

BALDOR® • RELIANCE

Product Information Packet

M50406LR-4

400HP,1193RPM,3PH,60HZ,5010,A50212M,TEFC

Part Detail							
Revision:	E	Status:	PRD/A	Change #:		Proprietary:	No
Type:	AC	Prod. Type:	A50212M	Elec. Spec:	A50WG5702	CD Diagram:	416820-025
Enclosure:	TEFC	Mfg Plant:		Mech. Spec:		Layout:	616159-817
Frame:	5010	Mounting:	F1	Poles:	06	Created Date:	04-06-2015
Base:		Rotation:	R	Insulation:	F	Eff. Date:	08-11-2016
Leads:	3#1/0 (03 per group) 4824-6-FB					Replaced By:	
Literature:		Elec. Diagram:					

Nameplate NP3131

ENERGY EFFICIENT			SERIAL NO.		
CATALOG NO.	M50406LR-4		SPEC NO.	KGPM50406LR-4	
HP	400	RPM	1193	FRAME	5010
VOLTS	460	F.L. AMPS	454	PHASE	3
F.L.EFF.	95.5	F.L.P.F.	86	MOTOR WEIGHT	4940
DESIGN	-	NEMA CODE	G	MAX AMBIENT	40
	115	C RISE/ RES	AT	HP	460
D.E. BRG.	120RU03M30X26		O.D.E. BRG.	110BC02J30X	
WDG. THERMAL	100 OHM	QTY.	6	BRG. THERMAL	
LUBE	POLYREX EM				
VOLTS	120/240	AMPS	2.9/1.46	WATTS	350/350
CERTIFICATE OF COMP NO.	LR52580				
	NEMA NOM EFF = 95.4%				

Parts List		
Part Number	Description	Quantity
SA299842	SA KGPM50406LR-4	1.000 EA
RA286874	RA KGPM50406LR-4	1.000 EA
482406100FB	1/0 AWG, UL3374,BLACK,600V,BELDEN #37190	62.000 FT
419512002A	ID TAG, ROLL LAC	0.002 RL
041009000FD	T-LUG(ALTERNATE -7D)	9.000 EA
041009038J	INT. LEAD LUG- AMP 36948	9.000 EA
001575000BA	N/P LAC	1.000 EA
000692000SC	N/P	5.000 EA
482406100FB	1/0 AWG, UL3374,BLACK,600V,BELDEN #37190	18.000 FT
606800016D	RTD LAC	7.000 EA
069306003B	CABLE TIE 14 T&B L14509C	9.000 EA
482413004Y	#4 SLEEVING (GREEN) PER FT	12.000 FT
424731025P	HEATER LAC	2.000 EA
419512012SG	LABELS, HEAT SHRINK SET	1.000 EA
616156056R	G30-GP CAP 6222 LOCKED/CONVERSION ENG	1.000 EA
032018004BK	HHCS 5/16-18X1/2 PLATED	4.000 EA
035051022AA	BBLCW W-22	1.000 EA
616156052A	CAP NU324 ENGLISH	1.000 EA
034017013AB	LCKW 5/16 STD. PLATED	4.000 EA
616145012A	THERMAL BARRIER, LAC	1.000 EA
T-0346-24	HALF KEY BALANCE 004600044AK	1.000 EA
415915007C	GASK, LAC	1.000 EA
036150030NA	SKHD SSCR;STAT;BT-G508	3.000 EA
034690001AB	SQHDPLG, COND	2.000 EA

Parts List (continued)		
Part Number	Description	Quantity
034692001AB	HCSPP 1/8" PLATED	2.000 EA
419512012S	SHRINK MKR,	1.000 EA
034017013AB	LCKW 5/16 STD. PLATED	4.000 EA
807473001XBB	GRILL, GP - FAN COVER, G30/5000, ENGLISH	1.000 EA
807468084A	BRACKET FE GP	1.000 EA
033102013AB	NUT 5/16-18 PLATED	4.000 EA
034630002AJ	PP CPLG ODE	1.000 EA
032018036CK	HHCS 3/8-16X4-1/2 PLTD.	4.000 EA
035000001AB	ALFTG CAT.NO.1627-B PLTD	1.000 EA
807473044A	FAN COVER ODE	1.000 EA
034530048EB	PP NIPP ODE GRS DR	1.000 EA
034530072BB	PIPE NIPPLE,DE - 440-BS	1.000 EA
034630005AJ	PP CPLG ODE GRS DR	1.000 EA
034017014AB	LCKW 3/8 STD. PLATED	4.000 EA
034000016AB	WSHR .531ID 1.062OD .095	4.000 EA
032130022HB	HXSCHCS BE BRKT- b/s 4/11/14	4.000 EA
035000001F	RELIEF FTG. G/DRN	1.000 EA
417526009A	BRG SPACER - G512 BLANCHARD GRIND	1.000 EA
034600007AB	RED.BSHG.GRS/DRN	1.000 EA
032375004HB	SLRHMS 8-32X1/2 PLATED	2.000 EA
415915001A	GASK, LAC	7.000 FT
482413004Y	#4 SLEEVING (GREEN) PER FT	30.000 FT
482415000A	GREASE (MOBIL POLYREX EM)	2.652 LB
034186031GA	KEY FE FAN - G512	1.000 EA

Product Information Packet: M50406LR-4 - 400HP,1193RPM,3PH,60HZ,5010,A50212M,TEFC

034017014AB	LCKW 3/8 STD. PLATED	4.000 EA
049843019E	PLTE NNN 049843049WCA	1.000 EA
065774015A	TBRD 180-280	1.000 EA
075458000AF	CONDUIT BOX	1.000 EA
415917004A	N/P	1.000 EA
PK4110A11	SHAFT BLOCKING	1.000 EA
PK5006A08	WOOD BASE SHIPPING BASE G5012	1.000 EA
482413003Y	#3 SLEEVING (GREEN)	3.000 FT
032018006AK	HHCS 1/4-20X3/4L PLATED	4.000 EA
034530040HB	P/NIP 1-1/2X5L PLATED-b/s	1.000 EA
049843019G	PLTE 320 049843048WCA	1.000 EA
071421043G	C/BOX WDG RTD	1.000 EA
032375005HB	RHMS 8-32X5/8L PLATED	4.000 EA
032018007CK	HHCS 3/8-16X7/8L PLATED	4.000 EA
034530040HB	P/NIP 1-1/2X5L PLATED-b/s	1.000 EA
403938056A	GASK, LAC	1.000 EA
403938055A	GASK, TBOX MTG, LAC	1.000 EA
032018014DK	HHCS 1/2-13X1-3/4 PLTD	4.000 EA
034000016AB	WSHR .531ID 1.062OD .095	4.000 EA
041009003F	TERMINAL LUG	4.000 EA
032018005CK	HHCS; 3/8X5/8	4.000 EA
705547082R	FAN, LAC	1.000 EA
403938027E	GASK, LAC	1.000 EA
041009003D	T & B LUG (A116)	18.000 EA
803076025A	SPACER TERM.BOX	1.000 EA
032018016DK	HHCS 1/2-13X2L PLTD.	4.000 EA

Product Information Packet: M50406LR-4 - 400HP,1193RPM,3PH,60HZ,5010,A50212M,TEFC

709239014B	AIR INLT BAFF FC	1.000 EA
406673001E	CAP PLUG	2.000 EA
034690004AB	PPLG 1/2" PLATED	2.000 EA
034690004AB	PPLG 1/2" PLATED	2.000 EA
004793040A	BUTT SPLICE SPHTR	2.000 EA
419512012SG	LABELS, HEAT SHRINK SET	1.000 EA
034692001AB	HCSPP 1/8" PLATED	2.000 EA
034690004AB	PPLG 1/2" PLATED	4.000 EA
034690002AB	"unbulked" PPLG 1/4" PLTD.	4.000 EA
034691008AB	1 1/2 PIPE PLUG- BIN STOCK	2.000 EA
807474043A	BRACKET MACH NU324	1.000 EA
032018036CK	HHCS 3/8-16X4-1/2 PLTD.	4.000 EA
035000001AB	ALFTG CAT.NO.1627-B PLTD	1.000 EA
032018004AK	HHCS 1/4-20X1/2 PLATED	4.000 EA
710607005WPA	THRM BARRIER BRKT, LAC	1.000 EA
034530040EB	PP NIPP DE GRS DR	1.000 EA
034630002AJ	PP CPLG ODE	1.000 EA
034630005AJ	PP CPLG ODE GRS DR	1.000 EA
034017014AB	LCKW 3/8 STD. PLATED	4.000 EA
406673001E	CAP PLUG	2.000 EA
032130022HB	HXSCHCS BE BRKT- b/s 4/11/14	4.000 EA
032130012HB	HXSCHCS BE BRKT	1.000 EA
MP1011A01	4 MIL X 12FT X 100 FT POLYETHYLENE	0.100 RL
034530064BB	P/NIP 1/4X8 PLATED	1.000 EA
035000001F	RELIEF FTG. G/DRN	1.000 EA
034017012AB	LCKW 1/4 STD. PLATED	4.000 EA

Product Information Packet: M50406LR-4 - 400HP,1193RPM,3PH,60HZ,5010,A50212M,TEFC

415045002W	SLGR V-RING 4.53-4.92	1.000 EA
034600007AB	RED.BSHG.GRS/DRN	1.000 EA
415916013L	T/BLK S/HTR LAC	2.000 EA
807470006A	AIR DEFL B/E BRKT	1.000 EA
034017014AB	LCKW 3/8 STD. PLATED	4.000 EA
032018008CK	HHCS 3/8-16X1L PLATED	4.000 EA
034000012AB	WSHR 1/4 STD. PLATED	4.000 EA
415915007B	GASK, 46" LAC	1.000 EA
705500324X	TERMINAL BOX WELDMENT 19X19X14	1.000 EA
705500324F	GASK, TERM BOX, LAC, FRONT COVER	1.000 EA
705500324D	CVR T/BOX FRONT	1.000 EA
705500324G	GASK, TERM BOX, LAC, BOTTOM COVER	1.000 EA
705500324E	BOTTOM COVER	1.000 EA
033519006MC	SHWHTS, 5/16-18 THREAD CUTTING	30.000 EA
418199008B	N/P	1.000 EA
402558004A	BRDRN- added to b/s 5/31	1.000 EA
419306099AG	N/P - MAKE IN ASSEMBLY	1.000 EA
419306099B	N/P - MAKE IN ASSEMBLY	1.000 EA
419306099A	N/P - MAKE IN ASSEMBLY	1.000 EA
034691004AB	1/2 PIPE PLUG	2.000 EA
406673000F	PPLG	1.000 EA
406673000B	PPLG	1.000 EA
412027034A	SUPPORT(T.B.) - G512	1.000 EA
415917001A	RTD TAG	4.000 EA
415916013C	T/BLK S/HTR LAC	1.000 EA
075459000A	C/BOX CVR W75459	1.000 EA

Product Information Packet: M50406LR-4 - 400HP,1193RPM,3PH,60HZ,5010,A50212M,TEFC

032130006AB	HSCHS 1/4-20X3/4L PLTD.	2.000 EA
065564000A	GASKET	1.000 EA
071422000A	C/BOX W 071422000	1.000 EA
047993000B	GASKET LAC	1.000 EA
032130007AB	HXSCHCS C/B CVR-449	10.000 EA
034180064LA	KEY DRV END EXT	1.000 EA
NP3131	"BALDOR ONLY" INDUSTRIAL MOTOR, SS,	1.000 EA
406255394A	N/P	1.000 EA
000692000EF	CAUTION LABEL	1.000 EA
482403000BVZ	WILCO NO. 789.201 Per Eng use MG1200G96-	1.000 GA
609911003A	NAMEPLATE SUPPORT	1.000 EA
033775004EA	DRSCR #6-1/4 304 S.S.	10.000 EA
000692000CL	N/P	1.000 EA
000692000FR	WARNING, HIGH VOLTAGE LABEL	1.000 EA
406255121B	N/P	1.000 EA
406991001SL	INSTRUCTION MANUAL	1.000 EA
412043012C	PLUG - 210	1.000 EA
LB1532	BALDOR LABEL, 12.00 LONG X 2.00 HIGH	2.000 EA

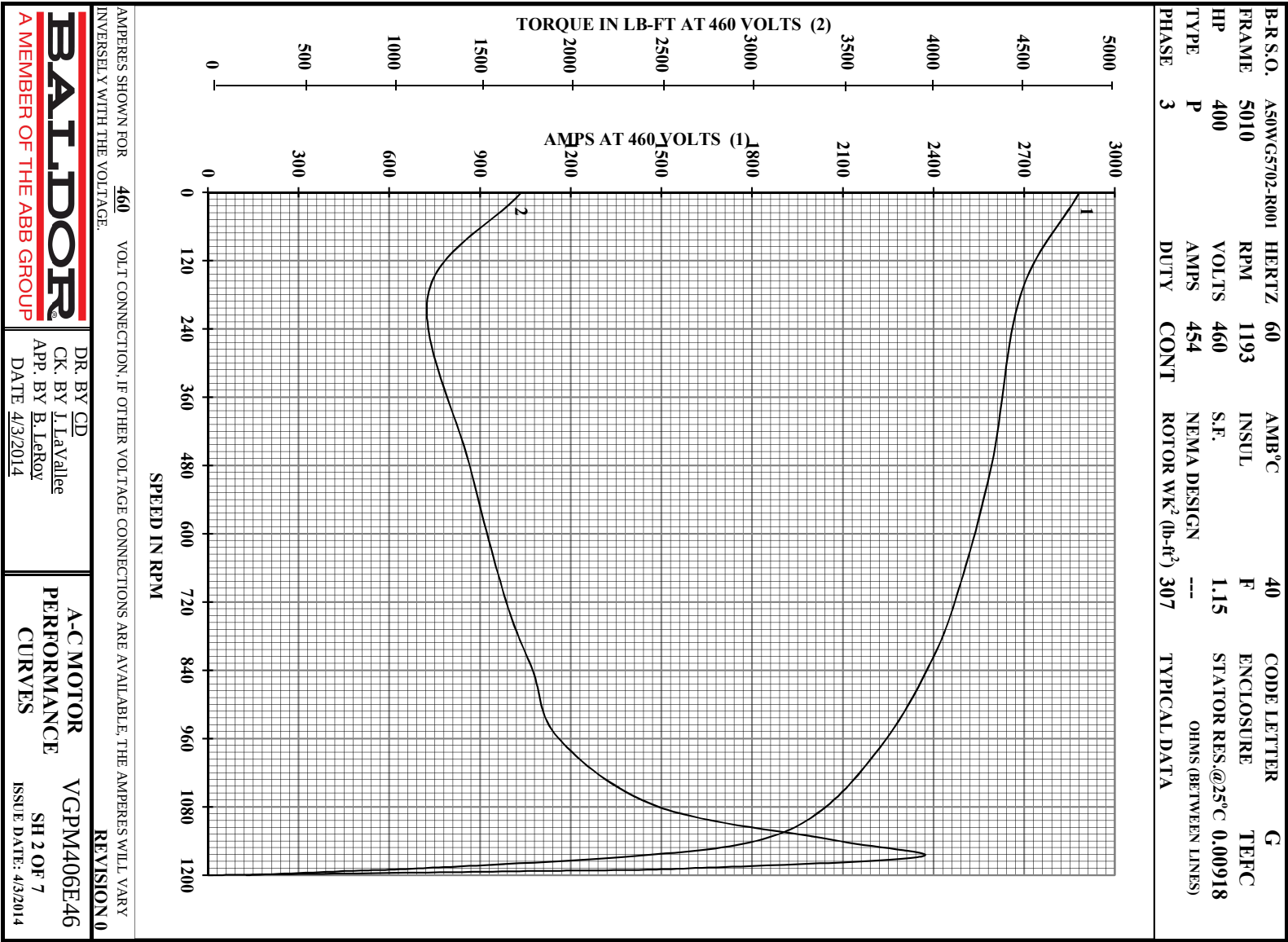
BALDOR-RELIANCE	FRAME	HP	TYPE	PHASE	HERTZ	RPM
SALES ORDER						
A50WG5702-R001	5010	400	P	3	60	1193
VOLTS	AMPS	DUTY	AMB°C	INSUL	S.F.	NEMA DESIGN
460	454	CONT	40	F	1.15	---
CODE LETTER	ENCL.	ROTOR WK ² (lb-ft ²)	STATOR RES.@25°C OHMS (BETWEEN LINES)	TYPICAL DATA		
G	TEFC	307	0.00918			
PERFORMANCE						
LOAD	HP	AMPERES	RPM	% POWER FACTOR	% EFFICIENCY	
NO LOAD	0	128.5	1200	5.2	0.0	
1/4	100	173.6	1198	58.3	92.7	
2/4	200	253.7	1197	77.5	95.2	
3/4	300	349.4	1195	84.0	95.7	
4/4	400	454.3	1193	86.3	95.5	
5/4	500	569.8	1191	86.4	95.1	
6/4	600	696.5	1188	85.4	94.5	
SPEED TORQUE						
	RPM	TORQUE % FULL LOAD	TORQUE LB-FT	AMPERES		
LOCKED ROTOR	0	98	1730	2882.7		
PULL UP	180	69	1214	2687.9		
BREAKDOWN	1168	225	3967	1384.8		
FULL LOAD	1193	100	1761	454.3		
AMPERES SHOWN FOR 460 VOLT CONNECTION(S). IF OTHER VOLTAGE CONNECTIONS ARE AVAILABLE, THE AMPERES WILL VARY INVERSELY WITH THE VOLTAGE.						
REVISION 0						
BALDOR		DR. BY CD CK. BY J.LaVallee APP. BY B. LeRoy DATE 4/3/2014		A-C MOTOR VGPM406E46 SH 1 OF 7 ISSUE DATE: 4/3/2014		
A MEMBER OF THE ABB GROUP						

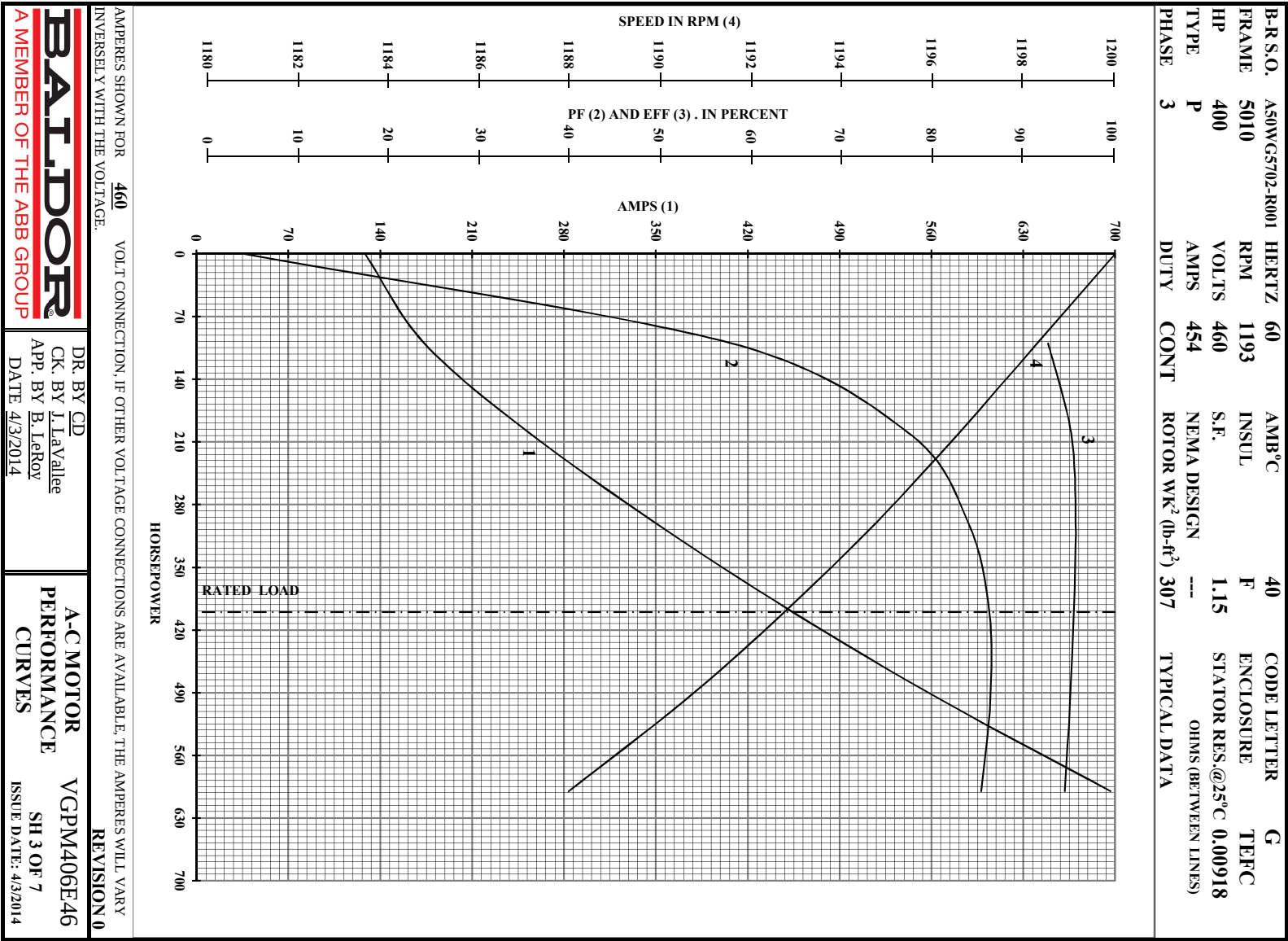
REVISION 0

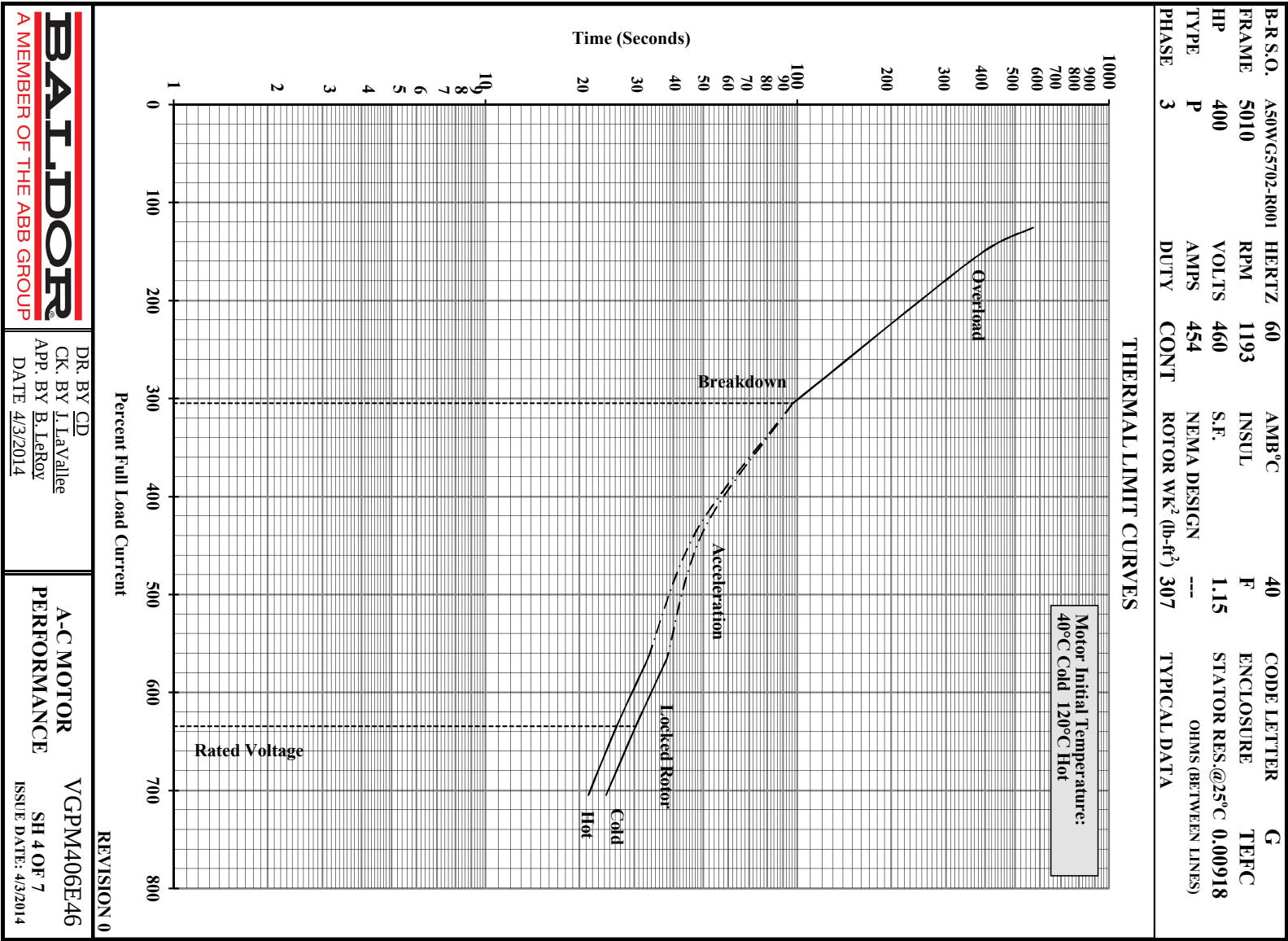
BALDOR
 A MEMBER OF THE ABB GROUP

 DR. BY CD
 CK. BY J LaVallee
 APP. BY B. LeRoy
 DATE 4/3/2014

 A-C MOTOR
 PERFORMANCE
 VCPM406E46
 SH 1 OF 7
 ISSUE DATE: 4/3/2014







BALDOR
A MEMBER OF THE ABB GROUP

DR. BY CD
CK. BY J. LaVallee
APP. BY B. LeRoy
DATE 4/3/2014

A-C MOTOR
PERFORMANCE
VGPM406E46
SH 4 OF 7
ISSUE DATE: 4/3/2014

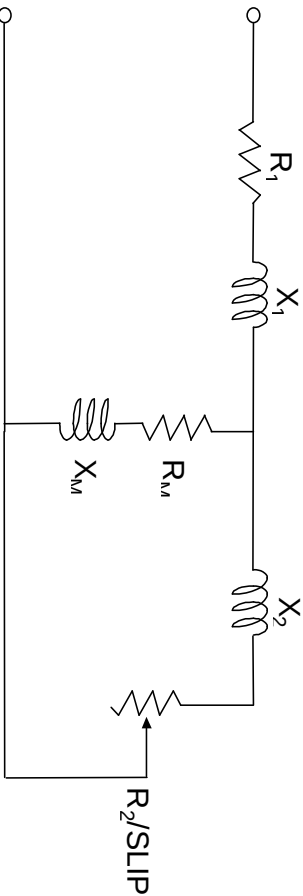
REVISION 0

B-R-S.O.	A50WG5702-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1193	INSUL	F	ENCLOSURE	TEFC
HP	400	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00918
TYPE	P	AMPS	454	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	307	TYPICAL DATA	

EQUIVALENT CIRCUIT DATA

(Per Unit, Per Phase)

FULL LOAD				LOCKED ROTOR			
R ₁	0.00847	X ₁	0.08521	R ₁	0.00685	X ₁	0.07322
R ₂	0.00503	X ₂	0.13674	R ₂	0.01816	X ₂	0.05429
R _m	0.08037	X _m	2.88493	R _m	0.28650	X _m	2.58169
BASE OHMS			0.70900	BASE VOLTS			266
SC Time Constant			0.067 Sec	X'' = X _s			0.12751
OC Time Constant			1.593 Sec	X/R Ratio			12.55



Parallel Equivalent			
FL R_m ' pu	103.6366	LR R_m ' pu	23.55046
FL X_m ' pu	2.88717	LR X_m ' pu	2.61348

R_1 = Stator dc resistance
 R_2 = Rotor resistance
 R_m = Core loss resistance
 SC = Short circuit
 OC = Open circuit
 X_1 = Stator leakage reactance
 X_2 = Rotor leakage reactance
 X_m = Magnetizing reactance
 FL = Full load
 LR = Locked rotor

$X'' = X_s$ = Subtransient reactance

REVISION 0

BALDOR
A MEMBER OF THE ABB GROUP

DR. BY CD
 CK. BY J. LaVallee
 APP. BY B. LeRoy
 DATE 4/3/2014

A-C MOTOR PERFORMANCE CURVES
 VCPM406E46
 SH 5 OF 7
 ISSUE DATE: 4/3/2014

B-R.S.O.	A50WG5702-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1193	INSUL	F	ENCLOSURE	TEFC
HP	400	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00918
TYPE	P	AMPS	454	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	307	TYPICAL DATA	

Recommended Winding and Bearing Temperatures

Stator Winding	Class B	Class F
Maximum Running Total Temperature	130 °C	155 °C
Alarm Total Temperature	135 °C	160 °C
Trip Total Temperature	145 °C	170 °C

Sleeve Bearings - Oil Lubricated	Bearing	Oil
Typical Running Total Temperature		
Alarm Total Temperature	93 °C	60 °C
Trip Total Temperature	96 °C	70 °C
	98 °C	75 °C

Anti-Friction Bearings - Grease Lubricated	Bearing	Grease
Typical Running Total Temperature		
Alarm Total Temperature	90 °C	80 °C
Trip Total Temperature	110 °C	100 °C
	120 °C	110 °C

Recommended Vibration Settings for Standard Motors

Speed (rpm)	Shaft Vibration (mils)		Bracket Vibration (mils)	
	Alarm	Shutdown	Alarm	Shutdown
3600	2.50	3.00	1.00	1.50
1800	3.00	3.50	2.00	2.50
1200	3.00	3.50	2.00	2.50
900 & Lower	3.00	3.50	2.00	2.50
			Bracket Vibration (in/sec pk)	
			Alarm	Shutdown
All Speeds			0.20*	0.30*

* 0 to 1000 Hz Spectrum

REVISION 0

BALDOR
 A MEMBER OF THE ABB GROUP

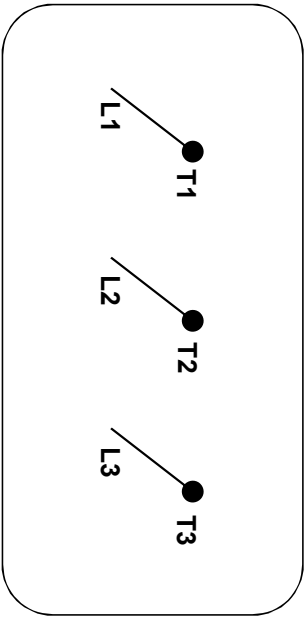
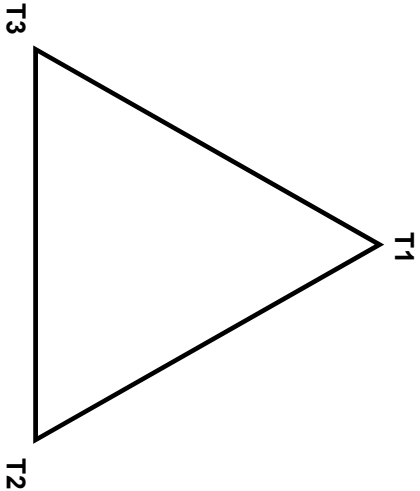
 DR. BY CD
 CK. BY J. LaVallee
 APP. BY B. LeRoy
 DATE 4/3/2014

 A-C MOTOR PERFORMANCE CURVES
 VGP406E46
 SH 6 OF 7
 ISSUE DATE: 4/3/2014

B-R.S.O.	A50WG5702-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1193	INSUL	F	ENCLOSURE	TEFC
HP	400	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00918
TYPE	P	AMPS	454	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	307	TYPICAL DATA	

A-C MOTOR
CONNECTION DIAGRAM

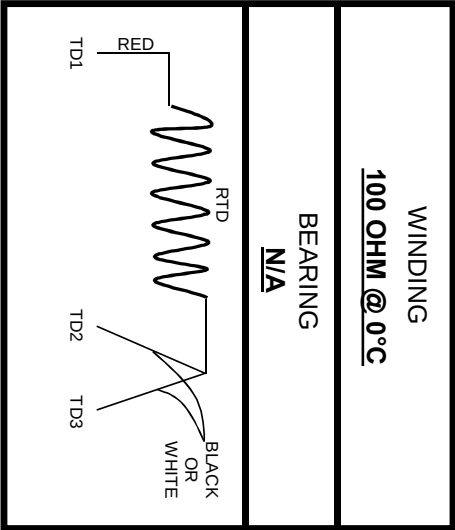
STANDARD 3 LEAD DELTA CONNECTED



(N.P. 1575-BA)

BALDOR A MEMBER OF THE ABB GROUP	DR. BY CD	A-C MOTOR	VGPM406E46
	CK. BY J.LaVallee	PERFORMANCE	SH 7 OF 7
	APP. BY B.LeRoy	CURVES	ISSUE DATE: 4/3/2014
REVISION 0			
DATE 4/3/2014			

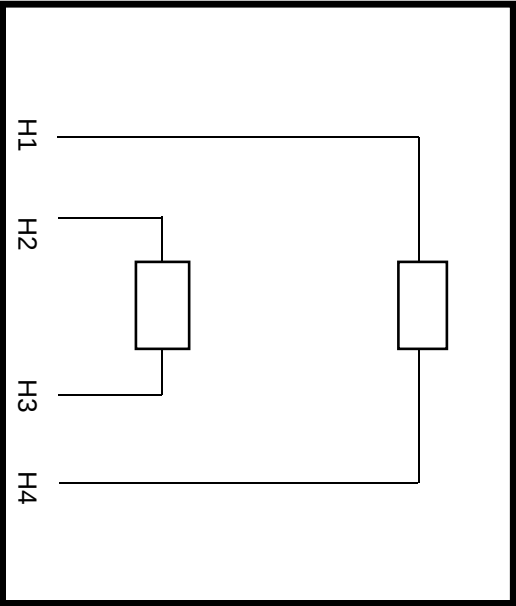
RESISTANCE TEMPERATURE
CONNECTION DIAGRAM



BALDOR BALDOR • DOUG • RELIANCE	DR. BY	Chris Stockton	A-C MOTOR AUXILIARY CONNECTIONS	G30_GP SHEET 1 OF 2
	CK. BY	Chris Stockton		
	APP. BY	Joe Hillhouse		
	DATE	3/5/2014		

SPACE HEATER CONNECTION

VOLTS 120/240 AMPS 2.9/1.46 WATTS 350/350
PHASE 1 HZ. 60



HEATER CONNECTIONS

LOW VOLTAGE - PARALLEL

- L1 - H1 & H2
- L2 - H3 & H4

HIGH VOLTAGE - SERIES

- L1 - H1
- L2 - H2
- CONNECT H3 TO H4



DR. BY Chris Stockton
CK. BY Chris Stockton
APP. BY Joe Hillhouse
DATE 3/5/2014

A-C MOTOR
AUXILIARY
CONNECTIONS

G30_GP
SHEET 2 OF 2

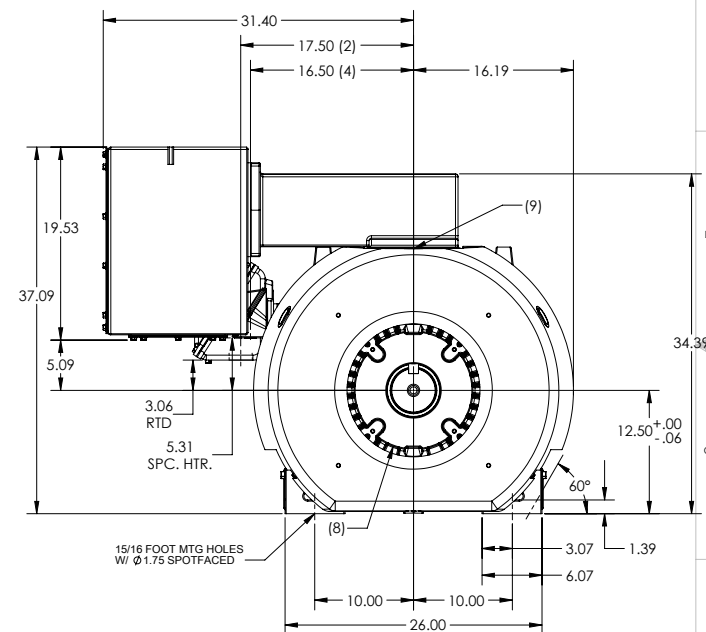
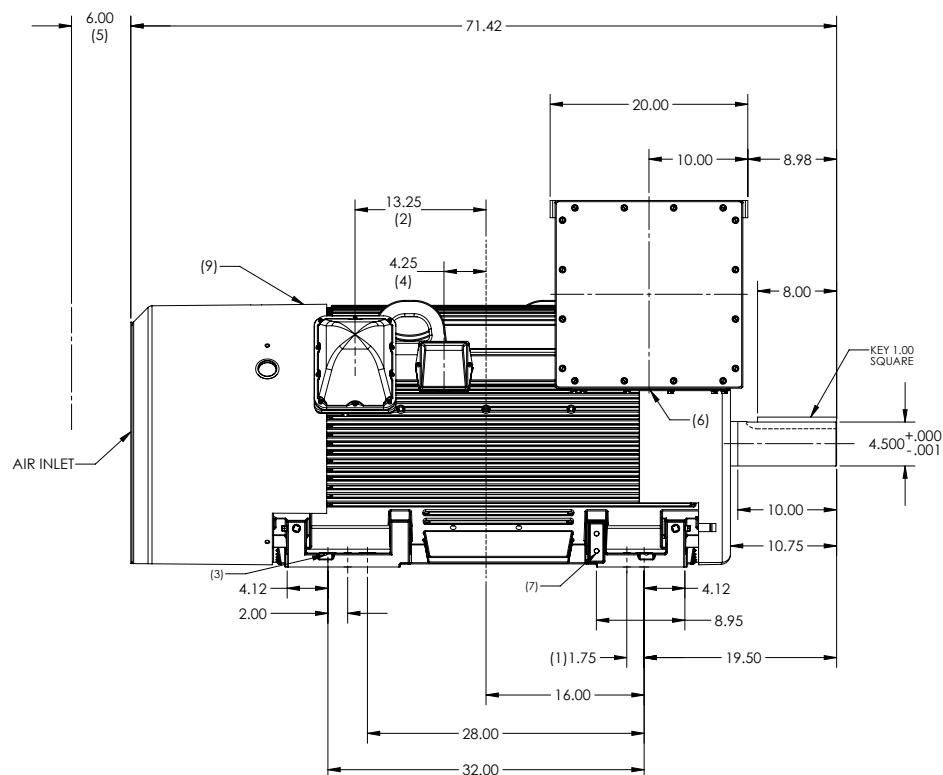
GENERAL PURPOSE STOCK ALTERNATING CURRENT MOTORS

616159-817

ENCLOSURE: TOTALLY ENCLOSED
MOUNTING: FOOT

SQUIRREL-CAGE INDUCTION
1200 RPM (MAX)
FRAME G5010L / LR
(FIELD CONVERTIBLE BELT/COUPLE)
INCLUDES G5009L FRAME MOUNTING HOLES

COOLING: FAN COOLED
ANTI-FRICTION BEARINGS
ENGLISH HARDWARE
OVERSIZE MAIN CONDUIT BOX



NOTES:

- (4) 3/4-10 JACKSCREW HOLES
- 2.0 NPT FOR WINDING TEMPERATURE DETECTOR LEADS
- 11/32 DOWEL PIN PILOT HOLES, 1 HOLE EACH FOOT
- 3/4 NPT FOR MOTOR SPACE HEATER LEADS
- WALL OR OBSTRUCTION MUST NOT ENCROACH ON AIR INLET SPACE
- CUSTOMER TO PROVIDE HOLE FOR MOTOR POWER LEADS
- TWO GROUND PADS DIAGONALLY OPPOSITE EACH OTHER, TAPPED 1/2-13
- 1/8 NPT PROVISIONS FOR BEARING TEMPERATURE DETECTOR LEADS.
- GREASE POINT

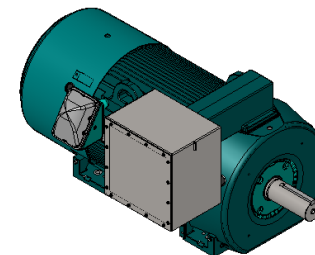
CONDUIT BOX LOCATED ON OPPOSITE SIDE WHEN F-2.
IF MOUNTING CLEARANCE DETAILS ARE REQUIRED, CONSULT FACTORY.
MAXIMUM PERMISSIBLE SHAFT RUNOUT WHEN MEASURED AT END OF
STANDARD SHAFT EXTENSION IS .003" T.I.R.

WEIGHT (LBS): 5600 (MAXIMUM)

DIMENSIONS ARE IN INCHES

CATALOG #S

M50356L-4 EM50356L-4
M50356LR-4 EM50356LR-4
M50406L-4
M50406LR-4
M50256LR-2340
M50306LR-2340
M50356LR-2340



L18-651919

REV. DESC: UPDATE BOX TO FROM 19X19X12 TO 19X19X14
REV: J VERSION: 09 REVISED: 01/51/19 09/16/2016 TDR: 000000997103
MODEL NO. 616159-817 REF: -
BY: MGHMTT Material: -

BALDOR

G5010LR,TEFC,S/N,CONV,1200,A/F,F1,19X19X

