

**GA, TECHNICAL DATA SHEET AND PERFORMANCE CURVES OF 315kW**  
**HT MOTOR**

S.No	Description	Drawing No	No of Sheets
1	Technical Data Sheet for 315 kW Motor	3F330742	7
2	DC355F3;Outline Dimension Drawing of HT Motor	A4C 17867-1035	1
3	Assembly Drawing of Phase Segregated Terminal Box	A3C 13780-013	1
4	Neutral Point Terminal Box	A3C 13903	1
5	Arrangement of RTD T.Box	A4C 18243-RTD-BTD	1
6	Heater Terminal Box Assembly	A4C 14150-001	1
7	Torque Vs Speed Characteristic Curve	-	1
8	Efficiency & Power Factor Vs % Load Curve	-	1
9	Current Vs % Speed Characteristic Curve	-	1
10	Current Vs % Time Characteristic Curve	-	1
11	Thermal Withstand Characteristics Curve	-	1
12	Negative Sequence Curve	-	1

 OPGC Power for Progress	Orissa Power Generation Corporation Ltd.	2X660 MW IB TPS Units 3&4		BGR Energy Systems Ltd.
	Development Consultants Pvt. Ltd	Technical Datasheet for AC Motor		Marathon Electric Motors (India) Ltd.

## 1.0 GENERAL

- 1.1 Application : Conveyor with Fluid coupling.  
13A/B, 16A/B, 17A/B + Spare
- 1.2 Quantity : 7 Nos.
- 1.3 Make : Marathon Electric
- 1.4 Frame Size : DC355F3
- 1.5 Applicable Standard : IS:325
- BGR is informed that 17A and 17B conveyor motors are not included in the CHP HT Transformer sizing calculation. Hence, Please clarify the feeding point/source of these motors.**

## 2.0 TYPE AND RATING

2.1 Type of Motor : Squirrel Cage Induction Motor

2.2 Service : Indoor

2.3 Duty Cycle/Designation : Continuous/S1.

2.4 Rated Continuous Output

a) At 40 Deg.C ambient kW : 330

b) At 50 Deg.C ambient kW : 315

**BGR please note that the rating considered for transformer sizing calculation as well as in the load list is 280kW. Request to check and confirm the motor rating and remove the discrepancy between this two document.**

2.5 Speed

a) Rated Speed r.p.m. : 1488

b) Synchronous Speed r.p.m. : 1500

2.6 Rated Voltage & % variation : 3.3 kV, +/-10%

2.7 Rated Frequency & % variation : 50Hz, +3% to - 5%

2.8 Combined voltage and frequency Variation % (absolute sum)

: 10%

**Please indicate following information in the data sheet.**  
**1.. Number of pole.**  
**2.. Minimum voltage to start the motor.**

2.9 Full load current Amps : 67.5

2.10 No load current Amps : 19 (max.)

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 <b>DCI</b>	<b>Development Consultants Pvt. Ltd</b>	<b>Technical Datasheet for AC Motor</b>	 <b>marathon electric</b>	<b>Marathon Electric Motors (India) Ltd.</b>

**2.11 Power Factor**

- a) Full load : 0.87
- b) 3/4 load : 0.85
- c) 1/2 load : 0.80
- d) No load : 0.123
- e) Starting : 0.20

**2.12 Efficiency at rated voltage and frequency**

- a) Full load % : 94.0
- b) 3/4 load % : 93.2
- c) 1/2 load % : 92.0

**3.0 PERFORMANCE**

**3.1 Method of Starting** : DOL

**3.2 Starting Current**

- a) Starting Current at 100% voltage % FLC : 600% (Inclusive of IS tolerance)
- b) Starting Current at 110% voltage % FLC : 660% (Inclusive of IS tolerance)

**3.3 Torque**

- a) Full load torque kg.m : 206
- b) Starting Torque at rated voltage kg.m : 227 (110%FLT)
- c) Pull out torque kg.m : 453 (220%FLT)

**3.4 Starting time at (% of Voltage)**      **80%**      **100%**      **110%**

- a) With load sec. : 2.5      1.5      1.2
- b) Without load (driven equipment Coupled) sec : 1.3      0.7      0.6

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3.5	Safe stall time at (% of Voltage)		<b>80%</b>	<b>100%</b>	<b>110%</b>
a)	Hot condition	sec. :	25	15	12
b)	Cold condition	sec. :	30	20	16
3.6	Time Constant				
a)	Heating time constant	min :	45		
b)	Cooling time constant	min :	100		
3.7	Starts				
a)	Permissible No. of equally spaced starts per hour			: Three (3)	
b)	Permissible No. of starts in quick succession			: Two (2)	
3.8	Voltage required at motor terminals to start with connected load and accelerate to full speed without exceeding acceptable winding temperature				: 80% Rated Voltage
3.9	Noise level at 1 m				: 85 dB
3.10	Vibration level				: 2.8 mm/sec.
3.11	Suitable for sudden application of 150% rated voltage during bus transfer				: Yes
3.12	Capable of operating satisfactorily at full load for 5 minutes without injurious heating with 75% rated voltage at motor terminals				: Yes
3.13	Capable of withstanding the stresses imposed if started at 110% of rated voltage				: Yes

#### **4.0 CONSTRUCTION**

4.1	Degree of Protection of Enclosure	: IP 55
4.2	Method of Cooling	: TEFC / IC411

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4.3	Insulation Class/Type	: Class F/VPI		
4.4	Temperature Rise Over 50 Deg.C ambient (By resistance)	: Class B		
4.5	Tropicalized (Yes/No)	: Yes		
4.6	Winding Connection	: Star		
4.7	Bearings	<b>D.E.</b>	<b>N.D.E.</b>	
a)	Make	: FAG/NTN/NSK/Equivalent		
b)	Type	: NU220-C3 6220-C3		
c)	Recommended lubricant	: Grease Grease		
d)	Is lubricant normally available IOC equivalent	: Yes		
e)	Insulation of bearing to prevent shaft current	: Yes(Insulated bkt. at NDE side)		
4.8	Motor Terminal Box			
a)	Type	: PSTB for Stator & Non-PSTB for Neutral		
b)	Degree of Protection	: IP 55		
c)	Fault withstand Current KA	: 43.7 kA		
d)	Fault Current Withstand Time Sec.	: 0.25 Sec		
e)	Suitable Cable Size	: 1x3Cx185 Sq. mm, Al. XLPE		
f)	Position	: RHS from DE		
g)	Capable of being turned 360° in steps of 180°	: Yes		
4.9	Painting	: Light Grey #631 as per IS-5		
4.10	Direction of rotation viewed from DE	: Bi-Direction		

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## 5.0 ACCESSORIES

- 5.1 Space Heaters
- a) No. x Watt : 2 x 43 W
  - b) Volt, phase, frequency : 240V, 1Ph., 50 Hz
- 5.2 Winding temperature detector
- a) Type : Pt.100, Simplex, Resistance type, 3 wire Platinum wound 100 ohms at 0°C
  - b) Nos. furnished : 12 nos. (4 Nos per phase)
- 5.3 Bearing temperature detector
- a) Type : Pt.100, duplex resistance type, 3 wire, Platinum wound 100 ohms at 0°C
  - b) Nos. furnished : 2 Nos. (1 No. per bearing)
- 5.4 Temperature Indicators
- a) Type : Mercury in steel dial type (DTT)
  - b) Nos. provided : 2 Nos.
  - c) Locations : 1 No. per bearing
- 5.5 Temperature Alarm Contact
- a) Nos. provided : 1 NO + 1 NC
  - b) Locations : DTT
  - c) Contact rating : 5A @ 240 VAC & 0.5A @ 220VDC
- 5.6 Flow Switch
- a) Type : Not Applicable
  - b) Nos. provided : Not Applicable

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- c) Locations : Not Applicable
- d) Contact Rating : Not Applicable
- 5.7 Current Transformer for differential protection
  - a) Nos. provided : Not Applicable
  - b) Current Ratio : Not Applicable
  - c) Class : Not Applicable
  - d) Knee point voltage : Not Applicable
  - e) Excitation current at VK/2 : Not Applicable
- 5.8 Accessory Terminal Box
  - a) No. provided : 2 Nos.(1 No. for Space Heater  
1 Nos. for RTD & BTD)
  - b) Suitable cable size : As per GAD
- 5.9 Speed Switch
  - a) Type : Not Applicable
  - b) Nos. provided : Not Applicable
  - c) Locations : Not Applicable
  - d) Contact Rating : Not Applicable
- 5.10 Vibration Pads : 2 Nos. (X & Y axis) in DE &  
2 Nos. (X & Y axis) in NDE

## **6.0 GROUNDING**

- 6.1 No. of grounding pads provided
  - a) On motor body : 2 Nos.
  - b) On terminal box : 2 Nos.

## **7.0 MISCELLANEOUS**

- 7.1 Type of mounting : Horizontal Foot (B3)

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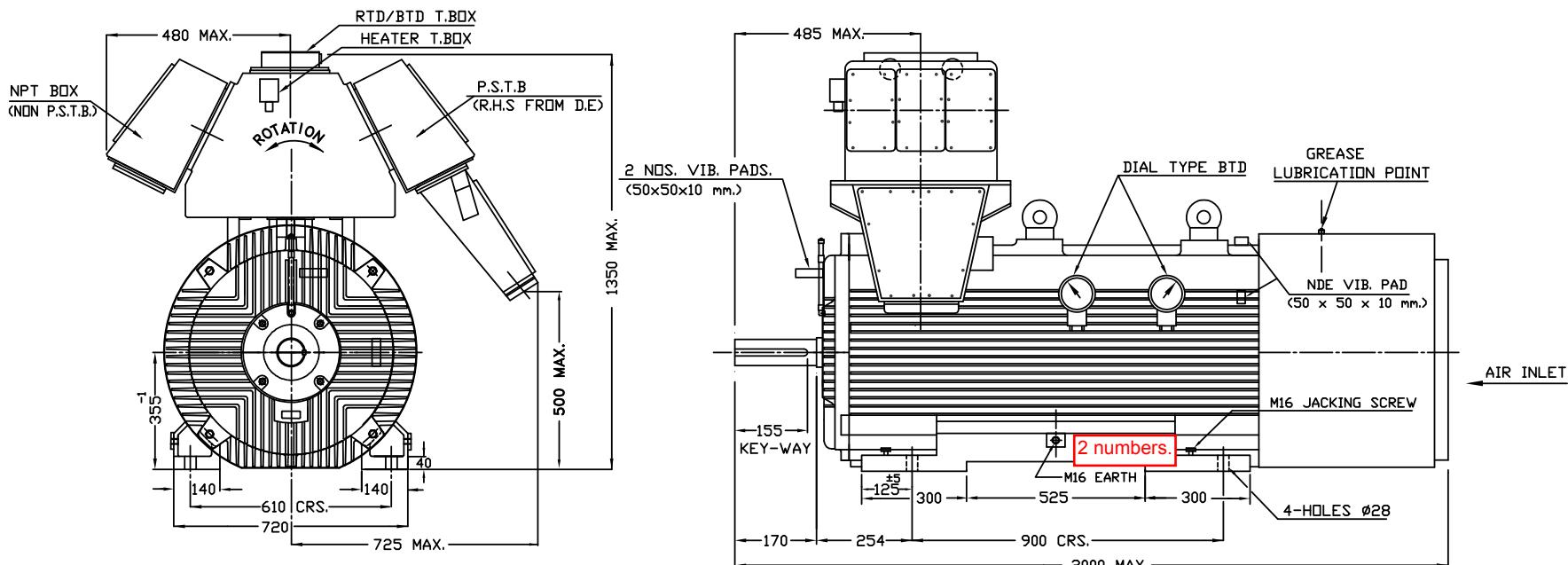
- 7.2 Overall dimension (L x B x H) in mm : As per GAD
- 7.3 Moment of Inertia (Sq.GD)
- a) Rotor Kg.Sq.m : 36
  - b) Load Kg.Sq.m : 28.2 (Primary side of fluid coupling)
- 7.4 Weight
- a) Stator Kg : 1890
  - b) Rotor Kg : 760
  - c) Total Kg : 2650
- 7.5 Document Enclosures
- a) Motor General Arrangement : Yes
  - b) Motor Stator Terminal Box GA : Yes
  - c) Motor Neutral Terminal Box GA : Yes
  - d) Motor RTD Terminal Box GA : Yes
  - e) Motor Space Heater Terminal Box GA : Yes
  - f) Motor Performance Curves : Yes

Note: All above performance figures except as specified are subject to IS tolerance.

R1, Rev.01, Dt: 30.07.15

DRAWING NO. REV.  
A4C 17867-1035 02

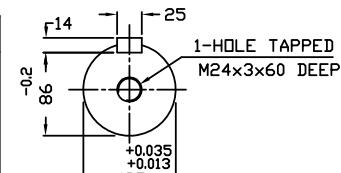
ALL DIMENSIONS ARE IN mm.



ROTATION : BI-DIRECTIONAL

FRAME	RATING	POLE	VOLTAGE/Ph./Hz.
DC355F3	315 KW	4	3.3KV/3PH/50HZ.
ENCLOSURE	MOUNTING	WEIGHT	PAINT SHADE
T.E.F.C. / IP55	B3	2650 KG. (APPROX.)	SHADE 631 OF IS:5 (EPOXY.)

- ACCESSORIES
- 1 NO. P.S.T.B. & 1 NO. N.P.T. BOX.(NON P.S.T.B.)
  - 12 NOS. RTD Pt.100-SIMPLEX TYPE
  - 2 NOS. BTD Pt.100-DUPLEX TYPE
  - 2 NOS. DIAL TYPE BTD.
  - 1 NO. HEATER T. BOX.  
2X43WATTS, 240V SUPPLY, 1PH, 50HZ. SP.HEATER.



DETAILS OF SHAFT DRIVE END

CUSTOMER : M/S. BGR ENERGY SYSTEMS Ltd.

CLIENT : ORISSA POWER GENERATION CORPORATION Ltd.

CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.

PROJECT : 2x660MW IB TPS UNIT 3&4

VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.

G4	G3	G2	G1	PT. NO.	DESCRIPTION	MATERIAL SPEC. DRAWING NO.
					REF. DRG. A4C 17867-783 F3 DESIGN	
					REF. SO. NO.	DC355F3; 4P OUTLINE DIMENSIONS DRG. OF H.T. MOTOR
					GEN. TOLERANCE	DRAWN RANJAN.C 02.06.2015
					SCALE	TRACED — —
					NTS.	CHECKED K.B 02.06.2015
						APPV'D P.L 02.06.2015

**marathon®**

Marathon Electric Motors (India) Ltd.  
AEI WORKS, 1, TARATALA ROAD,  
KOLKATA-700024, INDIA

REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D. K.B/31.07.15	REV.	CHK'D. K.B/24.07.15
	APPV'D.		APPV'D.		APPV'D.		APPV'D.P.L/31.07.15	01	APPV'D.P.L/24.07.15

N.D.E VIB. PAD ADDED.

ROTATION CHANGED.  
CUSTOMER DETAILS  
ADDED.



DRAWN	RANJAN.C	02.06.2015
TRACED	—	—
CHECKED	K.B	02.06.2015
APPV'D	P.L	02.06.2015

A4C 17867-1035 02

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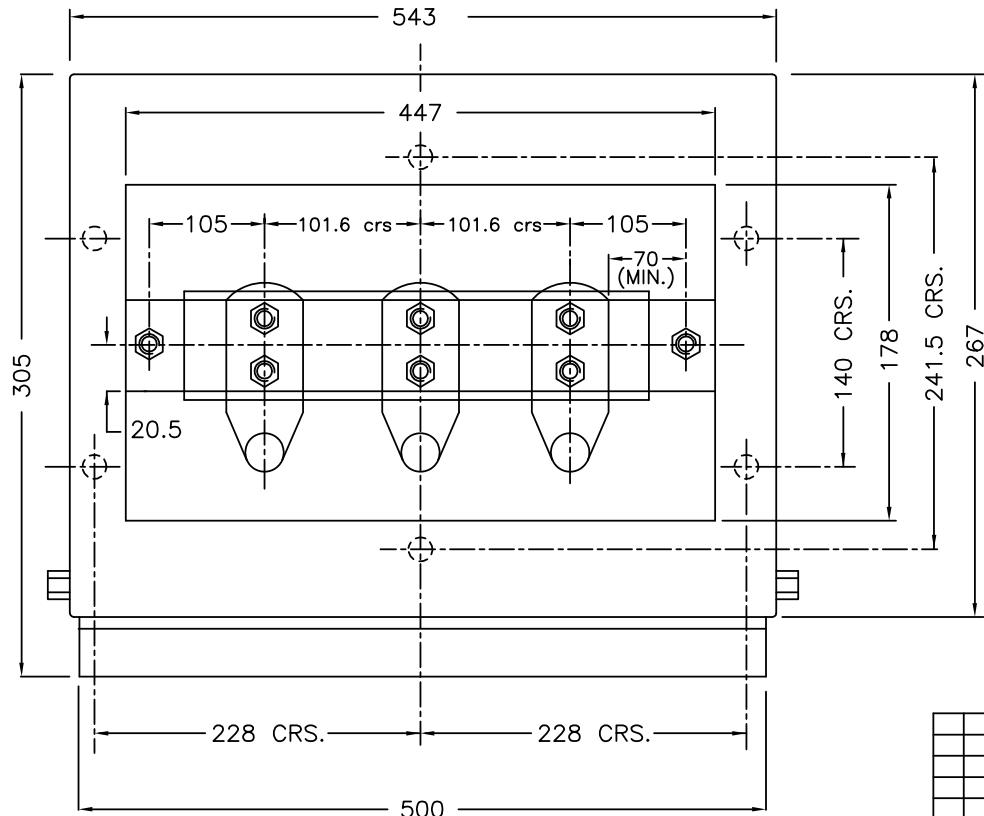
## PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

DRAWING NO. ASC 13780-013		REV. 05																																																																																																																																																																																																																																						
<p><b>NOTE :-</b></p> <ol style="list-style-type: none"> <li>1. T.BOX IS SUITABLE FOR FAULT LEVEL OF 43.7 KA FOR 0.25 SEC</li> <li>2. PROVISION OF EARTHING TERMINATION ON THE BOX GIVEN-REF. ITEM NO.19</li> <li>3. MIN. CREEPAGE DISTANCE = 116 mm.</li> <li>4. MIN. DISTANCE BETWEEN PHASE &amp; EARTH = 70 mm.</li> <li>5. DEGREE OF PROTECTION IP55.</li> <li>6. CABLE SIZE : 1x3Cx185 Sq.mm. 3.3KV, XLPE ARMoured CABLE</li> <li>7. PAINT SHADE 631 OF IS:5, EPOXY</li> <li>8. T.BOX IS SUITABLE FOR ROTATION IN STEPS OF 180°</li> <li>9. JOINT BOX(FOR PHASE SEGREGATION) - EPOXY MOULDED(2 mm. THK.)</li> <li>10. GLAND PLATE : HOT/COLD ROLLED SHEET(3 mm. THK.)</li> </ol> <p><b>CUSTOMER :</b> M/S. BGR ENERGY SYSTEMS Ltd.  <b>CLIENT :</b> ORISSA POWER GENERATION CORPORATION Ltd.  <b>CONSULTANT :</b> DEVELOPMENT CONSULTANTS Pvt. Ltd.  <b>PROJECT :</b> 2x660MW IB TPS UNIT 3&amp;4  <b>VENDOR :</b> MARATHON ELECTRIC MOTORS (I) Ltd.</p> <table border="1"> <tr> <td>REV. 05</td> <td>CHK'D.K/B/24.07.15</td> <td>REV. APPV,D.P.L/24.07.15</td> <td>CHK'D.P.D/14.05.14 04</td> <td>APPV,D.G.M/14.05.14</td> <td>REV. 03</td> <td>CHK'D.P.D/14.05.14</td> <td>APPV,D.G.M/14.05.14</td> <td>REV. 02</td> <td>CHK'D.P.D/07.05.14</td> <td>APPV,D.G.M/07.05.14</td> <td>REV. 01</td> <td>CHK'D.P.D/03.05.14</td> <td>APPV,D.G.M/03.05.14</td> </tr> </table> <p><b>CUSTOMER DETAILS ADDED</b></p> <p>GLAND PLATE THK. CHANGED.</p> <p>PT. 30 ADDED.</p> <p>NOTE 9 ADDED.</p> <p>PT 29 ADDED.</p> <p>CABLE SIZE CHANGED</p> <p>CONFIDENTIAL AND PROPERTY OF Marathon Electric Motors (India) Limited. NOT TO BE REPRODUCED OR LENT WITHOUT PERMISSION</p>						REV. 05	CHK'D.K/B/24.07.15	REV. APPV,D.P.L/24.07.15	CHK'D.P.D/14.05.14 04	APPV,D.G.M/14.05.14	REV. 03	CHK'D.P.D/14.05.14	APPV,D.G.M/14.05.14	REV. 02	CHK'D.P.D/07.05.14	APPV,D.G.M/07.05.14	REV. 01	CHK'D.P.D/03.05.14	APPV,D.G.M/03.05.14																																																																																																																																																																																																																					
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PLATED</td> </tr> <tr> <td>3</td> <td>23</td> <td>GLAND WASHER</td> <td>NYLON</td> </tr> <tr> <td>3</td> <td>22</td> <td>GLAND BUSH</td> <td>NEOPRINE</td> </tr> <tr> <td>3</td> <td>21</td> <td>RING NUT</td> <td>NYLON</td> </tr> <tr> <td>3</td> <td>20</td> <td>GLAND BODY</td> <td>NYLON</td> </tr> <tr> <td>1</td> <td>19</td> <td>EARTHING TERMINAL M12 WITH THIMBLE</td> <td>M.S.</td> </tr> <tr> <td>1</td> <td>18</td> <td>CUSTOMER CABLE</td> <td>1x3Cx185 Sq.mm. 3.3KV, XLPE ARMoured CABLE</td> </tr> <tr> <td>3</td> <td>17</td> <td>FERRULE(MOTOR CABLE)</td> <td>COPPER TIN PLATED</td> </tr> <tr> <td>1</td> <td>16</td> <td>SLG. CHAMBER COVER PLATE</td> <td>M.S.</td> </tr> <tr> <td>1</td> <td>15</td> <td>SEALING CHAMBER</td> <td>M.S.</td> </tr> <tr> <td>3</td> <td>14</td> <td>GROMMET</td> <td>NEOPRENE</td> </tr> <tr> <td>1</td> <td>13</td> <td>TERMINAL SEALING PLATE</td> <td>FRP</td> </tr> <tr> <td>3</td> <td>12</td> <td>GLAND NUT</td> <td>NYLON</td> </tr> <tr> <td>1</td> <td>11</td> <td>GASKET FOR SLG. CHAMBER</td> <td>NEOPRENE</td> </tr> <tr> <td>3</td> <td>10</td> <td>EPOXY LINING ON TERMINAL COVER</td> <td>EPOXY</td> </tr> <tr> <td>3</td> <td>9</td> <td>TERMINAL COVER</td> <td>M.S.</td> </tr> <tr> <td>3</td> <td>8</td> <td>CABLE CLAMP</td> <td>TINNED COPPER</td> </tr> <tr> <td>1</td> <td>7</td> <td>CABLE (MOTOR)</td> <td>CSP/SILICON CABLE</td> </tr> <tr> <td>3</td> <td>6</td> <td>GASKET FOR LID</td> <td>NEOPRENE</td> </tr> <tr> <td>3</td> <td>5</td> <td>JOINT BOX</td> <td>EPOXY MOULDED</td> </tr> <tr> <td>1</td> <td>4</td> <td>GASKET FOR SLC. PLATE</td> <td>NEOPRENE</td> </tr> <tr> <td>1</td> <td>3</td> <td>SEALING PLATE (ROUND)</td> <td>FRP</td> </tr> <tr> <td>1</td> <td>2</td> <td>TERMINAL BOX</td> <td>M.S.</td> </tr> <tr> <td>1</td> <td>1</td> <td>P.S.T.B. ASSLY.</td> <td></td> </tr> <tr> <td>G4</td> <td>G3</td> <td>G2</td> <td>G1</td> <td>PT. NO.</td> <td colspan="2">DESCRIPTION</td> <td colspan="3">MATERIAL SPEC. DRAWING NO.</td> </tr> <tr> <td colspan="6"></td> <td colspan="2">REF. DRG. A3C 13780-003</td> <td colspan="3">Marathon Electric Motors (India) Ltd. AEI WORKS, 1, TARATALA ROAD, KOLKATA-700024, INDIA</td> </tr> <tr> <td colspan="6"></td> <td colspan="6">ASSLY. DRG. OF PHASE SEGREGATED TERMINAL BOX.</td> </tr> <tr> <td colspan="6"></td> <td colspan="2">GEN. TOLERENCE</td> <td>DRAWN</td> <td>P.DAS</td> <td>15.02.2008</td> <td colspan="2">DRAWING NO.</td> <td>REV NO.</td> </tr> <tr> <td colspan="6"></td> <td colspan="2"></td> <td>TRACED</td> <td></td> <td></td> <td colspan="2"></td> <td></td> </tr> <tr> <td colspan="6"></td> <td colspan="2">SCALE NTS.</td> <td>CHECKED</td> <td>P.LAHIRI</td> <td>15.02.2008</td> <td colspan="2"></td> <td></td> </tr> <tr> <td colspan="6"></td> <td colspan="2"></td> <td>APPV'D</td> <td>G.MONDAL</td> <td>15.02.2008</td> <td colspan="2"></td> <td></td> </tr> <tr> <td colspan="12">T.BOX//...../A3C13780-013/A3C13780-013-03.05.14</td> </tr> </tbody> </table>						1	30	DETACHABLE GLAND PLATE	HOT/COLD ROLLED SHEET(3 mm. THK.)	1	29	DRAIN PLUG(M6)	STAINLESS STEEL	1	28	CABLE SUPPORT	FRP	1	27	DOUBLE COMPRESSION CABLE GLAND	BRASS NICKEL PLATED.	3	26	THIMBLE(CUSTOMER CABLE)	COPPER TIN PLATED	1	25	BOSS	M.S.	3	24	DESICCATOR & HUMIDITY INDICATOR	M.S. PLATED	3	23	GLAND WASHER	NYLON	3	22	GLAND BUSH	NEOPRINE	3	21	RING NUT	NYLON	3	20	GLAND BODY	NYLON	1	19	EARTHING TERMINAL M12 WITH THIMBLE	M.S.	1	18	CUSTOMER CABLE	1x3Cx185 Sq.mm. 3.3KV, XLPE ARMoured CABLE	3	17	FERRULE(MOTOR CABLE)	COPPER TIN PLATED	1	16	SLG. CHAMBER COVER PLATE	M.S.	1	15	SEALING CHAMBER	M.S.	3	14	GROMMET	NEOPRENE	1	13	TERMINAL SEALING PLATE	FRP	3	12	GLAND NUT	NYLON	1	11	GASKET FOR SLG. CHAMBER	NEOPRENE	3	10	EPOXY LINING ON TERMINAL COVER	EPOXY	3	9	TERMINAL COVER	M.S.	3	8	CABLE CLAMP	TINNED COPPER	1	7	CABLE (MOTOR)	CSP/SILICON CABLE	3	6	GASKET FOR LID	NEOPRENE	3	5	JOINT BOX	EPOXY MOULDED	1	4	GASKET FOR SLC. PLATE	NEOPRENE	1	3	SEALING PLATE (ROUND)	FRP	1	2	TERMINAL BOX	M.S.	1	1	P.S.T.B. ASSLY.		G4	G3	G2	G1	PT. NO.	DESCRIPTION		MATERIAL SPEC. DRAWING NO.									REF. DRG. A3C 13780-003		Marathon Electric Motors (India) Ltd. AEI WORKS, 1, TARATALA ROAD, KOLKATA-700024, INDIA									ASSLY. DRG. OF PHASE SEGREGATED TERMINAL BOX.												GEN. 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DRAWING NO  
A3C 13903

REV.  
01

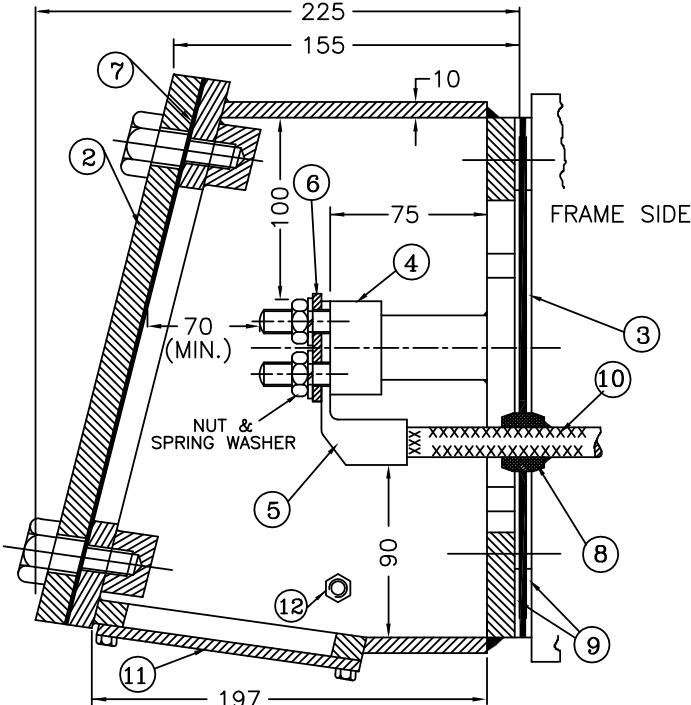
ALL DIMENSIONS ARE IN mm.  
IF IN DOUBT, PLEASE ASK DESIGN DEPT.



DEGREE OF PROTECTION : IP-55

CUSTOMER : M/S. BGR ENERGY SYSTEMS Ltd.  
CLIENT : ORISSA POWER GENERATION CORPORATION Ltd.  
CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.  
PROJECT : 2x660MW IB TPS UNIT 3&4  
VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.

REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D. K.B.
	APPV,D.		APPV,D.		APPV,D.		APPV,D.	01	APPV,D.P,L.
					CUSTOMER DATA ADDED.				



		12	EARTHING TERMINAL M12 WITH THIMBLE	M.S.
		11	ADAPTOR PLATE	M.S.
		10	CABLE	CSP/SILICON
		9	GASKETS (BOTTOM)	NEOPRENE
		8	GROMET	NEOPRENE
		7	GASKETS (TOP)	NEOPRENE
		6	SHORTING LINK ( 38 x 6 )	CD PLTD. CU BAR
		5	MOTOR THIMBLE	COPPER
		4	TERMINAL BAR	EPOXY (MOULDED)
		3	SEALING PLATE	FRP
		2	COVER (543x267x10 THK.)	M.S.
		1	TERMINAL BOX	M.S.

**marathon**  
electric  
*A Regal Beloit Company*

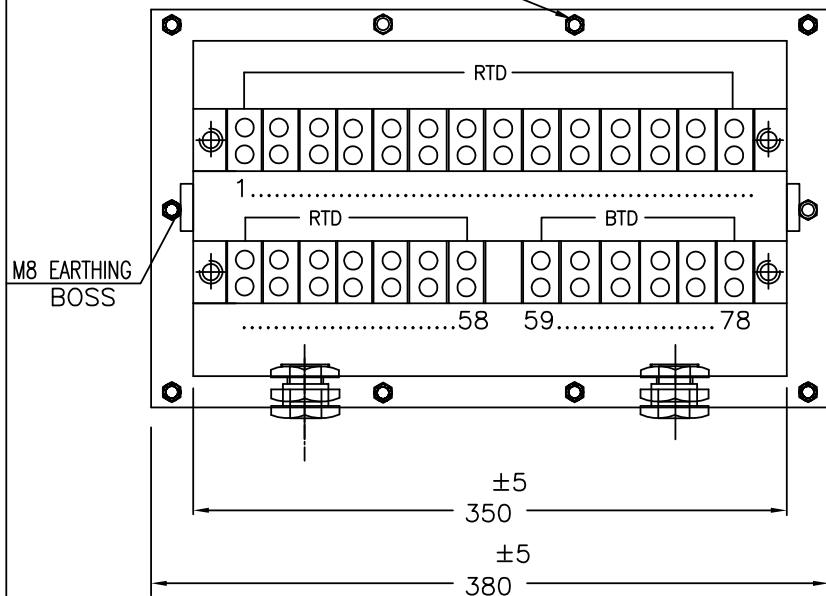
Marathon Electric Motors (India) Ltd.  
AEI WORKS, 1, TARATALA ROAD,  
KOLKATA-700024, INDIA

## NEUTRALPOINT TERMINAL BOX

GEN. TOLERENCE		DRAWN	RANJAN.C	18.05.2015	DRAWING NO.	REV NO.
SCALE NTS.		TRACED	---	---	A3C 13903	01
		CHECKED	P.DAS	18.05.2015		
		APP'D	G MONDAL	18.05.2015		

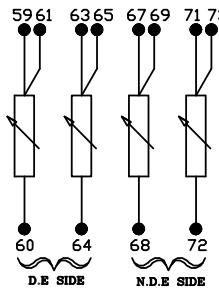
DRAWING NO. REV.  
A4C 18243-RTD-BTD 01

10 NOS. M5 X 20 LG. SCREW.



DEGREE OF PROTECTION OF T. BOX - IP55

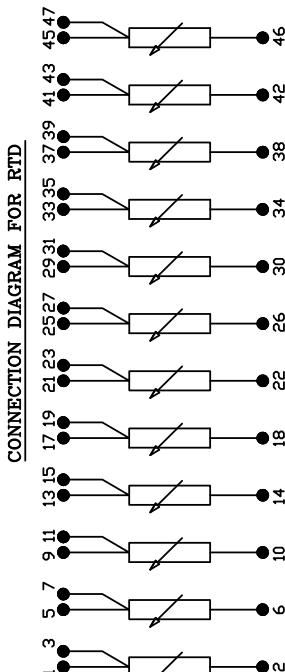
## CONNECTION DIAGRAM FOR DUPLEX BTD



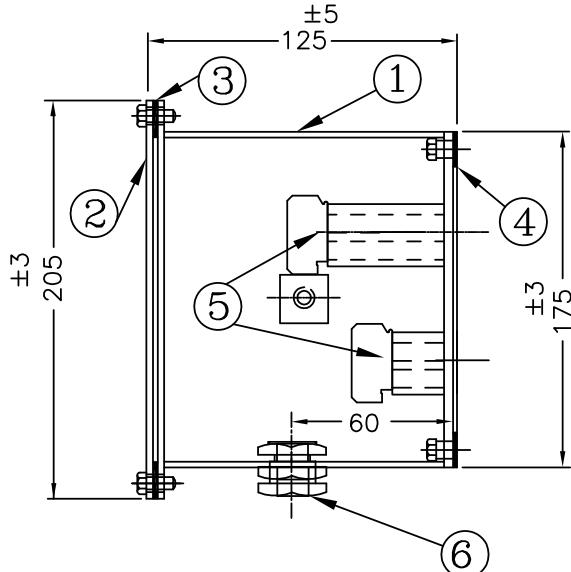
NOTE : 20% SPARE TERMINALS PROVIDED.

REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D.	REV.	CHK'D.
APPV'D.		APPV'D.		APPV'D.		APPV'D.	

**20% SPARE TERMINAL  
PROVIDED**



ALL DIMENSIONS ARE IN mm.



RTD CABLE - 12 TRIAD x 0.75 SQ. mm CONTROL CABLE  
BTD CABLE - 4 TRIAD x 0.75 SQ. mm CONTROL CABLE

	2	6	DOUBLE COPM. GLAND		BRASS Ni-Cr PLATED
	1	5	TERMINAL BLOCK (2.5 Sq.mm TERMINALS)		PHENOLIC BONDED INSULATOR
	1	4	GASKET BOTTOM		NEOPRENE
	1	3	GASKET TOP		NEOPRENE
	1	2	BOX COVER		M.S.
	1	1	RTD/BTD TERMINAL BOX		M.S.
G4	G3	G2	G1	PT.	MATERIAL SPEC.

**marathon**  
electric  
*A Regal Beloit Company*

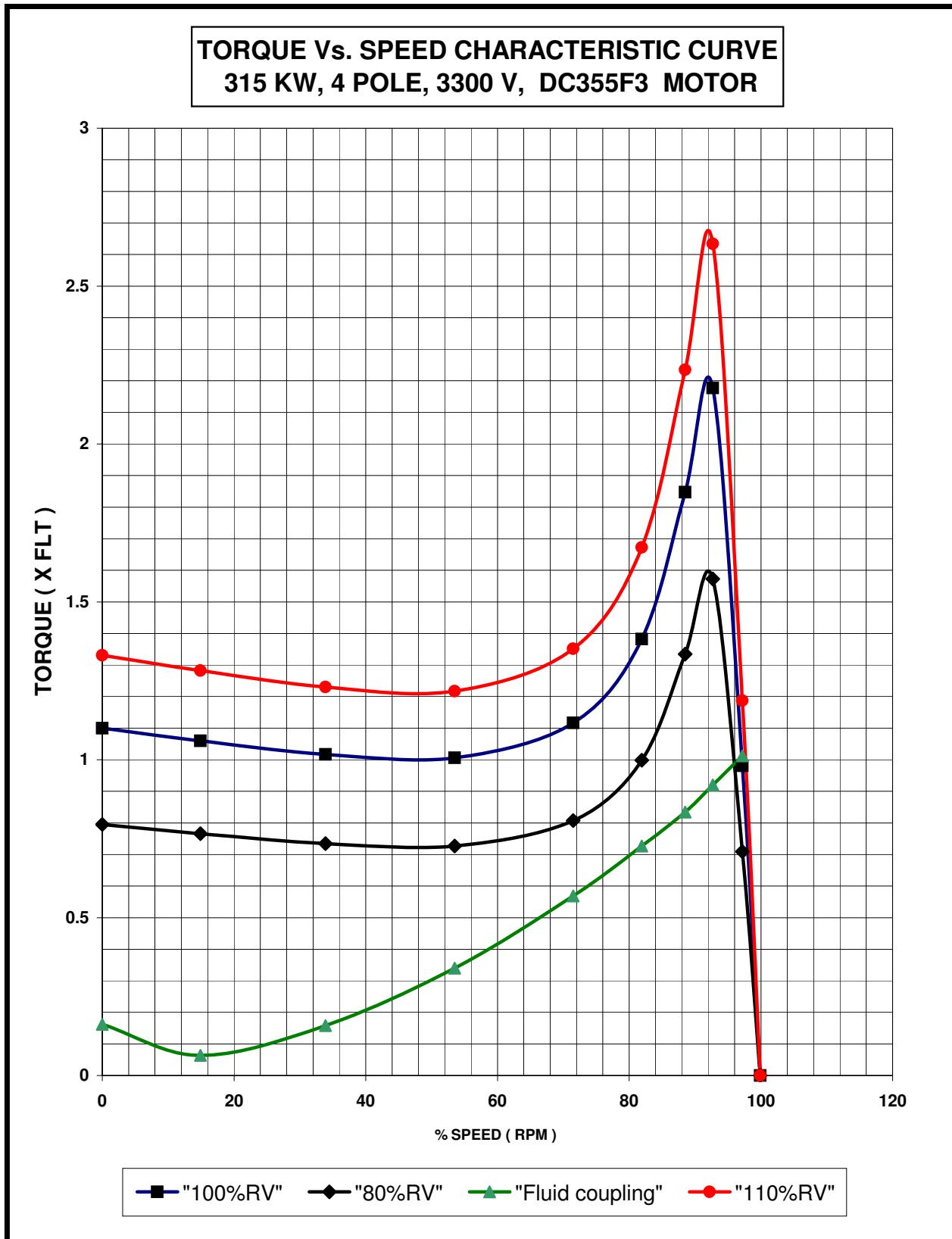
Marathon Electric Motors (India) Ltd.  
AEI WORKS, 1, TARATALA ROAD,  
KOLKATA-700024, INDIA

## ARRANGEMENT OF RTD T.BOX

S	GEN. TOLERENCE	DRAWN	RANJAN.C	16.04.2014	DRAWING NO.	REV NO.
		TRACED	—	—		
SCALE NTS.		CHECKED	P.DAS	16.04.2014	A4C 18243-RTD-BTD	01
		APP'D	G.MONDAL	16.04.2014		

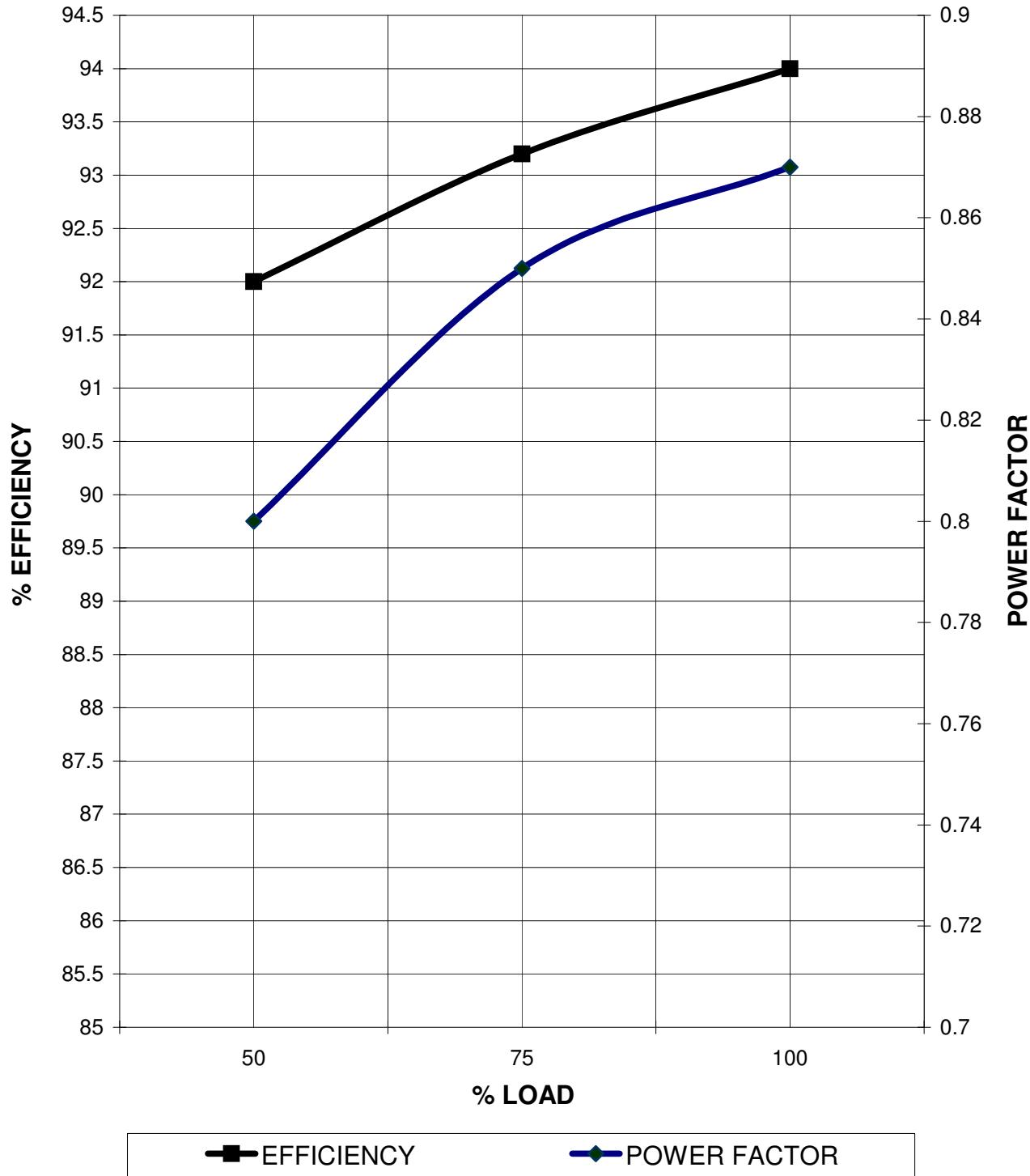
<small>CONFIDENTIAL AND PROPERTY OF Marathon Electric Motors (India) Limited NOT TO BE REPRODUCED OR LENT WITHOUT PERMISSION</small>																																		
REV.	CHK'D	REV.	CHK'D	REV.	CHK'D	REV.	CHK'D																											
	APPV'D.		APPV'D.		APPV'D.		APPV'D.																											
<small>ALL DIMENSION, IN MM. UNLESS STATED OTHERWISE</small>																																		
<b>CONNECTION &amp; ASSEMBLY DRAWING FOR SPACE HEATER</b>																																		
				<b>NOTE :-</b> CONNECT 240 V AC / PH-PH, 50 Hz. SUPPLY TO EITHER OF THE TERMINALS. DEGREE OF PROTECTION - IP55.																														
				<b>CUSTOMER : M/S. BGR ENERGY SYSTEMS Ltd.</b> <b>CLIENT : ORISSA POWER GENERATION CORPORATION Ltd.</b> <b>CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.</b> <b>PROJECT : 2x660MW IB TPS UNIT 3&amp;4</b> <b>VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.</b>																														
<b>SECTION-AA. T. BOX ASSMBLY. ELEVATION.</b>																																		
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<b>HEATER TERMINAL BOX ASSLY.</b>																																		
<b>GEN. TOLERENCE</b>  		DRAWN	RANJAN.C	22.07.2014	<b>DRAWING NO.</b>  A4C 14150-001		<b>REV NO.</b>  00																											
		TRACED	-	-																														
<b>SCALE</b> N.T.S		CHECKED	P.DAS	22.07.2014																														
		APPV'D	P.K.PAL	22.07.2014																														

CUSTOMER : M/s BGR ENERGY LTD.  
 CLIENT ; ORISSA POWER GENERATION CORPORATION Ltd.  
 CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.  
 PROJECT : 2 X 660 MW 1B. TPS UNIT: 3 4  
 VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.

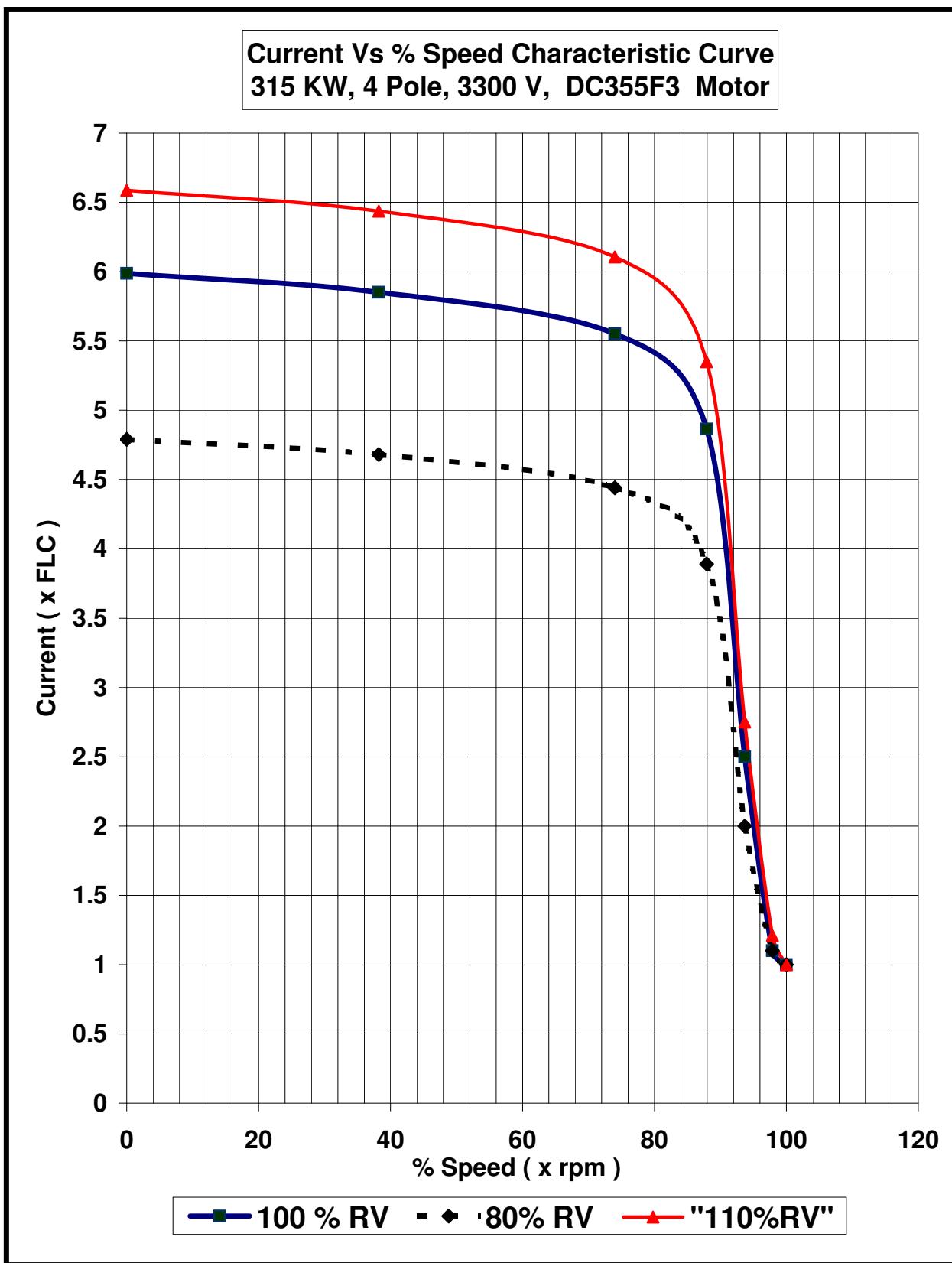


CUSTOMER : M/s BGR ENERGY LTD.  
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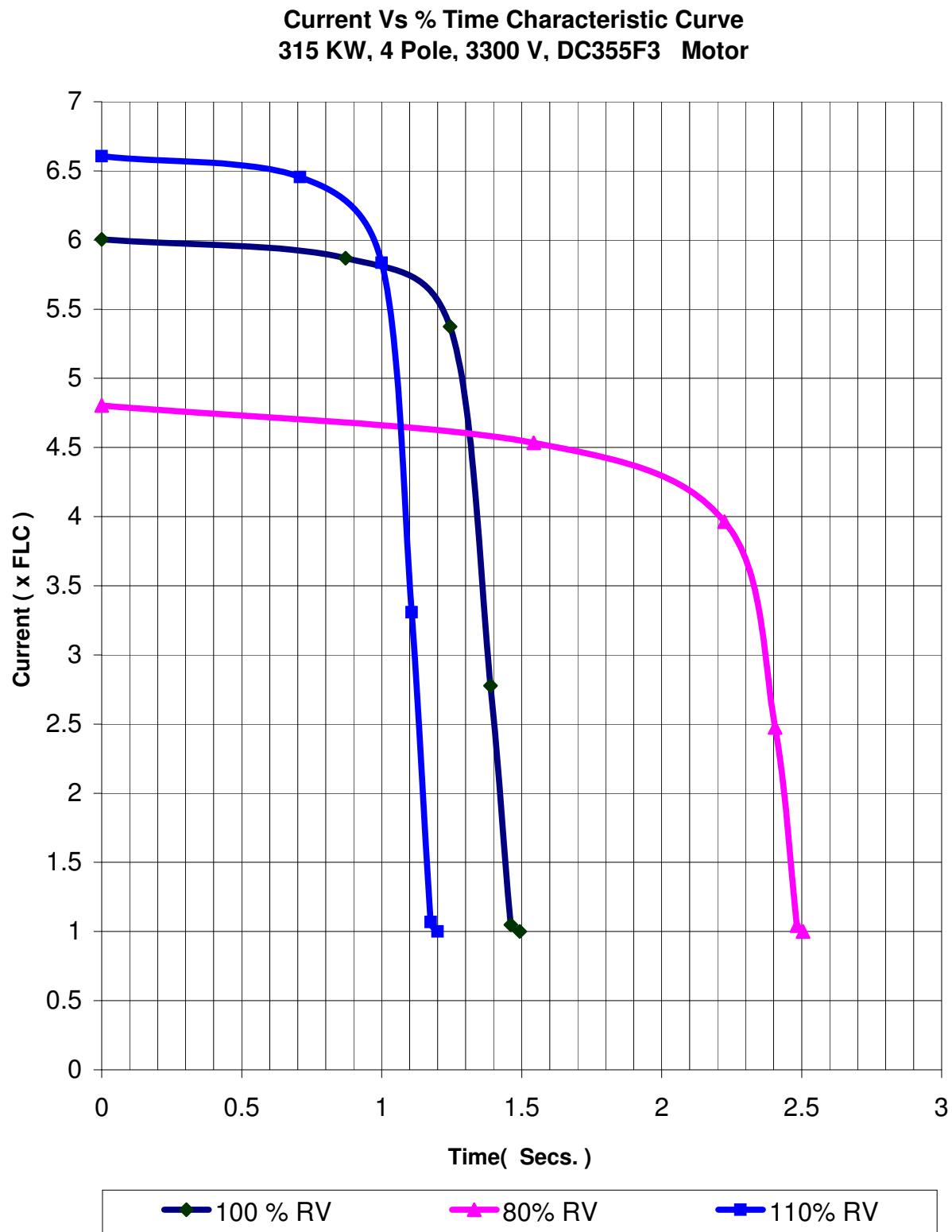
**EFFICIENCY & POWER FACTOR VS % LOAD CURVE**  
**315 KW, 4 POLE, 3300 V, DC355F3 Motor**



CUSTOMER : M/s BGR ENERGY LTD.  
CLIENT ; ORISSA POWER GENERATION CORPORATION Ltd.  
CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.  
PROJECT : 2 X 660 MW 1B. TPS UNIT: 3 4  
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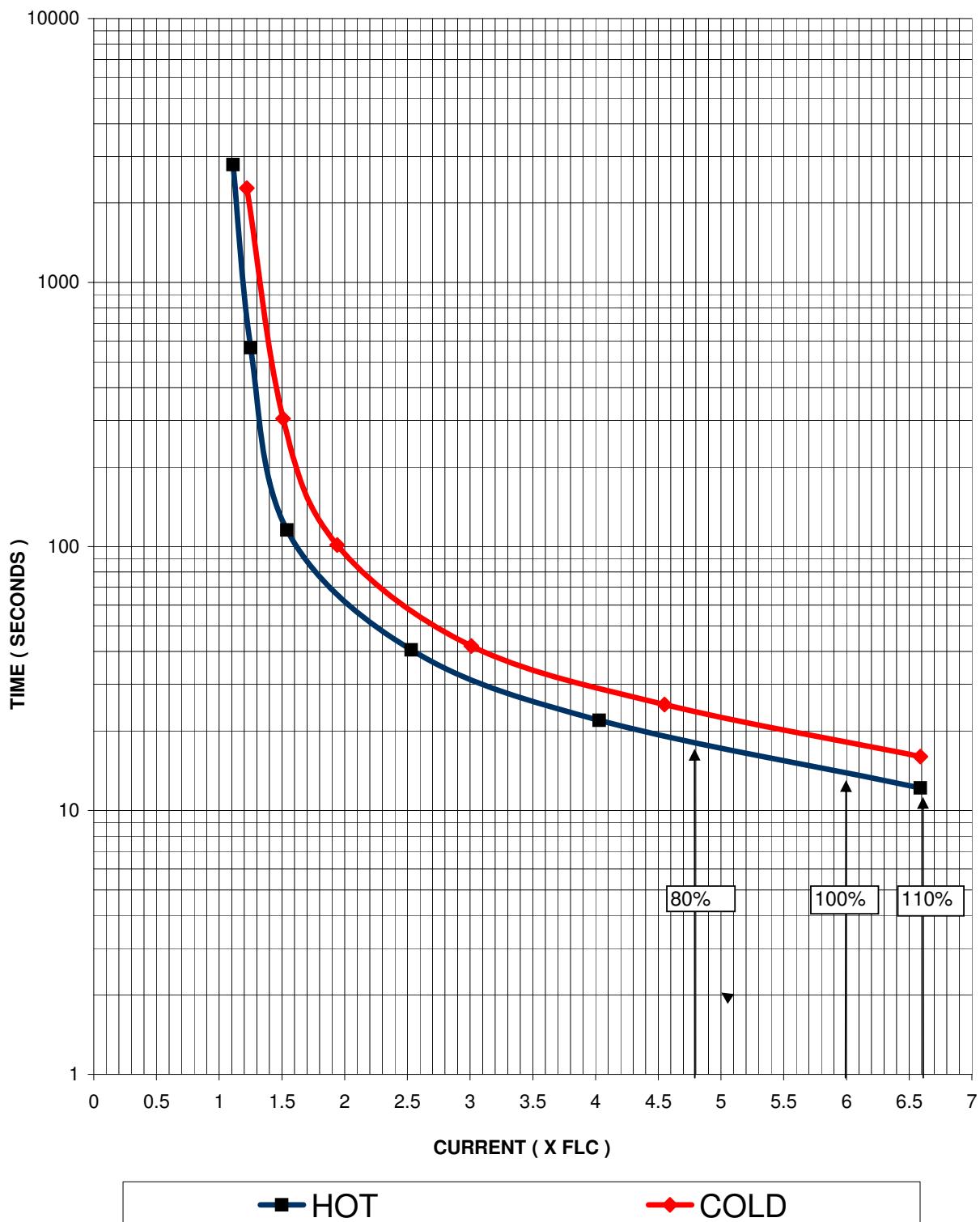


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PROJECT : 2 X 660 MW 1B. TPS UNIT: 3 4  
VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.

**THERMAL WITHSTAND CHARACTERISTICS CURVE**  
**315 KW, 4 POLE, 3300 V, DC355F3 Motor**



CUSTOMER : M/s BGR ENERGY LTD.  
CLIENT ; ORISSA POWER GENERATION CORPORATION Ltd.  
CONSULTANT : DEVELOPMENT CONSULTANTS Pvt. Ltd.  
PROJECT : 2 X 660 MW 1B. TPS UNIT: 3 4  
VENDOR : MARATHON ELECTRIC MOTORS (I) Ltd.

### Negative Sequence Curve for 315 KW, 4P, 3300 V, DC355F3 Motor

