

Type of Panel	AMF CONTROL PANEL
DG Rating	40kVA
AC Voltage System	3PH.,400VAC,50Hz
Control Voltage	12VDC
Engine Make	Mahindra & Mahindra
Genset Controller Used	DSE-4520-R1
Project	EXPORT

TABLE OF CONTENTS	
PAGE	TITLE
1 OF 11	COVER SHEET
2 OF 11	SWITCHGEAR COMPONENT SELECTION CHART
3 OF 11	BILL OF MATERIAL
4 OF 11	DSE-4520-R1 CONTROLLER CONFIGURATION DETAILS
5 OF 11	DSE-4520-R1 CONTROLLER CONFIGURATION DETAILS
6 OF 11	GENERAL ARRANGEMENT DRAWING
7 OF 11	POWER CIRCUIT DRAWING
8 OF 11	CONTROL CIRCUIT DRAWING
9 OF 11	CONNECTOR DETAIL, SYMBOLS & NOMENCLATURE
10 OF 11	ENGINE WIRING DIAGRAM
11 OF 11	EARTHING CABLE

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

L1-PROTO DEVELOPMENT  
DRAWING DATE: 24/11/2021  
DESIGNER: SHITAL SURWASE  
CHECKER: RAJI BABU NAIDU  
APPROVED BY: RAJESH KALE

## COVER SHEET

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇:CRITICAL CHARACTERISTICS</b>	
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.		MAHINDRA & MAHINDRA LIMITED TRACTOR DIVISION KANDIVLI(EAST), MUMBAI-400 101, INDIA.	
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1999		E.R. / PROC.REQ.NO. : SDC	PART NO. : REFER SHEET NO.2
DIMENSIONS		PART NAME : 40kVA, 3PH., AMF PANEL COLD START WITH DSE-4520-R1	
LINEAR IN mm.	OVER UPTO	0.5 3	6 30
		120 400	1000 2000
T FINE (XXXX)	±0.05	±0.1	±0.2
m MEDIUM (XXX)	±0.1	±0.2	±0.3
C COARSE (XX)	±0.2	±0.3	±0.4
V VERY COARSE (X)	±0.3	±0.4	±0.5
ANGULAR IN deg.		LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	
	OVER UPTO	10 50	120 400
T FINE (XXXX)	±1°	±0°30'	±0°20'
m MEDIUM (XXX)	±1°30'	±1°	±0°30'
C COARSE (XX)	±2°	±1°30'	±1°
V VERY COARSE (X)	±3°	±2°	±1°30'
2021	NAME	SIGN	DATE
CAD ENGG	SSS		20/10/21
DESIGNER	SSS		20/10/21
CHECKER	RBN		20/10/21
APPR. BY	RAK		20/10/21
IF IN DOUBT, ASK	DO NOT SCALE	DRG SIZE :	ALL DIMENSIONS ARE IN mm. CHECK DRG WITH LATEST CHANGE

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

TABLE (3Ø SWITCHGEAR COMPONENT SELECTION CHART)

SR.NO.	RATING KVA	PHASE	MCCB	CONTACTOR	CT RATIO	POWER CABLE (UNINYVIN)	CONTROL PANEL M&M PART NO.											
1	40.0	3	3P,80A	4P,80A	75/5A	U-8	0	0	7	7	1	0	0	2	3	H	9	1

TABLE B:

KVA RATING	PHASE	CONTACTOR	M&M PART NO	MCCB	M&M PART NO	MECHANICAL INTERLOCK	M&M PART NO	SURGE SUPPRESSOR	M&M PART NO	ADD ON BLOCK 1NO+1NC	M&M PART NO
40	3	4P,80A (LC1E65004)	007709395H91	3P,80A 10KA (DY125U)	006029687H91	LAEM1	007709400H91	LAERCU	007709398H91	LAEN11	007709397H91

TABLE C:

RATING KVA	CT RATIO	M&M PART NO.
40	75/5A, CL-1, 2.5VA	006032995H91

## SWITCHGEAR COMPONENT SELECTION CHART

CURRENT RATINGS			
SR NO.	RATING KVA	FULL-LOAD CURRENT	OVERLOAD CURRENT
1	40	57.7A	63.5A

<SC> :SIGNIFICANT CHARACTERISTICS ▽ :CRITICAL CHARACTERISTICS

BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.  
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989

DIMENSIONS		E.R. / PROC.REQ.NO. : SDC		PART NO. : REFER SHEET NO.2	
LINEAR IN mm.	OVER UPTO	0.5	3	6	30
		120	400	1000	2000
		3	6	30	120
		400	1000	2000	4000
T FINE (X.XXX)	20.1	25.1	30.2	35.3	40.5
m MEDIUM (X.XX)	20.1	25.1	30.3	35.3	41.5
C COARSE (X.X)	20.2	25.2	30.3	35.3	42
V VERY COARSE ( )	20.3	25.3	30.4	35.4	43
ANGULAR IN deg.		LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.			
	OVER UPTO	10	50	120	400
		10	50	120	400
T FINE (X.XXX)	11°	10°30'	10°20'	10°10'	10°5'
m MEDIUM (X.XX)	11°30'	11°	10°30'	10°15'	10°10'
C COARSE (X.X)	11°30'	11°	10°30'	10°15'	10°10'
V VERY COARSE ( )	12°	12°	11°	10°30'	10°20'

PART NAME: 40kVA, 3PH., AMF PANEL  
COLD START WITH DSE-4520-R1

MATERIAL : HEAT TREATMENT :

2021	NAME	SIGN	DATE	FIRST USED TRCR. MODEL
CAD ENGG	SSS		20/10/21	N.T.S
DESIGNER	SSS		20/10/21	SCALE
CHECKER	RBN		20/10/21	SHEET 2 OF 11
APPR.BY	RAK		20/10/21	UNIT QTY. : _____
COMPUTER GENERATED DRAWING	DO NOT CHANGE MANUALLY			WEIGHT : kg.

IF IN DOUBT, ASK DO NOT SCALE DRG SIZE : ALL DIMENSIONS ARE IN mm. CHECK DRG WITH LATEST CHANGE

SR NO.	DESCRIPTION OF COMPONENT	MODEL	MAKE	QTY	M&M PART NO
1	DC RELAY CARD FOR R1/R2/R3/R4, 4-CH. WITH C/O 12VDC-70A-2 NOS, 5A-2 NO. RELAY (A)	UL5302NO-C-DP-72	UL AUTOMATION OEN	1	006029269H91
2	BATTERY CHARGER 12VDC; 5A	CB1205A	SEDEMAC	1	007709451H91
3	CURRENT TRANSFORMER	(Refer Table A)	NEWTEK	3	-
4	DOOR LOCK	-	DARSHANA	1	-
5	ENCLOSURE-MADE OF CRCA SHEET	(Refer sheet no. 6)	-	1	-
6	ELECTRONIC BUZZER-BASE MOUNTING	12VDC	IOTA	1	006025640H91
7	FUSE TERMINAL BLOCK	4Sq.mm	CONNECTWELL	8	-
8	GLASS FUSE	2A	PROTECTRON	1	-
9	GLASS FUSE	6A	PROTECTRON	7	-
10	GENERATOR CONTROL UNIT	DSE-4520-R1	DEEPSEA	1	006040370H91
11	TOGGLE SWITCH 15A 28V DC	KT 1521BY	KAYCEE	1	-
12	MCB 1 POLE-32A."C" CURVE WITH 10kA BREAKING	32A	L&T	1	006024461H91
13	MCB 1 POLE-6A."C" CURVE WITH 10kA BREAKING	6A	L&T	2	006029656H91
14	MCCB FOR DG INCOMING/EB INCOMING	Refer Sheet 2	L&T	2	-
15	POWER CONTACTOR, 4POLE WITH 220VAC COIL SUPPLY	Refer Sheet 2	SCHNEIDER	2	-
16	12V DC, 5A RELAY CARD, 2 CH, 2C/O	UL02-2C	UL AUTOMATION	1	006029707H91
17	CONNECTOR 6PIN 250 SERIES	250 SERIES	MSSL	1	-
18	CONNECTOR 8PIN,250 SERIES	250 SERIES	MSSL	1	-
19	CONNECTOR 10PIN,250 SERIES	250 SERIES	MSSL	1	-
20	TERMINAL BLOCK.4P,63A	-	POWERMATE	2	-
21	MICROSWITCH	2A, 250V	SURDHI	1	006019613H91
22	LED LAMP 61.2(L)x46.5(W)	12VDC-1W(OVP)	SAM INTEGRATIONS	1	006025268H91
23	PVC GLAND FOR HARNESS CONN.	25 MM	-	1	-
24	PVC POWER CABLE GLAND WITH CAP FOR MAINS & LOAD	PG29	JIGO	2	-
25	ADD ON BLOCK (1NO+1NC)	Refer Sheet 2	SCHNEIDER	2	Refer Table 2
26	MECHANICAL INTERLOCK	Refer Sheet 2	SCHNEIDER	1	Refer Table 2
27	SURGE SUPPRESSOR	Refer Sheet 2	SCHNEIDER	2	Refer Table 2
28	RESISTOR	240Ω±0.5%	-	1	-
29	AUTOMOTIVE RELAY 1NO	741-12-1A-2SA	OEN	1	007710327H91
30	TERMINAL BLOCK	6 SQ.MM	CONNECTWELL	3	-
31	ELECTRONIC TIMER	150DT4(R8)	GIC	1	-
32	EARTHING CABLE	Refer Sheet 11	-	3	-

\*\*\* NOTE: ALL PANELS MUST BE SUPPLIED WITH TEST CERTIFICATE AND HARD COPY OF DRAWING

### BILL OF MATERIAL

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

TAG	DESCRIPTION
BUZ	ELECTRONIC BUZZER
CT	CURRENT TRANSFORMER
GCU	GENERATOR CONTROL UNIT (DSE-4520-R1)
TS	TOGGLE SWITCH
Q1,Q2	MINIATURE CIRCUIT BREAKER
R1/R2	RELAY FOR START OUT/SOLENOID
CONN.	CONNECTORS FOR ENGINE HARNESS
F	FUSE ( CONTROL )
R3	FAILURE RELAY FOR BUZZER
R4/R5	AMF RELAYS
MC	MAINS CONTACTOR
AC	ALTERNATOR CONTACTOR
BCR	BATTERY CHARGER
F1-8	FUSED TERMINAL BLOCK
RM	RELAY MODULE

CABLE SIZE TABLE	CABLE SIZE & Specification
BATTERY +VE BATTERY-VE	4 Sq.mm
CURRENT TRANSFORMER	1.5 Sq.mm
CONTROL SIGNAL	0.75 Sq.mm
START,STOP SIGNAL	4 Sq.mm
BATT. +VE BATT.-VE FOR BATT. CHARGER & PANEL HEATER & TIMER CONN.	2.5 Sq.mm
POWER CABLE	Refer Sheet 2 (Table A)

FINOLEX/POLYCAB/BONTON /RR CABLE/LAPP/HAVELS PVC INSULATED SINGLE CORE MULTISTAND FR CABLE  
MIRACLE MAKE UNINYVIN CABLE AS PER BSG177 STD.

<SC> :SIGNIFICANT CHARACTERISTICS ▽ :CRITICAL CHARACTERISTICS

BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.

UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989

**MAHINDRA & MAHINDRA LIMITED**  
TRACTOR DIVISION  
KANDIVLI(EAST), MUMBAI-400 101, INDIA.

E.R. / PROC.REQ.NO: \_\_\_\_\_ PART NO.: **REFER SHEET NO.2**

PART NAME: **40kVA, 3PH., AMF PANEL**  
**COLD START WITH DSE-4520-R1**

MATERIAL: \_\_\_\_\_ HEAT TREATMENT: \_\_\_\_\_

T	DATE	NAME	SIGN	DATE	FIRST USED TRCR. MODEL
CAD ENGG	SSS			20/10/21	
DESIGNER	SSS			20/10/21	SCALE N.T.S
CHECKER	RBN			20/10/21	SHEET 3OF 11
APPR. BY	RAK			20/10/21	UNIT QTY.: _____ WEIGHT: kg.

PART OF THIS DRAWING / DOCUMENT SHOULD NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF M & M LTD.

COMPUTER GENERATED DRAWING | DO NOT CHANGE MANUALLY

IF IN DOUBT, ASK DO NOT SCALE DRG SIZE: ALL DIMENSIONS ARE IN mm. CHECK DRG WITH LATEST CHANGE

1	METERING FACILITY AVAILABLE IN THE GENSET CONTROLLER DSE-4520-R1	
	Voltage (Phase to Neutral)	
	Current	
	Frequency	
	kW	
	kVA	
	kVAR	
	PF	
	kWh	
	kVARh	
	kVAh	
	RPM	
	Hours	
	Battery Voltage	
	Pressure - Bar/PSI/kPa	
	TEMPERATURE: °C/°F	
	Fuel - %	
	Clock Time	
2	Genset Controller Key Features	
	Dimension Details	Overall : 140 (w) x 113 (h) x 43 (d) Cutout : 118 (w) x 92 (h)
	Degrees of Protection	BS EN60529 IP 42
	Shock	BS EN 60068-2-27 Three Shocks in each of three major axes 15 gn in 11 mS
	Humidity	BS EN 60068-2-30 DB DAMP HEAT CYCLIC: 20/55 °C @ 95% RH 48 Hours

		BS EN 60068-2-78 Cab Damp Heat Static 40 °C @93% RH 48 Hours		
	Vibration	BS EN 60068-2-6 Ten Sweeps in each of three major axes 5 Hz to 8Hz @ +/-7.5mm 8 Hz to 500 Hz @ 2 gn		
	Temperature	BS EN 60068-2-1 Ab/Ae Cold Test -30 °C BS EN 60068-2-2 Bb/Be Dry Heat +70 °C		
	Electrical Safety	BS EN 60950 Safety for Information Technology Equipment, including Electrical Business Equipment.		
	Electro Magnetic Compatibility	BS EN 61000-6-2 EMC Generic immunity standard for the Industrial Environment BS EN 61000-6-4 EMC Generic Emission standard for the Industrial Environment		
3	Engine Type	Conventional		
4	Analog Input Assignment	Sensor Type	Trip Setting	
	Input-A	Lube Oil Pressure	M&M	1.5 bar
	Input-B	Coolant temp. sensor	M&M	108 °C
	Input-C	Fuel Level Sensor	Resistive LR 45	10%
5	Digital Input Assignment			
	Input-A	Not used		
	Input-B	COOLANT TEMP. SWITCH		
	Input-C	Not used		
	Input-D	Emergency Stop		

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

## DSE-4520-R1 CONTROLLER CONFIGURATION DETAILS

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇ :CRITICAL CHARACTERISTICS</b>																																													
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX. UNSPECIFIED TOLERANCES AS PER ISO-2768-1:2009																																															
DIMENSIONS		E.R. / PROC.REQ.NO. : SDC																																													
PART NO. : REFER SHEET NO.2		PART NAME : 40kVA, 3PH., AMF PANEL COLD START WITH DSE-4520-R1																																													
MATERIAL : HEAT TREATMENT :		MATERIAL : HEAT TREATMENT :																																													
<table border="1"> <tr> <th>LINEAR IN mm.</th> <th>OVER</th> <th>0.5</th> <th>3</th> <th>6</th> <th>30</th> <th>120</th> <th>400</th> <th>1000</th> <th>2000</th> </tr> <tr> <th>UPTO</th> <th>3</th> <th>6</th> <th>30</th> <th>120</th> <th>400</th> <th>1000</th> <th>2000</th> <th>4000</th> <th>-</th> </tr> </table>		LINEAR IN mm.	OVER	0.5	3	6	30	120	400	1000	2000	UPTO	3	6	30	120	400	1000	2000	4000	-	<table border="1"> <tr> <th>T FINE (X.XXX)</th> <th>20'</th> <th>30'</th> <th>45'</th> <th>60'</th> <th>90'</th> </tr> <tr> <th>M MEDIUM (X.XX)</th> <th>30'</th> <th>45'</th> <th>60'</th> <th>90'</th> <th>120'</th> </tr> <tr> <th>C COARSE (X.X)</th> <th>45'</th> <th>60'</th> <th>90'</th> <th>120'</th> <th>180'</th> </tr> <tr> <th>V VERY COARSE ( )</th> <th>60'</th> <th>90'</th> <th>120'</th> <th>180'</th> <th>240'</th> </tr> </table>		T FINE (X.XXX)	20'	30'	45'	60'	90'	M MEDIUM (X.XX)	30'	45'	60'	90'	120'	C COARSE (X.X)	45'	60'	90'	120'	180'	V VERY COARSE ( )	60'	90'	120'	180'	240'
LINEAR IN mm.	OVER	0.5	3	6	30	120	400	1000	2000																																						
UPTO	3	6	30	120	400	1000	2000	4000	-																																						
T FINE (X.XXX)	20'	30'	45'	60'	90'																																										
M MEDIUM (X.XX)	30'	45'	60'	90'	120'																																										
C COARSE (X.X)	45'	60'	90'	120'	180'																																										
V VERY COARSE ( )	60'	90'	120'	180'	240'																																										
<table border="1"> <tr> <th>ANGULAR IN deg.</th> <th>OVER</th> <th>10</th> <th>30</th> <th>60</th> <th>120</th> <th>400</th> </tr> <tr> <th>UPTO</th> <th>10</th> <th>30</th> <th>60</th> <th>120</th> <th>400</th> <th>-</th> </tr> </table>		ANGULAR IN deg.	OVER	10	30	60	120	400	UPTO	10	30	60	120	400	-	<table border="1"> <tr> <th>T FINE (X.XXX)</th> <th>11°</th> <th>15°</th> <th>22°</th> <th>30°</th> <th>45°</th> </tr> <tr> <th>M MEDIUM (X.XX)</th> <th>15°</th> <th>22°</th> <th>30°</th> <th>45°</th> <th>60°</th> </tr> <tr> <th>C COARSE (X.X)</th> <th>22°</th> <th>30°</th> <th>45°</th> <th>60°</th> <th>90°</th> </tr> <tr> <th>V VERY COARSE ( )</th> <th>30°</th> <th>45°</th> <th>60°</th> <th>90°</th> <th>120°</th> </tr> </table>		T FINE (X.XXX)	11°	15°	22°	30°	45°	M MEDIUM (X.XX)	15°	22°	30°	45°	60°	C COARSE (X.X)	22°	30°	45°	60°	90°	V VERY COARSE ( )	30°	45°	60°	90°	120°						
ANGULAR IN deg.	OVER	10	30	60	120	400																																									
UPTO	10	30	60	120	400	-																																									
T FINE (X.XXX)	11°	15°	22°	30°	45°																																										
M MEDIUM (X.XX)	15°	22°	30°	45°	60°																																										
C COARSE (X.X)	22°	30°	45°	60°	90°																																										
V VERY COARSE ( )	30°	45°	60°	90°	120°																																										
<table border="1"> <tr> <th>DATE</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> <th>FIRST USED TRCR. MODEL</th> </tr> <tr> <td>2021</td> <td>SSS</td> <td></td> <td>20/10/21</td> <td></td> </tr> </table>		DATE	NAME	SIGN	DATE	FIRST USED TRCR. MODEL	2021	SSS		20/10/21		<table border="1"> <tr> <th>DATE</th> <th>NAME</th> <th>SIGN</th> <th>DATE</th> <th>FIRST USED TRCR. MODEL</th> </tr> <tr> <td>20/10/21</td> <td>SSS</td> <td></td> <td>20/10/21</td> <td></td> </tr> </table>		DATE	NAME	SIGN	DATE	FIRST USED TRCR. MODEL	20/10/21	SSS		20/10/21																									
DATE	NAME	SIGN	DATE	FIRST USED TRCR. MODEL																																											
2021	SSS		20/10/21																																												
DATE	NAME	SIGN	DATE	FIRST USED TRCR. MODEL																																											
20/10/21	SSS		20/10/21																																												
<table border="1"> <tr> <th>DESIGNER</th> <th>CHECKER</th> <th>APPR. BY</th> </tr> <tr> <td>SSS</td> <td>RBN</td> <td>RAK</td> </tr> </table>		DESIGNER	CHECKER	APPR. BY	SSS	RBN	RAK	<table border="1"> <tr> <th>SCALE</th> <th>SHEET QTY. OF 11</th> <th>UNIT QTY. :</th> <th>WEIGHT : kg.</th> </tr> <tr> <td>N.T.S</td> <td>11</td> <td></td> <td></td> </tr> </table>		SCALE	SHEET QTY. OF 11	UNIT QTY. :	WEIGHT : kg.	N.T.S	11																																
DESIGNER	CHECKER	APPR. BY																																													
SSS	RBN	RAK																																													
SCALE	SHEET QTY. OF 11	UNIT QTY. :	WEIGHT : kg.																																												
N.T.S	11																																														
<table border="1"> <tr> <th>COMPUTER GENERATED DRAWING</th> <th>DO NOT CHANGE MANUALLY</th> </tr> <tr> <td></td> <td></td> </tr> </table>		COMPUTER GENERATED DRAWING	DO NOT CHANGE MANUALLY			<table border="1"> <tr> <th>IF IN DOUBT, ASK</th> <th>DO NOT SCALE</th> <th>DRG SIZE :</th> <th>ALL DIMENSIONS ARE IN mm.</th> <th>CHECK DRG WITH LATEST CHANGE</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		IF IN DOUBT, ASK	DO NOT SCALE	DRG SIZE :	ALL DIMENSIONS ARE IN mm.	CHECK DRG WITH LATEST CHANGE																																			
COMPUTER GENERATED DRAWING	DO NOT CHANGE MANUALLY																																														
IF IN DOUBT, ASK	DO NOT SCALE	DRG SIZE :	ALL DIMENSIONS ARE IN mm.	CHECK DRG WITH LATEST CHANGE																																											

6	Digital Output Assignment		
	OUTPUT-A	Fuel Relay	
	OUTPUT-B	Start Relay	
	OUTPUT-C	Energise to Stop	
	OUTPUT-D	De-Energize Mains Contactor (Close)	
	OUTPUT-E	Energize Alternator Contactor (Close)	
	OUTPUT-F	AUDIBLE ALARM RELAY	
7	Timer Setting made on the controller		
a)	Start Timer	Mains Transient Delay	5.0 Sec
		Start Delay	5.0 Sec
		Delay in Crank	2.0 Min
		Pre-Heat	0 Sec
		Cranking Time	45.0 Sec
		Crank Rest Time	10.0 Sec
		Smoke Limit	0 Sec
		Smoke Limit Off	0 Sec
		Safety ON Delay	10.0 Sec
		Warming Up Time	1.0 Sec
b)	Load/Stopping Timers	Load Control Timers	
		Transfer Time	2.0 Sec
		Breaker Trip Pulse	0.5 Sec
		Breaker Close Pulse	0.5 Sec
		Stopping Timers	
		Return Delay	30.0 Sec
		Cooling Time	1.0 Min
		ETS Solenoid Hold	10.0 Sec
8	Generator Options	No. of Pole Selection	4 Pole
		AC System	3Ph.,4Wire

9	Generator Voltage	Under Voltage Shutdown	320V
		Loading Voltage	380V
		Nominal Voltage	400V
		Over Voltage Shutdown	440V
10	Generator Frequency	Under Frequency Shutdown	45 Hz
		Loading Frequency	48 Hz
		Nominal Frequency	50 Hz
		Over Frequency Shutdown	55 Hz
11	Generator Current	CT Primary	(Refer Sheet 2)
		Full Load Rating	(Refer Sheet 2)
		Over Current Alarm - 110%	(Refer Sheet 2)
12	Start-up Options	Start Attempt	3
13	Crank Disconnect	Crank Disconnect on Oil Pressure	Yes
14	Crank Disconnect Freq.		21Hz
15	Plat Battery (VDC)	Under Voltage Warning	8.5VDC
		Under Voltage Return	9.0VDC
		Under Voltage Delay	5.0 Sec
		Over Voltage Return	15.0VDC
		Over Voltage Warning	15.5VDC
		Over Voltage Delay	5.0 Sec
16	Mains Options	AC System	3Ph.,4Wire
17	Mains Voltage	Under Voltage Shutdown	320V
		Loading Voltage	380V
		Over Voltage Shutdown	440V
		Over Frequency Shutdown	55 Hz
18	Mains Frequency	Under Frequency Shutdown	45 Hz
		Loading Frequency	48 Hz
		Nominal Frequency	50 Hz
		Over Frequency Shutdown	55 Hz

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

## DSE-4520-R1 CONTROLLER CONFIGURATION DETAILS

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇ :CRITICAL CHARACTERISTICS</b>																																					
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX. UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1999																																							
<b>DIMENSIONS</b> <table border="1" style="font-size: 8px; width: 100%;"> <tr> <th>LINEAR</th> <th>OVER</th> <th>3</th> <th>6</th> <th>30</th> <th>120</th> <th>400</th> <th>1000</th> <th>2000</th> </tr> <tr> <td>IN mm.</td> <td>UPTO</td> <td>3</td> <td>6</td> <td>30</td> <td>120</td> <td>400</td> <td>1000</td> <td>2000</td> </tr> </table>		LINEAR	OVER	3	6	30	120	400	1000	2000	IN mm.	UPTO	3	6	30	120	400	1000	2000	E.R / PROC.REQ.NO : <b>SDC</b>																			
LINEAR	OVER	3	6	30	120	400	1000	2000																															
IN mm.	UPTO	3	6	30	120	400	1000	2000																															
<table border="1" style="font-size: 8px; width: 100%;"> <tr> <td>T FINE (X.XXX)</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> </tr> <tr> <td>m MEDIUM (X.XX)</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> </tr> <tr> <td>C COARSE (X.X)</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> </tr> <tr> <td>V VERY COARSE ( )</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> <td>25.1</td> </tr> </table>		T FINE (X.XXX)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	m MEDIUM (X.XX)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	C COARSE (X.X)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	V VERY COARSE ( )	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1	PART NO. : <b>REFER SHEET NO.2</b>	
T FINE (X.XXX)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1																															
m MEDIUM (X.XX)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1																															
C COARSE (X.X)	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1																															
V VERY COARSE ( )	25.1	25.1	25.1	25.1	25.1	25.1	25.1	25.1																															
MATERIAL :		HEAT TREATMENT :																																					
<table border="1" style="font-size: 8px; width: 100%;"> <tr> <td>ANGULAR</td> <td>OVER</td> <td>10</td> <td>50</td> <td>120</td> <td>400</td> </tr> <tr> <td>IN deg.</td> <td>UPTO</td> <td>10</td> <td>50</td> <td>120</td> <td>400</td> </tr> </table>		ANGULAR	OVER	10	50	120	400	IN deg.	UPTO	10	50	120	400	<table border="1" style="font-size: 8px; width: 100%;"> <tr> <td>2021</td> <td>NAME</td> <td>SIGN</td> <td>DATE</td> <td>FIRST USED TRCR. MODEL</td> </tr> <tr> <td>CAD ENGG</td> <td>SSS</td> <td></td> <td>20/10/21</td> <td></td> </tr> </table>		2021	NAME	SIGN	DATE	FIRST USED TRCR. MODEL	CAD ENGG	SSS		20/10/21															
ANGULAR	OVER	10	50	120	400																																		
IN deg.	UPTO	10	50	120	400																																		
2021	NAME	SIGN	DATE	FIRST USED TRCR. MODEL																																			
CAD ENGG	SSS		20/10/21																																				
<table border="1" style="font-size: 8px; width: 100%;"> <tr> <td>T FINE (X.XXX)</td> <td>21°</td> <td>20°30'</td> <td>20°20'</td> <td>20°10'</td> <td>20°5'</td> </tr> <tr> <td>m MEDIUM (X.XX)</td> <td>21°30'</td> <td>21°</td> <td>20°30'</td> <td>20°15'</td> <td>20°10'</td> </tr> <tr> <td>C COARSE (X.X)</td> <td>22°</td> <td>22°</td> <td>21°</td> <td>20°30'</td> <td>20°20'</td> </tr> <tr> <td>V VERY COARSE ( )</td> <td>23°</td> <td>22°</td> <td>21°</td> <td>20°30'</td> <td>20°20'</td> </tr> </table>		T FINE (X.XXX)	21°	20°30'	20°20'	20°10'	20°5'	m MEDIUM (X.XX)	21°30'	21°	20°30'	20°15'	20°10'	C COARSE (X.X)	22°	22°	21°	20°30'	20°20'	V VERY COARSE ( )	23°	22°	21°	20°30'	20°20'	PART NAME : <b>40kVA, 3PH., AMF PANEL</b> <b>COLD START WITH DSE-4520-R1</b>													
T FINE (X.XXX)	21°	20°30'	20°20'	20°10'	20°5'																																		
m MEDIUM (X.XX)	21°30'	21°	20°30'	20°15'	20°10'																																		
C COARSE (X.X)	22°	22°	21°	20°30'	20°20'																																		
V VERY COARSE ( )	23°	22°	21°	20°30'	20°20'																																		
PART OF THIS DRAWING / DOCUMENT SHOULD NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF M & M LTD.																																							
COMPUTER GENERATED DRAWING   DO NOT CHANGE MANUALLY		SCALE :																																					
IF IN DOUBT, ASK DO NOT SCALE DRG SIZE :		SHEET 5 OF 11 UNIT QTY. : WEIGHT : kg.																																					
ALL DIMENSIONS ARE IN mm.		CHECK DRG WITH LATEST CHANGE																																					

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

CUBICLE DATA	
TAG SIZE	FREE STANDING VERTICAL 650(W)x300(H)x250+100(D)
MATERIAL THICKNESS	CRCA SHEET 1.6MM FOR ENCLOSURE & DOOR 1.6MM MOUNTING PLATE 2.0MM GLAND PLATE
PAINT SHADE	MAT BLACK-301736 FOR ENCLOSURE WITH MAT FINISH
FINISH	RAL 2000 FOR MOUNTING PLATE WITH SEMI GLASSY FINISH
CABLE ENTRY	FROM BACK SIDE OF PANEL GLAND HOLE SHOULD MATCH THE POSITION OF POWER TERMINAL
Door Hinge	DHFM-40 Darshana Make with nut weld
FASTENERS	ALL FASTENERS SHOULD BE MS WITH GREEN PASSIVATION (REFER TABLE 1)
WASHERS	ALL BOLT HARDWARE SHOULD BE WITH SPRING WASHER AND PLAIN WASHER

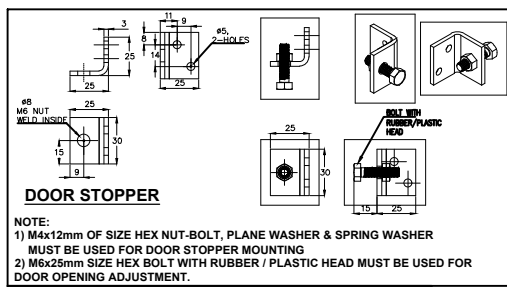
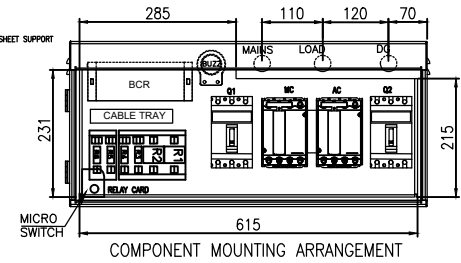
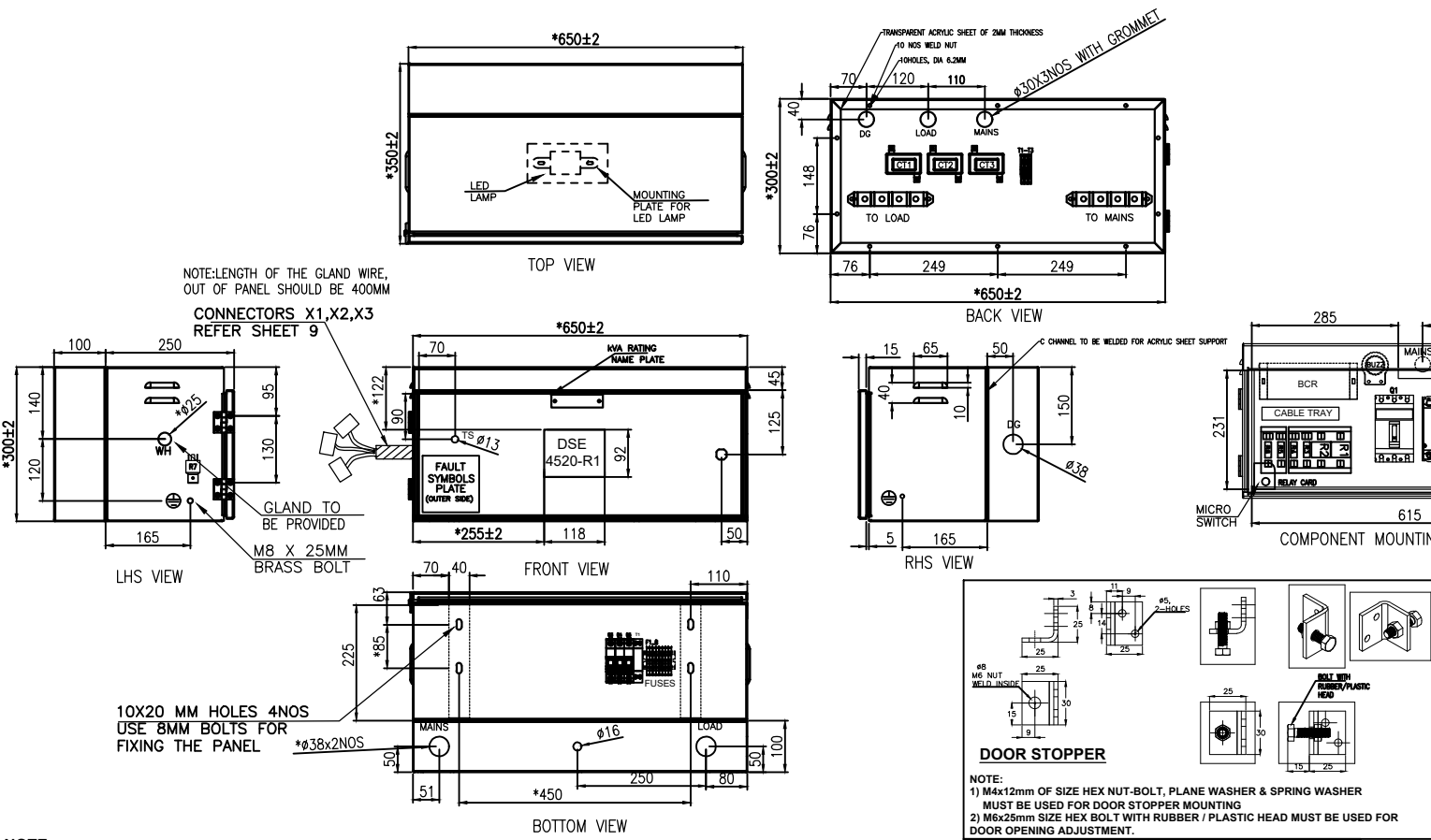


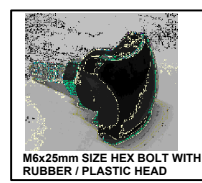
TABLE 1							
BOLT SIZE	M3	M4	M5	M6	M8	M10	M12
GRADE OF BOLT	8.8	8.8	8.8	8.8	8.8	8.8	8.8
GRADE OF NUT	8	8	8	8	8	8	8
TORQUE	1.4+/-0.2	3.1+/-0.6	6.2+/-1.2	10.4+/-0.2	25+/-5	72+/-13	126+/-24

- NOTE:**
- LENGTH OF THE GLAND WIRE, OUT OF PANEL SHOULD BE 400+50mm
  - NO SHARP EDGES TO BE PRESENT
  - TOLERANCE FOR ALL DIMENSION SHOULD BE CONSIDERED AS ±1mm.
  - DOOR LOCK OPENING AND CLOSING IS TO BE ENSURED AT VENDOR END BEFORE DISPATCH.
  - PANEL ENCLOSURE IS PROVIDED WITH VERTICAL 'C' BEND [TOP, BACK & BOTTOM] & SIDE PLANES ARE WELDED TO IT.
  - ALL FASTENER USED SHOULD BE GREEN PASSIVATED
  - FAULT SYMBOL MUST BE ON REVITED BLACK ANODIZED PLATE, FIXED ON THE OUTER SIDE OF DOOR.
  - GLAND HOLES SHOULD MATCH THE POSITION OF POWER TERMINALS
  - DOOR HINGE TYPE DHFM40 DARSHANA MAKE. NUT WELD PANEL INSIDE FOR HINGE.
  - ADD DOOR STOPPER ON SIDE VIEW-1NO.
  - THE DIMENSIONS MARKED WITH (\*) ARE CRITICAL TO QUALITY.
  - ONLY YELLOW-GREEN WIRES MUST BE USED FOR BODY EARTHING .
  - AT ONE NODE/JUNCTION POINT CONNECT TWO EARTHING CABLES ONLY.
  - MOUNTING PLATE ARRANGEMENT IS TENTATIVE THIS MAY OR MAY NOT CHANGES.

**CABLE ENTRY DETAILS FOR LOAD & MAINS**

Sr.No	kVA	Gland Hole Details	Gland Details
1	40	Ø 38MM	PG29 (2nos)

- 1) ENGINE & CANOPY WIRING HARNESS - 25Ø



**GENERAL ARRANGEMENT DRAWING**

<SC> :SIGNIFICANT CHARACTERISTICS ▽ :CRITICAL CHARACTERISTICS

BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.

UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1998

**MAHINDRA & MAHINDRA LIMITED**  
TRACTOR DIVISION  
KANDHLI(EAST), MUMBAI-400 101, INDIA.

E.R. / PROC.REQNO : PART NO. :  
ER/PROC.REQNO : REFER SHEET NO.2

PART NAME : 40kVA, 3PH., AMF PANEL  
COLD START WITH DSE-4520-R1

MATERIAL : HEAT TREATMENT :

LINEAR IN mm.	OVER	0.5	3	6	30	120	400	1000	2000
UP TO	3	6	30	120	400	1000	2000	4000	

T/FINE	(0.000)	±0.05	±0.10	±0.15	±0.20	±0.30	±0.40	±0.50
MAXIMUM (CKX)	±0.05	±0.10	±0.15	±0.20	±0.30	±0.40	±0.50	
MINIMUM (CKX)	±0.05	±0.10	±0.15	±0.20	±0.30	±0.40	±0.50	
VERY COARSE (K)	±0.3	±0.4	±0.5	±0.6	±0.7	±0.8	±0.9	

LENGTH OF NUMBER SIDE OF THE ANGLE IN mm.

ANGULAR IN deg.	OVER	10	50	120	400
UP TO	10	50	120	400	

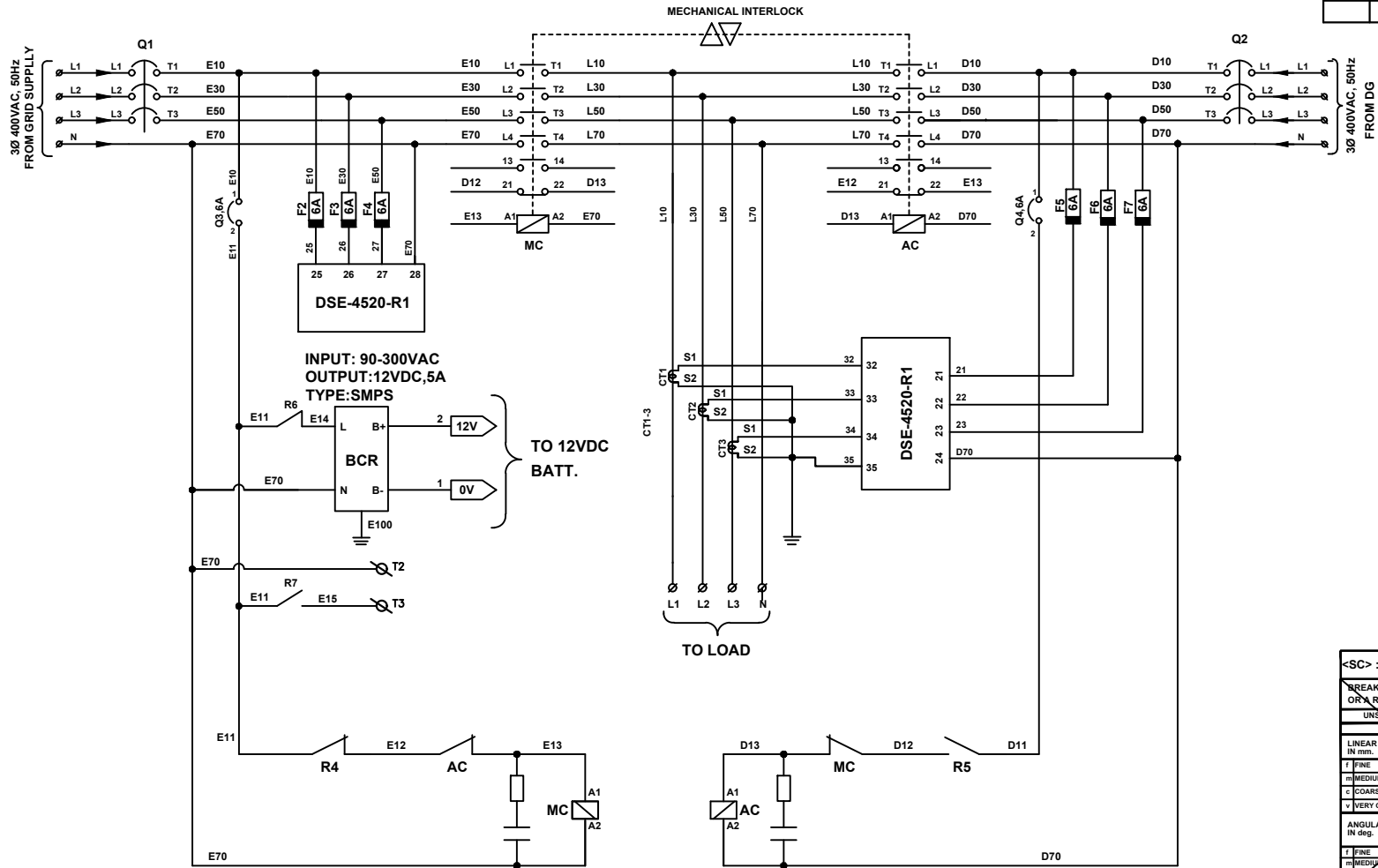
T/FINE	(0.000)	±1'	±0'30"	±0'20"	±0'10"	±0'5"
MAXIMUM (CKX)	±1'	±0'30"	±0'20"	±0'10"	±0'5"	
MINIMUM (CKX)	±1'30"	±1'	±0'30"	±0'15"	±0'10"	
VERY COARSE (K)	±3'	±2'	±1'	±0'30"	±0'20"	

PART OF THIS DRAWING / DOCUMENT SHOULD NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF M & M LTD.

COMPUTER GENERATED DRAWING | DO NOT CHANGE MANUALLY

IF IN DOUBT, ASK	DO NOT SCALE	DRG SIZE :	ALL DIMENSIONS ARE IN mm.	CHECK DRG WITH LATEST CHANGE

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21



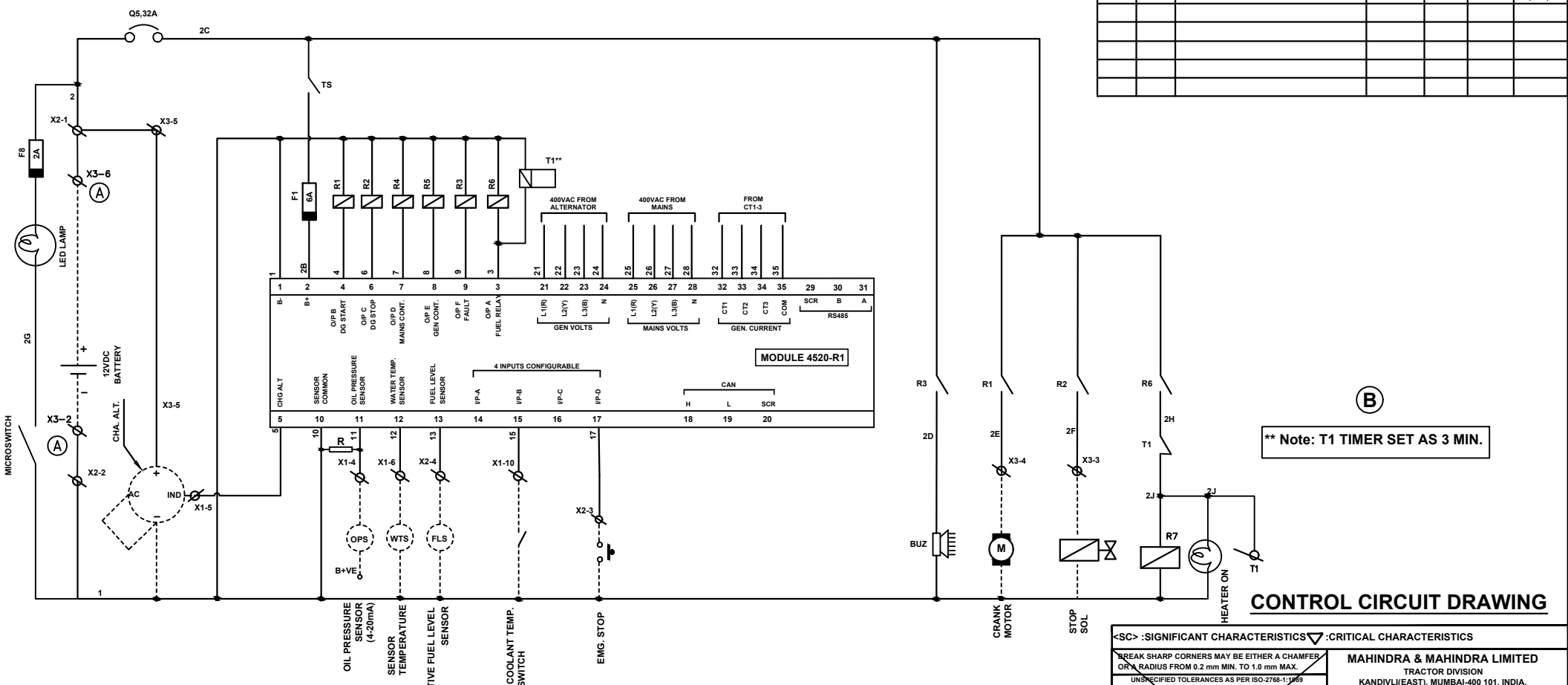
Note: Use Heat Shrink Sleeve on Power Cable as per below colour coding:  
**R Phase: Brown**  
**Y Phase: Black**  
**B Phase: Gray**  
**Neutral: Blue**  
**Earthing: Yellow/Green**

### POWER CIRCUIT DRAWING

\*\*\* Note: USE PVC WHITE PRINTED FERRULE OF SIZE 3.5 MM

DIMENSIONS		E.R / PROC.REQ.NO.		PART NO.:	
LINEAR	OVER	SDC	MAHINDRA & MAHINDRA LIMITED		
IN mm.	UPTO		TRACTOR DIVISION		
			KANDIVLI(EAST), MUMBAI-400 101, INDIA.		
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989		PART NAME:		REFER SHEET NO.2	
		40kVA, 3PH., AMF PANEL			
		COLD START WITH DSE-4520-R1			
		MATERIAL:		HEAT TREATMENT:	
		2021		FIRST USED TRCR. MODEL	
		CAD ENGG		SSS	
		DESIGNER		SSS	
		CHECKER		RBN	
		APPR. BY		RAK	
		DATE		20/10/21	
		SCALE		SHEET 7 OF 11	
		UNIT QTY.:			
		WEIGHT:		kg.	
		ALL DIMENSIONS ARE IN mm.		CHECK DRG WITH LATEST CHANGE	

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21



**\*\* Note: T1 TIMER SET AS 3 MIN.**

**\*\*\* Note: USE PVC WHITE PRINTED FERRULE OF SIZE 3.5 MM**

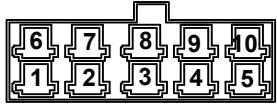
**CONTROL CIRCUIT DRAWING**

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇ :CRITICAL CHARACTERISTICS</b>	
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.			
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1999			
DIMENSIONS			
LINEAR	OVER	0.5	3
IN mm.	UPTO	3	6
		6	30
		30	120
		120	400
		400	1000
		1000	2000
		2000	4000
T FINE	(X.XXX)	10	16
		16	25
		25	40
		40	63
		63	100
		100	160
		160	250
		250	400
		400	630
		630	1000
		1000	1600
		1600	2500
		2500	4000
T MEDIUM	(X.XX)	5	8
		8	12
		12	20
		20	35
		35	60
		60	100
		100	160
		160	250
		250	400
		400	630
		630	1000
		1000	1600
		1600	2500
		2500	4000
T COARSE	(X.X)	3	5
		5	10
		10	20
		20	40
		40	80
		80	160
		160	320
		320	640
		640	1280
		1280	2560
		2560	5120
		5120	10240
T VERY COARSE	(X)	2	3
		3	6
		6	12
		12	25
		25	50
		50	100
		100	200
		200	400
		400	800
		800	1600
		1600	3200
		3200	6400
		6400	12800
		12800	25600
		25600	51200
		51200	102400
		102400	204800
		204800	409600
		409600	819200
		819200	1638400
		1638400	3276800
		3276800	6553600
		6553600	13107200
		13107200	26214400
		26214400	52428800
		52428800	104857600
		104857600	209715200
		209715200	419430400
		419430400	838860800
		838860800	1677721600
		1677721600	3355443200
		3355443200	6710886400
		6710886400	13421772800
		13421772800	26843545600
		26843545600	53687091200
		53687091200	107374182400
		107374182400	214748364800
		214748364800	429496729600
		429496729600	858993459200
		858993459200	1717986918400
		1717986918400	3435973836800
		3435973836800	6871947673600
		6871947673600	13743895347200
		13743895347200	27487790694400
		27487790694400	54975581388800
		54975581388800	109951162777600
		109951162777600	219902325555200
		219902325555200	439804651110400
		439804651110400	879609302220800
		879609302220800	1759218604441600
		1759218604441600	3518437208883200
		3518437208883200	7036874417766400
		7036874417766400	14073748835532800
		14073748835532800	28147497671065600
		28147497671065600	56294995342131200
		56294995342131200	112589990684262400
		112589990684262400	225179981368524800
		225179981368524800	450359962737049600
		450359962737049600	900719925474099200
		900719925474099200	1801439850948198400
		1801439850948198400	3602879701896396800
		3602879701896396800	7205759403792793600
		7205759403792793600	14411518807585587200
		14411518807585587200	28823037615171174400
		28823037615171174400	57646075230342348800
		57646075230342348800	115292150460684697600
		115292150460684697600	230584300921369395200
		230584300921369395200	461168601842738790400
		461168601842738790400	922337203685477580800
		922337203685477580800	1844674407370955161600
		1844674407370955161600	3689348814741910323200
		3689348814741910323200	7378697629483820646400
		7378697629483820646400	14757395258967641292800
		14757395258967641292800	29514790517935282585600
		29514790517935282585600	59029581035870565171200
		59029581035870565171200	118059162071741130342400
		118059162071741130342400	236118324143482260684800
		236118324143482260684800	472236648286964521369600
		472236648286964521369600	944473296573929042739200
		944473296573929042739200	1888946593147858085478400
		1888946593147858085478400	3777893186295716170956800
		3777893186295716170956800	7555786372591432341913600
		7555786372591432341913600	15111572745182864683827200
		15111572745182864683827200	30223145490365729367654400
		30223145490365729367654400	60446290980731458735308800
		60446290980731458735308800	120892581961462917470617600
		120892581961462917470617600	24178516392292583494123200
		24178516392292583494123200	48357032784585166988246400
		48357032784585166988246400	96714065569170333976492800
		96714065569170333976492800	193428131138340667952985600
		193428131138340667952985600	386856262276681335905971200
		386856262276681335905971200	773712524553362671811942400
		773712524553362671811942400	1547425049106725343623884800
		1547425049106725343623884800	309485009821345068724777600
		309485009821345068724777600	618970019642690137449555200
		618970019642690137449555200	1237940039285380274899110400
		1237940039285380274899110400	2475880078570760549798220800
		2475880078570760549798220800	4951760157141521099596441600
		4951760157141521099596441600	9903520314283042199192883200
		9903520314283042199192883200	19807040628566084398387766400
		19807040628566084398387766400	39614081257132168796775532800
		39614081257132168796775532800	79228162514264337593551065600
		79228162514264337593551065600	158456325028528675187102131200
		158456325028528675187102131200	316912650057057350374204262400
		316912650057057350374204262400	633825300114114700748408524800
		633825300114114700748408524800	1267650600228229401496817049600
		1267650600228229401496817049600	2535301200456458802993634099200
		2535301200456458802993634099200	5070602400912917605987268198400
		5070602400912917605987268198400	10141204801825835211974536396800
		10141204801825835211974536396800	20282409603651670423949072793600
		20282409603651670423949072793600	40564819207303340847898145478400
		40564819207303340847898145478400	811296384146066816957938899577600
		811296384146066816957938899577600	162259276829213363915777799155200
		16225927682921336391577799155200	324518553658426727831555598310400
		32451855365842672783155598310400	649037107316853455663111196620800
		649037107316853455663111196620800	1298074214637069111326222393241600
		1298074214637069111326222393241600	2596148429274138222652447886483200
		2596148429274138222652447886483200	5192296858548276445310895772966400
		5192296858548276445310895772966400	10384593717096552890621791555932800
		10384593717096552890621791555932800	207691874341931057812435831111665600
		207691874341931057812435831111665600	415383748683862115624871662223332800
		415383748683862115624871662223332800	83076749736772423124975332444665600
		83076749736772423124975332444665600	16615349947354484624995066488931200
		16615349947354484624995066488931200	33230699894708969249991137779862400
		33230699894708969249991137779862400	66461399789417938499982755559724800
		6646139978941793849998275559724800	132922799578835876999965111119449600
		132922799578835876999965111119449600	265845599157671753999930222238899200
		265845599157671753999930222238899200	531691198315343507999860444477798400
		531691198315343507999860444477798400	1063382396630687015999720888955977600
		1063382396630687015999720888955977600	21267647932613740319994417779119555200
		21267647932613740319994417779119555200	4253529586522748063998883555833910400
		4253529586522748063998883555833910400	8507059173045496127997767111667820800
		8507059173045496127997767111667820800	170141183460909922559955342233556441600
		170141183460909922559955342233556441600	34028236692181984511991106846711288889600
		34028236692181984511991106846711288889600	6805647338436396902398221337355577777600
		680564733843639690239822133735557777600	13611294676872793804797442674711555555200
		13611294676872793804797442674711555555200	27222589353745587609594885349431111110400
		27222589353745587609594885349431111110400	544451787074911752191897706988622222220800
		544451787074911752191897706988622222220800	1088903574149



### CONNECTOR DETAILS

**PANEL SIDE 10-PIN (MALE)  
CONNECTOR 250 SERIES MSSL  
FROM BACK VIEW (CABLE  
INSERTION VIEW)**

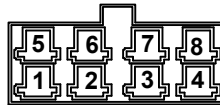


CONNECTOR SEQUENCE

PINS No	FERRULE No
1	SPARE
2	SPARE
3	SPARE
4	LOP SEN.
5	IND
6	WT SEN
7	SPARE
8	SPARE
9	SPARE
10	WT SW.

**X1**

**PANEL SIDE 8-PIN (MALE)  
CONNECTOR 250 SERIES MSSL  
FROM BACK VIEW (CABLE  
INSERTION VIEW)**

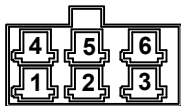


CONNECTOR SEQUENCE

PINS No	FERRULE No
1	BATT. +VE
2	BATT. -VE
3	E STOP
4	FLS
5	SPARE
6	SPARE
7	SPARE
8	SPARE

**X2**

**PANEL SIDE 6-PIN (MALE)  
CONNECTOR 250 SERIES MSSL  
FROM BACK VIEW (CABLE  
INSERTION VIEW)**



CONNECTOR SEQUENCE

PINS No	FERRULE No
1	SPARE
2	BATT. -VE
3	SOLENOID
4	START OUT
5	ALT. +VE
6	BATT. +VE

**X3**

**\*\*\* Note: USE PVC WHITE PRINTED FERRULE OF  
SIZE 3.5 MM**

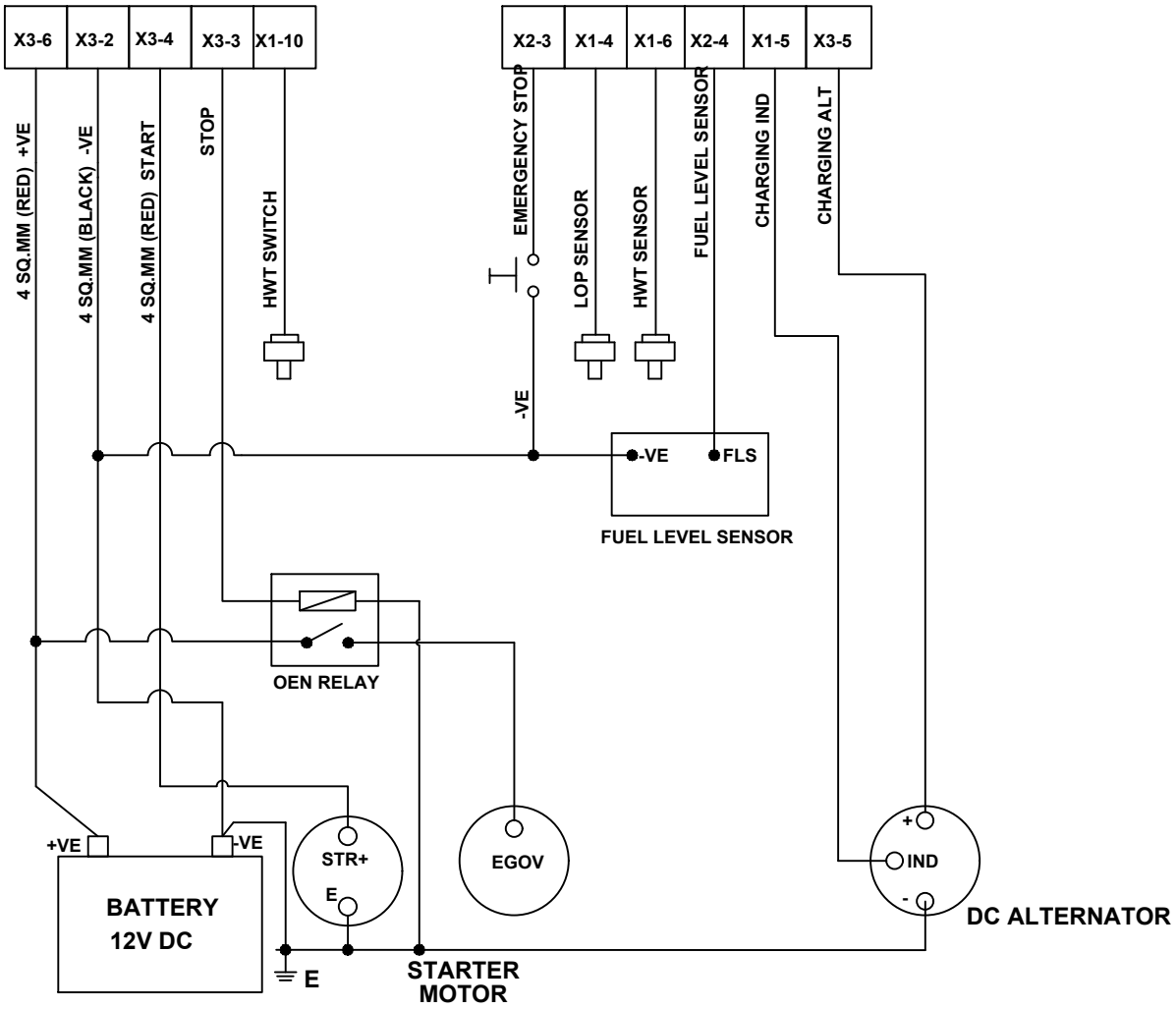
### SYMBOLS & NOMENCLATURE

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SHUTDOWN ALARMS		Under Frequency Shutdown		Gen. Low Volt. Warning
	CAN ECU Data Fail		Under Speed Shutdown		High Coolant Temp. Warning
	CAN ECU Shutdown		Temp. Sensor Open Circuit		Low Oil Pressure Warning
	Digital Input A-D		Oil Pressure Sensor Open Circuit		Low Fuel Level
	Analogue Input A-C		Flexible Sensor		Over Frequency Warning
	Emergency Stop/RWL		Magnetic Pickup Open Circuit		Over Speed Warning
	Fail To Start		WARNING		Under Frequency Warning
	Gen. High Volt. Shutdown		Battery High Voltage		Under Speed Warning
	Gen. Low Volt. Shutdown		Battery Low Voltage		Flexible Sensor
	High Coolant Temp Shutdown		CAN ECU Warning	USER CONFIGURED SHUT DOWN	
	Loss of Mag. Pickup Signal		Charge Alternator Failure		
	Low Oil Pressure Shutdown		Digital Input A-D		Fuel Level Sensor
	Low Fuel Level		Analogue Input A-C		Analogue Input A-C
	Over Frequency Shutdown		Fail To Stop		Low Fuel Level Shut Down Switch
	Over Speed Shutdown		Gen. High Volt. Warning		RWL /EmergencyPB

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH, X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

### CONNECTOR DETAIL, SYMBOLS & NOMENCLATURE

<SC> :SIGNIFICANT CHARACTERISTICS		▽:CRITICAL CHARACTERISTICS	
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.		MAHINDRA & MAHINDRA LIMITED TRACTOR DIVISION KANDIVLI(EAST), MUMBAI-400 101, INDIA.	
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989		E.R / PROC.REQ.NO: <b>SDC</b> PART NO.: <b>REFER SHEET NO.2</b>	
DIMENSIONS		PART NAME: <b>40kVA, 3PH., AMF PANEL COLD START WITH DSE-4520-R1</b>	
LINEAR IN mm.	OVER UPTO 0.5 3 6 30 120 400 1000 2000 3 6 30 120 400 1000 2000 4000	MATERIAL: _____ HEAT TREATMENT: _____	
T FINE (X.XXX)	20 25 30 40 50 60 80 100 125 160 200 250 315 400	2021 NAME SIGN DATE FIRST USED TRCR. MODEL	
m MEDIUM (X.XX)	20 25 30 40 50 60 80 100 125 160 200 250 315 400	CAD ENGG	SSS 20/10/21
C COARSE (X.X)	20 25 30 40 50 60 80 100 125 160 200 250 315 400	DESIGNER	SSS 20/10/21
V VERY COARSE ( )	20 25 30 40 50 60 80 100 125 160 200 250 315 400	CHECKER	RBN 20/10/21
ANGULAR IN deg.	OVER UPTO 10 30 45 60 90 120 180 100 120 150	APPR.BY	RAK 20/10/21
T FINE (X.XXX)	21° 20'30" 20'30" 20'10" 20'5'	SCALE N.T.S	
m MEDIUM (X.XX)	21°30' 21° 20'30" 20'15" 20'10"	SHEET'S OF 11	
C COARSE (X.X)	22° 22° 21° 20'30" 20'20"	UNIT QTY.: _____	
V VERY COARSE ( )	23° 22° 21° 20'30" 20'20"	WEIGHT: _____ kg.	
PART OF THIS DRAWING / DOCUMENT SHOULD NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF M & M LTD.		COMPUTER GENERATED DRAWING DO NOT CHANGE MANUALLY	
IF IN DOUBT, ASK DO NOT SCALE DRG SIZE :		ALL DIMENSIONS ARE IN mm. CHECK DRG WITH LATEST CHANGE	



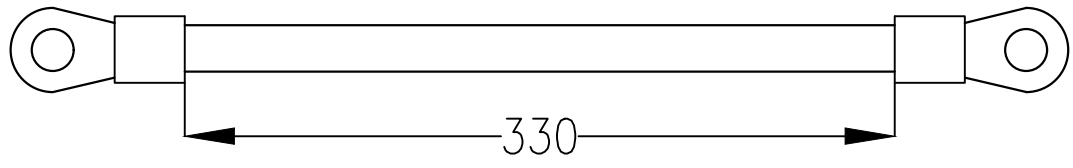
\*\*\*Note: USE PVC WHITE PRINTED FERRULE OF SIZE 3.5 MM

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

### ENGINE WIRING DIAGRAM

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇ :CRITICAL CHARACTERISTICS</b>																					
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.																							
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989																							
<table border="1"> <thead> <tr> <th colspan="2">DIMENSIONS</th> </tr> <tr> <th>LINEAR</th> <th>IN mm.</th> </tr> </thead> <tbody> <tr> <td>OVER</td> <td>0.5 3 6 30 120 400 1000 2000</td> </tr> <tr> <td>UPTO</td> <td>3 6 30 120 400 1000 2000 4000</td> </tr> </tbody> </table>		DIMENSIONS		LINEAR	IN mm.	OVER	0.5 3 6 30 120 400 1000 2000	UPTO	3 6 30 120 400 1000 2000 4000	<table border="1"> <thead> <tr> <th colspan="2">E/R / PROC.REQ.NO.</th> </tr> <tr> <td>SDC</td> <td>REF PART SHEET NO.2</td> </tr> </thead> </table>		E/R / PROC.REQ.NO.		SDC	REF PART SHEET NO.2								
DIMENSIONS																							
LINEAR	IN mm.																						
OVER	0.5 3 6 30 120 400 1000 2000																						
UPTO	3 6 30 120 400 1000 2000 4000																						
E/R / PROC.REQ.NO.																							
SDC	REF PART SHEET NO.2																						
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">ANGULAR</th> </tr> <tr> <th>IN deg.</th> <th>UPTO</th> </tr> </thead> <tbody> <tr> <td>OVER</td> <td>10 30 45 60 90 120 150 180</td> </tr> <tr> <td>UPTO</td> <td>10 30 45 60 90 120 150 180</td> </tr> </tbody> </table>		ANGULAR		IN deg.	UPTO	OVER	10 30 45 60 90 120 150 180	UPTO	10 30 45 60 90 120 150 180	<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>		PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1							
ANGULAR																							
IN deg.	UPTO																						
OVER	10 30 45 60 90 120 150 180																						
UPTO	10 30 45 60 90 120 150 180																						
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>		PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1		<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :											
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>MEDIUM (XXX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>COARSE (XX)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> <tr> <td>VERY COARSE (X)</td> <td>10 20 30 40 50 60 80 100 120 150 200</td> </tr> </tbody> </table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200	MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200	COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200	VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200	<table border="1"> <thead> <tr> <th colspan="2">MATERIAL :</th> <th colspan="2">HEAT TREATMENT :</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MATERIAL :		HEAT TREATMENT :					
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 200																						
MEDIUM (XXX)	10 20 30 40 50 60 80 100 120 150 200																						
COARSE (XX)	10 20 30 40 50 60 80 100 120 150 200																						
VERY COARSE (X)	10 20 30 40 50 60 80 100 120 150 200																						
MATERIAL :		HEAT TREATMENT :																					
<table border="1"> <thead> <tr> <th colspan="2">PART NAME :</th> </tr> <tr> <td>40kVA, 3PH., AMF PANEL</td> <td>REF PART SHEET NO.2</td> </tr> <tr> <th colspan="2">COLD START WITH DSE-4520-R1</th> </tr> </thead> </table>				PART NAME :		40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2	COLD START WITH DSE-4520-R1															
PART NAME :																							
40kVA, 3PH., AMF PANEL	REF PART SHEET NO.2																						
COLD START WITH DSE-4520-R1																							
<table border="1"> <thead> <tr> <th colspan="2">TYPICAL</th> </tr> <tr> <th>FINISH</th> <th>LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.</th> </tr> </thead> <tbody> <tr> <td>FINE (XXXX)</td> <td>10 20 30 40 50 60 80 100 120 150 2</td></tr></tbody></table>		TYPICAL		FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.	FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 2																
TYPICAL																							
FINISH	LENGTH OF SHORTER SIDE OF THE ANGLE IN mm.																						
FINE (XXXX)	10 20 30 40 50 60 80 100 120 150 2																						

0 1 2 3 4 5 6 7 8 9



NOTE:

- 1) SIZE OF CABLE 10SQ.MM.
- 2) ALL CABLES SHOULD BE FINOLEX/POLYCAP/BONTON/LAPP/HAVELLS MAKE HRFR TYPE
- 3) ALL LUGS SHOULD BE DOWELLS MAKE.
- 4) ALL LUGS SHOULD BE CRIMPED PROPERLY.
- 5) SHRINKING SLEEVE YELLOW/GREEN
- 6) CABLE TO BE IN YELLOW/GREEN COLOR
- 7) LUG ID SHOULD OF 10MM

LET	LOC	REVISION	DSNR	CKR	APPR	DATE
A		RELAY CARD CHANGE FROM 3CH TO 4CH X3 CONNECTOR CONNECTION ADDED IN CIRCUIT	PBK	RBN	RAK	29/10/21
B		TIMER T1 SETTING UPDATE AS 3 MIN.	SSS	RBN	RAK	24/11/21

**EARTHING CABLE**

<b>&lt;SC&gt; :SIGNIFICANT CHARACTERISTICS</b>		<b>∇ :CRITICAL CHARACTERISTICS</b>	
BREAK SHARP CORNERS MAY BE EITHER A CHAMFER OR A RADIUS FROM 0.2 mm MIN. TO 1.0 mm MAX.			
UNSPECIFIED TOLERANCES AS PER ISO-2768-1:1989			
DIMENSIONS		E.R. / PROC.REQ.NO. : <b>SDC</b>	
LINEAR IN mm.	OVER UPTO	0.5 3 6 30 120 400 1000 2000	PART NO. : <b>REFER SHEET NO.2</b>
T FINE (X.XXX)	3 6 30 120 400 1000 2000	20.1 25.1 30.2 35.3 40.5	PART NAME : <b>40kVA, 3PH., AMF PANEL COLD START WITH DSE-4520-R1</b>
m MEDIUM (X.XX)	3 6 30 120 400 1000 2000	20.1 25.1 30.2 35.3 40.5	MATERIAL : _____
C COARSE (X.X)	3 6 30 120 400 1000 2000	20.1 25.1 30.2 35.3 40.5	HEAT TREATMENT : _____
V VERY COARSE ( )	3 6 30 120 400 1000 2000	20.1 25.1 30.2 35.3 40.5	
ANGULAR IN deg.	OVER UPTO	10 50 120 400	
T FINE (X.XXX)	11° 10° 30' 10° 20' 10° 10'	10° 5'	2021
m MEDIUM (X.XX)	11° 30' 11° 10° 30' 10° 15'	10° 10'	CAD ENGG <b>SSS</b>
C COARSE (X.X)	11° 30' 11° 10° 30' 10° 15'	10° 10'	DATE <b>20/10/21</b>
V VERY COARSE ( )	11° 30' 11° 10° 30' 10° 15'	10° 10'	DESIGNER <b>SSS</b>
PART OF THIS DRAWING / DOCUMENT SHOULD NOT BE REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION OF M & M LTD.		CHECKER <b>RBN</b>	
COMPUTER GENERATED DRAWING DO NOT CHANGE MANUALLY		APPR.BY <b>RAK</b>	
IF IN DOUBT, ASK	DO NOT SCALE	DRG SIZE :	SCALE N.T.S
ALL DIMENSIONS ARE IN mm.		FIRST USED TRCR. MODEL	
CHECK DRG WITH LATEST CHANGE		SHEET# OF 11	
		UNIT QTY. : _____	
		WEIGHT : kg.	