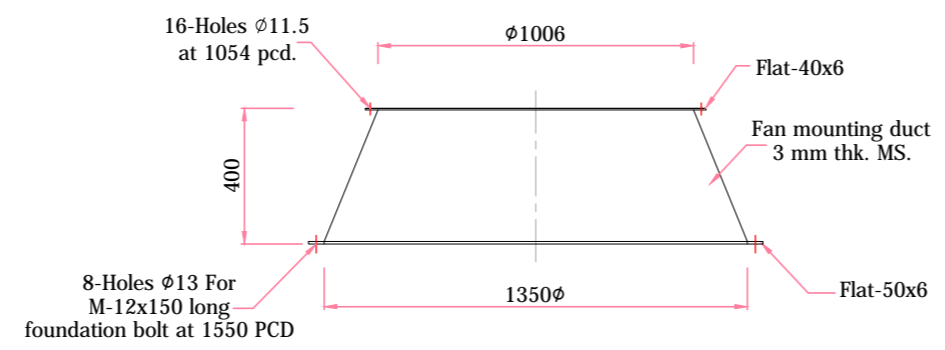
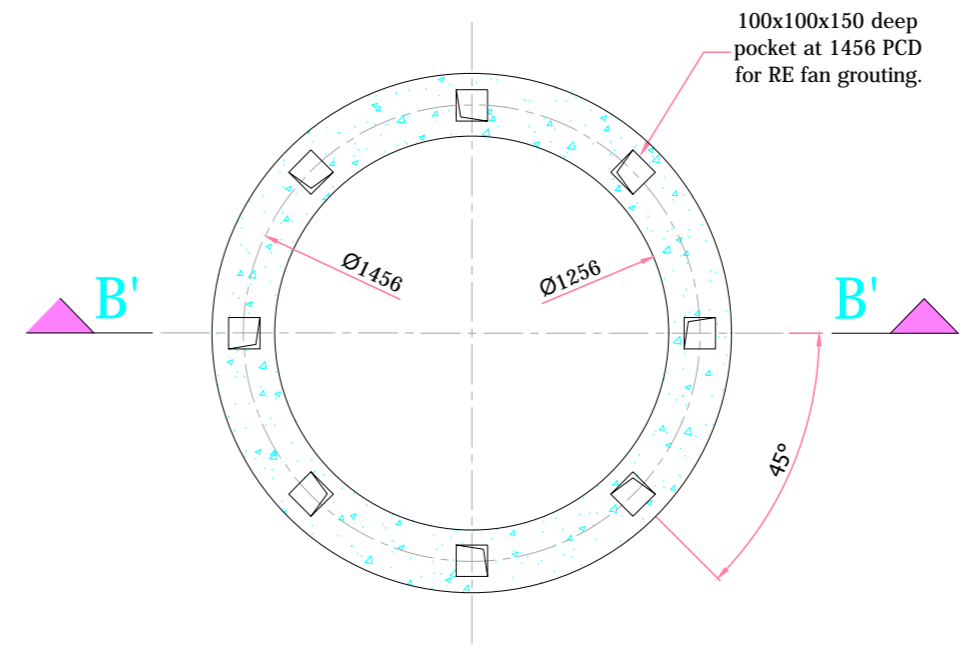


FAN TOP VIEW



ROOF EXTRACTOR FAN MOUNTING DUCT DETAIL



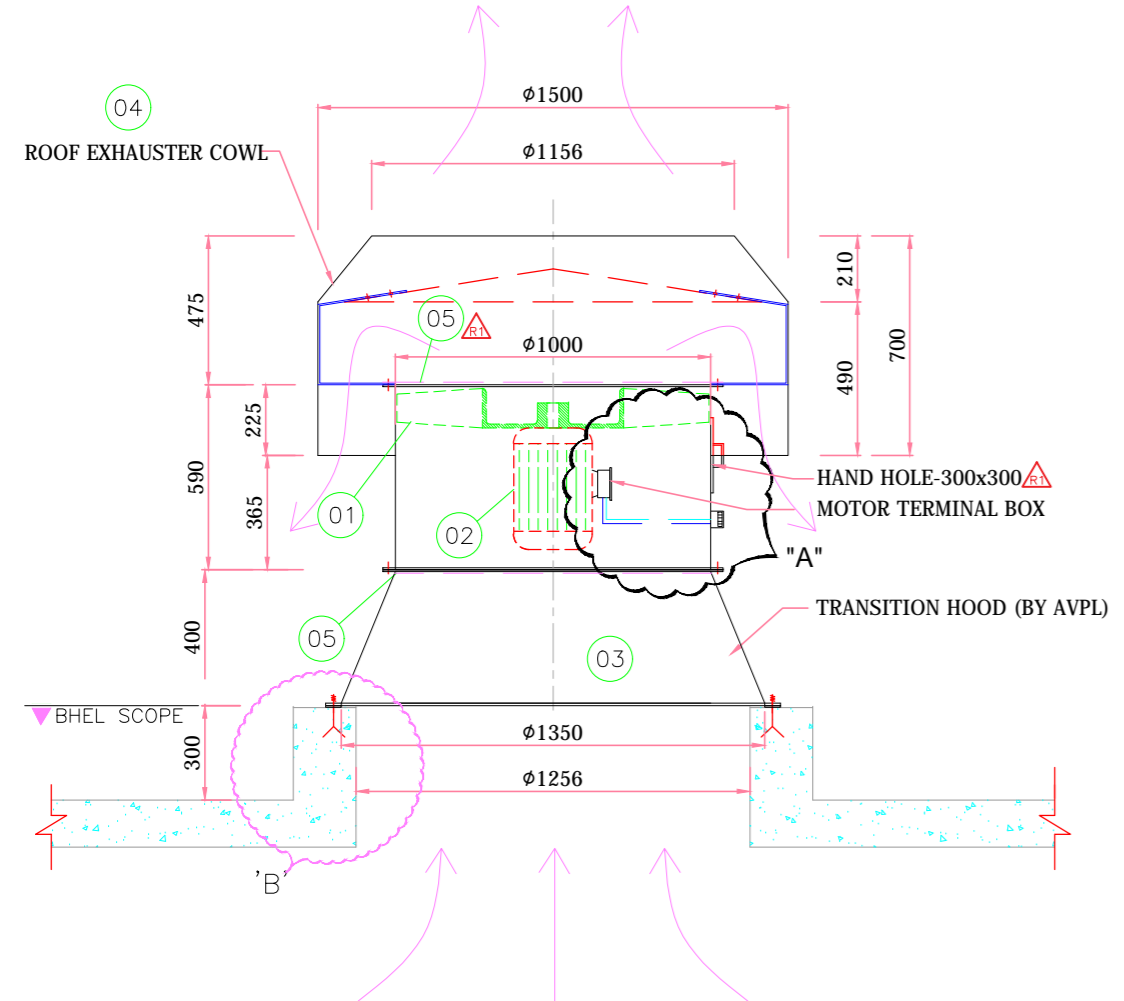
ROOF OPENING DETAIL FOR AdTV-1000/8B

REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

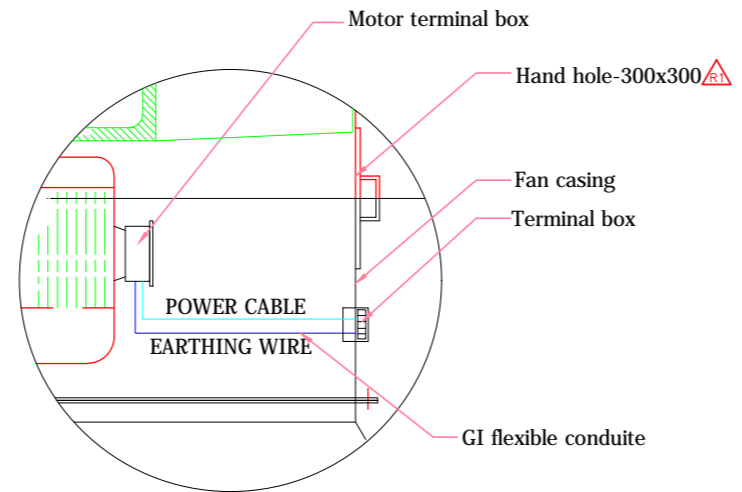
- NOTES:-
- ALL EQUIPMENTS SHALL BE DESIGNED FOR CONTINUOUS DUTY.
  - ALL DIMENSIONS ARE IN MM, AND ELEVATIONS ARE IN MTRS, UNLESS OTHERWISE STATED.
  - FAN VIBRATION LEVEL SHALL BE AS PER ISO - 14694.
  - 15 MM THK. XLPE GASKET WILL BE PROVIDED BETWEEN FAN & TRANSITION HOOD TO AVOID ANY VIBRATION TRANSFER TO ROOF.
  - ITEM LISTED IN THE PART LIST FOR ONE FAN ONLY.
  - REFER APPROVED FAN SCHEDULE FOR FINAL R E FAN QTY.

AIR CAPACITY	: 40,000 CMH
FAN STATIC PRESSURE	: 15 (mmwc)
FAN STATIC LOAD	: 185 KG
DYNAMIC LOAD	: 225 KG

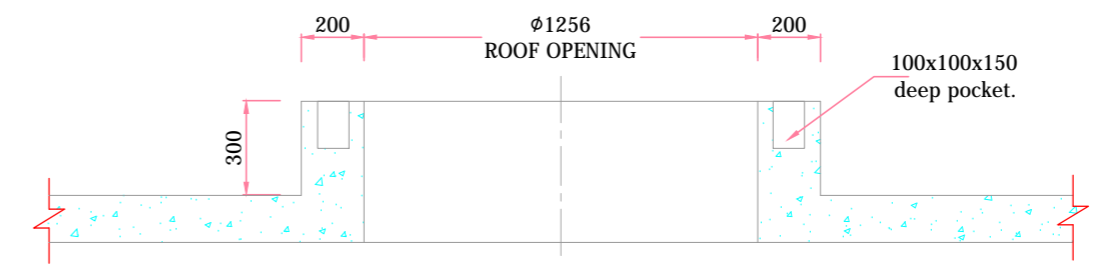
PART NO.	DESCRIPTION	SIZE	QTY.
06.	VIBRATION ISOLATOR	100x50x12	8 nos.
05.	WIRE MESH (15 MM SQ.)	1000	2 nos.
04.	ROOF EXHAUSTER COWL	1500/ 1156	1 no.
03.	FAN MOUNTING DUCT	1350/ 1000	1 no.
02.	MOTOR 5.5KW/6POLE	-	1 no.
01.	ROOF EXTRACTOR FAN	AdTV-1000/8B	1 no.



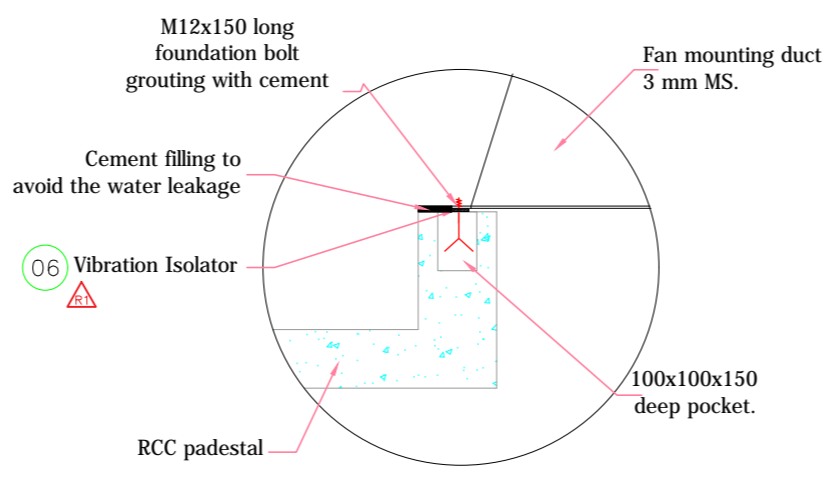
ELEVATION VIEW



DETAIL 'A'



SECTION B'-B'



DETAIL 'B'

REV. NO.	DATE	DONE BY	CHECK BY	DESCRIPTION
01	10.06.2021	HIMANSHU	A.G.	DRAWING ISSUED FOR REVIEW/ APPROVAL
02	08.03.2021	HIMANSHU	A.G.	DRAWING ISSUED FOR REVIEW/ APPROVAL

CUSTOMER: TELANGANA STATE POWER GENERATION CORPORATION LTD  
 TELANGANA, INDIA  
 58900 MW YADADRI TPS, NALGONDA

CONSULTANT: TATA CONSULTING ENGINEERS LIMITED  
 BANGALORE INDIA

CLIENT: BHARAT HEAVY ELECTRICALS LTD  
 POWER SECTOR  
 PROJECT ENGINEERING MANAGEMENT  
 NOIDA

JOB NO.	417		
STATUS	CONTRACT		
DISTRIBUTION			
REV. DATE	ALTD	CHD	APPI
01. 13.07.21	HK	AG	SC
Client comments Incorporated			
DRN	DESIGN	CHD	APPD
H.K	A.G	SCY	SCY
DATE	08.03.2021	SCALE	1:100
DRAWING NO.		PE-VD-417-554-4010	
SHEET		5 OF 14	
REV.		02	

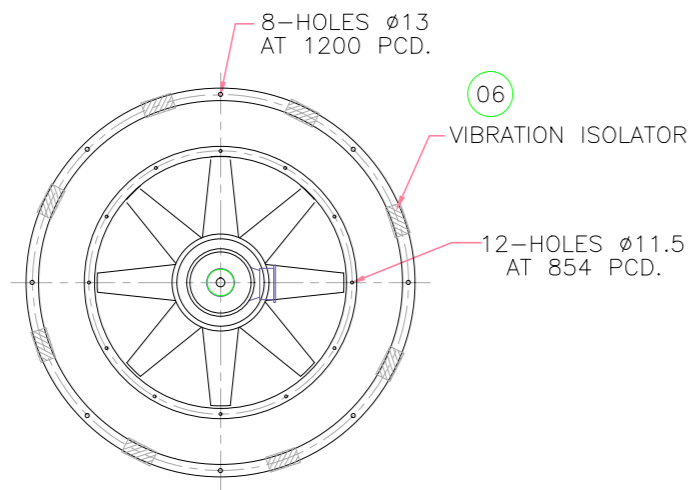
TECHNICAL DATA SHEET & GA DRAWING FOR ROOF EXHAUSTER ALONG WITH FIXING DETAILS

DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

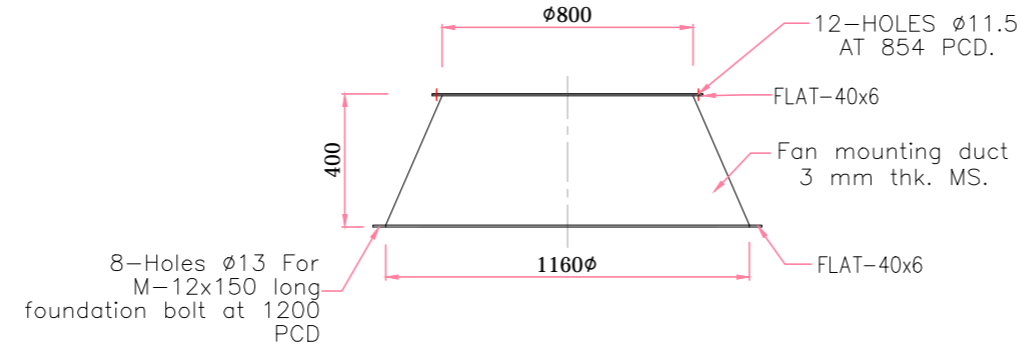
- NOTES:
- ALL EQUIPMENTS SHALL BE DESIGNED FOR CONTINUOUS DUTY.
  - ALL DIMENSIONS ARE IN MM, AND ELEVATIONS ARE IN MTRS, UNLESS OTHERWISE STATED.
  - FAN VIBRATION LEVEL SHALL BE AS PER ASO : 14694.
  - 13 MM THK. XLPE GASKET WILL BE PROVIDED BETWEEN FAN & TRANSITION HOOD TO AVOID ANY VIBRATION TRANSFER TO ROOF.
  - ITEM LISTED IN THE PART LIST FOR ONE FAN ONLY.
  - REFER APPROVED FAN SCHEDULE FOR FINAL R E FAN QTY.

AIR CAPACITY	: 20,000 CMH
FAN STATIC PRESSURE	: 15 (mmwc)
FAN STATIC LOAD	: 105 KG
DYNAMIC LOAD	: 150 KG

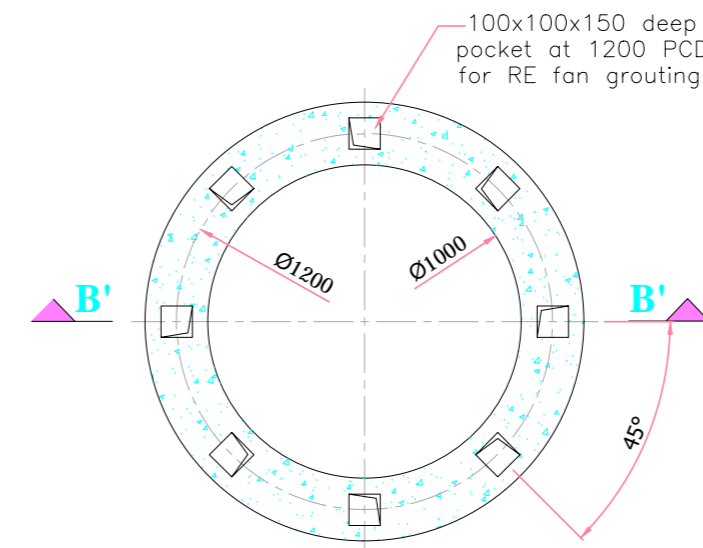
PART NO.	DESCRIPTION	SIZE	QTY.
06.	VIBRATION ISOLATOR	100x50x12	8 nos
05.	WIRE MESH (15 MM SQ.)	Ø800	2 nos
04.	ROOF EXHAUSTER COWL	Ø1200/Ø970	1 no
03.	TRANSITION DUCT/HOOD	Ø1160/Ø800	1 no
02.	MOTOR 2.2kW/6POLE	-	1 no
01.	ROOF EXTRACTOR FAN	AdTV-800/8B	1 no



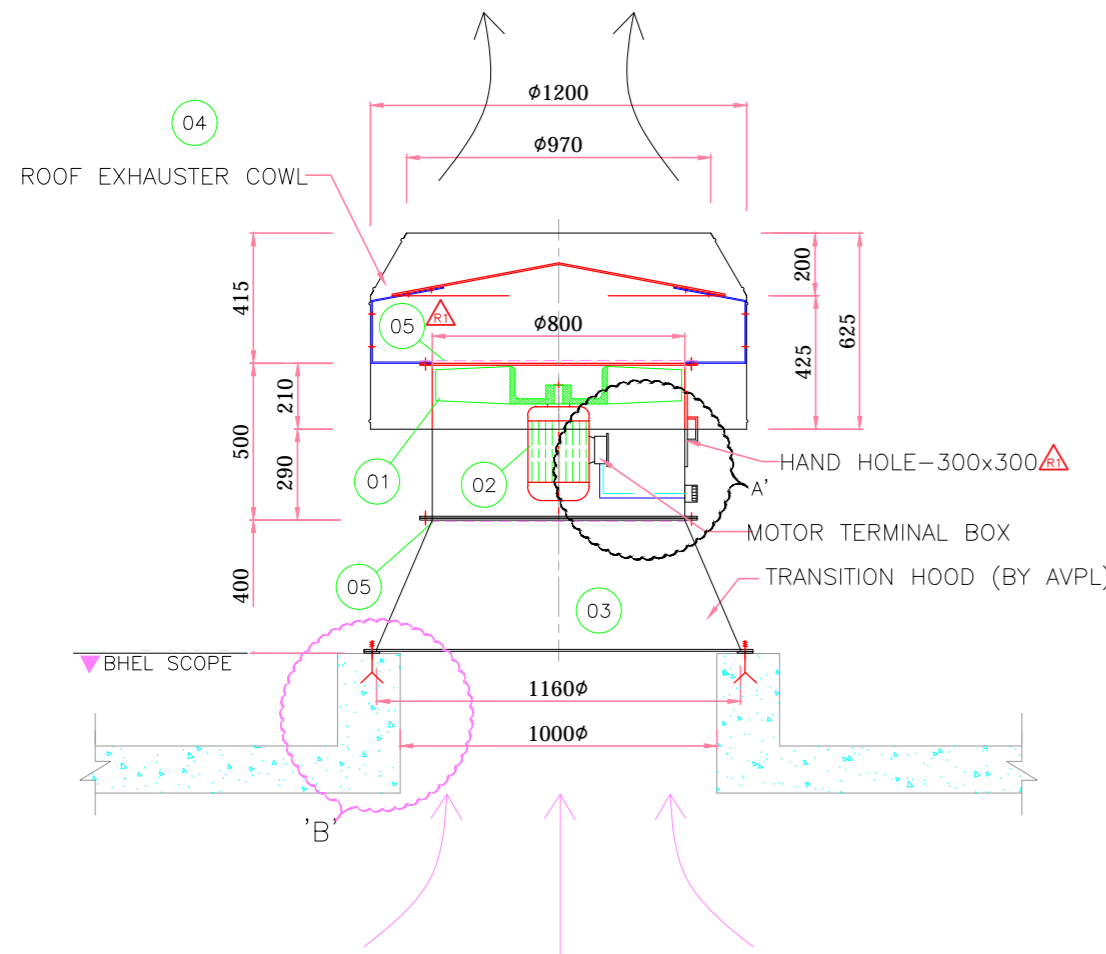
FAN TOP VIEW



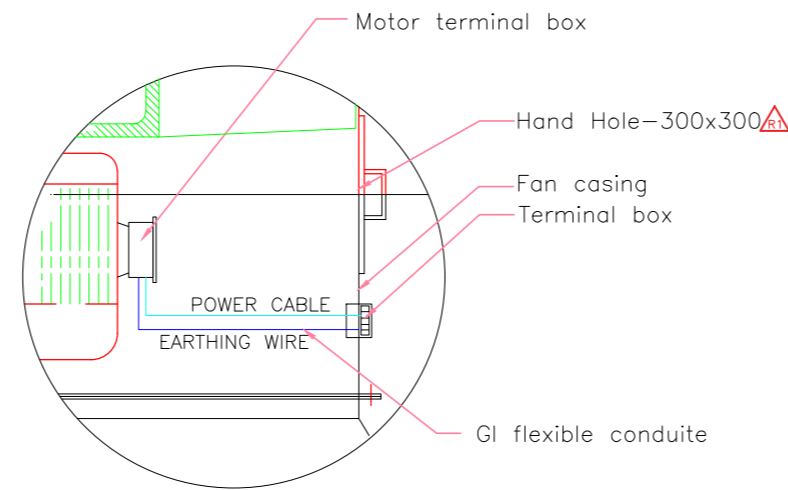
ROOF EXTRACTOR FAN MOUNTING DUCT DETAIL



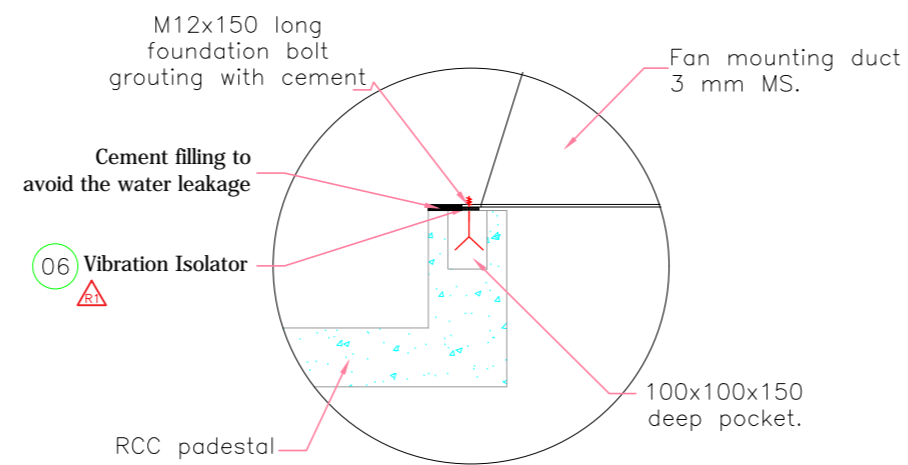
ROOF OPENING DETAIL FOR AdTV-800/8B



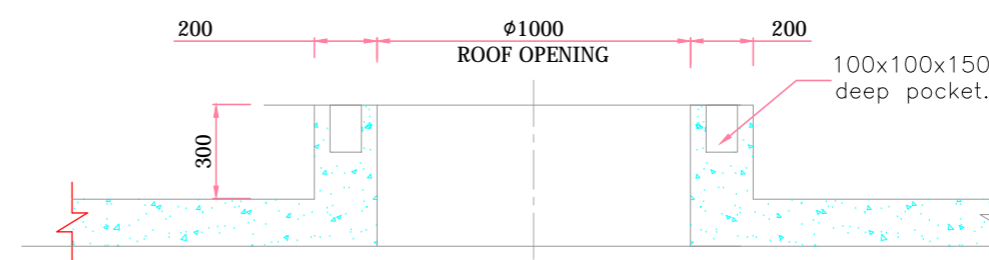
ELEVATION VIEW



DETAIL 'A'



DETAIL 'B'

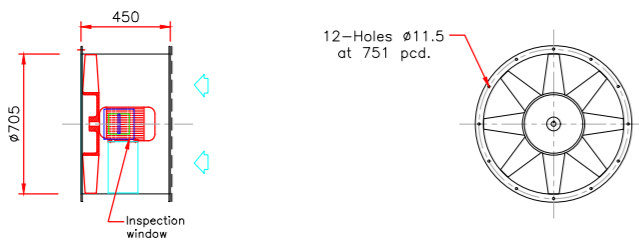


SECTION B'-B'

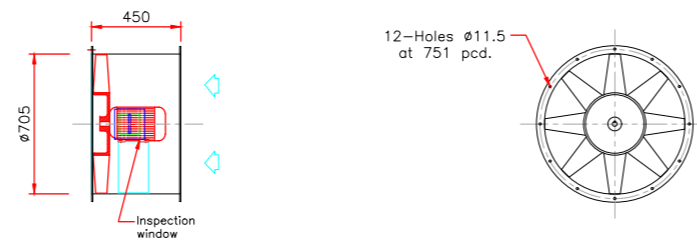
CUSTOMER	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
JOB NO.	417
STATUS	CONTRACT
DISTRIBUTION	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOLDA

REV.	DATE	ALTD	CHD	API	TITLE	SCALE	DRAWING NO.				
01.	13.07.21	HK	AG	SC	TECHNICAL DATA SHEET & GA DRAWING FOR ROOF EXHAUSTER ALONG WITH FIXING DETAILS		PE-VD-417-554-M010				
Client comments Incorporated					DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.
					H.K	A.G	SCY	SCY	08.03.2021	NTS	
SHEET 6 OF 14											
REV. 02											

Customer	Telangana State Power Generation & Corporation		Job Ref. No.	M21/DEL-069.BHEL			
Project	5 x 800 MW YADADRI		Date	15.02.2021			
Doc. No.	PE-VO-417-554-A010		Sheet	1			
Sr. No.	Description	Unit	Particulars				
1	Manufacturer						
2	Model No.		AdTV-700	AdTV-700	AdTV-600	AdTV-600	AdTV-450
3	Type of Fan		<b>Axial Flow Exhaust Fans with 10mm WC Static</b>				
4	Capacity	CMH	15000	10000	7500	6000	2000
5	Quantity		As per Approved Fan Schedule - PE-VO-417-554-A008				
6	Static pressure	mmWG	10	10	10	10	10
7	Total pressure	mmWG	14.8	12.5	12.5	11.6	11.5
8	Impeller Diameter	mm	700	700	600	600	450
9	Type of blade		Variable pitch Cast Aluminium blade				
10	No. of blade	Nos.	8	8	8	8	8
11	Blade angle	Degree	30	22.5	27.5	25	17.5
12	Drive Arrgt.		Impeller mounted directly on the motor shaft				
13	Fan/Impeller Speed	RPM	930	925	915	915	1360
14	Critical Speed	RPM	1162	1156	1143	1143	1700
15	Shaft Power at duty point	BkW	0.96	0.58	0.43	0.32	0.11
16	Fan Efficiency (Total)	%	64	60	60	60	60
17	Fan Efficiency (Static)	%	43	47	48	52	50
18	Bearing Type		Ball Bearing				
19	Selection curves enclosed (yes/No)		yes	yes	yes	yes	yes
20	Motor Data						
	a) Rating	kW/Pole	1.1/6	0.75/6	0.55/6	0.55/6	0.37/4
	b) Speed	RPM	930	925	915	915	1360
	c) Type of Mounting		B3				
	e) Direction of Rotation		Clockwise / Anti-clockwise				
21	Material						
	a) Impeller		Cast Aluminium				
	b) Casing		MS				
	c) Casing thickness (mm)		3				
	d) Shaft		Motor Shaft (EN-8)				
22	Accessories		Rain protection cowl, birdmesh				
23	Painting		As per specification				
24	Noise Level	dB(A)	≤ 85				
25	Vibration Level	mm/sec	≤ 5				
26	Inspection & Testing		As per approved QAP				



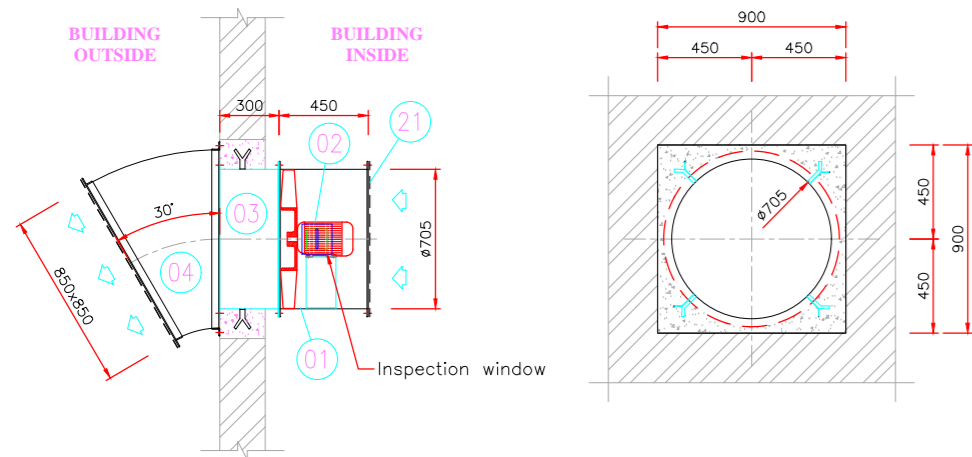
FAN SIDE VIEW IMPELLER END VIEW



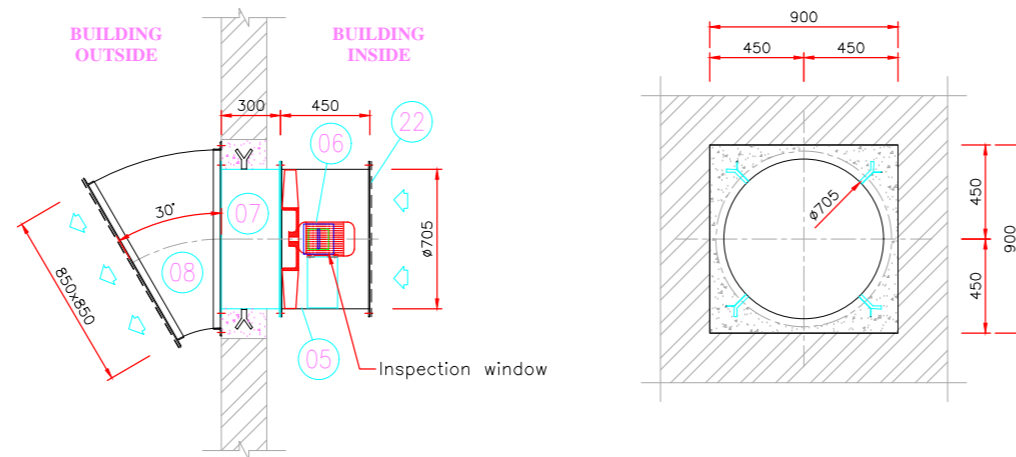
FAN SIDE VIEW IMPELLER END VIEW



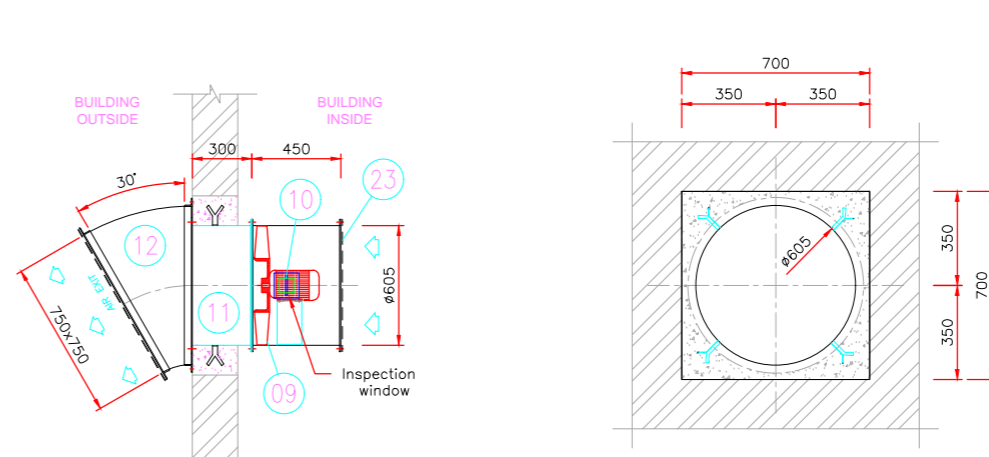
FAN SIDE VIEW IMPELLER END VIEW



FAN ASSY. DETAIL FAN SLEEVE GROUTING DETAIL

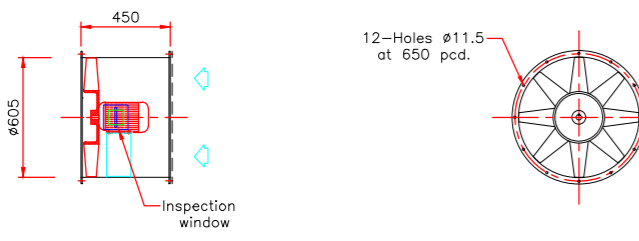


FAN ASSY. DETAIL FAN SLEEVE GROUTING DETAIL

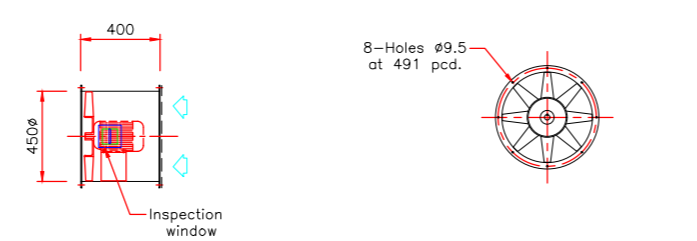


FAN ASSY. DETAIL FAN SLEEVE GROUTING DETAIL

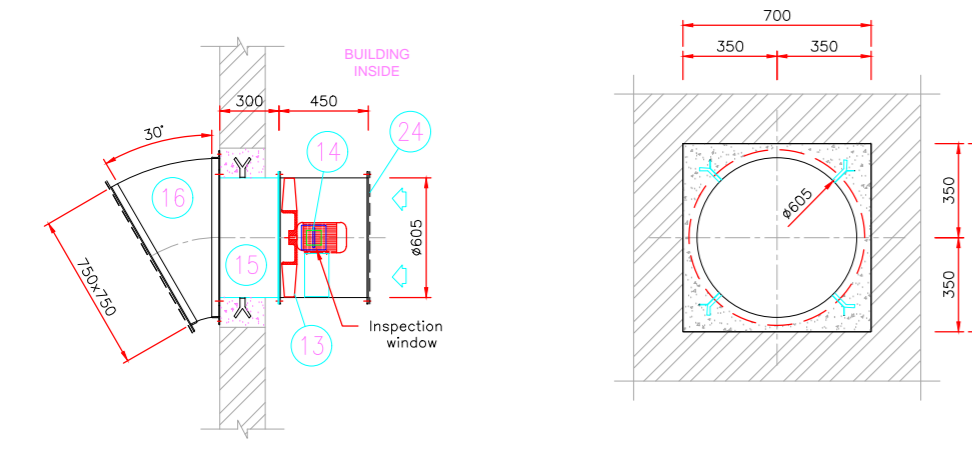
Air Capacity (CMH)	S.P. (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor Kw/Pole	Fan Dynamic Load (Kg.)	Air Capacity (CMH)	S.P. (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor Kw/Pole	Fan Dynamic Load (Kg.)	Air Capacity (CMH)	S.P. (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor Kw/Pole	Fan Dynamic Load (Kg.)
15,000	10	AdTV-700/8B	930	*	1.1/6	150	10,000	10	AdTV-700/8B	925	*	0.75/6	150	7,500	10	AdTV-600/8B	915	*	0.55/6	125



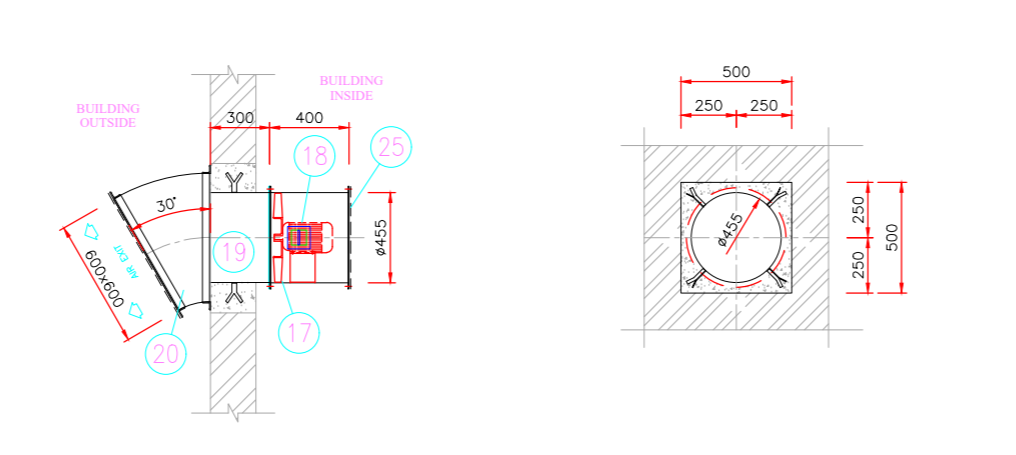
FAN SIDE VIEW IMPELLER END VIEW



FAN SIDE VIEW IMPELLER END VIEW



FAN ASSY. DETAIL FAN SLEEVE GROUTING DETAIL



FAN ASSY. DETAIL FAN SLEEVE GROUTING DETAIL

Air Capacity (CMH)	S.P. (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor Kw/Pole	Fan Dynamic Load (Kg.)	Air Capacity (CMH)	S.P. (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor Kw/Pole	Fan Dynamic Load (Kg.)
6,000	10	AdTV-600/8B	915	*	0.55/6	125	2,000	10	AdTV-450/8B	1360	*	0.37/4	60

REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

- NOTES:**
- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  - EXHAUST AIR FAN ASSEMBLY SUPPORTED ON THE FAN MOUNTING SLEEVE.
  - ITEM LISTED FOR ONE FAN ONLY.
  - FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  - SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

**6.Fan supports shall be in bidder's scope**

25.	BRD MESH AT FAN INLET : 455 #	1	GI
24.	BRD MESH AT FAN INLET : 605 #	1	GI
23.	BRD MESH AT FAN INLET : 605 #	1	GI
22.	BRD MESH AT FAN INLET : 705 #	1	GI
21.	BRD MESH AT FAN INLET : 705 #	1	GI
20.	AR DISCHARGE COWL : 600x600x307	1	GI
19.	FAN MOUNTING SLEEVE : #450x300 Long	1	M.S.
18.	MOTOR 0.37 KW/4 POLE	1	-
17.	TUBE AXIAL EXHAUST AIR FAN : AdTV-450/8B	1	M.S.
16.	AR DISCHARGE COWL : 750x750x307	1	GI
15.	FAN MOUNTING SLEEVE : #600x300 Long	1	M.S.
14.	MOTOR 0.55 KW/6 POLE	1	-
13.	TUBE AXIAL EXHAUST AIR FAN : AdTV-600/8B	1	M.S.
12.	AR DISCHARGE COWL : 750x750x307	1	GI
11.	FAN MOUNTING SLEEVE : #600x300 Long	1	M.S.
10.	MOTOR 0.55 KW/6 POLE	1	-
09.	TUBE AXIAL EXHAUST AIR FAN : AdTV-600/8B	1	M.S.
08.	AR DISCHARGE COWL : 850x850x307	1	GI
07.	FAN MOUNTING SLEEVE : #700x300 Long	1	M.S.
06.	MOTOR 0.75 KW/6 POLE	1	-
05.	TUBE AXIAL EXHAUST AIR FAN : AdTV-700/8B	1	M.S.
04.	AR DISCHARGE COWL : 850x850x307	1	GI
03.	FAN MOUNTING SLEEVE : #700x300 Long	1	M.S.
02.	MOTOR 1.1 KW/6 POLE	1	-
01.	TUBE AXIAL EXHAUST AIR FAN : AdTV-700/8B	1	M.S.

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR

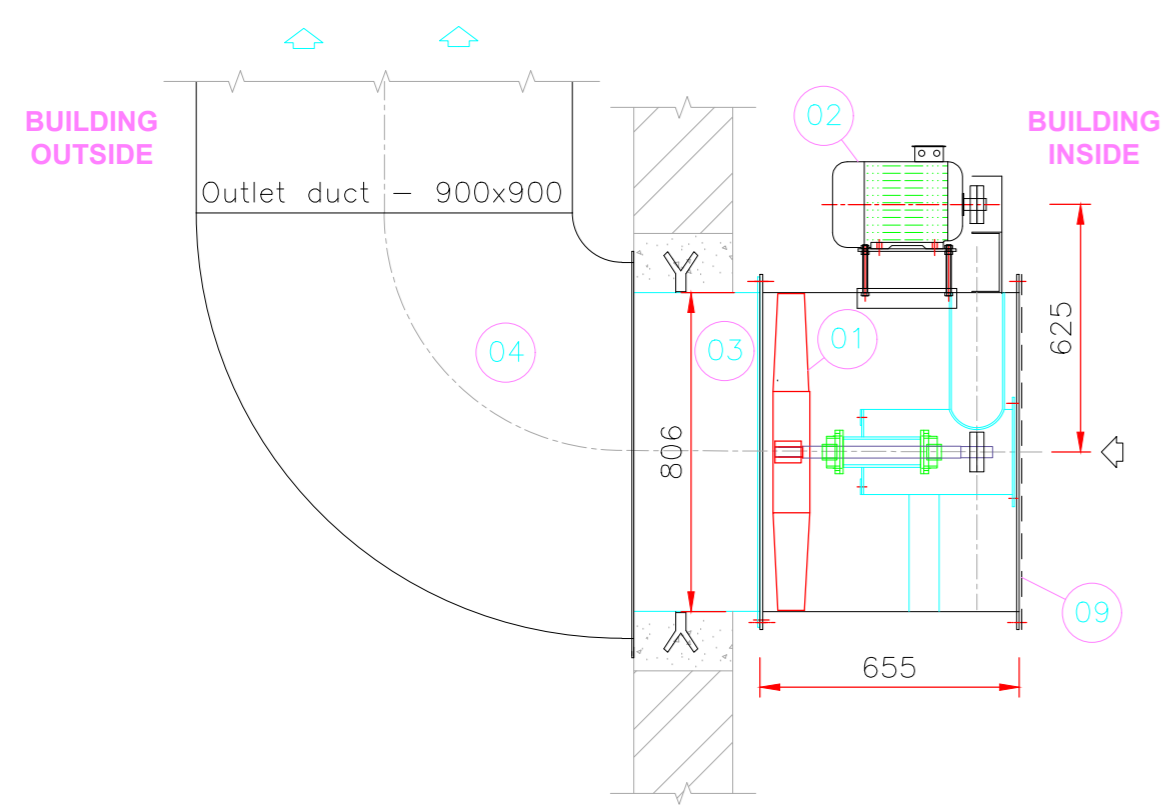
TITLE									
TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS									
DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.			
MUKLA	A.GAUR	A.GAUR	BCY	28-01-2021	NTS	PE-V0-417-554-A010			
						SHEET 1 OF 14   REV. 02			
						SIZE-A1			

Customer	Telangana State Power Generation & Corporation		Job Ref. No.	M21/DEL-069.BHEL					
Project	5 x 800 MW YADADRI		Date	15.02.2021					
Doc. No.	PE-V0-417-554-A010		Sheet	1					
Sr. No.	Description	Unit	Particulars						
1	Manufacturer								
2	Model No.		AdBFP-800	AdBFP-800	AdBFP-800	AdBFP-800	AdBFP-450	AdBFP-450	
3	Type of Fan		Axial Flow Exhaust Fans with 15mm WC Static						
4	Capacity	CMH	15000	10000	7500	6000	4000	2000	
5	Quantity		As per Approved Fan Schedule - PE-V0-417-554-A008						
6	Static pressure	mmWG	15	15	15	15	15	15	
7	Total pressure	mmWG	19.5	18	16.5	16.5	17.8	16.1	
8	Impeller Diameter	mm	800	800	800	800	450	450	
9	Type of blade		Variable pitch Cast Aluminium blade						
10	No. of blade	Nos.	8	8	8	8	6	6	
11	Blade angle	Degree	22.5	17.5	17.5	17.5	34	23.5	
12	Drive Arrgt.		Bifurcated type						
13	Fan/Impeller Speed	RPM	960	935	930	930	1405	1405	
14	Critical Speed	RPM	1200	1168	1160	1160	1756	1756	
15	Shaft Power at duty point	BkW	1.35	0.83	0.60	0.42	0.37	0.20	
16	Fan Efficiency (Total)	%	60	60	57	57	53	44	
17	Fan Efficiency (Static)	%	46	50	52	52	45	41	
18	Bearing Type		Ball Bearing						
19	Selection curves enclosed (yes/No)		yes	yes	yes	yes	yes	yes	
20	Motor Data								
	a) Rating	kW/Pole	2.2/6 (FLP)	1.5/6 (FLP)	1.1/6 (FLP)	0.75/6 (FLP)	0.55/4 (FLP)	0.55/4 (FLP)	
	b) Speed	RPM	960	935	930	930	1405	1405	
	c) Type of Mounting		B3						
	e) Direction of Rotation		Clockwise / Anti-clockwise						
21	Material								
	a) Impeller		Cast Aluminium						
	b) Casing		MS						
	c) Casing thickness (mm)		5				3		
	d) Shaft		Motor Shaft (EN-8)						
22	Accessories		Rain protection cowl, birdmesh						
23	Painting		As per specification						
24	Vibration Level	mm/sec	≤ 5						
25	Noise Level	dB(A)	≤ 85						
26	Inspection & Testing		As per approved QAP						

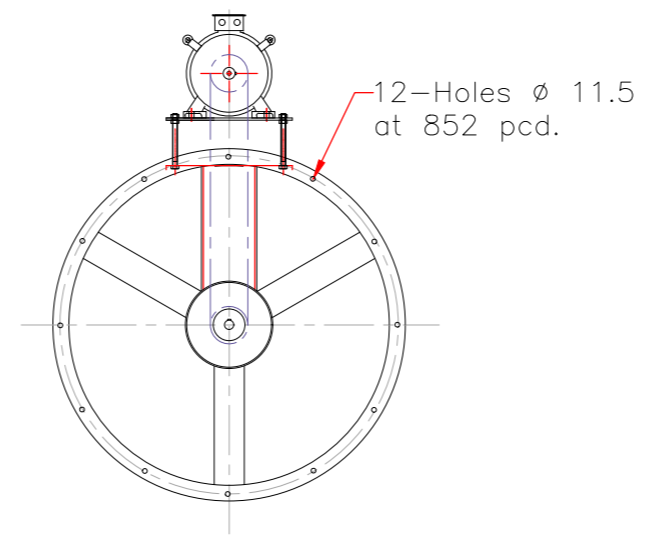


Project	5 x 800 MW YADADRI	Date	15.02.2021	
Doc. No.	PE-V0-417-554-A010	Sheet	1	
Sr. No.	Description	Unit	Particulars	
1	Manufacturer			
2	Model No.		AdTV-800	AdTV-800
3	Type of Fan		Axial Fans with 25mm WC Static	
4	Capacity	CMH	20000	15000
5	Quantity		As per Approved Fan Schedule - PE-V0-417-554-A008	
6	Static pressure (Required)	mmWG	25	25
7	Static pressure (Selection)	mmWG	30	30
8	Total pressure	mmWG	36	35.5
9	Impeller Diameter	mm	800	800
10	Type of blade		Variable pitch Cast Aluminium blade	
11	No. of blade	Nos.	8	8
12	Blade angle	Degree	22.5	15
13	Drive Arrgt.		Impeller mounted directly on the motor shaft	
14	Fan/Impeller Speed	RPM	1430	1430
15	Critical Speed	RPM	1787	1787
16	Shaft Power at duty point	BkW	2.64	2.47
17	Fan Efficiency (Total)	%	60	60
18	Fan Efficiency (Static)	%	50	50
19	Bearing Type		Ball Bearing	
20	Selection curves enclosed (yes/No)		yes	yes
21	Motor Data			
	a) Rating	kW/Pole	3.7/4	3.7/4
	b) Speed	RPM	1430	1430
	c) Type of Mounting		B3	
	e) Direction of Rotation		Clockwise / Anti-clockwise	
22	Material			
	a) Impeller		Cast Aluminium	
	b) Casing		MS	
	c) Casing thickness (mm)		5	5
23	Accessories		Rain protection cowl, birdmesh	
24	Painting		As per specification	
25	Vibration Level	mm/sec.	≤ 5	
26	Noise Level	dB(A)	≤ 85	
27	Inspection & Testing		As per approved QAP	

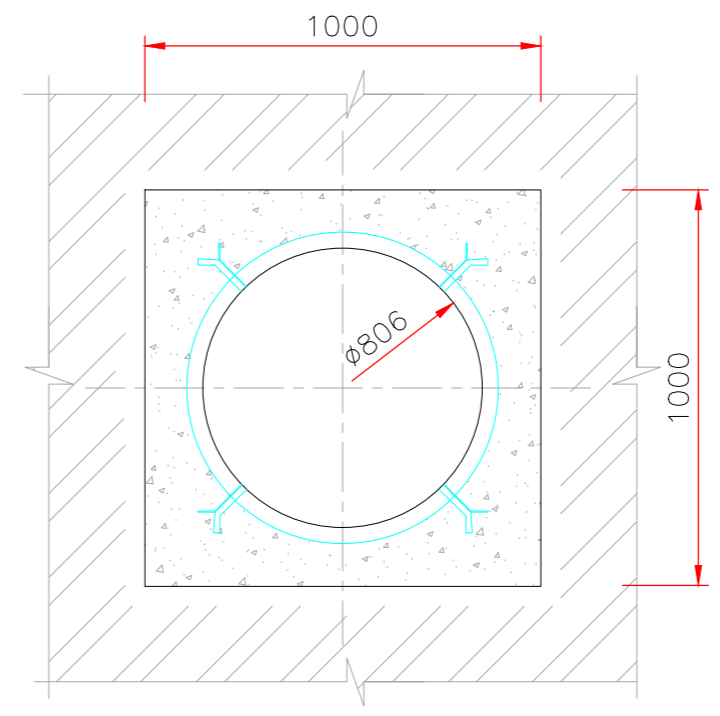
REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE



FAN ASSEMBLY DETAIL



DRIVE END VIEW

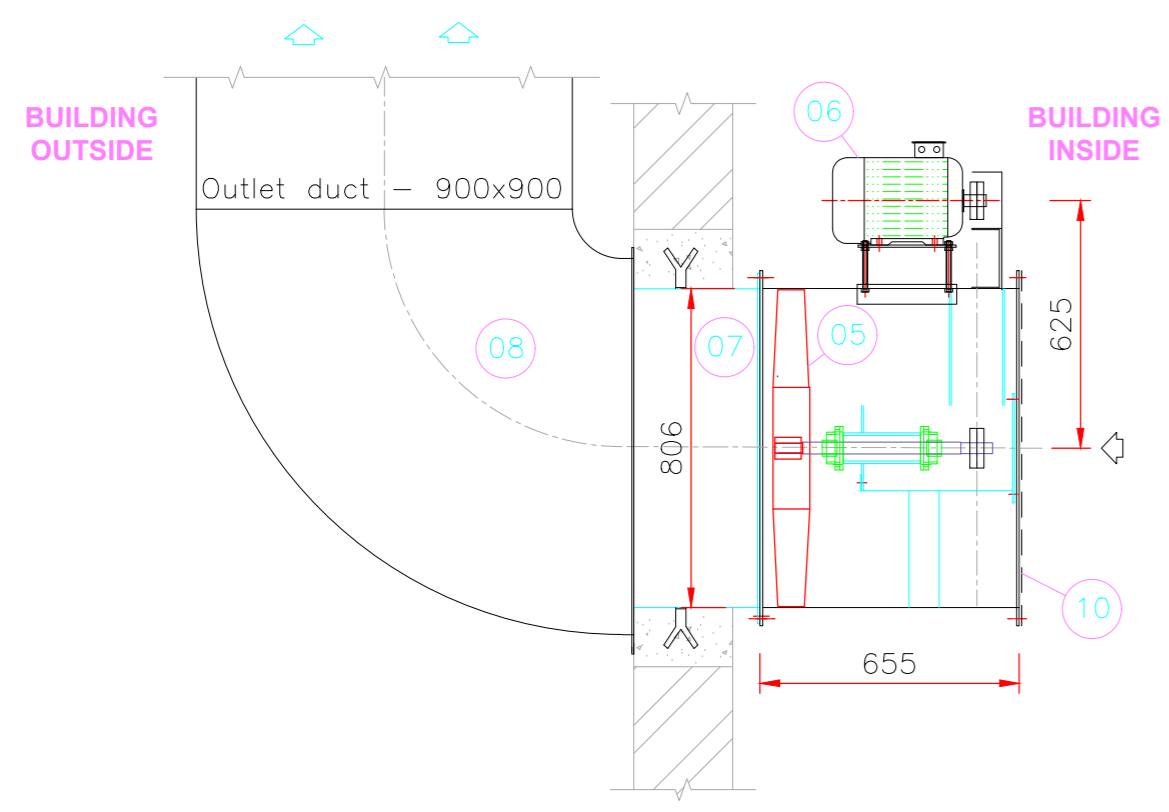


FAN GROUTING DETAILS

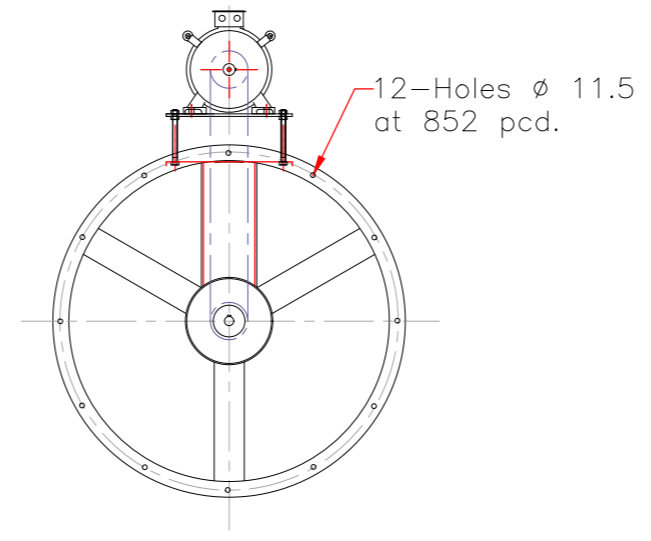
- NOTES:**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  2. EXHAUST AIR FAN ASSEMBLY SUPPORTED ON THE FAN MOUNTING SLEEVE.
  3. ITEM LISTED FOR ONE FAN ONLY.
  4. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  5. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.
  6. COWL WITH BIRD MESH SHALL BE PROVIDED AT AIR DISCHARGE

7. Fan supports shall be in bidder's scope

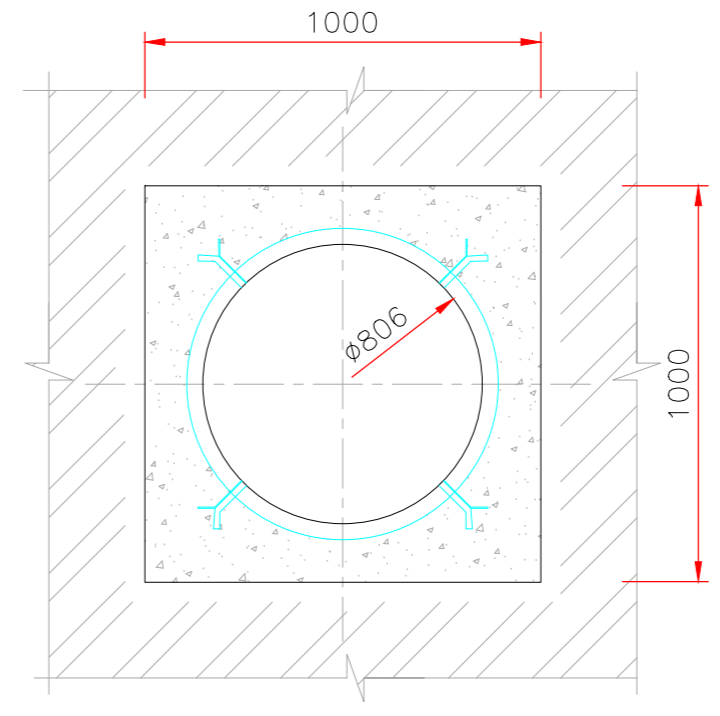
Air Capacity (CMH)	SP (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor (Kw/Pole)	Fan Dynamic Load (Kg.)	Motor Pulley	Fan Pulley	V-Belts
20,000	25	AdTV-800/8B	1420	*	3.7/4P FLP	165	95 x 2 SPA	95 x 2 SPA	1550 x 2 SPA



FAN ASSEMBLY DETAIL



DRIVE END VIEW



FAN GROUTING DETAILS

PART NO.	DESCRIPTION	QTY	MATLS/MAKE
10.	BIRD MESH AT FAN INLET : 806 ø	1	GI
09.	BIRD MESH AT FAN INLET : 806 ø	1	GI
08.	AIR DISCHARGE COWL : 900x900x307	1	GI
07.	FAN MOUNTING SLEEVE : ø800x300 Long	1	M.S.
06.	MOTOR 3.7 KW/4 POLE (FLP)	1	-
05.	TUBE AXIAL EXHAUST AIR FAN : AdTV-800/8B	1	M.S.
04.	AIR DISCHARGE COWL : 900x900x307	1	GI
03.	FAN MOUNTING SLEEVE : ø800x300 Long	1	M.S.
02.	MOTOR 3.7 KW/4 POLE (FLP)	1	-
01.	TUBE AXIAL EXHAUST AIR FAN : AdTV-800/8B	1	M.S.

**CUSTOMER:** TELANGANA STATE POWER GENERATION CORPORATION LTD  
 TELANGANA, INDIA  
 5x800 MW YADADRI TPS, NALGONDA

**CONSULTANT:** TATA CONSULTING ENGINEERS LIMITED  
 BANGALORE INDIA

**POWER SECTOR**  
 BHARAT HEAVY ELECTRICALS LTD  
 POWER SECTOR  
 PROJECT ENGINEERING MANAGEMENT

Air Capacity (CMH)	SP (mmWC)	Fan Model	Fan Speed (RPM)	Qty. (Nos.)	Motor (Kw/Pole)	Fan Dynamic Load (Kg.)	Motor Pulley	Fan Pulley	V-Belts
15,000	25	AdTV-800/8B	1420	*	3.7/4P FLP	165	95 x 2 SPA	95 x 2 SPA	1550 x 2 SPA

**TITLE:** VENTILATION DUCTING LAYOUT FGD CONTROL BUILDING UNIT 1 & 2

DRWING NO. PE-V0-417-554-A010  
 SHEET 2 OF 14 | REV. 02

Customer	Telangana State Power Generation & Corporation		Job Ref. No.	M21/DEL-069.BHEL			
Project	5 x 800 MW YADADRI		Date	15.02.2021			
Doc. No.	PE-VO-417-554-A010		Sheet	1			
Sr. No.	Description	Unit	Particulars				
1	Manufacturer						
2	Model No.		AdTV-900	AdTV-900	AdTV-900	AdTV-900	
3	Type of Fan		Axial Flow Supply Fans with 20mm WC Static				
4	Capacity	CMH	10000	7500	6000	4000	
5	Quantity		As per Approved Fan Schedule - PE-VO-417-554-A008				
6	Static pressure	mmWG	20	20	20	20	
7	Total pressure	mmWG	21.5	21	20.6	20.3	
8	Impeller Diameter	mm	900	900	900	900	
9	Type of blade		Variable pitch Cast Aluminium blade				
10	No. of blade	Nos.	8	8	6	6	
11	Blade angle	Degree	25	21.5	28.5	25	
12	Drive Arrgt.		Impeller mounted directly on the motor shaft				
13	Fan/Impeller Speed	RPM	935	930	930	925	
14	Critical Speed	RPM	1168	1160	1160	1156	
15	Shaft Power at duty point	BkW	1.05	0.86	0.71	0.45	
16	Fan Efficiency (Total)	%	57	50	47	50	
17	Fan Efficiency (Static)	%	53	48	46	49	
18	Bearing Type		Ball Bearing				
19	Selection curves enclosed (Yes/No)		yes	yes	yes	yes	
20	Motor Data						
	a) Rating	kW/Pole	1.5/6	1.1/6	1.1/6	0.75/6	
	b) Speed	RPM	935	930	930	925	
	c) Type of Mounting		B3				
	e) Direction of Rotation		Clockwise / Anti-clockwise				
20	Material						
	a) Impeller		Cast Aluminium				
	b) Casing		MS				
	c) Casing thickness (mm)		5				
	d) Shaft		Motor Shaft (EN-8)				
21	Accessories		Rain protection cowl, birdmesh				
22	Filter						
	21.1 Filter type		Pre-filter				
	a) Filter size		610 x 610 x 50 & 610x305x50				
	b) No. of filters		4	2+2	2+2	2	
	c) Filter efficiency		90% down to 10 Micron				
23	Painting		As per specification				
24	Vibration Level	mm/sec	≤ 5				
25	Noise Level	dB(A)	≤ 85				
26	Inspection & Testing		As per approved QAP				

DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

NOTES:

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
2. ITEM LISTED FOR ONE FAN ONLY.
3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

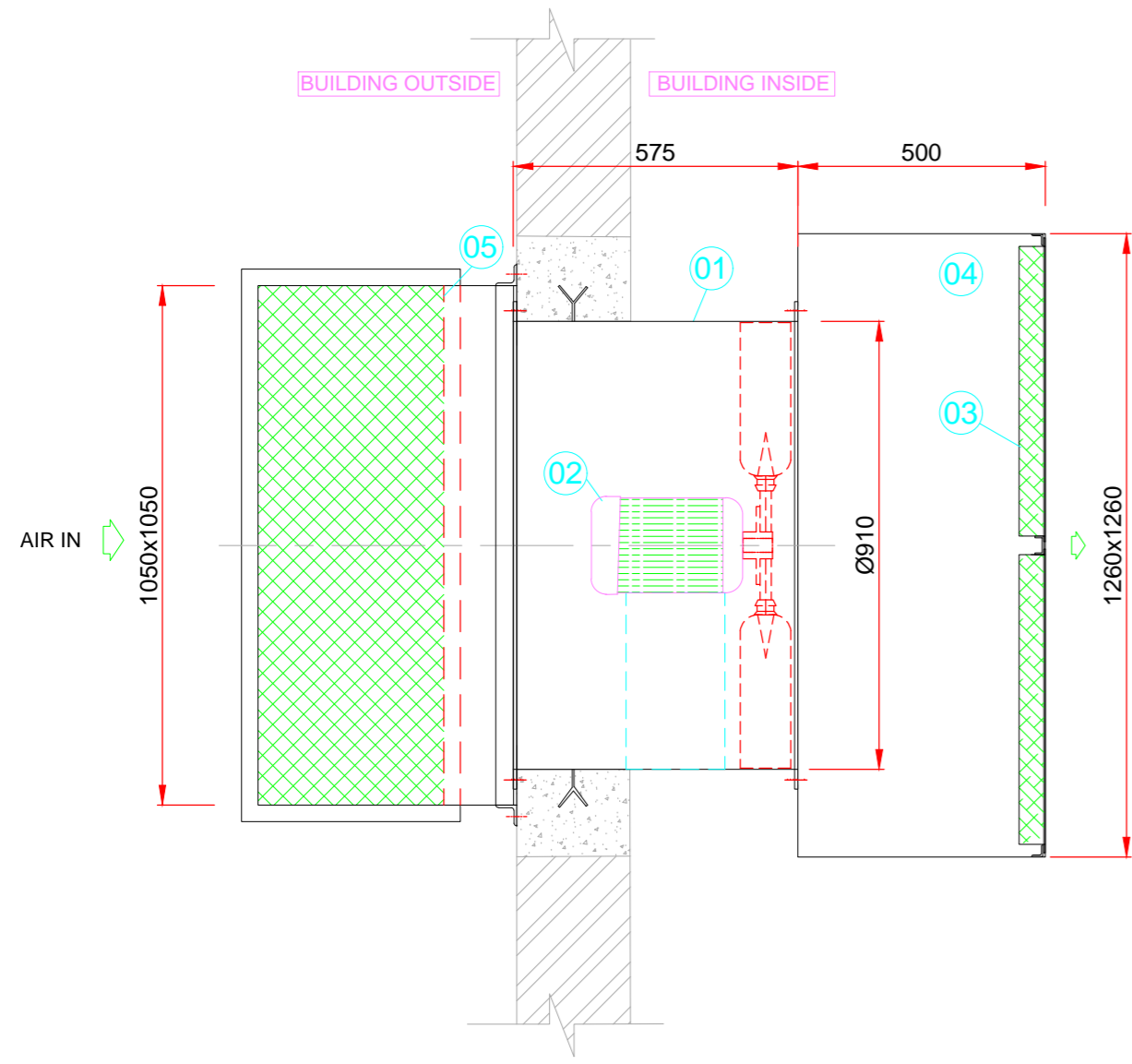
5. Fan supports shall be in bidder's scope

Air Capacity (GMH) - 10,000 CMH
Static Pressure - 20 MMWG
Fan Static Load - 120 Kg.
Fan Operating Load - 150 Kg.

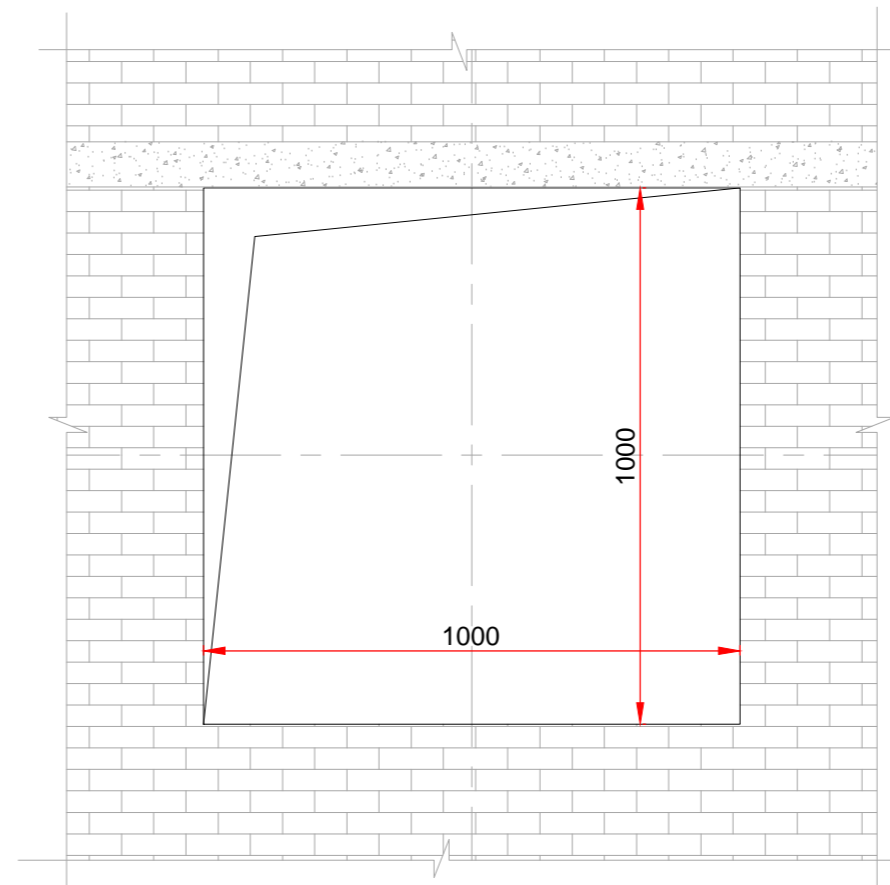
PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
06.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
05.	COWL WITH BIRDMENSH	950x950	1	GI
04.	FILTER BOX	1260x1260x500	1	GI
03.	PRE- FILTER (FLANGE TYPE)	610x610x50	4	-
02.	MOTOR 1.5kw/6POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-900/8B	1	-

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA
	ADVANCE VENTILATION PRIVATE LIMITED KHASRA NO. 22/2/11&2, 22/2/2, 1&2 NATHURPUR INDUSTRIAL AREA (SONEPAT)

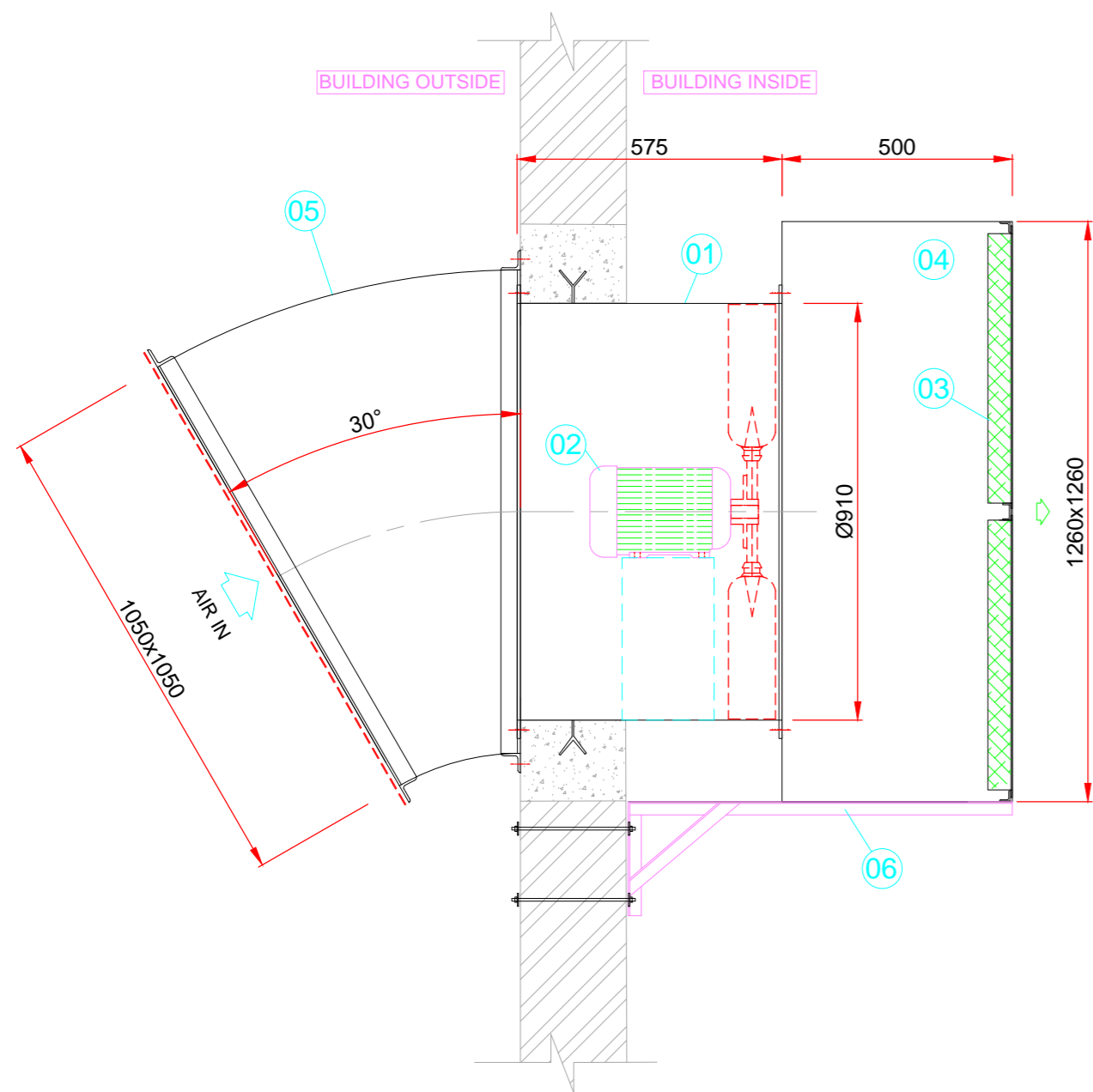
DRN	DESIGN	CHK	APPD	DATE	SCALE	DRAWING NO.
MUKLA	A.GAJR	A.GAJR	BCY	28-01-2021	NTS	PE-V0-417-554-A010
						SHEET 7 OF 14
						REV. 02
						SIZE A1



TOP VIEW

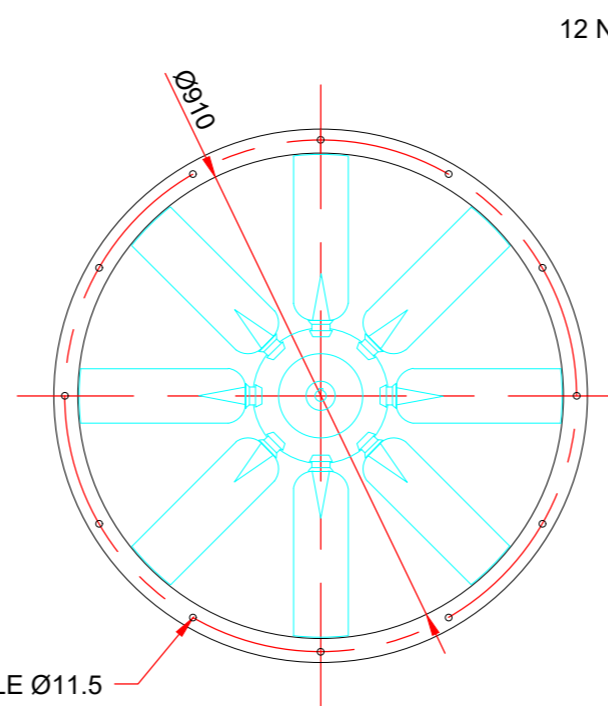


WALL OPENING DETAILS

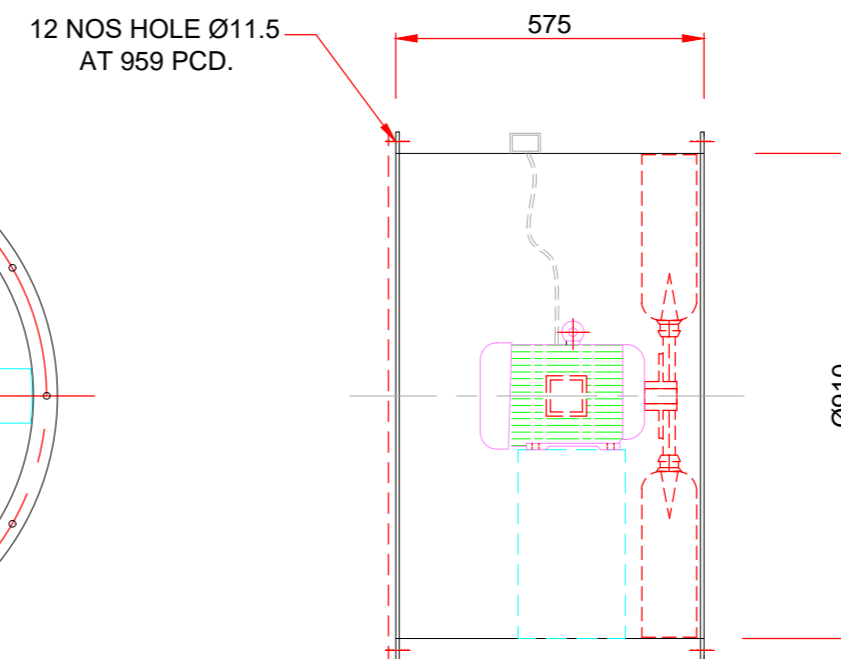


SIDE ELEVATION

AdTV-900/8 B



IMPELLER END VIEW



FAN ASSEMBLY

15	DOCUMENT / DRAWING NO.	16	DOCUMENT / DRAWING TITLE	17

**NOTES:**

1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
2. ITEM LISTED FOR ONE FAN ONLY.
3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

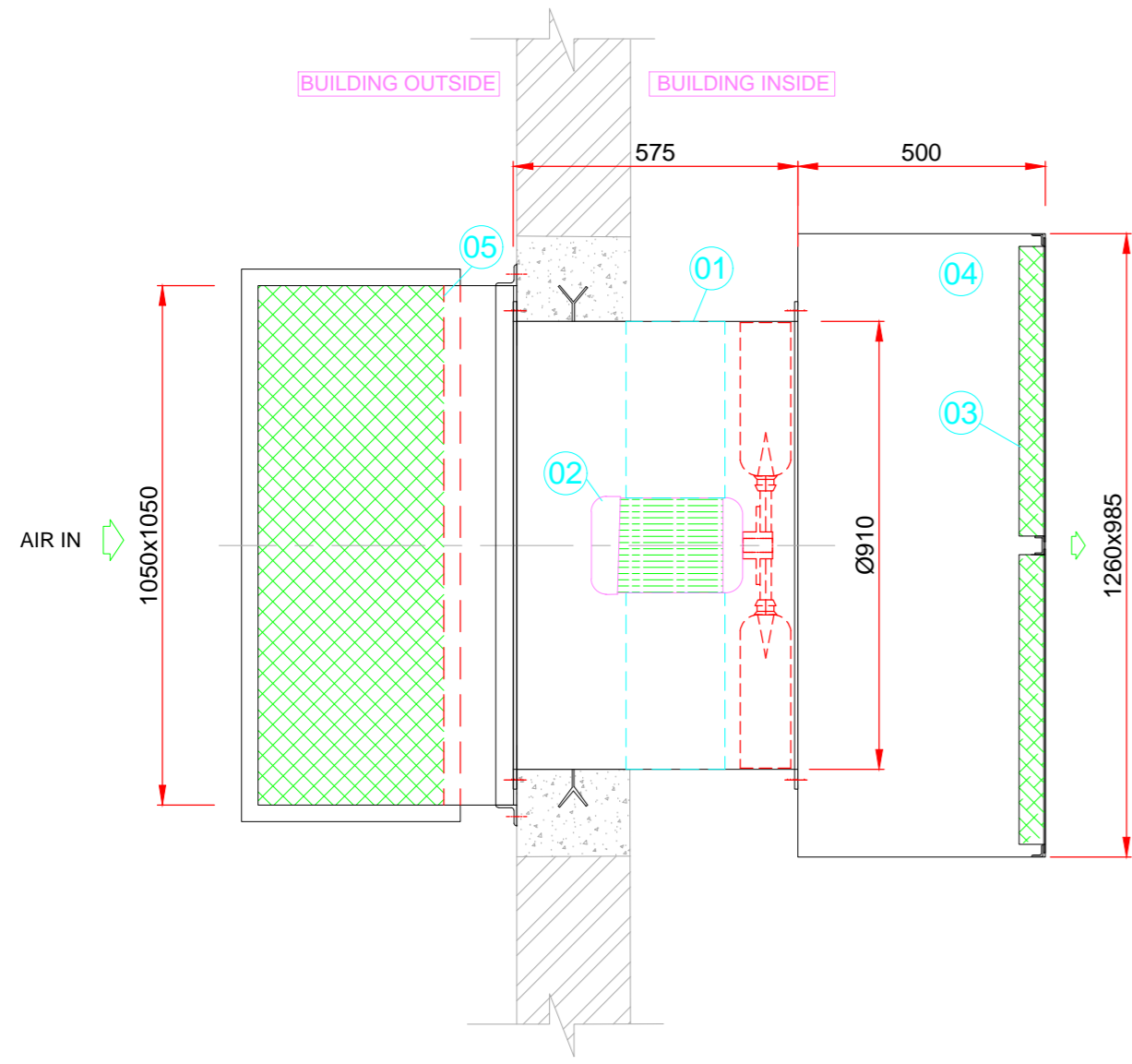
**5. Fan supports shall be in bidder's scope**

Air Capacity (CMH) - 7,500 CMH
Static Pressure - 20 MMWG
Fan Static Load - 120 Kg.
Fan Operating Load - 150 Kg.

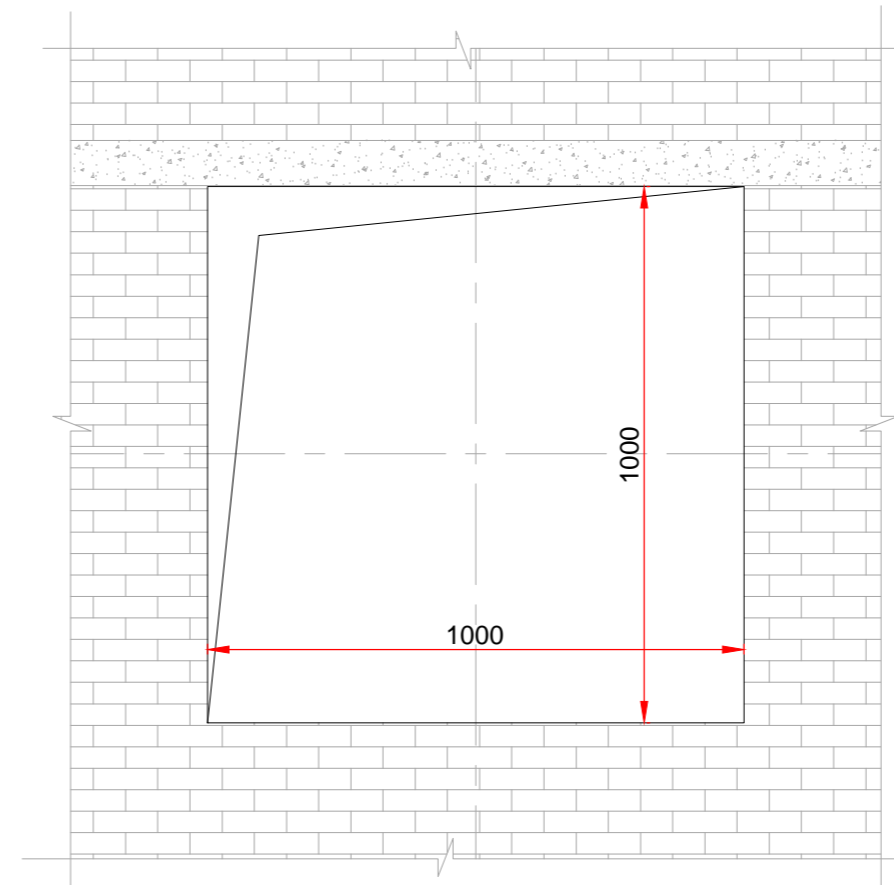
PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
06.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
05.	COWL WITH BIRDMENSH	950x950	1	GI
04.	FILTER BOX	1260x950x500	1	GI
03.	PRE-FILTER (FLANGE TYPE)	610x610x50 610x305x50	2 2	-
02.	MOTOR 1.1kw/6POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-900/8B	1	-

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

TITLE					TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS				
DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.		REV.	
MUKLA	A.GAJAR	A.GAJAR	BCY	28-01-2021	NTS	PE-V0-417-554-A010		02	
ELECTRONIC FILE NAME :						SHEET		8 OF 14	
ELECTRONIC FILE NAME :						SIZE		A1	

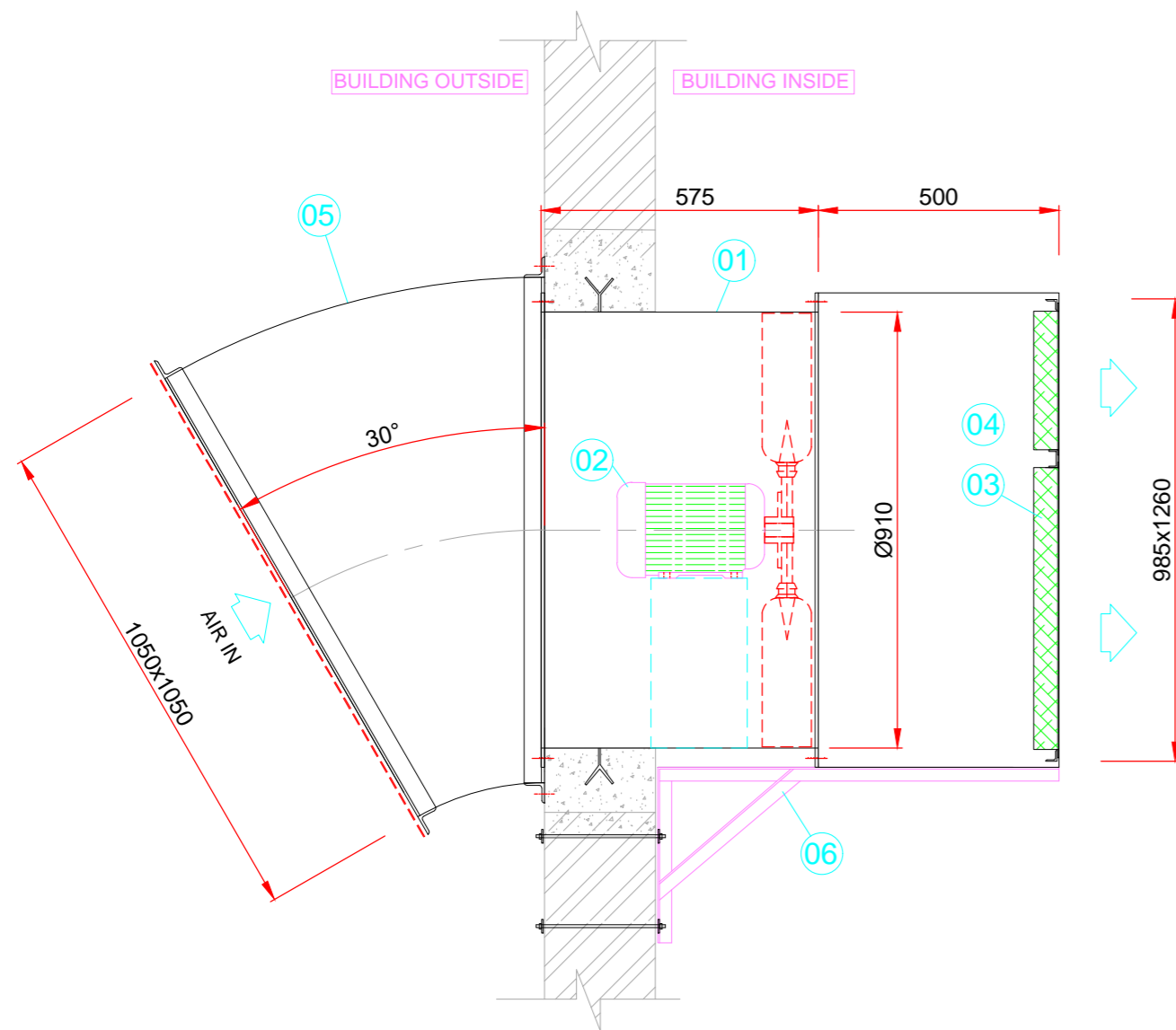


TOP VIEW

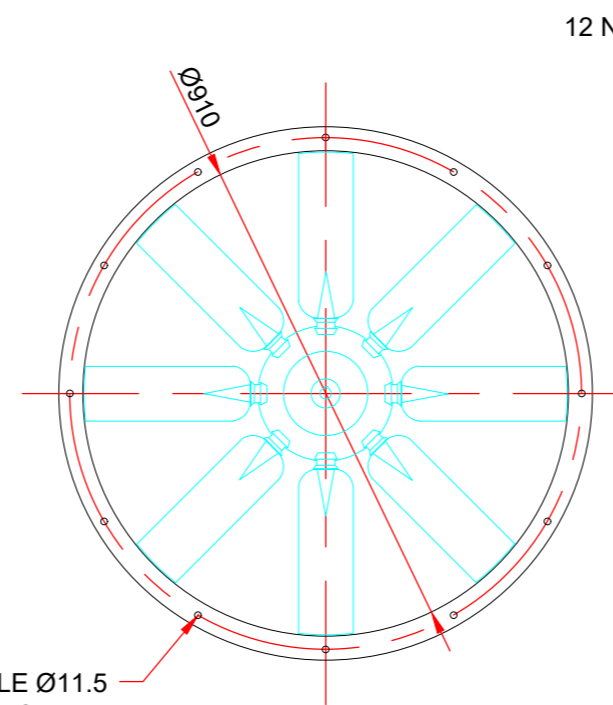


WALL OPENING DETAILS

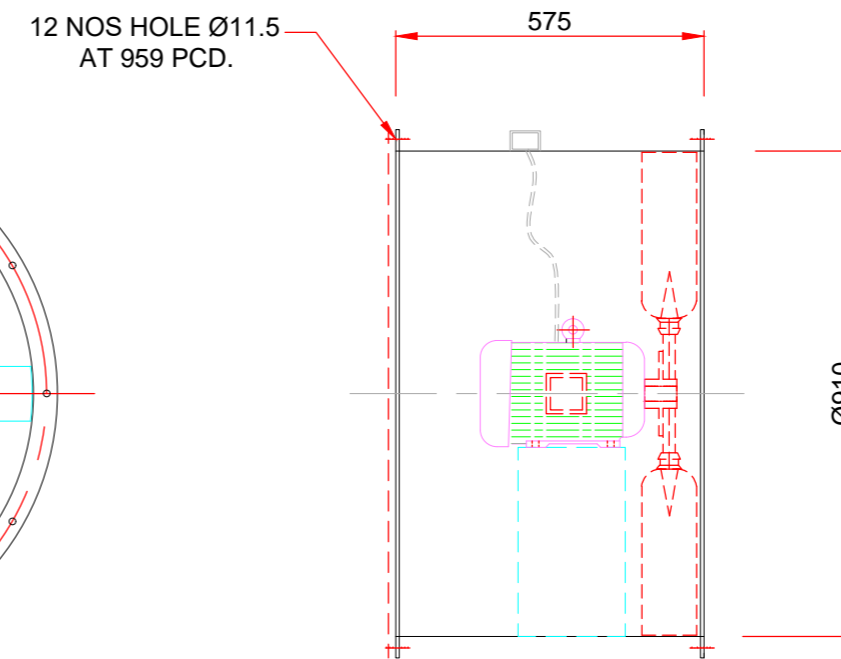
AdTV-900/8 B



SIDE ELEVATION



IMPELLER END VIEW



FAN ASSEMBLY

PE-V0-417-554-A010-05

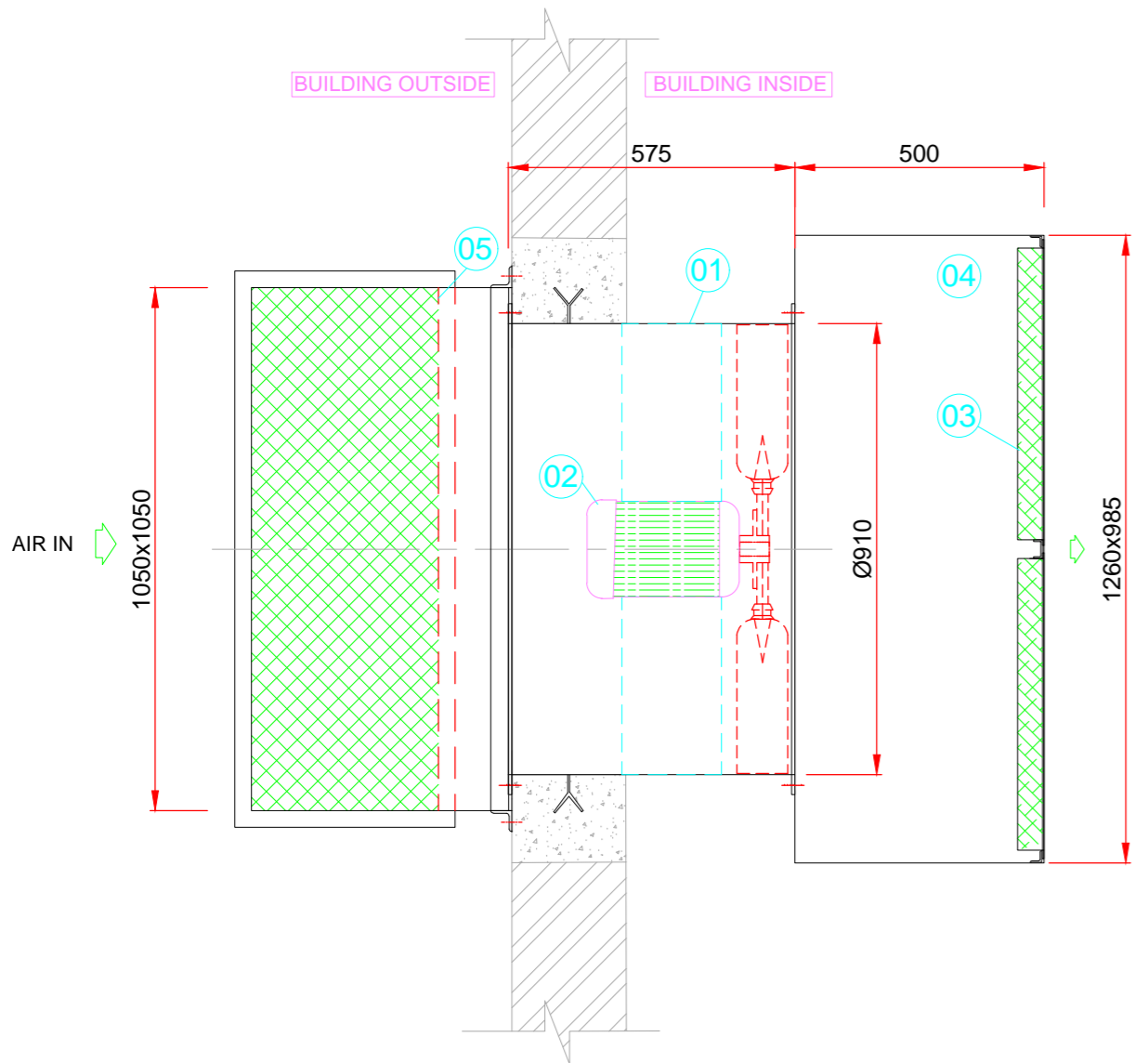
15	DOCUMENT / DRAWING NO.	16	DOCUMENT / DRAWING TITLE	17

- NOTES:**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  2. ITEM LISTED FOR ONE FAN ONLY.
  3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

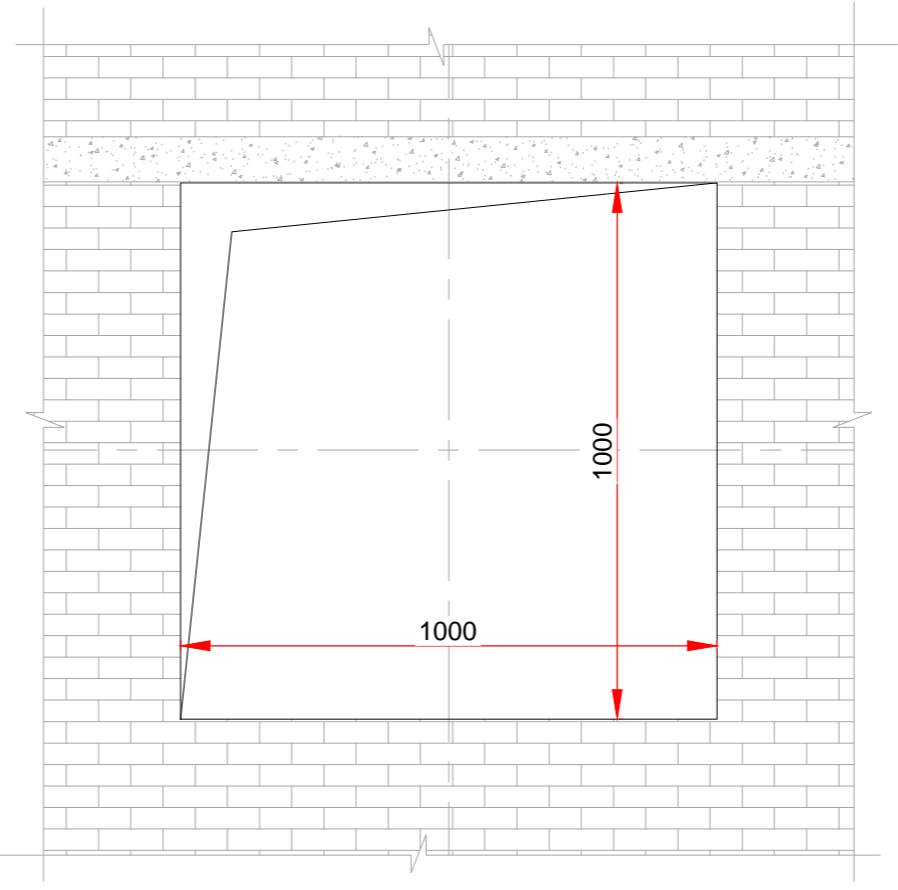
5. Fan supports shall be in bidder's scope

Air Capacity (CMH) - 6,000 CMH
Static Pressure - 20 MMWG
Fan Static Load - 120 Kg.
Fan Operating Load - 150 Kg.

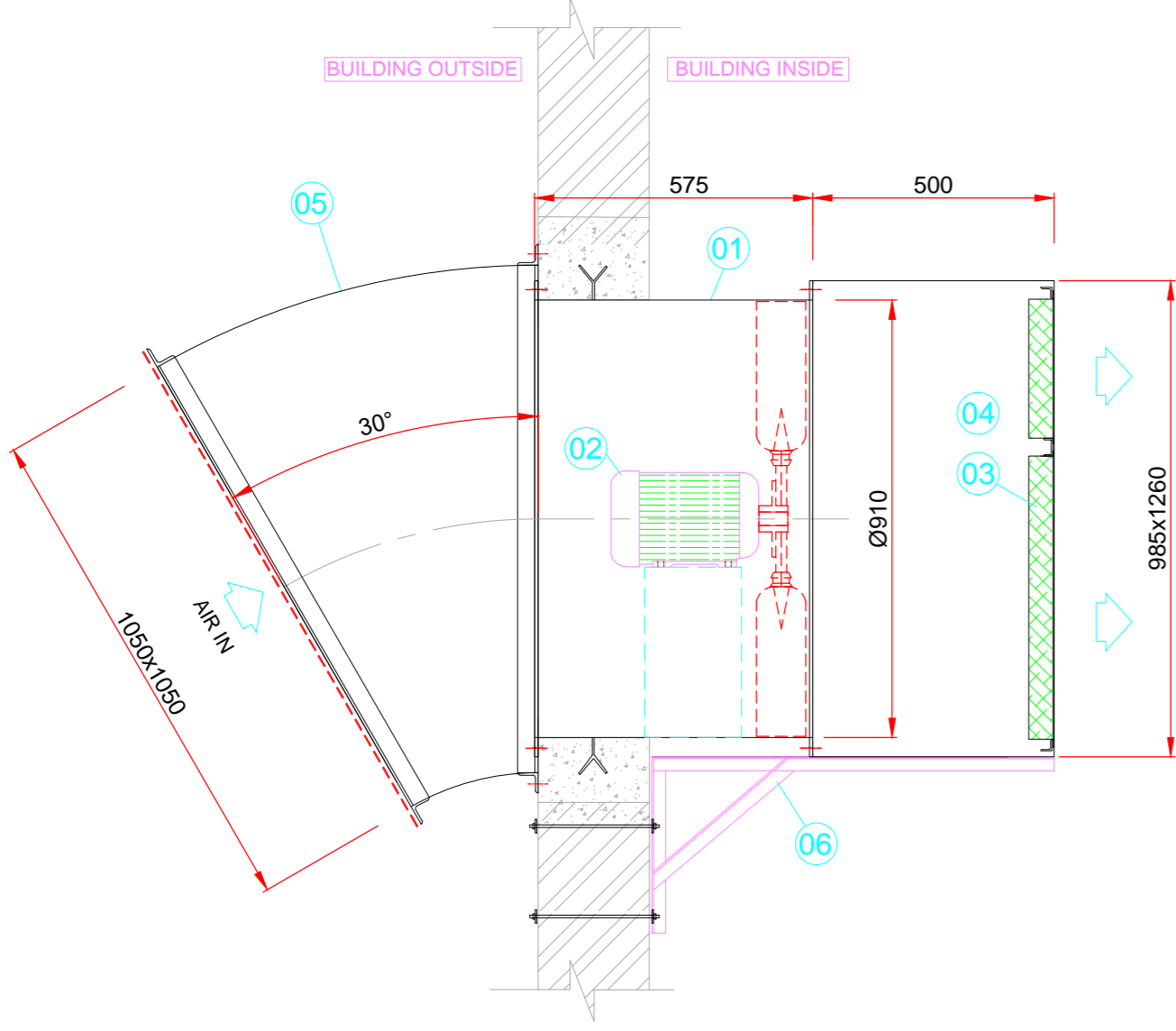
06.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
05.	COWL WITH BIRDMENSH	950x950	1	GI
04.	FILTER BOX	1260x1260x500	1	GI
03.	PRE-FILTER (FLANGE TYPE)	610x610x50 610x305x50	2	-
02.	MOTOR 1.1kw/6POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-900/6B	1	-
PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE



TOP VIEW

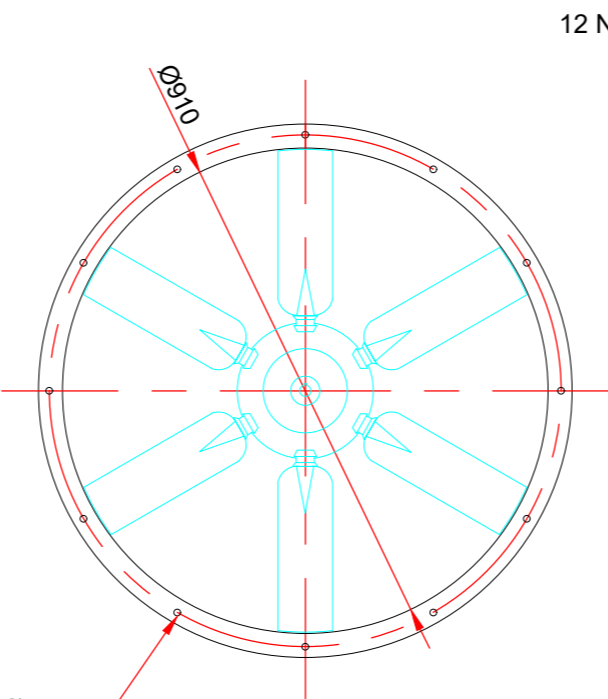


WALL OPENING DETAILS



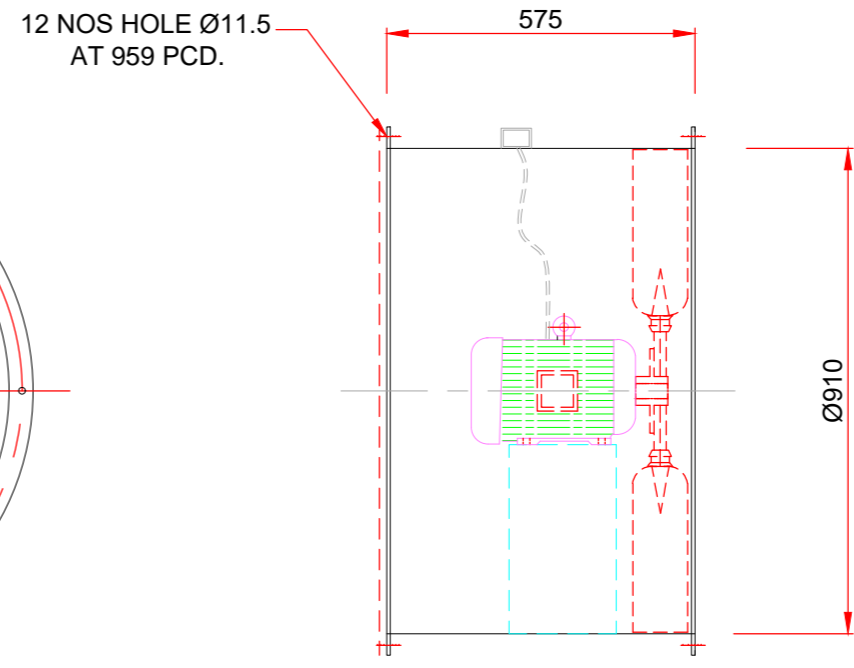
SIDE ELEVATION

AdTV-900/6 B



12 NOS HOLE Ø11.5 AT 959 PCD.

IMPELLER END VIEW



FAN ASSEMBLY

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

TITLE					TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS				
DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.		REV.	
MUKHA	A.GAJAR	A.GAJAR	BCY	29-01-2021	NTS	PE-V0-417-554-A010		SHEET 9 OF 14	
							REV. 02		SIZE A1

REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

- NOTES:**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  2. ITEM LISTED FOR ONE FAN ONLY.
  3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

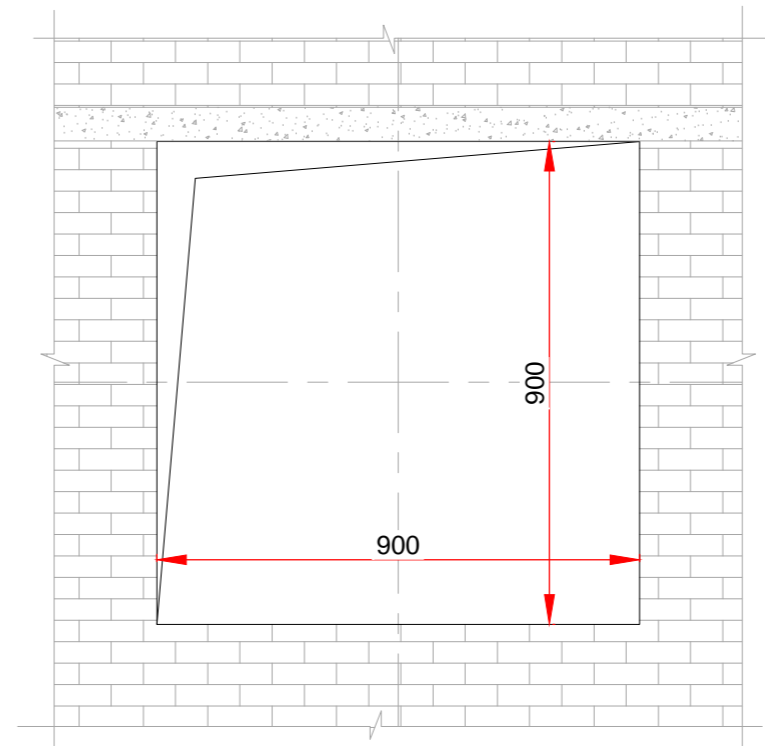
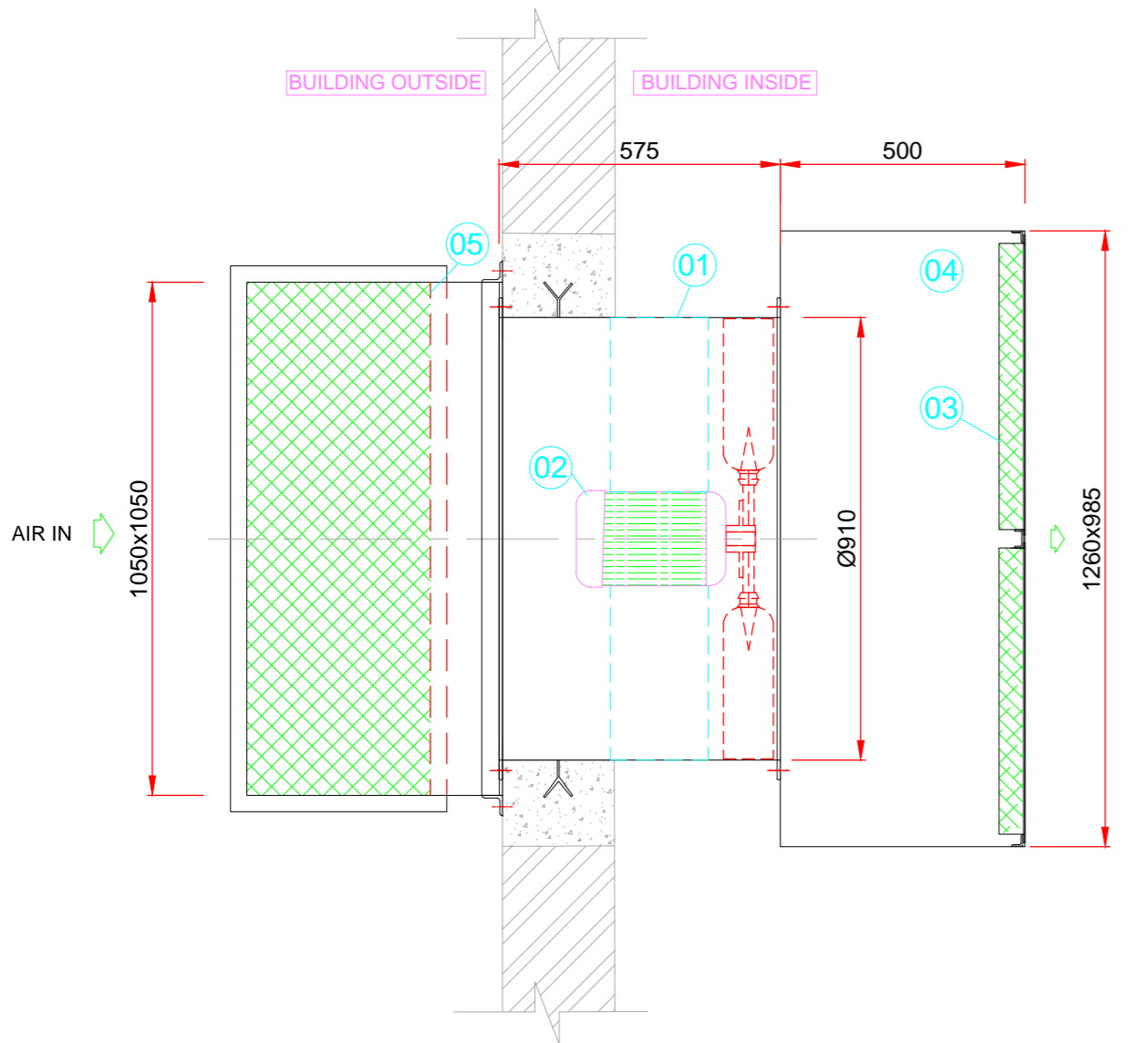
**5. Fan supports shall be in bidder's scope**

Air Capacity (CMH) - 4,000 CMH
Static Pressure - 20 MMWG
Fan Static Load - 120 Kg.
Fan Operating Load - 150 Kg.

PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
06.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
05.	COWL WITH BIRDMENSH	900x900	1	GI
04.	FILTER BOX	900x1260x500	1	GI
03.	PRE-FILTER (FLANGE TYPE)	610x610x50	2	-
02.	MOTOR 0.75kw/6POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-900/6B	1	-

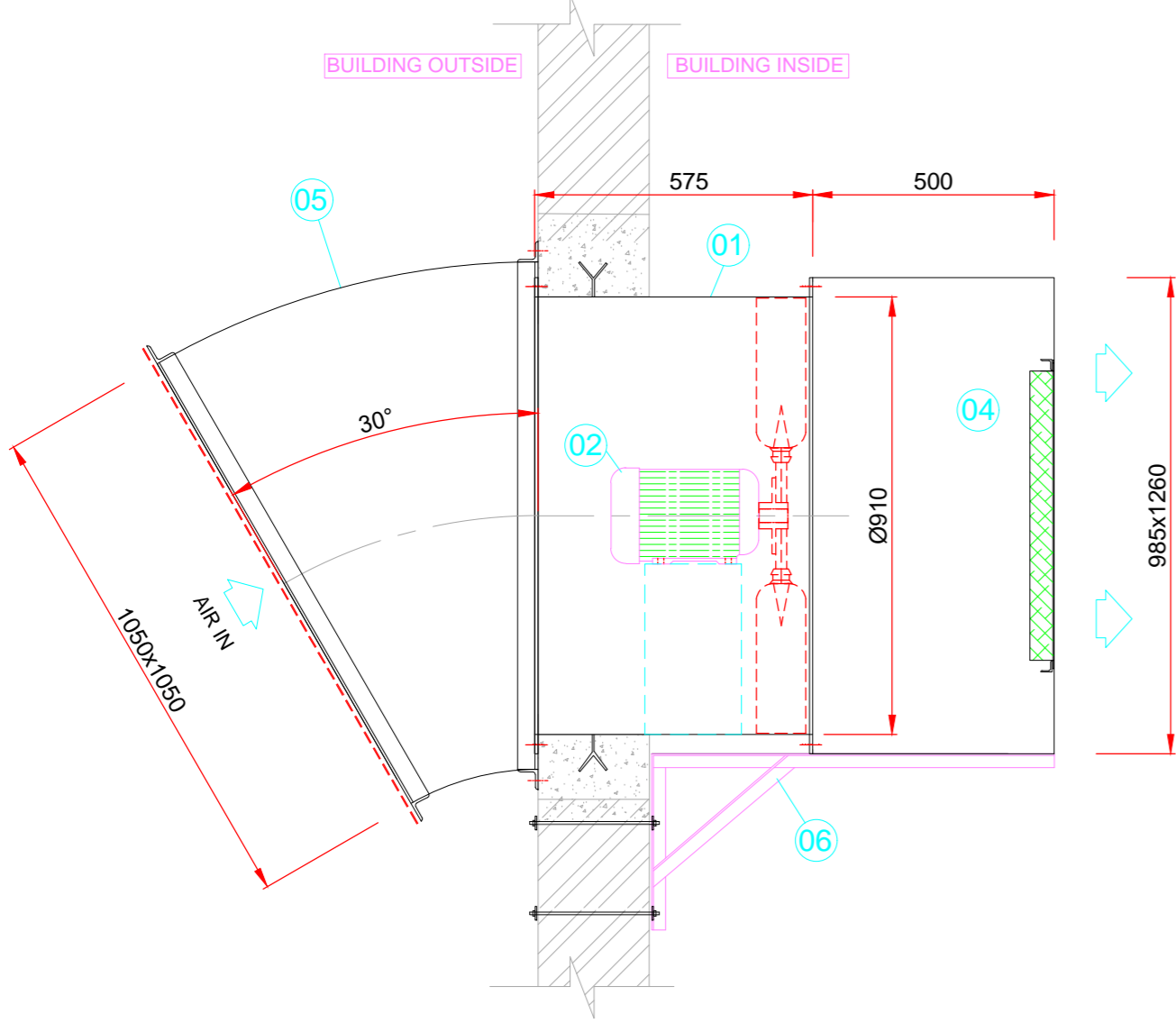
CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT N/01/4

TITLE					TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS					
DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.				
MUKA	A.GARJ	A.GARJ	BCY	29-01-2021	NTS	PE-VO-417-554-A010				
						SHEET 10 OF 14		REV. 02		SIZE: A1

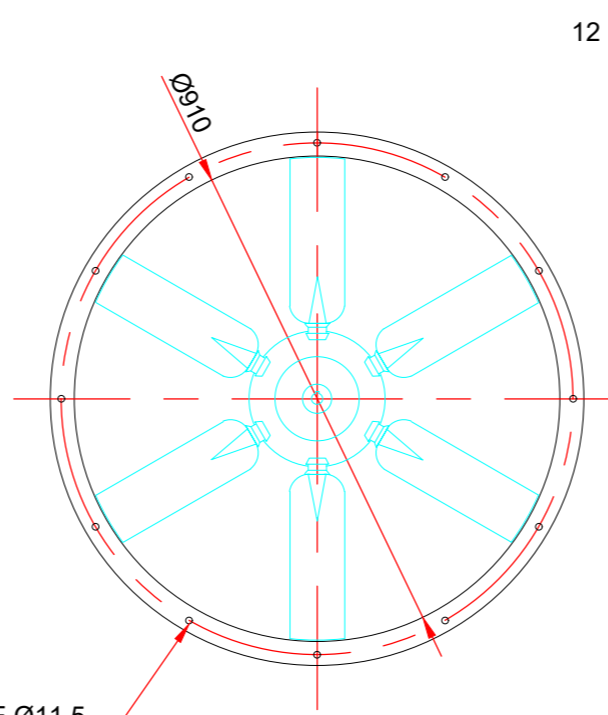


WALL OPENING DETAILS

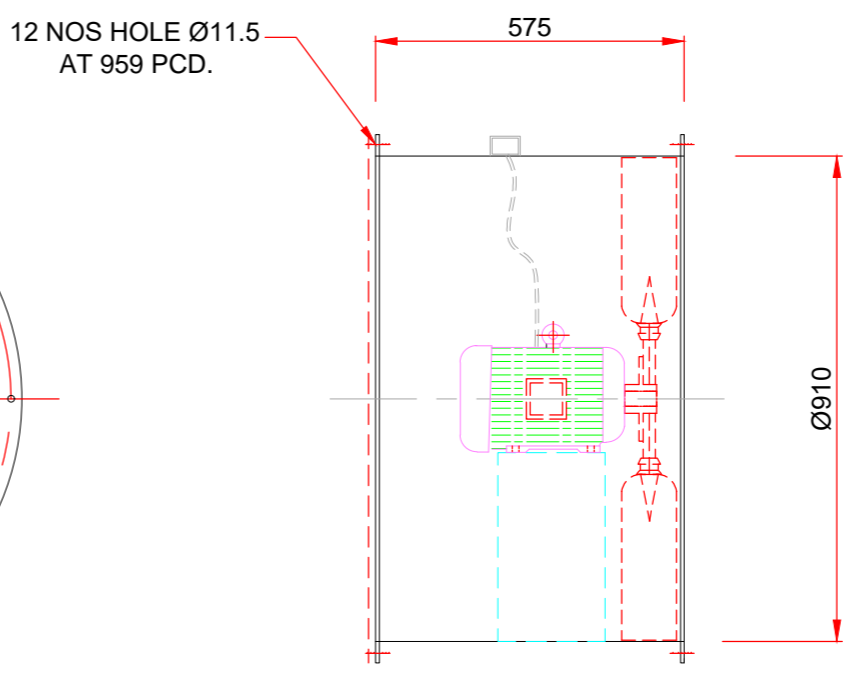
AdTV-900/6 B



SIDE ELEVATION



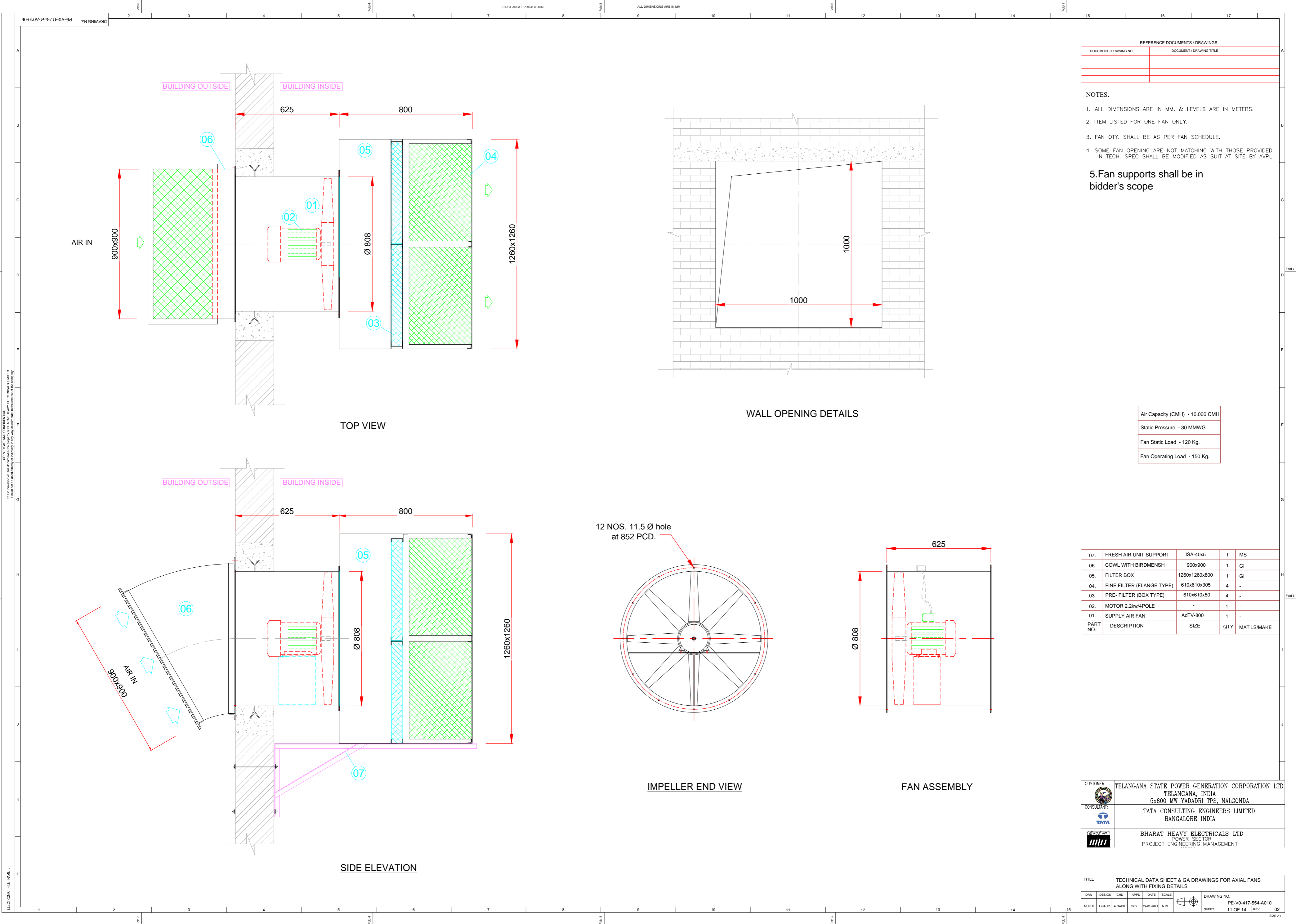
IMPELLER END VIEW



FAN ASSEMBLY

Customer	Telangana State Power Generation & Corporation		Job Ref. No.	M21/DEL-069.BHEL		
Project	5 x 800 MW YADADRI		Date	15.02.2021		
Doc. No.	PE-V0-417-554-A010		Sheet	1		
Sr. No.	Description	Unit	Particulars			
1	Manufacturer					
2	Model No.		AdTV-800	AdTV-450	AdTV-400	AdTV-400
3	Type of Fan		Axial Flow Supply Fans with 30mm WC Static			
4	Capacity	CMH	10000	7500	6000	4000
5	Quantity		As per Approved Fan Schedule - PE-V0-417-554-A008			
6	Static pressure	mmWG	30	30	30	30
7	Total pressure	mmWG	33.25	31	33	32
8	Impeller Diameter	mm	800	450	400	400
9	Type of blade		Variable pitch Cast Aluminium blade			
10	No. of blade	Nos.	8	8	8	8
11	Blade angle	Degree	17.5	22.5	25	20
12	Drive Arrgt.		Impeller mounted directly on the motor shaft			
13	Fan/Impeller Speed	RPM	1420	2880	2880	2880
14	Critical Speed	RPM	1775	3600	3600	3600
15	Shaft Power at duty point	BkW	1.54	1.20	0.99	0.63
16	Fan Efficiency (Total)	%	60	60	60	60
17	Fan Efficiency (Static)	%	54	52	50	52
18	Bearing Type		Ball Bearing			
19	Selection curves enclosed (yes/No)		yes	yes	yes	yes
20	Motor Data					
	a) Rating	kW/Pole	2.2/4	1.5/2	1.1/2	0.75/2
	b) Speed	RPM	1420	2880	2880	2880
	c) Type of Mounting		B3			
	e) Direction of Rotation		Clockwise / Anti-clockwise			
21	Material					
	a) Impeller		Cast Aluminium			
	b) Casing		MS			
	c) Casing thickness (mm)		5	3		
	d) Shaft		Motor Shaft (EN-8)			
22	Accessories		Rain protection cowl, birdmesh			
23	Filter					
	20.1 Filter type		Pre-filter			
	a) Filter size		610 x 610 x 50			
	b) No. of filters		4	3	3	2
	c) Filter efficiency		90% down to 10 Micron			
	20.2 Filter type		Fine-filter			
	a) Filter size		610 x 610 x 305			
	b) No. of filters		4	3	3	2
	c) Filter efficiency		99% down to 5 Micron			
24	Painting		As per specification			
25	Vibration Level	mm/sec.	≤ 5			
26	Noise Level	dB(A)	≤ 85			
27	Inspection & Testing		As per approved QAP			
<b>Prep By</b>	<b>Anand Gaur</b>		<b>Appd. By</b>	<b>Sumit Chaudhary</b>		





REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO	DOCUMENT / DRAWING TITLE

- NOTES:**
- ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  - ITEM LISTED FOR ONE FAN ONLY.
  - FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  - SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

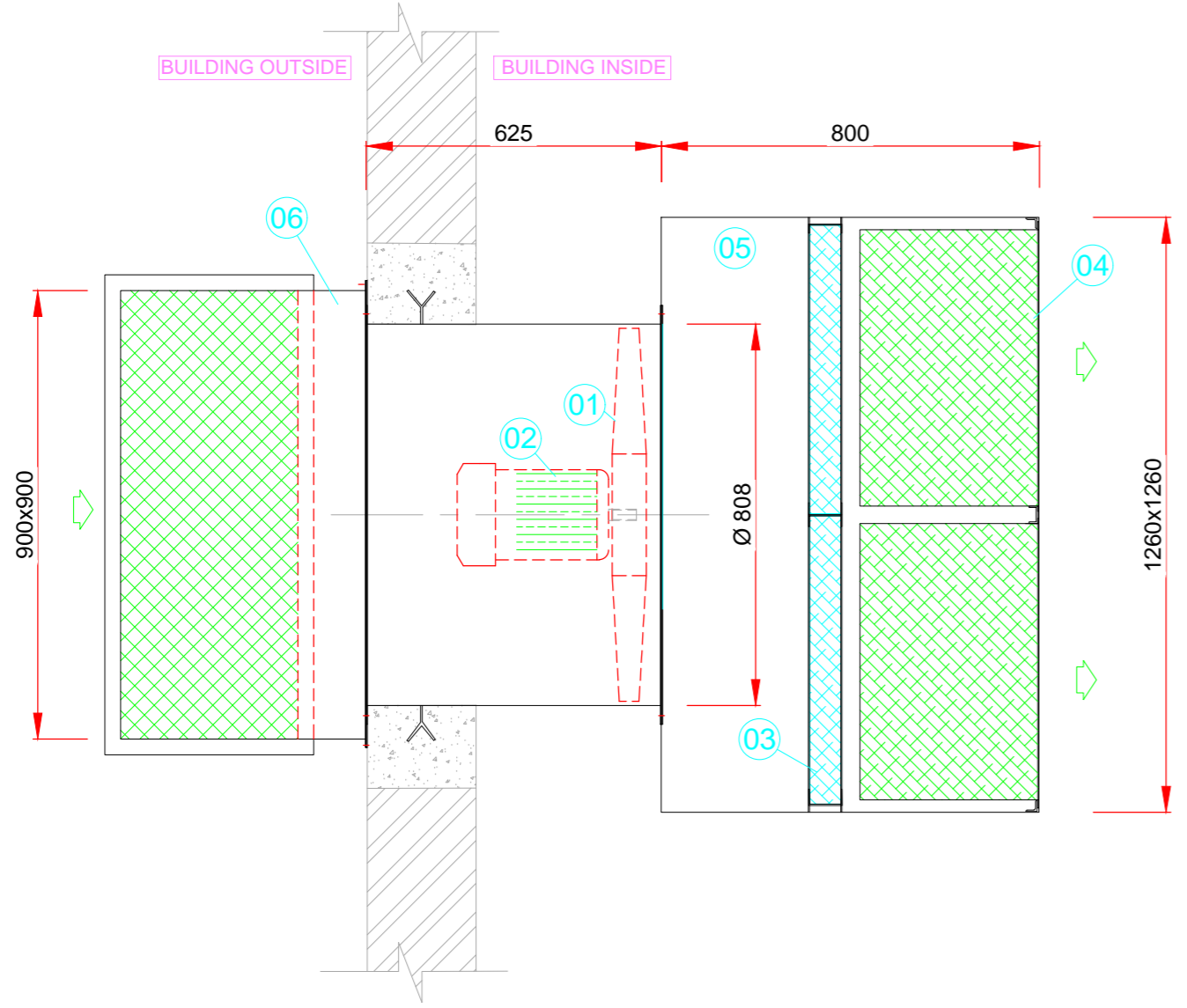
**5.Fan supports shall be in bidder's scope**

Air Capacity (CMH) - 7,500 CMH
Static Pressure - 30 MMWG
Fan Static Load - 120 Kg.
Fan Operating Load - 150 Kg.

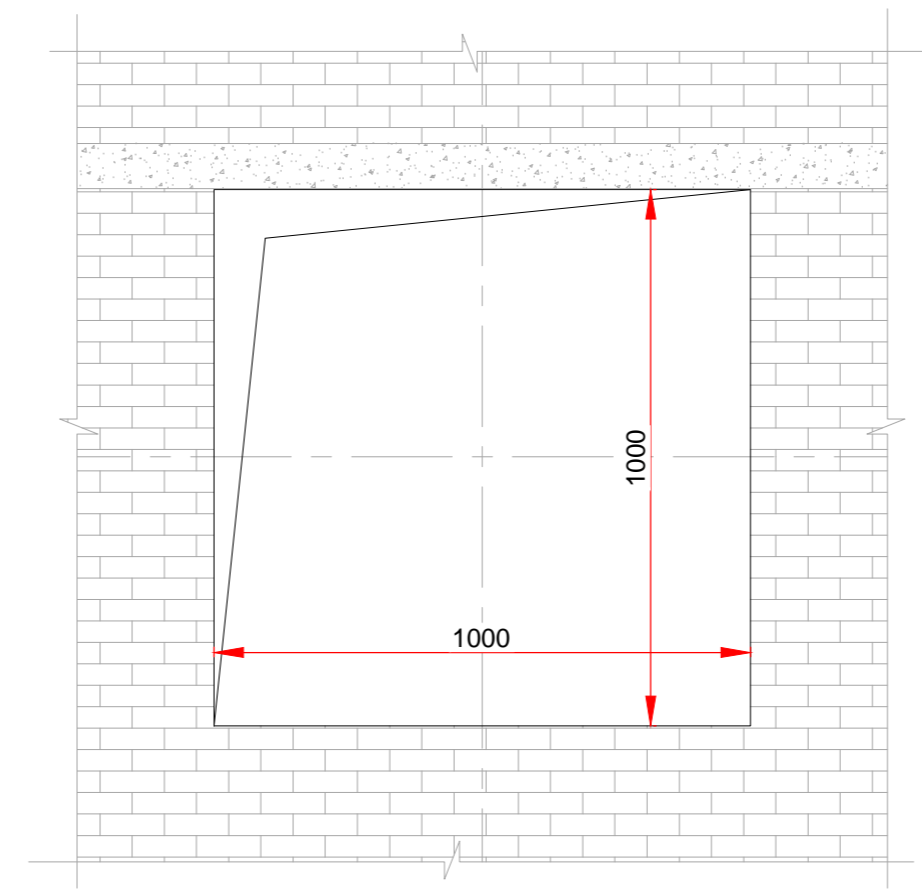
PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
07.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
06.	COWL WITH BIRDMENSH	900x900	1	GI
05.	FILTER BOX	1260x950x800	1	GI
04.	FINE FILTER (FLANGE TYPE)	610x610x305	2	-
03.	PRE-FILTER (BOX TYPE)	610x305x305	2	-
02.	MOTOR 1.5kw/4POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-800	1	-

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

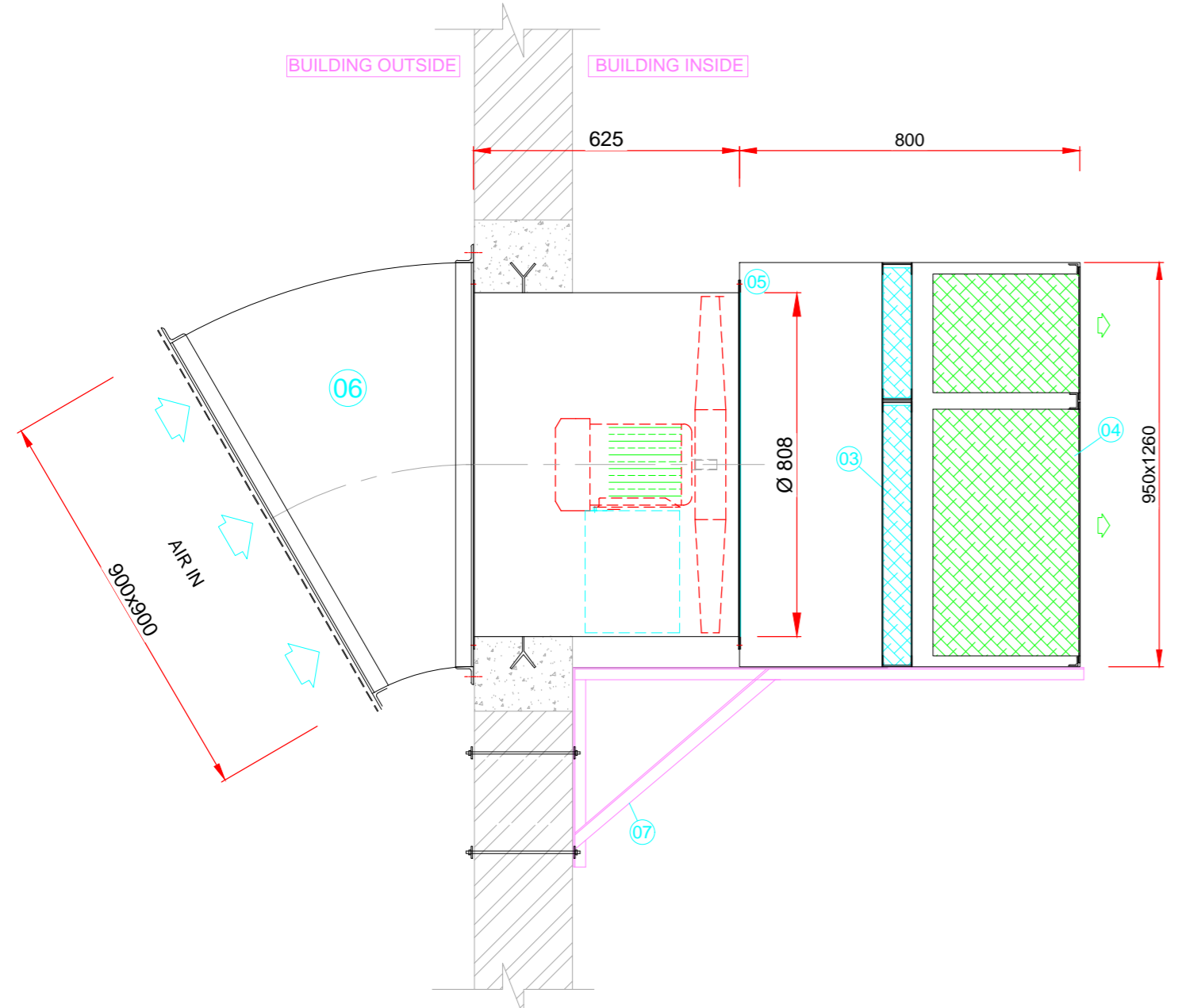
TITLE: TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS				
DRN	DESIGN	CHD	APPD	DATE
MUKLA	A.GAR	A.GAR	BCY	29-01-2021
SCALE: 1:1				DRAWING NO. PE-V0-417-554-A010
SHEET 12 OF 14				REV. 02



**TOP VIEW**

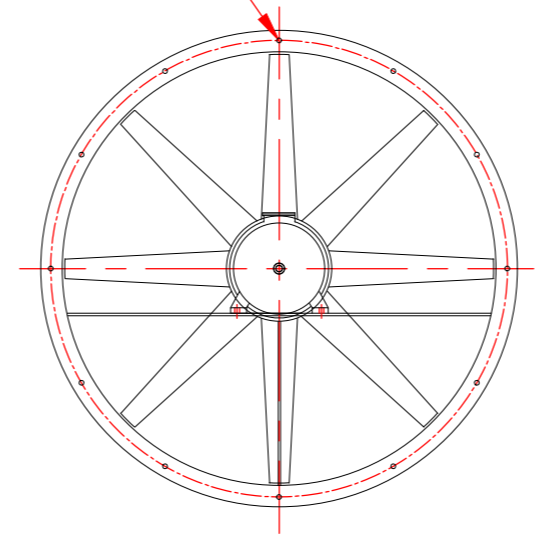


**WALL OPENING DETAILS**

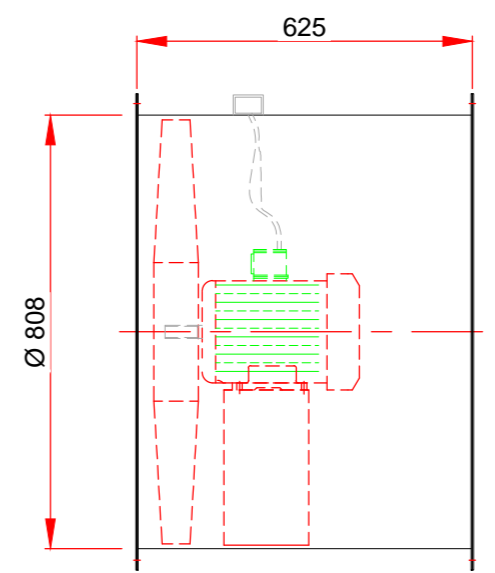


**SIDE ELEVATION**

12 NOS. 11.5 Ø hole at 852 PCD.

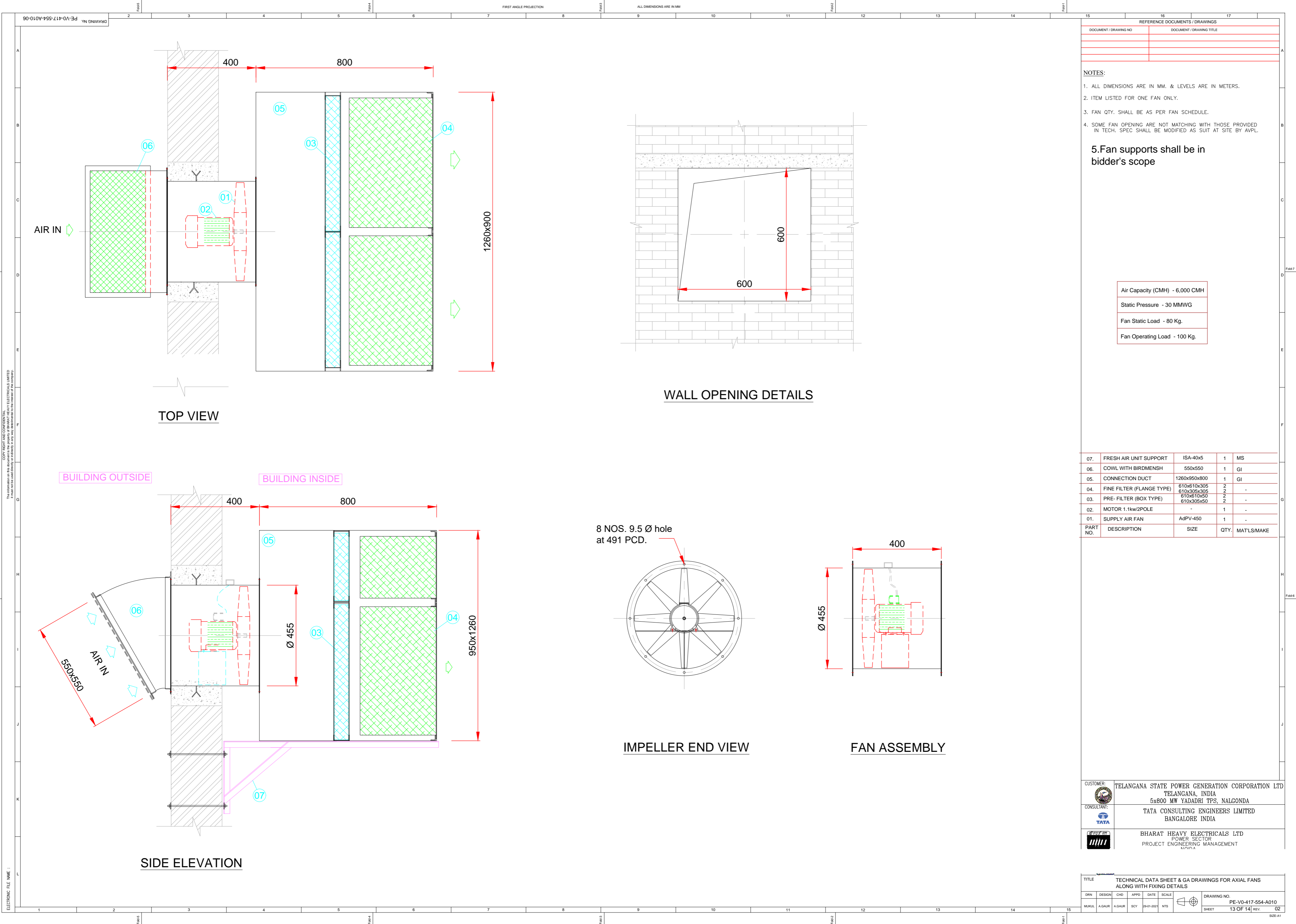


**IMPELLER END VIEW**



**FAN ASSEMBLY**

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PE-V0-417-554-A010-06  
 DRAWING NO.  
 COPYRIGHT AND CONFIDENTIAL  
 THE INFORMATION CONTAINED HEREIN IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED  
 AND IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY MENTIONED.  
 ELECTRONIC FILE NAME :  
 1  
 2  
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 4  
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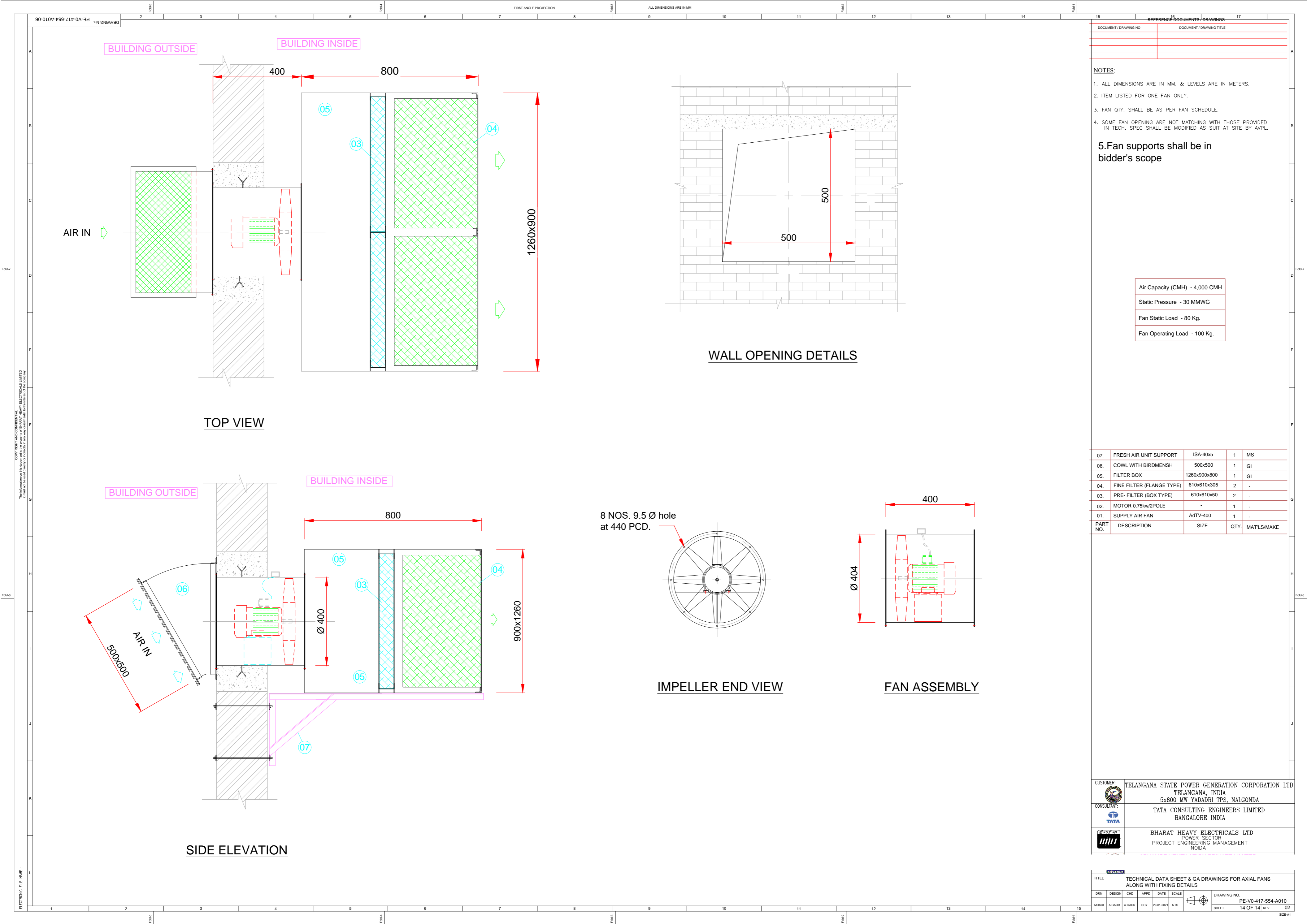
FIRST ANGLE PROJECTION  
 ALL DIMENSIONS ARE IN MM  
 REFERENCE DOCUMENTS / DRAWINGS  
 DOCUMENT / DRAWING NO. DOCUMENT / DRAWING TITLE  
 NOTES:  
 1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.  
 2. ITEM LISTED FOR ONE FAN ONLY.  
 3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.  
 4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.  
**5. Fan supports shall be in bidder's scope**  
 Air Capacity (CMH) - 6,000 CMH  
 Static Pressure - 30 MMWG  
 Fan Static Load - 80 Kg.  
 Fan Operating Load - 100 Kg.  

PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
07.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
06.	COWL WITH BIRDMENSH	550x550	1	GI
05.	CONNECTION DUCT	1260x950x800	1	GI
04.	FINE FILTER (FLANGE TYPE)	610x610x305	2	-
03.	PRE- FILTER (BOX TYPE)	610x610x50	2	-
02.	MOTOR 1.1kw/2POLE	-	1	-
01.	SUPPLY AIR FAN	AdPV-450	1	-

 CUSTOMER: TELANGANA STATE POWER GENERATION CORPORATION LTD  
 TELANGANA, INDIA  
 5x800 MW YADADRI TPS, NALGONDA  
 CONSULTANT: TATA CONSULTING ENGINEERS LIMITED  
 BANGALORE INDIA  
 BHARAT HEAVY ELECTRICALS LTD  
 POWER SECTOR  
 PROJECT ENGINEERING MANAGEMENT  
 TITLE: TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS  
 ALONG WITH FIXING DETAILS  

DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.
MUKA	A.GARJ	A.GARJ	BCY	29-01-2021	NTS	PE-V0-417-554-A010

 SHEET 13 OF 14 REV. 02  
 SIZE A1



REFERENCE DOCUMENTS / DRAWINGS	
DOCUMENT / DRAWING NO.	DOCUMENT / DRAWING TITLE

- NOTES:**
1. ALL DIMENSIONS ARE IN MM. & LEVELS ARE IN METERS.
  2. ITEM LISTED FOR ONE FAN ONLY.
  3. FAN QTY. SHALL BE AS PER FAN SCHEDULE.
  4. SOME FAN OPENING ARE NOT MATCHING WITH THOSE PROVIDED IN TECH. SPEC SHALL BE MODIFIED AS SUIT AT SITE BY AVPL.

**5. Fan supports shall be in bidder's scope**

Air Capacity (CMH) - 4,000 CMH
Static Pressure - 30 MMWG
Fan Static Load - 80 Kg.
Fan Operating Load - 100 Kg.

PART NO.	DESCRIPTION	SIZE	QTY.	MATLS/MAKE
07.	FRESH AIR UNIT SUPPORT	ISA-40x5	1	MS
06.	COWL WITH BIRDMENSH	500x500	1	GI
05.	FILTER BOX	1260x900x800	1	GI
04.	FINE FILTER (FLANGE TYPE)	610x610x305	2	-
03.	PRE- FILTER (BOX TYPE)	610x610x50	2	-
02.	MOTOR 0.75kw/2POLE	-	1	-
01.	SUPPLY AIR FAN	AdTV-400	1	-

CUSTOMER:	TELANGANA STATE POWER GENERATION CORPORATION LTD TELANGANA, INDIA 5x800 MW YADADRI TPS, NALGONDA
CONSULTANT:	TATA CONSULTING ENGINEERS LIMITED BANGALORE INDIA
	BHARAT HEAVY ELECTRICALS LTD POWER SECTOR PROJECT ENGINEERING MANAGEMENT NOIDA

TITLE: TECHNICAL DATA SHEET & GA DRAWINGS FOR AXIAL FANS ALONG WITH FIXING DETAILS						
DRN	DESIGN	CHD	APPD	DATE	SCALE	DRAWING NO.
MUKRA	A.GARJ	A.GARJ	BCY	29-01-2021	NTS	PE-V0-417-554-A010
SHEET						14 OF 14
REV.						02

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VENTILATION FAN SCHEDULE										Yadadri 5x800 MW					Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.	
			L (in m)	W (in m)	H (in m)																				Gross (m³)
A TG-PowerHouse#1#2																									
1	PowerHouse area RE unit	Evaporative						1344000			1350000	50000	15	RE unit	27	5.5	3 Phase	1256mm dia (Circular)	NA	NA	NA	NA	Washed air Supply for Power house (Stage I )=2x1120000 CMH Exhaust air considering 60 pc exhaust = 0.6x2x1120000=13,44,000CMH	00SAG12AN041-067	
2	INERT GAS ROOM AT EL. 0.0 M unit #1 and #2	Exhaust fan with inlet Louver	10.5	11	4.5	520	20	11435	NA	NA	12000	6000	15	Spark proof construction with flame proof motor	2	1.1	3 Phase	700x700	1300x1300	1	NA	NA	00SAG12AN110-111		
3	LUBE OIL ROOM AT EL. 8.5 M #1	Exhaust fan with inlet Louver	16	12	5	960	20	19200	13.62	13525	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN112-113		
4	LUBE OIL ROOM AT EL. 8.5 M #2	Exhaust fan with inlet Louver	16	12	5	960	20	19200	13.62	13525	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN114-115		
5	AC plant Room 0.0m	Exhaust fan with inlet Louver	21	11	8	1848	10	18480	15.11	15008	20000	10000	10	AXIAL FLOW EXHAUST FAN	2	0.75	3 Phase	900x900	1200x1200	2	NA	NA	00SAG12AN406-407		
6	GAS CYLINDER ROOM AT EL. 0.0 M #1	Exhaust fan with inlet Louver	12	4	4.5	216	20	4752	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	1	1.1	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN116		
7	GAS CYLINDER ROOM AT EL. 0.0 M #2	Exhaust fan with inlet Louver	12	4	4.5	216	20	4752	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	1	1.1	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN117		
8	Oil Purification room	Exhaust fan with inlet Louver	21	10.2	6	1285	20	25704	NA	NA	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN118-119		
9	MCC ROOM NEAR AC PLANT ROOM	Supply fan with gravity Damper	21	10.2	4.5	964	15	14459	4.98	4952	15000	7500	30	Supply fan with pre filter and fine filter	2	1.5	3 Phase	1000X1000	NA	NA	700s550(ht)	2	00SAG12AN120-121		
10	TOILET -0.0m-Unit #1	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	4	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
11	TOILET -0.0m-Unit #2	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
12	TOILET -8.5m Unit #1	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
13	TOILET -8.5m Unit #2	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
14	TOILET -17m Unit #1	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
15	TOILET -17m Unit #2	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
16	TOILET -24m Unit #1	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	6	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
17	TOILET -24m Unit #2	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	6	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
B TG-PowerHouse#3#4##5																									
1	PowerHouse area (RE unit)	Evaporative						2016000			2050000	50000	15	RE unit	41	5.5	3 Phase	1256mm dia (Circular)	NA	NA	NA	NA	Washed air Supply for Power house (Stage II )=3x1120000 CMH Exhaust air considering 60 pc exhaust = 0.6x3x1120000=20,16,000CMH	00SAG12AN068-108	
2	INERT GAS ROOM AT EL. 0.0 M Unit #3#4	Exhaust fan with inlet Louver	10.5	11	4.5	520	20	11435	NA	NA	12000	6000	15	Spark proof construction with flame proof motor	2	1.1	3 Phase	700x700	1300x1300	1	NA	NA	00SAG12AN122-123		

VENTILATION FAN SCHEDULE							Yadadri 5x800 MW							Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.
			L (in m)	W (in m)	H (in m)																			
3	INERT GAS ROOM AT EL. 0.0 M Unit #5	Exhaust fan with inlet Louver	10.5	11	4.5	520	20	11435	NA	NA	12000	6000	15	Spark proof construction with flame proof motor	2	1.1	3 Phase	700x700	1300x1300	1	NA	NA	00SAG12AN124-125	
4	LUBE OIL ROOM AT EL. 8.5 M unit #3	Exhaust fan with inlet Louver	15.8	12	5	948	20	18960	13.62	13525	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN126-127	
5	LUBE OIL ROOM AT EL. 8.5 M unit #4	Exhaust fan with inlet Louver	15.8	12	5	948	20	18960	13.62	13525	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN128-129	
6	LUBE OIL ROOM AT EL. 8.5 M unit #5	Exhaust fan with inlet Louver	15.8	12	5	948	20	18960	13.62	13525	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN130-131	
7	AC plant Room 0.0m unit #3and #4	Exhaust fan with inlet Louver	21	11	8	1848	10	18480	15.11	15008	20000	10000	10	AXIAL FLOW EXHAUST FAN	2	0.75	3 Phase	900x900	1200x1200	2	NA	NA	00SAG12AN132-133	
8	AC plant Room 0.0m unit #5	Exhaust fan with inlet Louver	21	11	8	1848	10	18480	8.66	8600	20000	10000	10	AXIAL FLOW EXHAUST FAN	2	0.75	3 Phase	900x900	1200x1200	2	NA	NA	00SAG12AN134-135	
9	GAS CYLINDER ROOM AT EL. 0.0 M Unit #3	Exhaust fan with inlet Louver	12	4	4.5	216	20	4752	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	1	1.1	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN136	
10	GAS CYLINDER ROOM AT EL. 0.0 M Unit #4	Exhaust fan with inlet Louver	12	4	4.5	216	20	4752	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	1	1.1	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN137	
11	GAS CYLINDER ROOM AT EL. 0.0 M Unit #5	Exhaust fan with inlet Louver	12	4	4.5	216	20	4752	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	1	1.1	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN138	
12	Central Lube Oil Purification room	Exhaust fan with inlet Louver	21	10.2	6	1285	20	25704	NA	NA	30000	15000	15	Spark proof construction with flame proof motor	2	2.2	3 Phase	1000x1000	1200x1200	3	NA	NA	00SAG12AN139-140	
13	MCC ROOM NEAR AC PLANT ROOM #3#4	Supply fan with gravity Damper	21	10.2	4.5	964	15	14459	4.98	4952	15000	7500	30	Supply fan with pre filter and fine filter	2	1.5	3 Phase	1000X1000	NA	NA	700s550	2	00SAG12AN141-142	
14	MCC ROOM NEAR AC PLANT ROOM #5	Supply fan with gravity Damper	10	10.2	4.5	459	15	6885	4.98	4952	7500	7500	30	Supply fan with pre filter and fine filter	1	1.5	3 Phase	1000X1000	NA	NA	700s550	1	00SAG12AN143	
15	TOILET -0.0m-Unit #3	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	4	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
16	TOILET -0.0m-Unit #4	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
17	TOILET -0.0m-Unit #5	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
18	TOILET -8.5m Unit #3	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
19	TOILET -8.5m Unit #4	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
20	TOILET -8.5m Unit #5	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
21	TOILET -17m Unit #3	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
22	TOILET -17m Unit #4	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
23	TOILET -17m Unit #5	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
24	TOILET -24m Unit #3	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	1	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
25	TOILET -24m Unit #4	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	1	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
26	TOILET -24m Unit #5	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	1	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
C	Battery room powerhouse #1#2																						PE-DG-417-611-C065	
1	Battery Room-Powerhouse 8.5m bw 3-4	Exhaust fan with inlet Louver	31.5	22.3	5	3512	20	152910	NA	NA	160000	20000	25	Spark proof construction with flame proof motor	16	3.7	3 Phase	1000x1000	1000x1100	21	NA	NA	8W+8S	00SAG12AN001-016
			10.5	43.3	5	2273	20																	
			12	31	5	1860	20																	
D	Battery room powerhouse #3#4																							PE-DG-417-611-C066
1	Battery Room-Powerhouse 8.5m bw 3-4	Exhaust fan with inlet Louver	31.5	22.3	5	3512	20	152910	NA	NA	160000	20000	25	Spark proof construction with flame proof motor	16	3.7	3 Phase	1000x1000	1000x1100	21	NA	NA	8W+8S	00SAG12AN017-032
			10.5	43.3	5	2273	20																	
			12	31	5	1860	20																	
E	Battery room powerhouse #5																							PE-DG-417-611-C067
1	Battery Room-Powerhouse #5	Exhaust fan with inlet Louver	32.6	12	5	1956	20	64018	NA	NA	75000	15000	25	Spark proof construction with flame proof motor	10	3.7	3 Phase	1000x1000	1000x1100	10	NA	NA	5W+5S	50SAG12AN001-010

VENTILATION FAN SCHEDULE							Yadadri 5x800 MW							Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.
			L (in m)	W (in m)	H (in m)																			
F	ESP Building#1		21.65	11.5	5	1245	20																PE-DG-417-619-C001	
1	TOILET 0M/4M	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
G	ESP Building#2																						PE-DG-417-619-C002	
1	TOILET 0M/4M	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
H	ESP Building#3																						PE-DG-417-619-C003	
1	TOILET 0M/4M	s	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
I	ESP Building#4																						PE-DG-417-619-C004	
1	TOILET 0M/4M	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
J	ESP Building#5																						PE-DG-417-619-C005	
1	TOILET 0M/4M	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380MM(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
K	CPU-Regeneration Building																						PE-DG-417-639-C001 PE-DG-417-639-C002 PE-DG-417-639-C003	
1	MRSV	Exhaust fan with inlet Louver	5.5	13	13	930	15	100869	19.10	18977	105000	7500	10	AXIAL FLOW EXHAUST FAN	14	0.55	3 Phase	700x700	1500x800	12	NA	NA		00SAG12AN144-157
2	SCRV		22	13	10	2860	15																	
3	HWT		5.5	13	6.5	465	15																	
4	ADP -ALDP		22	13	6.5	1859	15																	
5	Electrical Lab	Exhaust fan with inlet Louver	13	9.1	4.25	503	15	8296	1.21	1200	10000	10000	10	AXIAL FLOW EXHAUST FAN	1	0.75	3 Phase	900x900	1000x1500	1	NA	NA		00SAG12AN158
6	TOILET +Tool room	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	5	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
7	MCC ROOM	Supply fan	10	25	4.5	1328	15	21904	9.50	9432	22500	7500	30	Supply fan with pre filter and fine filter	3	1.5	3 Phase	1000x1000						00SAG12AN159-161
		Exhaust fan						14625		6130.8	15000	15000	15	Spark proof construction with flame proof motor	1	2.2	3 Phase	1000x1000					Appx 60 percent of Supply air considered for Exhaust fan capacity	00SAG12AN162
L	RAW WATER PUMP HOUSE BUILDING																						PE-DG-417-654-C007 PE-DG-417-654-C008	
1	PUMP HOUSE-PUMP AREA	Supply fan with gravity Damper	29.5	8.5	17.5	4388	10	43881	82.21	81668	90000	15000	20	Supply fan with pre filter	6	2.2	3 Phase	1000x1000	NA	NA	700s550	12		00SAG12AN163-168
2	SWITCH GEAR/MCC AREA	Supply fan with gravity Damper	11.4	8.5	5	485	15	7268	3.99	3962	10000	10000	30	Supply fan with pre filter and fine filter	1	2.2	3 Phase	1000x1000	NA	NA	700s550	2		00SAG12AN169
3	BATTERY ROOM	Exhaust fan with inlet Louver	6	8.5	3.9	199	20	3978	NA	NA	4000	4000	15	Spark proof construction with flame proof motor	2	0.75	3 Phase	700X700	800x800	1	NA	NA	1W+1S	00SAG12AN170-171
4	Raw Water Pump House Toilets (G+L)	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
M	CW Pump House Building-I																						PE-DG-417-653-C002 PE-DG-417-653-C003 PE-DG-417-653-C004	
1	Pump House Area	Re unit with inlet Louver	80	13	19	19760	10	197600	80.55	80013	220000	20000	15	RE unit	11	2.2	3 Phase	1000 (circular)	1300x900	26	NA	NA		00SAG12AN172-182
2	Battery Room	Exhaust fan with inlet Louver	4	4.5	3.6	65	30	1944	NA	NA	2000	2000	15	Spark proof construction with flame proof motor	2	0.55	3 Phase	500x500	500x500	1	NA	NA	1W+1S	00SAG12AN183-184
3	Pump House Toilets (G+L)	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
N	CW Pump House Building-II																						PE-DG-417-653-C021 PE-DG-417-653-C022 PE-DG-417-653-C023	
1	Pump House Area	Re unit with inlet Louver	114	14	19	30324	10	303240	121.90	121090	340000	20000	15	RE unit	17	2.2	3 Phase	1000 (circular)	1300x900	34	NA	NA		00SAG12AN185-191
2	Battery Room	Exhaust fan with inlet Louver	4	4.5	3.6	65	30	1944	NA	NA	2000	2000	15	Spark proof construction with flame proof motor	2	0.55	3 Phase	500x500	500x500	1	NA	NA	1W+1S	00SAG12AN192-193
3	Pump House Toilets (G+L)	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.	
O	Clarified Water Pump House Building																						PE-DG-417-635-C001 PE-DG-417-635-C002	

VENTILATION FAN SCHEDULE										Yadadri 5x800 MW					Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume Gross (m³)	Air Changes ACH	Air Qty as per Air Change CMH	Total Heat Dissipation KW	Heat Load Basis Q/ C*(Δ T) CMH	Selected CMH	Capacity of each fan CMH	Static Pr. of each fan CMH	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.	
			L (in m)	W (in m)	H (in m)																				
1	MCC Area	Supply fan with gravity Damper	33	12.5	4.5	1999	15	29989	19.94	19809	30000	10000	30	Supply fan with pre filter and fine filter	3	2.2	3 Phase	1000x1000	NA	NA	700s550	4		00SAG12AN194-196	
2	PUMP HOUSE- AREA	Supply fan with gravity Damper	80	10.25	9.5	7790	10	77900	129	128000	165000	15000	20	Supply fan with pre filter	11	2.2	3 Phase	1000x1000	NA	NA	700s550	20		00SAG12AN197-207	
3	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
<b>P DM Plant</b>																						PE-DG-417-635-C012 PE-DG-417-635-C013 PE-DG-417-635-C014			
1	Battery room	Exhaust fan with inlet Louver	7.2	6.7	4.5	217	20	4342	NA	NA	6000	6000	15	Spark proof AXIAL FLOW EXHAUST FAN	2	1.1	3 Phase	700x700	900x900	1	NA	NA	1W+1S	00SAG12AN208-209	
2	MCC Area	Supply fan with gravity Damper	43	15	4.5	2903	15	43538	19.94	19809	50000	10000	30	Supply fan with pre filter and fine filter	5	2.2	3 Phase	1000x1000	NA	NA	700s550	6		00SAG12AN210-214	
3	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
4	DM plant Store	Exhaust fan with inlet Louver	4.4	4.2	4.5	83	20	1663	NA	NA	2000	2000	10	AXIAL FLOW EXHAUST FAN	2	0.37	3 Phase	500x500	500x500	1	NA	NA		00SAG12AN215-216	
5	DM plant area	Exhaust fan with inlet Louver	65	47.3	7.5	24214	10	242138	108	107264	255000	15000	10	AXIAL FLOW EXHAUST FAN	17	1.1	3 Phase	900x900	1200x1200	24	NA	NA		00SAG12AN217-233	
<b>Q Fuel Oil Pressurizing Building</b>																						PE-DG-417-634-C013 PE-DG-417-634-C014 PE-DG-417-634-C015			
1	Fuel Oil Pressuzing Area	Exhaust fan with inlet Louver	82.5	16.5	7.6	10346	20	206910	60.10 0	59707	210000	15000	15	Spark proof AXIAL FLOW EXHAUST FAN with flame proof motor with fusible link damper	14	2.2	3 Phase	1000x1000	1200x1200	18	NA	NA		00SAG12AN234-247	
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
3	MCC	Supply fan with gravity Damper	10	22	4.5	990	15	14850	6.98	6933	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN248-249	
4	BATTERY ROOM	Exhaust fan with inlet Louver	6	16.5	4.5	446	20	8910	NA	NA	10000	10000	15	Spark proof construction with flame proof motor	2	1.5	3 Phase	800X800	850x850	24	NA	NA	1W+1S	00SAG12AN250-251	
<b>R Mill Tripper Floor</b>																						PE-DG-417-616-C015 PE-DG-417-616-C016 PE-DG-417-616-C012			
1	Mill Bay area unit #1	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN252-256	
2	Mill Bay area unit #1	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN257-261	
3	Mill Bay area unit #2	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN262-266	
4	Mill Bay area unit #2	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN267-271	
5	Mill Bay area unit #3	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN272-276	
6	Mill Bay area unit #3	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN277-281	
7	Mill Bay area unit #4	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN282-286	
8	Mill Bay area unit #4	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN287-291	
9	Mill Bay area unit #5	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN292-296	
10	Mill Bay area unit #5	Re unit with inlet Louver	46.2	15.5	11.2	8020	30	240610	NA	NA	250000	50000	15	RE unit	5	5.5	3 Phase	1256 (circular)	1200x1200	24	NA	NA		00SAG12AN297-301	
<b>S BOP SWITCHGEAR - STAGE I</b>																						PE-DG-417-653-C038			
1	MCC Area	Supply fan with gravity Damper	23.5	10.5	5	1234	15	18506	11.97	11886	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN302-303	
<b>T BOP SWITCHGEAR - STAGE II</b>																						PE-DG-417-653-C043			
1	MCC Area	Supply fan with gravity Damper	35.5	7.5	5	1331	15	19969	7.98	7924	22500	7500	30	Supply fan with pre filter and fine filter	3	1.5	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN304-306	
<b>U AUX BOILER MCC</b>																						PE-DG-417-631-C002			
1	MCC Area	Supply fan with gravity Damper	26	8	5.5	1287	15	19305	5.98	5943	22500	7500	30	Supply fan with pre filter and fine filter	3	1.5	3 Phase	700x700	NA	NA	700s550	3		00SAG12AN408-409	
2	Battery room	Exhaust fan with inlet Louver	4	6	5.5	132	20	2640	NA	NA	4000	4000	15	Spark proof AXIAL FLOW EXHAUST FAN	2	0.75	3 Phase	700x700	800x800	1	NA	NA	1W+1S	00SAG12AN309-310	

VENTILATION FAN SCHEDULE										Yadadri 5x800 MW					Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravirty Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.	
			L (in m)	W (in m)	H (in m)																				Gross (m³)
<b>V Compressor House-I</b>																						PE-DG-417-647-C001 PE-DG-417-647-C002			
1	Compressor House-Area	Supply fan with gravity Damper	32.3	13	8.5	3712	15	55682	48.18	47861	60000	10000	20	Supply fan with pre filter	6	1.5	3 Phase	1000x1000	NA	NA	700s550	12		00SAG12AN311-316	
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
<b>W Compressor House-II</b>																						PE-DG-417-647-C007 PE-DG-417-647-C008			
1	Compressor House-Area	Supply fan with gravity Damper	36.85	15	8.5	4841	15	72621	69.99	69531	80000	10000	20	Supply fan with pre filter	8	1.5	3 Phase	1000x1000	NA	NA	700s550	10		00SAG12AN317-324	
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
3	MCC Area	Supply fan with gravity Damper	20	6.2	5.5	825	15	12375	5.48	5448	15000	7500	30	Supply fan with pre filter and fine filter	2	1.5	3 Phase	1000x1000	NA	NA	700s550	2		00SAG12AN325-326	
<b>X Fire Water Pump House</b>																						PY-DA-1-M081-1250-01			
1	PUMP HOUSE AREA	Supply fan with gravity Damper	44	9	8.1	3351	10	33506	14.25	14158	37500	7500	20	Supply fan with pre filter	5	1.1	3 Phase	1000x1000	NA	NA	700s550	6		00SAG12AN327-331	
2	MCC Area	Supply fan with gravity Damper	5	9	5	368	15	5520	1.99	1981	7500	7500	30	Supply fan with pre filter and fine filter	1	1.5	3 Phase	1000x1000	NA	NA	700s550	1		00SAG12AN332	
3	BATTERY ROOM	Exhaust fan with inlet Louver	7.5	6.5	5	244	20	4875	NA	NA	6000	6000	15	Spark proof construction with flame proof motor	2	1.1	3 Phase	700X700	800x800	2	NA	NA	1W+1S	00SAG12AN333-334	
4	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
<b>Y DG Building</b>																						PE-DG-417-642-C001 PE-DG-417-642-C008			
1	DG Area #building 1	Exhaust fan with inlet Louver	16.5	27	9.5	4232	10	42323	NA	NA	45000	15000	10	AXIAL FLOW EXHAUST FAN	3	1.1	3 Phase	900x900	1100x1100	5	NA	NA		00SAG12AN335-337	
2	DG Area #building 2	Exhaust fan with inlet Louver	16.5	27	9.5	4232	10	42323	NA	NA	45000	15000	10	AXIAL FLOW EXHAUST FAN	3	1.1	3 Phase	900x900	1100x1100	5	NA	NA		00SAG12AN338-340	
3	DG Area #building 3	Exhaust fan with inlet Louver	16.5	19	9.5	2978	10	29783	NA	NA	30000	10000	10	AXIAL FLOW EXHAUST FAN	3	0.75	3 Phase	900x900	1200x1200	3	NA	NA		00SAG12AN341-343	
<b>Z DM Transfer Pump House</b>																						PE-DG-417-635-C006			
1	PUMP HOUSE AREA	Supply fan with gravity Damper	50	6	7.1	2273	10	22730	10.22	10152	42000	6000	20	Supply fan with pre filter	7	1.1	3 Phase	600x600	NA	NA	700s550	6		00SAG12AN344-350	
<b>AA Admin Building</b>																						PE-DG-417-641-C001 PE-DG-417-641-C002 PE-DG-417-641-C003 PE-DG-417-641-C004			
1	Toilets/Pantry- Ground floor	Exhaust							NA	NA	1200	1200	5	Propeller fan	6	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
2	MCC Area	Supply fan with gravity Damper	20	10	4.75	1093	15	16395	5.98	5943	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN351-352	
3	Toilets/Pantry- first floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	7	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
4	Toilets/Pantry- Secnd floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	13	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
<b>BB Pt plant- Chemical House</b>																						1-WT-221-02111,12,13,14			
1	Chemical House Area	Exhaust fan with inlet Louver	57.5	25	5.5	7906	20	158125	77.05	76586	165000	15000	10	AXIAL FLOW EXHAUST FAN	11	1.1	3 Phase	900x900	1100x1100	20	NA	NA		00SAG12AN353-363	
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
3	MCC	Supply fan with gravity Damper	30	9	4	1080	15	16200	NA	5943	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN364-365	
4	BATTERY ROOM	Exhaust fan with inlet Louver	6.5	7	4	182	20	3640	NA	NA	4000	4000	15	Spark proof construction with flame proof motor	2	0.75	3 Phase	700X700	800x800	1	NA	NA	1W+1S	00SAG12AN366-367	
<b>CC CST Pump House 1</b>																						PE-DG-417-638-C001			
1	PUMP HOUSE AREA	Supply fan with gravity Damper	19.5	7.25	5.2	878	10	8782	5.43	5398	10000	10000	20	Supply fan with pre filter	1	1.1	3 Phase	1000x1000	NA	NA	700s550	2		00SAG12AN368	

VENTILATION FAN SCHEDULE										Yadadri 5x800 MW					Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.	
			L (in m)	W (in m)	H (in m)																				Gross (m³)
DD	CST Pump House 2																						PE-DG-417-638-C001		
1	PUMP HOUSE AREA	Supply fan with gravity Damper	25	7.25	5.2	1086	10	10855	5.85	5814	12000	6000	20	Supply fan with pre filter	2	1.1	3 Phase	600x600	NA	NA	700s550	2		00SAG12AN369-370	
EE	ETP																						1-WT-221-02125 1-WT-221-02126		
1	ETP AREA	Exhaust fan with inlet Louver	24	20	4.5	4660	10	46600	NA	NA	50000	10000	10	AXIAL FLOW EXHAUST FAN	5	0.75	3 Phase	1000x1000	1200x1200	5	NA	NA		00SAG12AN371-375	
			12.5	20	10																				
2	MCC Area	Supply fan with gravity Damper	20.3	5.4	4.5	636	15	9544	8.97	8914	10000	10000	30	Supply fan with pre filter and fine filter	1	2.2	3 Phase	1000x1000	NA	NA	700s550	2		00SAG12AN376	
3	BATTERY ROOM	Exhaust fan with inlet Louver	5.3	4	4.5	95	20	1908	NA	NA	2000	2000	15	Spark proof construction with flame proof motor	2	0.55	3 Phase	700x700	600x600	1	NA	NA	1W+1S	00SAG12AN377-378	
4	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)					Inlet of Toilets shall be though door undercut/Door louvers.		
FF	Heavy fuel oil Unloading Pump house																						PE-DG-417-634-C005 PE-DG-417-634-C006 PE-DG-417-634-C007		
1	Pump House area	Exhaust fan with inlet Louver	33.5	10	4.5	1508	20	36650	16.71	16614	40000	10000	15	Spark proof AXIAL FLOW EXHAUST FAN with flame proof motor with fusible link damper	4	1.5	3 Phase	1000x1000	1200x1200	4	NA	NA		00SAG12AN379-382	
			5	10	6.5	325	20																		
2	Toilets/Pantry	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
GG	CW Treatment unit 1,2																						1-WT-221-02140 1-WT-221-02141		
1	MCC Area	Supply fan with gravity Damper	38.5	7.5	4.5	1631	15	24465	8.97	8914	30000	10000	30	Supply fan with pre filter and fine filter	3	2.2	3 Phase	1000x1000	NA	NA	700s550	4		00SAG12AN383-385	
			13.4	5.5	4.5																				
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
3	Chemical Store	Exhaust fan with inlet Louver	11	5.2	5	286	20	5720	NA	NA	7500	7500	15	Spark proof AXIAL FLOW EXHAUST FAN	1	1.1	3 Phase	1000x1000	1000x1000	1	NA	NA		00SAG12AN386	
HH	CW Treatment unit 3,4,5																						1-WT-221-02148 1-WT-221-02149		
1	MCC Area	Supply fan with gravity Damper	38.5	7.5	4.5	1631	15	24465	5.98	5943	30000	10000	30	Supply fan with pre filter and fine filter	3	2.2	3 Phase	1000x1000	NA	NA	700s550	4		00SAG12AN387-389	
			13.4	5.5	4.5																				
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	3	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
3	Chemical Store	Exhaust fan with inlet Louver	11	5.2	5	286	20	5720	NA	NA	7500	7500	15	Spark proof AXIAL FLOW EXHAUST FAN	1	1.1	3 Phase	1000x1000	1000x1000	1	NA	NA		00SAG12AN390	
II	Service Building (Stage I)																						PE-DG-417-640-C001 PE-DG-417-640-C002 PE-DG-417-640-C003 PE-DG-417-640-C004 PE-DG-417-640-C005		
1	Toilets/Pantry- Ground floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	6	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
2	MCC Area	Supply fan with gravity Damper	22	10	4.75	1188	15	17820	8.97	8914	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3		00SAG12AN391-392	
3	Toilets/Pantry- first floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	7	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
4	Toilets/Pantry- Secnd floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	13	0.1	1 Phase	380mm(circular)						Inlet of Toilets shall be though door undercut/Door louvers.	
5	AC Plant room area	Exhaust fan with inlet Louver	15.6	6.8	5	530	10	5304	NA	NA	7500	7500	10	AXIAL FLOW EXHAUST FAN	1	0.55	3 Phase	700x700	1000x1000	1	NA	NA		00SAG12AN393	
6	Battery room	Exhaust fan with inlet Louver	4.5	5.4	5	122	15	1823	NA	NA	2000	2000	15	AXIAL FLOW EXHAUST FAN Spark proof	2	0.55	3 Phase	700x700	700x700	1	NA	NA	1W+1S	00SAG12AN394-395	

VENTILATION FAN SCHEDULE								Yadadri 5x800 MW							Doc no.		PE-V0-417-554-A008		Rev 05	Date 25.07.22					
S No	AREA	Type of Ventilation	Dimension (M)			Volume	Air Changes	Air Qty as per Air Change	Total Heat Dissipation	Heat Load Basis Q/ C*(Δ T)	Selected	Capacity of each fan	Static Pr. of each fan	Type of Fan	No. Of FAN	Motor rating (KW)	Power supply Phase	Opening	Louvers Size (LXB) mm	Number of Louvers	Gravity Damper Size (LXB) mm	Number of Gravity Dampers	Building Drawing number/Remarks	Tag No.	
			L (in m)	W (in m)	H (in m)																				Gross (m³)
JJ Service Building (Stage II)																							PE-DG-417-640-C040 PE-DG-417-640-C041 PE-DG-417-640-C042 PE-DG-417-640-C043 PE-DG-417-640-C044		
1	Toilets/Pantry- Ground floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	6	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
2	MCC Area	Supply fan with gravity Damper	22	10	4.75	1188	15	17820	6.48	6438	20000	10000	30	Supply fan with pre filter and fine filter	2	2.2	3 Phase	1000x1000	NA	NA	700s550	3	00SAG12AN396-397		
3	Toilets/Pantry- first floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	7	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
4	Toilets/Pantry- Secnd floor	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	13	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
5	AC Plant room area	Exhaust fan with inlet Louver	15.6	6.8	5	530	10	5304	NA	NA	7500	7500	10	AXIAL FLOW EXHAUST FAN	1	0.55	3 Phase	700x700	1000x1000	1	NA	NA	00SAG12AN398		
6	Battery room	Exhaust fan with inlet Louver	4.5	5.4	5	122	15	1823	NA	NA	2000	2000	15	AXIAL FLOW EXHAUST FAN Spark proof	2	0.55	3 Phase	700x700	700x700	1	NA	NA	1W+1S 00SAG12AN399-400		
KK STP																							1-WT-221-02127		
1	MCC Area	Supply fan with gravity Damper	12	6	4.5	467	15	7005	1.99	1981	10000	10000	30	Supply fan with pre filter and fine filter	1	2.2	3 Phase	1000x1000	NA	NA	700s550	2	00SAG12AN401		
2	BATTERY ROOM	Exhaust fan with inlet Louver	5	6	4.5	135	20	2700	NA	NA	4000	4000	15	Spark proof construction with flame proof motor	2	0.75	3 Phase	700X700	800x800	1	NA	NA	1W+1S 00SAG12AN402-403		
3	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
LL Booster pump house Fire water																							PY-DA-1-M081-1250-02		
1	PUMP HOUSE Area	Exhaust fan with inlet Louver	18.5	8	5	883	10	8830	5.49	5450	10000	10000	10	AXIAL FLOW EXHAUST FAN	1	0.75	3 Phase	900x900	1200x1200	1	NA	NA	00SAG12AN404		
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
MM Foam Pump house																							PY-DA-1-M081-1250-03		
1	PUMP HOUSE Area	Supply fan with gravity Damper	13.7	8.3	4.5	655	10	6547	4.11	4084	7500	7500	20	Supply fan with pre filter	1	1.1	3 Phase	1000x1000	NA	NA	700s550	1	00SAG12AN405		
2	Toilets	Exhaust	5	2.5	3.2	40	20	800	NA	NA	1200	1200	5	Propeller fan	2	0.1	1 Phase	380mm(circular)				Inlet of Toilets shall be though door undercut/Door louvers.			
NN Gypsum Dewatering Building																							PY-DA-1-M081-1250-03		
1	VACCUM PUMP /BELT WASHING AREA	Exhaust fan with inlet Louver	53	34	15	27030	10	525107	18.00	18977	550000	15000	10	AXIAL FLOW EXHAUST FAN	37	2.2	3 Phase	700x700	1500x800	12	NA	NA	00SAG12AN144-157		
2	Gypsum belt area		53	34	9.5	17119	10																		
3	Hydro Cyclone area		34.5	13	8	3588	10																		
0	ADP -ALDP		0	13	6.5	0	10																		
NN NDCT Switch geat STAGE 1																							PY-DA-1-M081-1250-03		
1	MCC Area	Supply fan with gravity Damper	9.5	5.8	3.5	336	15	5038	3.00	2984	6000	6000	30	Supply fan with pre filter and fine filter	1	1.1	3 Phase	600x600	NA	NA	700s550	1	00SAG12AN396-397		
NN NDCT Switch geat STAGE II Building																							PY-DA-1-M081-1250-03		
1	MCC Area	Supply fan with gravity Damper	13	5.8	3.5	407	15	6104	3.00	2984	7500	7500	30	Supply fan with pre filter and fine filter	1	1.5	3 Phase	600x600	NA	NA	700s550	1	00SAG12AN396-397		

Technical Data Sheet			
ITEM	PRE FILTER (SS)	ANNEXURE	Page 1 of 6
CUSTOMER	TSGENCO	R1	REF 2103092-TDS-A
PROJECT	5X800 MW YADADRI TPS	DATE	09.03.2021
PACKAGE	VENTILATION SYSTEMS	REV	R2
		DATE	10.03.2021

S.No.	Description	Specification
1	Manufacturer	As Per Approved Vendor R1
2	Frame type	Cassette/ Flange
3	Frame material	Al sheet 18 G ( 1.25 ± 0.12 mm ) R1
4	Filter Media	Multiple layers of SS 316 wire mesh ( mesh aperature 0.025mm max. and wire Dia 0.16 mm)
5	Media sealing	Epoxy R2
6	Test standard	BS:6540/ASHRAE-52-76/EN779
7	Face velocity	2.5 m/sec
8	Initial pressure drop	≤ 5 mm of WC
9	Final pressure drop	Up to 12 mm of WC R1
10	Average synthetic dust wt. arrestance (Equivalent Efficiency)	65% to 80% (90% down to 10 microns )
11	Aesthetics	Clean external surface, No adhesive on frame
12	Filter cleaning R1	Cleanable type with water spray

S.No.	Overall dimensions (mm) (H X W X D)	Flange Type Filter Face Area (mm)	Rated Flow (CMH)		Qty (Nos) R1
			For Cassette	For Flange	
1	610 X 610 X 50	550x550	3350	2733	PE-V0-417-554-A009

NOTE: As per the Test Standard the testing of filters will be done only for Average Synthetic Dust Weight Arrestance .



AN ISO 9001:2008 COMPANY

CIN:U74899DL1992PTC048328



**Puromatic Filters Pvt. Ltd.**

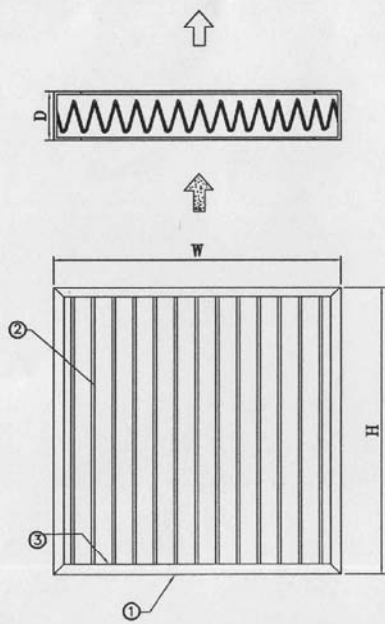
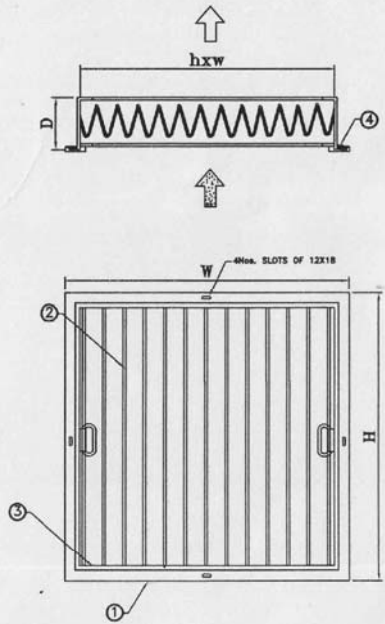
12, DSIDC, Scheme-2, Okhla Industrial Area  
Phase-2, New Delhi-110020, India  
Telefax: +91-11-26388013, 14, 26389158  
Email: sales@puromaticfilters.in  
filters@puromaticfilters.in  
website: www.puromaticfilters.in

4.	GASKET	SOFTSPONGE FOAM	1 Set.	
3.	SEALING	EPOXY		
2.	FILTER MEDIA	SS WIRE MESH	1 Set.	
1.	FILTER FRAME	AL. SHEET 18 G	1 No.	
S.No.	ITEM	MATERIAL	QTY.	REMARKS
BILL OF MATERIAL			R1	

**NOTE:-**

Sheet Thickness: Al. Sheet 18 G -  $1.25 \pm 0.12$  mm  
 Filter Media: SS 316 Wire mesh, Multiple layers  
 (Aperture  $0.025$ mm Max wire dia  $0.16$  mm)

R2



H <sup>1</sup>	W <sup>1</sup>	D <sup>1</sup>
610	610	50

H <sup>1</sup>	W <sup>1</sup>	h <sup>2</sup>	w <sup>2</sup>	D <sup>2</sup>
610	610	550	550	50

PROJECT: 5X800 MW YADADRI TPS	ITEM: PRE FILTER (SS)
PACKAGE: VENTILATION SYSTEMS	TYPE: CASSTTE/FLANGE

**PUROMATIC FILTERS PVT. LTD.**  
 12, D SIDC, Scheme-2, Okhla Industrial Area  
 Phase-2, New Delhi-110020, India  
 Telefax: +91-11-26388013, 14, 26389158  
 Email: sales@puromaticfilters.in  
 filters@puromaticfilters.in  
 web: www.puromaticfilters.in  
 CIN: U74899DL1992PTC048328

ALL DIMENSIONS ARE IN MM.	
DRWN. BY MD	CHKD. BY
DRG NO. 2103092-GAD-A	
DATE: 09.03.2021	
REV: 01	DATE: 10.03.2021
Sheet No. 2 of 6	

Technical Data Sheet			
ITEM	PRE FILTER	ANNEXURE	Page 3 of 6
CUSTOMER	TSGENCO	R1	REF 2103092-TDS-B
PROJECT	5X800 MW YADADRI TPS	DATE	09.03.2021
PACKAGE	VENTILATION SYSTEMS	REV	R2
		DATE	10.03.2021

S.No.	Description	Specification
1	Manufacturer	As Per Approved Vendor R1
2	Frame type	Cassette / Flange
3	Frame material	GI sheet 18 G ( 1.25 ± 0.12 mm )
5	Spacers	Al sheet 20 G ( 0.91 ± 0.08 mm )
6	Filter Media	Synthetic non woven (fire retardant and resistant to moisture, fungi ,bacteria & frost) progressive density filter media having high dust holding capacity at lesser pressure drop with HDPE mesh on air entry side & Al expanded mesh on air exit side.
7	Filter Media Basic Weight/ Thickness	120 ± 10% GSM / > 4 mm
8	Media sealing	Epoxy
9	Test standard	BS:6540/ASHRAE-52-76/EN779
10	Face velocity	2.5 m/sec.
11	Initial pressure drop	≤ 5 mm of WC
12	Final pressure drop	Up to 10 mm of WC R1
13	Average synthetic dust wt. arrestance (Equivalent Efficiency)	65% to 80% (90% down to 10 microns )
14	Aesthetics	Clean external surface, No adhesive on frame
15	Filter cleaning	By compressed air/ water

S.No.	Overall dimensions (mm) (H X W X D)	Flange Type Filter Face Area (mm)	Rated Flow (CMH)		Qty (Nos) R1
			For Cassette	For Flange	
1	610 X 610 X 50	550x550	3350	2733	PE-V0-417-554-A008

NOTE: As per the Test Standard the testing of filters will be done only for Average Synthetic Dust Weight Arrestance

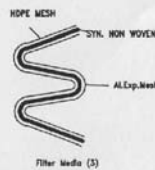
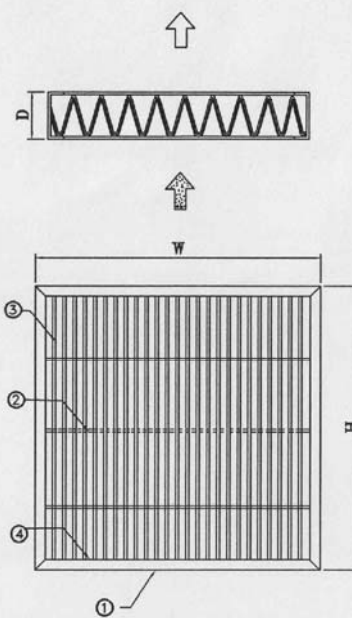
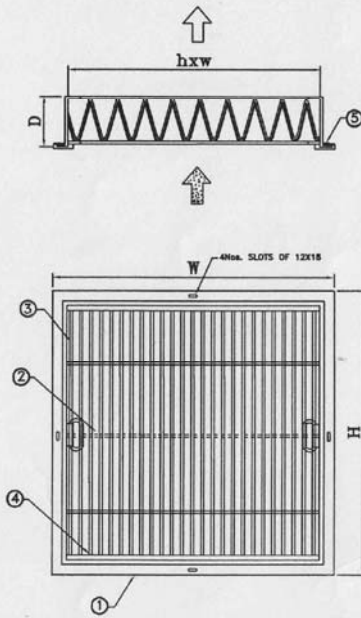


AN ISO 9001:2008 COMPLYING WITH 12 DSIDC Scheme-2, Okhla Ph-II 074899DL1992PTC048328



**Puromatic Filters Pvt. Ltd.**

12, DSIDC, Scheme-2, Okhla Industrial Area  
Phase-2, New Delhi-110020, India  
Telefax: +91-11-26388013, 14, 26389158  
Email: sales@puromaticfilters.in  
filters@puromaticfilters.in  
website: www.puromaticfilters.in



S.No.	ITEM	MATERIAL	QTY.	REMARKS
5	GASKET	SOFTSPONGE FOAM		
4	SEALING	EPOXY		
3	FILTER MEDIA	SYN. NONWOVEN	1 Set	
2	SPACERS	AL. Sheet 20 G	As per list	
1	FILTER FRAME	GI Sheet 18 G	1 No.	

BILL OF MATERIAL

**NOTE:-**

FILTER MEDIA : Thickness >4 mm  
 Basic Weight -120 ± 10% GSM  
 Sheet Thickness: GI Sheet 18 G -1.25 ± 0.12 mm  
 AL. Sheet 20 G -0.91 ± 0.08 mm



**DIMENSIONS FOR CASSETTE TYPE**

H <sup>1</sup>	W <sup>1</sup>	D <sup>1</sup>	No. of Pleats(± 1)	No. of Spacers
610	610	50	22	3

**DIMENSIONS FOR FLANGE TYPE**

H <sup>2</sup>	W <sup>2</sup>	h <sup>2</sup>	w <sup>2</sup>	D <sup>2</sup>	No. of Pleats(± 1)	No. of Spacers
610	610	550	550	50	20	3

PROJECT: 5X800 MW YADADRI TPS	ITEM: PRE FILTER
PACKAGE: VENTILATION SYSTEMS	TYPE: CASSTTE/FLANGE

**PUROMATIC FILTERS PVT. LTD.**  
 12, DSIDC, Scheme-2, Okhla Industrial Area  
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 filters@puromaticfilters.in  
 web: www.puromaticfilters.in  
 CIN- U74899DL1992PTC048328

ALL DIMENSIONS ARE IN MM.  
 DRWN. BY MD CHKD. BY  
 DRG NO. 2103092-GAD-B  
 DATE: 09.03.2021  
 REV: 01 DATE: 10.03.2021  
 Sheet No. 4 of 6

Technical Data Sheet			
ITEM	FINE FILTER	ANNEXURE	Page 5 of 6
CUSTOMER	TSGENCO	R1	REF 2103092-TDS-C
PROJECT	5X800 MW YADADRI TPS	DATE	09.03.2021
PACKAGE	VENTILATION SYSTEMS	REV	R2
		DATE	10.03.2021

S.No.	Description	Specification
1	Manufacturer	As Per Approved Vendor R1
2	Frame type	Cassette / Flange
3	Frame material	GI sheet 18 G ( 1.25 ± 0.12 mm )
5	Spacers	Al sheet 20 G ( 0.91 ± 0.08 mm )
6	Filter Media	Synthetic non woven (fire retardant and resistant to moisture, fungi ,bacteria & frost) progressive density filter media having high dust holding capacity at lesser pressure drop with HDPE mesh on air entry side & Al expanded mesh on air exit side.
7	Filter Media Basic Weight/ Thickness	200 ± 10% GSM / > 1.5 mm
8	Media sealing	Epoxy
9	Test standard	BS:6540/ASHRAE-52-76/EN779
10	Face velocity	2.4 m/sec.
11	Initial pressure drop	≤ 10 mm of WC
12	Final pressure drop	Up to 18 mm of WC
13	Average synthetic dust wt. arrestance (Equivalent Efficiency)	>90% (99% down to 5 microns )
14	Aesthetics	Clean external surface, No adhesive on frame
15	Filter cleaning	By compressed air/ water

S.No.	Overall dimensions (mm) (H X W X D)	Flange Type Filter Face Area (mm)	Rated Flow (CMH)		Qty (Nos) R1
			For Cassette	For Flange	
1	610 X 610 X 305	550x550	3215	2613	PE-V0-417-554-A008

NOTE: As per the Test Standard the testing of filters will be done only for Average Synthetic Dust Weight Arrestance .

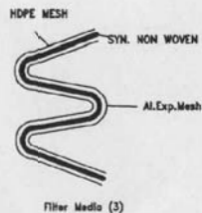
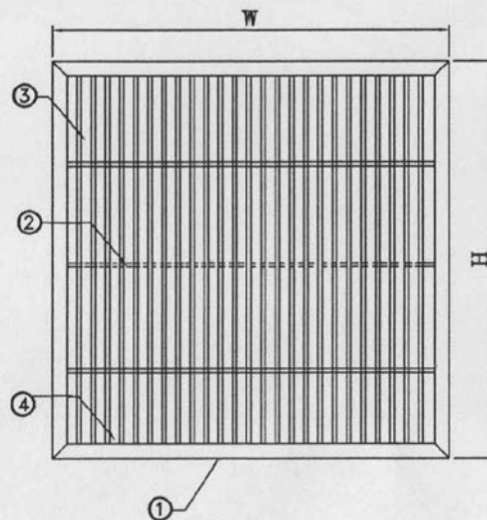
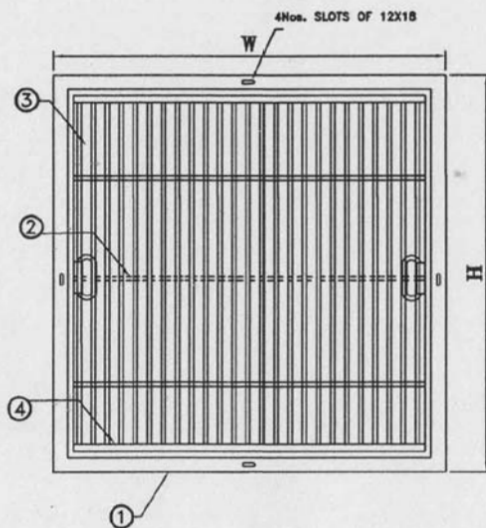
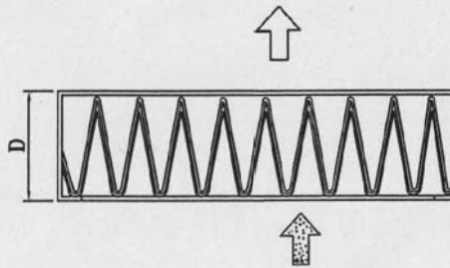
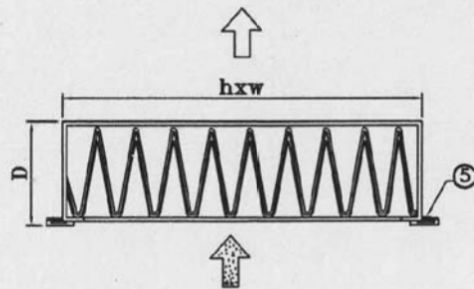


AN ISO 9001:2008 COMPANY CIN:U74899DL1992PTC048328



**Puromatic Filters Pvt. Ltd.**

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filters@puromaticfilters.in  
website: www.puromaticfilters.in



S.No.	ITEM	MATERIAL	QTY.	REMARKS
5	GASKET	SOFTSPONGE FOAM		
4	SEALING	EPOXY		
3	FILTER MEDIA	SYN. NONWOVEN	1 Set	
2	SPACERS	AL. Sheet 20 G	As per list	
1	FILTER FRAME	GI. Sheet 18 G	1 No.	

BILL OF MATERIAL

**NOTE:-**

FILTER MEDIA : Thickness >1.5 mm

Basic Weight -200 ± 10% GSM

Sheet Thickness: GI Sheet 18 G -1.25 ± 0.12 mm

AL. Sheet 20 G-0.91 ± 0.08 mm

**DIMENSIONS FOR CASSETTE TYPE**

H <sup>1</sup>	W <sup>1</sup>	D <sup>1</sup>	No. of Pleats(± 1)	No. of Spacers
610	610	305	22	3

**DIMENSIONS FOR FLANGE TYPE**

H <sup>1</sup>	W <sup>1</sup>	h <sup>1</sup>	w <sup>1</sup>	D <sup>1</sup>	No. of Pleats(± 1)	No. of Spacers
610	610	550	550	305	20	3



PROJECT: 5X800 MW YADADRI TPS	ITEM: FINE FILTER
PACKAGE: VENTILATION SYSTEMS	TYPE: CASSTTE/FLANGE

**PUROMATIC FILTERS PVT.LTD.**  
 12, DSIDC, Scheme-2, Okhla Industrial Area  
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 CIN- U74899DL1992PTC048328

ALL DIMENSIONS ARE IN MM.  
 DRWN. BY MD CHKD. BY  
 DRG NO. 2103092-GAD-C  
 DATE: 09.03.2021  
 REV: 01 DATE: 10.02.2021  
 Sheet No. 6 of 6

**TECHNICAL DATA SHEET**

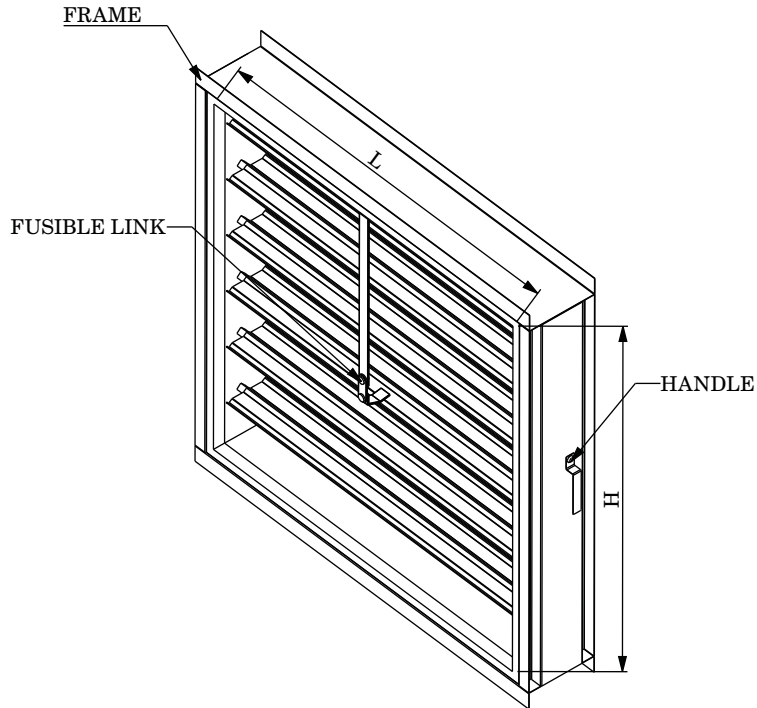
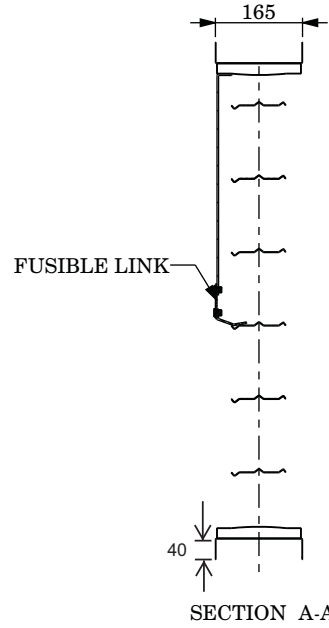
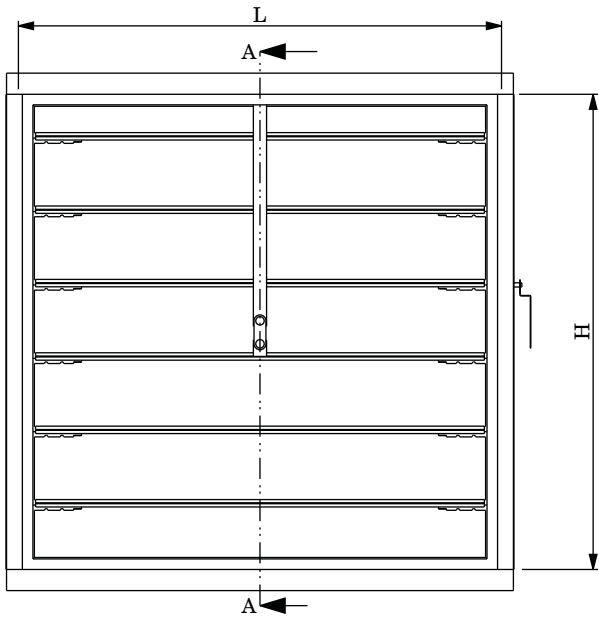
**DUCT MOUNTED TYPE FIRE DAMPER (FUSIBLE LINK TYPE)**


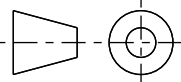






S.No.	DESCRIPTION	DETAILS
1	MAKE	SYSTEMAIR (RAVISTAR)
2	SIZE	AS PER FINAL DUCTING LAYOUT
3	MODEL	WGD
4	REFERENCE CODE/ STANDARD	AS PER UL-555,1995 ( CERTIFIED BY CBRI )
5	FIRE RATING	120 MINUTES
6	MOUNTING	DUCT MOUNTED
7	BLADE CONSTRUCTION	V- TYPE; MULTILEAF TYPE BLADE
8	LINKAGES /HANDLE	SELF LUBRICATING BRONZE BUSHES, SS SIDE SEAL, MS LINKAGES ONE SIDE ONLY , MANUAL TYPE
9	MATERIAL OF DAMPER	GALVANIZED SHEET
10	THICKNESS OF DAMPER	FRAME -16 G, BLADE- 16G V-TYPE
11	MAKE OF SHEET	JINDAL/NATIONAL/ESSAR (120GSM)
12	Fusible link	UL listed, 73 deg. C, ELSIE MAKE, Model A
13	WIDE	MINIMUM SIZE 300 X 300 MM (NECK) MAXIMUM SIZE 1200 X 1200 MM ( NECK) SIZES ABOVE 1200 X 1200 WILL BE IN PARTITION
14	<b>Application/ Location</b>	Battery Room/ Refer VENT. ARRANGEMENT FOR BATTERY ROOM Unit 1&2 - doc.No(PE-V0-417-554-A031) and Unit 3,4 & 5 (doc.no-PE-V0-417-554-A047)



ALL DIMENSIONS ARE IN M.M. (IF IN DOUBT PLS. ASK DON'T SCALE THE DRAWING)



PART/No.:-		MATERIAL:-	DATE:-		DRAWING No.:-	
FIRE DAMPER WITH FUSIBLE LINK			G.I.	13-Nov-2018		
TOLERANCE:-	SCALE:-	DRN. BY:-	SAGAR	CHD. BY:-	APPD. BY:-	
±2	N.T.S.					
No. of SC/CC		 <b>SYSTEMAIR INDIA PVT.LTD.</b>				
SC						
CC						

TECHNICAL DATASHEET		
FIRE DAMPER WITHOUT SLEEVE (MOTORIZED)		
S.NO.	DESCRIPTION	DETAILS
1	MAKE	SYSTEM AIR
2	SIZE	AS PER REQUIREMENT
3	MODEL	WGD
4	REFERENCE CODE/ STANDARD	AS PER UL-555,1995 (CERTIFIED BY CBRI)
5	FIRE RATING	120 MINUTES, WITH STAND TEMPERATURE -90 DEGREES CELSIUS.
6	MOUNTING	DUCT MOUNTED
7	BLADE CONSTRUCTION	V-TYPE
8	SHAFT	18mmx 14mm DIA CIRCULAR RODE code. IS-9550 GRI
9	MATERIAL OF DAMPER	GALVANIZED SHEET, IS277 
10	THICKNESS OF DAMPER	FRAME-16 G, ;LOUVER-16 G
11	MAKE OF SHEET	JINDAL/ TATA/BHUSHAN
12	LINKAGE/ BUSH	U TYPE LINKAGE, STEEL IS-9550 FLAT CHROME PLATED HANDLE FOR ACTUATOR 
13	ACTUATOR	BELIMO MAKE ACTUATOR, SRPING RETURN TYPE MODEL NFAS2,10NM TORQUE, IP54 PROTECTION,24-230V AC/DC 
14	CONTROL PANEL	OPERATING VOLTAGE-220V AC, FREQUENCY 50 Hz, INDICATION OF POWER ON/ OFF CONNECT WITH AWU / FIRE SIGNAL ETC.
15	TYPE OF DAMPER	MOTORIZED
16	SIZE	MINIMUM SIZE 300 X 300 MM (NECK) MAXIMUM SIZE 1000 X 1000 MM (NECK) SIZES ABOVE 1000X 1000 WILL BE IN PARTITION
17	DAMPER CLOSING	SPRING RETURN ACTION FROM ACTUATOR ON POWER FAILURE
18	APPLICATION/ LOCATION 	<p>AT AWU/UAF DUCT LEADING TO TG BUILDING/ ESP BUILDING /</p> <p>1.VENTILATION DUCT LAYOUT FORTG BUILDING - 'A' ROW SIDE ( Unit 1 &amp; 2) (PE-V0-417-554-A026).</p> <p>2.VENTILATION DUCT LAYOUT FORTG BUILDING - 'BC BAY' SIDE( Unit 1 &amp; 2) (PE-V0-417-554-A027).</p> <p>3.VENTILATION DUCT LAYOUT FOR ESP BUILDINGS ( Unit 1 &amp; 2) -(PE-V0-417-554-A028).</p> <p>4.AIR WASHER LAYOUT OUTSIDE "A ROW" SIDEALONGWITH FOUNDATION DETAILS - TG BUILDING (Unit 3, 4 &amp; 5) (PE-V0-417-554-A040).</p> <p>5.AIR WASHER LAYOUT FOR" B-C BAY" SIDEALONGWITH FOUNDATION DETAILS - TG BUILDING (Unit 3, 4 &amp; 5) (PE-V0-417-554-A041).</p> <p>6.UAF LAYOUT ALONGWITH FOUNDATION DETAILS - ESP BUILDING. ( Unit 3, 4 &amp; 5) (PE-V0-417-554-A042)</p>

## Approved AXIAL FAN Motor Data sheet :LHP make

Motor Schedule For Fan						
S. No.	Driven Equipment Type	Selected Motor (KW)	Pole	Speed (RPM)	motor quantity	Motor Voltage
3	RE FAN	2.2	6	960	27	415VAC
4	RE FAN	5.5	6	960	47	415VAC
5	Supply Air Fan	2.2	4	1470	25	415VAC
6	Supply Air Fan	1.5	4	1470	14	415VAC
7	Supply Air Fan	2.2	6	960	6	415VAC
8	Supply Air Fan	1.5	6	935	7	415VAC
9	Supply Air Fan	1.1	6	930	5	415VAC
10	Supply Air Fan	1.1	6	930	7	415VAC
11	Exhaust Air Fan (FLP)	2.2	6	960	21	415VAC
12	Exhaust Air Fan (FLP)	1.5	6	930	6	415VAC
13	Exhaust Air Fan (FLP)	0.75	6	925	9	415VAC
14	Exhaust Air Fan (FLP)	0.55	6	915	6	415VAC
15	Exhaust Air Fan (FLP)	1.1	6	970	16	415VAC
16	Exhaust Air Fan (FLP)	0.55	4	1470	65	415VAC
17	Exhaust Air Fan (FLP)	3.7	4	1470	11	415VAC
18	Exhaust Air Fan	1.1	6	930	12	415VAC
19	Exhaust Air Fan	0.75	6	925	2	415VAC
20	Exhaust Air Fan	0.55	6	915	15	415VAC
21	Exhaust Air Fan	0.37	4	1470	2	415VAC

**Note:**

1. Quantities mentioned are typical and will vary as per Engg requirement.
2. Offered Motors are for Indoor installations.
3. The selected motors are suitable to run at full load torque for 15 sec at 60% rated.
4. Vibration level will be as per IS Standard, however same shall be limited for 4 Pole upto 25 microns
5. Motors are designed to withstand 120% rated speed for 2 minutes.

MOTORS			
TDS FOR 2.2 KW-4 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 100L
1.03.00	design code no.		IS/IEC 60034-1, IS12615
1.04.00	Nos. required		As per ventilation fan schedule
1.05.00	Application		As per approved layout
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	2.2
	ii) At 40 Deg C ambient	kW	2.35
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	4.59
	b) Full load speed	A	1435
	c) No load current	A	2.30
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	5min
1.17.00	Maximum permissible time at 80% of rated voltage during running at full load.	Sec.	5min
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		86.7 0.77
	50		84 0.65
	25		82 0.50
	0		NA 0.09
	At start		NA 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		4.22
	iv) Resistance per phase at 20°C		2.11
	v) Inductance per phase		0.020
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.49
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	250
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F TO B
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles *		3 HOT 3COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6206 ZZ/6206 ZZ @ DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED/ SELF LUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEGREE C
	xi) Max. permissible temp. of Oil		NA
	xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		As per provided cable size in table
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN100A0249
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.02
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	14 APPROX
	ii) Weight of rotor (wound)	kg	9 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 23 Kg
1.57.00	Shipping dimensions & weight		480x320x295 & 26 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

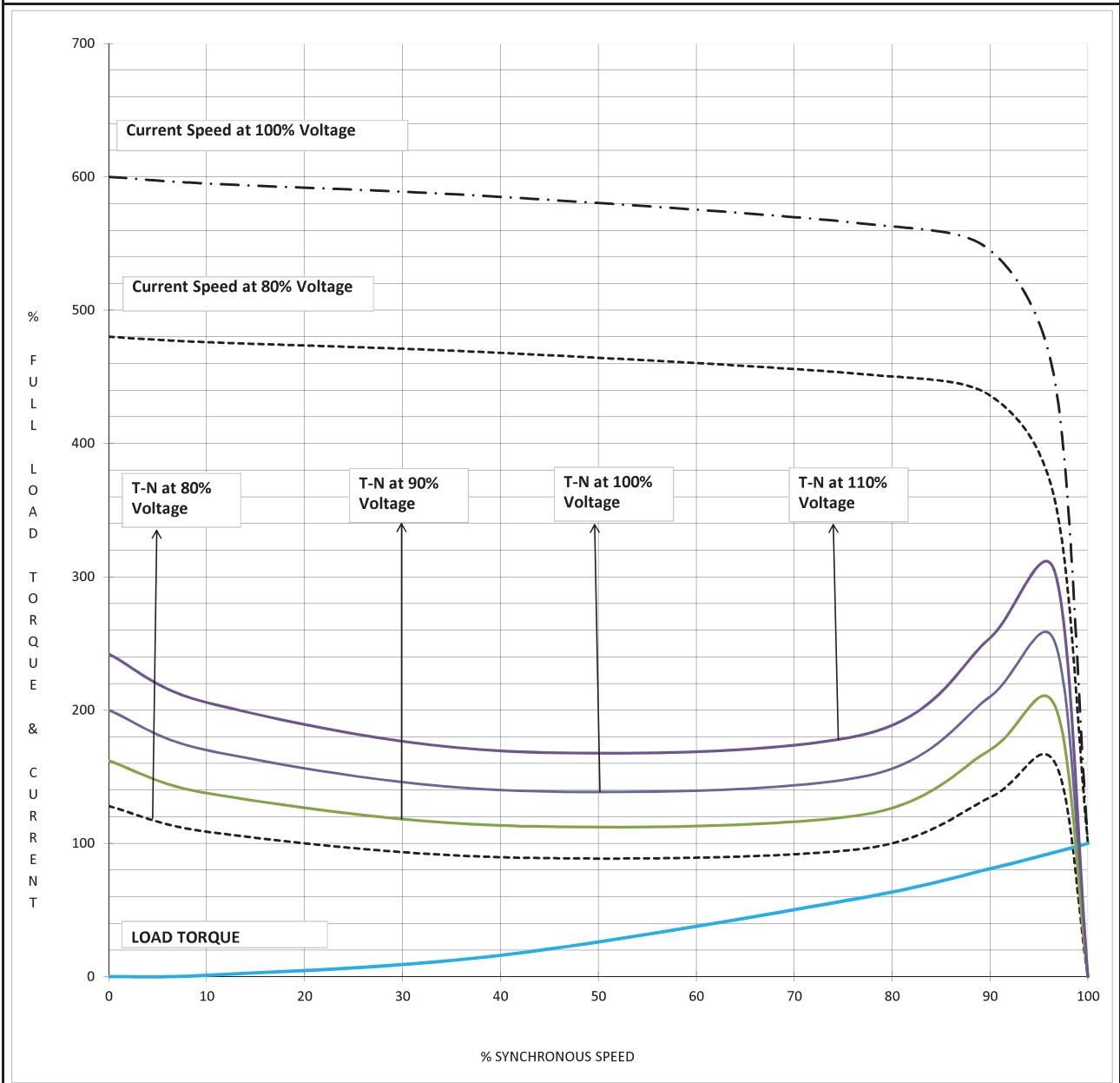
4

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

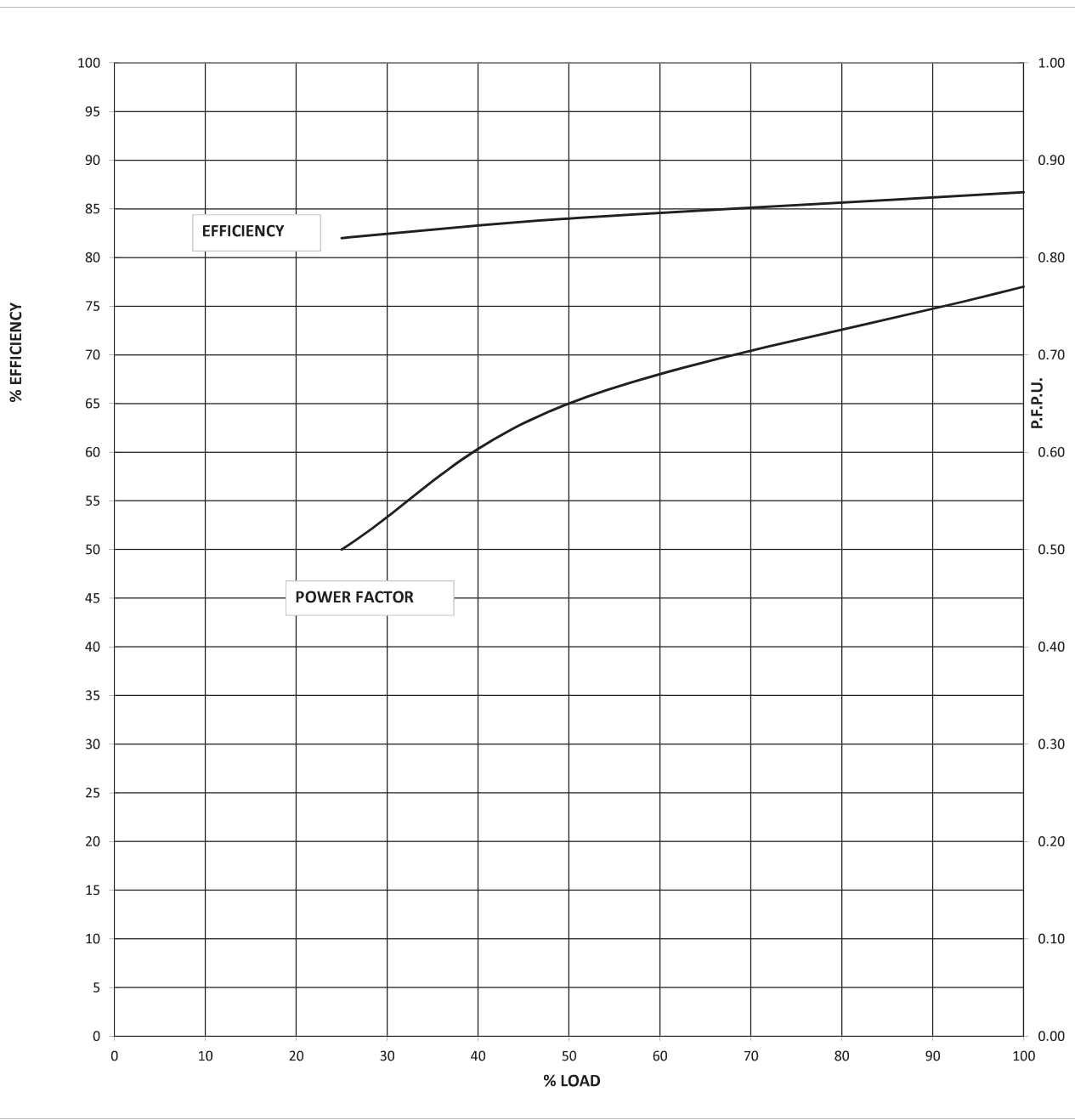
4

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	11/25/2019
1			T BOX NO		Checked By	SNG	11/25/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 2.2 POLE :

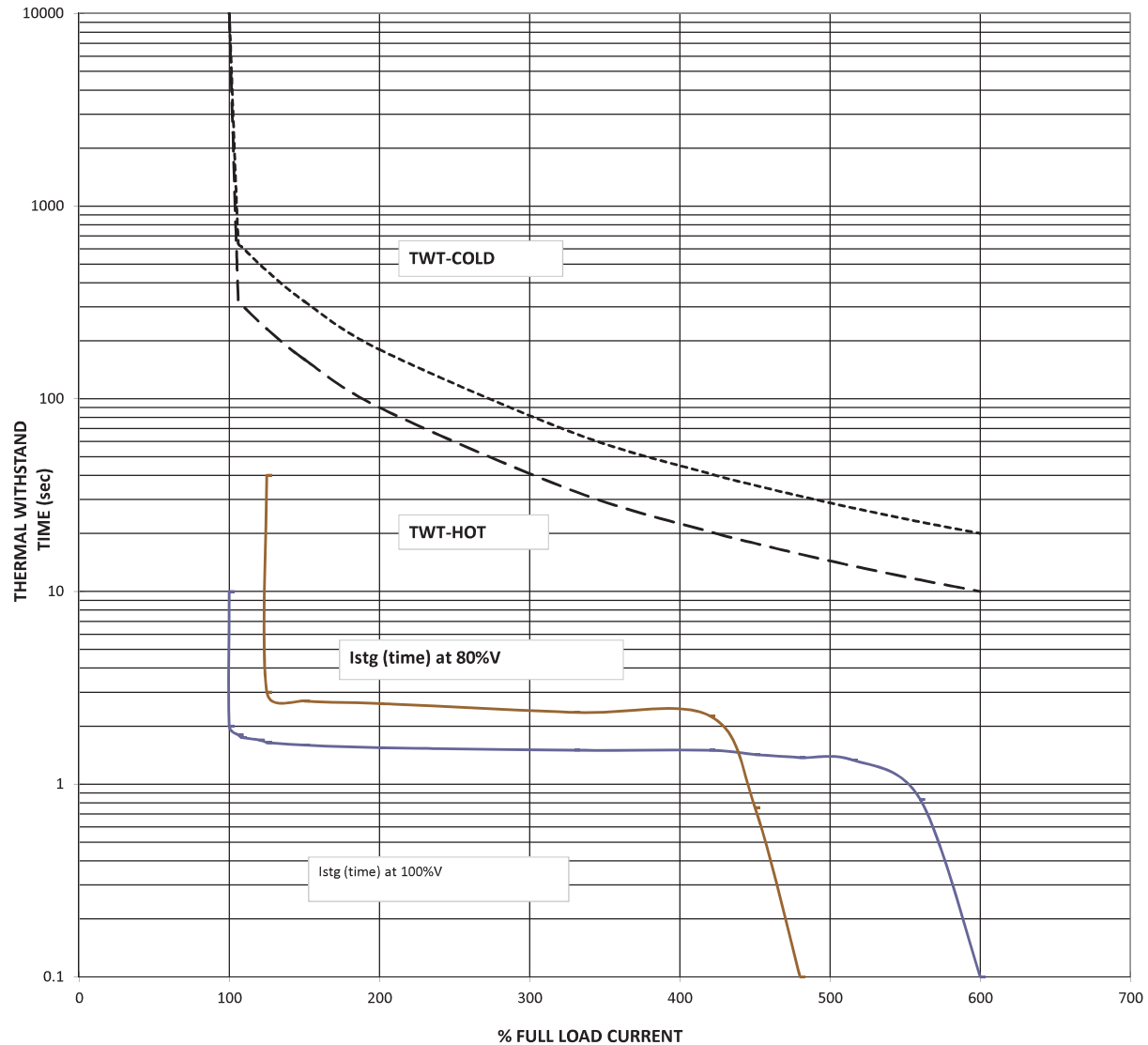
4

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT 100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT 100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

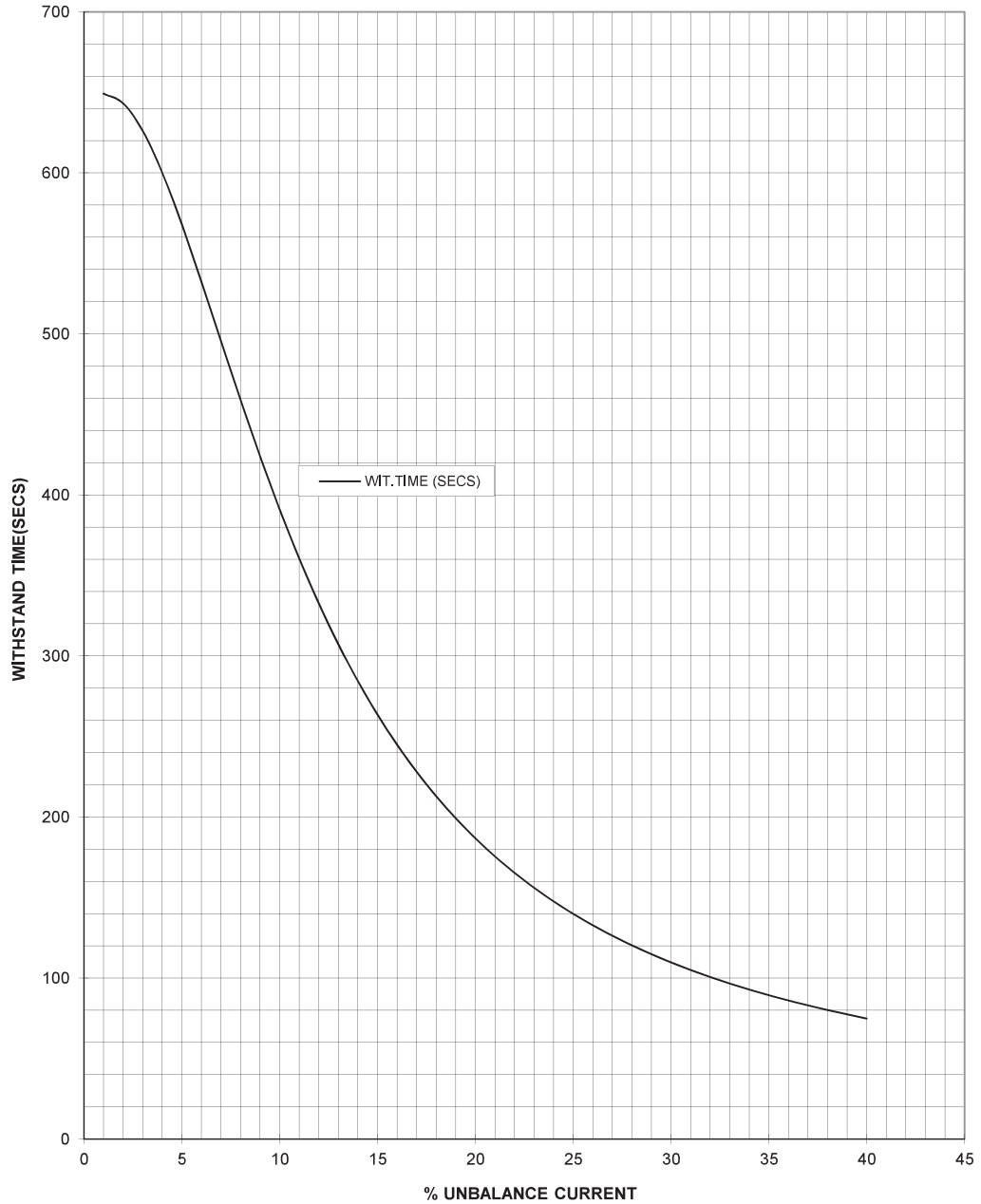
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

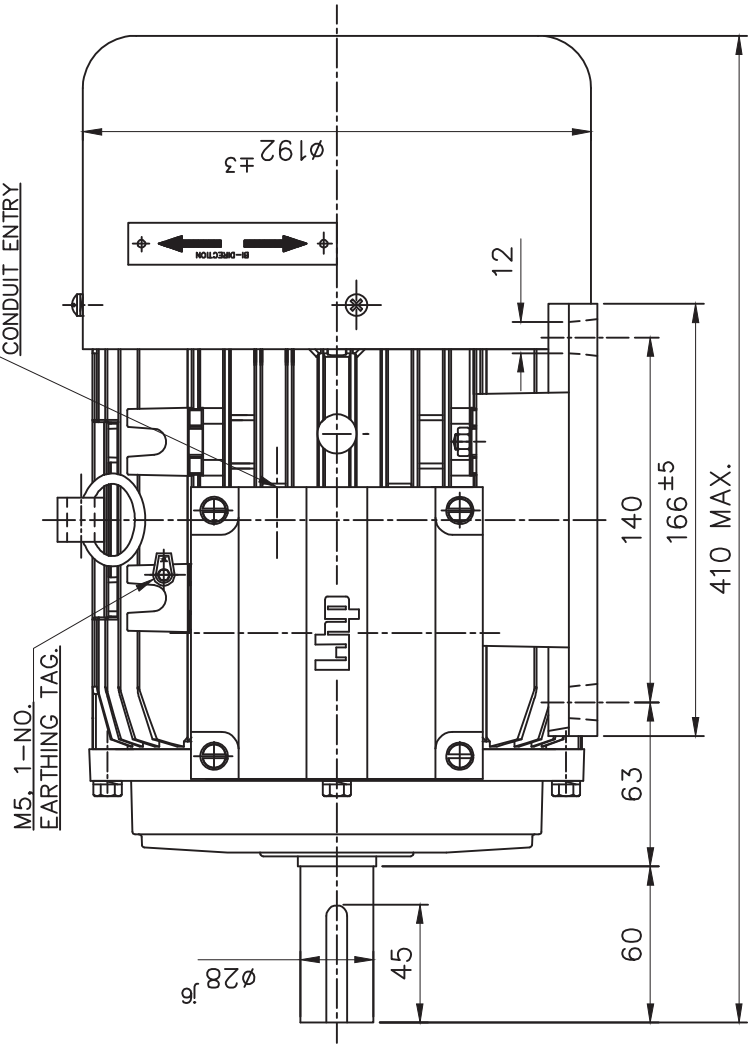
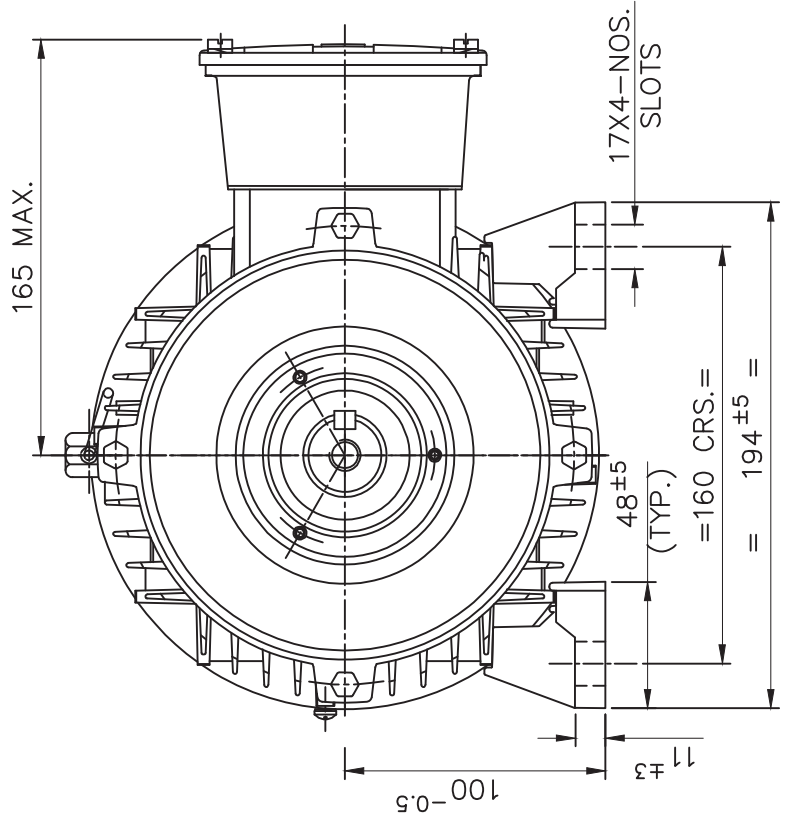


**NEGATIVE SEQUENCE CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION  
 WORKS ORDER NO. :  
 kW : 2.2 POLE : 4 VOLTS : 415 SAP NO:  
 QTY : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE

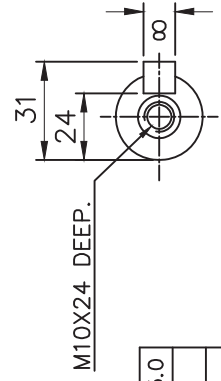


**SPECIFICATIONS:-**

RATING (kW/HP)	1.5/2.0	2.2/3.0	3.7/5.0
POLE	6	4	2
BEARING DE SIDE	6206 ZZ		
BEARING NDE SIDE	6206 ZZ		

**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	CAST IRON/AL
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL



**SHAFT END DETAILS**

Note:  
1. Terminal Box Rotatable 360 deg in step of 90 deg.

UNMENTIONED DIMNS.	OVER 2. UPTO 0.5-3	3-6	6-30	30-120	120-500	400-1000	1000-2000
TOLERANCES	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
ARE AS PER IS:202-17	PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE						
ISO 7168-1	OVER 2. UPTO 0-10	10-50	50-120	120-400	400.....		
ANGULAR DIMNS.	0-1°	1°-30'	30°-20'	20°-10'	10°-5'		
TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'		

TITLE:-  
**GENERAL ARRANGEMENT. DRG. FOR 100L FRAME FOOT (B3) MOUNTED MOTOR**

REV. NO.	1	DATE	17.08.19	SAT	INTL.
DOR NAMEPLATE ADDED. RATING 3.7kW, 2-POLE ADDED.		DETAILS OF CHANGE			

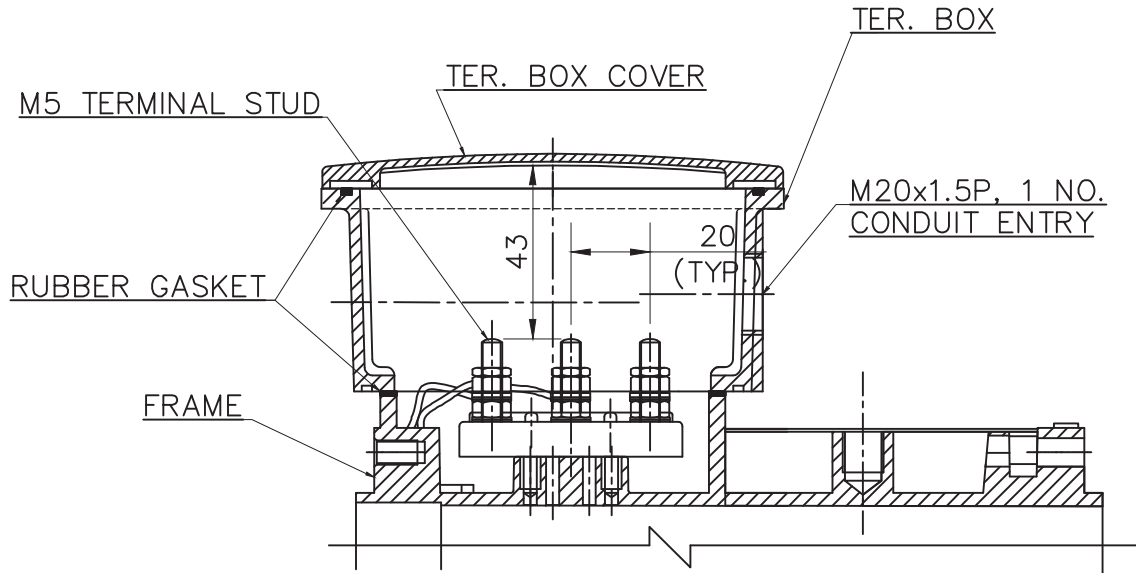
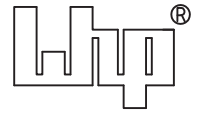
**HP** Laxmi Hydraulics Pvt.Ltd. SOLAPUR  
Website : www.lhp.co.in

DRG. NO.	MGAN100A0249
ISSUE NO.	01
REV. NO.	01

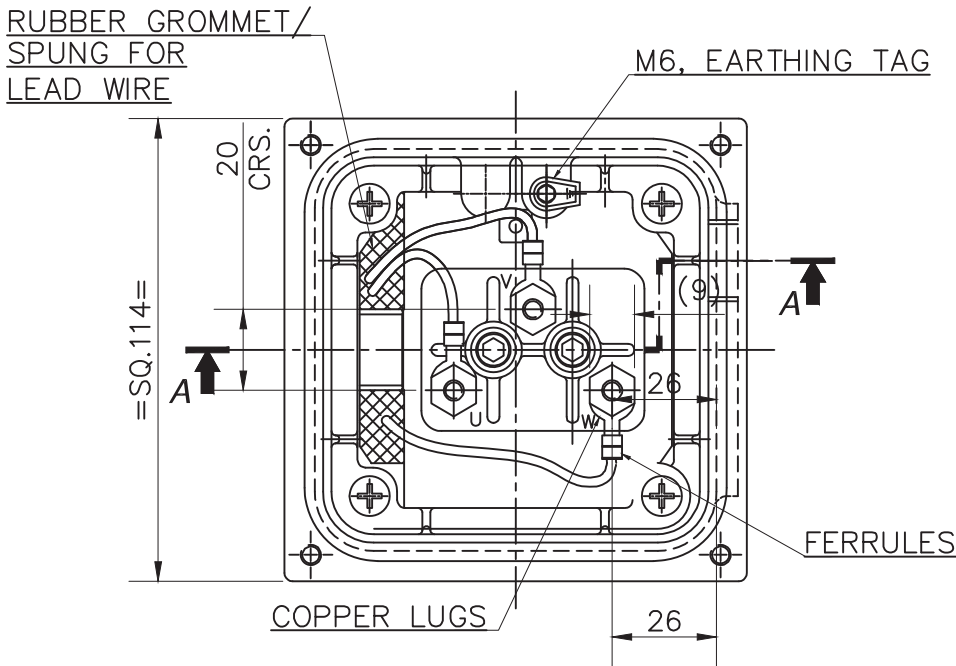
PRODUCT CODE: EA0356  
PRODUCT CODE: EB0891

NAME	TAMBLE	DATE	17.10.18
DGN.		GRM	17.10.18
DRN.		SHEET	1 OF 02

**LAXMI HYDRAULICS PVT. LTD, SOLAPUR**  
**TERMINAL BOX ARRANGEMENT FOR 100 AL-PDC FRAME**



**SECTION A-A**



**TER. BOX VIEW WITHOUT COVER**

\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MGAN\100\B3\MGAN100A0249.dwg

1	REFER SHEET NO. 01 OF 02.	17.08.19	SAT
REV. NO.	DETAIL OF CHANGE	DATE.	INTL.
ISSUE.NO.-01	REV.NO.-01	DATE: - 17.10.18	DRG.NO.: -MGAN100A0249
SHEET-2 OF 2	DRN.BY:- TAMBULE	CHD BY:-	APPD. BY:- GRM

MOTORS			
1.00.00	TDS FOR 2.2 KW-6 POLE MOTOR		
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 112M
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		As per ventilation fan schedule
1.05.00	Application		As per approved layout
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	2.2
	ii) At 40 Deg C ambient	kW	2.35
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	4.78
	b) Full load speed	A	950
	c) No load current	A	2.70
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	5min
1.17.00	Maximum permissible time at 80% of rated voltage during running at full load.	Sec.	5min
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		84.3 0.76
	50		83 0.65
	25		80 0.42
	0		NA 0.11
	At start		NA 0.65
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00 (STUD)
	iii) Resistance between terminals at 20°C		6.66
	iv) Resistance per phase at 20°C		3.33
	v) Inductance per phase		0.030
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	2.26
1.23.00	Break away torque in % of full load torque	%	160
1.24.00	Pull up torque in % of full load torque	%	150
1.25.00	Pull out torque in % of full load torque	%	210
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F TO B
	ii) Material & treatment of insulation		VPI
1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V

1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles *		3 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6306 ZZ/6306 ZZ @ DE/NDE
	ii) Type		DGGB
	iii) Lubrication system		PRELUBRICATED / SELF LUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEGREE C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		As per cable size
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	iii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN112A0246
1.52.00	Grounding pads size nos. & location		2 X M6
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.044
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	24 APPROX
	ii) Weight of rotor (wound)	kg	16 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 30 Kg
1.57.00	Shipping dimensions & weight		650X395X480 & 33 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		2 X M6
	ii) Terminal Box (Number & Size)		1 X M6

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

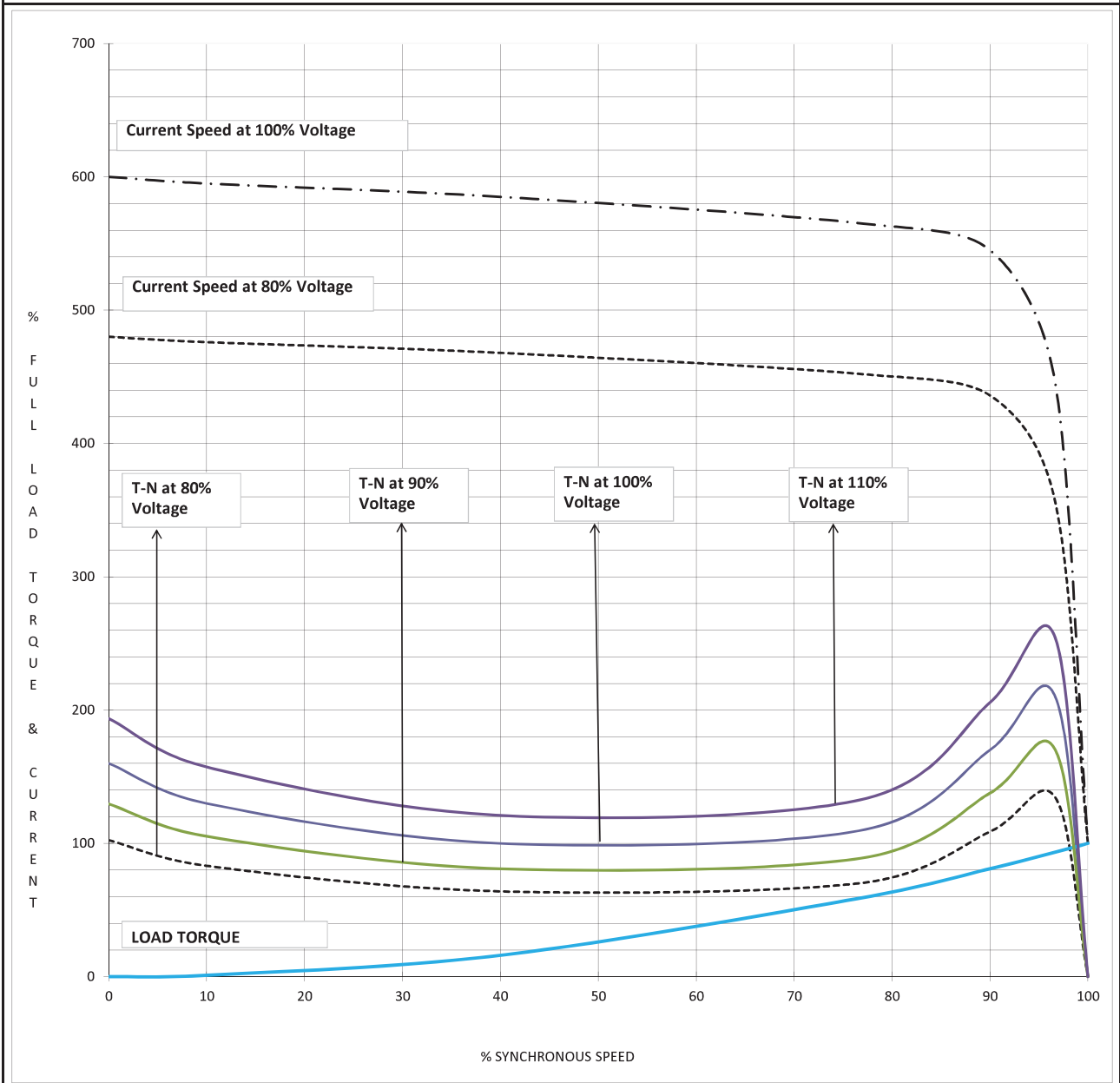
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.

**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

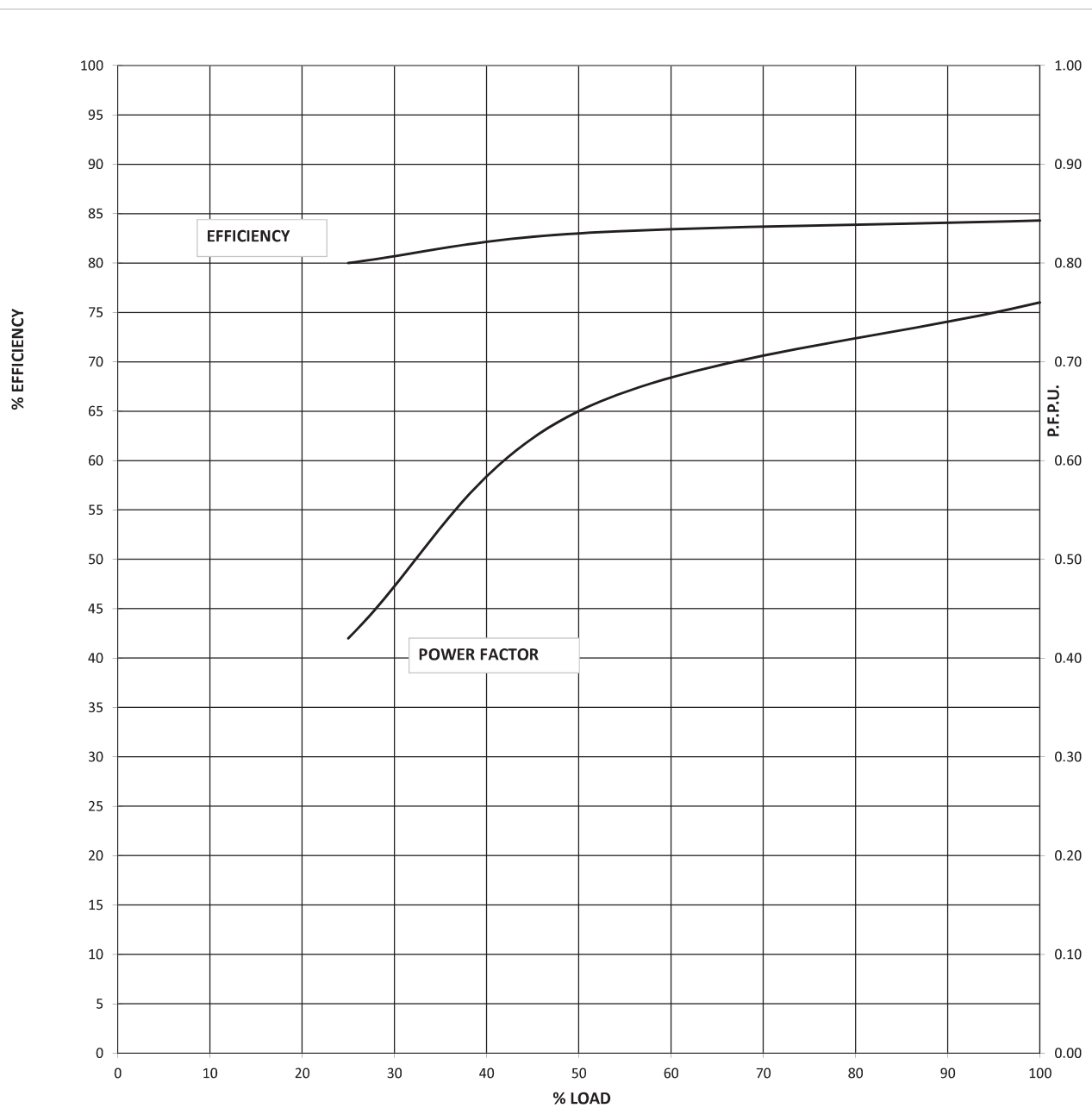
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	SIGN	DATE
2		WDG NO		Prepared By	SSG 11/25/2019
1		GAD NO		Checked By	SNG 11/25/2019
		T BOX NO			

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 2.2 POLE :

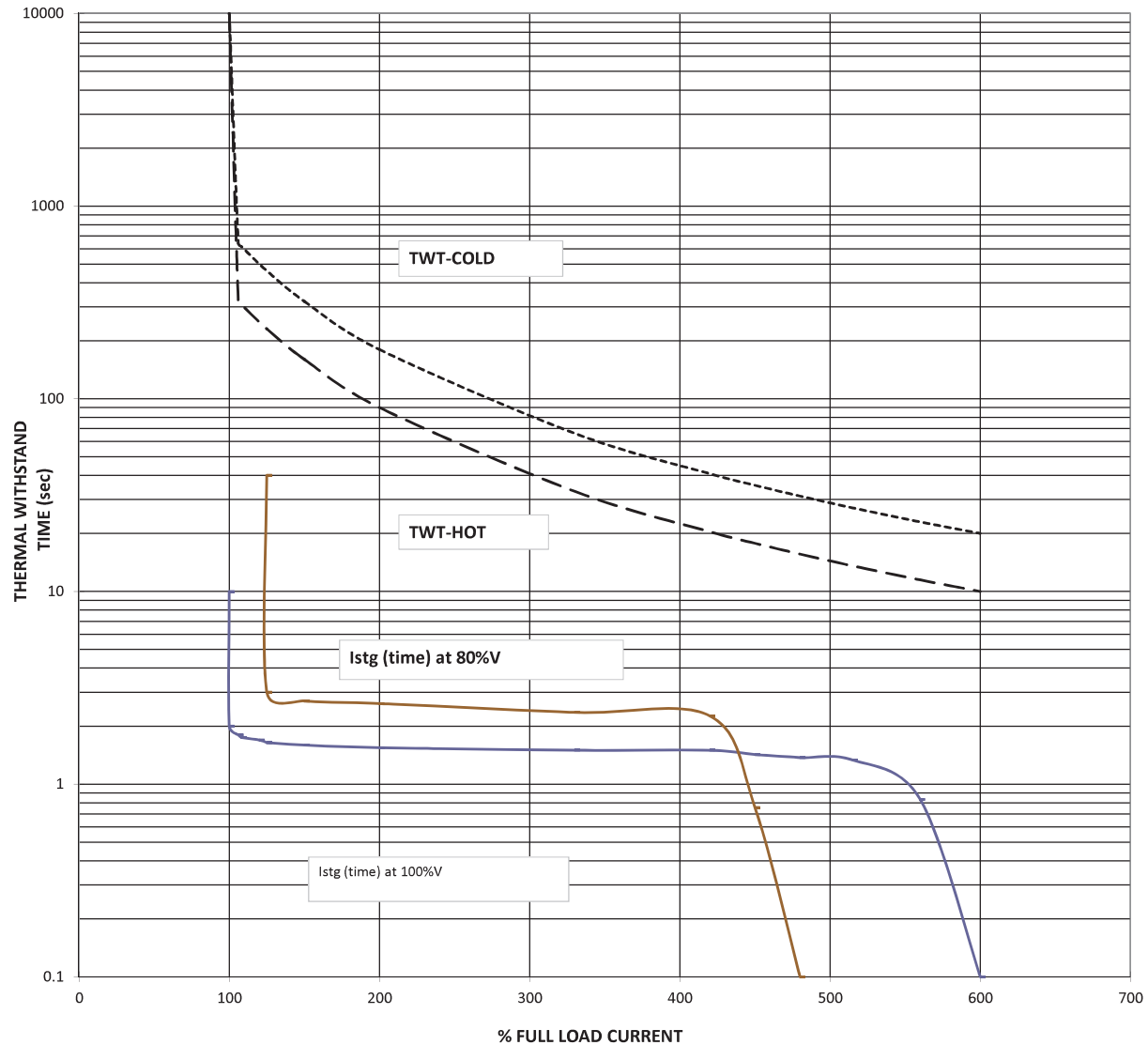
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT 100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT 100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

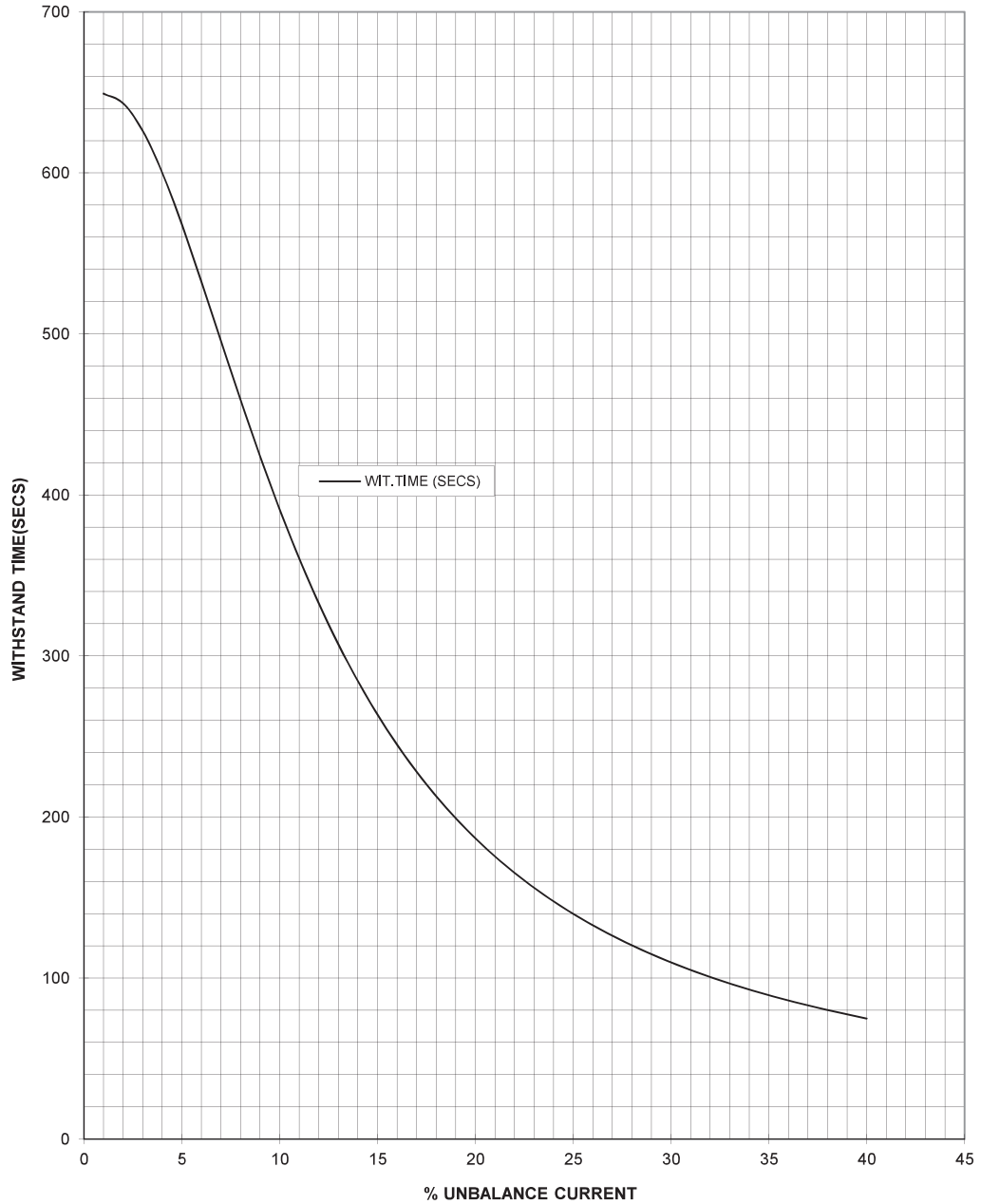
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE



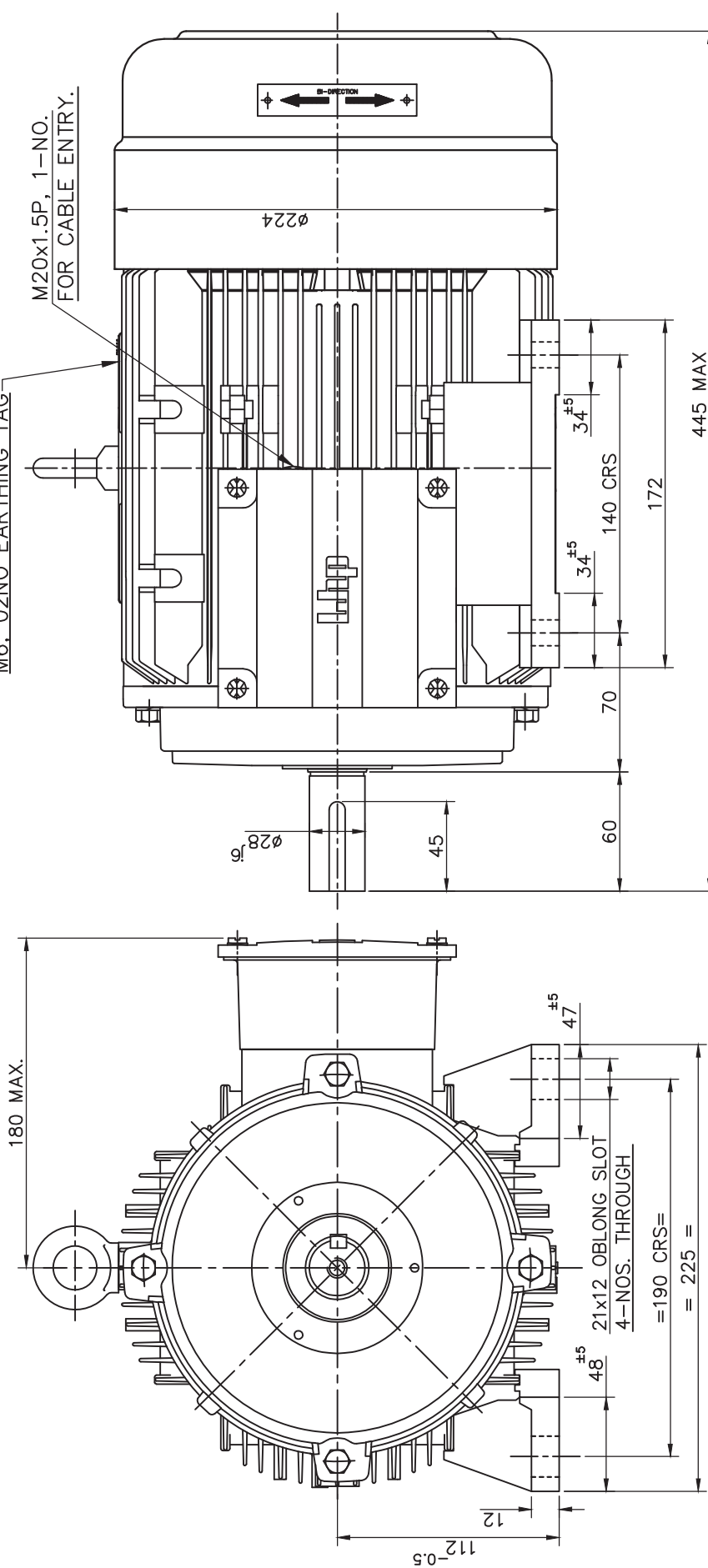
**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 2.2    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE

M6. 02NO EARTHING TAG  
M20x1.5P, 1-NO.  
FOR CABLE ENTRY.



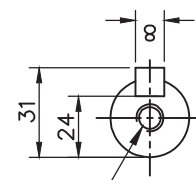
**SPECIFICATION:-**

KW / HP.	2.2/3
POLE	6
BEARING DE SIDE	6306 ZZ
BEARING NDE SIDE	6306 ZZ

**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	ALUMINIUM
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL

M10x22 DEEP.



**SHAFT END DETAILS**

Note:  
1. Terminal Box Rotatable 360 deg in step of 90 deg.

UNMENTIONED DIMS.	OVER & UP TO	0.5-3	3-4	4-6	6-30	30-100	100-400	400-1000	1000-2000
TOLERANCE		±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	±3
ANGULAR DIMS. <td></td> <td>0-10</td> <td>10-50</td> <td>50-100</td> <td>100-400</td> <td>400-1000</td> <td>1000-2000</td> <td></td> <td></td>		0-10	10-50	50-100	100-400	400-1000	1000-2000		
TOLERANCE		±1°	±0.75°	±0.75°	±0.75°	±0.75°	±0.75°		

PROD. CODE:- EC0125

NAME	DATE
DGN.	
DRN.	
CHD.	15.03.19
APPD.	15.03.19
SCALE	1:1

TITLE  
GENERAL ARRANGEMENT. DRG. FOR  
112M FRAME FOOT MOUNTED MOTOR

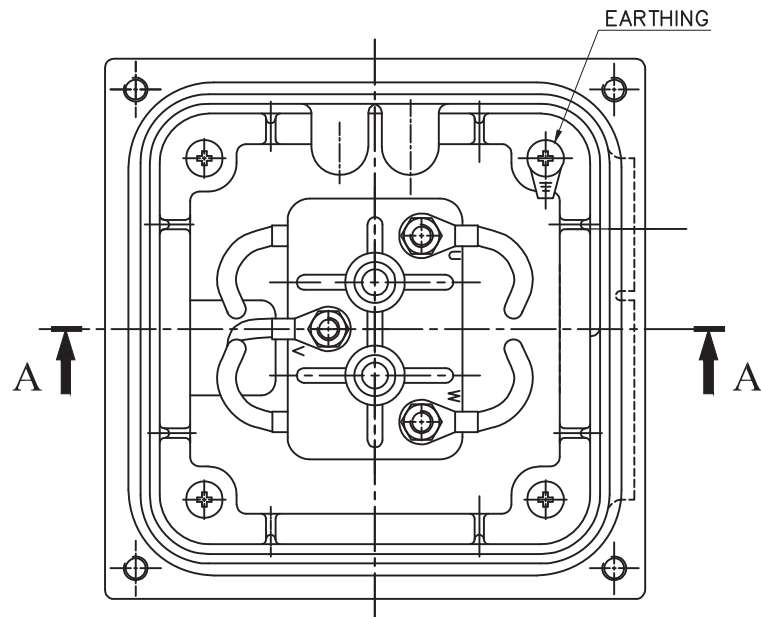
DRG. NO.	MGAN112A0246
ISSUE NO.	01
REV. NO.	00

01	DDR N/P SHOWN ON FAN COVER	09.08.19	SSV
	DETAIL OF CHANGE	DATE	INTL.

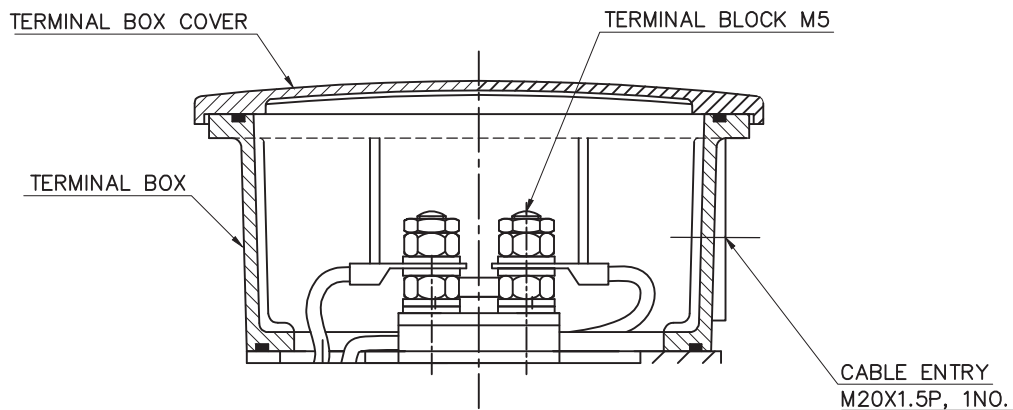
Laxmi Hydraulics Pvt.Ltd.  
SOLAPUR  
Website : www.lhb.co.in  
UNLESS OTHERWISE SPECIFIED ALL DIMS. ARE IN MM. DO NOT SCALE THE DRAWING.

LAXMI HYDRAULICS PVT. LTD, SOLAPUR

TERMINAL BOX ARRANGEMENT  
OF 112 FRAME MOTOR



TOP VIEW WITHOUT COVER



ISSUE.NO.-01	REV.NO.-01	DATE- 15.03.19	DRG.NO.-MGAN112A0246
CHD.BY.-VALSANGE	CHD. BY.-	APPD.BY.-	SHEET- 2/2

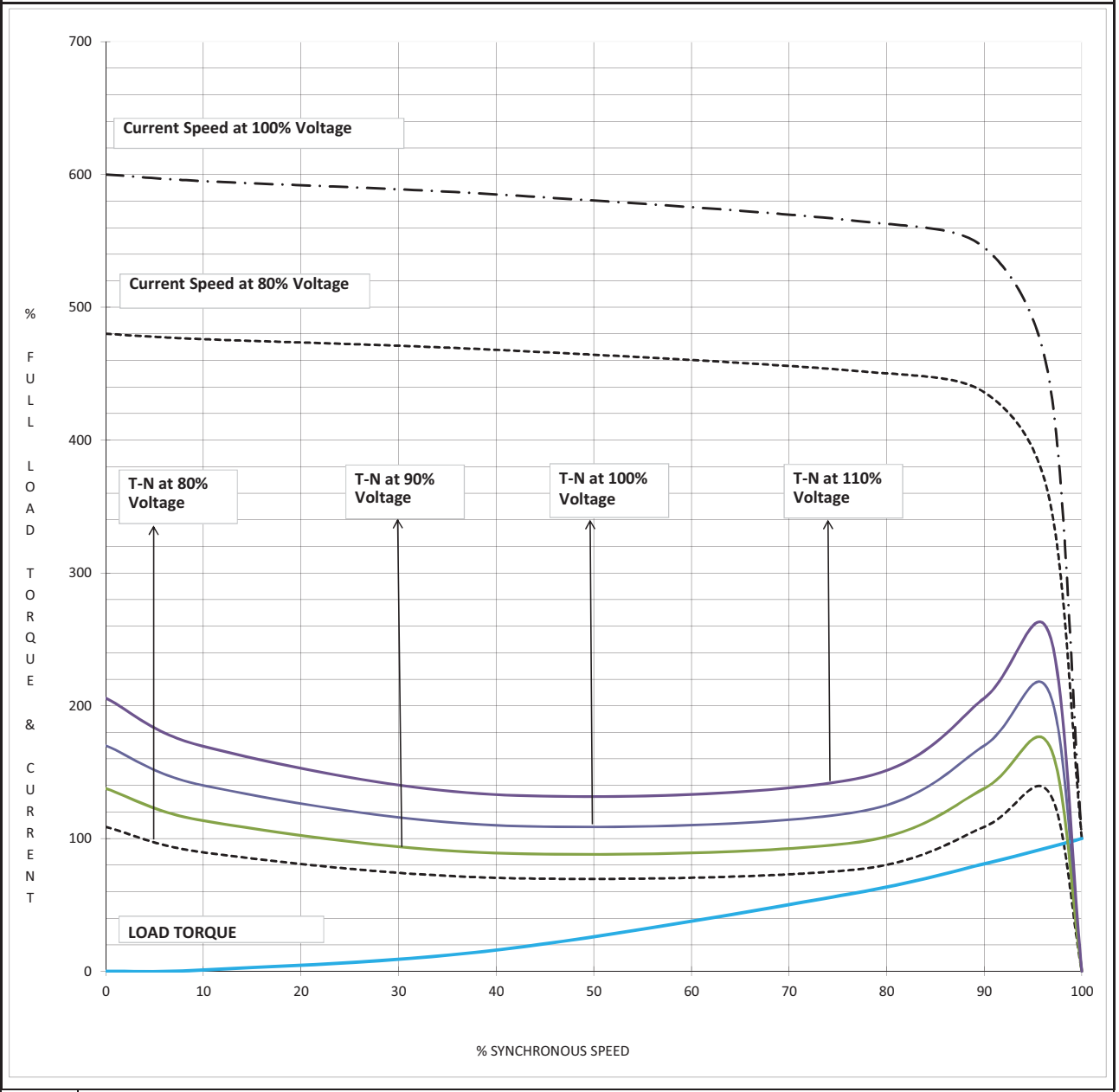
1.00.00 MOTORS-TDS of 5.5 KW/ 6 POLE			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic Private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 132M
1.03.00	design code no.		IS/IEC 60034-1,IS 12615
1.04.00	Nos. required		Axial fan/ as per approved Layouts
1.05.00	Application		As per approved Layouts
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	5.5
	ii) At 40 Deg C ambient	kW	5.9
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	11.61
	b) Full load speed	A	950
	c) No load current	A	5.80
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100	88	0.75
	50	87	0.64
	25	83	0.40
	0	-	0.07
	At start	-	0.40
	Duty Point		
1.20.00	Stator winding		
	i) Connection		DELTA
	ii) Type & nos. of terminals Brought out		6.00
	iii) Resistance between terminals at 20°C		1.70
	iv) Resistance per phase at 20°C		2.55
	v) Inductance per phase		0.100
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	5.64
1.23.00	Break away torque in % of full load torque	%	170
1.24.00	Pull up torque in % of full load torque	%	150
1.25.00	Pull out torque in % of full load torque	%	210
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	8
	ii) At 80% of rated voltage	Sec.	13
	iii) At 110% of rated voltage	Sec.	7
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	16
	ii) At 80% of rated voltage	Sec.	25
	iii) At 110% of rated voltage	Sec.	13
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6308 ZZ.C3/6208 ZZ.C3 @DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEGREE C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTION MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		M25X1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CA/AL & 6 mm MINIMUM
1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA

1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN132A0538
1.52.00	Grounding pads size nos. & location		2 X M6
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.108
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	48 APPROX
	ii) Weight of rotor (wound)	kg	32 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	80 Approx. Kg
1.57.00	Shipping dimensions & weight		700x495x495 & 96 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		2 X M6
	ii) Terminal Box (Number & Size)		1 X M6

MKTG Ref No.:	D7PO1907021	LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.	CE <b>Lhp</b>
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SPEED VS TORQUE & CURRENT CHARACTERISTICS					
CUSTOMER :	M/s ADVANCE VENTILATION	PO NO:		PO DATE:	
INDENT NO. :					
PROJECT NAME :					
kW :	5.5	POLE :	6	VOLTS :	415
				QTY :	1



NOTE 1	ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.
2	STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,
3	PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	8/31/2019
2			GAD NO			Checked By	SNG	8/31/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

kW :

5.5

POLE :

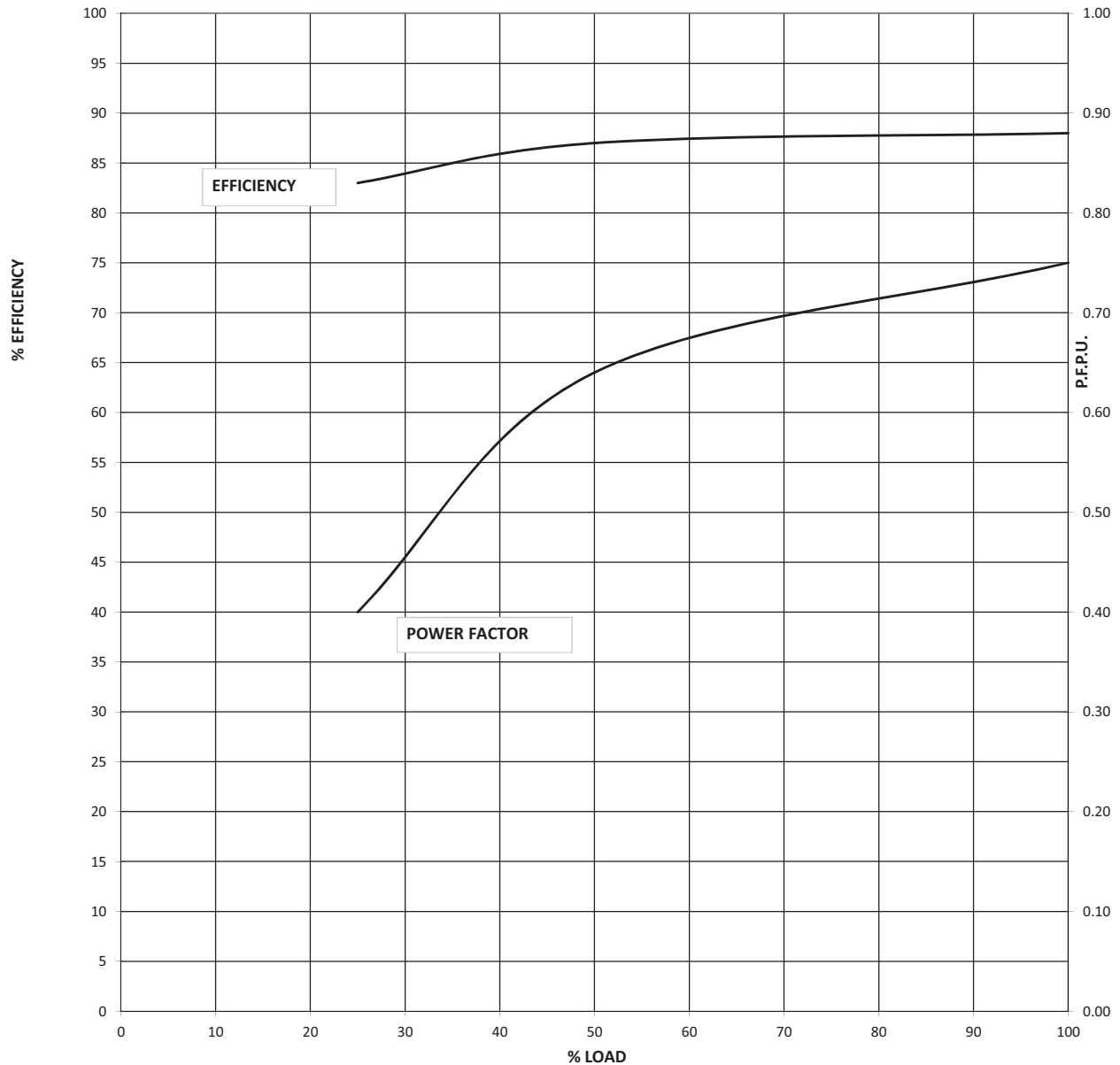
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	8/31/2019
1			T BOX NO		Checked By	SNG	8/31/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 5.5 POLE :

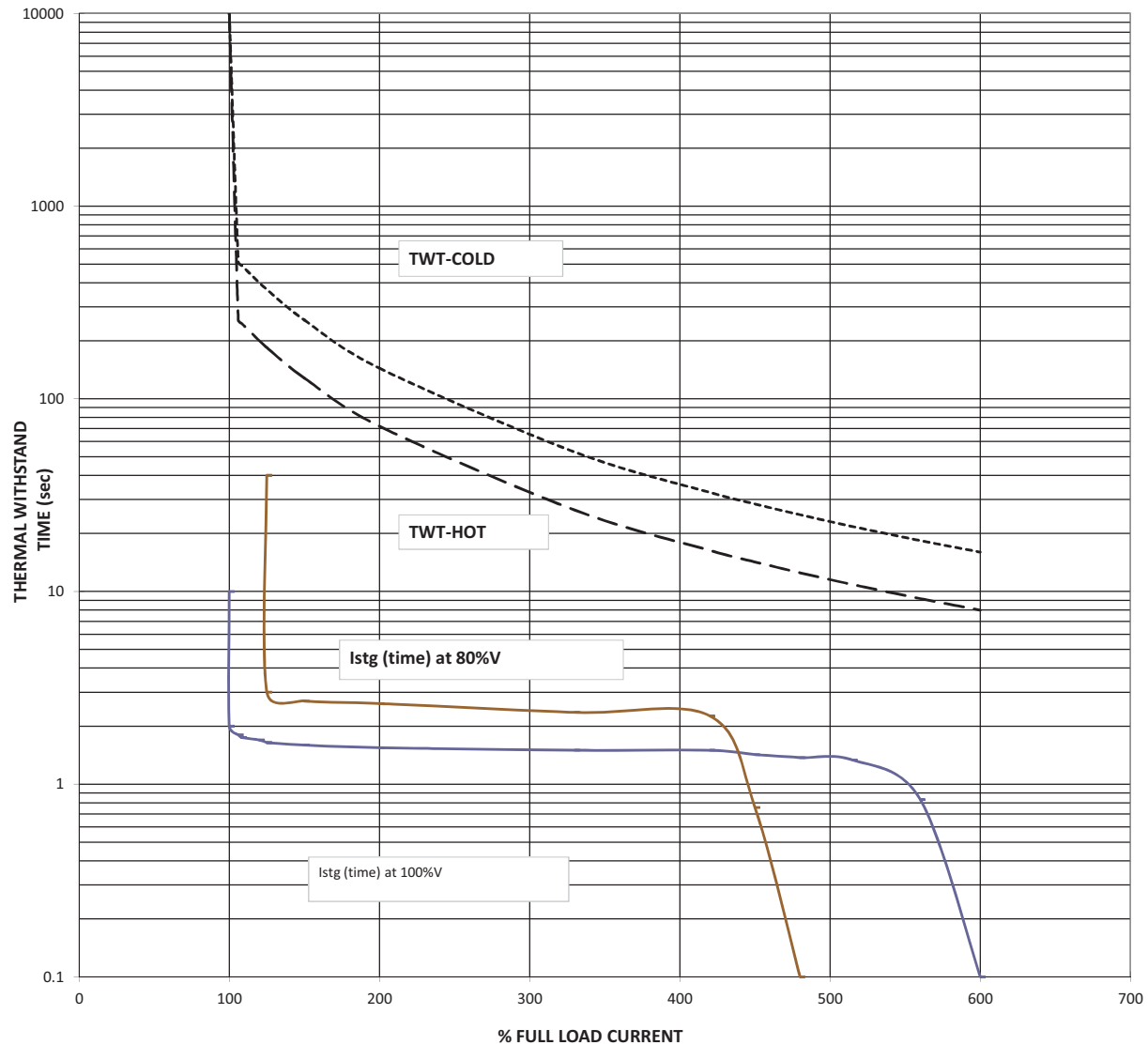
6

VOLTS :

415

QTY :

1



L. R. CURRENT at 100% voltage :

600

% OF FLA

THERMAL WITHSTAND TIME(sec):

Starting time at 100% voltage :

2

sec

AT100% RATED VOLTAGE (HOT) :

8

Starting time at 80% voltage :

3

sec

AT100% RATED VOLTAGE (COLD):

16

NOTE 1

ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2

STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3

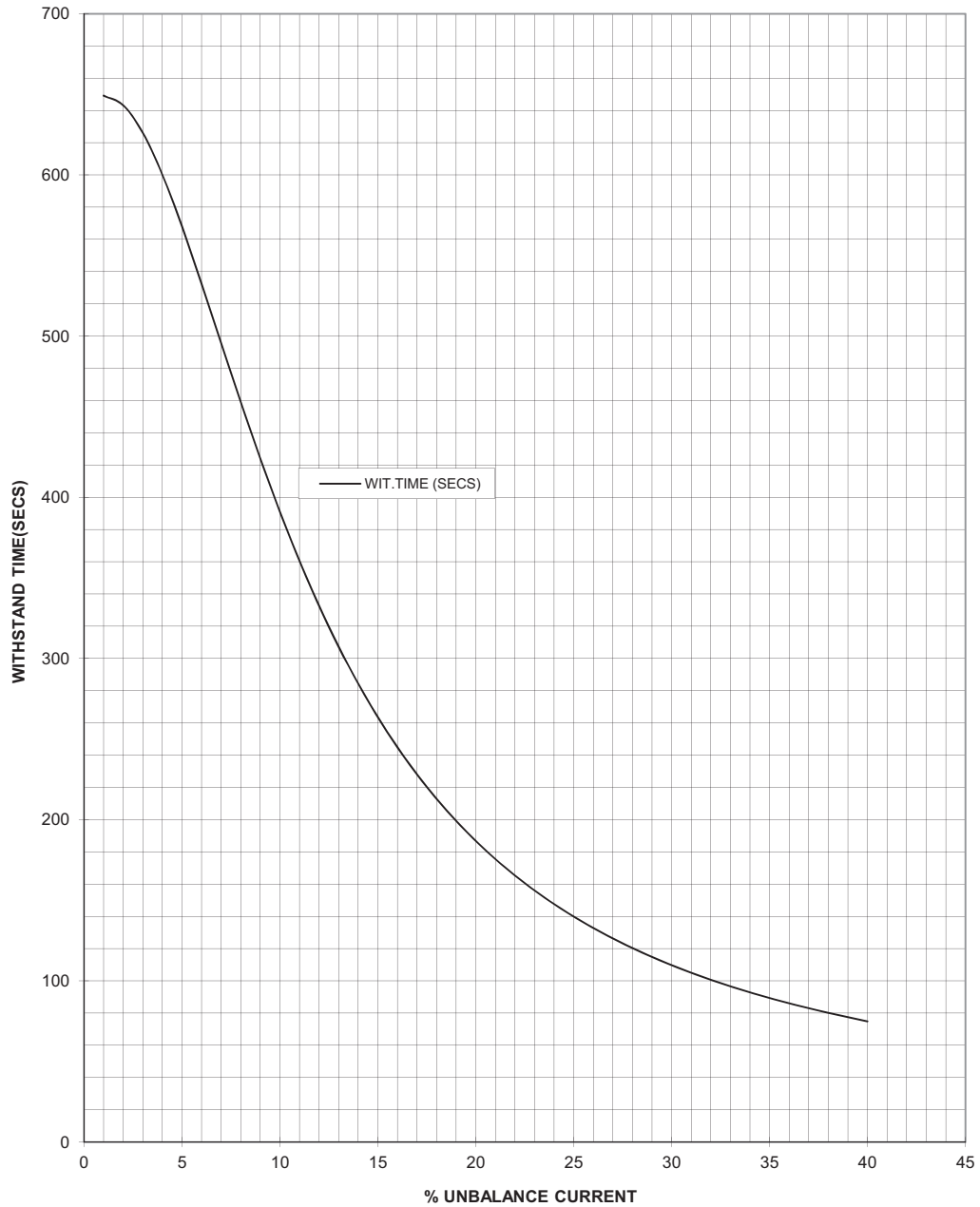
PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	8/31/2019
1		GAD NO		Checked By	SNG	8/31/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE



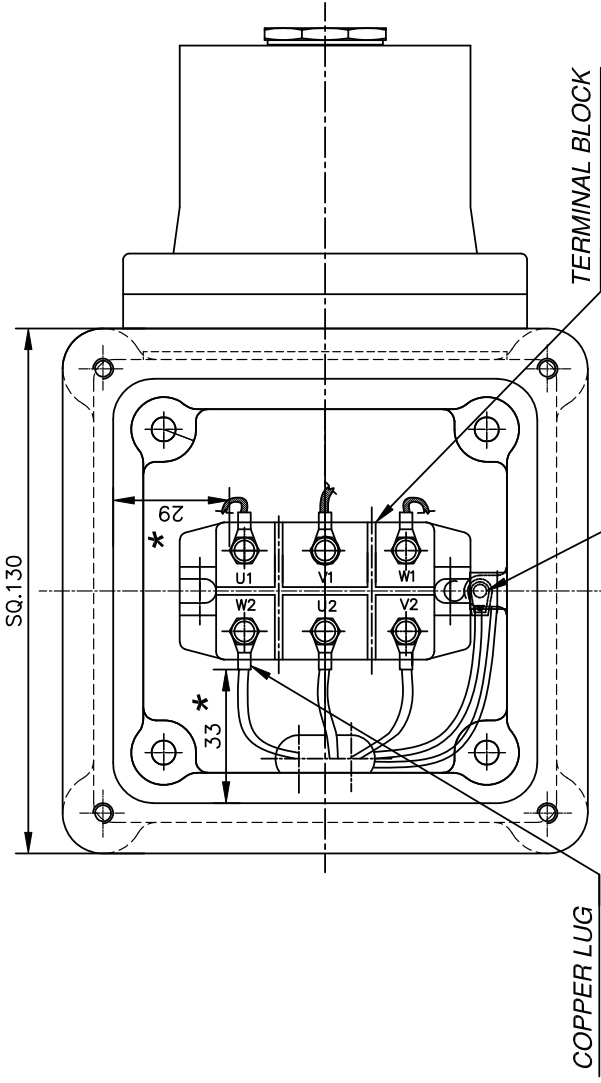
**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 5.5    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	8/31/2019
1		APPD	SNG	8/31/2019
NO	REVISION	SIGN/DATE		SIGN    DATE





TERMINAL BLOCK

COPPER LUG

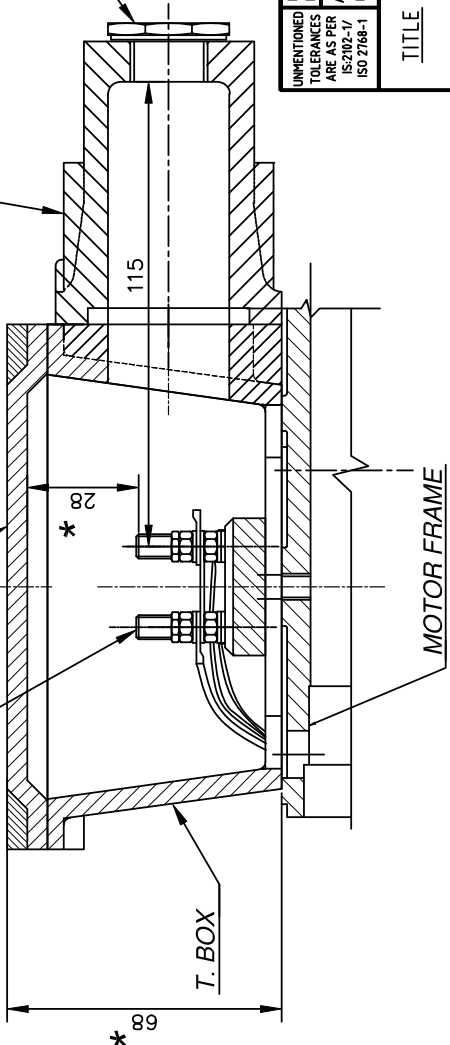
EARTHING TAG

T. BOX COVER

TERMINAL STUD M6

CABLE SPREADER BOX

CABLE ENTRY  
M25X1.5P- 01NO.



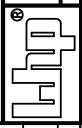
MOTOR FRAME

\* MARKED DIM SHALL BE APPROX

PROD CODE:-

UNMENTIONED TOLERANCES ARE AS PER ISO 2768-1	LINEAR DIMMS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000	NAME.	DATE.
	TOLERANCE		±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3		
	ANGULAR DIMMS. <td>OVER &amp; UPTO <td>0-10 <td>10-50 <td>50-120 <td>120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td></td></td></td></td></td>	OVER & UPTO <td>0-10 <td>10-50 <td>50-120 <td>120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td></td></td></td></td>	0-10 <td>10-50 <td>50-120 <td>120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td></td></td></td>	10-50 <td>50-120 <td>120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td></td></td>	50-120 <td>120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td></td>	120-400 <td>400-..... <td></td> <td></td> <td>DGN. <td></td> </td></td>	400-..... <td></td> <td></td> <td>DGN. <td></td> </td>			DGN. <td></td>	
	TOLERANCE		±1°	±0.30°	±0.20°	±0.10°	±0.05°			DRN. <td>VALSANGE 15.03.19</td>	VALSANGE 15.03.19
										CHD. <td>15.03.19</td>	15.03.19
										APPD. <td>15.03.19</td>	15.03.19
										SCALE	1:1
										SHEET	1-2 OF 2

TITLE  
TER. BOX ARRANGEMENT DRG OF  
132 FRAME FOOT MOUNTED MOTOR



Laxmi Hydraulics Pvt.Ltd.  
SOLAPUR  
Website : www.lhp.co.in

DRG. NO.  
MGAN132B0538  
ISSUE NO. 01 REV.NO. 01

REV. NO.	DETAIL OF CHANGE	DATE.	INTL.
2			
1			

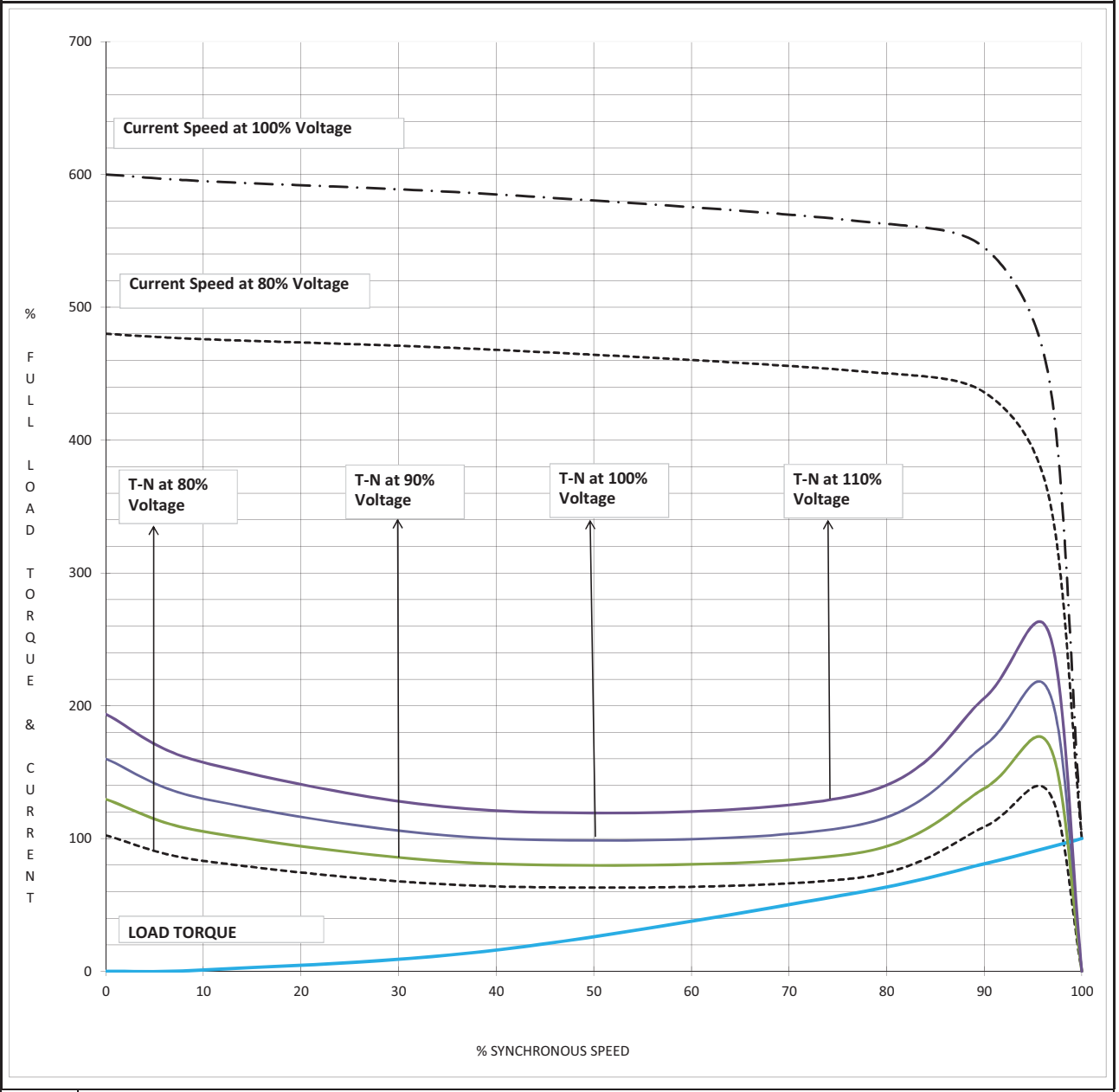
UNLESS OTHERWISE SPECIFIED ALL DIMMS. ARE IN MM. DO NOT SCALE THE DRAWING.

TDS FOR 2.2 KW-6 POLE FLP MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, INDIA
1.02.00	Type and frame size		IE3 SQIM & 112M
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		As Per Approved layout
1.06.00	Specification & Codes		IS-12615-2018,IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	2.2
	ii) At 40 Deg C ambient	kW	2.35
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		HAZARDOUS AREA (FLP) & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	4.78
	b) Full load speed	A	950
	c) No load current	A	2.70
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		84.3 0.76
	50		83 0.65
	25		80 0.42
	0		- 0.11
	At start		- 0.65
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		6.66
	iv) Resistance per phase at 20°C		3.33
	v) Inductance per phase		0.030
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	2.26
1.23.00	Break away torque in % of full load torque	%	160
1.24.00	Pull up torque in % of full load torque	%	150
1.25.00	Pull out torque in % of full load torque	%	210
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI
1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V

1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6306 ZZ/6306 ZZ @ DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEGREE C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP FROM NDE
	iv) Cable gland size & no.		M20X1.5P, 1NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN112A0246
1.52.00	Grounding pads size nos. & location		2 X M6
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.044
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	24 APPROX
	ii) Weight of rotor (wound)	kg	16 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 30 Kg
1.57.00	Shipping dimensions & weight		650X395X480 & 33 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		2 X M6
	ii) Terminal Box (Number & Size)		1 X M6

SPEED VS TORQUE & CURRENT CHARACTERISTICS					
CUSTOMER :	M/s ADVANCE VENTILATION				
INDENT NO. :	PO NO:	PO DATE:			
PROJECT NAME :					
kW :	2.2	POLE :	6	VOLTS :	415
				QTY :	1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO		Prepared By	SSG	11/25/2019
2			GAD NO		Checked By	SNG	11/25/2019
1			T BOX NO				
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 2.2 POLE :

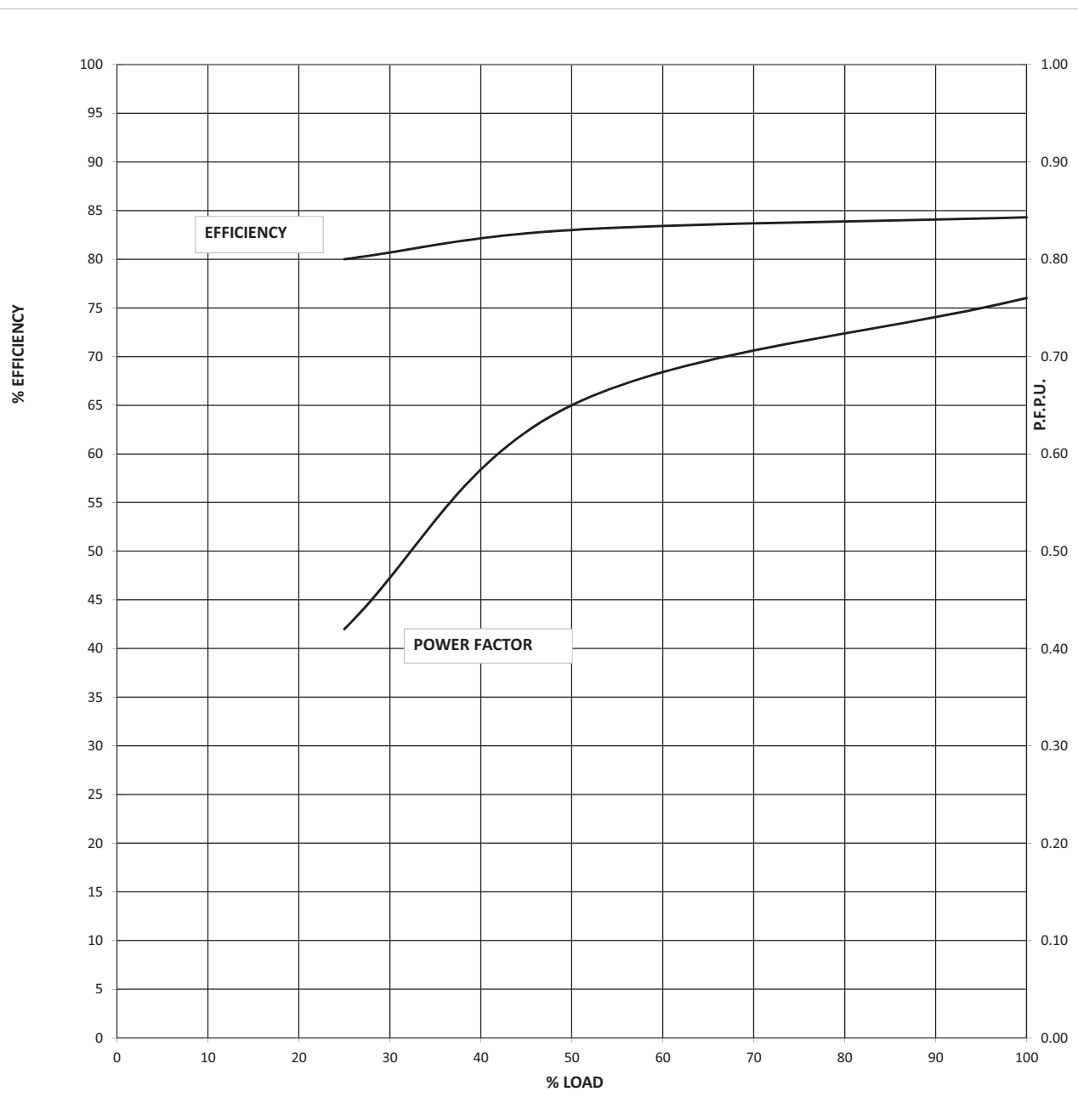
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	WDG NO	GAD NO	T BOX NO	Prepared By	SSG	11/25/2019
2							Checked By	SNG	11/25/2019
1							SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

2.2

POLE :

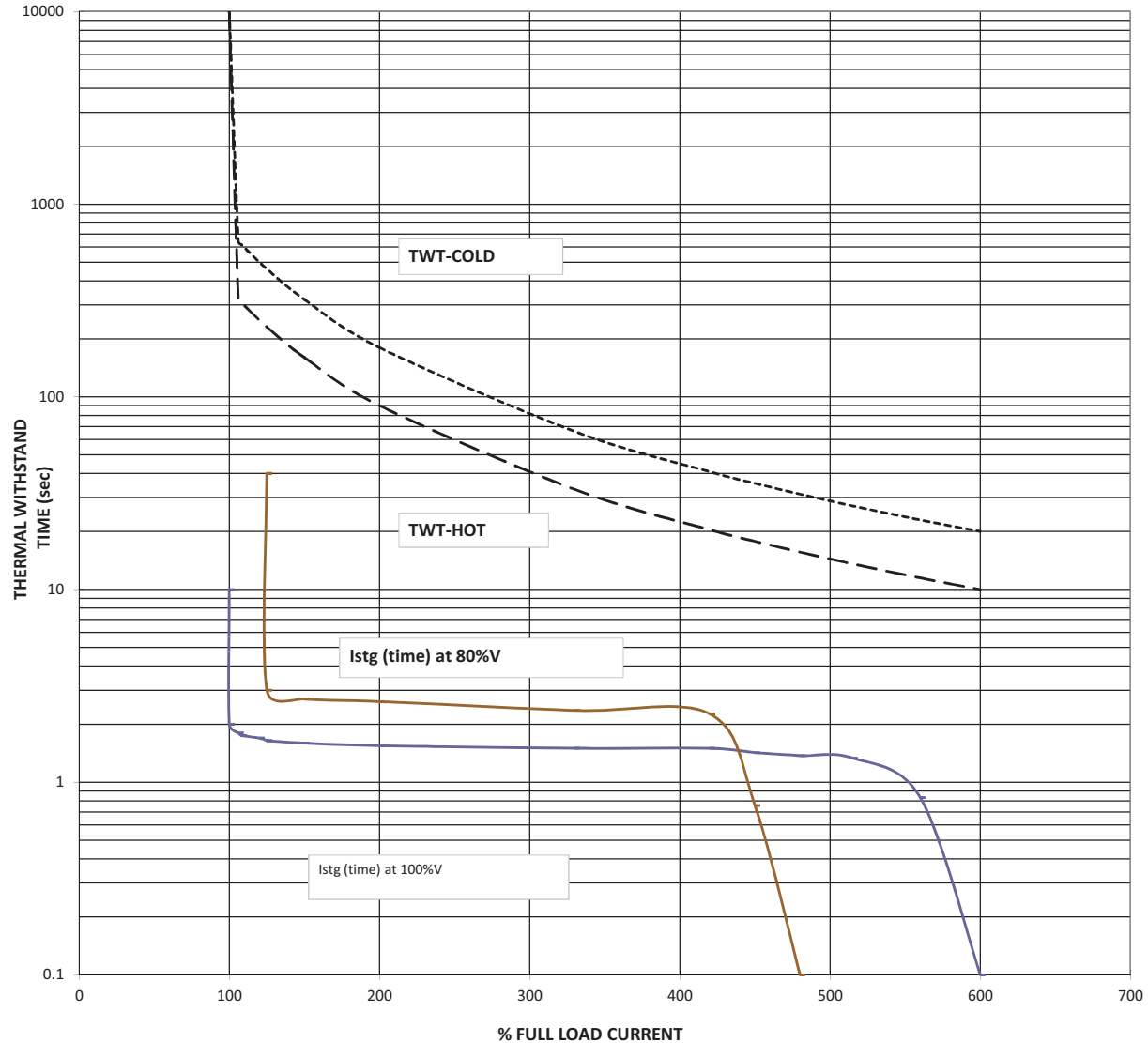
6

VOLTS :

415

QTY :

1



L. R. CURRENT at 100% voltage :

600

% OF FLA

THERMAL WITHSTAND TIME(sec):

Starting time at 100% voltage :

2

sec

AT100% RATED VOLTAGE (HOT) :

10

Starting time at 80% voltage :

3

sec

AT100% RATED VOLTAGE (COLD):

20

NOTE 1

ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

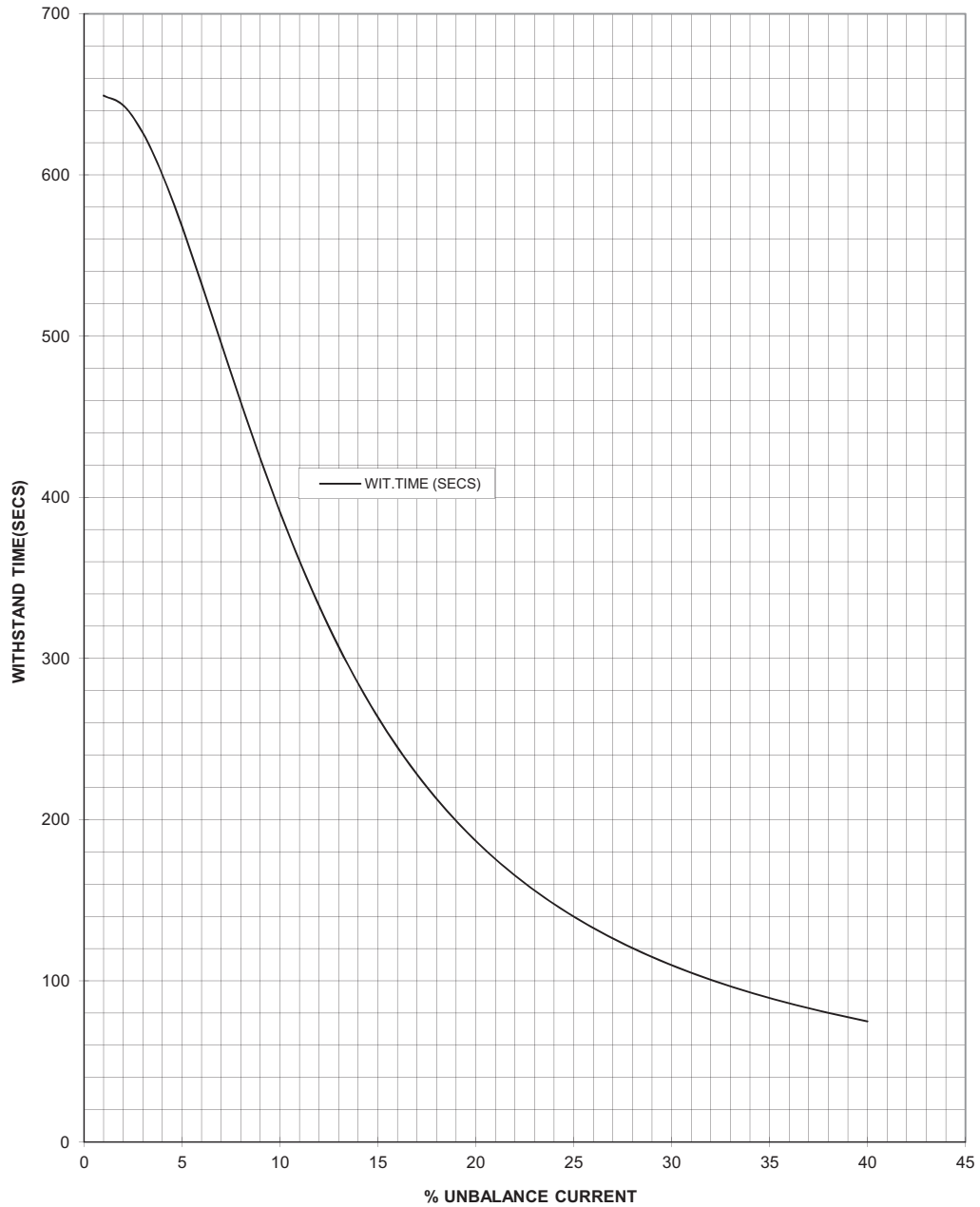
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	SIGN	DATE
2		WDG NO		Prepared By	SSG 11/25/2019
1		GAD NO		Checked By	SNG 11/25/2019
		T BOX NO			



**NEGATIVE SEQUENCE CHARACTERISTICS**

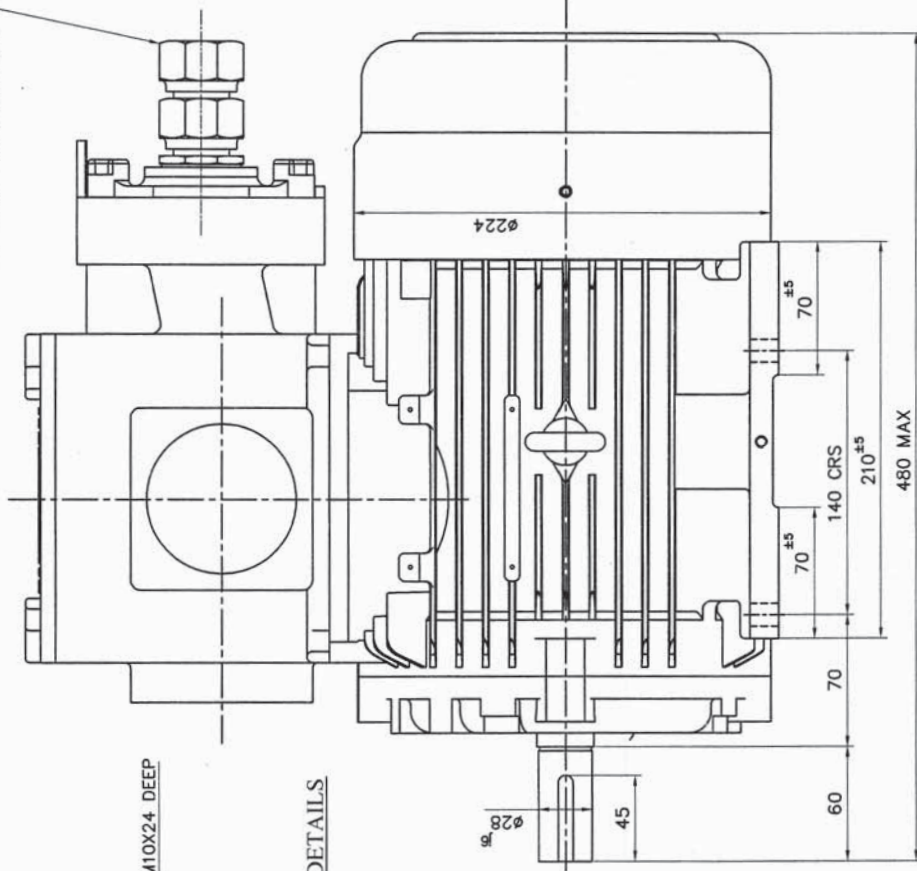
**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 2.2    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



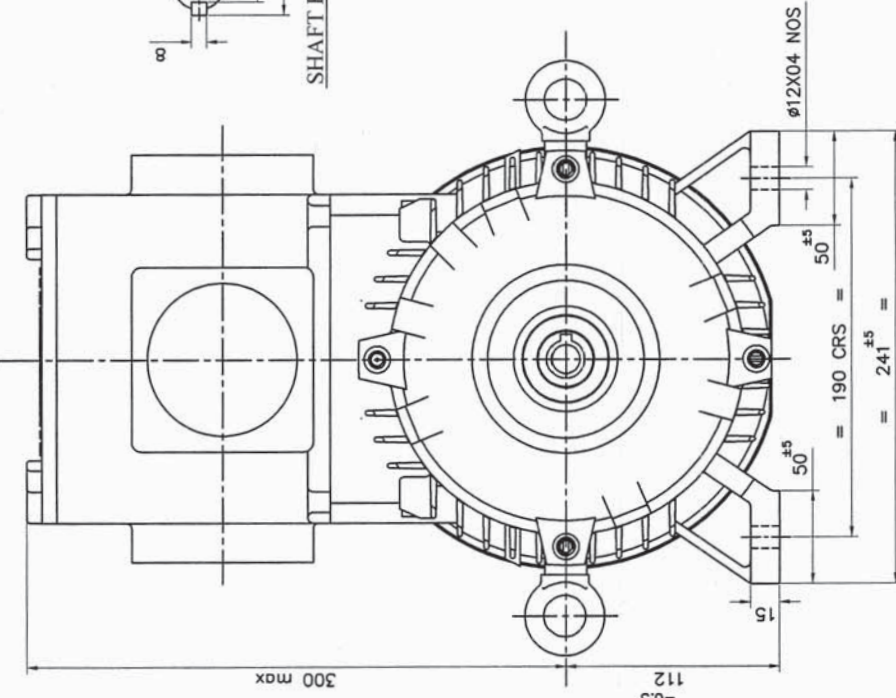
2		PREP	SSG	11/25/2019
1		APPD	SNG	11/25/2019
NO	REVISION	SIGN/DATE		SIGN    DATE

1 2 3 4 5

M20X1.5P.02 NO. FLAMEPROOF  
DOUBLE COMP. CABLE GLAND  
OINO FOR THERMISTOR



SHAFT END DETAILS



SPECIFICATION:-

KW/HP	2.2/3
POLE	6
BEARING DE SIDE	6306.ZZ.
BEARING NDE SIDE	6206.ZZ.

MATERIAL OF CONSTRUCTION:-

FRAME	CAST IRON
END COVER (DE)	CAST IRON
END COVER (NDE)	CAST IRON
T.BOX & COVER	CAST IRON
SHAFT	40CB

PROD CODE:-

UNMENTIONED TOLERANCES ARE AS PER IS:2025-1/100 Z106-1	OVER & UPTO 0.5-3	3-4	6-30	30-120	120-400	400-5000	5000-20000	NAME	DATE
ANGULAR DIMS	±0.2	±0.3	±0.5	±0.8	±1.2	±1.7	±3	DGN	
PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE	OVER & UPTO 0-10	10-50	50-120	120-400	400-1000	1000-10000	10000-100000	DRN	VALSANGE
TOLERANCE	±1	±0.30	±0.20	±0.15	±0.10	±0.07	±0.05	CHD.	29.08.19
TITLE	GENERAL ARRANGEMENT DRG. FOR								
	LFN-112M FOOT MOUNTED (B3) FLP MOTOR								
	(GAS GROUP-IC)								
	SCALE: 1:1								
	SHEET: 1 / 2								
	DRG. NO. MGAFF112A0123								
	ISSUE NO. 01 REV. NO. 00								

Laxmi Hydraulics Pvt.Ltd.  
SOLAPUR  
Website: www.lhp.co.in  
UNLESS OTHERWISE SPECIFIED ALL DIMMS. ARE IN MM. DO NOT SCALE THE DRAWING.

REV. NO.	DETAIL OF CHANGE	DATE	INIT.
3			
2			
1			

1

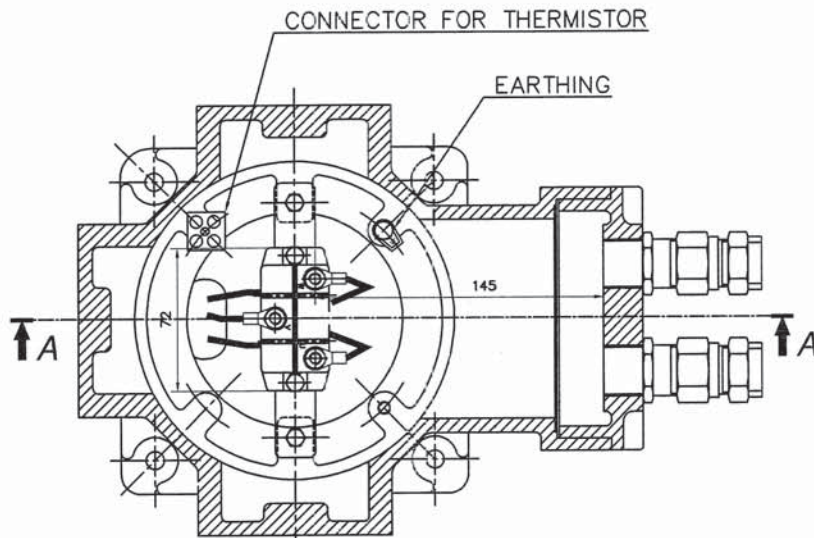
2

3

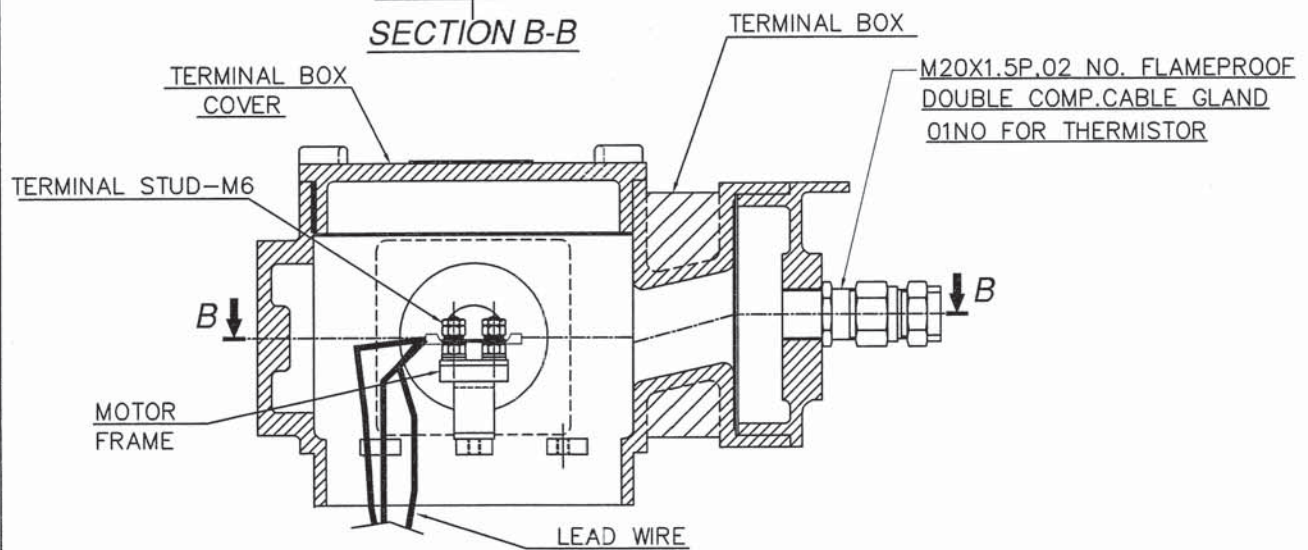
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5

**LAXMI HYDRAULICS PVT. LTD, SOLAPUR**  
**TERMINAL BOX ARRANGEMENT**  
**OF LFN-112 FRAME MOTOR**  
**(GAS GROUP-IIC)**



SECTION B-B



SECTION A-A

TERMINAL BOX DETAILS

\\Ppk\HPL\_DRAWING\_FILES\DRGS\_3\G.A.DWC\MGAF\112\B3\MGAF112A0123.dwg

ISSUE.NO.-01	REV.NO.-00	DATE- 29.09.19	DRG.NO.-MGAF112A0123
SHEET NO.-2 OF 2	DRN.BY.- VALSANGE	CHD. BY.- HPL	APPD.BY.-

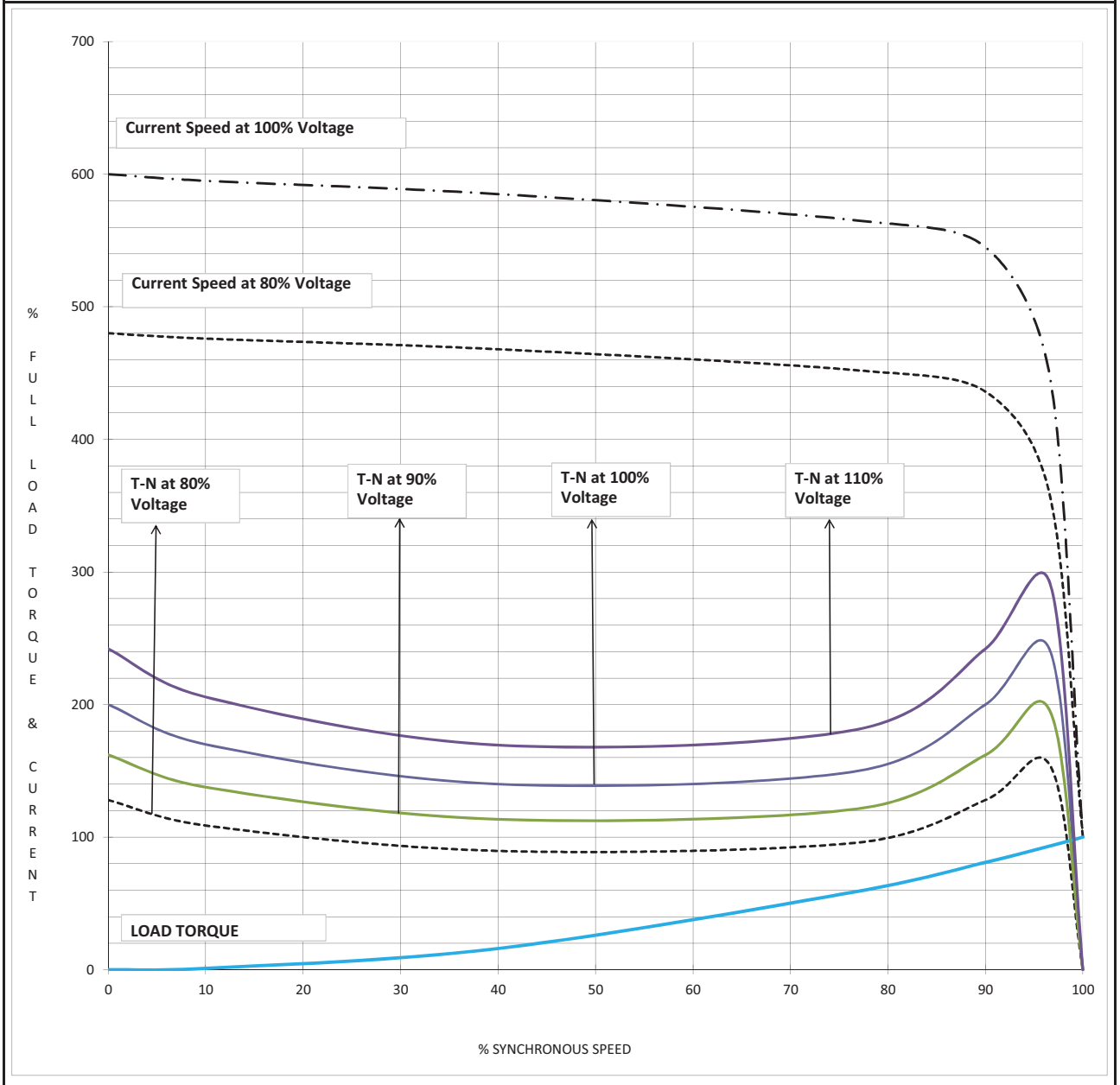
1.00.00		TDS FOR 1.5 KW- 6 POLE FLP MOTOR	
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic Private Limited, India
1.02.00	Type and frame size		IE3SQIM & 100L
1.03.00	design code no.		IS-12615-2018,IEC 60034-1
1.04.00	Nos. required		Axial fan/ as per approved Layouts
1.05.00	Application		As Per Approved Layout
1.06.00	Specification & Codes		IS-12615-2018,IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	1.5
	ii) At 40 Deg C ambient	kW	1.60
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		HAZARDOUS AREA (FLP) & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	3.90
	b) Full load speed	A	960
	c) No load current	A	2.90
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		0.65
	50		0.50
	25		0.30
	0		0.11
	At start		0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		7.80
	iv) Resistance per phase at 20°C		3.90
	v) Inductance per phase		0.030
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.52
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	240
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI
1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	

1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6206 ZZ/6205 ZZ@DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1 mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEG C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP
	iv) Cable gland size & no.		M20 X1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAF100A0153
1.52.00	Grounding pads size nos. & location		1 X M6
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.026
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	12 APPROX
	ii) Weight of rotor (wound)	kg	9 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	21 Approx. Kg
1.57.00	Shipping dimensions & weight		480X320X295 & 25 kg.
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		
1.62.00	Noise Level	dB	85 dB at 1 M
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M6
	ii) Terminal Box (Number & Size)		1 X M6

**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION	PO NO:	PO DATE:		
INDENT NO. :				
PROJECT NAME :				
kW : 1.5	POLE : 6	VOLTS : 415	QTY : 1	



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	8/31/2019
2			GAD NO			Checked By	SNG	8/31/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



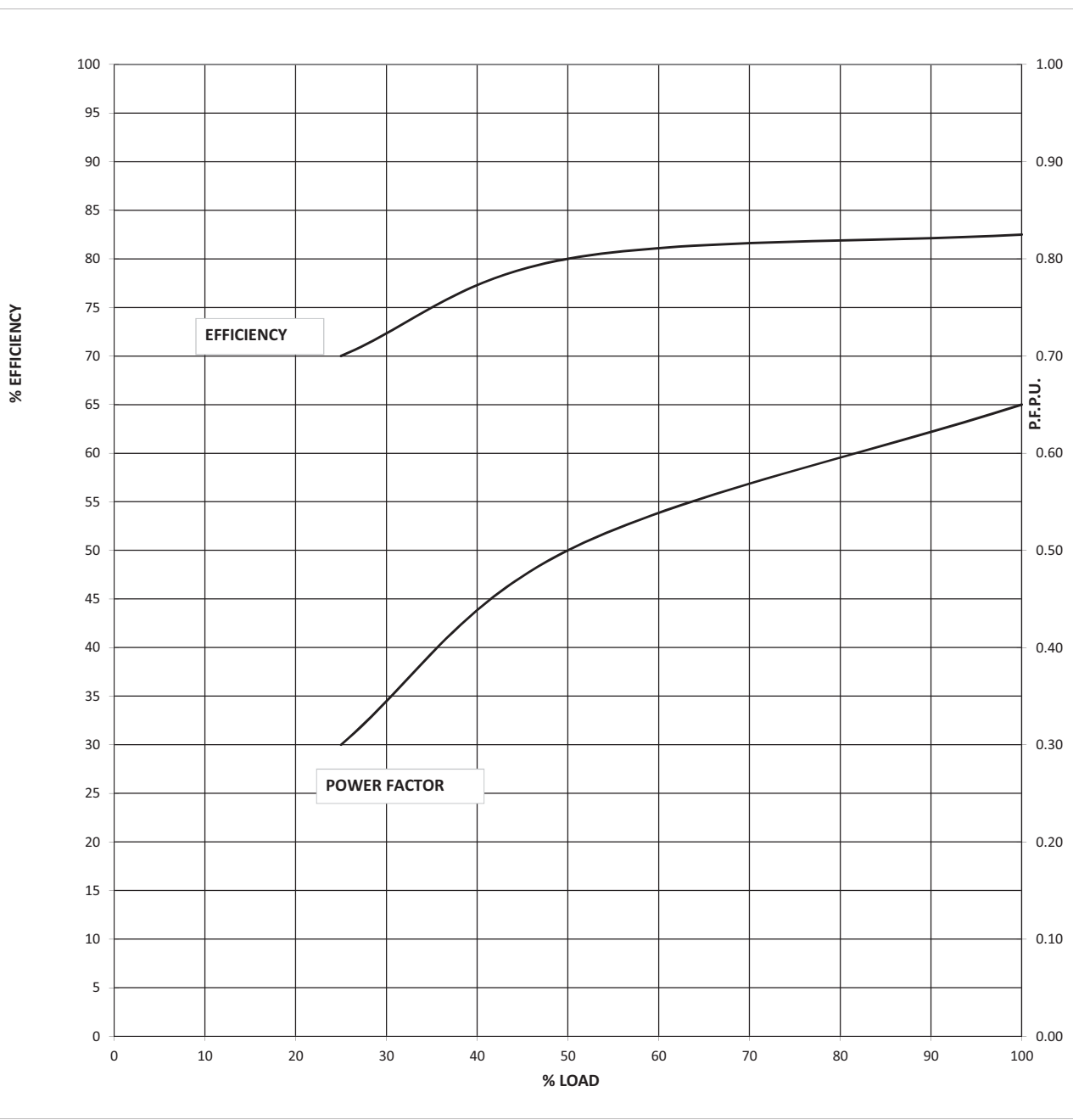
PROJECT NAME :

kW : 1.5

POLE : 6

VOLTS : 415

QTY : 1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	8/31/2019
1			T BOX NO		Checked By	SNG	8/31/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 1.5 POLE :

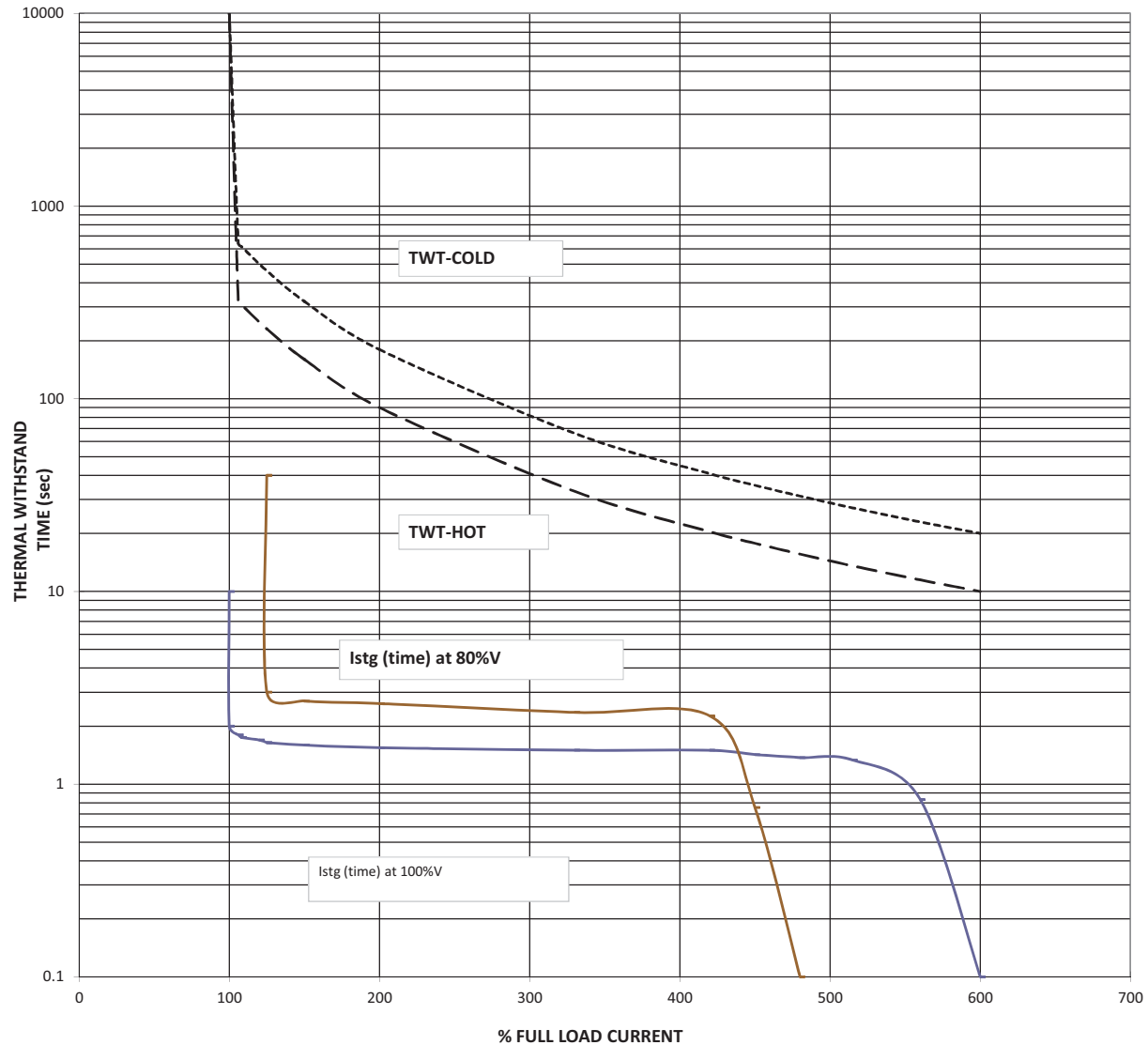
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

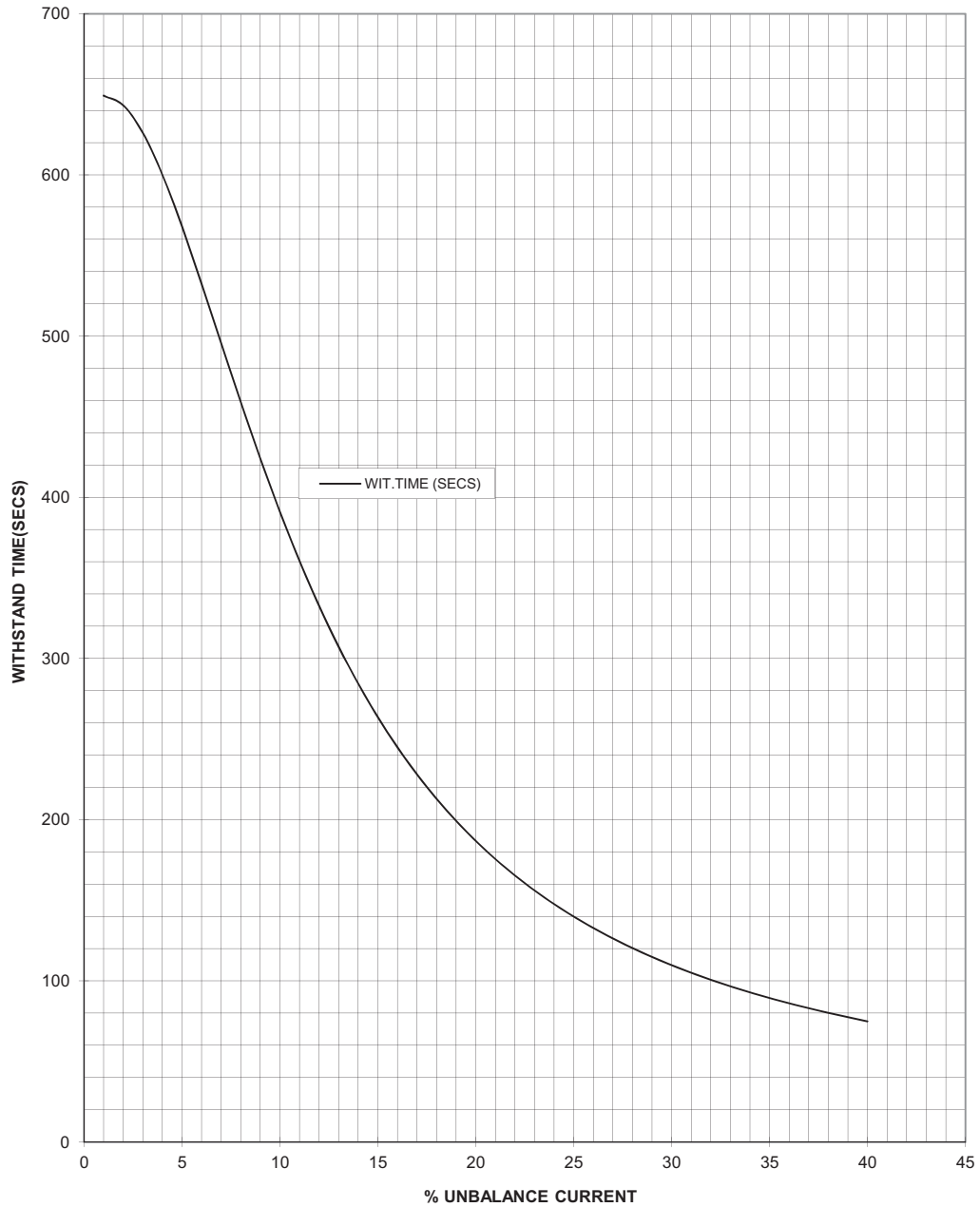
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	8/31/2019
1		GAD NO		Checked By	SNG	8/31/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

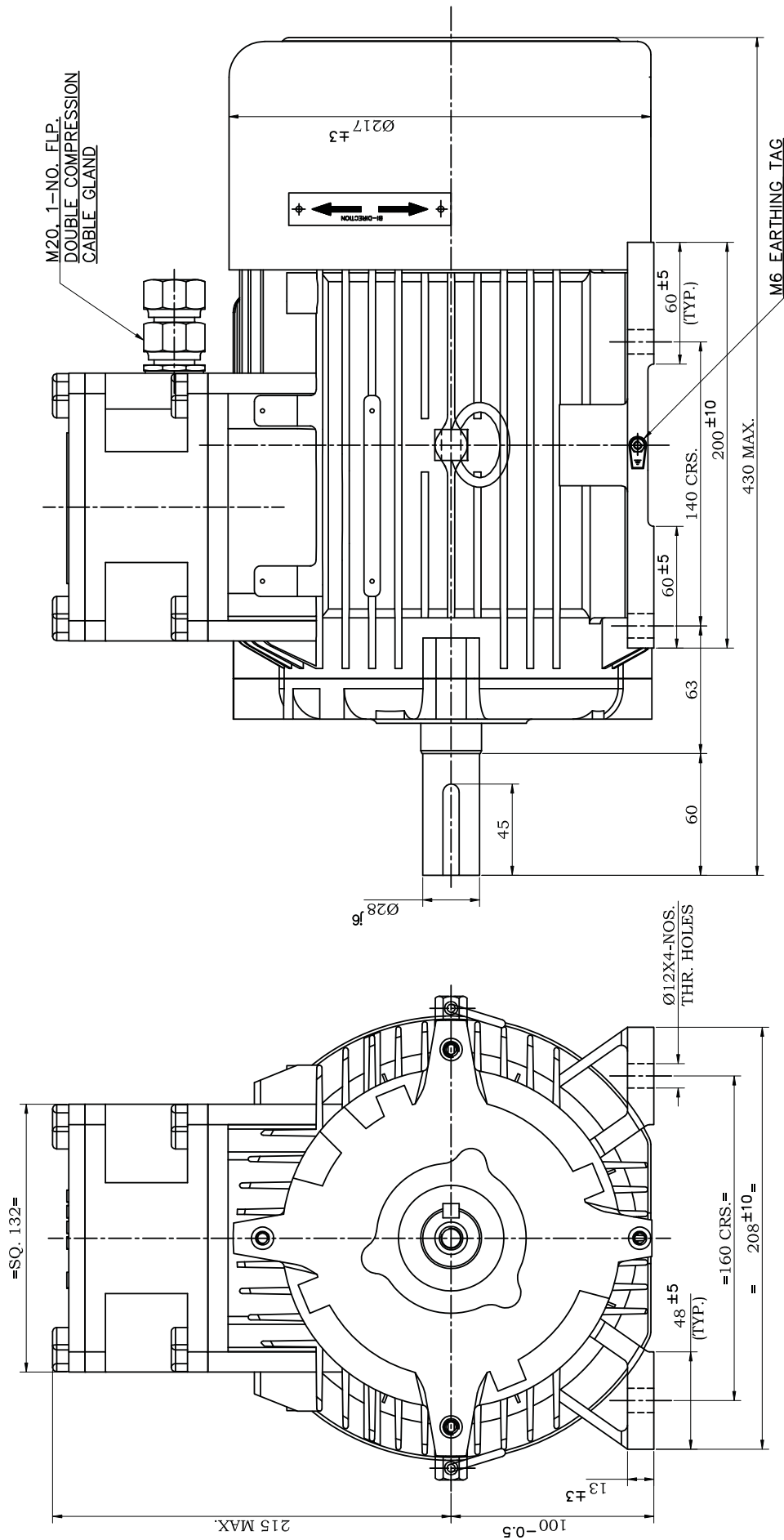


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 1.5    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	8/31/2019
1		APPD	SNG	8/31/2019
NO	REVISION	SIGN/DATE		SIGN    DATE

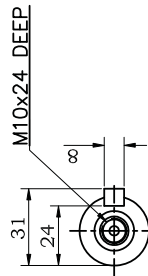


**SPECIFICATION:-**

KW/HP.	1.5/2.0
POLE	6
BEARING DE SIDE	6206 ZZ
BEARING NDE SIDE	6205 ZZ

**MATERIAL OF CONSTRUCTION:-**

FRAME	CAST IRON
END COVER (DE)	CAST IRON
END COVER (NDE)	CAST IRON
T. BOX	CAST IRON
T. BOX COVER	CAST IRON
SHAFT	CARBON STEEL



SHAFT END DETAILS.

**PRODUCT CODE:- LFN299**

UNMENTIONED DIMS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000	NAME	DATE.
TOLERANCES ARE AS PER IS:2102-17 ISO 2108-1	TOLERANCE	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	DGN.	
ANGULAR DIMS.	OVER & UPTO	0-10	10-50	50-120	120-400	400-.....			DRN.	TAMBULE
	TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'			CHD.	17.03.19

TITLE: GENERAL ARRANGEMENT DRG. FOR LFN-100L FRAME FOOT (B3) MOUNTED FLP MOTOR  
GAS GROUP- Ex 't' (IIC)

DRG. NO. MGAF100A0153  
SHEET NO.- 01 OF 02

UNLESS OTHERWISE SPECIFIED ALL DIMS. ARE IN MM. DO NOT SCALE THE DRAWING.

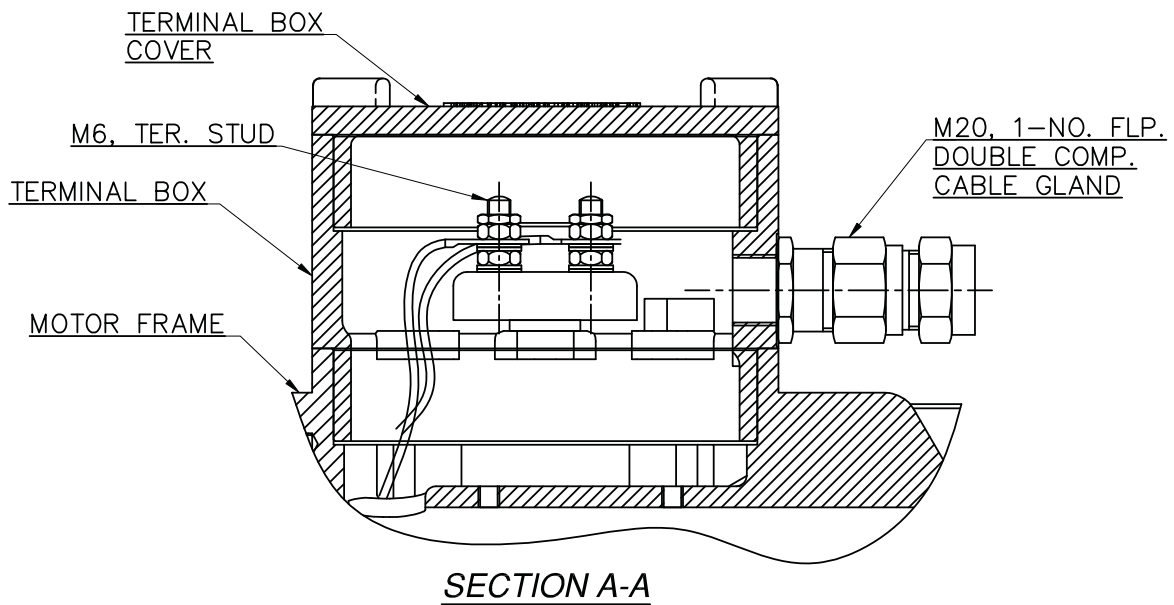
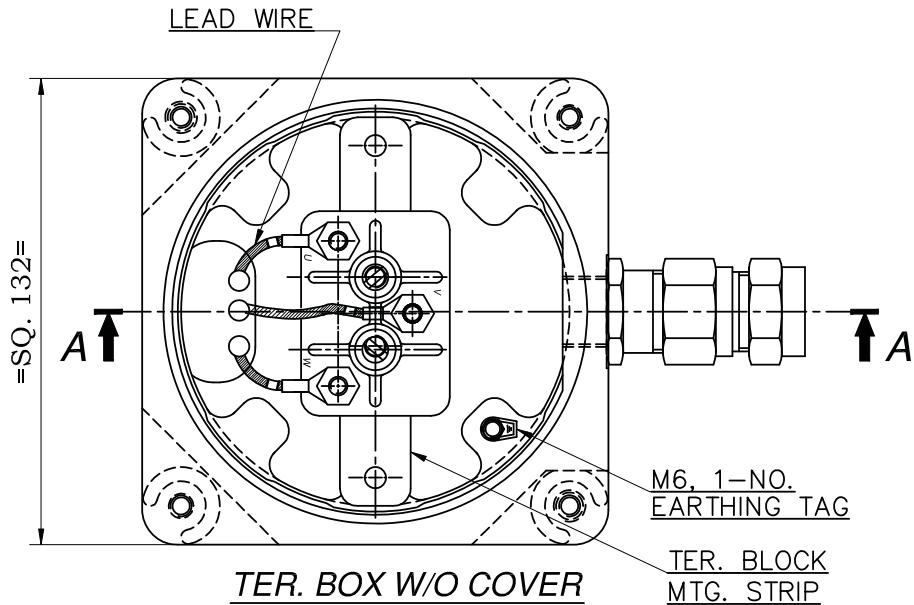
Laxmi Hydraulics Pvt.Ltd.  
Website : www.lhp.co.in  
SOLAPUR

17.08.19 SAT  
17.03.19 GRM  
SCALE :- 1:1

1 DOR NAMEPLATE ADDED. 17.08.19 SAT  
DETAIL OF CHANGE DATE. INTL.

# LAXMI HYDRAULICS PVT. LTD, SOLAPUR

## TERMINAL BOX ARRANGEMENT OF LFN-100, FRAME MOTOR (GAS GR.-IIC)



1	REFER SHEET NO. 01 OF 02.	17.08.19	SAT
REV. NO.	DETAIL OF CHANGE	DATE.	INTL.
ISSUE.NO.-01	REV.NO.-01	DATE- 17.03.19	DRG.NO.- MGAFT100A0153
SHEET NO-02 OF 02	DRN.BY.- TAMBULE	CHD. BY.-	APPD.BY.- GRM

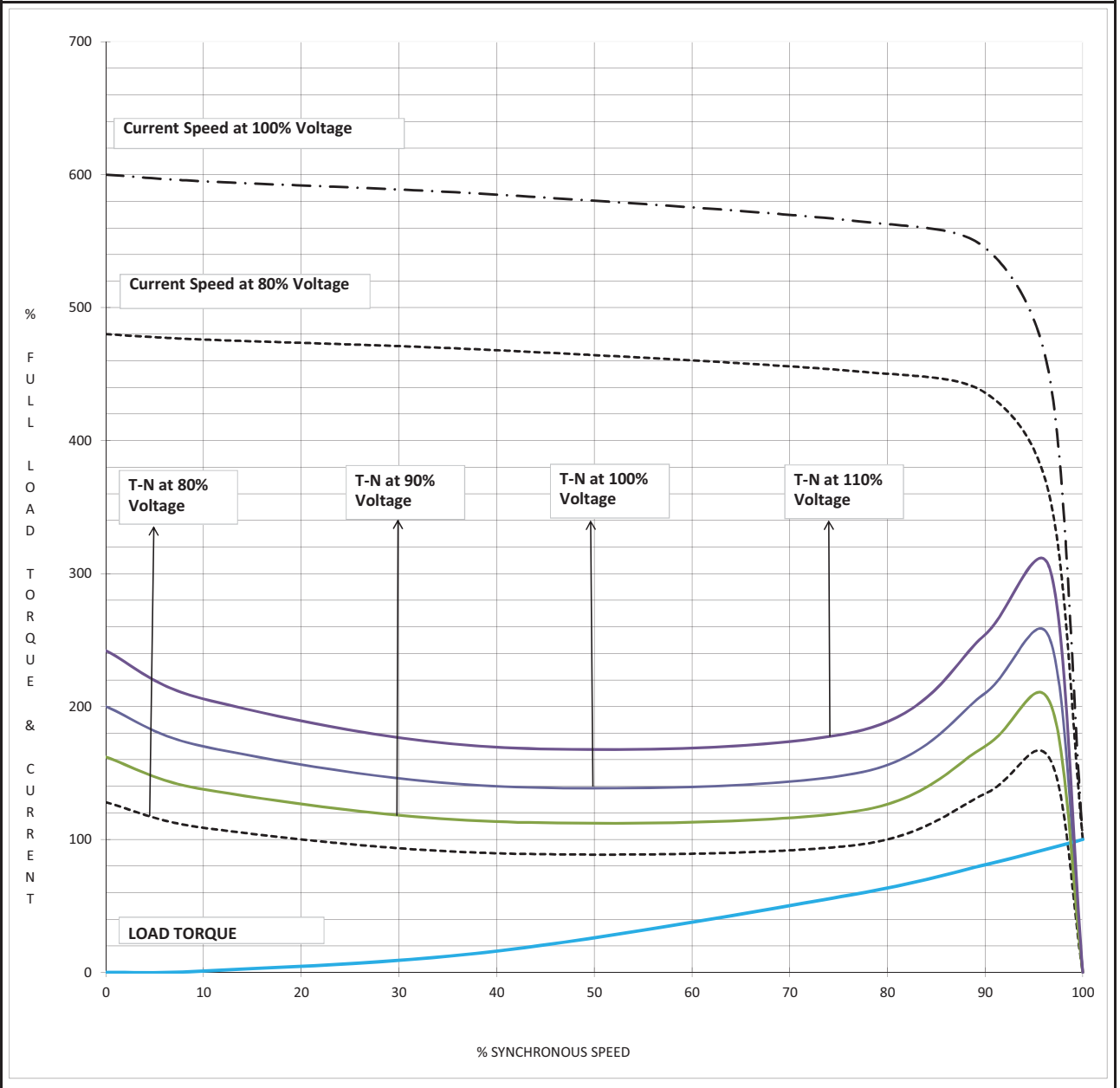
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TDS FOR 1.1KW-6 POLE FLP MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 90L
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		As Per Approved Layout
1.06.00	Specification & Codes		IS-12615-2018,IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	1.1
	ii) At 40 Deg C ambient	kW	1.18
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		HAZARDOUS AREA (FLP) & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	3.15
	b) Full load speed	A	930
	c) No load current	A	2.5
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		81 0.60
	50		78 0.40
	25		65 0.25
	0		- 0.09
	At start		- 0.60
	Duty Point		PI mention
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		9.30
	iv) Resistance per phase at 20°C		4.65
	v) Inductance per phase		0.050
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.15
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	250
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	1
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6205 2Z/6204 2Z @DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. of Bearing		110 DEG C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP
	iv) Cable gland size & no.		M20 X1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/ AL 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAF090A0164
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.015
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	12 APPROX
	ii) Weight of rotor (wound)	kg	8 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	12 Approx. Kg
1.57.00	Shipping dimensions & weight		425X250X305 & 14 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 M
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		2 XM5
	ii) Terminal Box (Number & Size)		1 XM5

SPEED VS TORQUE & CURRENT CHARACTERISTICS					
CUSTOMER :	M/s ADVANCE VENTILATION				
INDENT NO. :	PO NO:	PO DATE:			
PROJECT NAME :					
kW :	1.1	POLE :	6	VOLTS :	415
				QTY :	1



NOTE 1	ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.
2	STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,
3	PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO		Prepared By	SSG	11/25/2019
2			GAD NO		Checked By	SNG	11/25/2019
1			T BOX NO				
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

1.1

POLE :

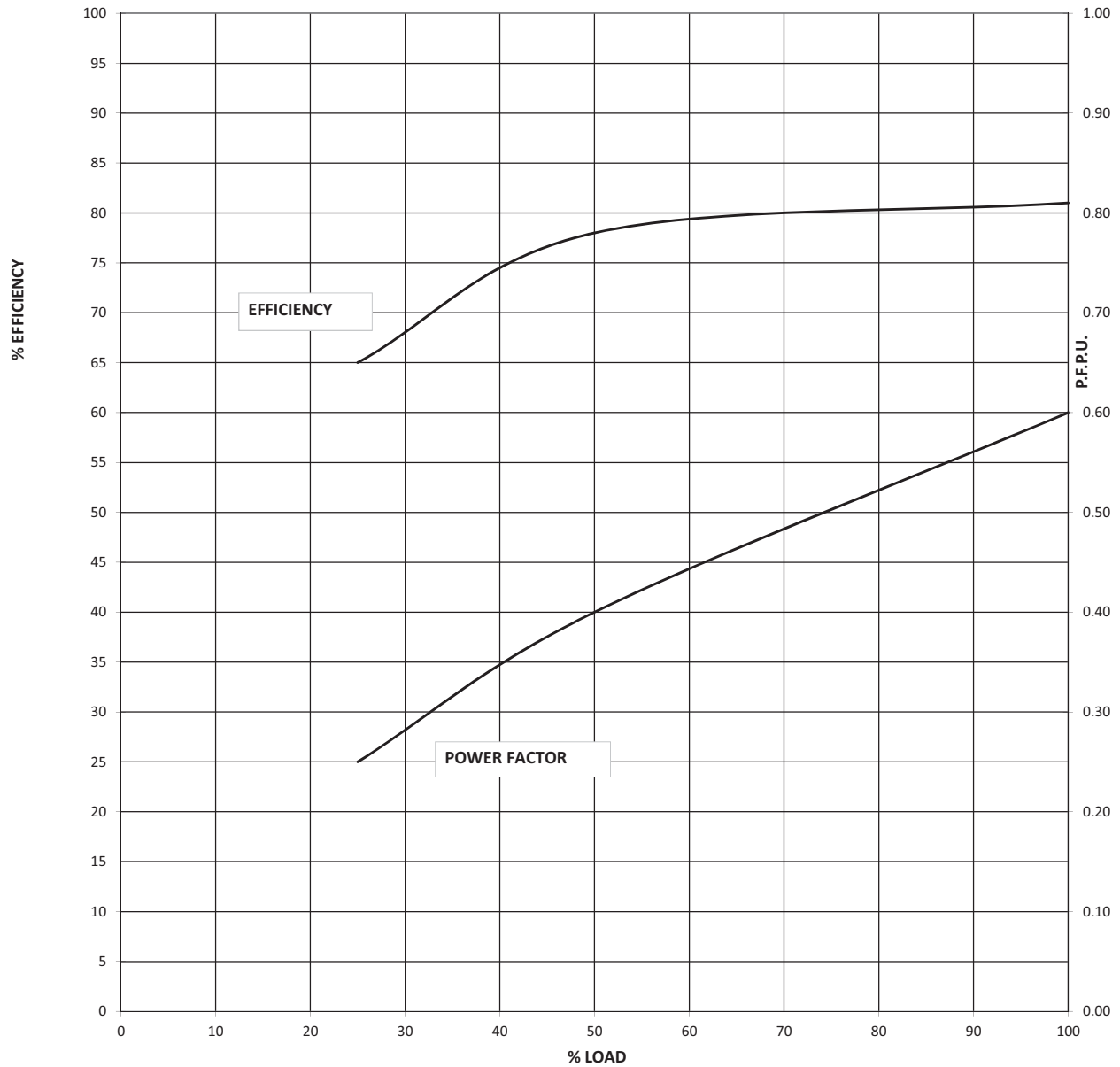
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	SIGN	DATE
2		WDG NO		Prepared By	SSG 11/25/2019
1		GAD NO		Checked By	SNG 11/25/2019
		T BOX NO			

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

1.1

POLE :

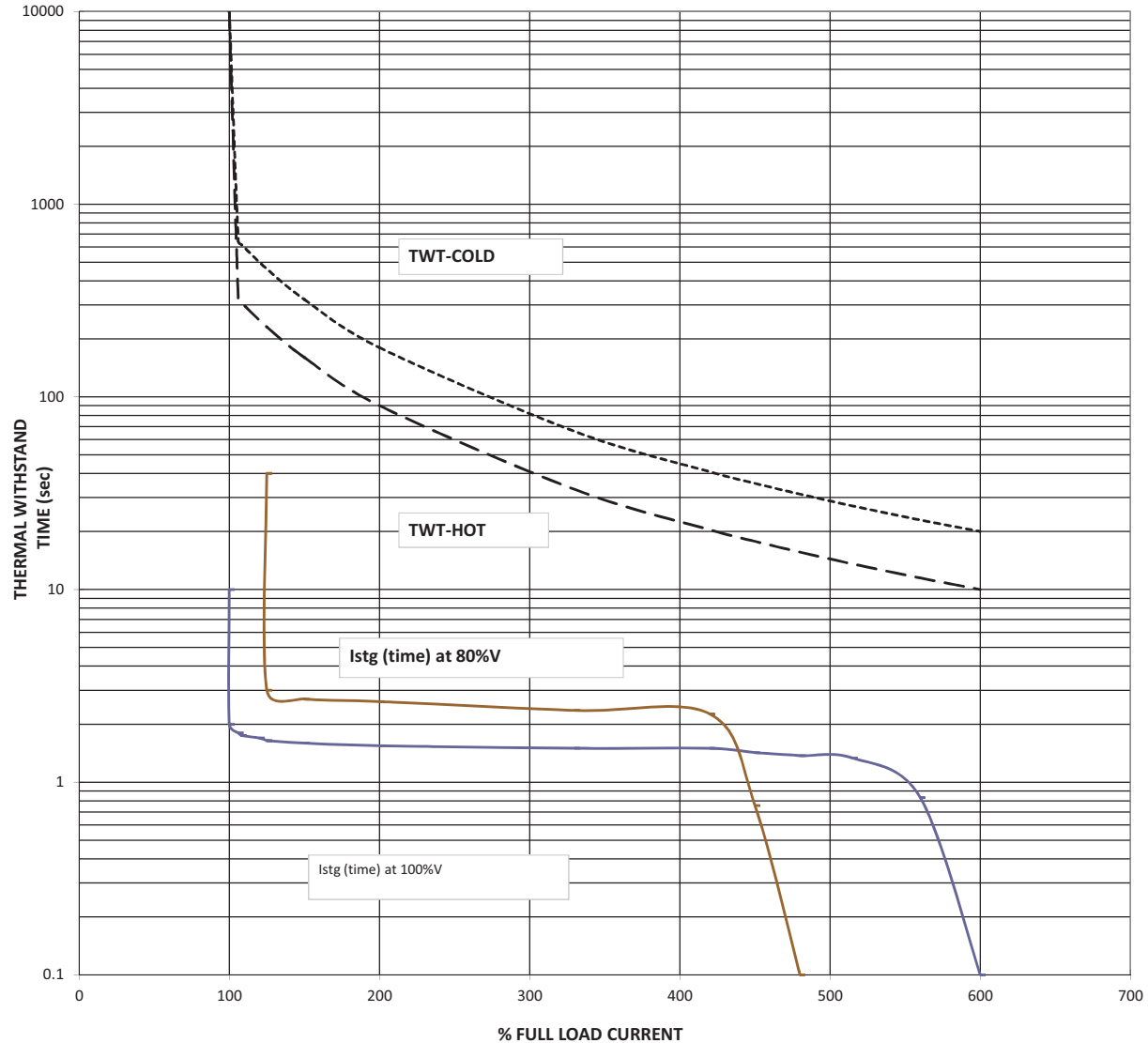
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

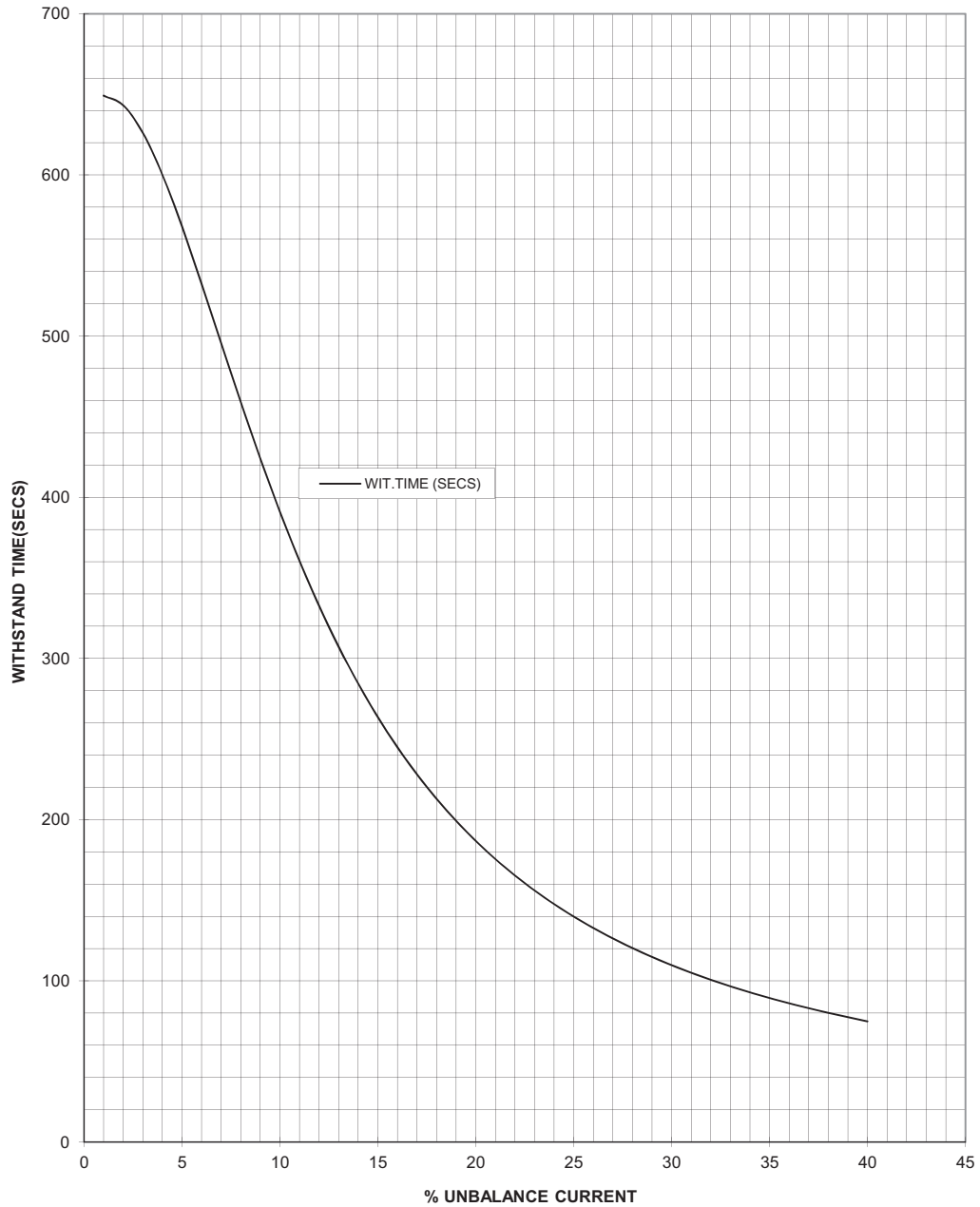
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

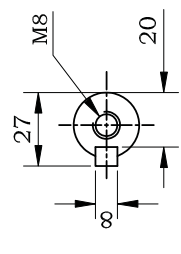
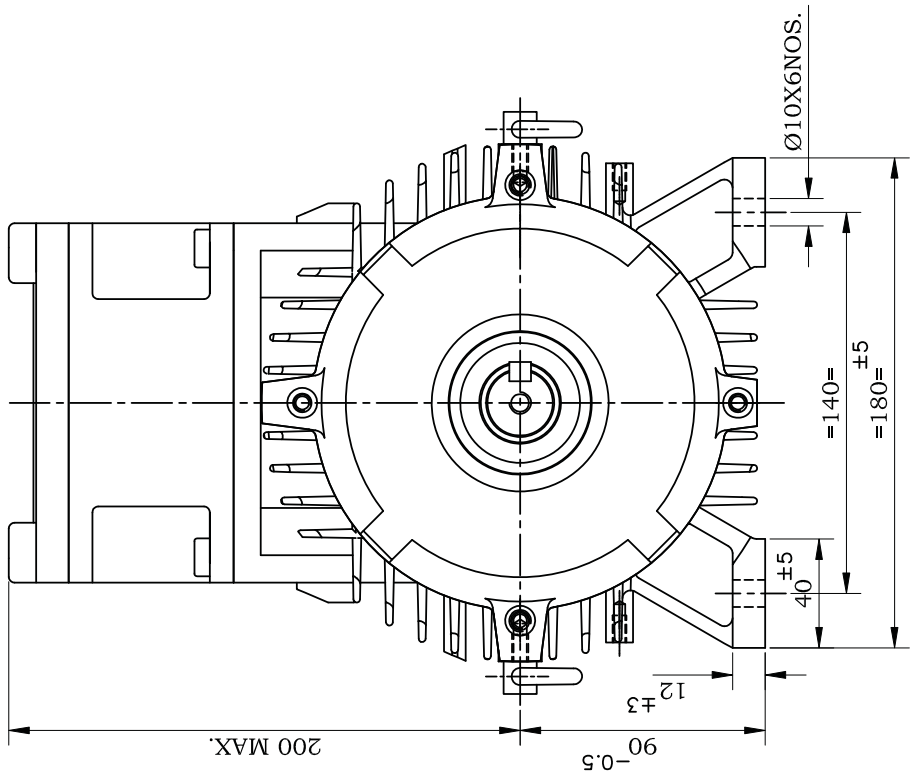


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 1.1    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE



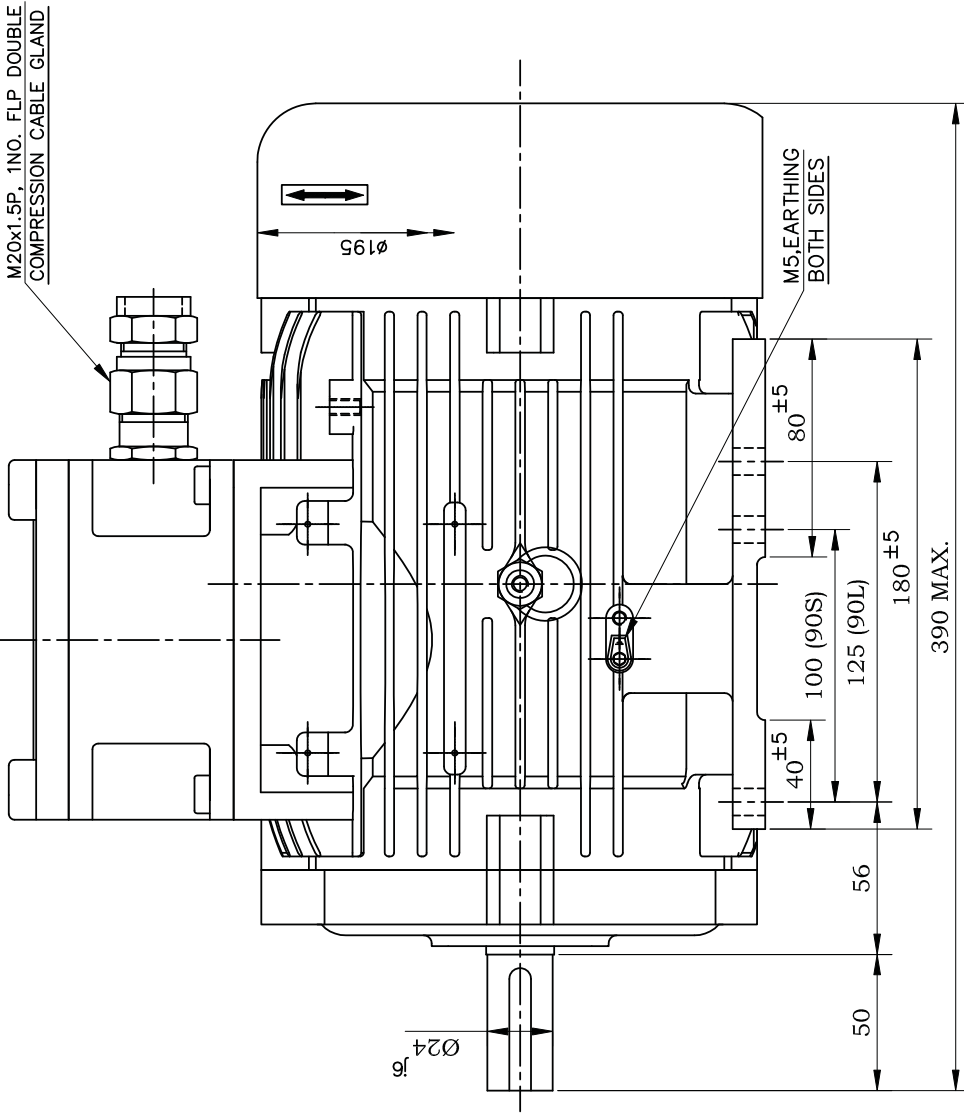
SHAFT END DETAILS

**SPECIFICATION:-**

RATING	1.1KW/1.5HP
POLE	6 POLE
BEARING DE	6205 2Z
BEARING NDE	6204 2Z

**MATERIAL OF CONSTRUCTION:-**

FRAME	CAST IRON
END COVER (DE)	CAST IRON
END COVER (NDE)	CAST IRON
T. BOX & COVER	CAST IRON
SHAFT	CARBON STEEL



PROD. CODE - LFN674

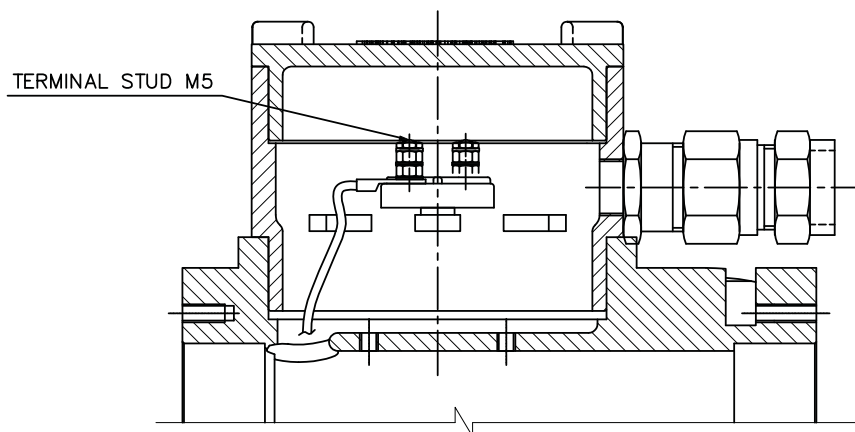
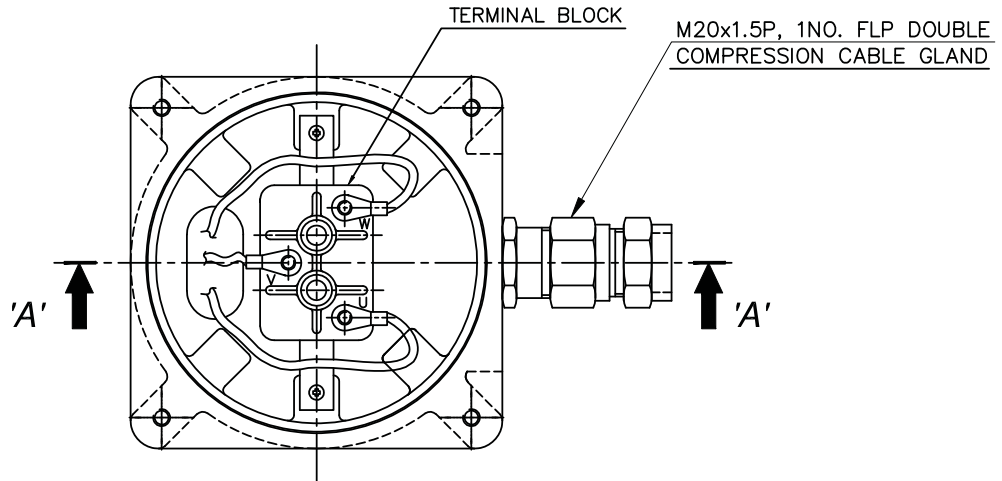
UNMENTIONED TOLERANCES ARE AS PER IS:2102-1/ ISO 2768-1	OVER & UPTO TOLERANCE	0.5-3 ±0.2	3-6 ±0.3	6-30 ±0.5	30-120 ±0.8	120-400 ±1.2	400-1000 ±2	1000-2000 ±3	
ANGULAR DIMMS.	OVER & UPTO TOLERANCE	0-10 ±1°	10-50 ±0°30'	50-120 ±0°20'	120-400 ±0°10'	400..... ±0°5'			

NAME	DATE
DGN.	
DRN.	POTDAR 11.08.19
CHD.	11.08.19
APPD.	GRM 11.08.19
SCALE :- 1:1	
SHEET :- 1 OF 2	
DRG. NO. MGAF090A0164	
ISSUE NO. 01 REV.NO. 00	

**TITLE:-**  
 GENERAL ARRANGEMENT DRG OF  
 LFN-90S/L FOOT (B-3) MOUNTING  
 GAS.GROUP- IIC

**LHP**  
 Laxmi Hydraulics Pvt.Ltd.  
 Website : www.lhp.co.in  
 SOLAPUR  
 UNLESS OTHERWISE SPECIFIED ALL DIMMS. ARE IN MM. DO NOT SCALE THE DRAWING.

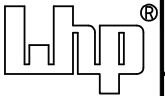
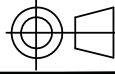
REV. NO.	REV. DETAILS	DATE	INTL.
1			



**SECTION A-A**

\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MCAF\090\B3\MCAF090A0164.dwg

1			
REV. NO.	REV. DETAILS	DATE	INTL.

Standardisation	UNMENTIONED TOLERANCES ARE AS PER ISO 2768-1	LINEAR DIMNS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000	NAME.	DATE.
Gemometrical Reqmnts.		TOLERANCE	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3			
Surface Finish		PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE.										
Sectional Views/ Arrows.	ANGULAR DIMNS.	OVER & UPTO	0-10	10-50	50-120	120-400	400.....	DGN.				
Material Grade	TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'	DRN. POTDAR 11.08.19					
Process. Reqmnts.	<b>TITLE:-</b> <u>TERMINAL BOX ARRANGEMENT DRG OF LFN-90 FLANGE MOUNTED MOTOR GAS.GROUP- IIC</u>											
Gauging Reqmnts.	 <b>Laxmi Hydraulics Pvt.Ltd.</b> Website : <a href="http://www.lhp.co.in">www.lhp.co.in</a>  SOLAPUR											
Drq.No./ Rev.No./ Issue No.	DRG. NO. <b>MGAF090A0164</b> SCALE :- 1:1 SHEET :- 2 OF 2											
Signature	UNLESS OTHERWISE SPECIFIED ALL DIMNS. ARE IN MM. DO NOT SCALE THE DRAWING.											
ISSUE NO. 01   REV.NO. 00												

Motor Datasheet

MOTORS			
H.V. & L.V. MOTORS			
Sr. No.	Description	Unit	Vendor Data
1.01.00.	Manufacturer		LHPL INDIA
1.02.00.	Type and frame size		IE3 SQIM & 90S
1.03.00.	design code no.		IS-12615-2018,IEC 60034-1
1.04.00.	Nos. required		
1.05.00.	Application		
1.06.00.	Specification & Codes		IS-12615-2018,IEC 60034-1
1.07.00.	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	0.75
	ii) At 40 Deg C ambient	kW	0.80
1.08.00.	Location for installation		
1.09.00.	Type of enclosure & ventilation		HAZARDOUS AREA (FLP) & TEFC
1.10.00.	Degree of protection		IP:55
1.11.00.	Type of duty		S1
1.12.00.	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00.	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00.	At rated voltage & frequency		
	a) Full load current	A	2.3
	b) Full load speed	A	950
	c) No load current	A	2.1
1.15.00.	Minimum permissible voltage during starting	V	332V (80%)
1.16.00.	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00.	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00.	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00.	Efficiency & power factor		
	Load (% of full load)		
	100		78.9      0.57
	50		73      0.35
	25		63      0.25
	0		-      0.11
	At start		-      0.60
	Duty Point		Pl mention
1.20.00.	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		11.46
	iv) Resistance per phase at 20°C		5.73
	v) Inductance per phase		0.060
	vi) Capacitance per phase		NA
1.21.00.	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00.	Torque at full load	kgm	0.77
1.23.00.	Break away torque in % of full load torque	%	200
1.24.00.	Pull up torque in % of full load torque	%	180
1.25.00.	Pull out torque in % of full load torque	%	250
1.26.00.	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00.	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00.	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00.	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20

Motor Datasheet

	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00.	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI
1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	1
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6205 2Z/6204 2Z @ DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. of Bearing		NA
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA



Motor Datasheet

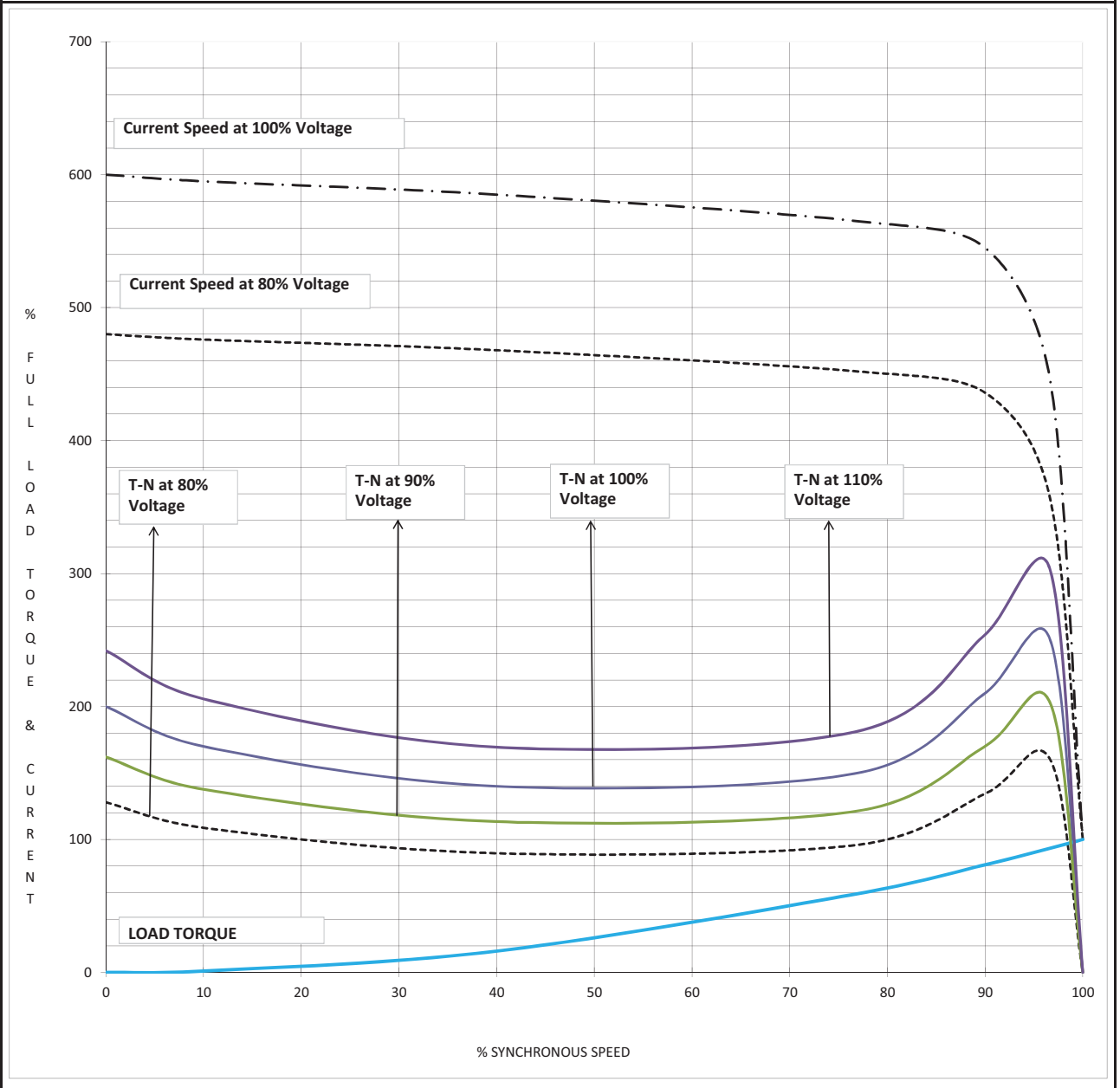
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP
	iv) Cable gland size & no.		M20 X 1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI /AL & 6mm MINIMUM
1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAF90A0166
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.011
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	9 APPROX
	ii) Weight of rotor (wound)	kg	7 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	16 Approx. Kg
1.57.00	Shipping dimensions & weight		425 X 250 X 305 & 19 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES

Motor Datasheet

	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 M
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 XM5

MKTG Ref No.:	D7PO1907021	LAXMI HYDRAULICS PVT LTD., B-11- MIDC CHINCHOLI , SOLAPUR.	CE <b>Lhp</b>
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SPEED VS TORQUE & CURRENT CHARACTERISTICS							
CUSTOMER :	M/s ADVANCE VENTILATION			PO NO:	PO DATE:		
INDENT NO. :							
PROJECT NAME :							
kW :	0.75	POLE :	6	VOLTS :	415	QTY :	1



NOTE 1	ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.
2	STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,
3	PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	8/31/2019
2			GAD NO			Checked By	SNG	8/31/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 0.75 POLE :

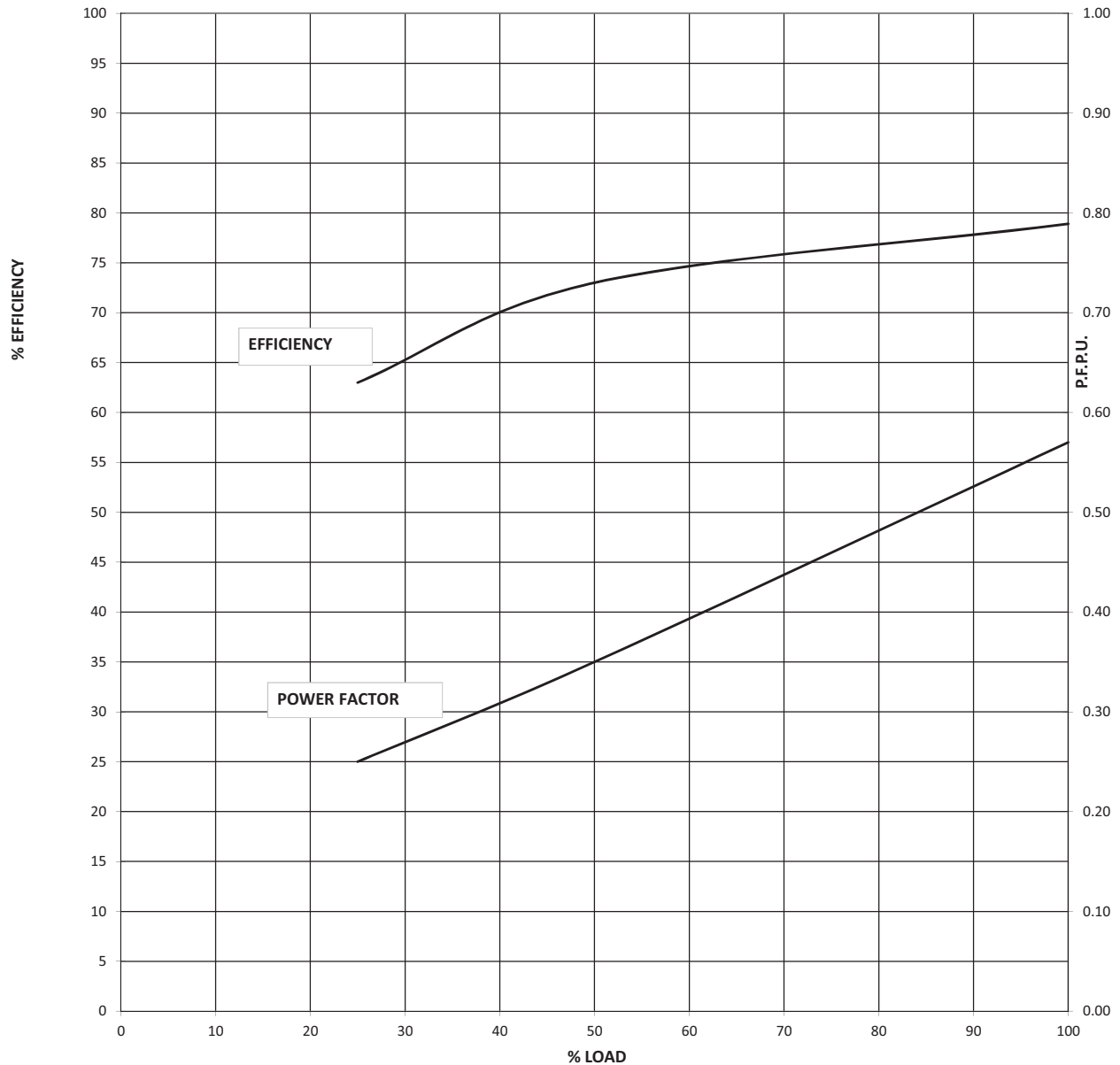
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	8/31/2019
1			T BOX NO		Checked By	SNG	8/31/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1907021

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 0.75 POLE :

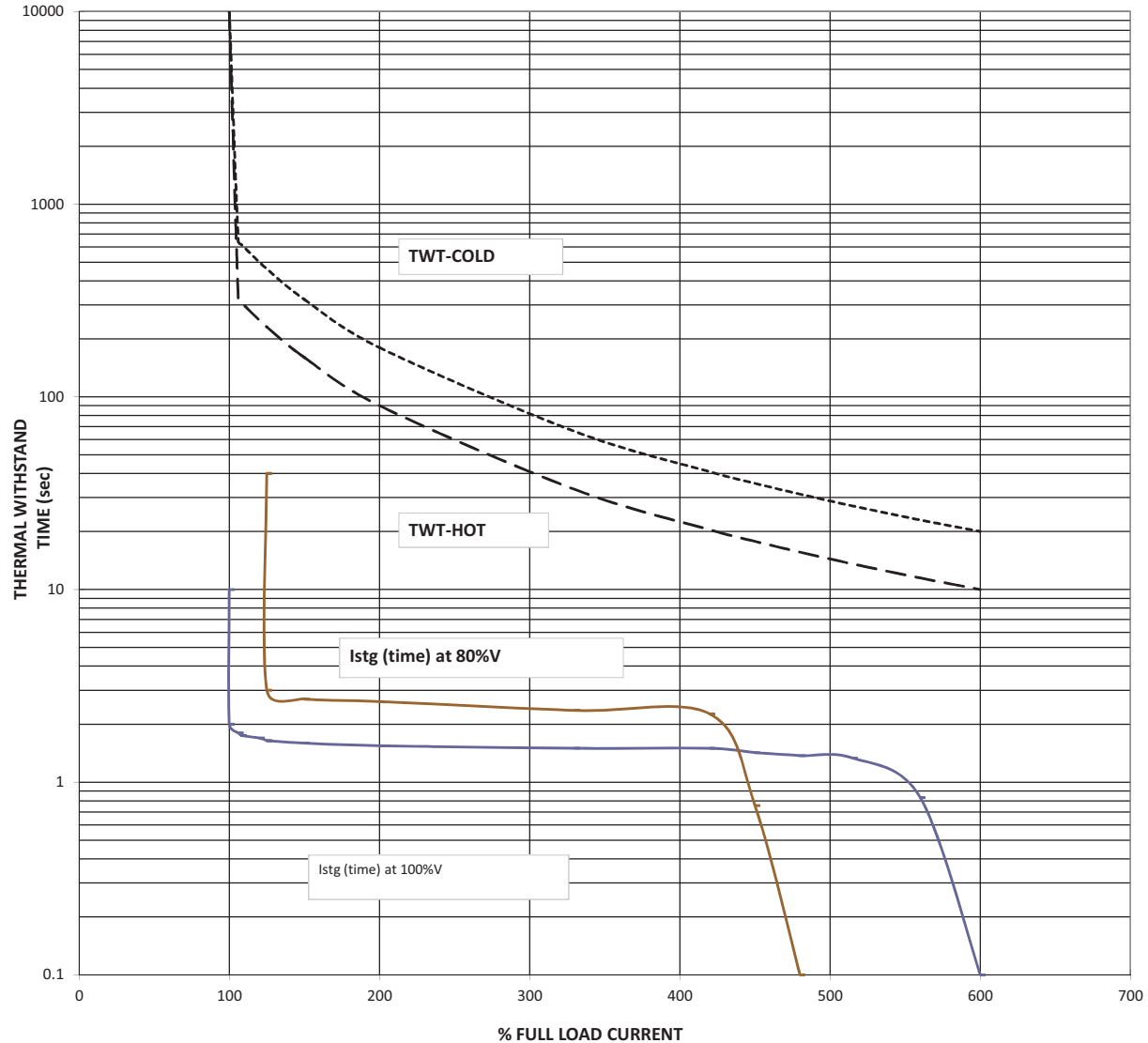
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

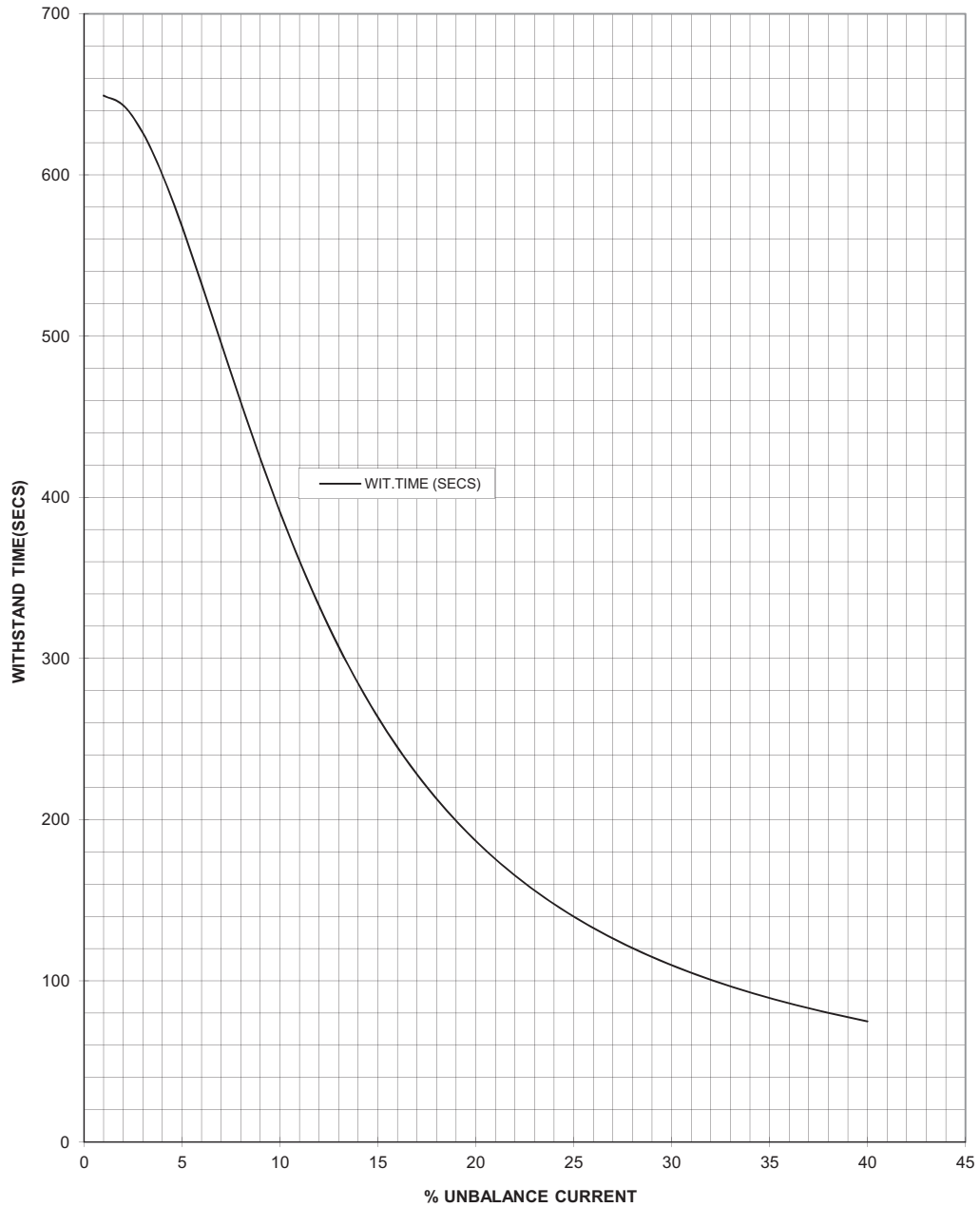
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	8/31/2019
1		GAD NO		Checked By	SNG	8/31/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

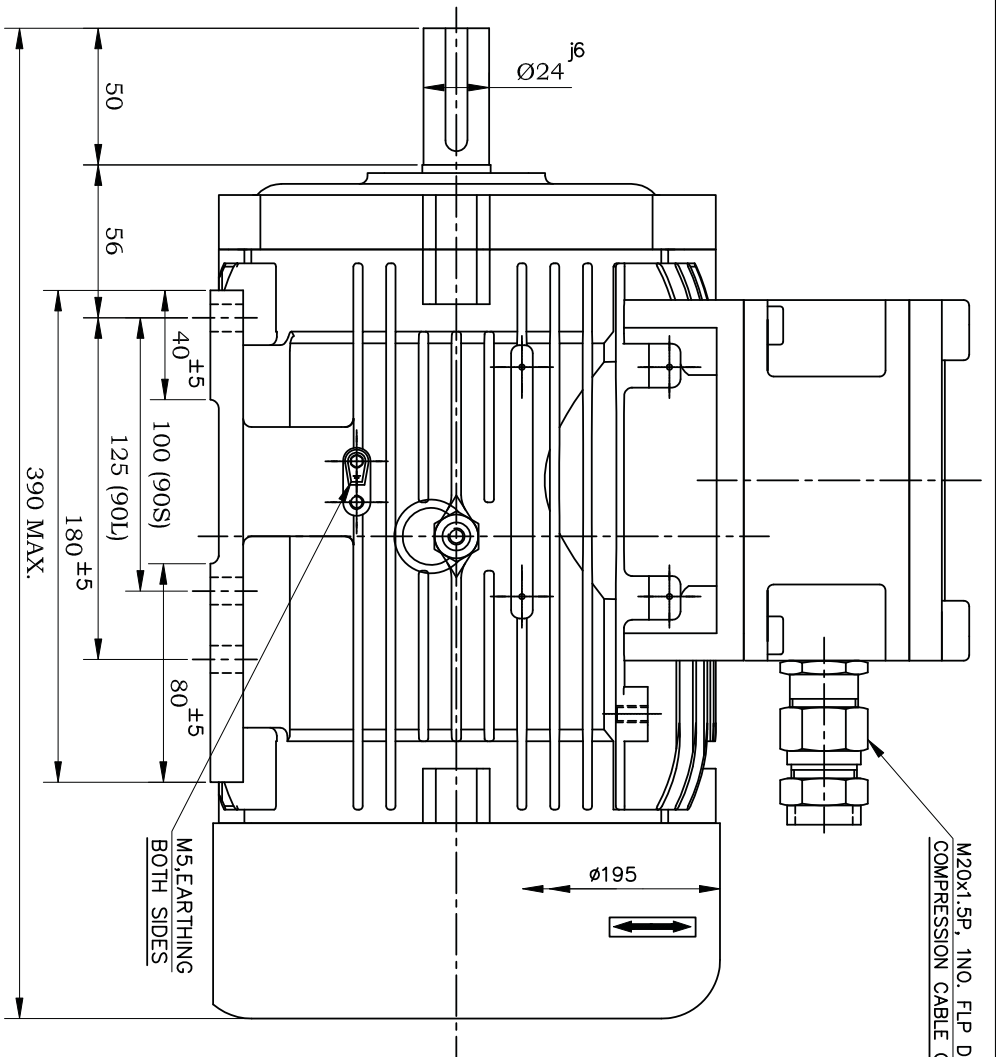
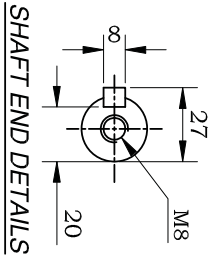
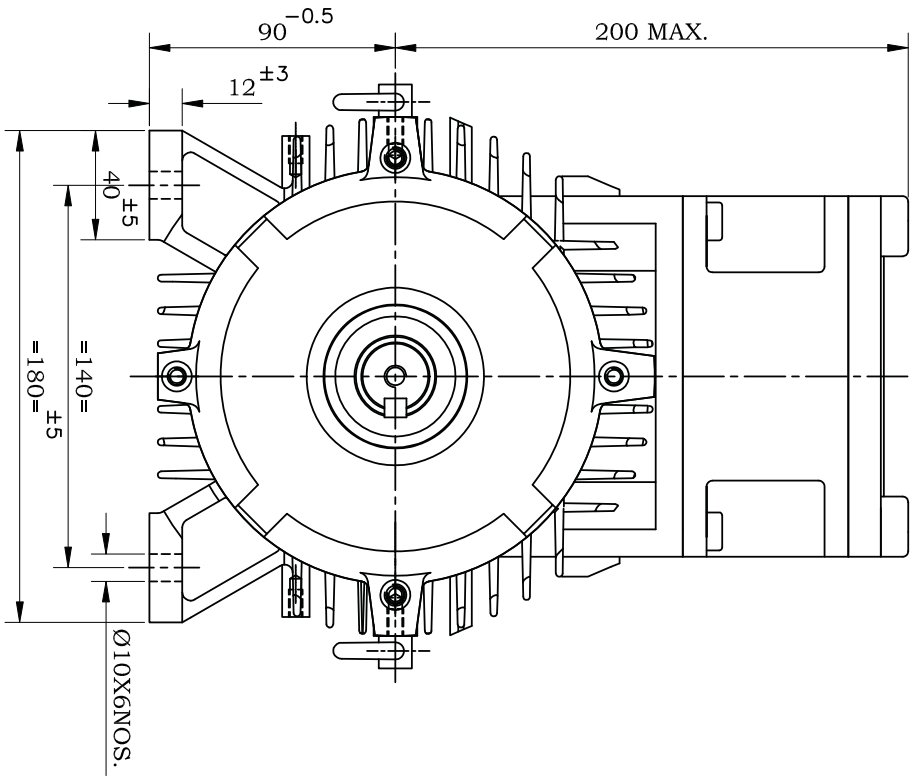


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 0.75 **POLE** : 6 **VOLTS** : 415 **QTY** : 1



2		PREP	SSG	8/31/2019	
1		APPD	SNG	8/31/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE



M20x1.5P, 1NO. FLP DOUBLE COMPRESSION CABLE GLAND

**SPECIFICATION:-**

RATING	0.75KW/1.0HP
POLE	6 POLE
BEARING DE	6205 2Z
BEARING NDE	6204 2Z

**MATERIAL OF CONSTRUCTION:-**

FRAME	CAST IRON
END COVER (DE)	CAST IRON
END COVER (NDE)	CAST IRON
T. BOX & COVER	CAST IRON
SHAFT	CARBON STEEL

**TITLE:-**

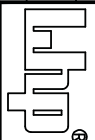
GENERAL ARRANGEMENT DRG OF  
LFN-90S/L FOOT (B-3) MOUNTING  
GAS.GROUP- IIC

UNMENTIONED TOLERANCES ARE AS PER IS:202-1/ ISO 2768-1	LINEAR DIMS.	PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE												
		0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000	ANGULAR DIMS.	0-10	10-50	50-120	120-400	400.....
	OVER & UP TO	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3	TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'

PROD. CODE - LFN675

NAME:	DATE:
DGN:	
DRN:	POTDAR
CHD:	16.08.19
APPD. GRM:	16.08.19
SCALE :- 1:1	
SHEET:- 1 OF 2	

REV. NO.	REV. DETAILS	DATE	INTL.
1			

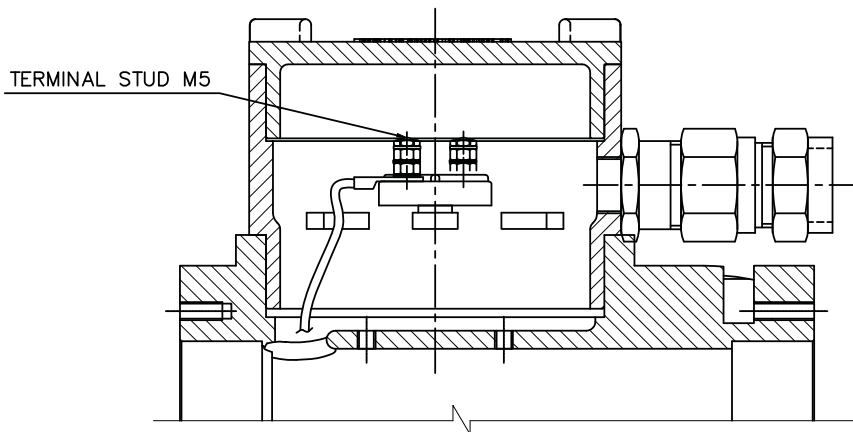
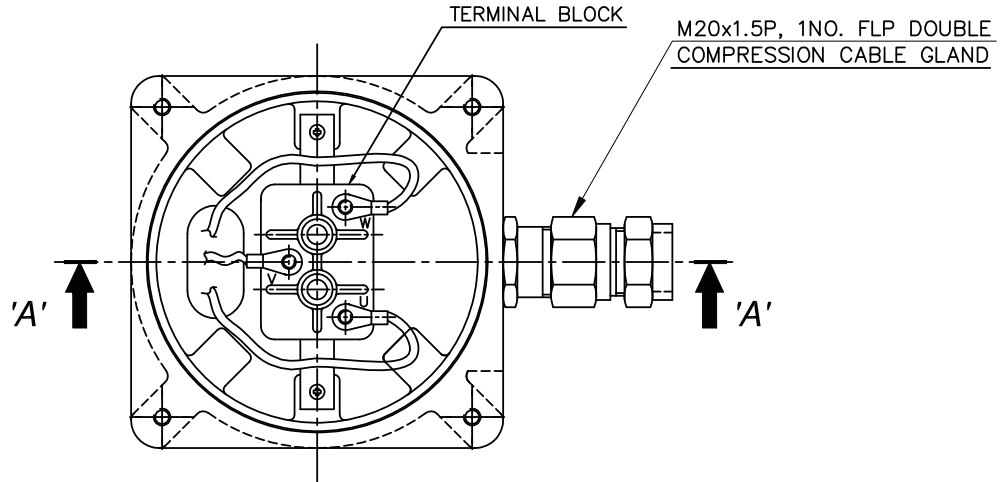


Laxmi Hydraulics Pvt.Ltd.  
Website : www.lhp.co.in  
SOLAPUR



DRG. NO. MGAF090A0166  
ISSUE NO. 01 REV.NO. 00

UNLESS OTHERWISE SPECIFIED ALL DIMS. ARE IN MM. DO NOT SCALE THE DRAWING.



**SECTION A-A**

\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MGAF\090\B3\MGAF090A0166.dwg

1			
REV. NO.	REV. DETAILS	DATE	INTL.

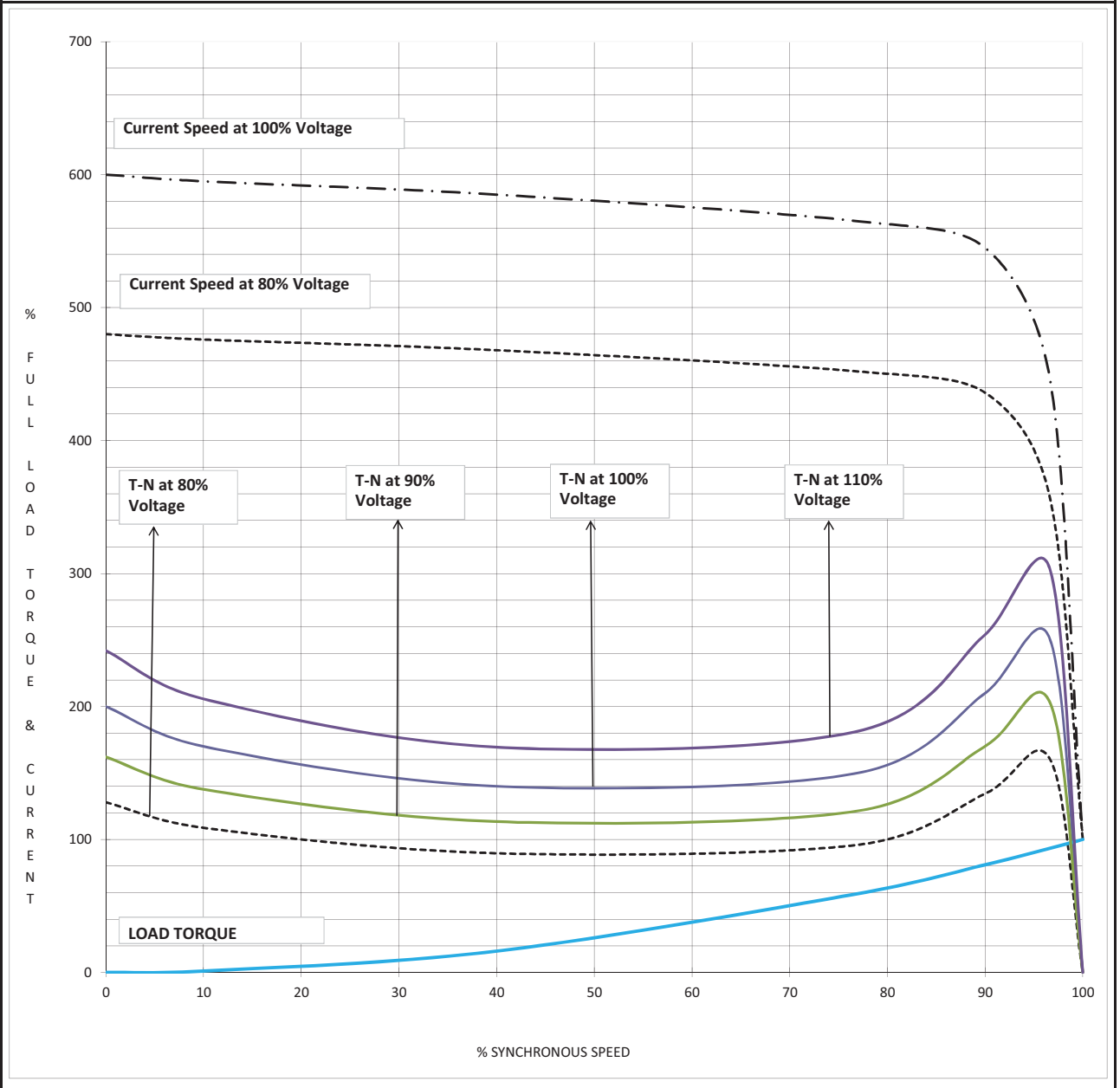
Standardisation	UNMENTIONED	LINEAR DIMNS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000		NAME.	DATE.	
Geometrical Reqmnts.	TOLERANCES ARE AS PER		TOLERANCE	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3				
Surface Finish	ISO 2768-1	ANGULAR DIMNS.	PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE.								DGN.			
Sectional Views/ Arrows.			OVER & UPTO	0-10	10-50	50-120	120-400	400.....			DRN.	POTDAR	16.08.19	
Material Grade			TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'			CHD.		16.08.19	
Process. Reqmnts.		<b>TITLE:-</b> TERMINAL BOX ARRANGEMENT DRG OF LFN-90 FLANGE MOUNTED MOTOR GAS.GROUP- IIC										APPD.	GRM	16.08.19
Gauging Reqmnts.		<b>Laxmi Hydraulics Pvt.Ltd.</b> Website : www.lhp.co.in      SOLAPUR										SCALE :- 1:1		
Dr.No./ Rev.No./ Issue No.												SHEET:- 2 OF 2		
Signature		UNLESS OTHERWISE SPECIFIED ALL DIMNS. ARE IN MM. DO NOT SCALE THE DRAWING.										DRG. NO.	<b>MGAF090A0166</b>	
												ISSUE NO. 01	REV.NO. 00	

1.00.00		TDS FOR 1.1KW-6 POLE MOTOR	
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 90L
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		As Per Approved TDS
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	1.1
	ii) At 40 Deg C ambient	kW	1.18
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	3.2
	b) Full load speed	A	930
	c) No load current	A	2.5
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100	81	0.60
	50	78	0.40
	25	65	0.25
	0	-	0.09
	At start	-	0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		9.30
	iv) Resistance per phase at 20°C		4.65
	v) Inductance per phase		0.050
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.15
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	250
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	1
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6205 2Z/6205 2Z @DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEG C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP
	iv) Cable gland size & no.		M20 X1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	iii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN090A0380
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.015
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	12 APPROX
	ii) Weight of rotor (wound)	kg	8 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 12 Kg
1.57.00	Shipping dimensions & weight		425x250x305 & 13 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

SPEED VS TORQUE & CURRENT CHARACTERISTICS					
CUSTOMER :	M/s ADVANCE VENTILATION				
INDENT NO. :	PO NO:	PO DATE:			
PROJECT NAME :					
kW :	1.1	POLE :	6	VOLTS :	415
				QTY :	1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

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			WDG NO		Prepared By	SSG	11/25/2019
2			GAD NO		Checked By	SNG	11/25/2019
1			T BOX NO				
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 1.1

POLE :

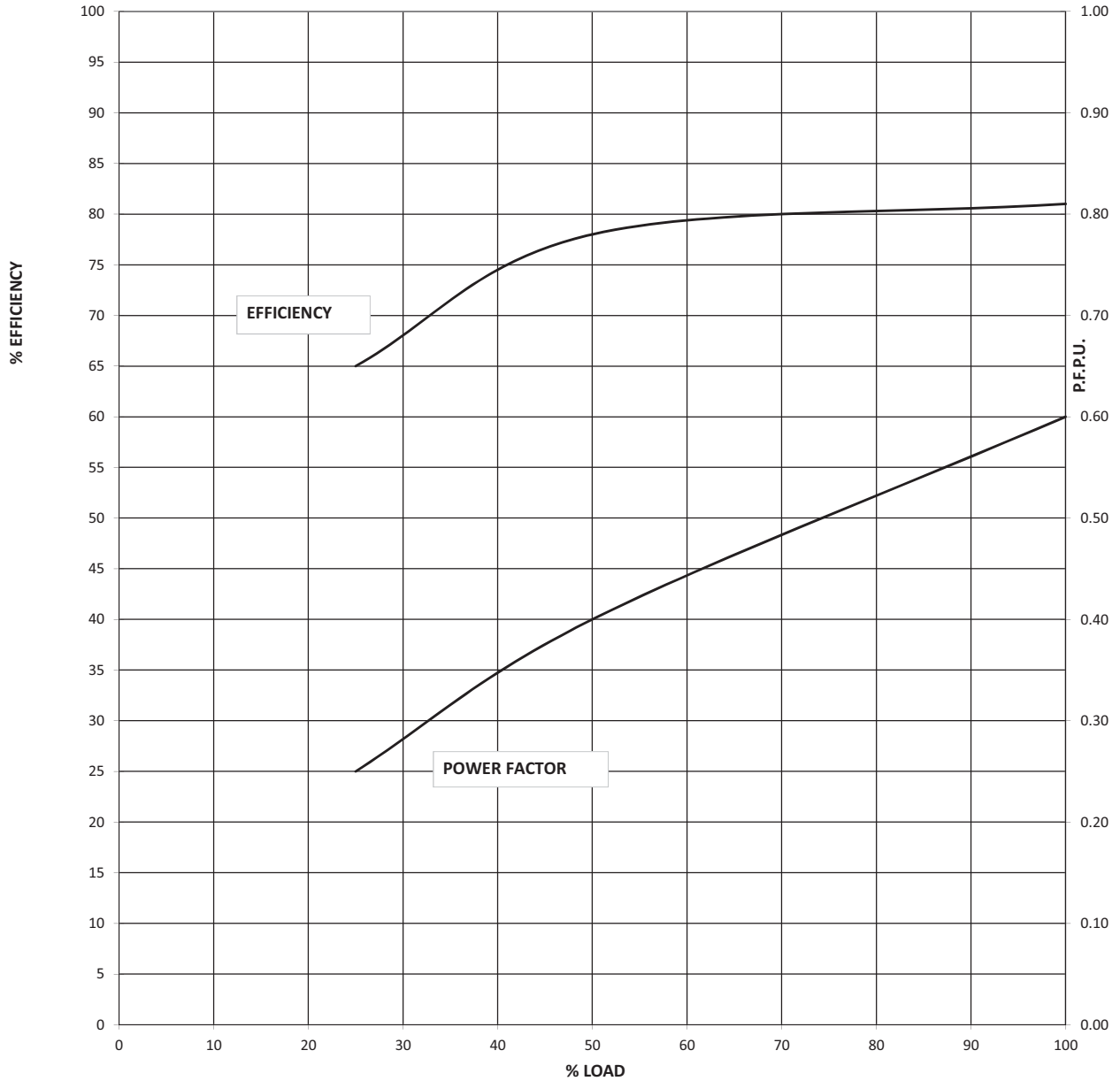
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

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2			GAD NO		Prepared By	SSG	11/25/2019
1			T BOX NO		Checked By	SNG	11/25/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. : PO NO:

PO DATE:

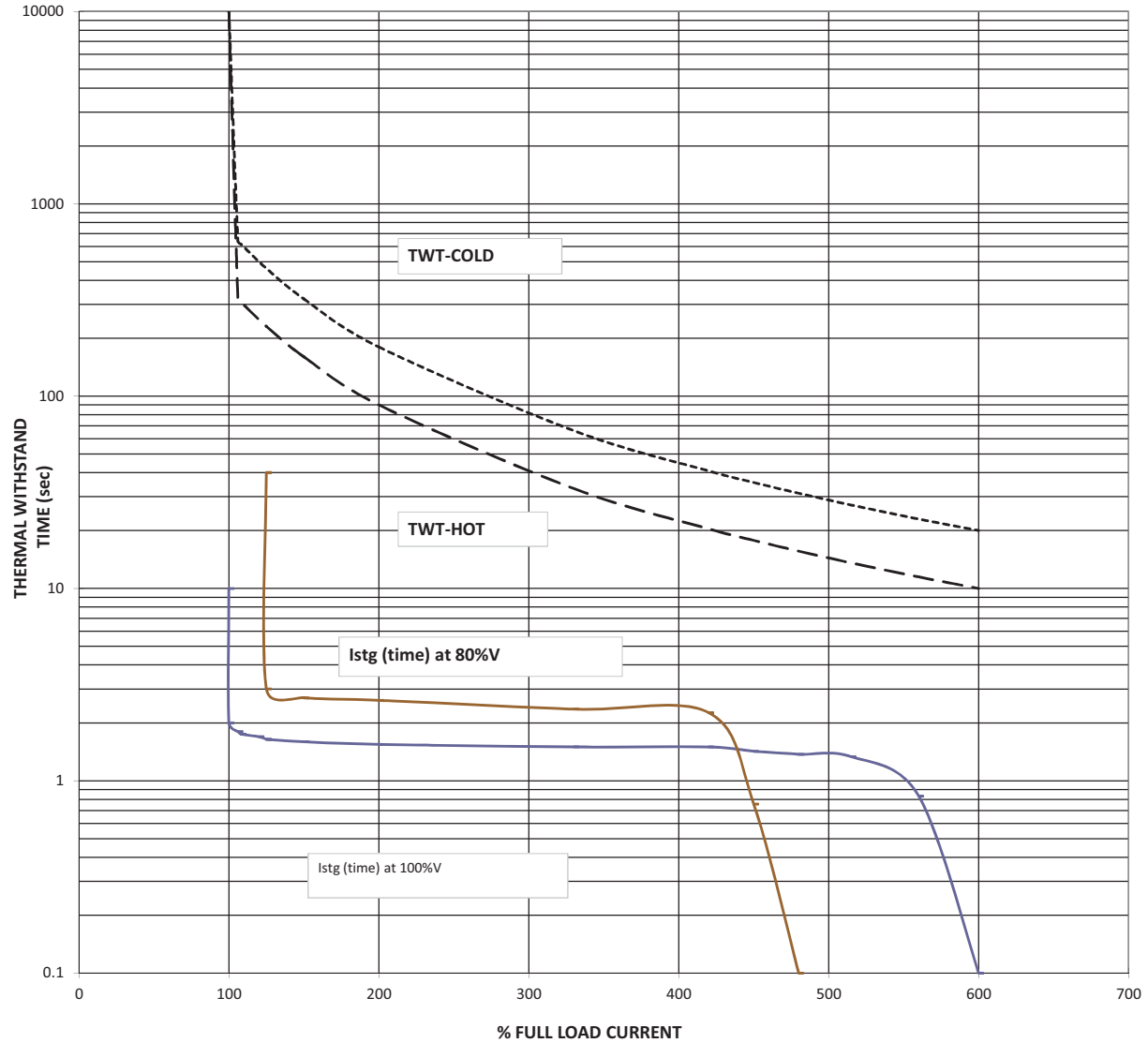


IE3

PROJECT NAME :

KW : 1.1 POLE : 6 VOLTS : 415

QTY : 1



L. R. CURRENT at 100% voltage :	600	% OF FLA	THERMAL WITHSTAND TIME(sec):
Starting time at 100% voltage :	2	sec	AT100% RATED VOLTAGE (HOT) : 10
Starting time at 80% voltage :	3	sec	AT100% RATED VOLTAGE (COLD): 20

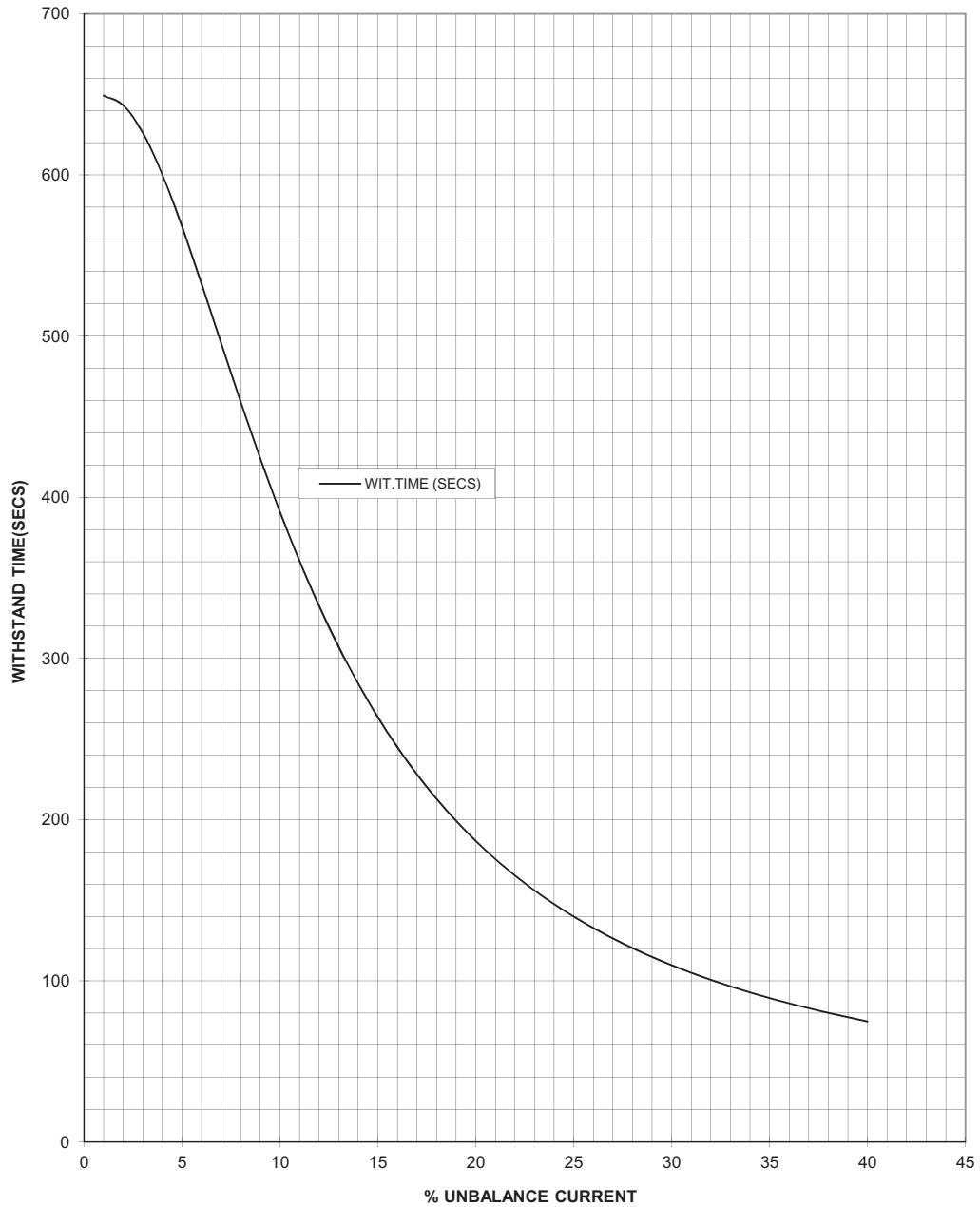
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- 2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,
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2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

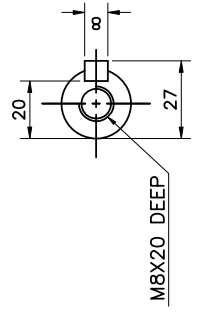
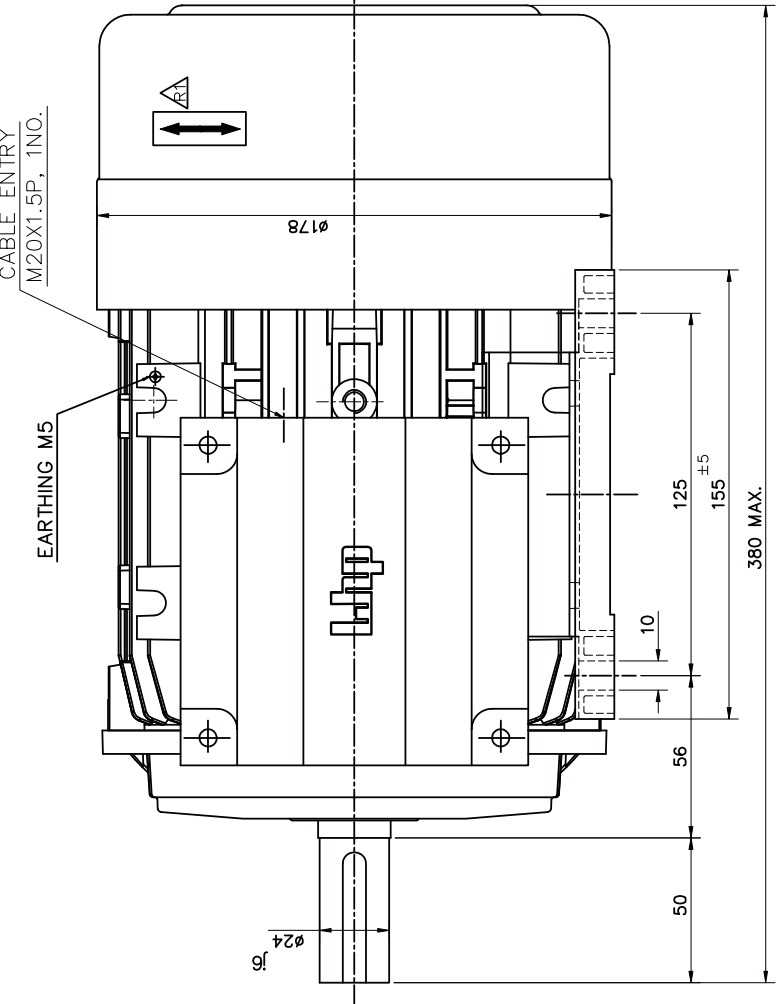


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 1.1    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE



SHAFT END DETAILS

**SPECIFICATION:-**

RATING	1.1KW / 1.5HP
POLE	6 POLE
BEARING DE	6205 2Z
BEARING NDE	6205 2Z

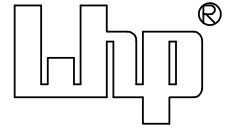
**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	ALUMINIUM/CAST ORON
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL

UNMENTIONED TOLERANCES ARE AS PER IS2102-1/ IS2766-1	OVER & UPTO 0.53	3-6	6-30	30-120	120-400	400-1000	1000-2000
LINEAR DIMS.	TOLERANCE ±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
ANGULAR DIMS.	OVER & UPTO 0-10	±1°	10-50	50-120	120-400	400.....	
	TOLERANCE	±1°	±0'30"	±0'20"	±0'10"	±0'5"	
PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE							
<b>TITLE:-</b> GENERAL ARRANGEMENT DRAWING FOR 90L FRAME FOOT MOUNTED MOTOR							
PROD.CODE- IC0121	NAME	DATE	DGN	DRN	POTDAR	12.04.19	
				CHD	APPD	GRM	12.04.19
							12.04.19
							SCALE: 1:1
							DRG NO
							<b>MGAN090A0380</b>
							ISSUE. NO. 01
							REV. NO. 01
							DO NOT SCALE THE DRAWING
							UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM
							SOLAPUR
							Website:- www.lhp.co.in
							Laxmi Hydraulics Pvt. Ltd.
							DRG NO
							MGAN090A0380
							ISSUE. NO. 01
							REV. NO. 01

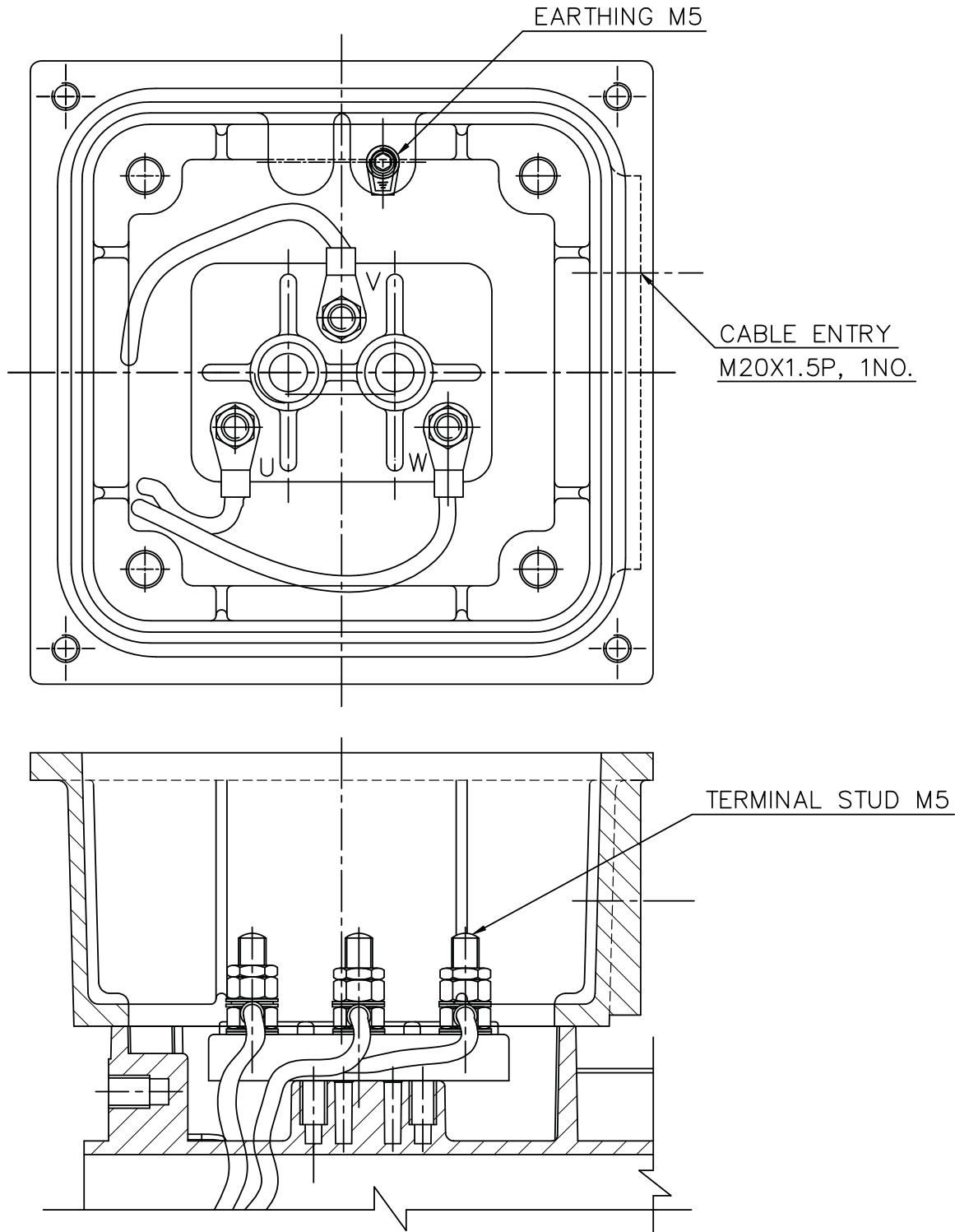
REV NO	1	ARROW PLATE SHOWN.	16.08.19	SJP
		ECN DETAILS	DATE	INTL

LAXMI HYDRAULICS PVT. LTD, SOLAPUR



TERMINAL BOX ARRANGEMENT FOR 3 LEADS

FOR 90 FRAME



\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MGAN\090\B3\MGAN090A0380.dwg

REV.DATE: - 16.08.19

SHEET: - 02 OF 02

ISSUE.NO. - 01

REV.NO. - 01

DATE - 12.04.19

DRG.NO. - MGAN090A0380

DRN.BY. - POTDAR

CHD.BY. -



APPD.BY. - GRM

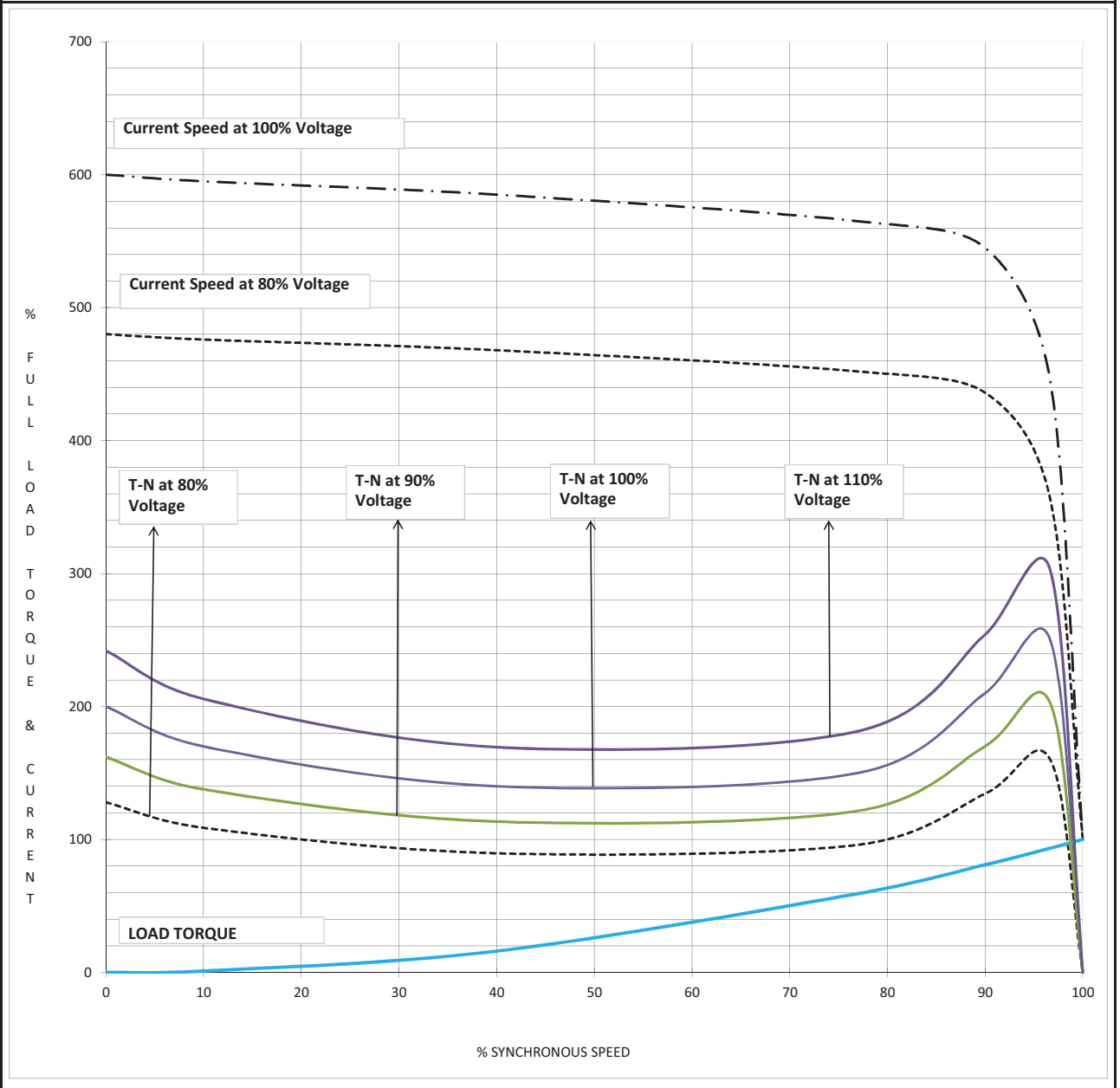
TDS FOR 0.75 KW-6 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 90S
1.03.00	design code no.		IS/IEC 60034-1, IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		As Per Approved TDS
1.06.00	Specification & Codes		IS/IEC-60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	0.75
	ii) At 40 Deg C ambient	kW	0.80
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	2.3
	b) Full load speed	A	950
	c) No load current	A	2.1
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		78.9 0.57
	50		73 0.35
	25		63 0.25
	0		- 0.11
	At start		- 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		11.46
	iv) Resistance per phase at 20°C		5.73
	v) Inductance per phase		0.060
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	0.77
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	250
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	1
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6205 2Z/6205 2Z @DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		NA
	xi) Max. permissible temp. of Oil		NA
	xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BI DIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		M20 X1.5P, 1NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN090A0372
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.011
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	9 APPROX
	ii) Weight of rotor (wound)	kg	7 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx.16 Kg
1.57.00	Shipping dimensions & weight		425x250x305 & 17.5 kg.
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		RAL-5012
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

MKTG Ref No.:	D7PO1911135	LAXMI HYDRAULICS PVT LTD., B-11- MIDC CHINCHOLI , SOLAPUR.	CE <b>Lhp</b>
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SPEED VS TORQUE & CURRENT CHARACTERISTICS							
CUSTOMER :	M/s ADVANCE VENTILATION			PO NO:	PO DATE:		
INDENT NO. :							
PROJECT NAME :							
kW :	0.75	POLE :	6	VOLTS :	415	QTY :	1



NOTE 1	ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.
2	STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,
3	PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

kW : 0.75 POLE :

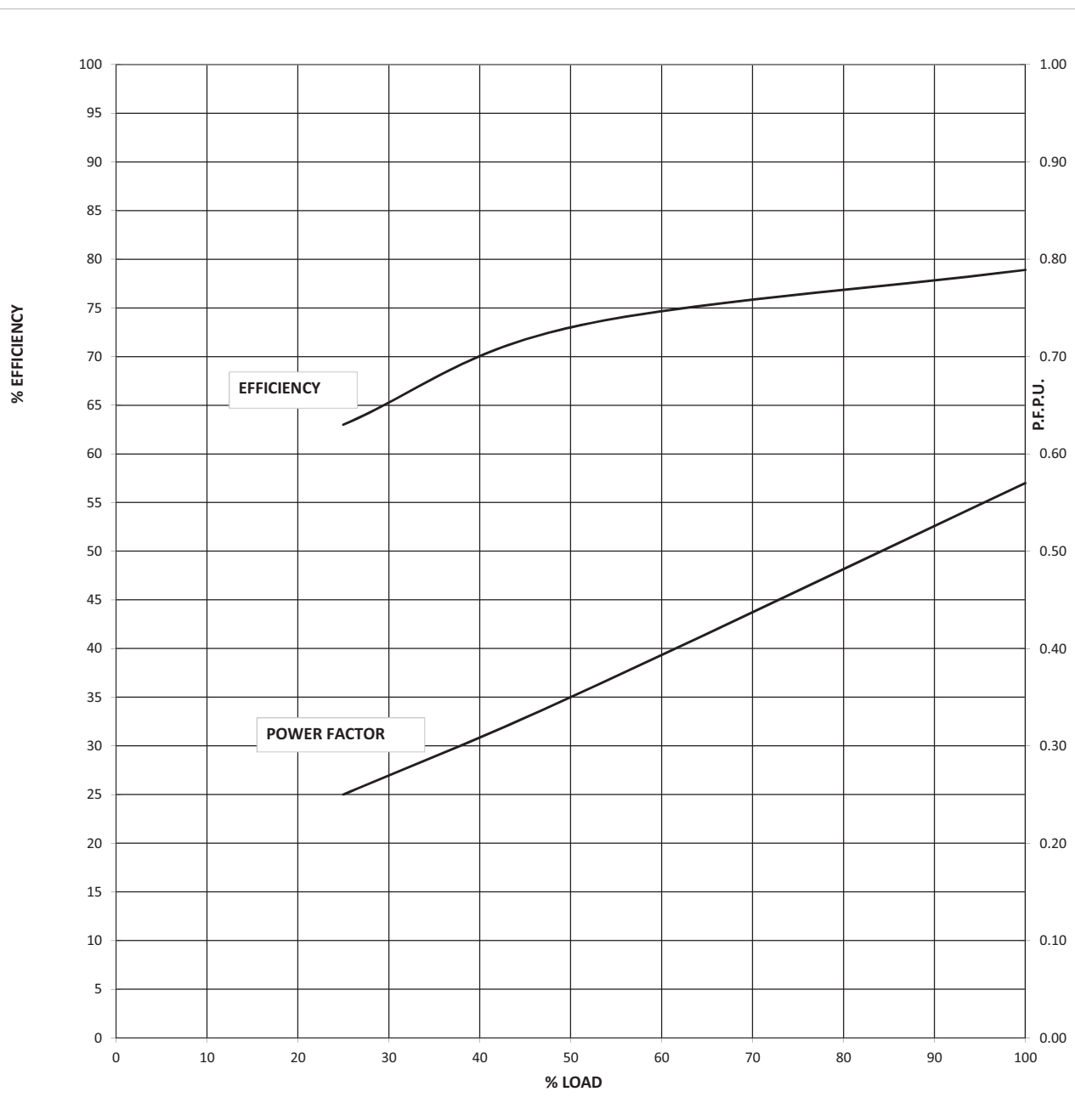
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	SIGN	DATE
2		WDG NO		Prepared By	SSG 11/25/2019
1		GAD NO		Checked By	SNG 11/25/2019
		T BOX NO			

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 0.75 POLE :

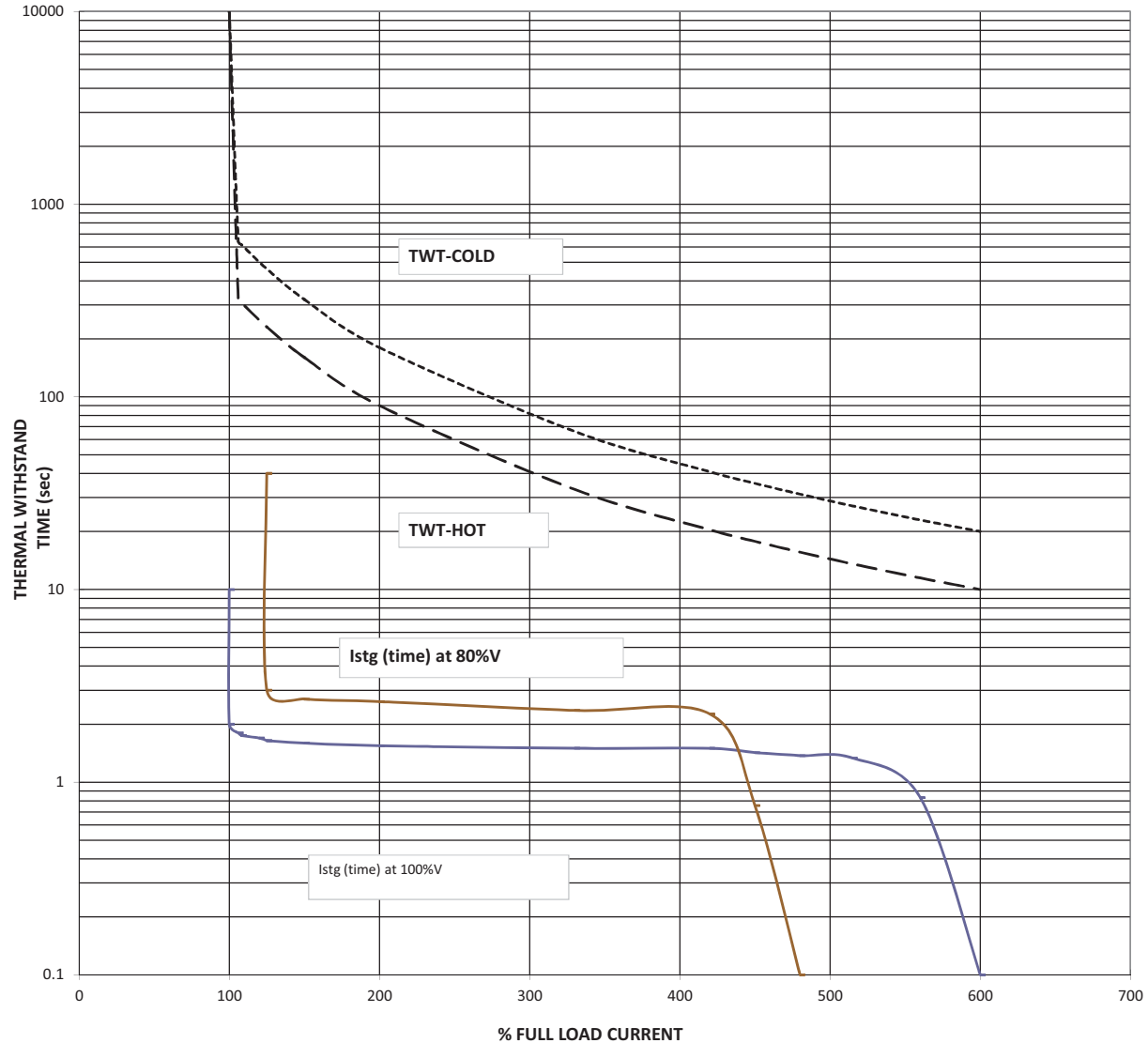
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

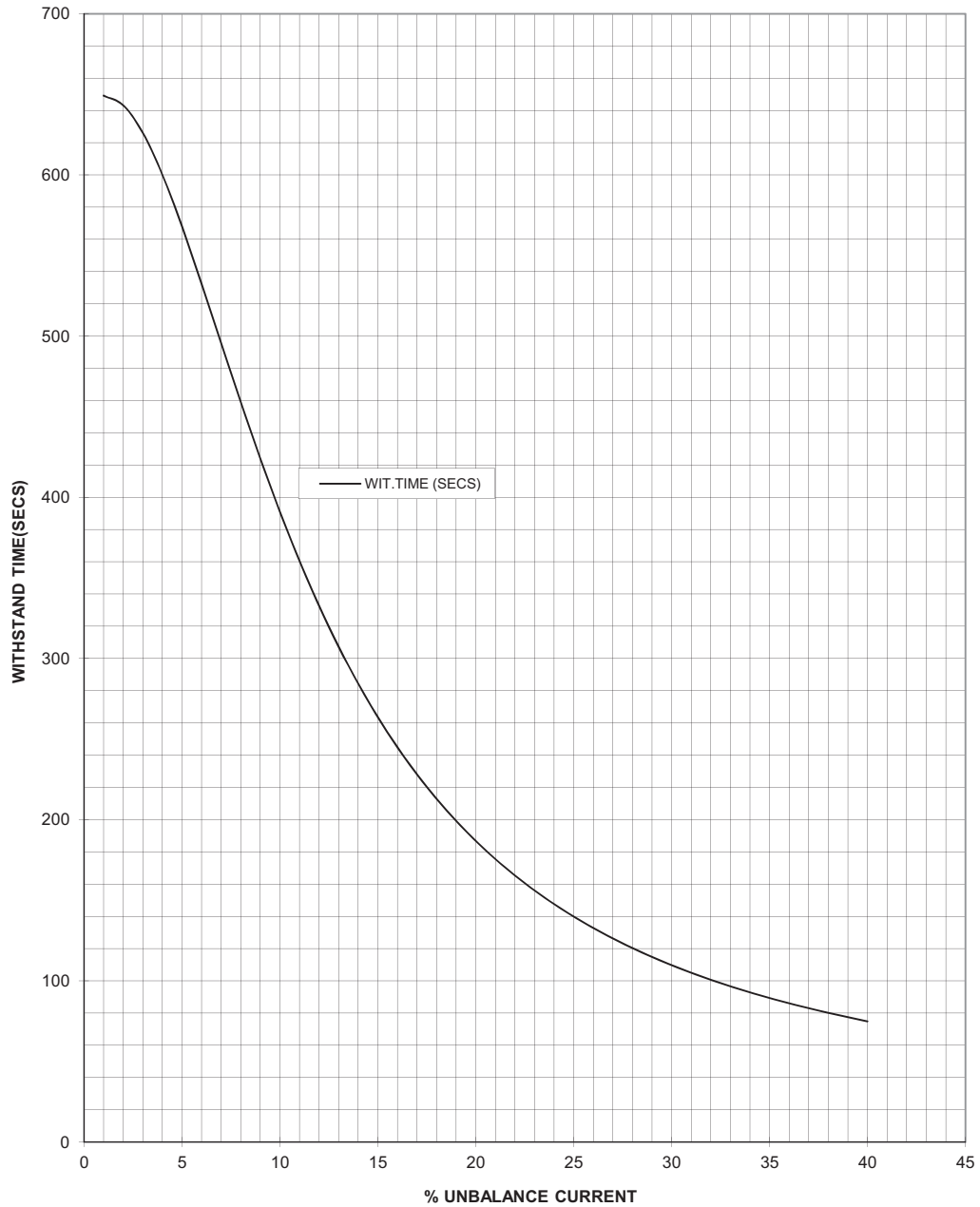
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

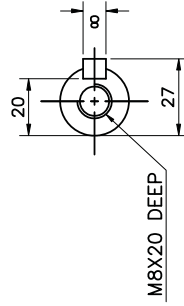
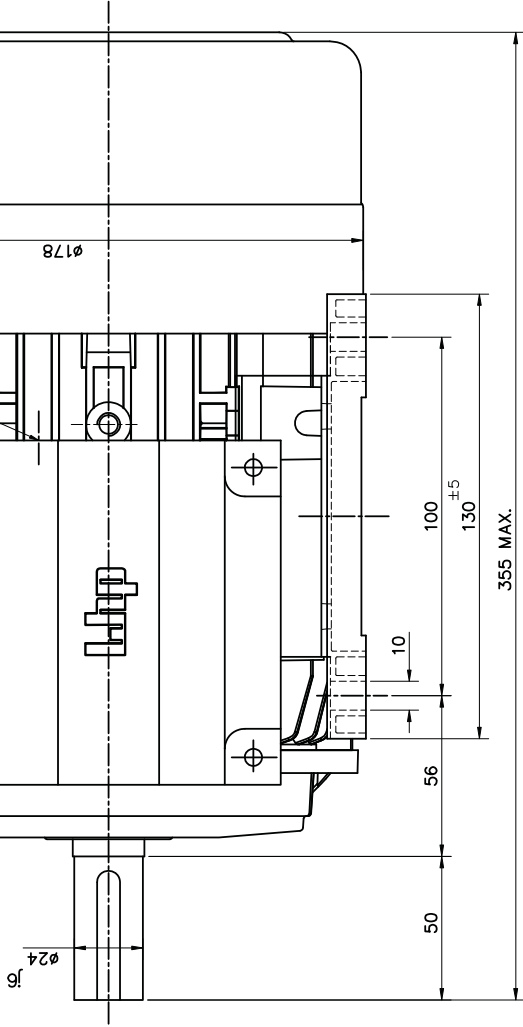
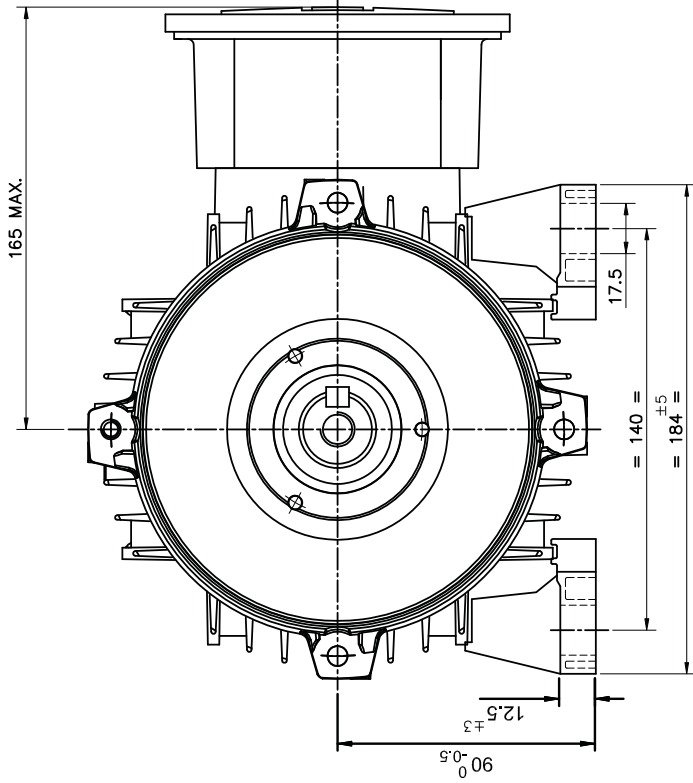


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 0.75    **POLE** : 6    **VOLTS** : 415    **QTY** : 1



2		PREP	SSG	11/25/2019
1		APPD	SNG	11/25/2019
NO	REVISION	SIGN/DATE		SIGN    DATE



SHAFT END DETAILS

SPECIFICATION:-

RATING	0.75KW / 1.0HP
POLE	6 POLE
BEARING DE	6205 2Z
BEARING NDE	6205 2Z

MATERIAL OF CONSTRUCTION:-

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	ALUMINIUM/CAST ORON
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL

TITLE:- GENERAL ARRANGEMENT DRAWING FOR 90S FRAME FOOT MOUNTED MOTOR.

Website:- [www.lhp.co.in](http://www.lhp.co.in)

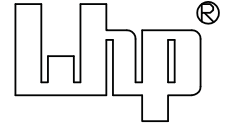


DRG NO. MGAN090A0372  
ISSUE NO. 01 REV. NO. 01

UNMENTIONED TOLERANCES ARE AS PER IS:1024-1/IS:2769-1	LINEAR DIMS.	OVER & UP TO TOLERANCE	0.5-3 ±0.2	3-5 ±0.3	5-30 ±0.5	30-120 ±0.8	120-400 ±1.2	400-1000 ±2	1000-2000 ±3	PROD. CODE- EC0120
	ANGULAR DIMS.	OVER & UP TO TOLERANCE	0-10 ±1°	10-50 ±0°30'	50-120 ±0°20'	120-400 ±0°10'	400... ±0°9'			NAME DATE
										DGN
										DRN
										POTDAR 17.03.19
										CHD 17.03.19
										APPD GRM 17.03.19
										SHEET:- 01 OF 02
										SCALE: 1:1

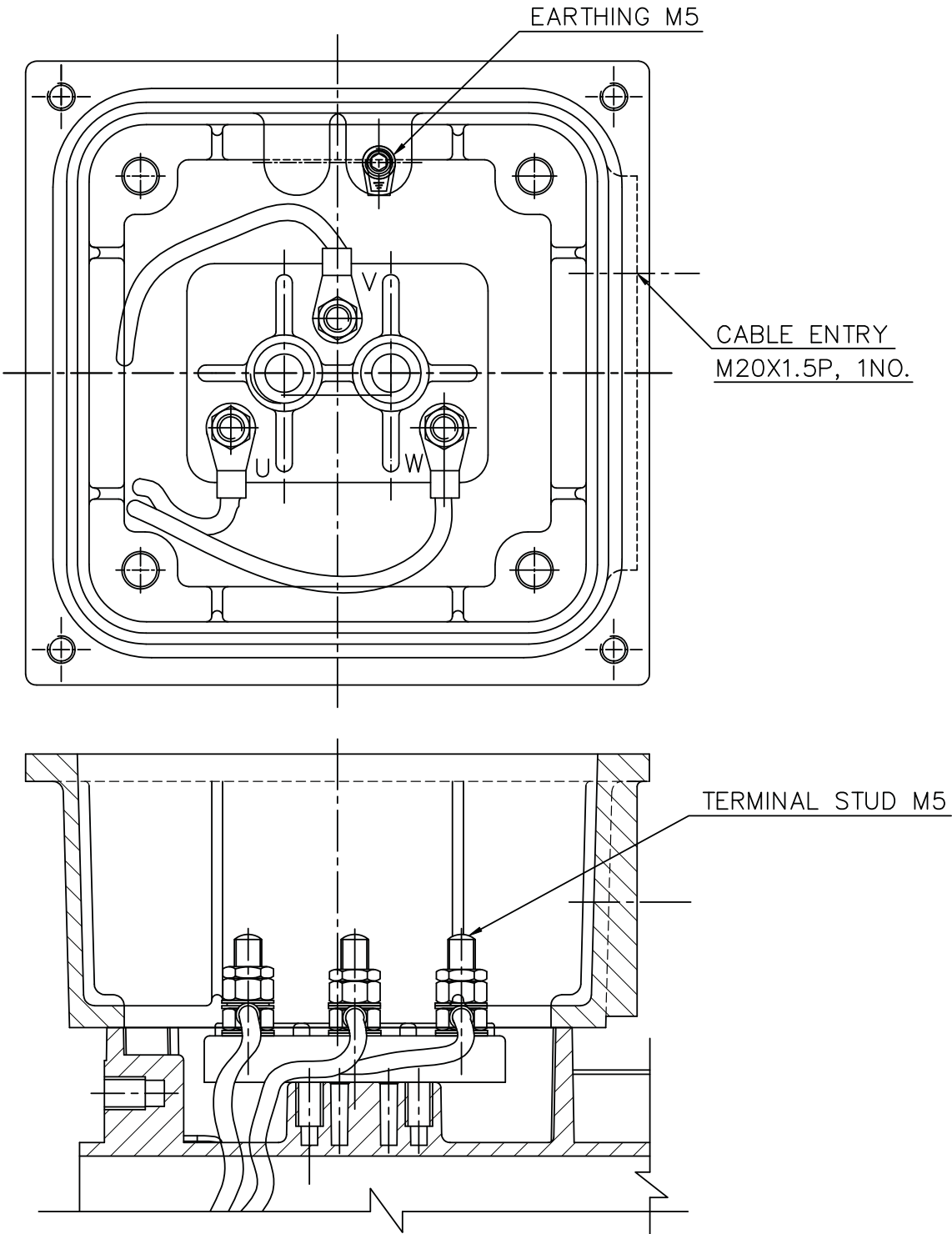
1	ARROW PLATE SHOWN.	16.08.19	SJP
REV. NO.	ECN DETAILS	DATE	INTL.

LAXMI HYDRAULICS PVT. LTD, SOLAPUR



TERMINAL BOX ARRANGEMENT FOR 3 LEADS

FOR 90 FRAME



\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MGAN\090\B3\MGAN090A0372.dwg

REV.DATE- 16.08.19

SHEET: - 02 OF 02

ISSUE.NO.- 01

REV.NO.- 01

DATE- 17.03.19

DRG.NO.- MGAN090A0372

DRN.BY.- POTDAR

CHD.BY.-

APPD.BY.- GRM

TDS FOR 0.55 KW-6 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 80
1.03.00	design code no.		IS/IEC 60034-1, IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		As Per Approved TDS
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	0.55
	ii) At 40 Deg C ambient	kW	0.59
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	1.50
	b) Full load speed	A	930
	c) No load current	A	1.10
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		77.2 0.66
	50		74 0.50
	25		64 0.34
	0		- 0.11
	At start		- 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		26.40
	iv) Resistance per phase at 20°C		13.20
	v) Inductance per phase		0.090
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	0.58
1.23.00	Break away torque in % of full load torque	%	190
1.24.00	Pull up torque in % of full load torque	%	160
1.25.00	Pull out torque in % of full load torque	%	240
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	1
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6204 ZZ/6204 2Z @ DE/NDE
	ii) Type		DGGB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		NA
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BI DIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		TOP
	iv) Cable gland size & no.		M20 X 1.5 P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI /AL & 6mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN080A0183
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.001
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	8 APPROX
	ii) Weight of rotor (wound)	kg	6 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 14 Kg
1.57.00	Shipping dimensions & weight		230x250x250 & 15.4 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD., B-11- MIDC CHINCHOLI , SOLAPUR.



**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 0.55 POLE :

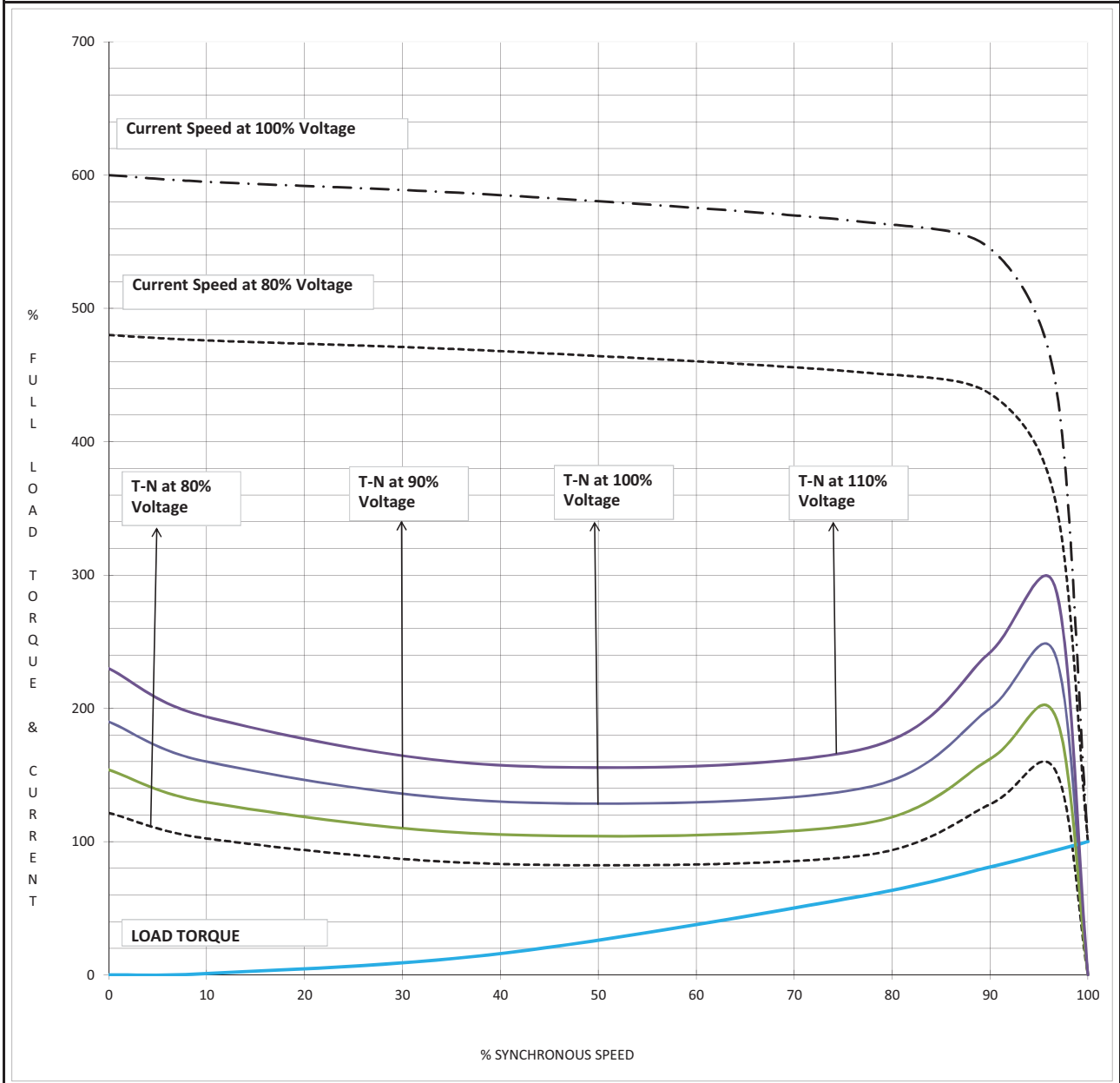
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 0.55

POLE :

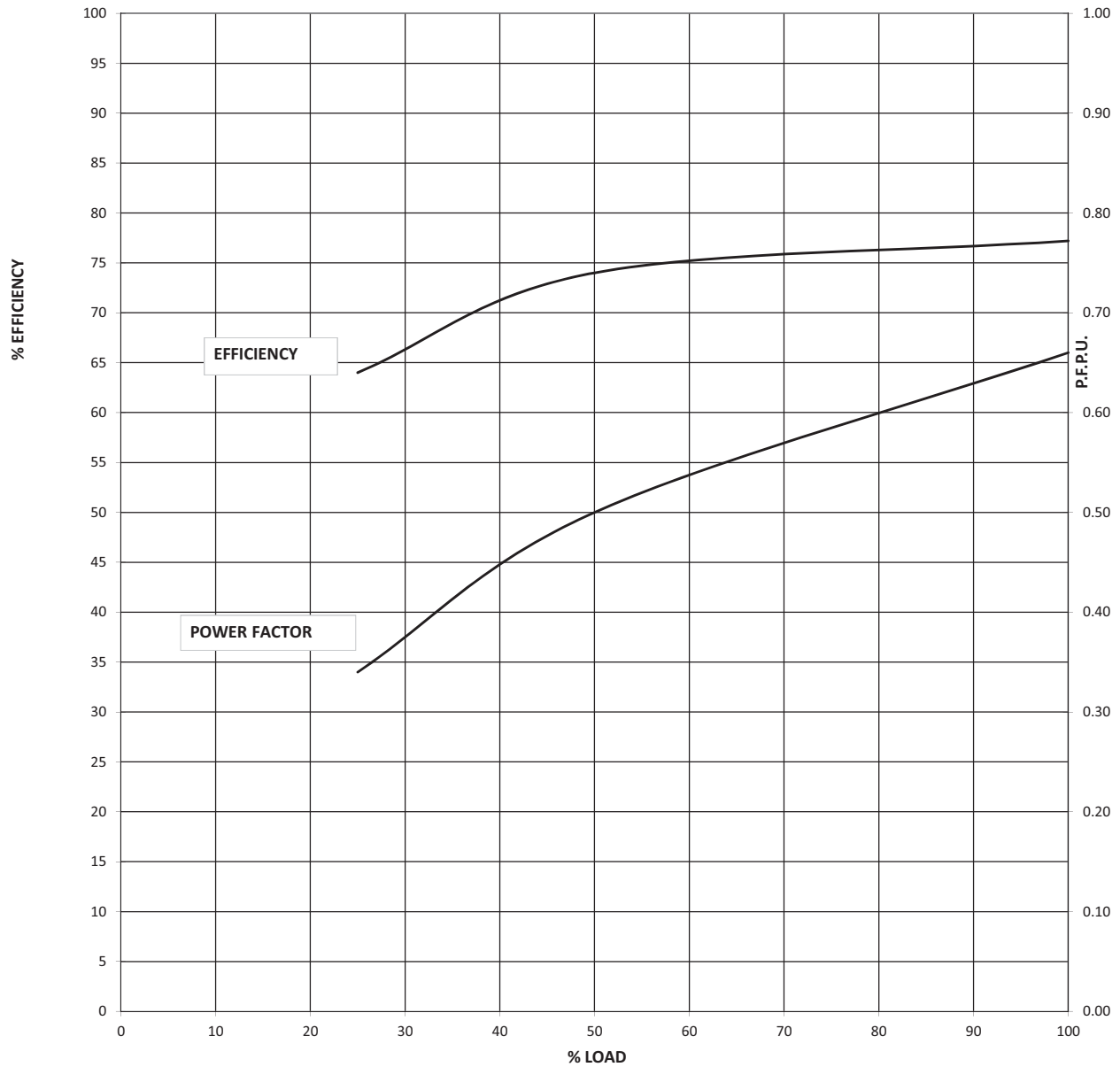
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	11/25/2019
1			T BOX NO		Checked By	SNG	11/25/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 0.55 POLE :

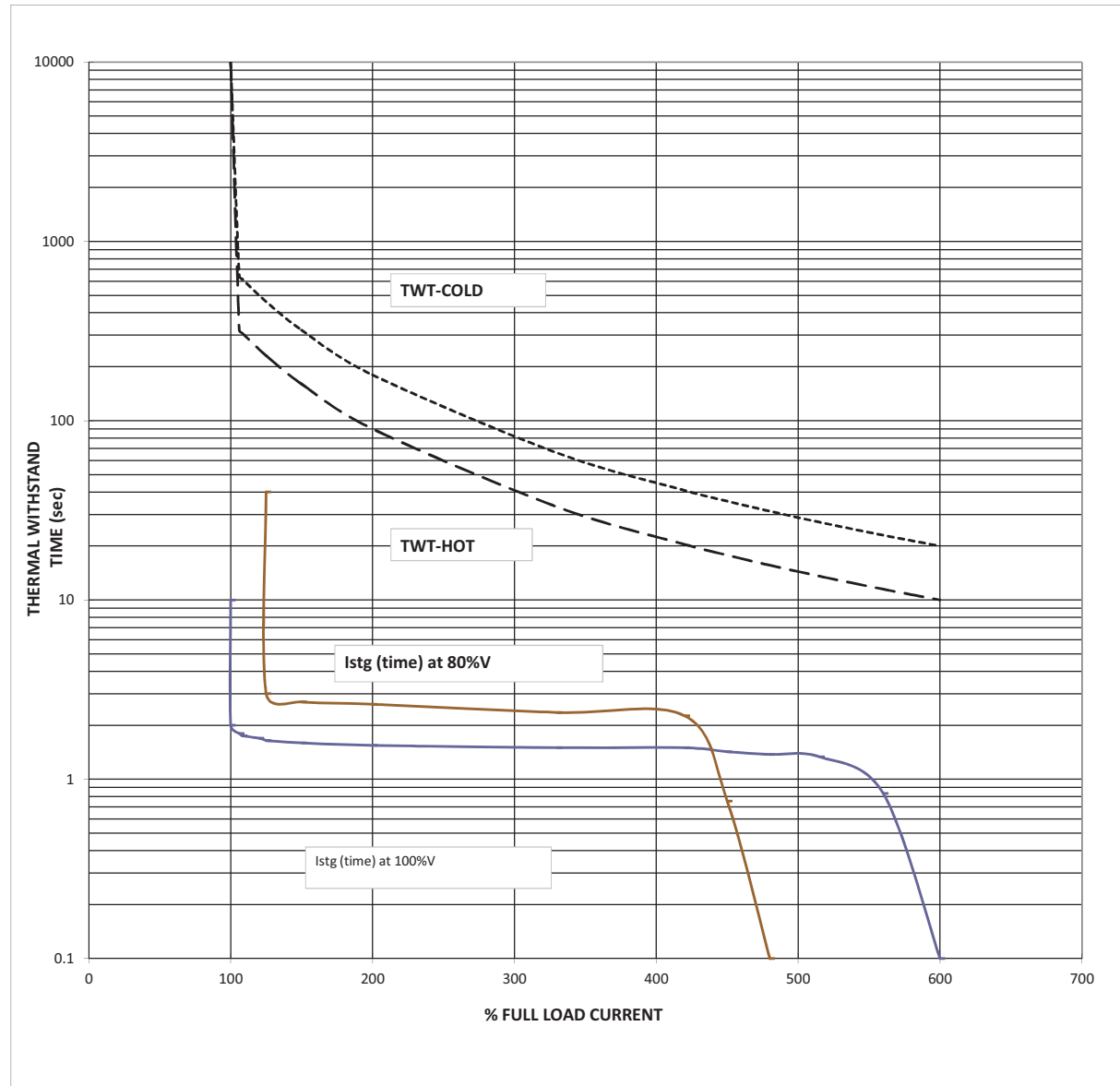
6

VOLTS :

415

QTY :

1



L. R. CURRENT at 100% voltage :	600	% OF FLA	THERMAL WITHSTAND TIME(sec):
Starting time at 100% voltage :	2	sec	AT100% RATED VOLTAGE (HOT) : 10
Starting time at 80% voltage :	3	sec	AT100% RATED VOLTAGE (COLD): 20

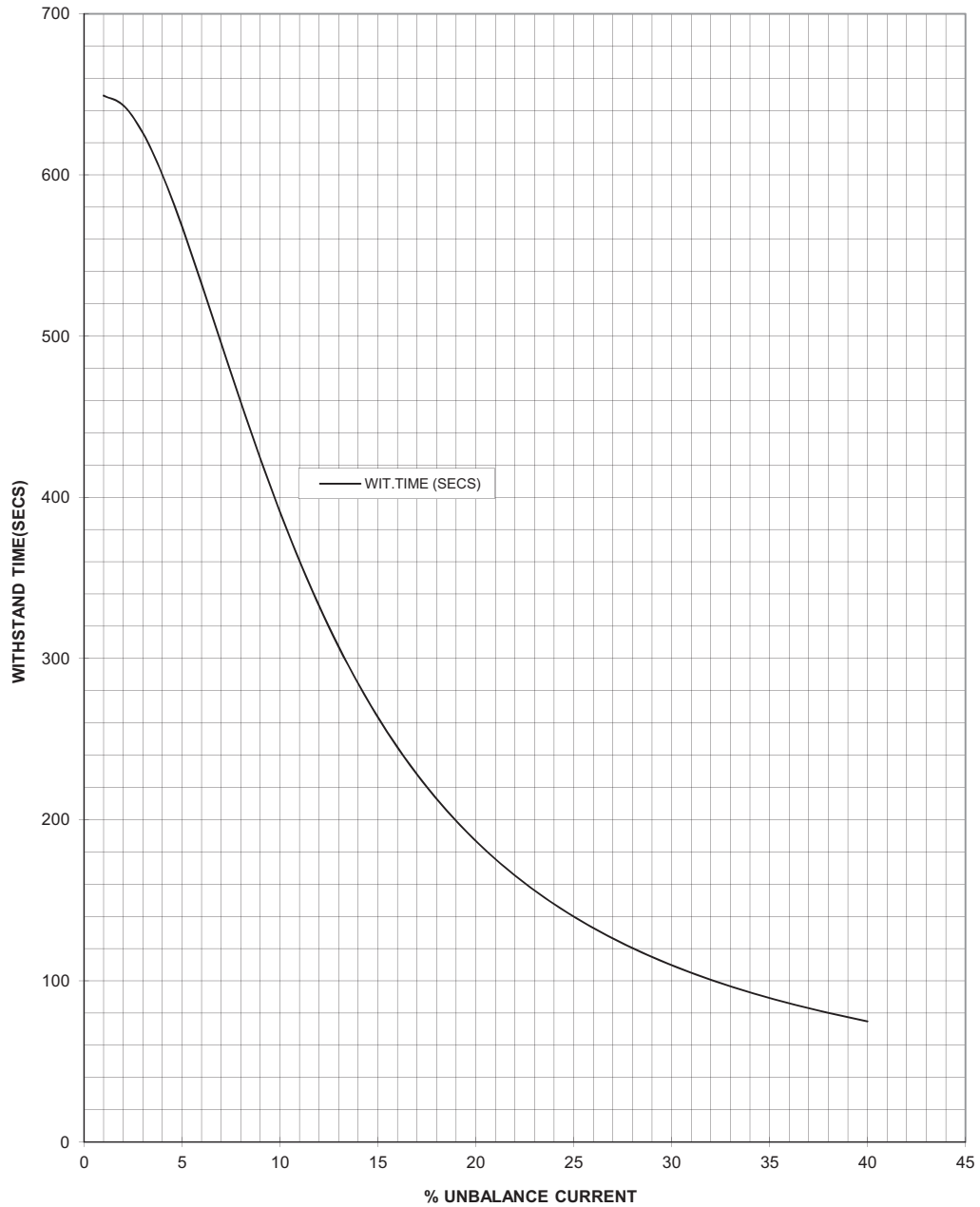
NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.  
 2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,  
 3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

		WDG NO		Prepared By	SSG	11/25/2019
2		GAD NO		Checked By	SNG	11/25/2019
1		T BOX NO				
NO	REVISION	SIGN	DATE	SIGN		DATE

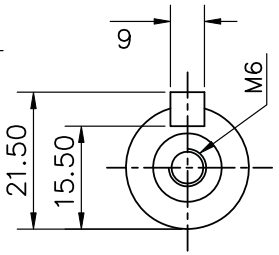
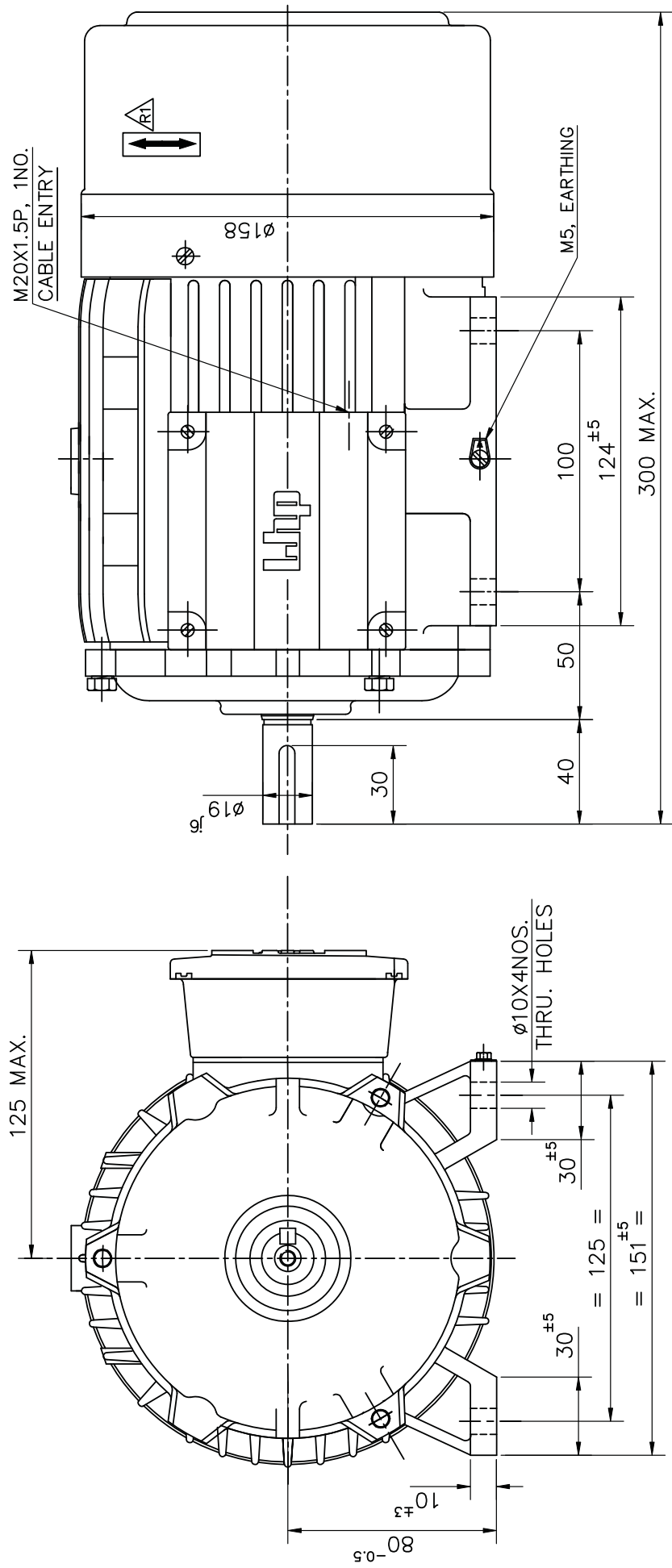


**NEGATIVE SEQUENCE CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION  
 WORKS ORDER NO. : SAP NO:  
 kW : 0.55 POLE : 6 VOLTS : 415 QTY : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE



**SPECIFICATION:-**

RATING KW/HP	0.55/0.75
POLE	6 POLE
BEARING DE	6204 ZZ
BEARING NDE	6204 ZZ/6203 ZZ

**MATERIAL OF CONSTRUCTION:-**

FRAME	CAST IRON
END COVER (DE)	CAST IRON
END COVER (NDE)	CAST IRON/ALUMINIUM
T-BOX	ALUMINIUM
T-BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL

SHAFT END DETAIL

UNMENTIONED DIMMS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000
TOLERANCES ARE AS PER IS 2102-1/ ISO 2768-1	TOLERANCE	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
ANGULAR DIMMS.	OVER & UPTO	0-10	10-50	50-120	120-400	400-.....		
	TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'		

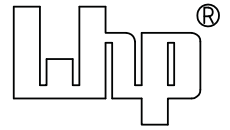
**TITLE**  
 GENERAL ARRANGEMENT DRAWING FOR  
 80 FRAME FOOT MOUNTED (B3) MOTOR

PROD. CODE—	EC0119
NAME.	DATE.
DGN.	
DRN.	POTDAR 17.03.19
CHD.	17.03.19
APPD.	GRM 17.03.19
SCALE	---:1:1
SHEET	---01 OF 02

DRG. NO. **MGAN080A0183**  
 Website : [www.lhp.co.in](http://www.lhp.co.in)  
**Laxmi Hydraulics Pvt.Ltd.** SOLAPUR  
 UNLESS OTHERWISE SPECIFIED ALL DIMMS. ARE IN MM. | DO NOT SCALE THE DRAWING.

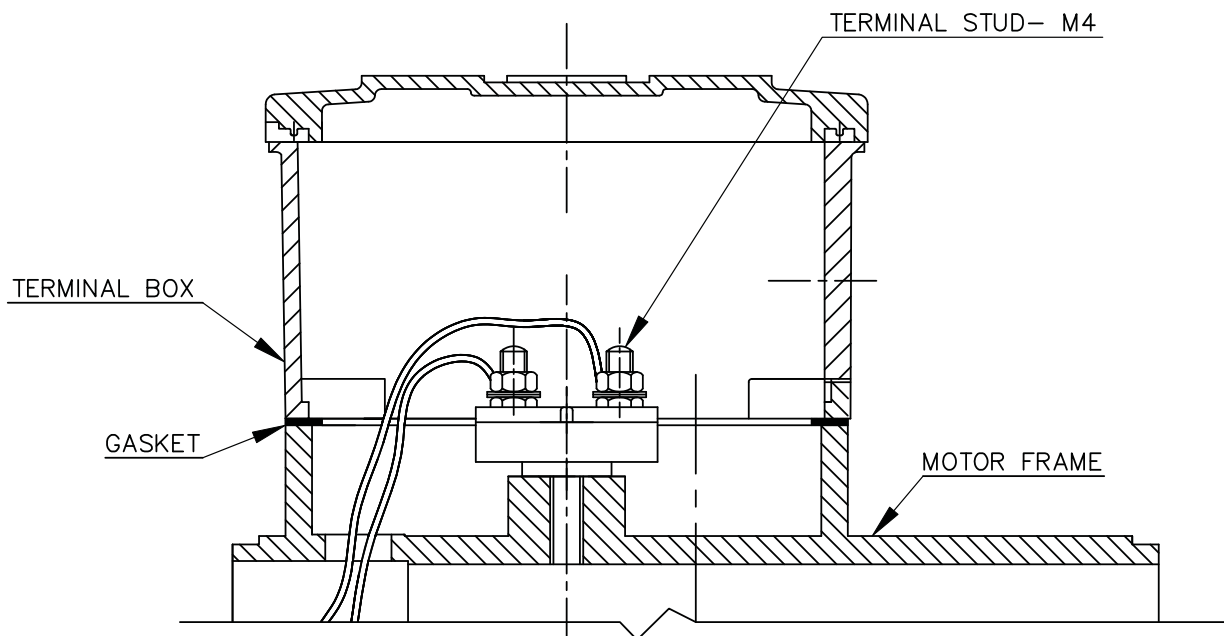
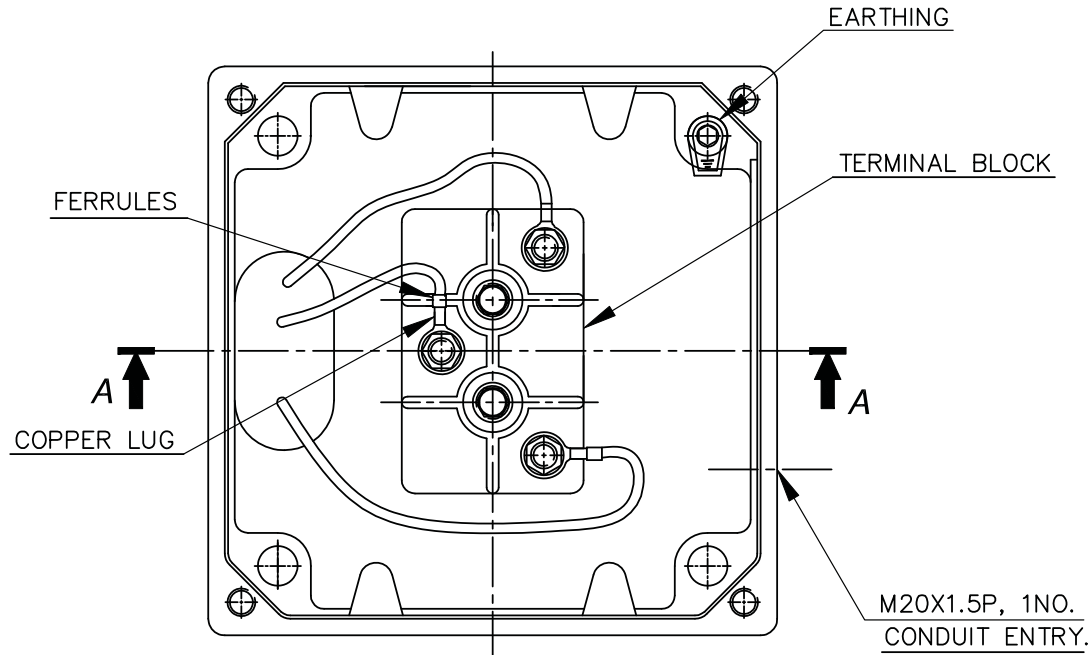
1	ARROW PLATE SHOWN.	16.08.19	SJP
REV. NO.	ECN. DETAIL.	DATE.	INTL.

LAXMI HYDRAULICS PVT. LTD, SOLAPUR



TERMINAL BOX ARRANGEMENT FOR 3 LEADS

FOR 80 FRAME



T. BOX ARRANGEMENT (SECTION A-A)

\\Ppk\d\lhpl DRAWING FILES\DRGS 3\G.A.DWG\MGAN\080\B3\MGAN080A0183.dwg

REV.DATE- 16.08.19

SHEET:- 02 OF 02

ISSUE.NO.- 01

REV.NO.- 01

DATE- 17.03.19

DRG.NO.- MGAN080A0183

DRN.BY.- POTDAR

CHD.BY.-

APPD.BY.- GRM

MOTORS			
TDS FOR 2.2 KW-4 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 100L
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		As per ventilation fan schedule
1.05.00	Application		As Per Approved TDS
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	2.2
	ii) At 40 Deg C ambient	kW	2.35
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	4.59
	b) Full load speed	A	1435
	c) No load current	A	2.30
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	5min
1.17.00	Maximum permissible time at 80% of rated voltage during running at full load.	Sec.	5min
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		86.7 0.77
	50		84 0.65
	25		82 0.50
	0		NA 0.09
	At start		NA 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		4.22
	iv) Resistance per phase at 20°C		2.11
	v) Inductance per phase		0.020
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.49
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	250
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F TO B
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles *		3 HOT 3COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6206 ZZ/6206 ZZ @ DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED/ SELF LUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		NA
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEGREE C
	xi) Max. permissible temp. of Oil		NA
	xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		As per cable schedule
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN100A0249
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.02
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	14 APPROX
	ii) Weight of rotor (wound)	kg	9 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 23 Kg
1.57.00	Shipping dimensions & weight		480x320x295 & 26 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 of IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

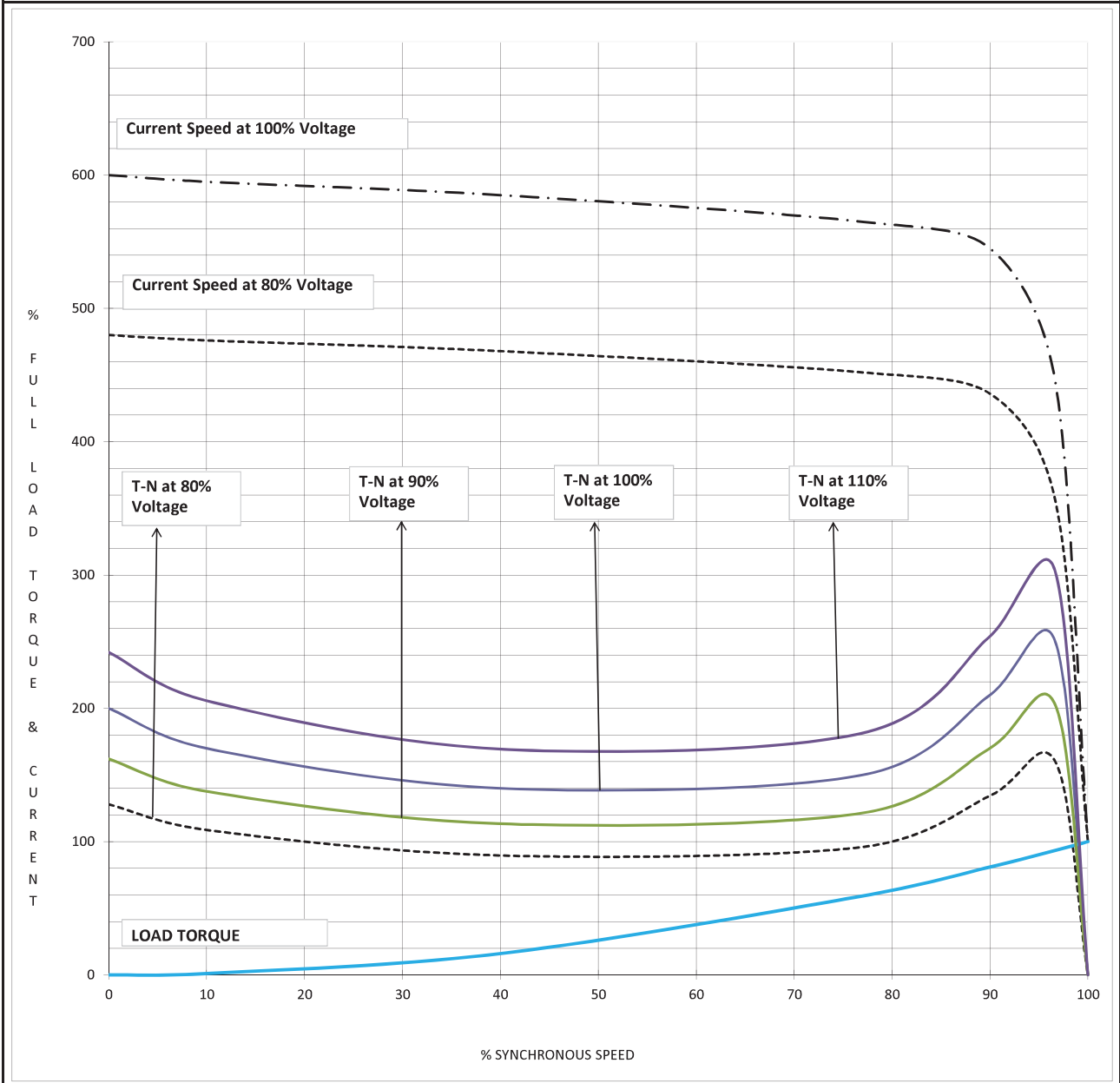
4

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.

**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 2.2 POLE :

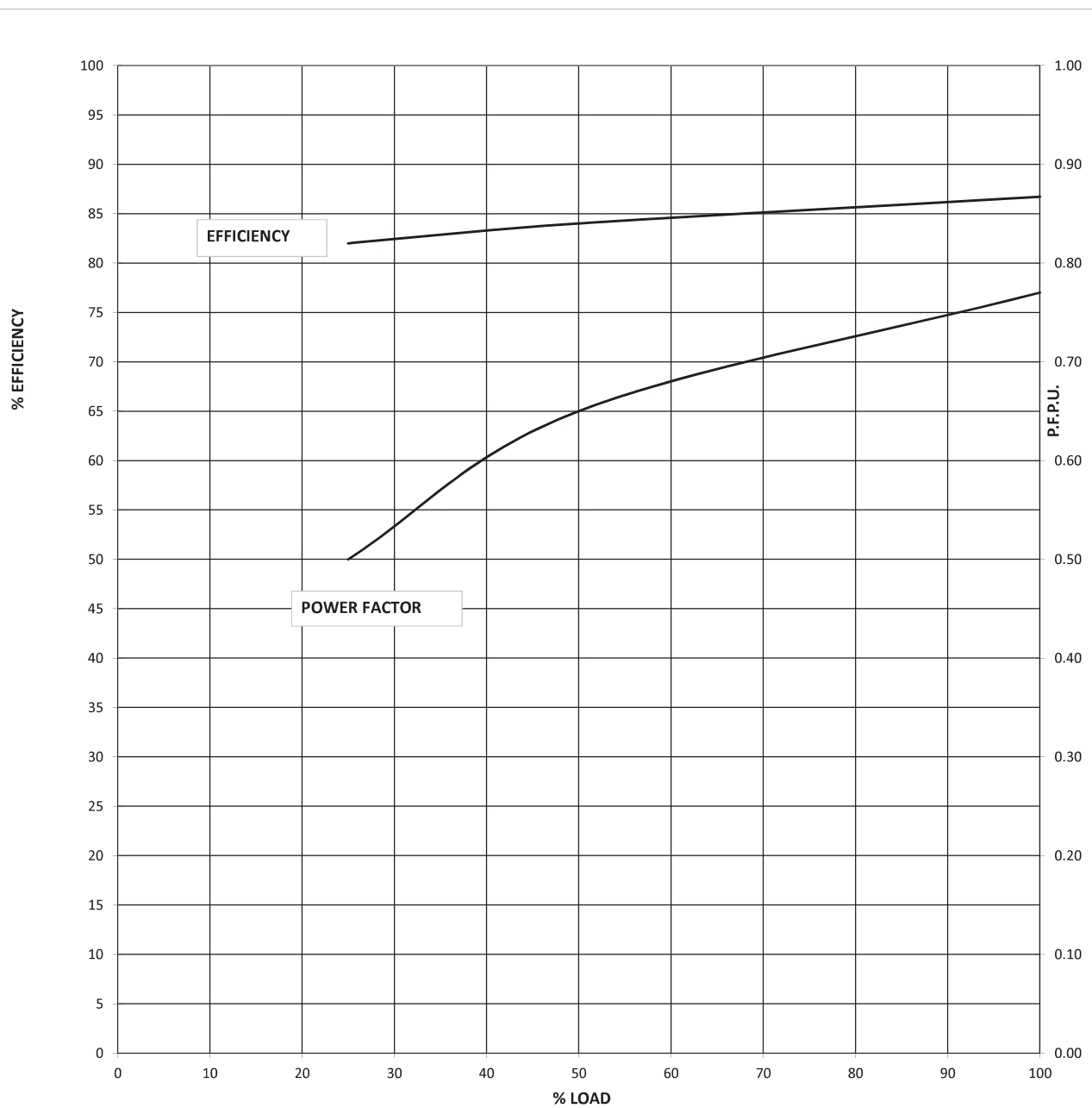
4

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

NO	REVISION	SIGN	DATE	WDG NO	GAD NO	T BOX NO	Prepared By	SSG	11/25/2019
2							Checked By	SNG	11/25/2019
1							SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 2.2 POLE :

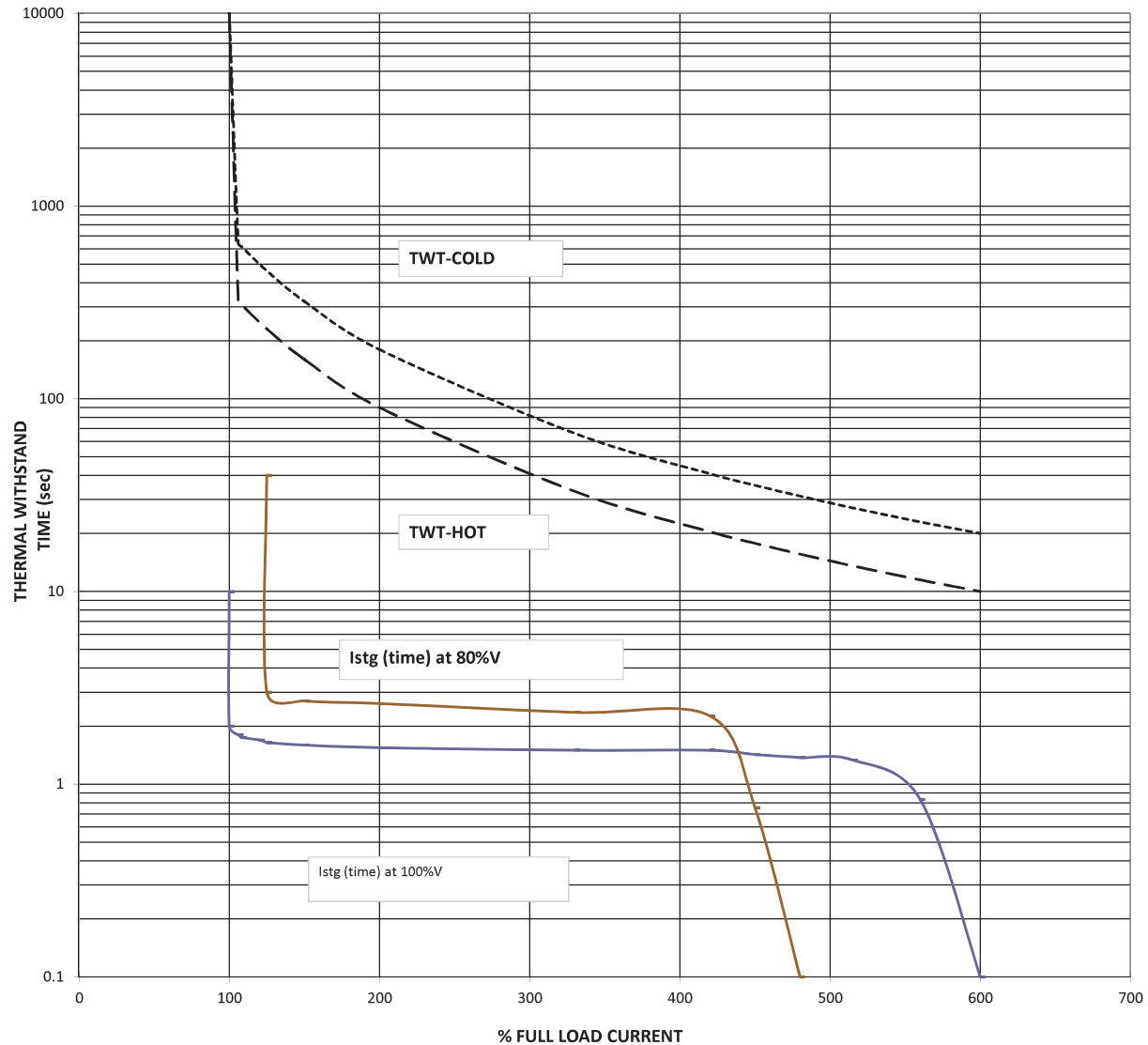
4

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT 100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT 100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

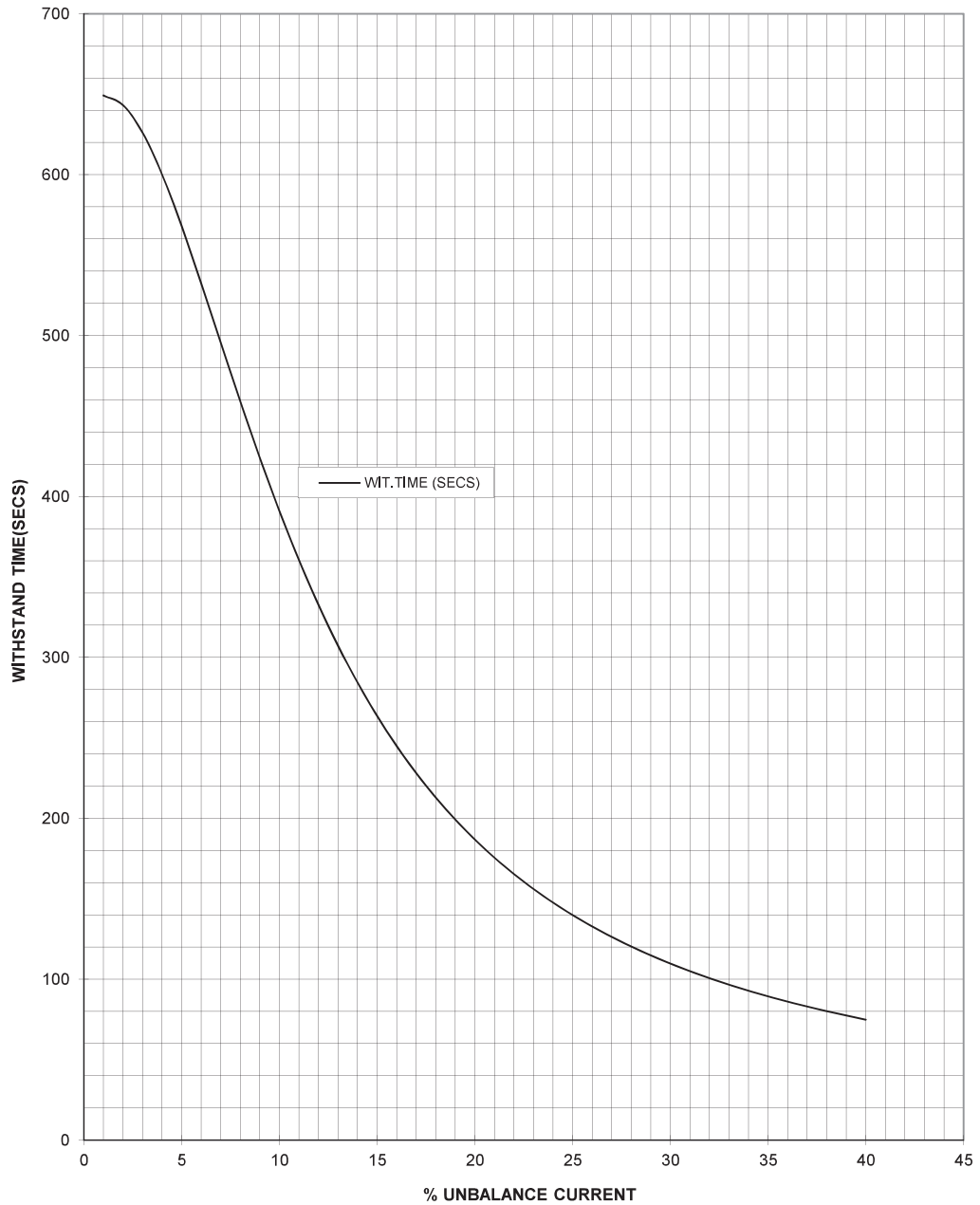
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

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1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

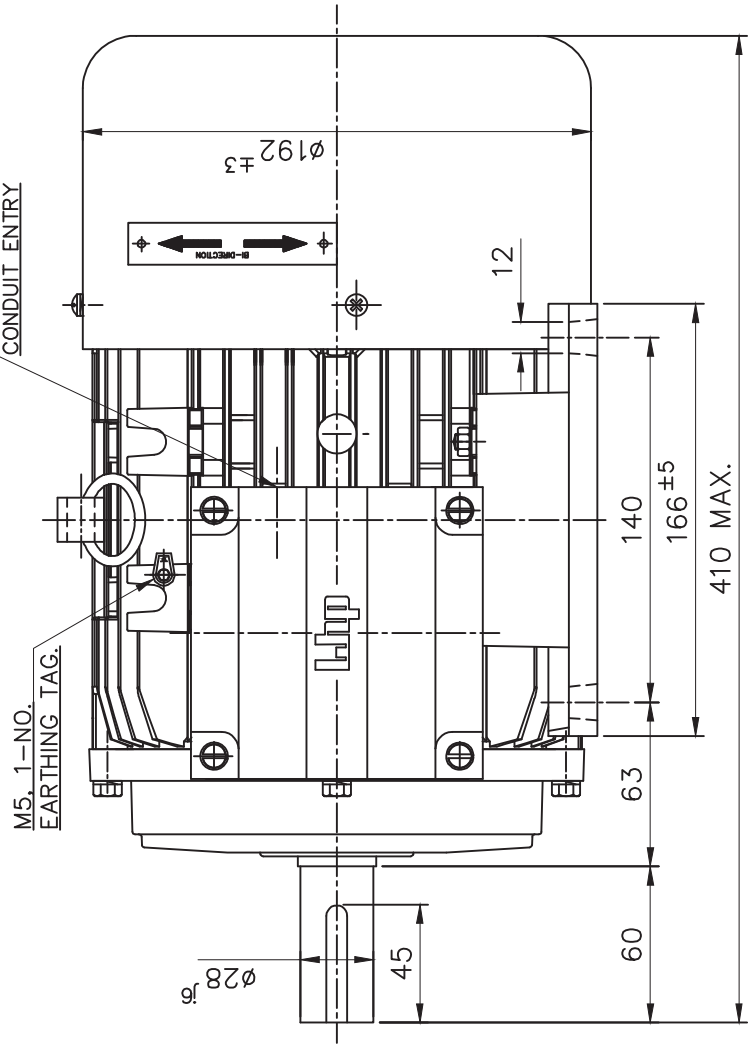
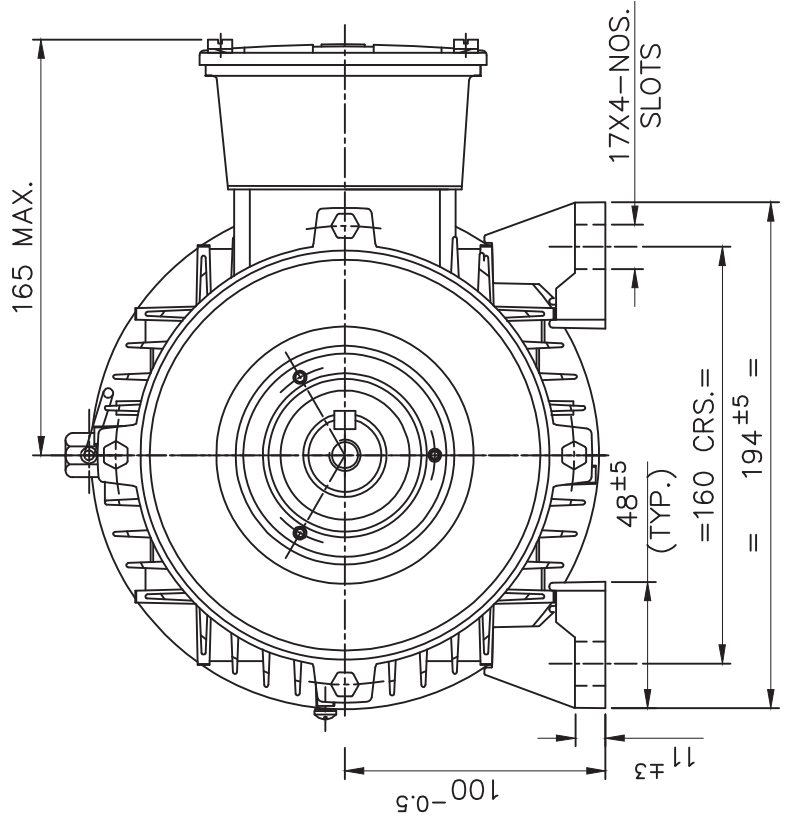


**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 2.2 **POLE** : 4 **VOLTS** : 415 **QTY** : 1



2		PREP	SSG	11/25/2019	
1		APPD	SNG	11/25/2019	
NO	REVISION	SIGN/DATE		SIGN	DATE

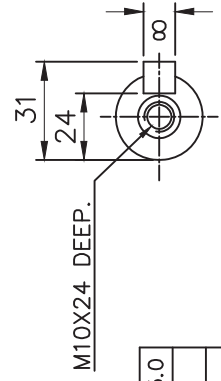


**SPECIFICATIONS:-**

RATING (kW/HP)	1.5/2.0	2.2/3.0	3.7/5.0
POLE	6	4	2
BEARING DE SIDE	6206 ZZ		
BEARING NDE SIDE	6206 ZZ		

**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	CAST IRON/AL
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL



**SHAFT END DETAILS**

Note:  
1. Terminal Box Rotatable 360 deg in step of 90 deg.

UNMENTIONED DIMNS.	OVER 2. UPTO 0.5-3	3-6	6-30	30-120	120-500	400-1000	1000-2000
TOLERANCES	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
ARE AS PER IS:202-17	PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE						
ISO 7168-1	OVER 2. UPTO 0-10	10-50	50-120	120-400	400.....		
ANGULAR DIMNS.	0-1°	1°-30'	30'-20'	20'-10'	10'-5'		
TOLERANCE	±1°	±0°30'	±0°20'	±0°10'	±0°5'		

TITLE:-  
**GENERAL ARRANGEMENT. DRG. FOR 100L FRAME FOOT (B3) MOUNTED MOTOR**

REV. NO.	1	DATE	17.08.19	SAT	INTL.
DOR NAMEPLATE ADDED. RATING 3.7kW, 2-POLE ADDED.		DETAILS OF CHANGE			

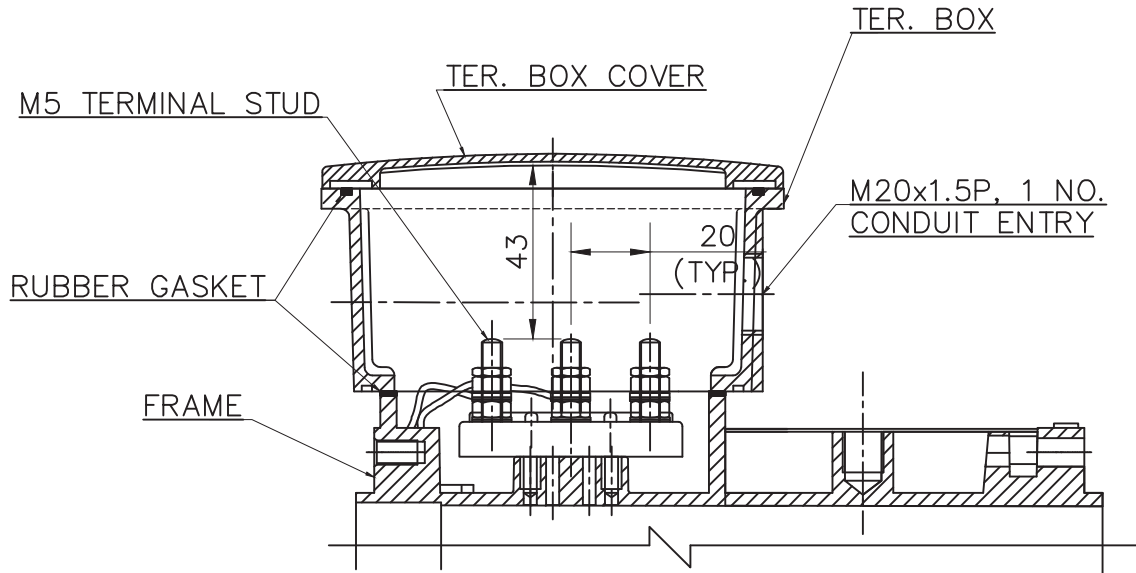
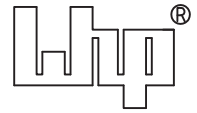
**HP** Laxmi Hydraulics Pvt.Ltd. SOLAPUR  
Website : www.lhp.co.in

DRG. NO.	MGAN100A0249
ISSUE NO.	01
REV. NO.	01

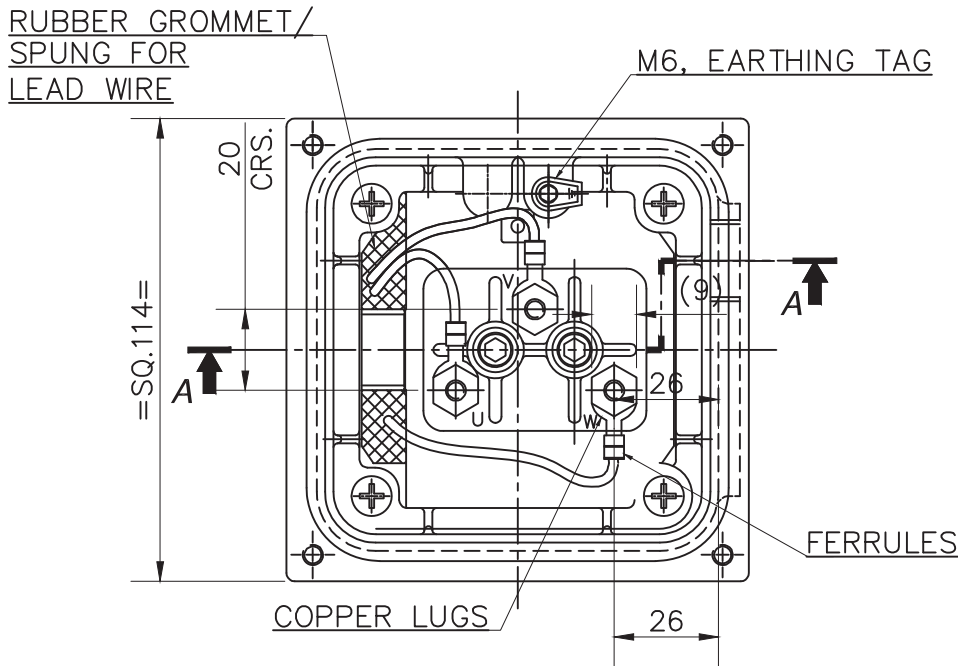
PRODUCT CODE: EA0356  
PRODUCT CODE: EB0891

DGN.	NAME.	DATE.
DRN.	TAMBULE	17.10.18
CHD.	GRM.	17.10.18
APPD.	SCALE	1:1
SHEET --- 01 OF 02		

**LAXMI HYDRAULICS PVT. LTD, SOLAPUR**  
**TERMINAL BOX ARRANGEMENT FOR 100 AL-PDC FRAME**



**SECTION A-A**



**TER. BOX VIEW WITHOUT COVER**

\\Ppk\d\LHPL DRAWING FILES\DRGS 3\G.A.DWG\MGAN\100\B3\MGAN100A0249.dwg

1	REFER SHEET NO. 01 OF 02.	17.08.19	SAT
REV. NO.	DETAIL OF CHANGE	DATE.	INTL.
ISSUE.NO.-01	REV.NO.-01	DATE: - 17.10.18	DRG.NO.: -MGAN100A0249
SHEET-2 OF 2	DRN.BY:- TAMBULE	CHD BY:-	APPD. BY:- GRM

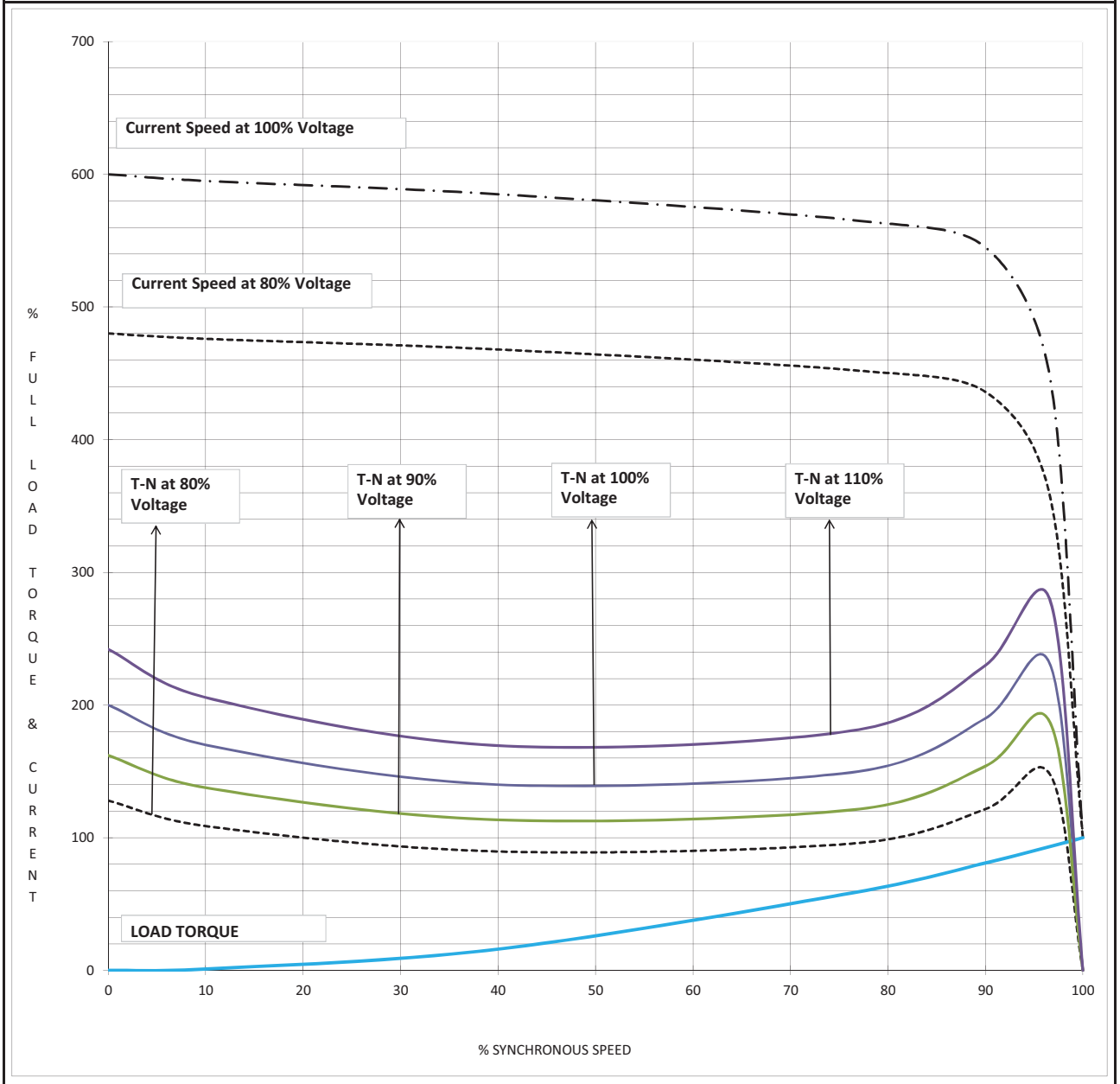
TDS FOR 1.5 KW-4 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 90L
1.03.00	design code no.		IS/IEC 60034-1, IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		AS PER APPROVED FAN TDS
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	1.5
	ii) At 40 Deg C ambient	kW	1.60
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	3.40
	b) Full load speed	A	1415
	c) No load current	A	0.80
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		85.3 0.72
	50		83 0.52
	25		78 0.40
	0		- 0.09
	At start		- 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		7.44
	iv) Resistance per phase at 20°C		3.72
	v) Inductance per phase		0.017
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.03
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	230
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6205 2Z/6205 2Z @DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1 mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEG C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		M20 X 15,P, 1NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN090A0413
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.015
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	10 APPROX
	ii) Weight of rotor (wound)	kg	8 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx.18 Kg
1.57.00	Shipping dimensions & weight		425x250x305 & 20 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 OF IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION	PO NO:	PO DATE:		
INDENT NO. :				
PROJECT NAME :				
kW : 1.5	POLE : 4	VOLTS : 415	QTY : 1	



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO		Prepared By	SSG	11/25/2019
2			GAD NO		Checked By	SNG	11/25/2019
1			T BOX NO				
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.

**LOAD VS EFF. & P.F.**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW : 1.5 POLE :

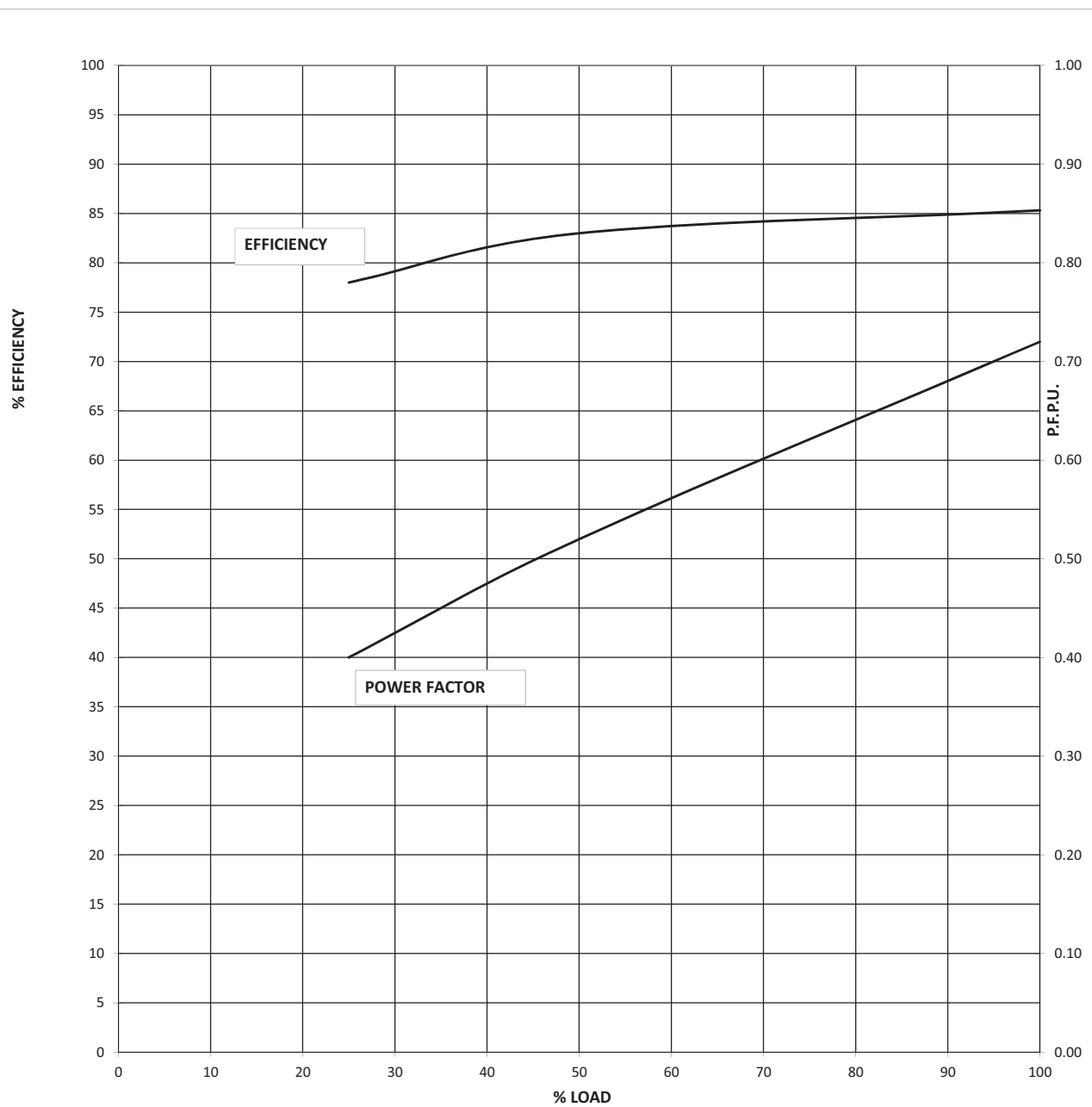
4

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

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NO	REVISION	SIGN	DATE	SIGN	DATE
2		WDG NO		Prepared By	SSG 11/25/2019
1		GAD NO		Checked By	SNG 11/25/2019
		T BOX NO			

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

1.5

POLE :

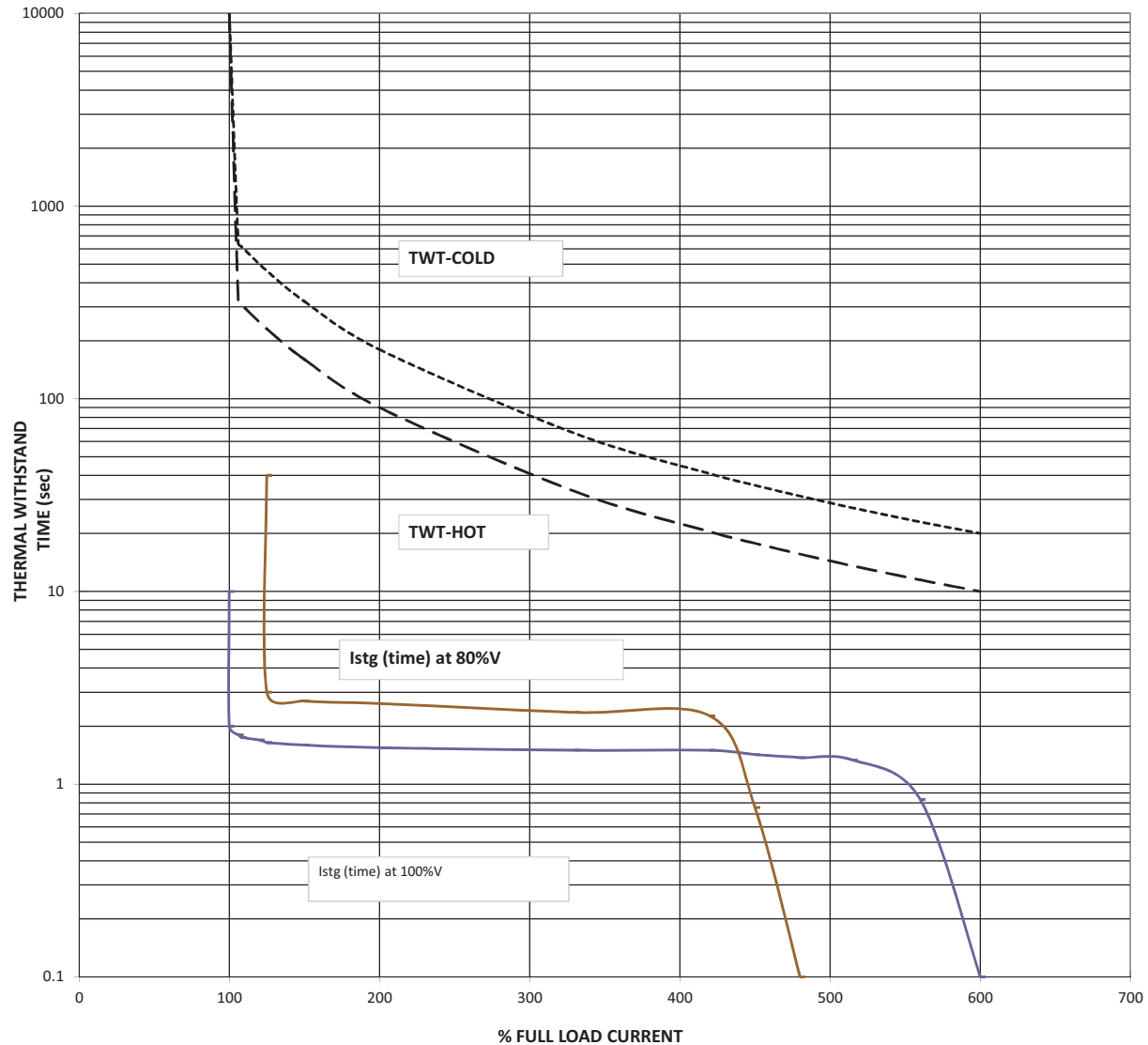
4

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

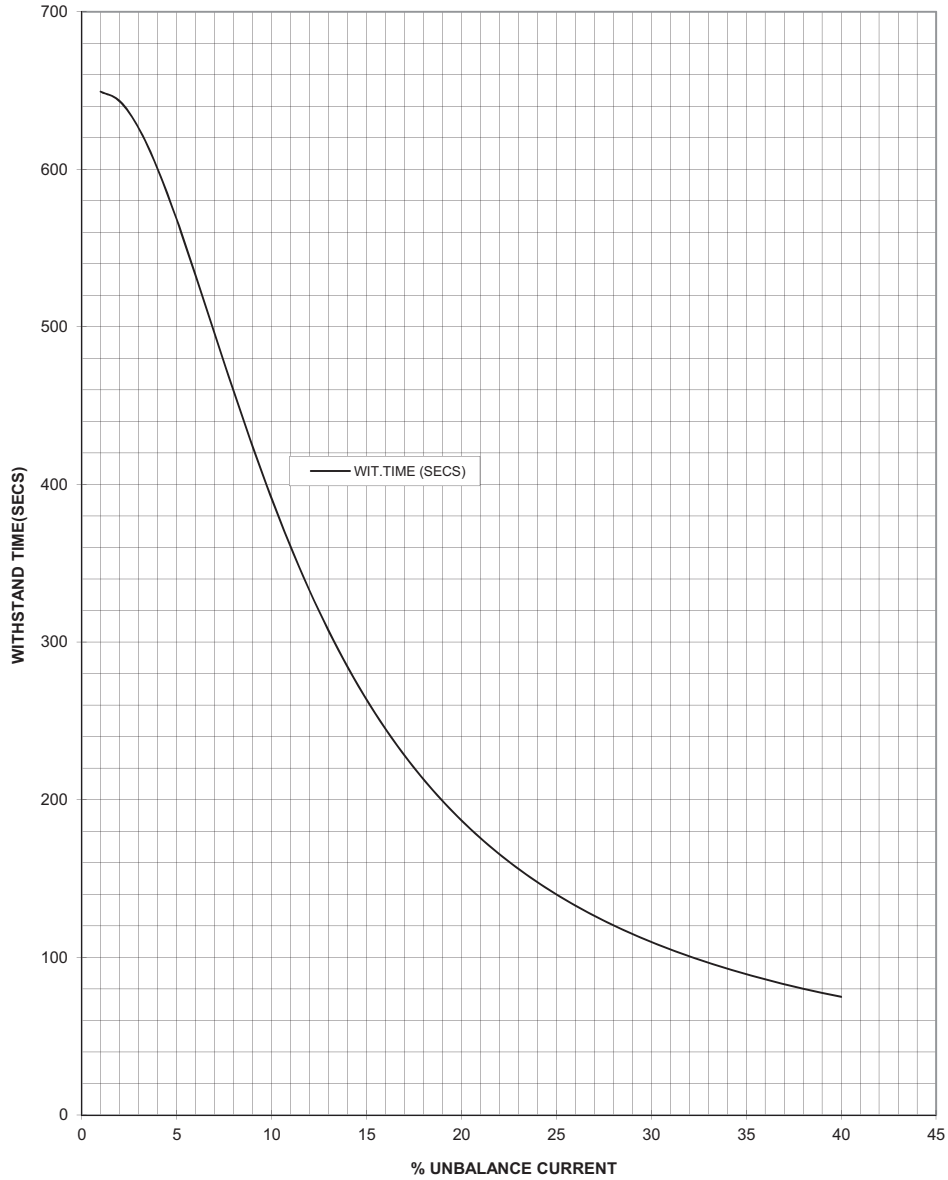
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE



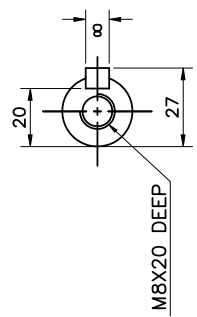
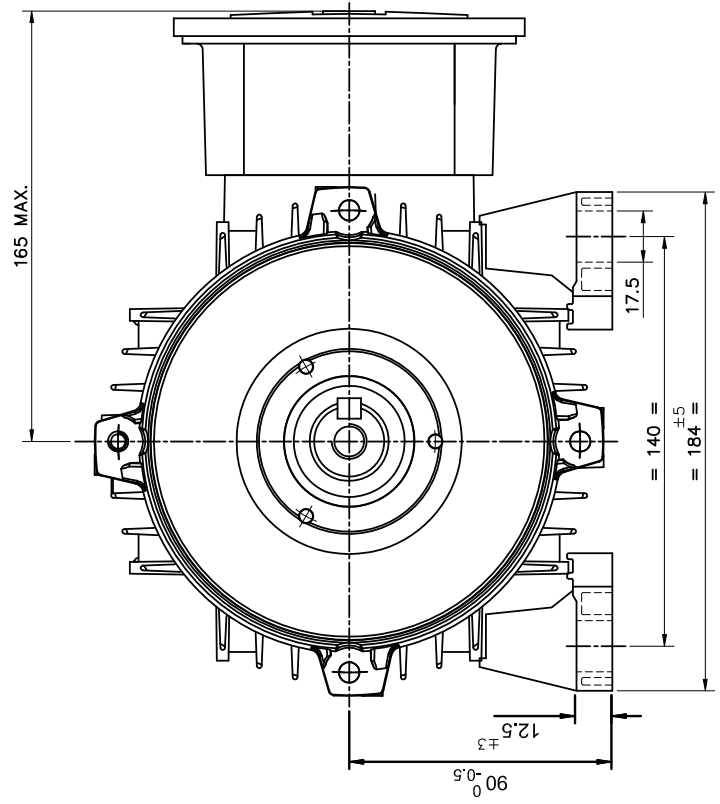
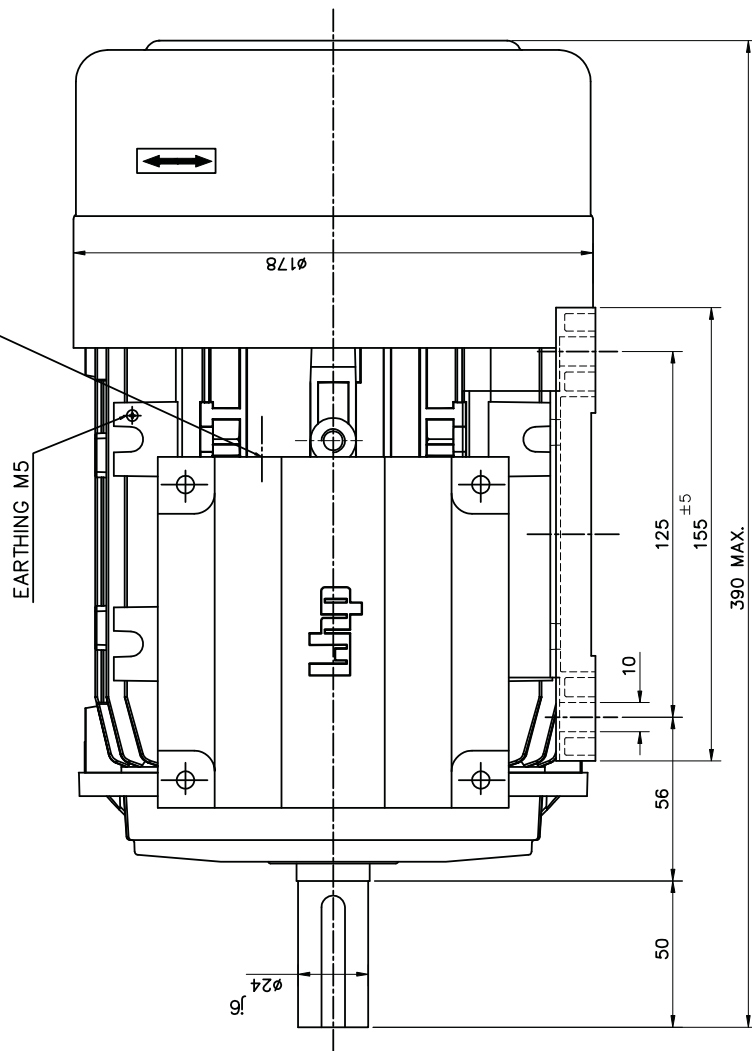
**NEGATIVE SEQUENCE CHARACTERISTICS**

**CUSTOMER** : M/s ADVANCE VENTILATION  
**WORKS ORDER NO.** : **SAP NO:**  
**kW** : 1.5      **POLE** : 4      **VOLTS** : 415      **QTY** : 1



2		PREP	SSG	11/25/2019
1		APPD	SNG	11/25/2019
NO	REVISION	SIGN/DATE		SIGN      DATE

CABLE ENTRY M20X1.5P - 1NO.



SHAFT END DETAILS

**SPECIFICATION:-**

RATING	1.5KW / 2.0HP
POLE	4 POLE
BEARING DE	6205 Z2
BEARING NDE	6205 Z2

**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	ALUMINIUM/CAST ORON
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL

UNMENTIONED TOLERANCES PER IS 2702-1/SC2768-1	LINEAR DIMS.	OVER & UPTO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000
	TOLERANCE		±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
	ANGULAR DIMS.	OVER & UPTO	0-10	10-50	50-120	120-400	400-...		
	TOLERANCE		±1°	±0.30	±0.20	±0.10	±0.05		

PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE

PROD.CODE: EB0886	NAME	DATE
DGN		
DRN	POTDAR	11.08.19
CHD		11.08.19
APPD	GRM	11.08.19
SHEET:- 01 OF 02		
SCALE:- 1:1		

**TITLE:-**  
GENERAL ARRANGEMENT DRAWING FOR  
90L FRAME FOOT MOUNTED MOTOR

**DRG NO.**  
MGAN090A0413

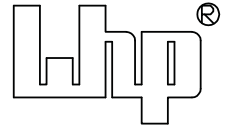
**Website:-** www.lhp.co.in  
**SOLAPUR**

UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM DO NOT SCALE THE DRAWING

REV. NO.	DATE	INTL.
1		

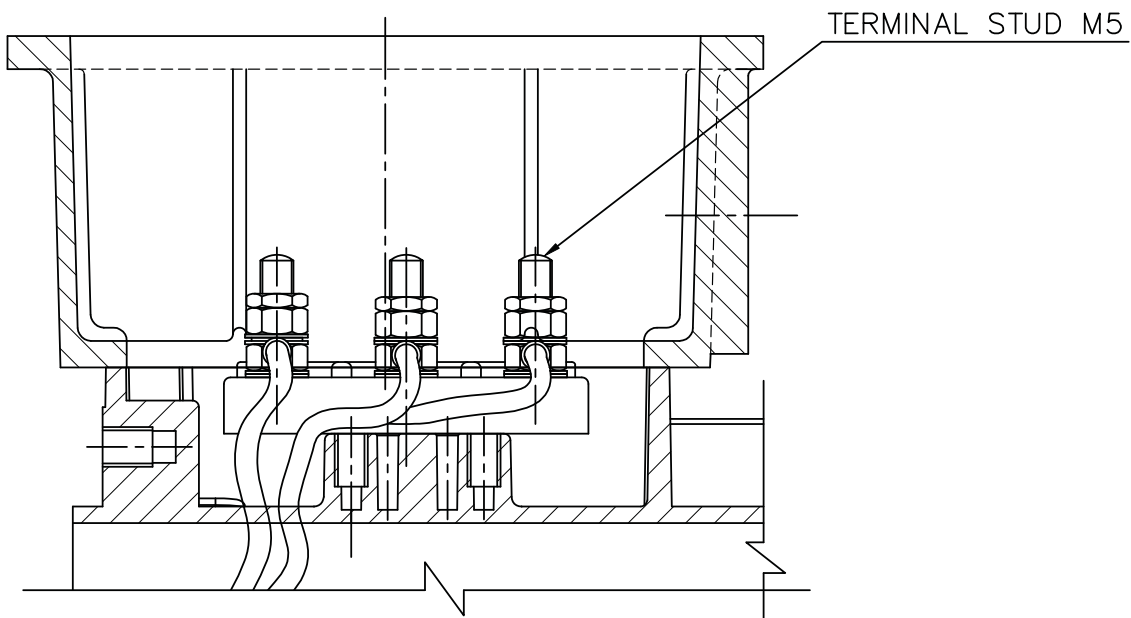
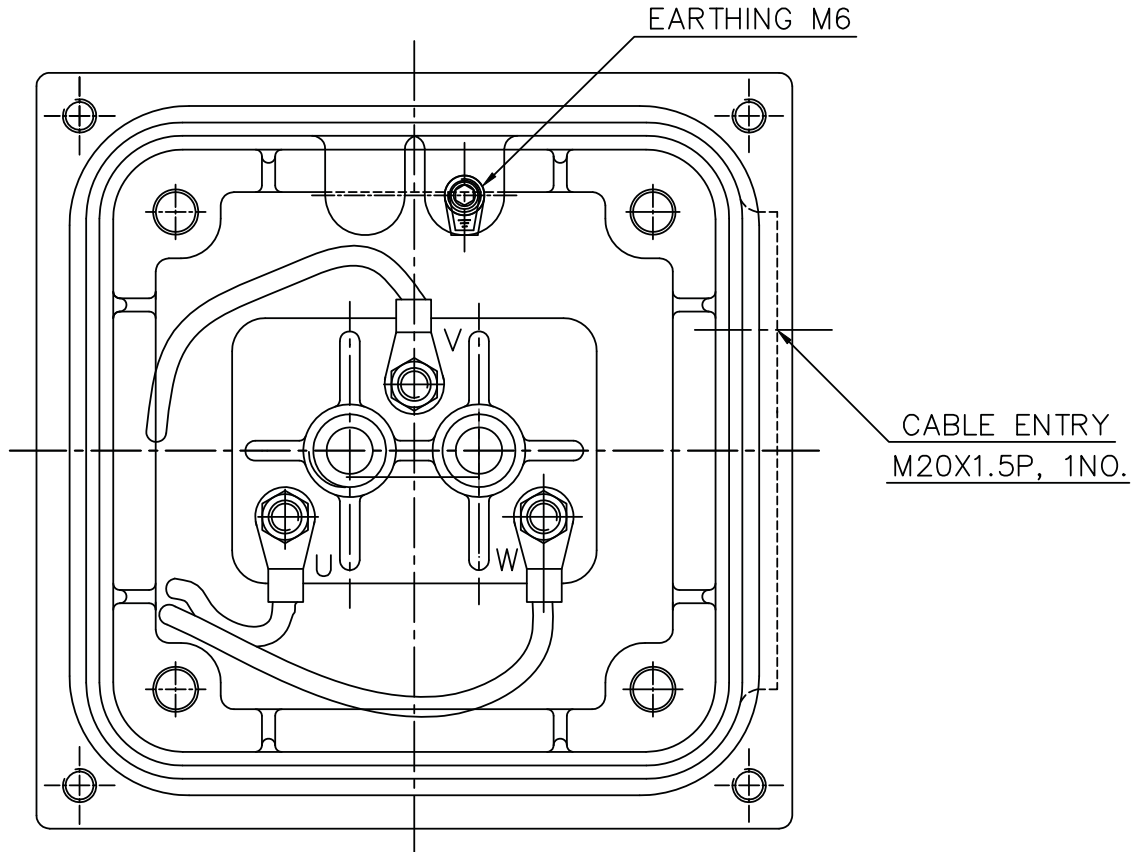
ECN DETAILS	DATE	INTL.

LAXMI HYDRAULICS PVT. LTD, SOLAPUR



TERMINAL BOX ARRANGEMENT FOR 3 LEADS

FOR 90 FRAME



SHEET: - 02 OF 02

ISSUE.NO.- 01

REV.NO.- 00

DATE- 11.08.19

DRG.NO.- MGAN090A0413

DRN.BY.- POTDAR

CHD.BY.-

APPD.BY.- GRM

\\\\Ppk\\d\\LHPL DRAWING FILES\\DRGS 3\\G.A.DWG\\MGAN\\090\\B3\\MGAN090A0413.dwg

TDS FOR 1.5KW-6 POLE MOTOR			
Sr. No.	Description	Unit	Vendor Data
1.01.00	Manufacturer		Laxmi Hydraulic private Limited, India
1.02.00	Type and frame size		IE3 SQIM & 100L
1.03.00	design code no.		IS/IEC 60034-1,IS12615
1.04.00	Nos. required		Axial Fan/As per approved layouts
1.05.00	Application		AS APPROVED FAN TDS
1.06.00	Specification & Codes		IS/IEC 60034-1
1.07.00	Capacity for		
	i) for specified climatic conditions (50 Deg C)	kW	1.5
	ii) At 40 Deg C ambient	kW	1.60
1.08.00	Location for installation		
1.09.00	Type of enclosure & ventilation		SAFE & TEFC
1.10.00	Degree of protection		IP:55
1.11.00	Type of duty		S1
1.12.00	No. of phases, frequency & voltage		3Ph,50Hz & 415V
1.13.00	Permissible variations in		
	a) Voltage	%	+/-10
	b) Frequency	%	+/-5
	c) Combined	%	10 (ABSOLUTE)
1.14.00	At rated voltage & frequency		
	a) Full load current	A	3.90
	b) Full load speed	A	960
	c) No load current	A	2.90
1.15.00	Minimum permissible voltage during starting	V	332V (80%)
1.16.00	Maximum permissible time at minimum permissible voltage during running at full load.	Sec.	300
1.17.00	Maximum permissible time at 75% of rated voltage during running at full load.	Sec.	300
1.18.00	Whether motor stalls at 70% of rated voltage.		Shall not stall for 1 minute
1.19.00	Efficiency & power factor		
	Load (% of full load)		
	100		82.5 0.65
	50		80 0.50
	25		70 0.30
	0		- 0.11
	At start		- 0.60
	Duty Point		
1.20.00	Stator winding		
	i) Connection		STAR
	ii) Type & nos. of terminals Brought out		3.00
	iii) Resistance between terminals at 20°C		7.80
	iv) Resistance per phase at 20°C		3.90
	v) Inductance per phase		0.030
	vi) Capacitance per phase		NA
1.21.00	Starting current as % of full load current		
	i) With IS tolerance	%	600
	ii) Without IS tolerance	%	720
1.22.00	Torque at full load	kgm	1.52
1.23.00	Break away torque in % of full load torque	%	200
1.24.00	Pull up torque in % of full load torque	%	180
1.25.00	Pull out torque in % of full load torque	%	240
1.26.00	Starting time in sec. Without mechanism coupled or Mechanism coupled through hydraulic coupling when it may be presumed that load is transferred to motor shaft only after attaining almost full speed.		
	i) with rated voltage	Sec.	2
	ii) with 80% of rated voltage	Sec.	3
	iii) with 110% of rated voltage	Sec.	2
1.27.00	Starting time in sec. With mechanism coupled through Flexible coupling.		
	i) with rated voltage	Sec.	3
	ii) with 80% of rated voltage	Sec.	5
	iii) with 110% of rated voltage	Sec.	2
1.28.00	Safe stall time (hot motor)		
	i) At rated voltage	Sec.	10
	ii) At 80% of rated voltage	Sec.	16
	iii) At 110% of rated voltage	Sec.	8
1.29.00	Safe stall time (Cold motor)		
	i) At rated voltage	Sec.	20
	ii) At 80% of rated voltage	Sec.	31
	iii) At 110% of rated voltage	Sec.	17
1.30.00	Limiting motor temperature to determine safe stall time	Deg. C	185
1.31.00	Permissible maximum accelerating time (hot motor)		
	i) At rated voltage	Sec.	3
	ii) At 80% of rated voltage	Sec.	5
	iii) At 110% of rated voltage	Sec.	2
1.32.00	Permissible maximum accelerating time (cold motor)		
	i) At rated voltage	Sec.	4
	ii) At 80% of rated voltage	Sec.	6
	iii) At 110% of rated voltage	Sec.	3
1.33.00	Insulation		
	i) Class of insulation		F
	ii) Material & treatment of insulation		VPI

1.34.00	Whether insulation is suitable for 415 V, 6.6KV, ungrounded system		Suitable for 415V
1.35.00	Temperature rise under normal conditions over 50 deg C ambient temperature		
	i) By resistance method		70
	Degree centigrade over cooling water temp. for CACW motors.	Deg. C	NA
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
	ii) By Thermometer method		NA
	Degree centigrade over cooling water temp. for CACW motor.	Deg. C	
	Degree centigrade over cooling air temp. for CACA motor.	Deg. C	
1.36.00	Method of starting		DOL
1.37.00.	Permissible starting duty cycles		2 HOT 3 COLD
1.38.00.	Stator thermal time constant		42/125
1.39.00	Maximum permissible voltage During high speed bus transfer & special design feature.		150%
1.40.00	Time required for voltage to decay down to when driving voltage is removed.		
	i) At 50% of rated voltage	Sec.	0.01
	ii) At 40% of rated voltage	Sec.	0.02
	iii) At 25% of rated voltage	Sec.	0.03
	iv) At 0% of rated voltage	Sec.	-
1.41.00	Method of cooling		TEFC
1.41.01	Details of water cooling system		NA
	i) No. of cooler		NA
	ii) Water requirement per cooler		NA
	iii) Losses removed by cooler		NA
	iv) Max. permissible temperature Of cooling water at inlet		NA
	v) Max. permissible temperature Of cooling water at outlet		NA
	vi) Maximum permissible pressure At water outlet		NA
	vii) Water pressure drop through the cooler		NA
	viii) Temp. of cold air coming Out & entering the machine For permissible cooling Water temperature of 310C		NA
	ix) Temp. rise of air passing through machine at full load.		NA
	x) Air pressure drop through The cooler		NA
	xi) Temp. rise of water through cooler		NA
	xii) Protection against leakage of water		NA
	xiii) Arrangement to ensure the water flow		NA
1.42.00	Bearings		
	i) Number		6206 ZZ/6206 ZZ @ DE/NDE
	ii) Type		DGBB
	iii) Lubrication system		PRELUBRICATED
	iv) Quantity of lubrican reqd. For both the bearings.		NA
	v) Life in hours at rated speed		40,000hrs
	vi) Recommended lubricant		NA
	vii) Bearing end play		1 mm MAX
	viii) Inlet oil pressure		NA
	ix) Temp. rise of oil		NA
	x) Max. permissible temp. ofBearing		110 DEG C
	Xi) Max. permissible temp. of Oil		NA
	Xii) Permissible running time without forced oil at full load & full speed		NA
	xiii) Whether bearings are provided with 4 wire, platinum RTD having 100-ohm resistance at 0 Deg C for remote temp. indication.		NA
	xiv) Whether bearings are provided with local temperature indicator having two adjustable contacts rated for 2A at 240V AC or 0.2A at 220V DC.		NA
	xv) If forced lub oil system provided :		NA
	i) Qty of lubricant required for initial filling.		NA
	ii) Recommended period after which lubricant should be replaced		NA
	iii) Bearing cooling water requirement		NA
	iv) Max. permissible bearing cooling water inlet temp. (permissible)		NA
	v) Max. permissible bearing cooling water outlet temp.		NA
1.43.00.	Terminal designation correspond to direction of rotation (Facing driving end).		BIDIRECTIONAL MOTOR
1.44.00	Terminal boxes with accessories separate terminal boxes provided.		
	i) Main		1 NO
	ii) Space heaters		NO
	iii) Winding temp. detectors		NO
	iv) Bearing temp. detectors		NO
	v) Moisture detectors		NO
	vi) Neutral terminals		NO
1.45.00	Main terminal box details		
	i) Type & Nos.		IP:55 & 1Nos
	ii) Fault level permissible for 0.25 sec.	kA	50
	iii) Location		LHS FROM NDE
	iv) Cable gland size & no.		M20X1.5P, 1 NO
	v) Direction of cable entry.		FROM NDE
	vi) Gland plate material and thickness		CI/AL & 6 mm MINIMUM

1.46.00.	Space Heater		
	i) Number		NA
	ii) Location		NA
	iii) Capacity of each		NA
	iv) Total power requirement	kW	NA
	v) Voltage.	V	NA
	vi) Gland plate material and thickness		NA
1.47.00.	Details of 4 wire platinum RTD having 100 ohm resistance at 0 Deg C for winding temp. detector.		NA
	i) Nos. provided		NA
	ii) Location		NA
1.48.00	Whether CTs for differential protection are provided		NA
	i) If Yes, no. of CTs supplied alongwith motors.C.T. details		NA
	a) C.T. ratio		NA
	b) Knee point voltage		NA
	ii) S.C. withstand capacity		NA
1.49.00	Type of mounting		B3
1.50.00	Shaft orientation		HORIZONTAL
1.51.00	Shaft extension		AS PER GAD MGAN100A0279
1.52.00	Grounding pads size nos. & location		1 X M5
1.53.00	Method of coupling to driven mechanism		
1.54.00	Motor GD2		0.026
1.55.00	Lifting device		EYE BOLT
1.56.00	Weight		
	i) Weight of stator (wound)	kg	12 APPROX
	ii) Weight of rotor (wound)	kg	9 APPROX
	iii) Weight of base plate	kg	NA
	iv) Weight of cooler	kg	NA
	v) Net weight of motor	kg	Approx. 21 Kg
1.57.00	Shipping dimensions & weight		480x320x295 & 23 kg
1.58.00	Thermometer provided		NO
	i) In cold air path		NO
	ii) In hot air path		NO
	iii) For measurement of oil temp.		NO
1.59.00	Characteristic curves furnished		
	i) Speed vs. current at rated voltage (Yes / No)		Enclosed
	ii) Speed vs. torque at 110%, 100%, 90% and 80% of rated voltage (Yes / No)		Enclosed
	iii) Thermal withstand curve for hot & cold conditions. (Yes / No)		Enclosed
	iv) Efficiency vs. load (Yes / No)		Enclosed
	v) P.F. Vs. load (Yes / No)		Enclosed
	vi) Current vs. time (Yes / No)		Enclosed
	vii) Negative phase sequence curve (Yes / No)		Enclosed
1.60.00	Drawings furnished		
	i) General arrangement of motor (Yes / No)		YES
	ii) Main terminal box showing the method of terminating the incoming cables (Yes / No)		YES
	iii) Instruction manuals (Yes / No)		YES
	iv) Name Plate drawing (Yes/No)		NO
1.61.00	Rotor design as per specification		IS 648
1.62.00	Noise Level	dB	85 dB at 1 m
1.63.00	Vibration Pad (Yes / No)		NO
1.64.00	Drain Hole ( two numbers with plug, one on either end of motor at bottom most point. (Yes / No)		NO
1.65.00	Painting shade		692 OF IS-5
1.66.00	Earthing		
	i) Body (Number & Size)		1 X M5
	ii) Terminal Box (Number & Size)		1 X M5

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD., B-11- MIDC CHINCHOLI , SOLAPUR.



**SPEED VS TORQUE & CURRENT CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



PROJECT NAME :

kW : 1.5 POLE :

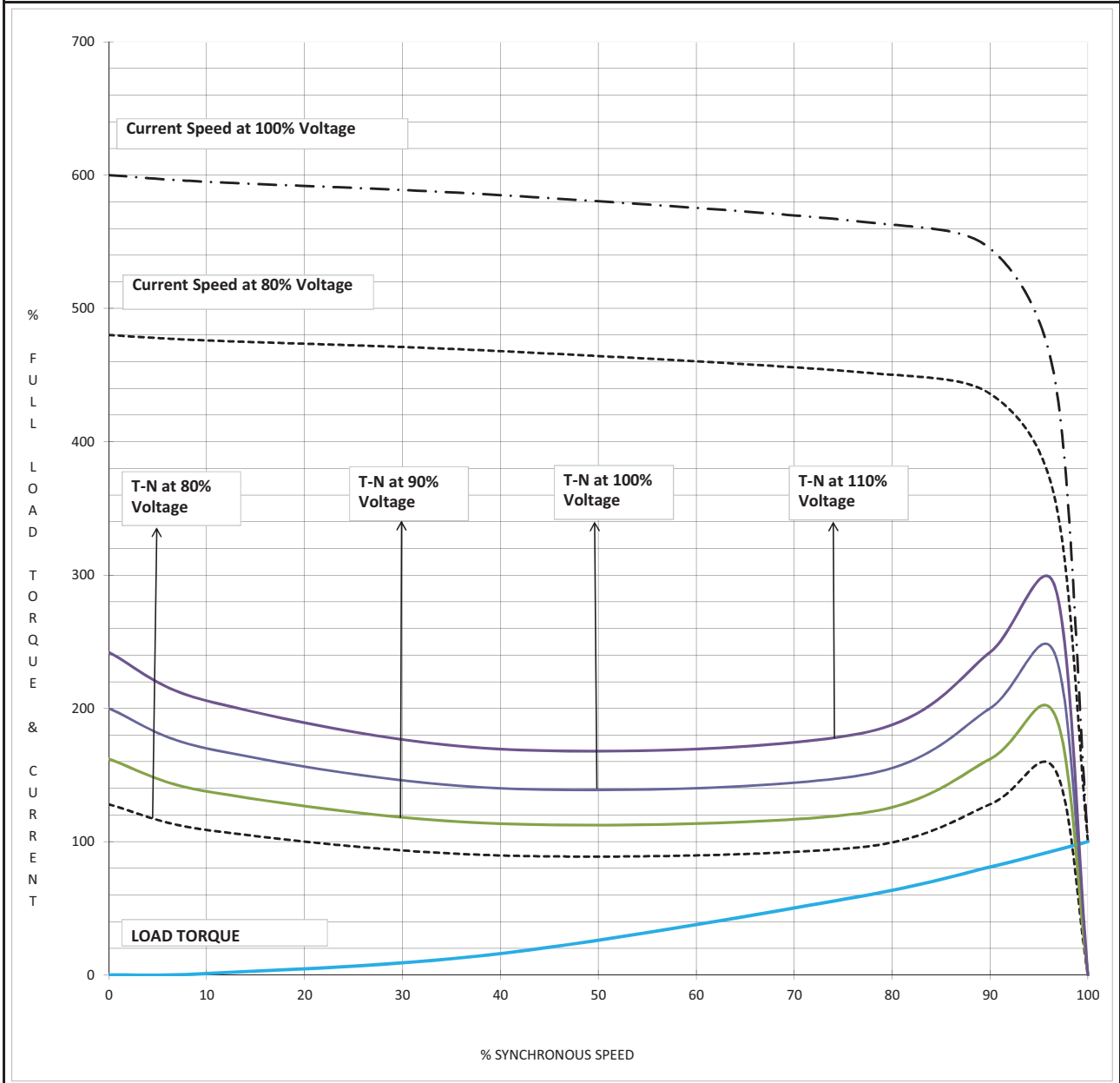
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO			Prepared By	SSG	11/25/2019
2			GAD NO			Checked By	SNG	11/25/2019
1			T BOX NO					
NO	REVISION	SIGN	DATE			SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## LOAD VS EFF. &amp; P.F.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

1.5

POLE :

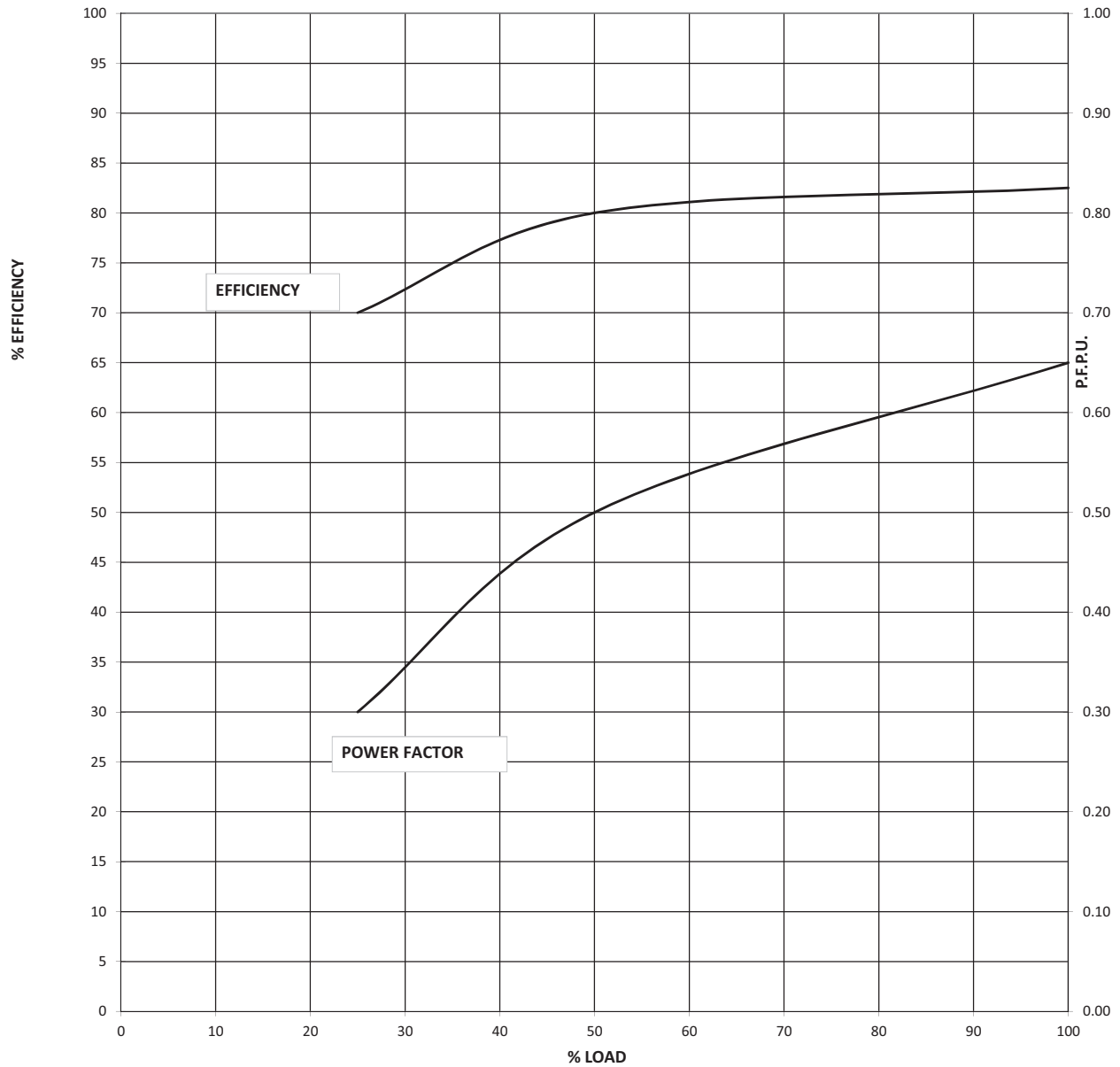
6

VOLTS :

415

QTY :

1



NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

			WDG NO				
2			GAD NO		Prepared By	SSG	11/25/2019
1			T BOX NO		Checked By	SNG	11/25/2019
NO	REVISION	SIGN	DATE		SIGN		DATE

MKTG Ref No.:

D7PO1911135

LAXMI HYDRAULICS PVT LTD. , B-11- MIDC CHINCHOLI , SOLAPUR.



## STARTING CURRENT VS STARTING TIME AND THERMAL WITHSTAND TIME.

CUSTOMER : M/s ADVANCE VENTILATION

INDENT NO. :

PO NO:

PO DATE:



IE3

PROJECT NAME :

KW :

1.5

POLE :

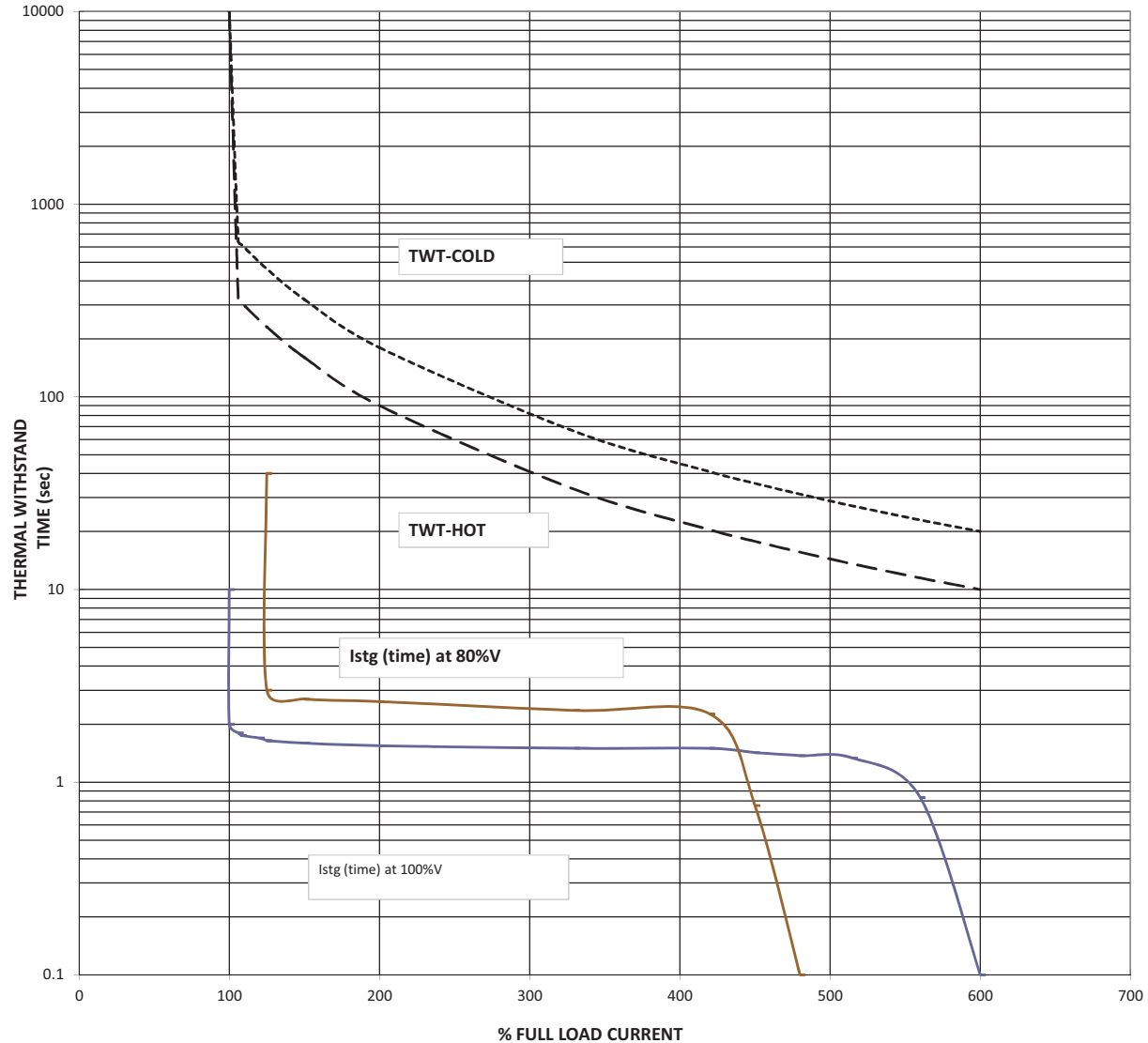
6

VOLTS :

415

QTY :

1

L. R. CURRENT at 100% voltage : **600** % OF FLA THERMAL WITHSTAND TIME(sec):Starting time at 100% voltage : **2** sec AT100% RATED VOLTAGE (HOT) : **10**Starting time at 80% voltage : **3** sec AT100% RATED VOLTAGE (COLD): **20**

NOTE 1 ALL PERFORMANCE FIGURES ARE SUBJECT TO IS/IEC 60034-1 TOLERANCES,PARAMETERS MAY CHANGE DURING FINAL SUBMISSION OF DATASHEET AFTER GETTING THE ORDER.

2 STARTING CURRENT MEASUREMENT AS PER IS 12615 : 2018 CLAUSE NO 16.2.2.3.1,

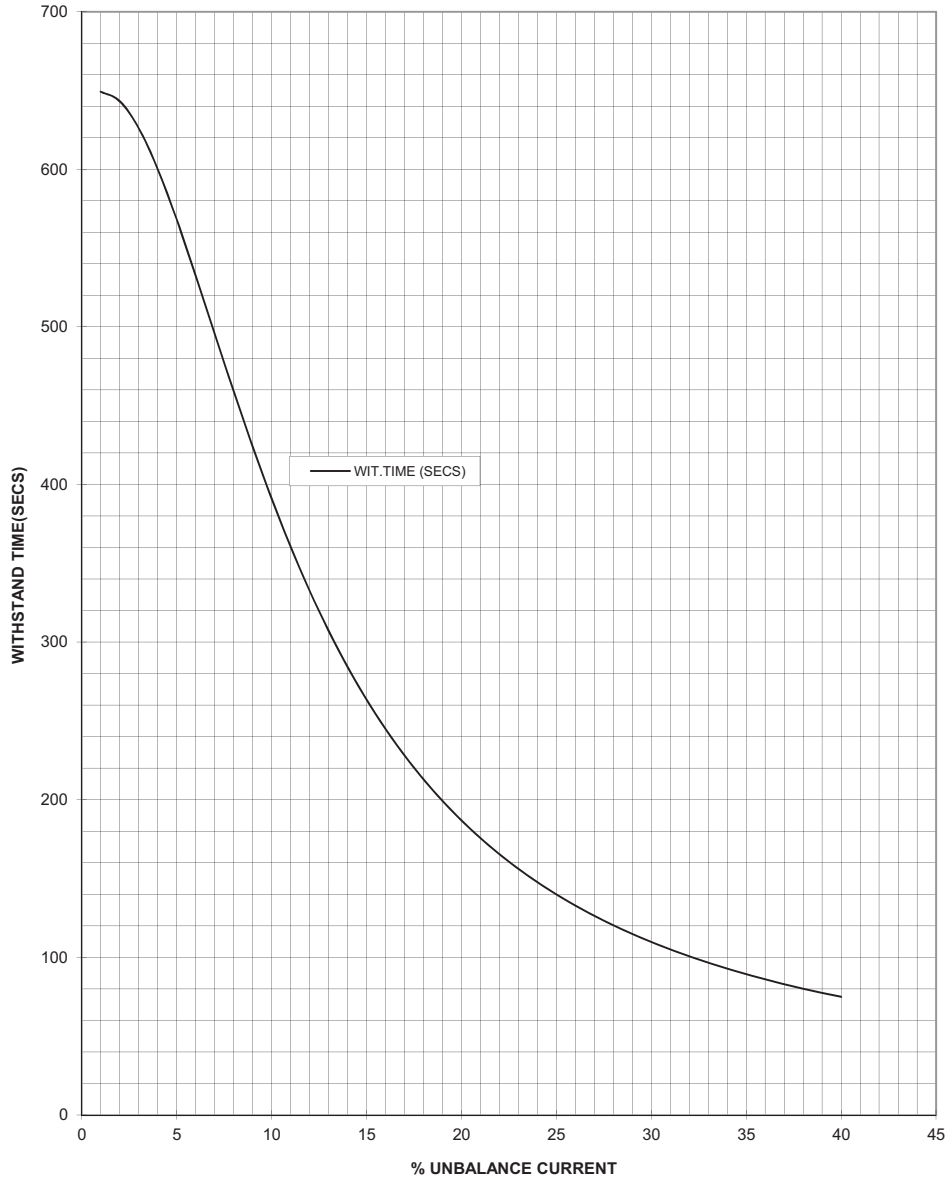
3 PERFORMANCE CURVES ARE DOR DOL OPERATION ONLY.

2		WDG NO		Prepared By	SSG	11/25/2019
1		GAD NO		Checked By	SNG	11/25/2019
		T BOX NO		SIGN		DATE
NO	REVISION	SIGN	DATE	SIGN		DATE

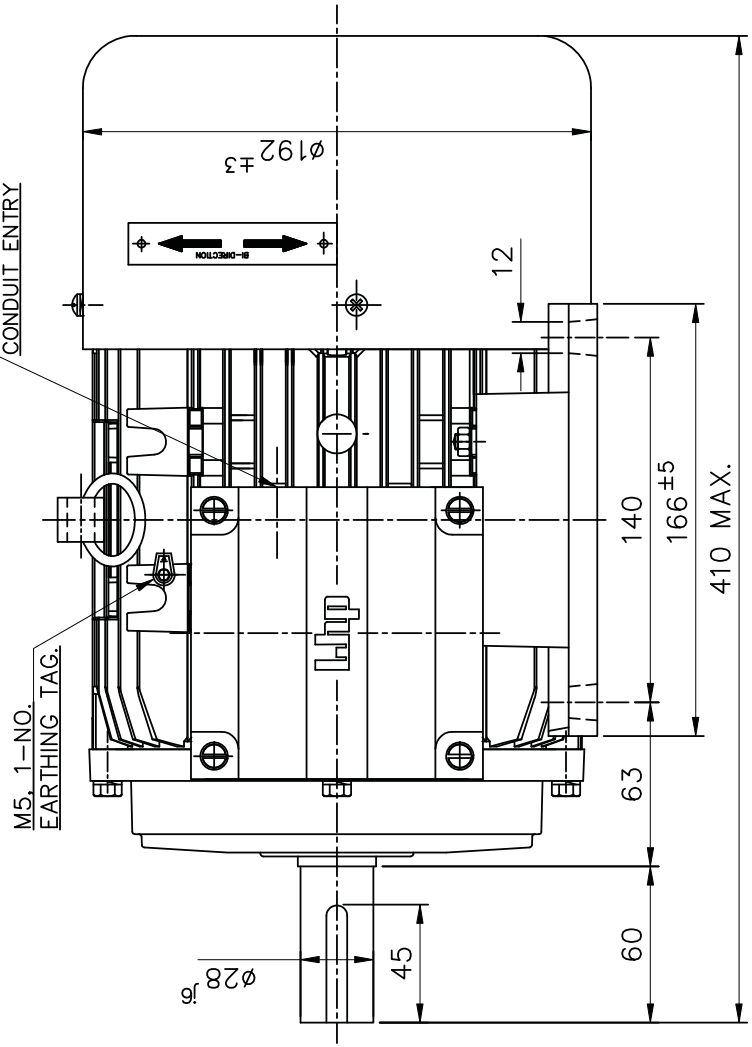
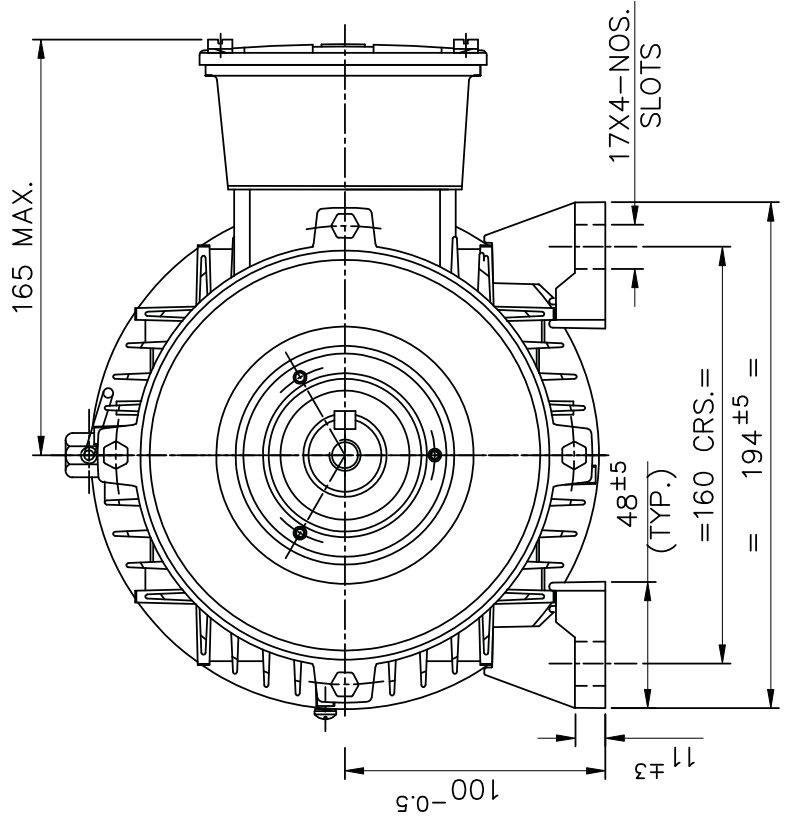


**NEGATIVE SEQUENCE CHARACTERISTICS**

CUSTOMER : M/s ADVANCE VENTILATION  
 WORKS ORDER NO. : SAP NO:  
 kW : 1.5 POLE : 6 VOLTS : 415 QTY : 1



2		PREP	SSG	11/25/2019
1		APPD	SNG	11/25/2019
NO	REVISION	SIGN/DATE		SIGN DATE

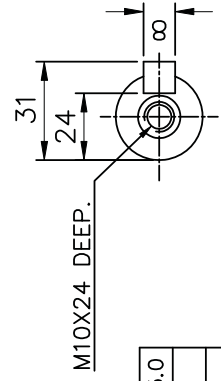


**SPECIFICATIONS:-**

RATING (kW/HP)	1.5/2.0	2.2/3.0	3.7/5.0
POLE	6	4	2
BEARING DE SIDE	6206 ZZ		
BEARING NDE SIDE	6206 ZZ		

**MATERIAL OF CONSTRUCTION:-**

FRAME	ALUMINIUM
END COVER (DE)	ALUMINIUM
END COVER (NDE)	CAST IRON/AL
T. BOX	ALUMINIUM
T. BOX COVER	ALUMINIUM
SHAFT	CARBON STEEL



**SHAFT END DETAILS**

PRODUCT CODE: EA0356  
 PRODUCT CODE: EB0891

UNMENTIONED DIMNS.	OVER 2.0 UP TO	0.5-3	3-6	6-30	30-120	120-400	400-1000	1000-2000
TOLERANCES	TOLERANCE	±0.2	±0.3	±0.5	±0.8	±1.2	±2	±3
ARE AS PER IS:202-17 ISO 2168-1	PERMISSIBLE DEVIATIONS FOR LENGTHS OF THE SHORTER SIDE OF THE ANGLE	0-10	10-50	50-120	120-400	400.....		
ANGULAR DIMNS.	OVER 2.0 UP TO	0-10	10-50	50-120	120-400	400.....		
TOLERANCE	TOLERANCE	±1°	±0°'30"	±0°'20"	±0°'10"	±0°'5"		

TITLE:-  
 GENERAL ARRANGEMENT. DRG. FOR  
 100L FRAME FOOT (B3) MOUNTED MOTOR

DRG. NO.	MGAN100A0249
SCALE	1:1
SHEET	01 OF 02
DRG. NO.	MGAN100A0249
ISSUE NO.	01
REV. NO.	01

REV. NO.	1	DATE	17.08.19	SAT
DETAILS OF CHANGE	DOR NAMEPLATE ADDED. RATING 3.7kW, 2-POLE ADDED.			

REV. NO.	1	DATE	17.08.19	SAT
DETAILS OF CHANGE	DOR NAMEPLATE ADDED. RATING 3.7kW, 2-POLE ADDED.			

UNLESS OTHERWISE SPECIFIED ALL DIMNS. ARE IN MM. | DO NOT SCALE THE DRAWING.