A04 INDICATES WIRE NUMBER 04 ORIGINATING ON SHEET 2A OF THE DIAGRAM; AND 15C34 INDICATES WIRE NUMBER 34 ORIGINATING ON SHEET 15C.

2. POWER WIRES:

DC POWER WIRES ARE HANDLED IN THE SAME WAY AS CONTROL WIRES EXCEPT THAT THE LETTER "P" IS INSERTED; ie. 1AP1, 3EP9. AC POWER WIRES USE LETTERS SUCH AS L,K,T & AC WITHOUT THE SHEET NUMBER; ie. L1, L2, L3, K13, K14, K15, AC1, AC2.

LOCATING MAPPING SYSTEM

4 OR 5 DIGIT NUMBERS WITHIN BRACKETS, SUCH AS (15C35), ALWAYS INDICATE A LOCATION WITHIN THE ELEMENTARY DIAGRAMS. THE LAST TWO DIGITS OF THE BRACKETED NUMBER INDICATE THE LINE NUMBER ON A SHEET AND THE FIRST TWO OR THREE DIGITS INDICATE WHICH SHEET; THUS (15C35) INDICATES LINE 35 ON SHEET 15C.

RELAY MAPPING SYSTEM

1. UNDER EACH CONTACT (EXCEPT MAIN CONTACTS OF CONTACTORS AND STARTERS) A LOCATION MAPPING NUMBER INDICATES WHERE THE OPERATING COIL IS TO BE FOUND IN THE ELEMENTARY DIAGRAMS.
2. IN THE DIAGRAM MARGIN BESIDE EACH OPERATING COIL, LOCATION NUMBERS GIVE THE LOCATION OF DEVICE CONTACTS THAT ARE USED. LOCATION NUMBERS AT OPERATING COILS DIFFER FROM THE USUAL LOCATION NUMBERING SYSTEM IN THAT;
 - A) THE BRACKETS ARE ELIMINATED, AND
 - B) UNDERSCORING INDICATES A NORMALLY CLOSED CONTACT AND LACK OF UNDERSCORING INDICATES A NORMALLY OPEN CONTACT.

THUS 3B56 INDICATES A NORMALLY OPEN CONTACT LOCATED ON LINE 56 OF SHEET 3B OF THE ELEMENTARY DIAGRAM, AND 13B48 INDICATES A NORMALLY CLOSED CONTACT LOCATED ON SHEET 13B, LINE 48.

AGAIN MAIN CONTACTS OF CONTACTORS AND STARTERS ARE NOT "MAPPED".

CONTACTS FOR PURCHASER'S USE

CONTACTS FOR PURCHASER'S USE WILL BE SHOWN ISOLATED, IN THE BODY OF THE DIAGRAM, AS NEAR AS CONVENIENT TO THE ASSOCIATED OPERATING COIL.

WIRE NUMBERS WILL BE SHOWN ON THE WIRES COMING OUT OF THE CONTACT WITH THE LABEL "FOR PURCHASER'S USE" OR SIMILAR WORDING.

THESE CONTACTS WILL ALSO BE "MAPPED" AT THE COIL LOCATION.

IN THE ACTUAL EQUIPMENT, THESE WIRES WILL BE RUN TO THE TERMINAL BOARD, WHICH WILL BE MARKED WITH THE WIRE NUMBERS.

WHEN KNOWN, PURCHASERS WIRE NUMBERS WILL BE USED.

CONTINUATION OF WIRES ON OTHER SHEETS

WHERE A WIRE IS CONTINUED FROM ONE SHEET TO ANOTHER, THE POINT OF ITS CONTINUATION IS INDICATED BY A BRACKETED LOCATION MAPPING NUMBER. THE FULL WIRE NUMBER MAY ALSO BE SHOWN.

902HM100AE SHEET 2

DATE 8-7-77

ISSUED RKW

APPD.

FIRST MADE FOR 717 NOT

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

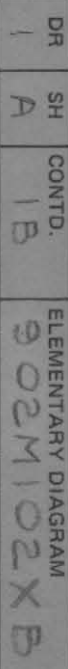
CONT. ON SH. NO.
SH 1A 2

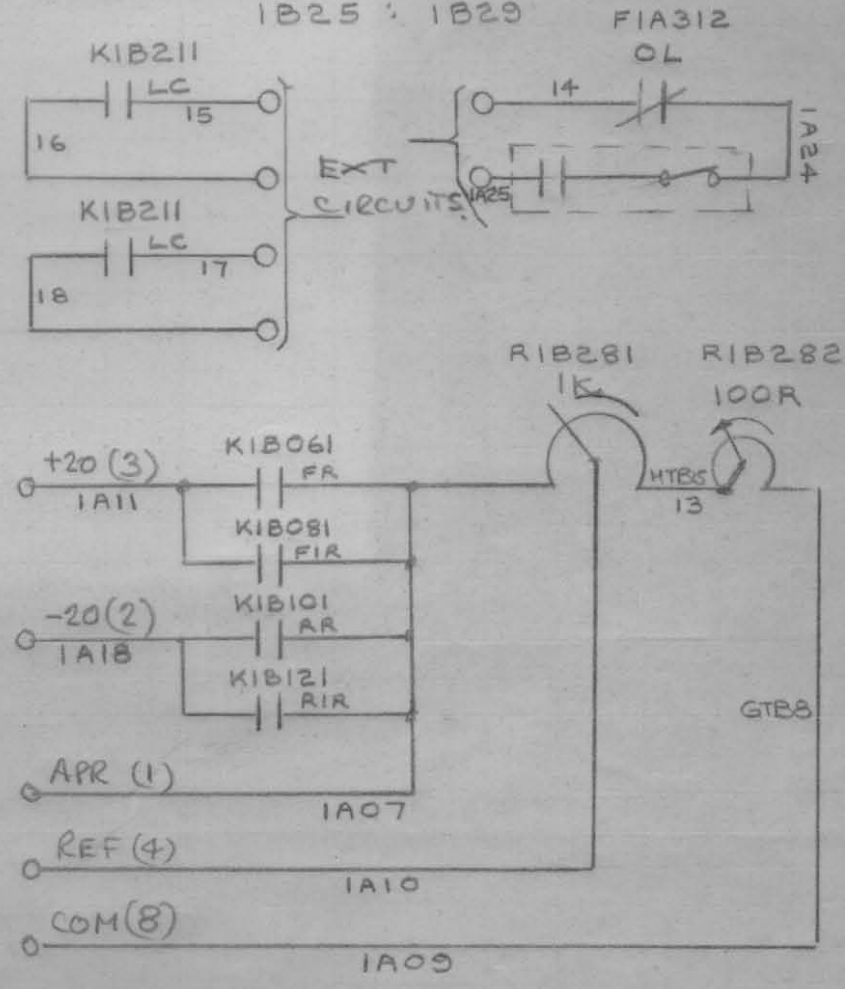
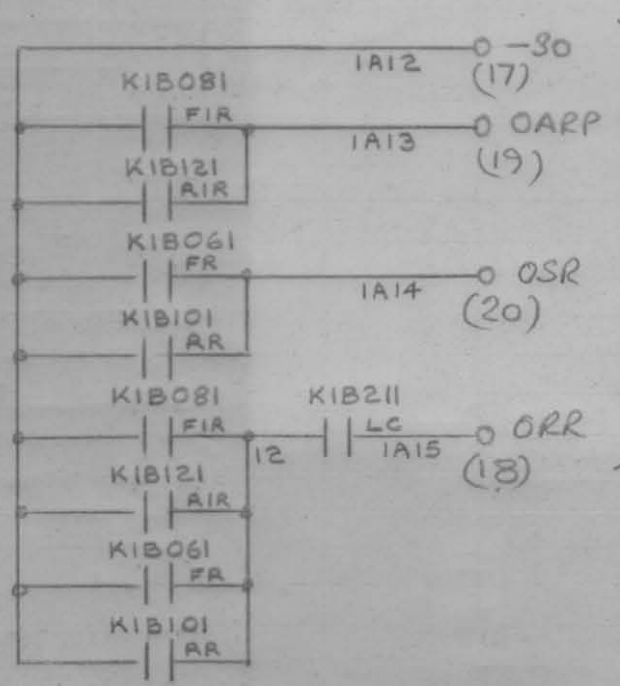
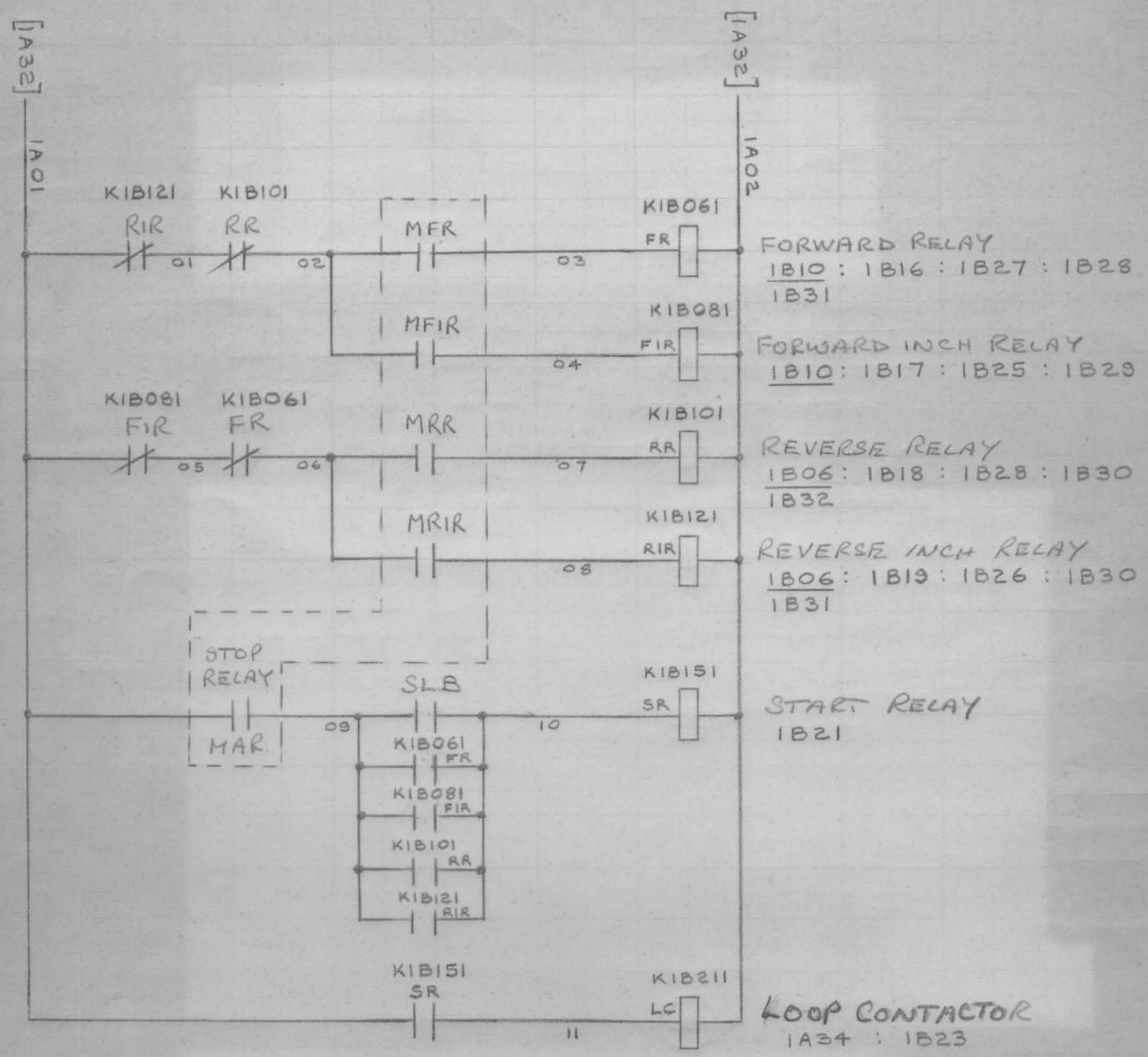
902M102XB

ELEMENTARY DIAGRAM NOTES

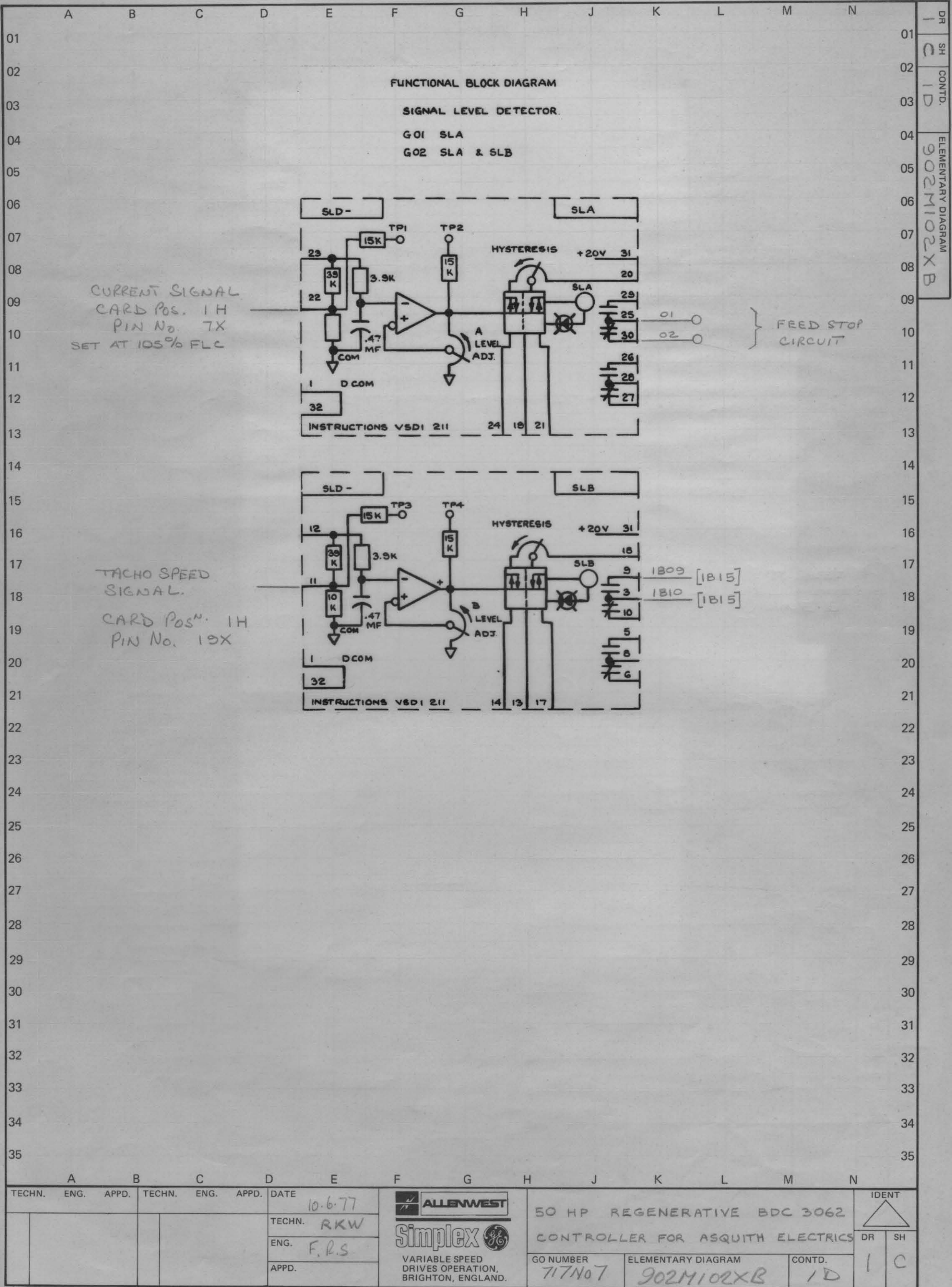
50 HP REGENERATIVE BDC 3062

CONTROLLER FOR ASQUITH ELECTRICS





A		B		C		D		E		F		G		H		J		K		L		M		N							
TECHN.	ENG.	APPD.	TECHN.	ENG.	APPD.	DATE	10-6-77																								
						TECHN.	RKW																								
						ENG.	F.R.S																								
						APPD.																									
						ALLENWEST Simplex VARIABLE SPEED DRIVES OPERATION, BRIGHTON, ENGLAND.												50 HP REGENERATIVE BDC 3062 CONTROLLER FOR ASQUITH ELECTRICS GO NUMBER 717N07 ELEMENTARY DIAGRAM 902M102XB CONTD. 1C												IDENT DR SH 1 B	



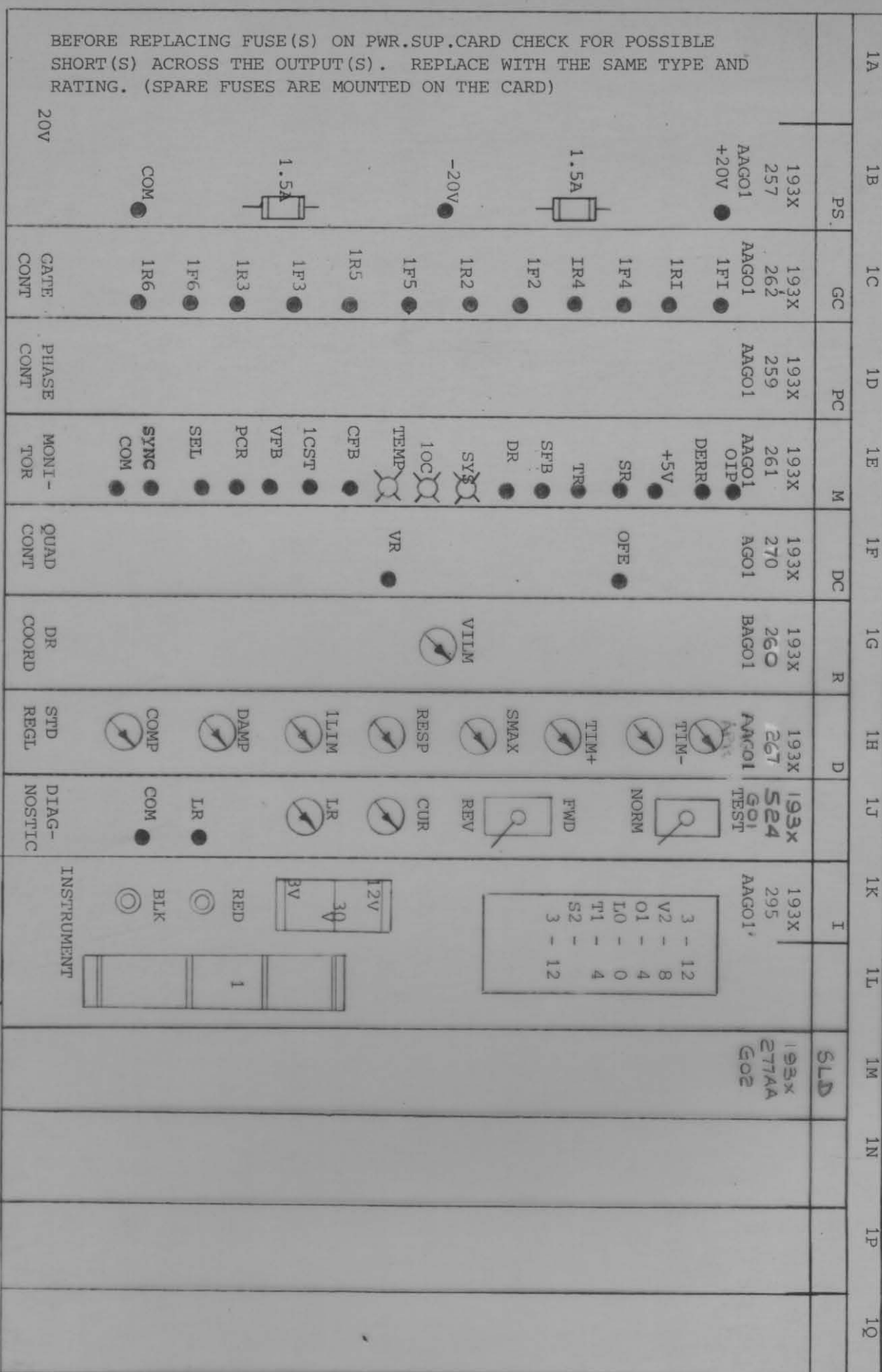
FRONT VIEW
FROM PLUG SIDE

ON PRINTED CIRCUIT CARDS USED IN THIS RACK THE LETTERS "AA" AFTER THE BASIC CARD CATALOGUE NUMBER INDICATES ORIGINAL DESIGN. SUBSEQUENT DESIGNS WITH THE SAME BASIC NUMBERS AND GROUP NUMBERS WITH THE SECOND LETTER CHANGED SUCH AS, AB, AC, AD, ETC ARE DIRECTLY INTER-CHANGEABLE AND MAY BE SUPPLIED IN PLACE OF THE "AA" CARDS.

THE PRINTED CIRCUIT CARDS SHOULD ALWAYS BE REMOVED WITH THE CARD EXTRACTOR WHICH IS ATTACHED ON TOP OF THE CARD RACK SOME CARDS CONTAIN PARTS WHICH WILL BE THERMALLY HOT AFTER BEING IN OPERATION. CARE SHOULD BE EXERCISED IN HANDLING ALL CARDS AFTER REMOVAL UNTIL THESE PARTS HAVE COOLED.

(FRONT VIEW OF RACK IN CLOSED POSITION)

FRONT VIEW OF 64 PIN RECEPTACLE AS SEEN IN RACK CLOSED POSITION



SYMBOLS

TEST POST

POT ADJUSTMENT

INDICATING LIGHT

P O R S T U

CONT ON
SH. 1 E

SH.NO.
1 D

ELEMENTARY DIAGRAM
902M/02X6

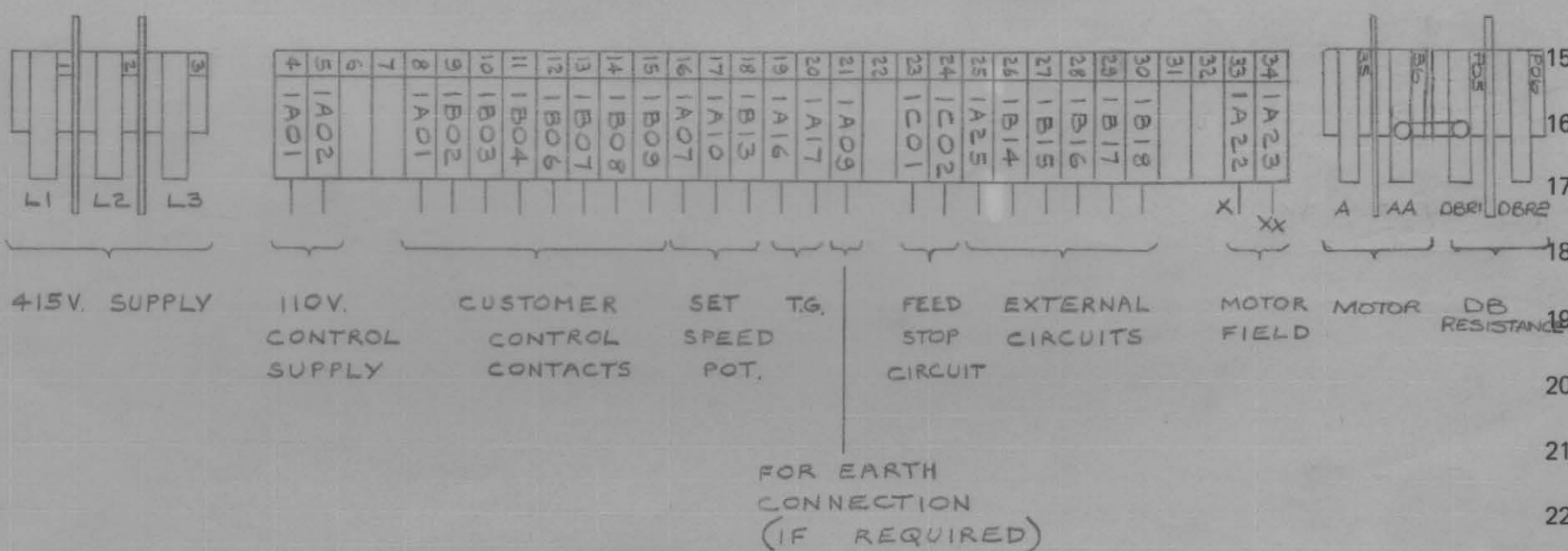
DATE 8-7-77

ISSUED RKW

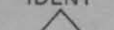
APPD.

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

4 QUAD DRIVER/REGULATOR LAYOUT
50 HP REGENERATIVE BDC 3062
CONTROLLER FOR ASQUITH ELECTRICS



TERMINAL ARRANGEMENT

A			B			C			D			E			F			G			H			J			K			L			M			N		
TECHN.			ENG.			APPD.			TECHN.			ENG.			APPD.			DATE			  VARIABLE SPEED DRIVES OPERATION, BRIGHTON, ENGLAND.			50 HP REGENERATIVE BDC 3062									IDENT					
TECHN.			ENG.			APPD.			TECHN.			ENG.			APPD.			DR																				
8-7-77			RKW			FRS			GO NUMBER			ELEMENTARY DIAGRAM						CONTD.						1			E											
												717N07 902M102XB FL																										

VARIABLE SPEED DRIVES OPERATION

SILCON DRIVE SYSTEM

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DIAGNOSTIC FUNCTION ☒		
SIGNAL LEVEL DETECTOR ☒		

902HM100AE SHEET 1

DATE
17-2-78
ISSUED
RKW
APPD.

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

CONT. ON SH. NO.
SH. 2 1

902M102YC

ELEMENTARY DIAGRAM NOTES

20 HP REGENERATIVE BDC 3062
CONTROLLER FOR ASQUITH ELECTRICS

FIRST MADE FOR 749NO2

ALLENWEST

902M102YC

SH. No

CONT. ON

902M102YC
SH.No. 2
CONT'D. ON 1A

DRIVE NUMBERING SYSTEM

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 - B) UNDERSCORING INDICATES A NORMALLY CLOSED CONTACT AND LACK OF UNDERSCORING INDICATES A NORMALLY OPEN CONTACT.

THUS 3B56 INDICATES A NORMALLY OPEN CONTACT LOCATED ON LINE 56 OF SHEET 3B OF THE ELEMENTARY DIAGRAM, AND 13B48 INDICATES A NORMALLY CLOSED CONTACT LOCATED ON SHEET 13B, LINE 48.

AGAIN MAIN CONTACTS OF CONTACTORS AND STARTERS ARE NOT "MAPPED".

CONTACTS FOR PURCHASER'S USE

CONTACTS FOR PURCHASER'S USE WILL BE SHOWN ISOLATED, IN THE BODY OF THE DIAGRAM, AS NEAR AS CONVENIENT TO THE ASSOCIATED OPERATING COIL.

WIRE NUMBERS WILL BE SHOWN ON THE WIRES COMING OUT OF THE CONTACT WITH THE LABEL "FOR PURCHASER'S USE" OR SIMILAR WORDING.

THESE CONTACTS WILL ALSO BE "MAPPED" AT THE COIL LOCATION.

IN THE ACTUAL EQUIPMENT, THESE WIRES WILL BE RUN TO THE TERMINAL BOARD, WHICH WILL BE MARKED WITH THE WIRE NUMBERS.

WHEN KNOWN, PURCHASERS WIRE NUMBERS WILL BE USED.

CONTINUATION OF WIRES ON OTHER SHEETS

WHERE A WIRE IS CONTINUED FROM ONE SHEET TO ANOTHER, THE POINT OF ITS CONTINUATION IS INDICATED BY A BRACKETED LOCATION MAPPING NUMBER. THE FULL WIRE NUMBER MAY ALSO BE SHOWN.

902HM100AE SHEET 2

DATE 17-2-78
ISSUED R KW
APPD.

 **ALLEN WEST**
VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

FIRST MADE FOR 749N02

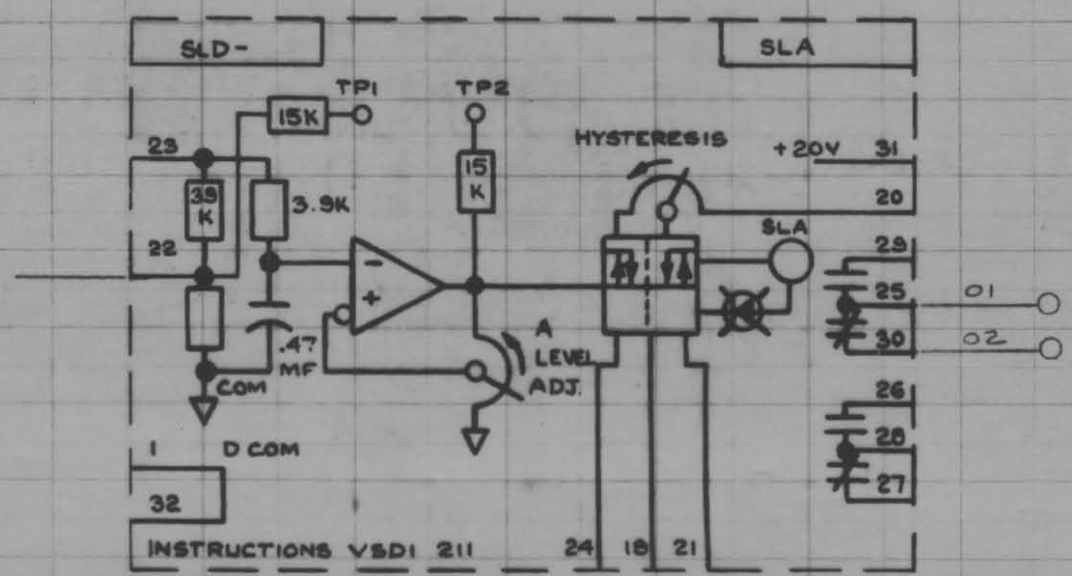
CONT. OF SH A	SH. NO. 2	902M102YC
ELEMENTARY DIAGRAM NOTES		
20 HP REGENERATIVE BDC 3062		
CONTROLLER FOR ASQUITH ELECTRICS		

FUNCTIONAL BLOCK DIAGRAM

SIGNAL LEVEL DETECTOR.

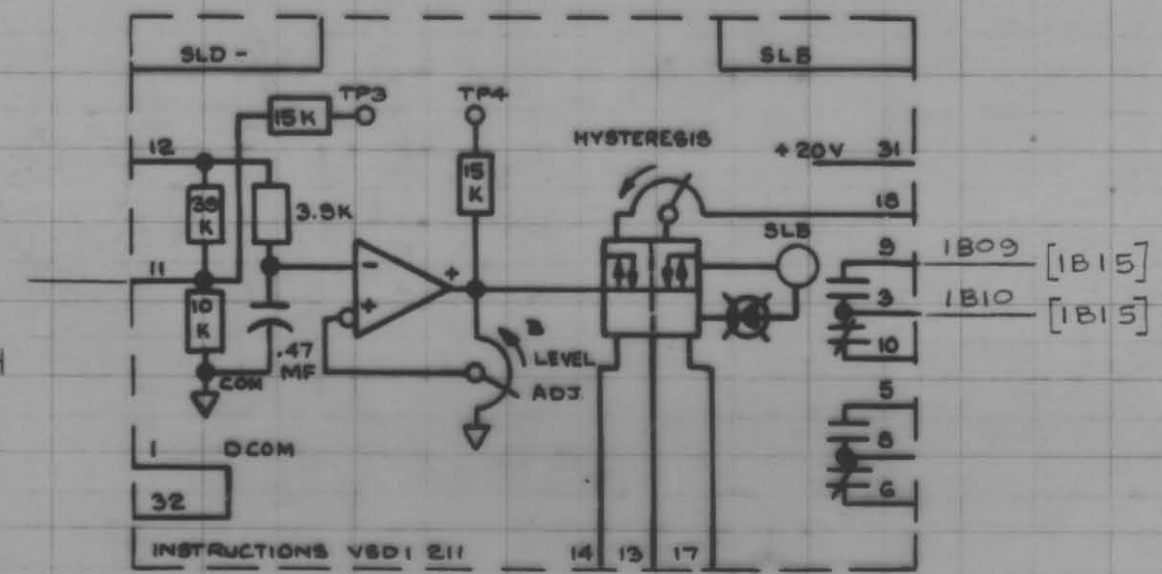
GO1 SLA
GO2 SLA & SLB

CURRENT SIGNAL
CARD POS. 1H
PIN No. 7X
SET AT 105% FLC



FEED STOP
CIRCUIT

TACHO SPEED
SIGNAL.
CARD POS. 1H
PIN No. 19X



1809 [1B15]
1810 [1B15]

01
02
03
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34
35

FRONT VIEW OF 64 PIN RECEPTACLE AS SEEN IN RACK CLOSED POSITION



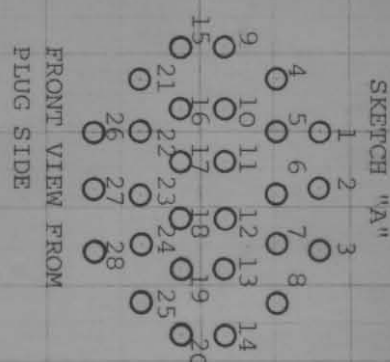
SYMBOLS

TEST POST

POT ADJUSTMENT

INDICATING LIGHT

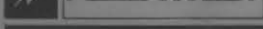
(FRONT VIEW OF RACK IN CLOSED POSITION)



ON PRINTED CIRCUIT CARDS USED IN THIS RACK THE LETTERS "AA" AFTER THE BASIC CARD CATALOGUE NUMBER INDICATES ORIGINAL DESIGN. SUBSEQUENT DESIGNS WITH THE SAME BASIC NUMBERS AND GROUP NUMBER WITH THE SECOND LETTER CHANGED SUCH AS, AB, AC, AD, ETC. ARE DIRECTLY INTERCHANGEABLE AND MAY BE SUPPLIED IN PLACE OF THE "AA" CARDS.

THE PRINTED CIRCUIT CARDS SHOULD ALWAYS BE REMOVED WITH THE CARD EXTRACTOR WHICH IS ATTACHED ON TOP OF THE CARD RACK. SOME CARDS CONTAIN PARTS WHICH WILL BE THERMALLY HOT AFTER BEING IN OPERATION. CARE SHOULD BE EXERCISED IN HANDLING ALL CARDS AFTER REMOVAL UNTIL THESE PARTS HAVE COOLED.

FOIL: 902HM100AR Sheet 2

A		B		C		D		E		F		G		H		J		K		L		M		N											
TECHN.		ENG.		APPD.		TECHN.		ENG.		APPD.		DATE				20 HP REGENERATIVE BDC 3062 CONTROLLER FOR ASQUITH ELECTRICS 4 - QUADRANT DRIVER/REGULATOR CARD FRAME LAYOUT										IDENT 									
												17-2-78														DR 									
												TECHN.		RKW												SH									
												ENG.		RJV																					
												APPD.		REL.		VARIABLE SPEED DRIVES OPERATION. BRIGHTON, ENGLAND.										GO NUMBER 749N02		ELEMENTARY DIAGRAM 902M102YC				CONTD. 1E		1 D	

VARIABLE SPEED DRIVES OPERATION

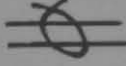
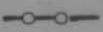
SILCON DRIVE SYSTEM

GENERAL NOMENCLATURE

THE FOLLOWING NOMENCLATURE IS NORMALLY USED. PREFIXES OR SUFFIXES MAY BE ADDED TO DESIGNATE A PARTICULAR UNIT, SECTION OR DRIVE OR MERELY TO DIFFERENTIATE BETWEEN SIMILAR DEVICES.

A	AMMETER	LS	LIMIT SWITCH
BMC	BLOWER MOTOR STARTER	MA	AC LINE CONTACTOR OR STARTER
CAP	CAPACITOR	MD	DC LOOP CONTACTOR
CB	CIRCUIT BREAKER	MRH	MOTOR OPERATED RHEOSTAT
CVT	CONTROL VOLTAGE TRANSFORMER	MTH	MOTOR THERMAL SWITCH
CT	CURRENT TRANSFORMER	OL	OVERLOAD
DBC	DYNAMIC BRAKING CONTACTOR	POT	POTENTIOMETER
DBRES	DYNAMIC BRAKING RESISTOR	PL	PILOT LIGHT
		PB	PUSHBUTTON
		RC OR RR	REVERSE CONTACTOR OR RELAY
ESR	EMERGENCY STOP RELAY	RES	RESISTOR
EXC	(STATIC) EXCITER	SUP	COIL SUPPRESSION
F	SCR MODULE FAULT RELAY	SH	(AMMETER) SHUNT
FTR	FIELD TRIM RESISTOR	SS	SELECTOR SWITCH
FLR	FIELD LOSS RELAY	TI	TACHO INDICATOR
FS	FUSE	TG	TACHO GENERATOR
FC OR FR	FORWARD CONTACTOR OR RELAY	TR	TIMING RELAY
HTH	HEATSINK THERMAL SWITCH	UVR	UNDERVOLTAGE RELAY
IVT	ISOLATION TRANSFORMER	V	VOLTMETER
IOC	INSTANTANEOUS OVER CURRENT RELAY	VR	VOLTAGE SENSING RELAY
IR	INCH RELAY		
IFR	INCH FORWARD RELAY		
IRR	INCH REVERSE RELAY		

SYMBOLS

	- SCREENED LEADS
	- TWISTED LEADS
	- TERMINAL BOARD JUMPER
	- MOUNTED IN MOTOR
	- REMOTE MOUNTED DEVICE
	- DEVICES IN OPERATOR STATION

THE TABLE BELOW LISTS CONNECTIONS THAT HAVE BEEN MADE IN THE DRIVER/REGULATOR TO PROVIDE THE REQUIRED SYSTEM OPERATION. REFER TO THE SYSTEM INSTRUCTION BOOK FOR CIRCUIT AND OPERATING DETAILS OF THE DRIVE REGULATOR.
FOR MULTIPLE DRIVE EQUIPMENTS, DRIVER/REGULATOR OPERATING TABLES ARE ON SHEETS 1A, 2A, 3A ETC.

DRIVER/REGULATOR OPERATING TABLE
(LEFT BLANK FOR MULTIPLE DRIVES)

LINE FREQUENCY 60HZ ☒ 50HZ ☒	DRIVER CURRENT LIMIT NONE ☐ 0-75HP ☒ 75 HP ☐	REGULATING LOOP VOLTAGE ☐ CURRENT ☐ DC TACH ☒ AC TACH ☐
SYSTEM REFERENCE 20V ☒ 10V ☐ 3V ☐ 15V ☒	LINEAR TIMING 0 SEC ☐ 0.5-3SEC ☒ 3-30SEC ☐ 30- SEC ☐	TACHOMETER VOLTAGE 43-62 VDC, 26-48 VAC ☐ 60-115 VDC, 47-85VAC ☐ 100-200VDC, 82-152VAC ☒ 180-380VDC, 151-275VAC ☐
AUXILIARY PRESET REFERENCE NONE ☐ TIMED ☐ UNTIMED ☒	AUXILIARY PRESET REF DIRECTION FWD ☐ REV ☐ EXTERNAL ☒	REGULATOR COMPENSATION NONE ☒ LOAD ☐
		RESPONSE NORMAL ☒ LOW ☐
		CURRENT LIMIT 150% ☒
SEE SYSTEM ELEMENTARY FOR ADDITIONAL REGULATOR CIRCUITRY ☒		TOP SPEED/BASE SPEED 0.9-1.0 ☐ 1.0-1.1 ☐ 1.1-1.2 ☐ 1.2-1.2 ☐ 1.3-1.5 ☐ 1.5-1.6 ☐ 1.6-1.8 ☐ 1.8-2.0 ☐ 2.0-2.2 ☐ 2.2-2.5 ☐ 2.5-2.7 ☐ 2.7-3.0 ☒ 3.0-3.3 ☐ 3.3-3.7 ☐
DRIVER/REGULATOR INCLUDES INSTRUMENT FUNCTION ☒	DIAGNOSTIC FUNCTION ☒	
SIGNAL LEVEL DETECTOR		

902HM100AE SHEET 1

DATE 8-7-77

ISSUED
RKW

APPD.

FIRST MADE FOR

74-3N09

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

CONT. ON SH. NO.
SH. 2 1

902M102YD

ELEMENTARY DIAGRAM NOTES

50 HP REGENERATIVE BDC 3062

CONTROLLER FOR ASQUITH ELECTRICS

902M102YD
SH. NO. 1
CONT. ON SH. 2

DRIVE NUMBERING SYSTEM

1. TO BREAK THE ELEMENTARY DIAGRAM INTO EASY-TO-USE SECTIONS, A SERIES OF ARBITRARY "DRIVES" HAS BEEN ESTABLISHED, WITH THE ELEMENTARY SHEETS ALPHABETICALLY NUMBERED IN EACH DRIVE. FOR EXAMPLE: SHEETS 3A, 3B AND 3C ARE THE FIRST THREE ELEMENTARY SHEETS IN DRIVE NO.3.
2. THE DRIVE CONCEPT IS ESTABLISHED TO CONVENIENTLY SECTIONALIZE THE ELEMENTARY DIAGRAM, AND NOT NECESSARILY TO DENOTE SEPARATE PHYSICAL EQUIPMENTS. HOWEVER, ALL THE SYSTEM ELEMENTS INCLUDED IN A DRIVE WILL BEAR AN OBVIOUS FUNCTIONAL RELATIONSHIP.

WIRE NUMBERING SYSTEM

1. CONTROL WIRES:

WIRE NUMBERS ARE SHOWN ON EACH SHEET AS TWO-DIGIT NUMBERS (E.G. 01, 02, 10, 42 ETC.) EXCEPT FOR WIRES ORIGINATING ON ANOTHER SHEET, WHICH ARE SHOWN AS 4-DIGIT OR 5-DIGIT NUMBERS. IN ALL CASES, THE COMPLETE WIRE NUMBER (WHICH APPEARS ON THE ACTUAL WIRES IN THE EQUIPMENT AND ON THE TERMINAL BOARDS) IS A 4-DIGIT OR 5-DIGIT NUMBER. THE FIRST TWO OR THREE DIGITS INDICATE THE NUMBER OF THE ELEMENTARY DIAGRAM SHEET ON WHICH THE WIRE ORIGINATES AND THE LAST TWO DIGITS INDICATE THE WIRE ON THAT SHEET. THUS 2A04 INDICATES WIRE NUMBER 04 ORIGINATING ON SHEET 2A OF THE DIAGRAM; AND 15C34 INDICATES WIRE NUMBER 34 ORIGINATING ON SHEET 15C.

2. POWER WIRES:

DC POWER WIRES ARE HANDLED IN THE SAME WAY AS CONTROL WIRES EXCEPT THAT THE LETTER "P" IS INSERTED; ie. 1AP1, 3EP9. AC POWER WIRES USE LETTERS SUCH AS L,K,T & AC WITHOUT THE SHEET NUMBER; ie. L1, L2, L3, K13, K14, K15, AC1, AC2.

LOCATING MAPPING SYSTEM

4 OR 5 DIGIT NUMBERS WITHIN BRACKETS, SUCH AS (15C35), ALWAYS INDICATE A LOCATION WITHIN THE ELEMENTARY DIAGRAMS. THE LAST TWO DIGITS OF THE BRACKETED NUMBER INDICATE THE LINE NUMBER ON A SHEET AND THE FIRST TWO OR THREE DIGITS INDICATE WHICH SHEET; THUS (15C35) INDICATES LINE 35 ON SHEET 15C.

RELAY MAPPING SYSTEM

1. UNDER EACH CONTACT (EXCEPT MAIN CONTACTS OF CONTACTORS AND STARTERS) A LOCATION MAPPING NUMBER INDICATES WHERE THE OPERATING COIL IS TO BE FOUND IN THE ELEMENTARY DIAGRAMS.
2. IN THE DIAGRAM MARGIN BESIDE EACH OPERATING COIL, LOCATION NUMBERS GIVE THE LOCATION OF DEVICE CONTACTS THAT ARE USED. LOCATION NUMBERS AT OPERATING COILS DIFFER FROM THE USUAL LOCATION NUMBERING SYSTEM IN THAT;
 - A) THE BRACKETS ARE ELIMINATED, AND
 - B) UNDERSCORING INDICATES A NORMALLY CLOSED CONTACT AND LACK OF UNDERSCORING INDICATES A NORMALLY OPEN CONTACT.

THUS 3B56 INDICATES A NORMALLY OPEN CONTACT LOCATED ON LINE 56 OF SHEET 3B OF THE ELEMENTARY DIAGRAM, AND 13B48 INDICATES A NORMALLY CLOSED CONTACT LOCATED ON SHEET 13B, LINE 48.

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902HM100AE SHEET 2

DATE 8-7-77

ISSUED RKW

APPD.

FIRST MADE FOR 748 NO6

VARIABLE SPEED DRIVES
OPERATION
BRIGHTON, ENGLAND

ALLENWEST

CONT. ON SH 1A SH. NO. 2

902M102YD

ELEMENTARY DIAGRAM NOTES

50 HP REGENERATIVE BDC 3062

CONTROLLER FOR ASQUITH ELECTRICS

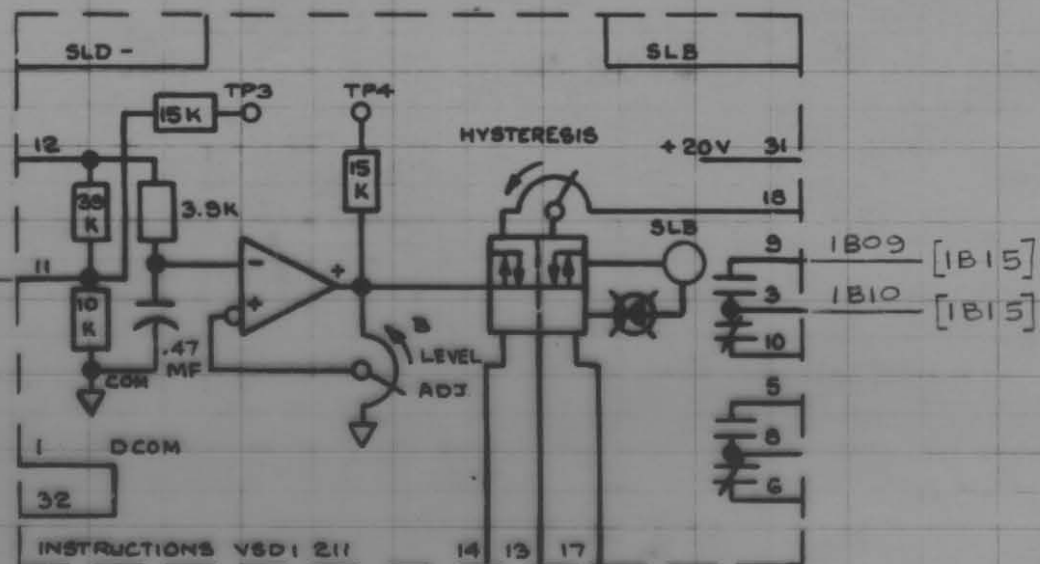
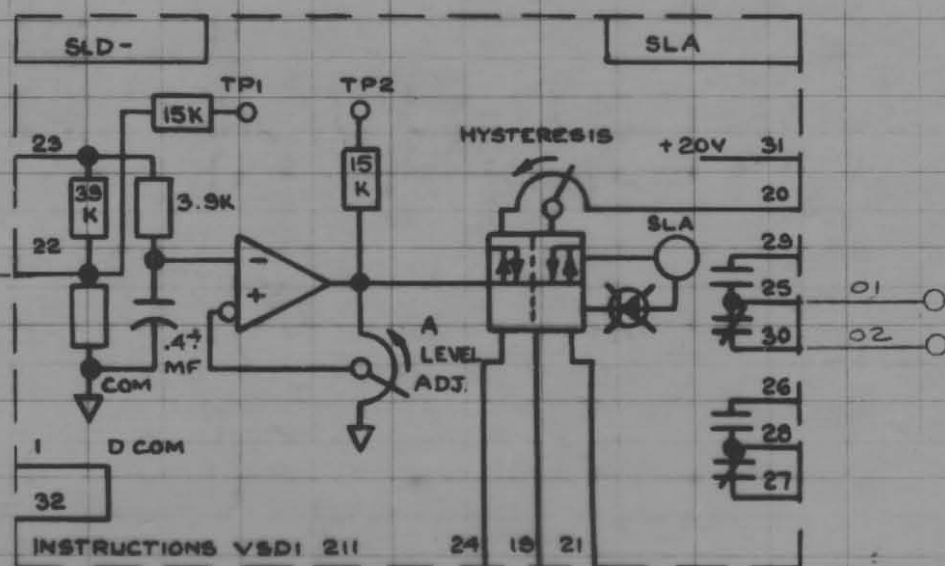
CURRENT SIGNAL
CARD Pos. 1H
PIN No. 7X

TACHO SPEED
SIGNAL.
CARD Pos. 1H
PIN No. 19X

FUNCTIONAL BLOCK DIAGRAM

SIGNAL LEVEL DETECTOR.

GO1 SLA
GO2 SLA & SLB



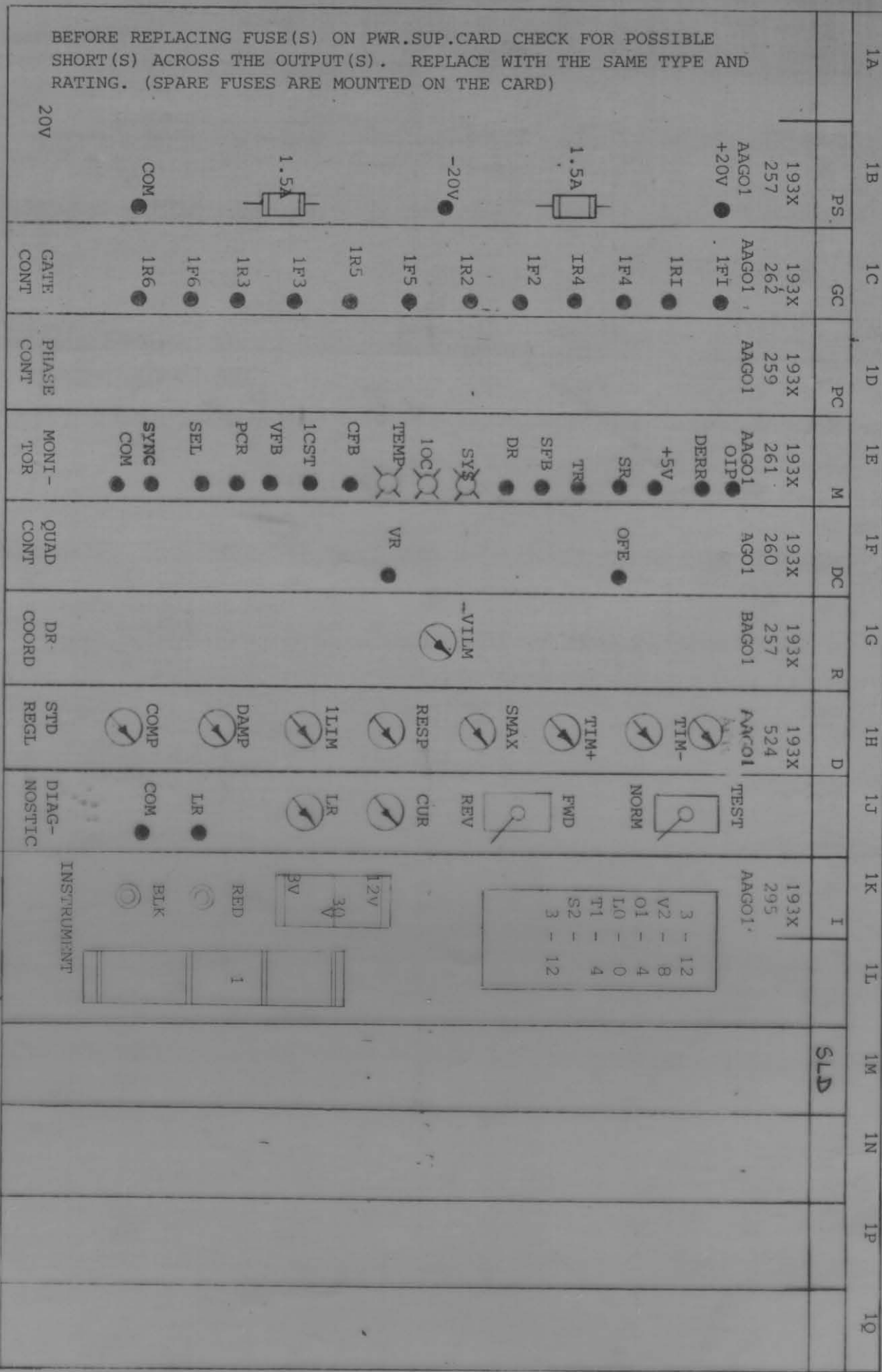
ELEMENTARY DIAGRAM
902M102YD

CONT ON	SH.NO.	ELEMENTARY DIAGRAM
SH. 1E	1D	902M102YD

4 QUAD DRIVER/REGULATOR LAYOUT
50 HP REGENERATIVE BDC 3062
CONTROLLER FOR ASQUITH ELECTRICS

32x	--32
31x	--31
30x	--30
29x	--29
28x	--28
27x	--27
26x	--26
25x	--25
24x	--24
23x	--23
22x	--22
21x	--21
20x	--20
19x	--19
18x	--18
17x	--17
16x	--16
15x	--15
14x	--14
13x	--13
12x	--12
11x	--11
10x	--10
9x	--9
8x	--8
7x	--7
6x	--6
5x	--5
4x	--4
3x	--3
2x	--2
1x	--1

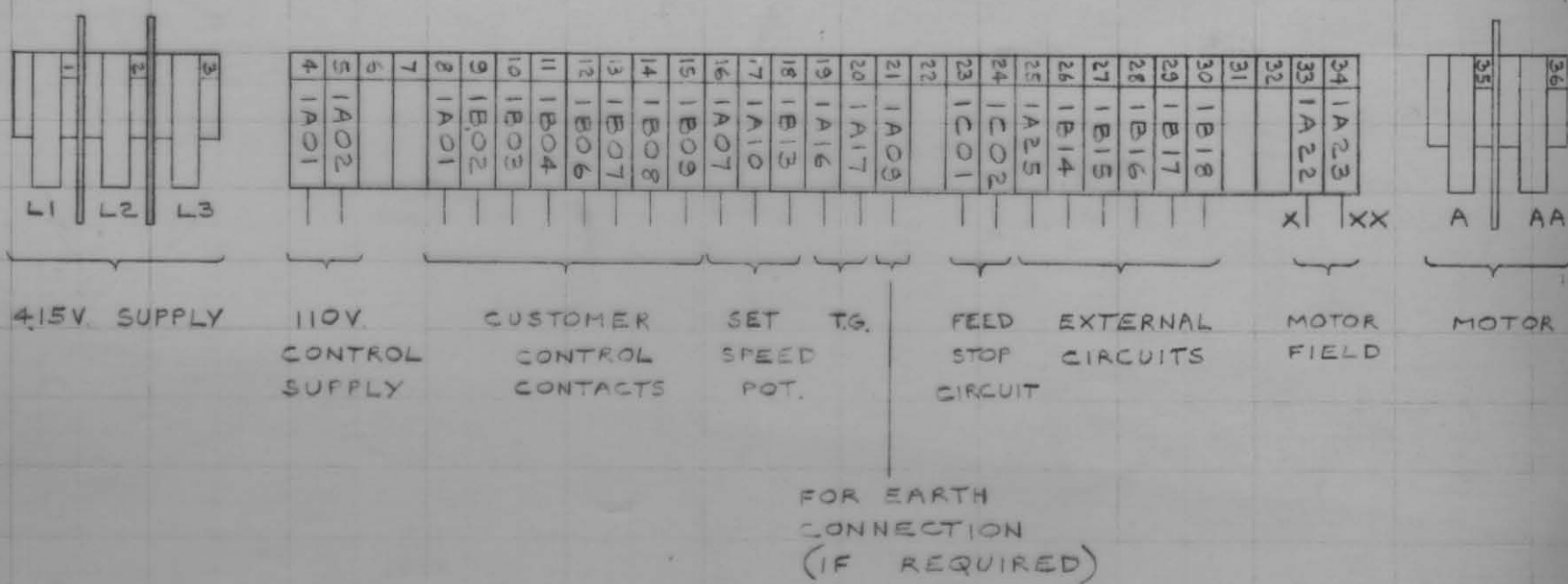
INDICATING LIGHT



SPL

RPL

SE.
SKETCH "A"



TERMINAL ARRANGEMENT

		A		B		C		D		E		F		G		H		J		K		L		M		N					
TECHN.		ENG.		APPD.		TECHN.		ENG.		APPD.		DATE				30 HP REGENERATIVE BDC 3062 CONTROLLER FOR ASQUITH ELECTRICS										IDENT 					
												TECHN.		8-7-77 RKW										DR		SH					
												ENG.		FRS																	
												APPD.		VARIABLE SPEED DRIVES OPERATION, BRIGHTON, ENGLAND.										GO NUMBER		ELEMENTARY DIAGRAM				CONTD.	
														743 NO 3										302 M102 YD				FL 1 E			