



**Bharat Heavy Electricals Limited  
(A Govt. Of India Undertaking)**

Power Sector, Eastern Region  
BHEL BHAWAN, PLOT NO. DJ-9/1, SECOTR II,  
SALT LAKE CITY, KOLKATA, WEST BENGAL, INDIA  
Phone: 033-23398220,033-23211690 FAX: 033-23211960

Su b	<b>TENDER CHANGE NOTICE (TCN-02 DTD. 24/08/2024)</b>
Jo b	<b>“MANUFACTURING, INSPECTION, TESTING, PAINTING, PACKING, TRANSPORTATION, DELIVERY ETC OF AIR WASHER UNIT ALONG WITH UNITARY AIR FILTRATION FOR VENTILATION SYSTEM PKG AT 1X660 MW SAGARDIGHI PROJECT, MURSHIDABAD, WEST BENGAL.”</b>
Ref	<b>TENDER NO.: PSER:PUR:PMX:447(I):037 (ENQ:24:PP:0015:PUR:33) DATE: 13/08/2024, TCN-01 DTD 23/08/2024.</b>

**With reference to above, following clarifications, relevant to tender, may please be noted and complied with while submitting the offer.**

- 1) Introduction of “Data Sheet for Motors (AWU Pump & UAF Pump) for Ventilation System” (BHEL Document Number PE-V0-445-554-A043, REV 01) to Technical Specification, is attached for tender purpose only.
- 2) Revised ‘No deviation certificate’ is attached. Bidder to submit their offer along with stamped & signed copy of this TCN & ‘No deviation certificate’ as per attached format only.
- 3) All other terms & conditions shall remain unchanged.

Thanking you,

Yours faithfully,  
for BHARAT HEAVY  
ELECTRICALS LTD

Dy MANAGER (PURCHASE)  
Encl: As above.  
(Signature, date & seal of  
authorized representative of the  
contractor)

**ANNEXURE - II**

**FORMAT FOR NO DEVIATION CERTIFICATE**  
**(To be submitted in the bidder's letter head)**

To,  
Bharat Heavy Electricals Limited,  
POWER SECTOR – EASTERN REGION  
2nd FLOOR, Block-DJ, Plot- 9/1, SECTOR  
SALT LAKE CITY, KOLKATA – 700 091  
FAX – 033-2321-1960

Job: “MANUFACTURING, INSPECTION, TESTING, PAINTING, PACKING, TRANSPORTATION, DELIVERY ETC OF AIR WASHER UNIT ALONG WITH UNITARY AIR FILTRATION FOR VENTILATION SYSTEM PKG AT 1X660 MW SAGARDIGHI PROJECT, MURSHIDABAD, WEST BENGAL).”

**E-Tender No.: PSER:PUR:PMX:447(I):037 (ENQ:24:PP:0015:PUR:33) DATE: 13/08/2024, TCN-01 DTD. 23/08/2024, TCN-02 DTD. 24/08/2024.**

Dear Sir/Madam,

With reference to above tender, this is to confirm you that we have gone through each and every terms and conditions mentioned in the enquiry (Terms and Conditions) and we offer our unqualified acceptance of the same. This is also to confirm that as per tender conditions, we have visited site before submission of our offer and noted the job content & site conditions etc.

We also confirm that we have not changed/modified the tender documents as appeared in the website/newspapers and in case of observance at any stage, it shall be treated as null and void. We hereby confirm that we have not taken any deviation from tender clauses together with other references as enumerated in the above referred NIT and confirm our acceptance to reverse auctioning process and we hereby convey our unqualified acceptance to all terms and conditions as stipulated in the tender and NIT.

It is also confirmed that the price has been quoted in the format received with the enquiry. We confirm that, we do not have any objections to splitting the quantity among the different bidders by BHEL and price shall remain firm till the completion supply of full ordered quantity.

Any deviation found subsequently at any time during execution of order shall be treated null and void

Thanking you,

Yours faithfully,

(Signature, date & seal of  
authorized representative  
of the contractor)

Digitally signed  
by Avik Sen

DN: cn=Avik Sen,  
o=DCPL,  
ou=Power Cell,  
email=avik.sen@i  
n.dclgroup.com,  
c=US

Date: 2024.08.08  
11:53:14 +05'30'





REVISION	
1	Approved
2	Approved with Comments
3	Approved except as noted (Specify Final Approval)
4	Disapproved
5	For Information and Record with comments
6	For Information and Record

Contractor is to be responsible for any errors and for the effect of any late requirements of contract documents.

Digitally signed by  
Arvind Kumar  
DN: cn=Arvind Kumar,  
o=BHEL, ou=PEM/  
MAUX,  
email=arvindkr@bhel.in  
, c=IN

Date: 2024.08.07  
11:50:53 +05'30'

BHEL	
BHARAT HEAVY ELECTRICALS LTD. PROJECT ENGINEERING MANAGEMENT POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA	
This is to certify that this document has been reviewed in PEM for conforming to the technical requirements of the project.	
REVIEWER	DATE
NAME OF REVIEWER ENGINEER & DESIGNATION	DATE

06.08.2024	Rev 01	SAHIL SINGH	DEEPAK	KRISHAN SINGH
07.03.2024	FIRST SUBMISSION	ARMAN SHAIKH	AHMAR KAMRAN	KRISHAN SINGH
Date	DESCRIPTION OF REVISION	Prep By	Checked	Approved
PROJECT		1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III		
OWNER		THE WEST BENGAL POWER DEVELOPMENT CORPORATION LIMITED (WBPDCL)		
CONSULTANT		DEVELOPMENT CONSULTANT PVT LTD. (DCPL), KOLKATA		
PURCHASER		BHARAT HEAVY ELECTRICALS LTD. POWER SECTOR, PROJECT ENGINEERING MANAGEMENT, NOIDA		
CONTRACTOR		PARKSONS ENGINEERING COMPANY PVT LTD. NEW DELHI		
Job No	445	BHEL DOCUMENT NO.	PE-V0-445-554-A043	REV 01
STATUS	CONTRACT	PARKSONS DOCUMENT NO.	PVR-1223	REV 01
PACKAGE	VENTILATION SYSTEM			
TITLE	DATA SHEET FOR MOTORS (AWU Pump & UAF Pump) FOR VENTILLATION SYSTEM			
		Name	Date	Submitted for
Prep By		ARMAN SHAIKH	11.12.2023	APPROVAL
Checked by		AHMAR KAMRAN	11.12.2023	APPROVAL
Approved by		KRISHAN SINGH	11.12.2023	APPROVAL

1x660 MW Sagardighi-Unit-5-Stage-III TPS					
Response to WBPDCI Comments on DATA SHEET FOR MOTORS (AWU Pump & UAF Pump) FOR VENTILLATION SYSTEM					
BHEL DOC NO. PE-V0-445-554-A043_REV-00					
S. No.	Reference clause / document sheet	WBPDCI / DCPL Comments on Rev 00	BHEL / PARKSONS Reply on Rev 00	WBPDCI / DCPL Comments on Rev 00	BHEL / PARKSONS Reply on Rev 00
1	General	Data sheet of Motor for pump is deleted from the document "PE-V0-445-554-A018, A/W Fan, A/W pumps, UAF Fan, UAF Pump, RE unit, Supply and Exhaust axial fan" and the same shall be submitted under separate document number.	Data sheet of Motor for pump is being submitted under separate document no. PE-V0-445-554-A043. Further it is confirmed that TDS of motor for Air Washer Pump (18.5 kW / 4 pole) and TDS of motor for UAF pump (15kW / 4 pole) are in-line with TDS of motor for AHU for CCR (18.5 kW / 4 Pole) and TDS of motor for Chilled water pump (15 kW / 4 Pole) already approved for AC system. Further, quantity and cable sized are changes as per ventilation system requirement.	Correct Customer name on 15kW pump motor data sheet.	Noted and corrected in revised data sheet.

**CG Power and Industrial Solutions Limited**

**Northern Region**

4th Floor, A-17, Discovery Tower, Sector- 62, Noida- 201 309, Uttar Pradesh, India  
T: +91 120 6861900/01 F: +91 120 6861902



DATE: 18.07.2023

**To whomsoever it may concern**

IE3 Motor Requirement - Starting current shall be limited 6 times of rated full load current for DOL start.

CG Reply:- starting current of motors will be as per IS12615 subject to tolerance. As per IS max limit is 770% subject to tolerance, we are offering 700% subject to tolerance which is even better than IS/IEC.

Further reduction in the same is not possible as we won't get required IE3 efficiency as per IS12516.



Sumit Lohani  
LT Motors

CG Power and Industrial Solutions Limited  
Sales Network India North - B2B  
4th Floor, Discovery Tower, Plot No-17, Block A Industrial Area  
Sector-62, Noida, UP - 201 301  
M: +91 7042513557 W: www.cgglobal.com  
Save the environment. Please print only if essential.

Registered Office:  
CG House, 6th Floor, Dr Annie Besant Road, Worli, Mumbai 400 030, India  
T: +91 22 2423 7777 F: +91 22 2423 7733 W: www.cgglobal.com  
Corporate Identity Number: L99999MH1937PLC002641



18.5 kw 4pole



## CG Power and Industrial Solutions Limited

LT Motors Division  
Ahmednagar



MOTOR DATA SHEET (For Air Washer Pump)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
<b>1</b>	<b>GENERAL</b>	
i	Manufacturer & country of origin	CG Power and Industrial Solutions Limited
ii	Equipment driven by motor	18.5 KW (For Air Washer Pump)
iii	Motor type	3 PHASE AC SQUIRREL CAGE INDUCTION MOTOR IE3
iv	Quantity	8
<b>2</b>	<b>DESIGN &amp; PERFORMANCE DATA</b>	
i	Frame size	ND180M
ii	Type of duty	S1
iii	Type of enclosure & method of cooling	TEFC Safe Area & IC 411
	Degree of protection	IP55
iv	Applicable standard to which motor generally confirms	IS12615,
v	Type of mounting	B3
vi	Direction of rotation viewed from DE	Bidirectional
vii	Standard continuous rating at 40 deg.C ambient temp. as per Indian Std. Kw	20.1
viii	Derated rating for specified normal condition i.e. 50 deg. C ambient ( Kw)	18.50
ix	Rated voltage (volts) & Rated frequency(Hz)	415 & 50
x	Permissible variation of	
a	voltage (volts)	+/-10%
b	Frequency (Hz)	+/-5%
c	Combined voltage & frequency	10% ( Absolute)
xi	Minimum permissible starting voltage(v)	80%
xii	Rated speed at rated voltage & frequency	1470 RPM
xiii	At rated voltage and frequency	
a	Full load current ( A )	34.00
b	No load current ( approx ) ( A )	12 (Max)
xiv	Power factor at	
a	100% load & 75% load & 50% load	0.82 & 0.79 & 0.68
b	No load	0.15 (Min.)
c	Starting	0.4 (Min.)
xv	Efficiency (%) at rated voltage & frequency	
a	100% load	92.6
b	75% load	92.6
c	50% load	91.6
xvi	Starting current % FLC at	
a	100% voltage	700
b	85% voltage	595
c	80% voltage	560
xvii	Starting time with minimum permissible voltage	LOAD GD2 ASSUMED=MOTOR GD2.
a	without driven equipment coupled	0.2
b	with driven equipment coupled	0.6
xviii	Safe stall time with 110% of rated voltage	

18.5 kw 4pole

**CG Power and Industrial Solutions Limited**

LT Motors Division

Ahmednagar



MOTOR DATA SHEET (For Air Washer Pump)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
a	From hot condition in sec.	8
b	From cold condition in sec.	17
xix	Torques - % FLT	
a	Starting torque at min. permissible V	128
	starting torq at rated V.	200
b	Pull up torque at rated voltage	175
c	Pull out torque	225
d	Min. accelerating torque available	10%
e	Rated torque - kg-m	12.26
xx	Stator winding resistance per phase (ohm/milli ohm at 20 ° C.) ( Indicative )	0.430 (±5%)
xxi	GD square value of motor - kg-m sq.	0.81
xxii	No. of permissible successive starts when motor is in hot / cold condition	2/3
xxiii		
a	Locked rotor KVA input	205.3
b	Locked rotor KVA / KW	11.10
		(INCLUSIVE OF TOLERANCE)
xxiv	Bearings	
a	Type	Antifriction deep groove ball
b	Manufacturer	SKF/FAG
c	Self lubricated or forced lubricated	Self Lubricated
d	Recommended lubricants	Greased for life
e	Guaranteed life in hours	> 40,000 hours
f	Whether dial type thermometer provided	NO
g	Oil pressure guage/switch	N.A.
i	range	
ii	Contact Nos. and ratings	
iii	Accuracy	
xxv	Vibration	As per IEC 60034-14 Grade A
a	Velocity mm/s	
b	Displacement microns	
xxvi	Noise level db(A) at 1 m at no load	As Per IS:12065
3	CONSTRUCTIONAL FEATURES	
i	Stator winding insulation	
a	Class & type	F (Temp. rise limited to class 'B')
b	Tropicalised (yes/no)	Yes
c	Temperature rise over specified max.	
	i. cold water temp. of 38 deg. C	N.A.
	ii. Ambient air 50 deg. C.	70
d	Method of temperature measurement	by resistance
e	Stator winding connection	Delta
f	Number of terminals brought out	6
ii	Type of terminal box for	
a	Stator leads	Cast iron non phase segregated
b	space heater	Non phase segregated
c	Temperature detectors	N.A.
d	instrument switch etc.	N.A.
iii.	For main terminal box	
a	Location	RHS From DE
b	Entry of cables	Side

18.5 kw 4pole



**CG Power and Industrial Solutions Limited**  
LT Motors Division  
Ahmednagar

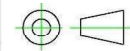


MOTOR DATA SHEET (For Air Washer Pump)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
c	Recommended cable size (to be matched with cable size envisaged by owner)	1 X 3C X 50 Sq.mm
d	Fault level	50KA FOR 0.25 SEC
iv	Temperature detector for stator winding	No
a	Type	NA
b	Nos. provided	NA
c	Location	NA
d	make	NA
e	resistance value at 0 deg. C (ohms)	NA
v	space heaters	No
a	Number	N.A.
b	Location	Winding overhang
c	Power requirement (watt)	N.A.
vi	Paint shade	RAL7032 Epoxy Pebble grey
vii	Weight of	
a	Motor stator	96
b	Motor rotor	64
c	Total weight (kg)	160
4	CHARACTERISTIC CURVES	
i	Torque speed characteristic of the motor	Yes
ii	Calibration characteristic of platinum type resistance temperature detector	N.A.
iii	Calibration characteristic of platinum BTD	N.A.
iv	Thermal withstand characteristic	Yes
v	starting current vs. time	Yes
vi	starting current vs. speed	yes
vii	neg. sequence current vs. time	N.A.
viii	PF & efficiency V.s load.	Yes
<p>All performance data is subject to tolerance as per IS/IEC 60034 All performance shall be measured on sinusoidal supply Temp rise test shall be carried at rated kW &amp; voltage for 1 hour other than S1 duty</p>		
ISSUED BY :		Sumit Lalwani LT MOTORS DIVISION , AHMEDNAGAR



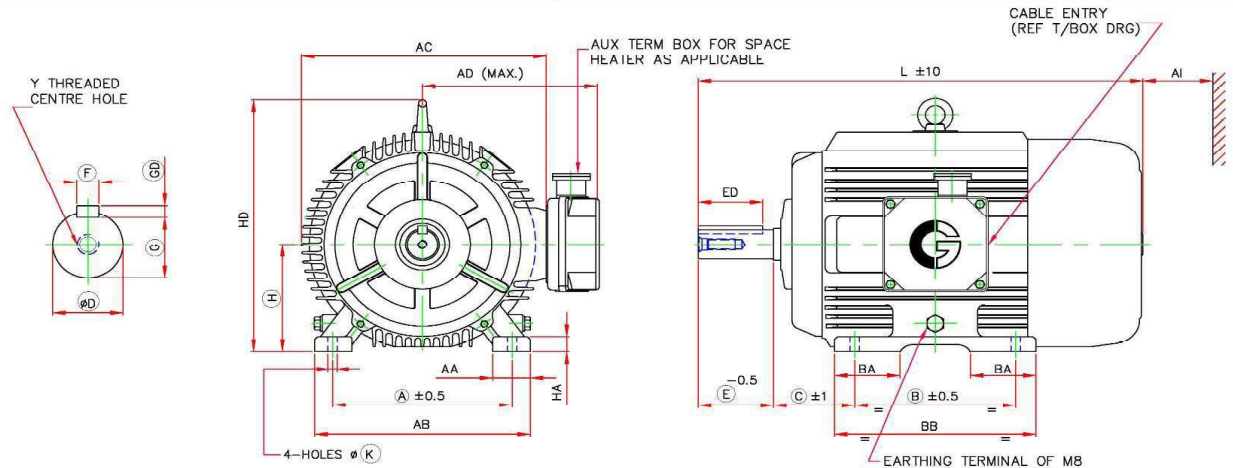
# DIMENSION DRAWING OF 3 PH SQUIRREL CAGE TEFC INDUCTION MOTOR

PROJECTION



DO NOT SCALE

PLEASE ASK, IF IN DOUBT



FRAME	FOOT FIXING										OVER ALL					MOTOR wt (kg)	AI**
	A	B	B1	C	H TOL	AA	AB	BA	BB	K TOL	AD	AC	L	HD	HA		
ND180M	279	241		121	180.0 / 179.5	84	348	83	286	15.0 / 15.5	295	352	677	422	22	160	100

D END SHAFT EXTENSION AND KEY						
D TOL	E	ED	F TOL	GD TOL	G	Y
48,018 / 48,002	110	80	14,00 / 13,957	9,0 / 8,9	42,5 / 42,3	M16X32

**NOTES** TERMINAL BOX CAN BE ROTATED IN 360 DEG @90 DEG.  
ONE EARTHING TERMINAL IS PROVIDED INSIDE MAIN TERMINAL BOX.  
MOTOR MAY HAVE ADDITIONAL FOOT HOLES FOR CUSTOMER/SITE FLEXIBILITY  
\*\*MINIMUM DISTANCE FOR EFFICIENT COOLING OF MOTOR TO BE MAINTAINED BY USER

ALL DIMENSIONS ARE IN mm

RINGED DIMENSIONS ARE AS PER IS:1231/IEC60072

Rev. 1 Dt:

Rev. 2 Dt:

CUSTOMER				RATED O/P kW	18.5	NO OF POLES	4
P.O. NO.				FRAME	ND180M	MAIN CABLE SIZE	1 * 3C,50-MM²
IND. NO.	QNPI230315/400			MOUNTING	B3 (HORIZONTAL FOOT)		
CLIENT				TAG NO.			
PROJECT							
	NAME	DATE	REMARKS		TITLE  <b>DIMENSIONAL DRAWING</b>		
DRN	SBK	31-Oct-23					
CHD	SBK	31-Oct-23					
APPROVED	SSN	31-Oct-23					

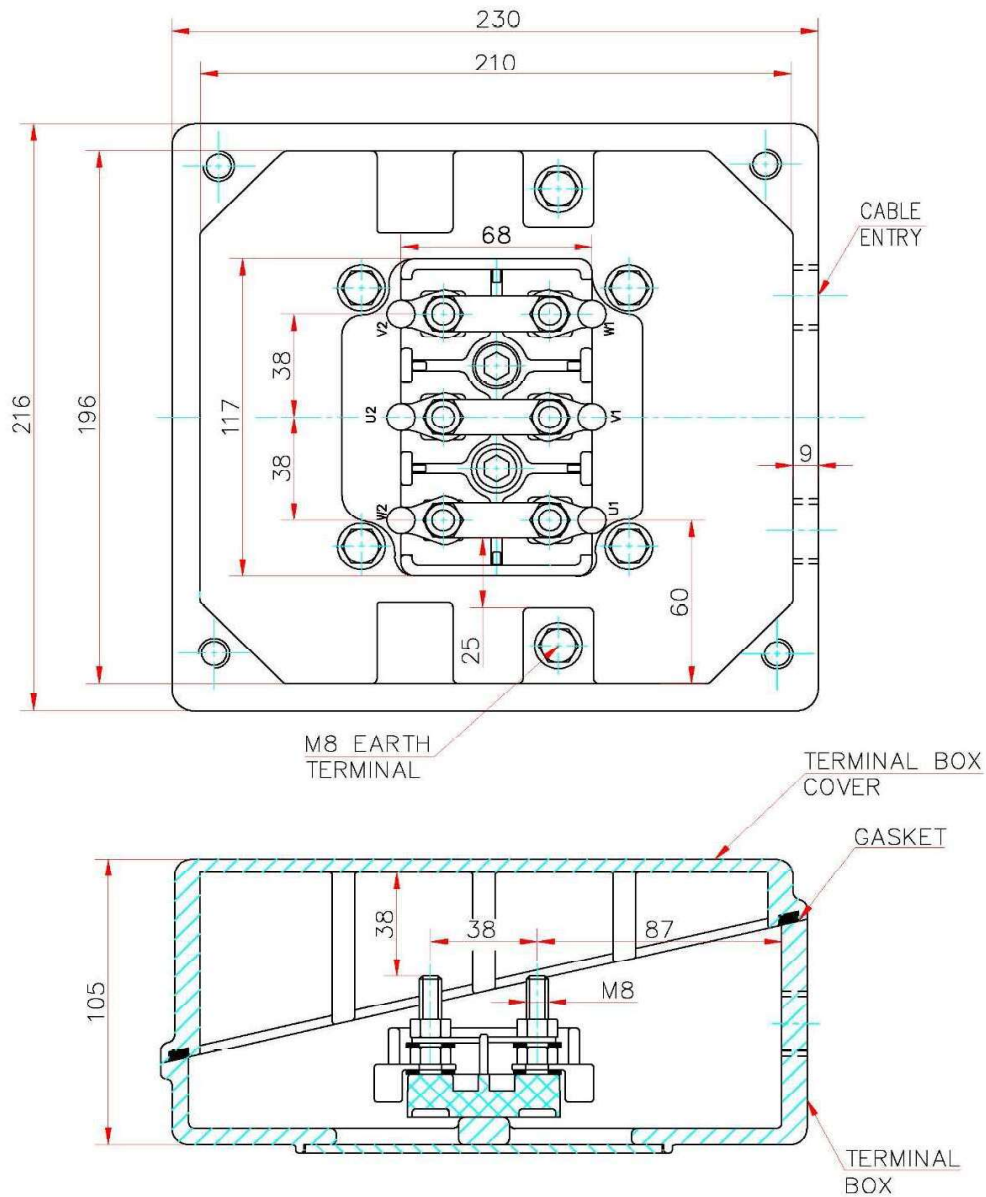


**CG Power and Industrial Solutions Limited**  
LT Motors Division  
Ahmednagar

DRG NO

**QNPI230315/400-ND180M**

REV 0



CREEPAGE = 25  
CLEARANCE = 12

MATERIAL OF T/BOX  
CAST IRON

ACCESSORIES	SPACE HEATER		THERMISTOR	RTD	
APPLICABLE	NA		NA	NA	
CABLE SIZE (ENTRY)	NA		NA	NA	
MAIN CABLE SIZE	1 * 3C,50-MM²		CABLE ENTRY	M40X1.5P 1-No.	
CUSTOMER				RATED O/P kW	18.5
PO No				NO OF POLES	4
INDENT / ENQ No	QNPI230315/400			FRAME	ND180M
CLIENT			Tag No.		
PROJECT					
	NAME	DATE	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED		
DRAWN BY	SBS	22-11-2023	TITLE :  TERMINAL BOX ARRANGEMENT		
CHECKED BY	SBK	22-11-2023			
APPROVED BY	SA	22-11-2023			

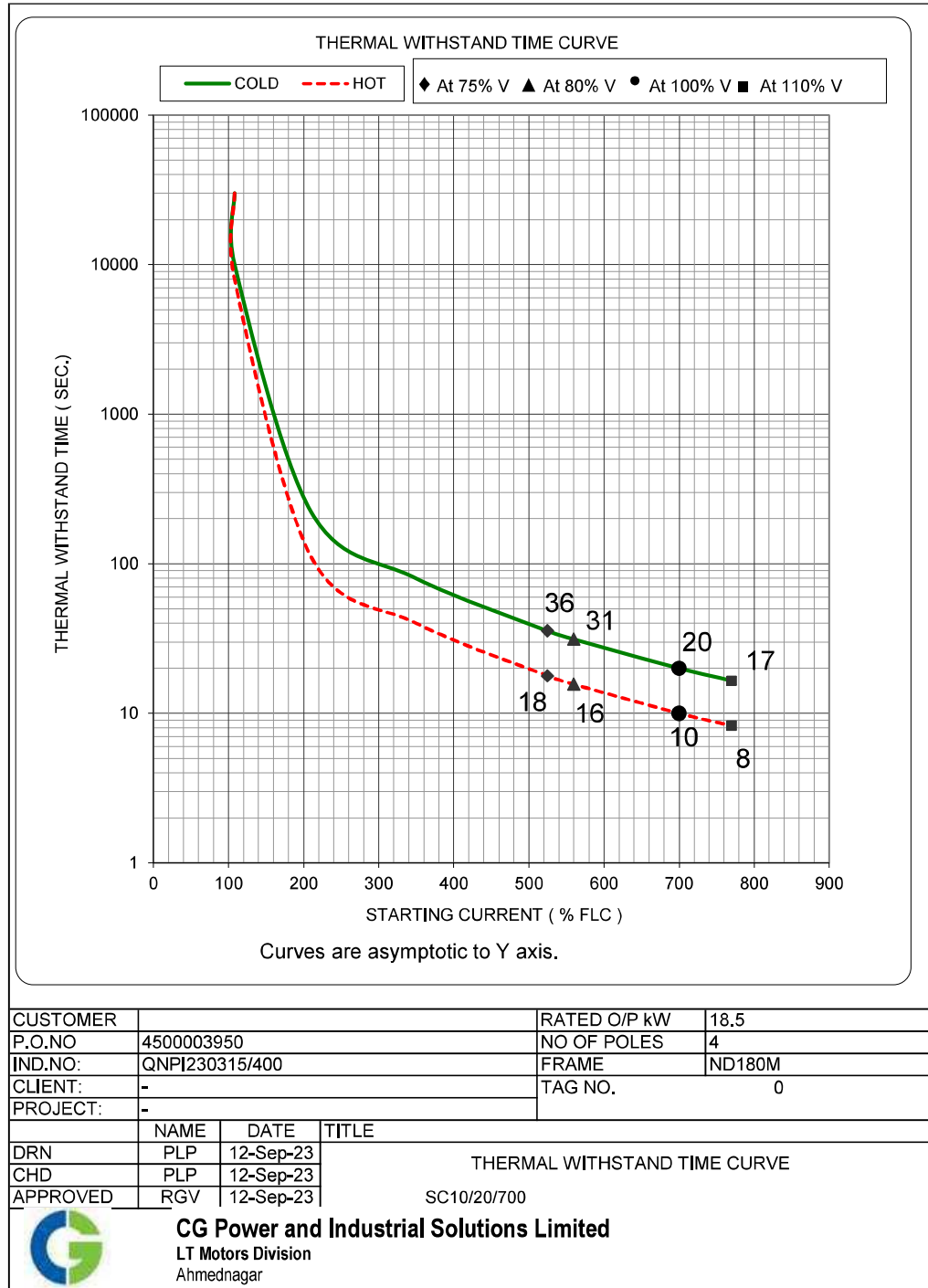


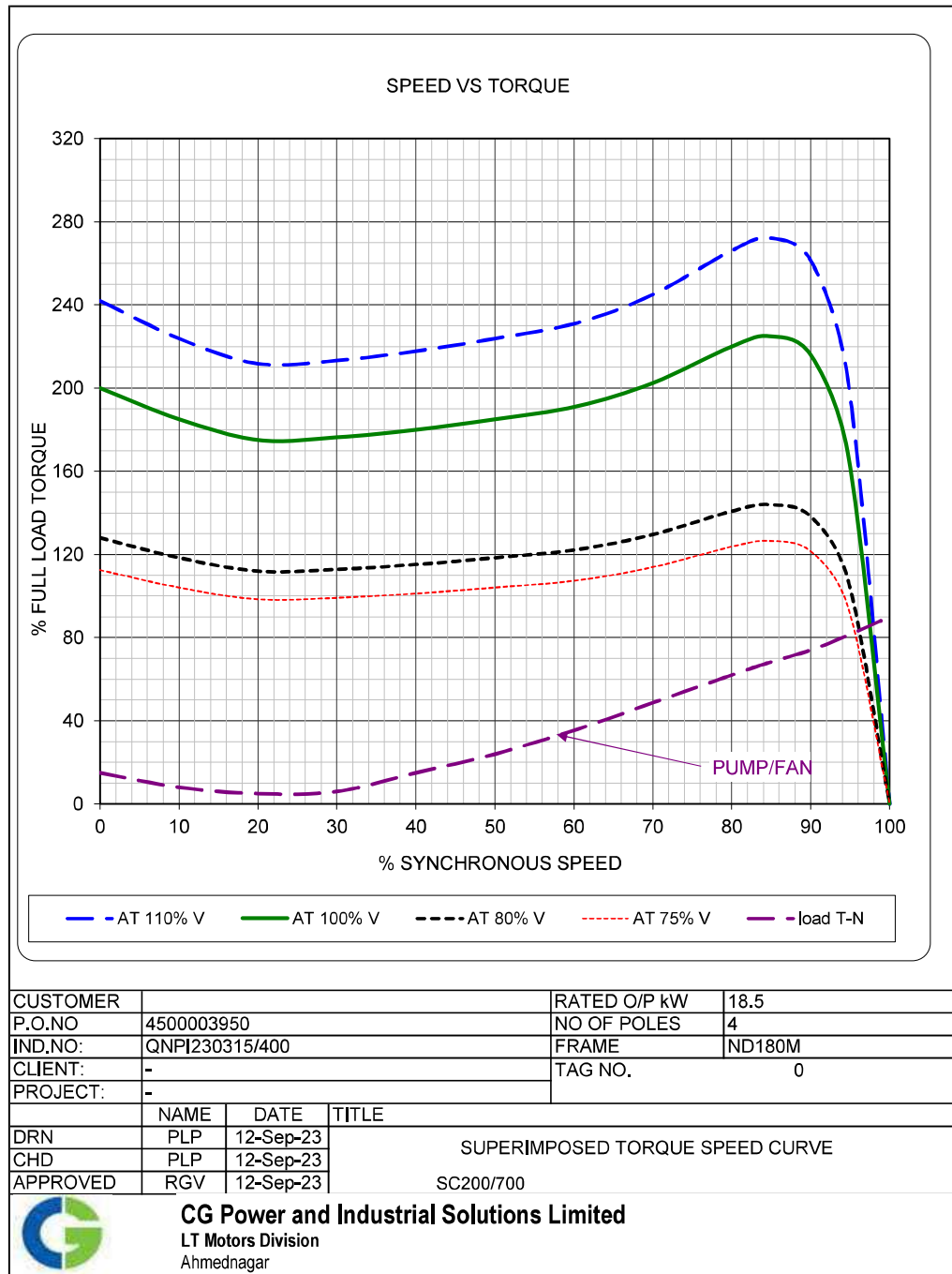
**CG Power and Industrial Solutions Limited**  
LT Motors Division  
Ahmednagar

EA9102R1

DRG No.:

61910101





15 kw 4pole


**CG Power and Industrial Solutions Limited**

 LT Motors Division  
 Ahmednagar


MOTOR DATA SHEET (For UAF PUMP)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
<b>1</b>	<b>GENERAL</b>	
i	Manufacturer & country of origin	CG Power and Industrial Solutions Limited
ii	Equipment driven by motor	PUMP Motor. (For UAF PUMP)
iii	Motor type	3 PHASE AC SQUIRREL CAGE INDUCTION MOTOR IE3
iv	Quantity	4
<b>2</b>	<b>DESIGN &amp; PERFORMANCE DATA</b>	
i	Frame size	ND160L
ii	Type of duty	S1
iii	Type of enclosure & method of cooling	TEFC Safe Area & IC 411
	Degree of protection	IP55
iv	Applicable standard to which motor generally confirms	IS12615,
v	Type of mounting	B3
vi	Direction of rotation viewed from DE	Bidirectional
vii	Standard continuous rating at 40 deg.C ambient temp. as per Indian Std. Kw	16.3
viii	Derated rating for specified normal condition i.e. 50 deg. C ambient ( Kw)	15.00
ix	Rated voltage (volts) & Rated frequency(Hz)	415 & 50
x	Permissible variation of	
a	voltage (volts)	+/-10%
b	Frequency (Hz)	+/-5%
c	Combined voltage & frequency	10% ( Absolute)
xi	Minimum permissible starting voltage(v)	80%
xii	Rated speed at rated voltage & frequency	1465 RPM
xiii	At rated voltage and frequency	
a	Full load current ( A )	27.00
b	No load current ( approx ) ( A )	12 (Max)
xiv	Power factor at	
a	100% load & 75% load & 50% load	0.84 & 0.8 & 0.7
b	No load	0.15 (Min.)
c	Starting	0.4 (Min.)
xv	Efficiency (%) at rated voltage & frequency	
a	100% load	92.1
b	75% load	92.1
c	50% load	91
xvi	Starting current % FLC at	
a	100% voltage	700
b	85% voltage	595
c	80% voltage	560
xvii	Starting time with minimum permissible voltage	LOAD GD2 ASSUMED=MOTOR GD2.
a	without driven equipment coupled	0.1
b	with driven equipment coupled	0.3
xviii	Safe stall time with 110% of rated voltage	

15 kw 4pole

**CG Power and Industrial Solutions Limited**

LT Motors Division

Ahmednagar



MOTOR DATA SHEET (For UAF PUMP)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
a	From hot condition in sec.	8
b	From cold condition in sec.	17
xix	Torques - % FLT	
a	Starting torque at min. permissible V	128
	starting torq at rated V.	200
b	Pull up torque at rated voltage	175
c	Pull out torque	250
d	Min. accelerating torque available	10%
e	Rated torque - kg-m	9.97
xx	Stator winding resistance per phase (ohm/milli ohm at 20 ° C.) ( Indicative )	0.626 (±5%)
xxi	GD square value of motor - kg-m sq.	0.39
xxii	No. of permissible successive starts when motor is in hot / cold condition	2/3
xxiii		
a	Locked rotor KVA input	163.0
b	Locked rotor KVA / KW	10.87
		(INCLUSIVE OF TOLERANCE)
xxiv	Bearings	
a	Type	Antifriction deep groove ball
b	Manufacturer	SKF/FAG/
c	Self lubricated or forced lubricated	Self Lubricated
d	Recommended lubricants	Greased for life
e	Guaranteed life in hours	> 40,000 hours
f	Whether dial type thermometer provided	NO
g	Oil pressure guage/switch	N.A.
i	range	
ii	Contact Nos. and ratings	
iii	Accuracy	
xxv	Vibration	As per IEC 60034-14 Grade A
a	Velocity mm/s	
b	Displacement microns	
xxvi	Noise level db(A) at 1 m at no load	As Per IS:12065
3	CONSTRUCTIONAL FEATURES	
i	Stator winding insulation	
a	Class & type	F (Temp. rise limited to class 'B')
b	Tropicalised (yes/no)	Yes
c	Temperature rise over specified max.	
	i. cold water temp. of 38 deg. C	N.A.
	ii. Ambient air 50 deg. C.	70
d	Method of temperature measurement	by resistance
e	Stator winding connection	Delta
f	Number of terminals brought out	6
ii	Type of terminal box for	
a	Stator leads	Cast iron non phase segregated
b	space heater	Non phase segregated
c	Temperature detectors	N.A.
d	instrument switch etc.	N.A.
iii.	For main terminal box	
a	Location	RHS From DE
b	Entry of cables	Side

15 kw 4pole



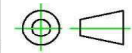
**CG Power and Industrial Solutions Limited**  
LT Motors Division  
Ahmednagar



MOTOR DATA SHEET (For UAF PUMP)		
CLAUSE		
No.	Customer	WBPDECL
	Project	1 X 660 MW WBPDCS SAGARDIGHI TPP EXTN UNIT-5, PHASE-III
c	Recommended cable size (to be matched with cable size envisaged by owner)	1 x 3C-25mm <sup>2</sup> [Al]
d	Fault level	50KA FOR 0.25 SEC
iv	Temperature detector for stator winding	No
a	Type	NA
b	Nos. provided	NA
c	Location	NA
d	make	NA
e	resistance value at 0 deg. C (ohms)	NA
v	space heaters	No
a	Number	N.A.
b	Location	Winding overhang
c	Power requirement (watt)	N.A.
vi	Paint shade	RAL7032 Epoxy Pebble grey
vii	Weight of	
a	Motor stator	77
b	Motor rotor	52
c	Total weight (kg)	129
4	CHARACTERISTIC CURVES	
i	Torque speed characteristic of the motor	Yes
ii	Calibration characteristic of platinum type resistance temperature detector	N.A.
iii	Calibration characteristic of platinum BTD	N.A.
iv	Thermal withstand characteristic	Yes
v	starting current vs. time	Yes
vi	starting current vs. speed	yes
vii	neg. sequence current vs. time	N.A.
viii	PF & efficiency V.s load.	Yes
<p>All performance data is subject to tolerance as per IS/IEC 60034 All performance shall be measured on sinusoidal supply Temp rise test shall be carried at rated kW &amp; voltage for 1 hour other than S1 duty</p>		
<p>ISSUED BY : Sumit Lalwani LT MOTORS DIVISION , AHMEDNAGAR</p>		

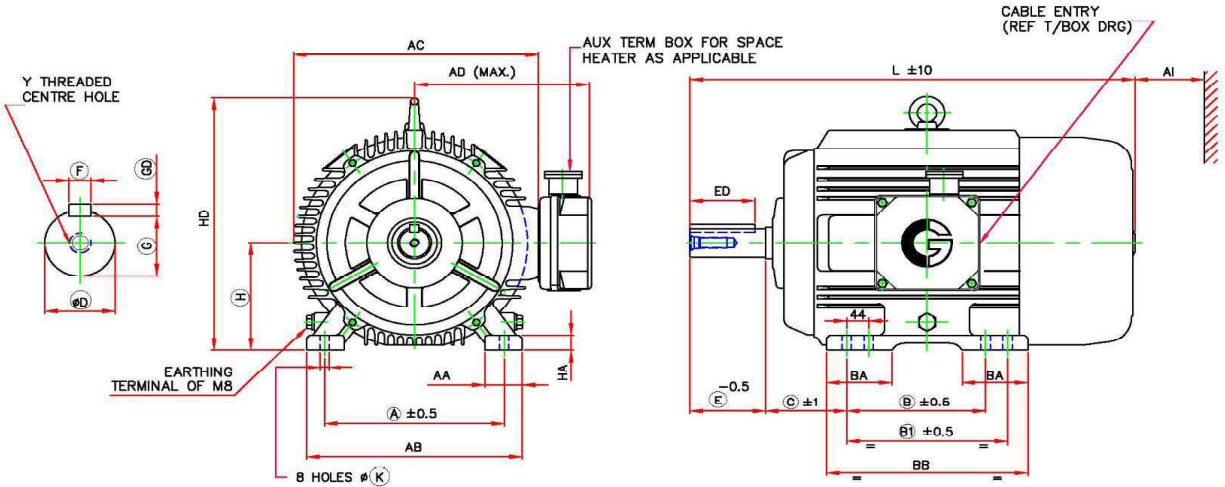
# DIMENSION DRAWING OF 3 PH SQUIRREL CAGE TEFC INDUCTION MOTOR

PROJECTION



DO NOT SCALE

PLEASE ASK, IF IN DOUBT



FRAME	FOOT FIXING										OVER ALL					MOTOR wt (kg)	AI**
	A	B	B1	C	H TOL	AA	AB	BA	BB	K TOL	AD	AC	L	HD	HA		
ND160L	254	210	254	108	160.0 / 159.5	73	308	101	298	15.0 / 15.5	255	325	650	376	22	129	90

D END SHAFT EXTENSION AND KEY						
D TOL	E	ED	F TOL	GD TOL	G	Y
42.018 / 42.002	110	80	12.00 / 11.957	8.0 / 7.9	37.0 / 36.8	M16X32

**NOTES** TERMINAL BOX CAN BE ROTATED IN 360 DEG @90 DEG.  
ONE EARTHING TERMINAL IS PROVIDED INSIDE MAIN TERMINAL BOX.  
MOTOR MAY HAVE ADDITIONAL FOOT HOLES FOR CUSTOMER/SITE FLEXIBILITY  
\*\*MINIMUM DISTANCE FOR EFFICIENT COOLING OF MOTOR TO BE MAINTAINED BY USER

ALL DIMENSIONS ARE IN mm

RINGED DIMENSIONS ARE AS PER IS:1231/IEC60072

Rev. 1 Dt:

Rev. 2 Dt:

CUSTOMER	WBPDCL			RATED O/P kW	15	NO OF POLES	4
P.O. NO.				FRAME	ND160L	MAIN CABLE SIZE	1 x 3C-25mm2
IND. NO.	QNPI230315/700			MOUNTING	B3 (HORIZONTAL FOOT)		
CLIENT				TAG NO.			
PROJECT							
	NAME	DATE	REMARKS	TITLE  <b>DIMENSIONAL DRAWING</b>			
DRN	SBK	31-Oct-23					
CHD	SBK	31-Oct-23					
APPROVED	SSN	31-Oct-23					



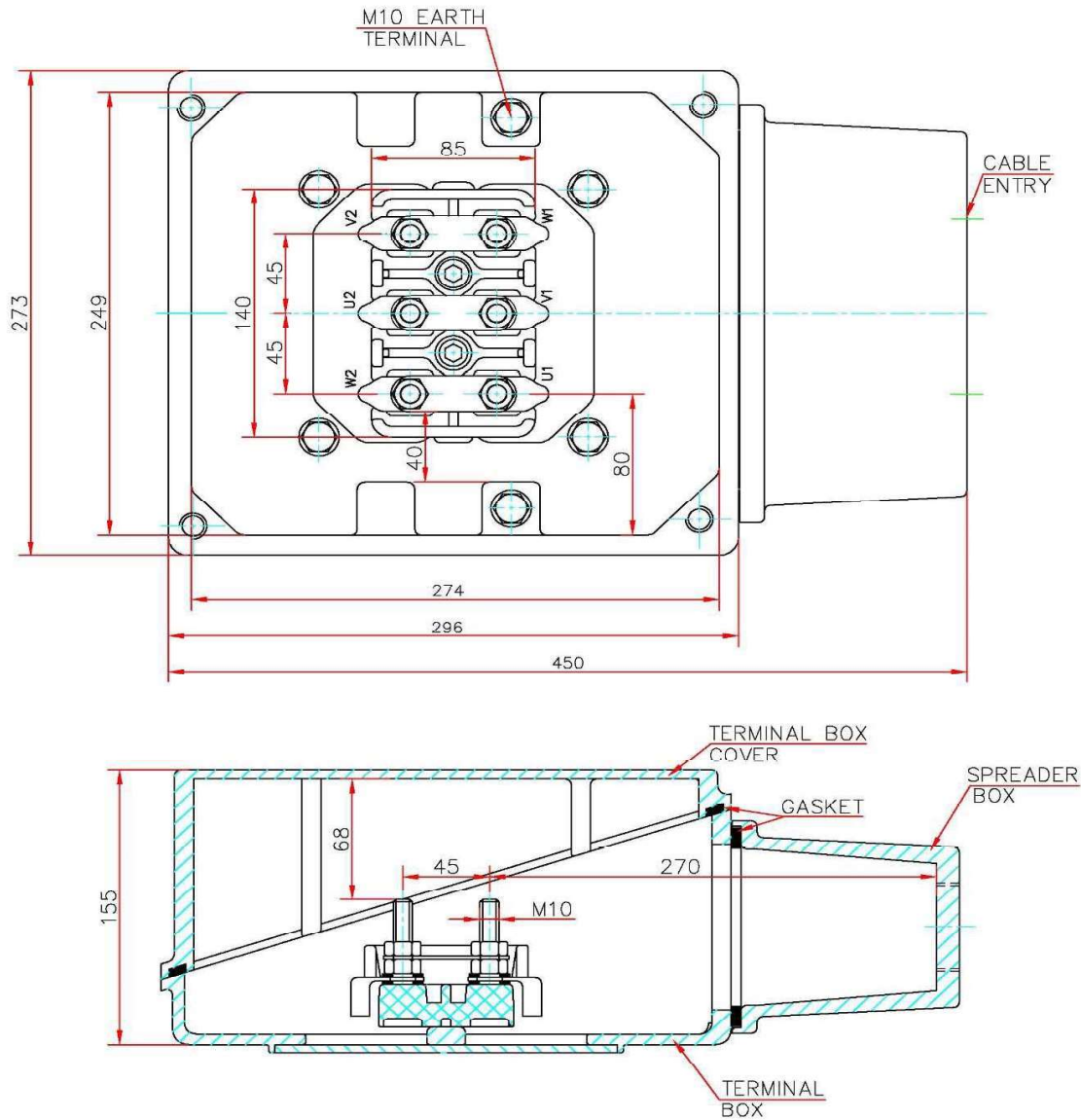
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LT Motors Division  
Ahmednagar

DRG NO

**QNPI230315/700-ND160L**

REV 0





EA9256R2

CREEPAGE = 25  
CLEARNCE = 13

MATERIAL OF T/BOX  
CAST IRON

ACCESSORIES	SPACE HEATER	THERMISTOR	RTD	
APPLICABLE	NA	NA	NA	
CABLE SIZE (ENTRY)	NA	NA	NA	
<b>MAIN CABLE SIZE</b>	<b>1 x 3C-25mm2 [Al]</b>	<b>CABLE ENTRY</b>	<b>M25X1.5P 1-No.</b>	
CUSTOMER	WBPDCL		RATED O/P kW	15
PO No			NO OF POLES	4
INDENT / ENQ No	QNPI230315/700		FRAME	ND160L
CLIENT		Tag No.		
PROJECT				
	NAME	DATE	ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED	
DRAWN BY	SBS	23-11-2023	<b>TITLE :</b> <b>TERMINAL BOX ARRANGEMENT</b>	
CHECKED BY	SBK	23-11-2023		
APPROVED BY	SA	23-11-2023		

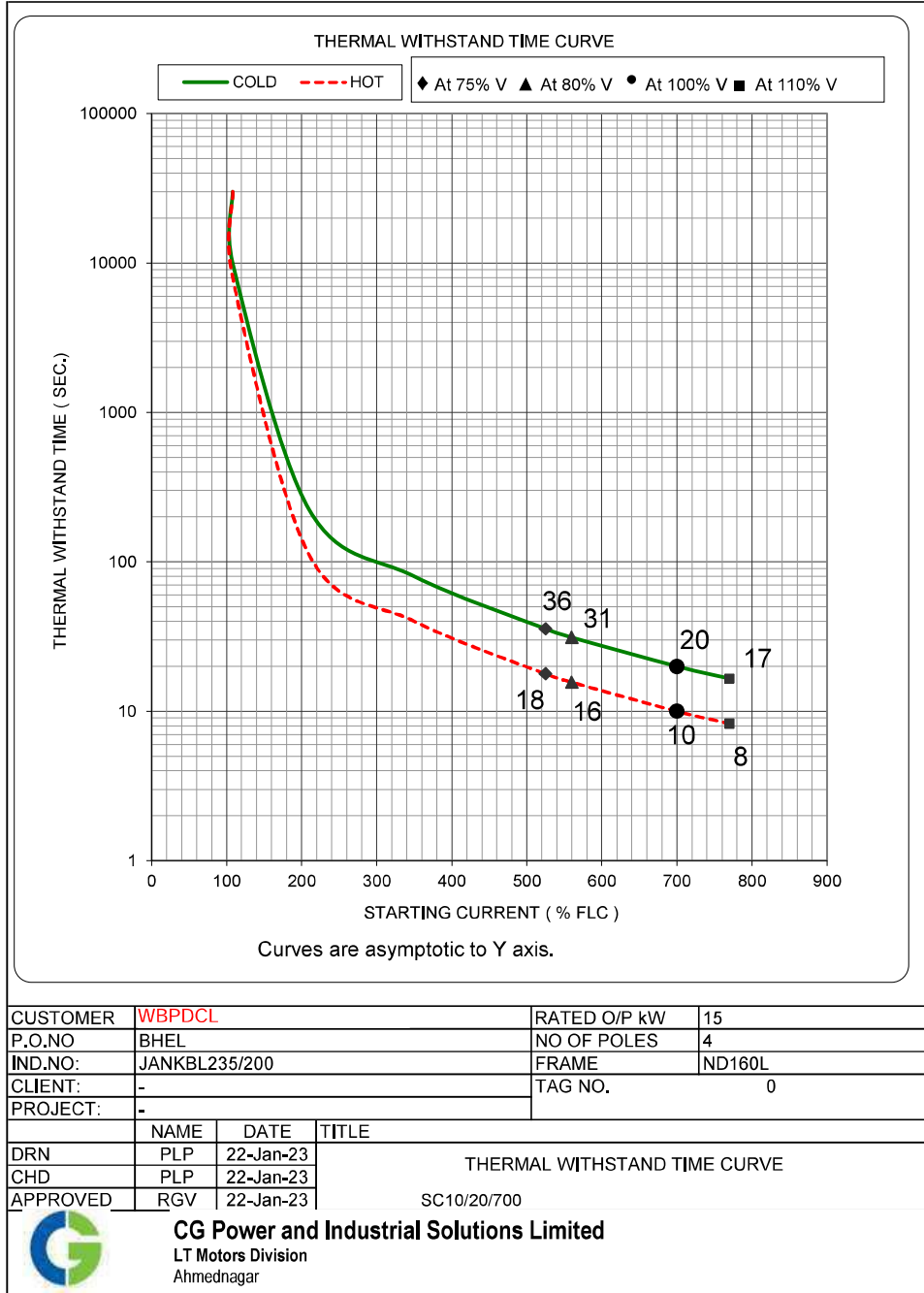


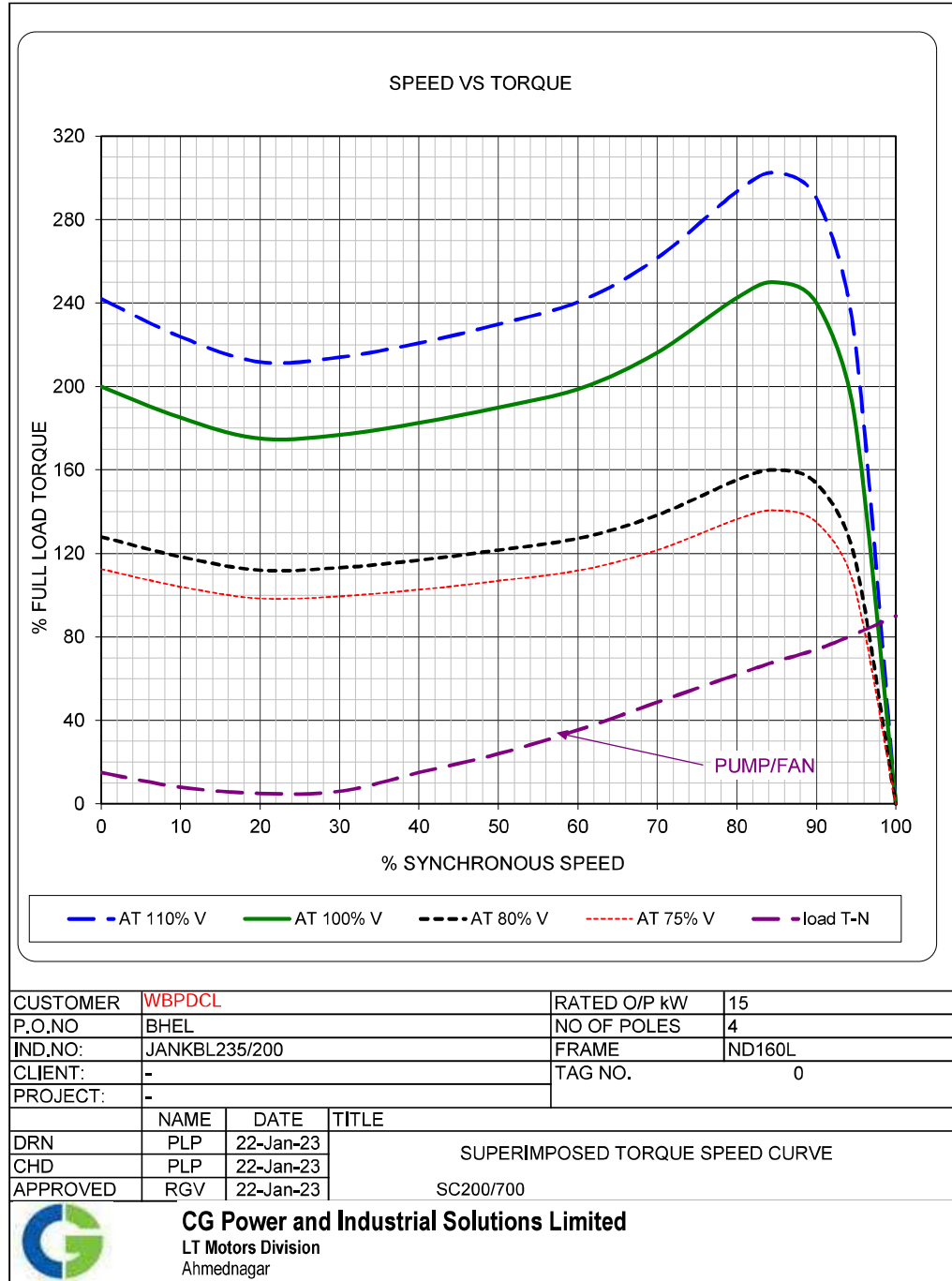
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Ahmednagar

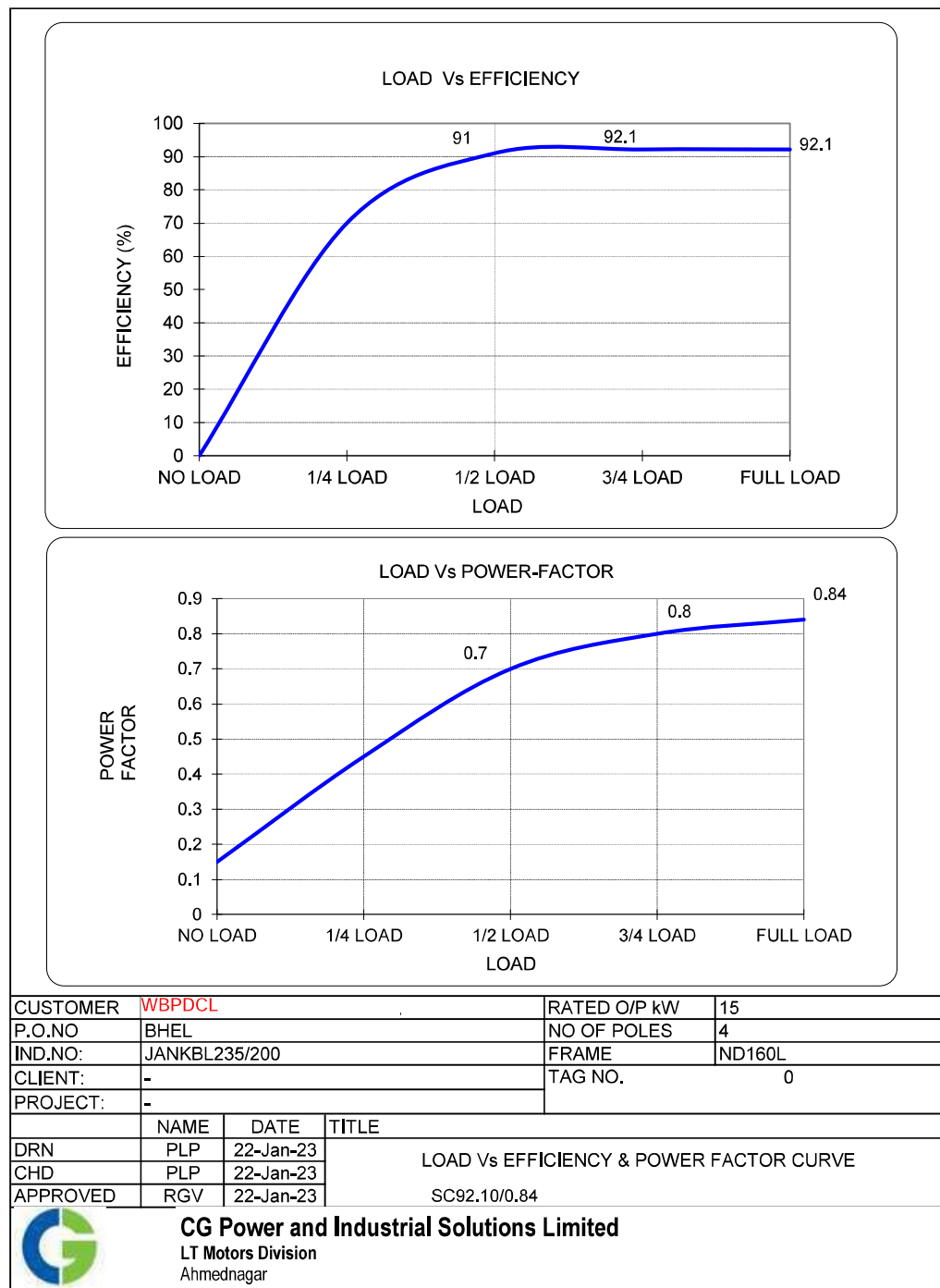
EA9256R2

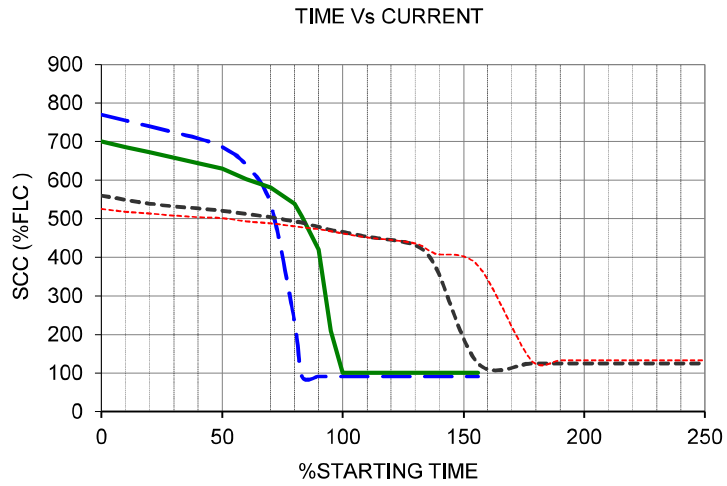
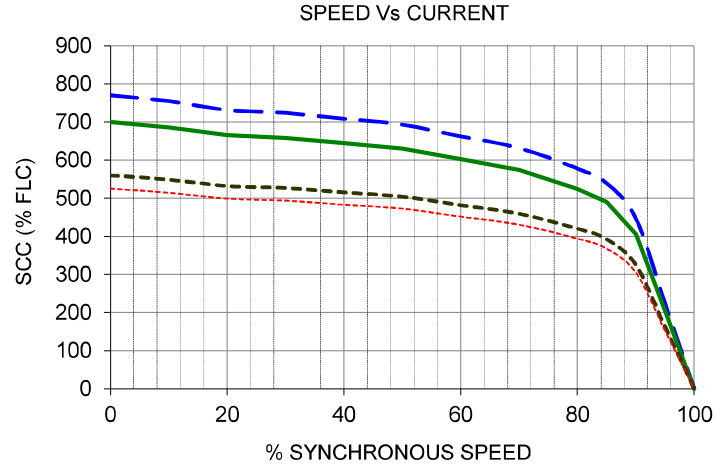
DRG No :

61911101







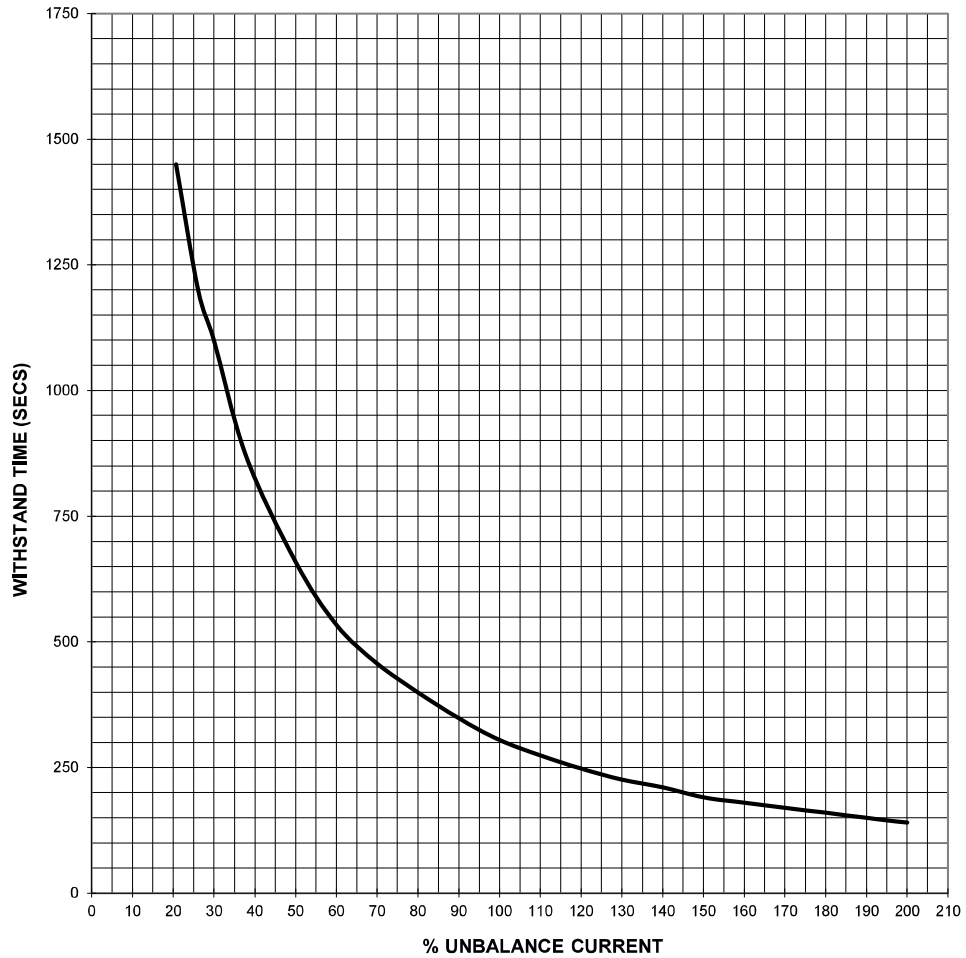


CUSTOMER	WBPDCL		RATED O/P kW	15
P.O.NO	BHEL		NO OF POLES	4
IND.NO:	JANKBL235/200		FRAME	ND160L
CLIENT:	-		TAG NO.	0
PROJECT:	-			
	NAME	DATE	TITLE	
DRN	PLP	22-Jan-23	CURRENT SPEED & CURRENT TIME CURVE SC1465/100	
CHD	PLP	22-Jan-23		
APPROVED	RGV	22-Jan-23		



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 Ahmednagar

### NEGATIVE SEQUENCE CHARACTERISTICS



CUSTOMER	WBPDCL		RATED O/P kW	15
P.O.NO	BHEL		NO OF POLES	4
IND.NO:	JANKBL235/200		FRAME	ND160L
CLIENT:	-		TAG NO.	0
PROJECT:	-			
	NAME	DATE	TITLE	
DRN	PLP	22-Jan-23	NEGATIVE SEQUENCE CHARACTERISTICS	
CHD	PLP	22-Jan-23		
APPROVED	RGV	22-Jan-23		



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