

BALDOR® • RELIANCE

Product Information Packet

ECP50504L-4

500HP,1789RPM,3PH,60HZ,5010,TEFC,F1

Part Detail							
Revision:	A	Status:	PRD/A	Change #:		Proprietary:	No
Type:	AC	Prod. Type:	A50192M	Elec. Spec:	A50WG8701	CD Diagram:	416820-025
Enclosure:	TEFC	Mfg Plant:		Mech. Spec:		Layout:	616159-893
Frame:	5010	Mounting:	F1	Poles:	04	Created Date:	03-10-2016
Base:		Rotation:	R	Insulation:	F	Eff. Date:	11-02-2016
Leads:	3#1 (04 per group) 4824-6-FB					Replaced By:	
Literature:		Elec. Diagram:					

Nameplate 000613007QB

ENERGY EFFICIENT			SERIAL NO.		
CATALOG NO.	ECP50504L-4		SPEC NO.	KECP50504L-4A	
HP	500	RPM	1789	FRAME	24BG5010Z
VOLTS	460	F.L. AMPS	561	HZ	60
NEMA NOM. EFF	96.2	F.L.P.F.	86	PHASE	3
DESIGN	-	NEMA CODE	G	TYPE	
		C RISE/	115	AT	
D.E. BRG.	110BC03J30X		HP	575	AMPS
WDG. THERMAL	100 OHM PLATINUM		QTY.	6	
LUBE	POLYREX EM		O.D.E. BRG.	110BC02J30X	
VOLTS	120	AMPS	2.0	WATTS	236
CERTIFICATE OF COMP NO.	LR52258, CC010A		QTY	4	

Nameplate 000692000UY

T. CODE	T2C
CL I DIV 2 GR	C & D
MOTOR I.D. NO.	

CL II DIV 2 GR

Parts List		
Part Number	Description	Quantity
SA320085	SA KECP50504L-4A	1.000 EA
RA307803	RA KECP50504L-4A	1.000 EA
482406001FB	01 AWG,UL3374,BLACK,600V,BELDEN #37101	81.000 FT
419512002A	ID TAG, ROLL LAC	0.002 RL
041009000GP	TERMINAL LUG, SOLDERLESS, T&B	12.000 EA
041009038J	INT. LEAD LUG- AMP 36948	12.000 EA
001575000BA	N/P LAC	1.000 EA
000692000SC	N/P	5.000 EA
482406001FB	01 AWG,UL3374,BLACK,600V,BELDEN #37101	24.000 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
419512012SG	LABELS, HEAT SHRINK SET	1.000 EA
616156062R	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
609233020R	INNER CAP BE	1.000 EA
034017013AB	LCKW 5/16 STD. PLATED	4.000 EA
616145012A	THERMAL BARRIER, LAC	1.000 EA
417213004A	CLAMP	4.000 EA
417213019A	CLAMP SPACE HTRS.	4.000 EA
417213019XC	CLAMP SPACE HTRS.	4.000 EA
067236000DU	SPACE HEATER, LAC	1.000 EA
067236013M	SPACE HEATER	1.000 EA

Parts List (continued)		
Part Number	Description	Quantity
067236000FK	SPACE HEATER, LAC	2.000 EA
032018008BK	HHCS 5/16-18X1L PLATED	8.000 EA
032018012BK	HHCS 5/16-16X1-1/2PLATED	4.000 EA
032018010BK	HHCS 5/16-18X1-1/4 PLTD.	4.000 EA
034017013AB	LCKW 5/16 STD. PLATED	12.000 EA
T-0346-24	HALF KEY BALANCE 004600044AK	1.000 EA
415915007C	GASK, LAC	1.000 EA
041009000FG	T/LUG GRND. STATOR	2.000 EA
032018005DK	HHCS 1/2-13X5/8 PLATED	1.000 EA
034017016AB	LCKW 1/2" PLATED	1.000 EA
482406400FB	4/0 AWG,UL3374,BLACK,600V,BELDEN # 37140	6.000 FT
036150030NA	SKHD SSCR;STAT;BT-G508	2.000 EA
034000016AB	WSHR .531ID 1.062OD .095	1.000 EA
034690001AB	SQHDPLG, COND	2.000 EA
034692001AB	HCSPP 1/8" PLATED	2.000 EA
419512012S	SHRINK MKR,	1.000 EA
034017013AB	LCKW 5/16 STD. PLATED	4.000 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
807473001XBA	FAN COVER GP - FE STD NOISE VIB PRV, ENG	1.000 EA
034530048EB	PP NIPP ODE GRS DR	1.000 EA

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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
417526016A	BRG SPACER	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
417213019D	MTG PLT SP HTR	1.000 EA
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
034017014AB	LCKW 3/8 STD. PLATED	4.000 EA
034017013AB	LCKW 5/16 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
482406010FS	WIRE #10, SP HTR ORDER BY THE FOOT	24.000 FT
482413003Y	#3 SLEEVING (GREEN)	5.000 FT
032018006AK	HHCS 1/4-20X3/4L PLATED	4.000 EA
034530048HB	PP NIPP WRTD	1.000 EA
034530040HB	P/NIP 1-1/2X5L PLATED-b/s	1.000 EA
049843019G	PLTE 320 049843048WCA	1.000 EA

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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
403938056A	GASK, LAC	1.000 EA
403938055A	GASK, TBOX MTG, LAC	1.000 EA
041009003F	TERMINAL LUG	2.000 EA
041009004C	T/LUG SP HTR CONN	10.000 EA
032018005CK	HHCS; 3/8X5/8	4.000 EA
705547084R	FAN, LAC	1.000 EA
403938027E	GASK, LAC	1.000 EA
041009003D	T & B LUG (A116)	18.000 EA
803076067A	SPACER TERM.BOX CSA GRD HOLES ENG	1.000 EA
032018016DK	HHCS 1/2-13X2L PLTD.	4.000 EA
709239013B	AIR INLT BAFF FC -13A	1.000 EA
412043012C	PLUG - 210	1.000 EA
406673001E	CAP PLUG	2.000 EA
402558011A	BREATHER-DRAIN	1.000 EA
402558011A	BREATHER-DRAIN	1.000 EA
034690004AB	PPLG 1/2" PLATED	2.000 EA
034690004AB	PPLG 1/2" PLATED	2.000 EA
419512012SG	LABELS, HEAT SHRINK SET	1.000 EA
034692001AB	HCSPP 1/8" PLATED	2.000 EA
482406010DB	#10 LEAD CABLE	1.000 FT
417311007A	GROUND STUD, BRG.	1.000 EA
034690004AB	PPLG 1/2" PLATED	4.000 EA
034690002AB	"unbulked" PPLG 1/4" PLTD.	4.000 EA

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034691008AB	1 1/2 PIPE PLUG- BIN STOCK	2.000 EA
807474041A	BRACKET BE GP	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
034530064BB	P/NIP 1/4X8 PLATED	1.000 EA
035000001F	RELIEF FTG. G/DRN	1.000 EA
041009000Z	T/LUG LEADS T&B C10-14	2.000 EA
482413004Y	#4 SLEEVING (GREEN) PER FT	2.000 FT
034017012AB	LCKW 1/4 STD. PLATED	4.000 EA
415045002D	SLGR - 440	1.000 EA
034600007AB	RED.BSHG.GRS/DRN	1.000 EA
415916013L	T/BLK S/HTR LAC	2.000 EA
406744033A	CONNECTOR, CABLE	1.000 EA
807470018XE	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

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034017012AC	LCKW 1/4" 316 S.S.	1.000 EA
415915007B	GASK, 46" LAC	1.000 EA
034000016AB	WSHR .531ID 1.062OD .095	1.000 EA
034000016AB	WSHR .531ID 1.062OD .095	4.000 EA
402558011D	DRAIN PLUG	1.000 EA
032018014DK	HHCS 1/2-13X1-3/4 PLTD	4.000 EA
705500324S	TERMINAL BOX WELDMENT 19X19X14 W/6" NPT	1.000 EA
032018004DK	HHCS,DRIP COVER	1.000 EA
034017016AB	LCKW 1/2" PLATED	1.000 EA
418199008B	N/P	1.000 EA
041009000RA	T/LUG GRND. STATOR	1.000 EA
033102012AE	NUT 1/4-20/316S.S-449	2.000 EA
419512004A	LEAD BAND, CABLE	1.000 EA
032018004AG	HHCS 1/4-20X1/2 316 S.S.	1.000 EA
402558004A	BRDRN- added to b/s 5/31	1.000 EA
419306099A	N/P - MAKE IN ASSEMBLY	1.000 EA
419306099B	N/P - MAKE IN ASSEMBLY	1.000 EA
419306099D	N/P - MAKE IN ASSEMBLY	1.000 EA
034691004AB	1/2 PIPE PLUG	2.000 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
034691009AB	2 PIPE PLUG-GO510	1.000 EA
075459000A	C/BOX CVR W75459	1.000 EA
032130006AB	HSHCS 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
482418000L	SEALANT SILICONE	5.050 OZ
MP1011A01	4 MIL X 12FT X 100 FT POLYETHYLENE	0.100 RL
PK5006A09	WOOD BASE SHIPPING BASE	1.000 EA
034180064LA	KEY DRV END EXT	1.000 EA
000613007QB	SS DUTY MASTER CSA-C US	1.000 EA
PK4110A11	SHAFT BLOCKING	1.000 EA
406255092A	NAME PLATE (PURCH)	1.000 EA
406255394A	N/P	1.000 EA
LB1532	BALDOR LABEL, 12.00 LONG X 2.00 HIGH	2.000 EA
000692000EF	CAUTION LABEL	1.000 EA
000692000EP	N/P LAC	2.000 EA
MG1200G96	POLANE S PLUS – MED. CHARCOAL METALLIC	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
000692000UY	N/P	1.000 EA

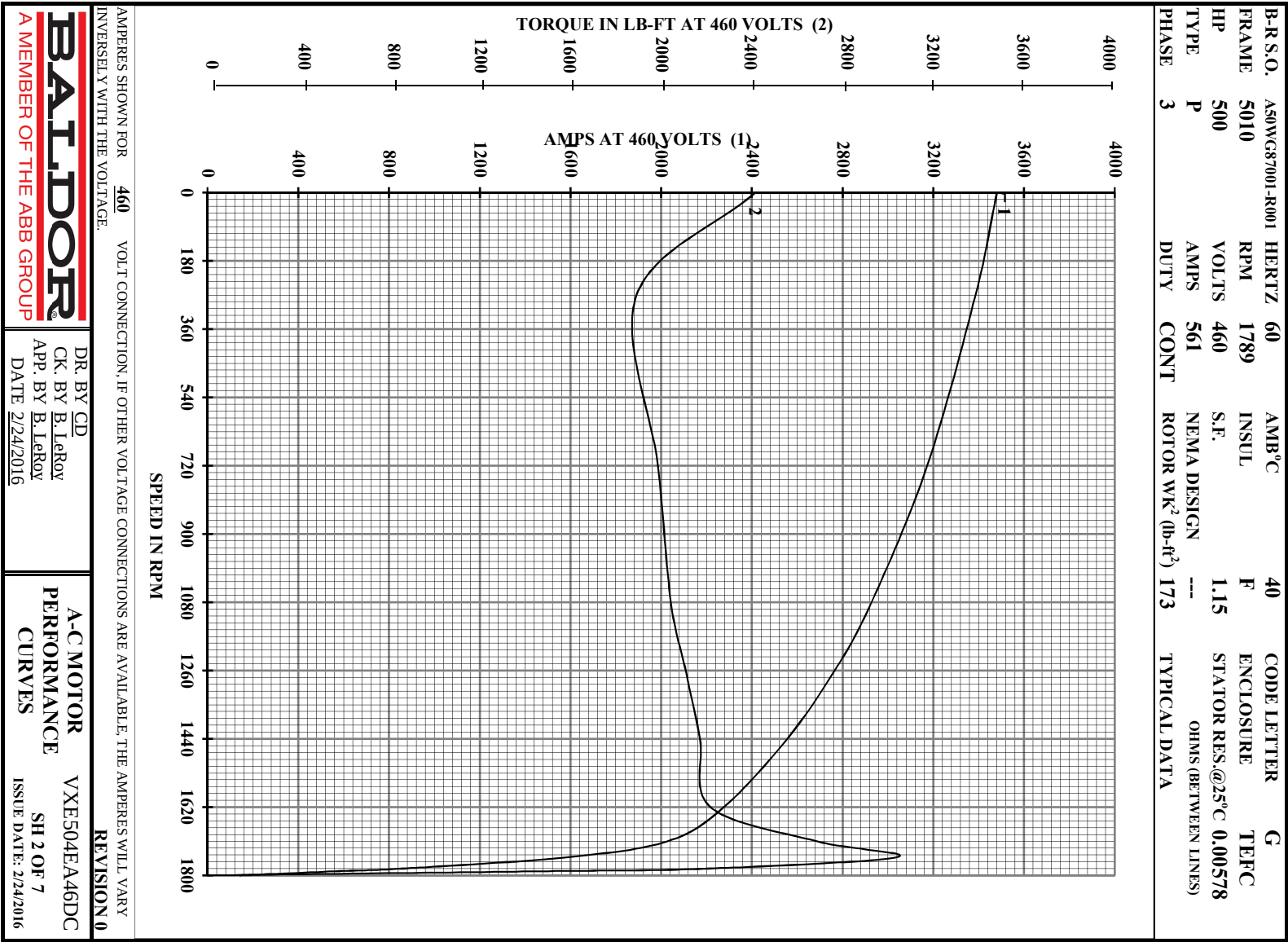
BALDOR-RELIANCE		FRAME	HP	TYPE	PHASE	HERTZ	RPM
SALES ORDER							
A50WG87001-R001		5010	500	P	3	60	1789
VOLTS	AMPS	DUTY	AMB°C	INSUL	S.F.	NEMA DESIGN	
460	561	CONT	40	F	1.15	---	
CODE LETTER	ENCL.	ROTOR WK ² (lb-ft ²)	STATOR RES.@25°C OHMS (BETWEEN LINES)		TYPICAL DATA		
G	TEFC	173	0.00578				
PERFORMANCE							
LOAD	HP	AMPERES	RPM	% POWER FACTOR	% EFFICIENCY		
NO LOAD	0	143.7	1800	5.3	0.0		
1/4	125	205.3	1797	61.1	93.4		
2/4	250	307.3	1795	79.4	95.9		
3/4	375	428.3	1792	85.1	96.3		
4/4	500	560.9	1789	86.7	96.3		
5/4	625	704.9	1786	86.5	96.0		
6/4	750	863.2	1782	85.2	95.5		
SPEED TORQUE							
	RPM	TORQUE % FULL LOAD	TORQUE LB-FT	AMPERES			
LOCKED ROTOR	0	165	2416	3480.2			
PULL UP	270	129	1892	3386.1			
BREAKDOWN	1752	209	3070	1591.0			
FULL LOAD	1789	100	1467	560.9			
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 <u>CD</u> CK. BY <u>B. LeRoy</u> APP. BY <u>B. LeRoy</u> DATE <u>2/24/2016</u>		A-C MOTOR VXE504EA46DC SH 1 OF 7 ISSUE DATE: 2/24/2016			
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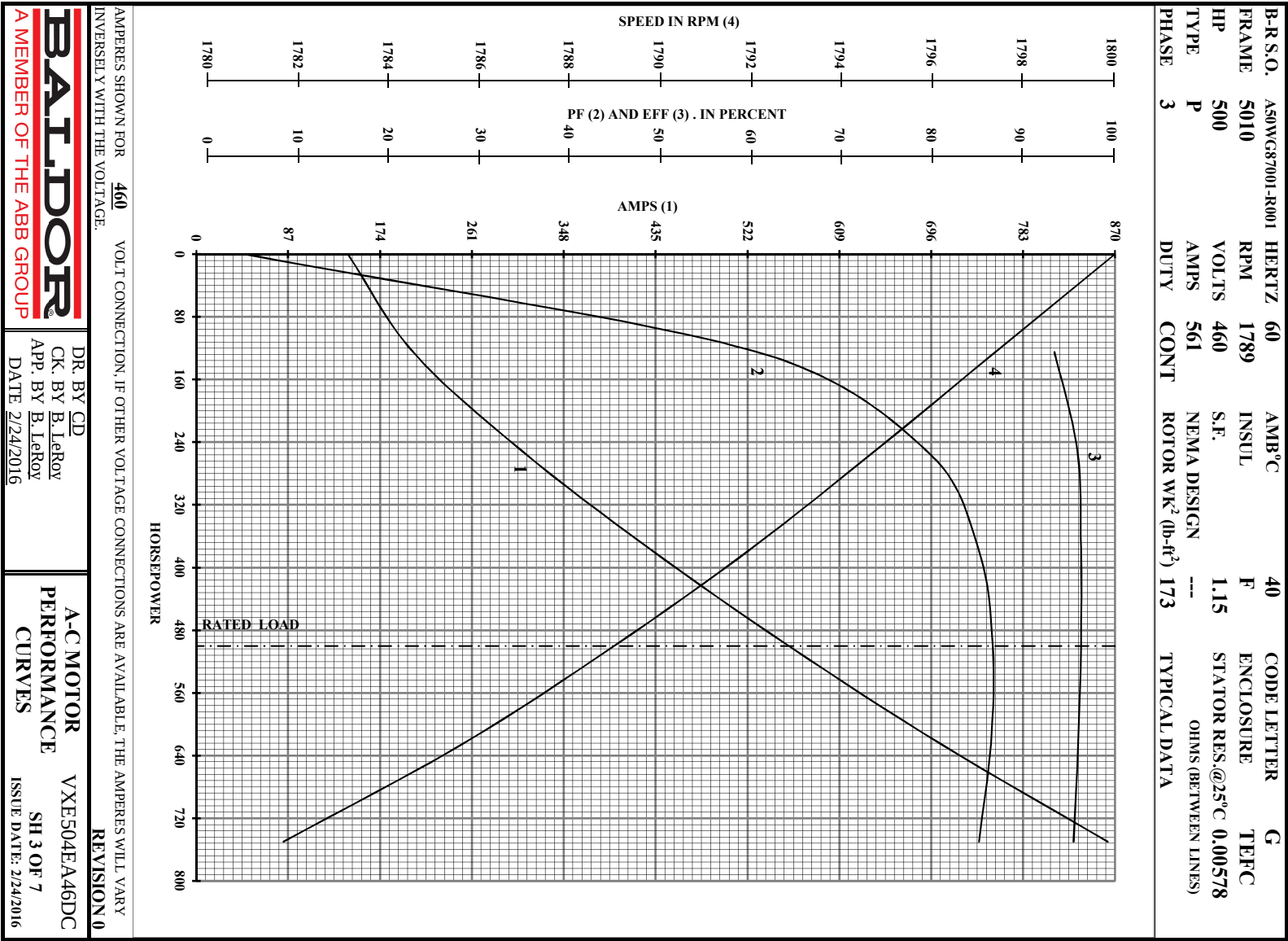
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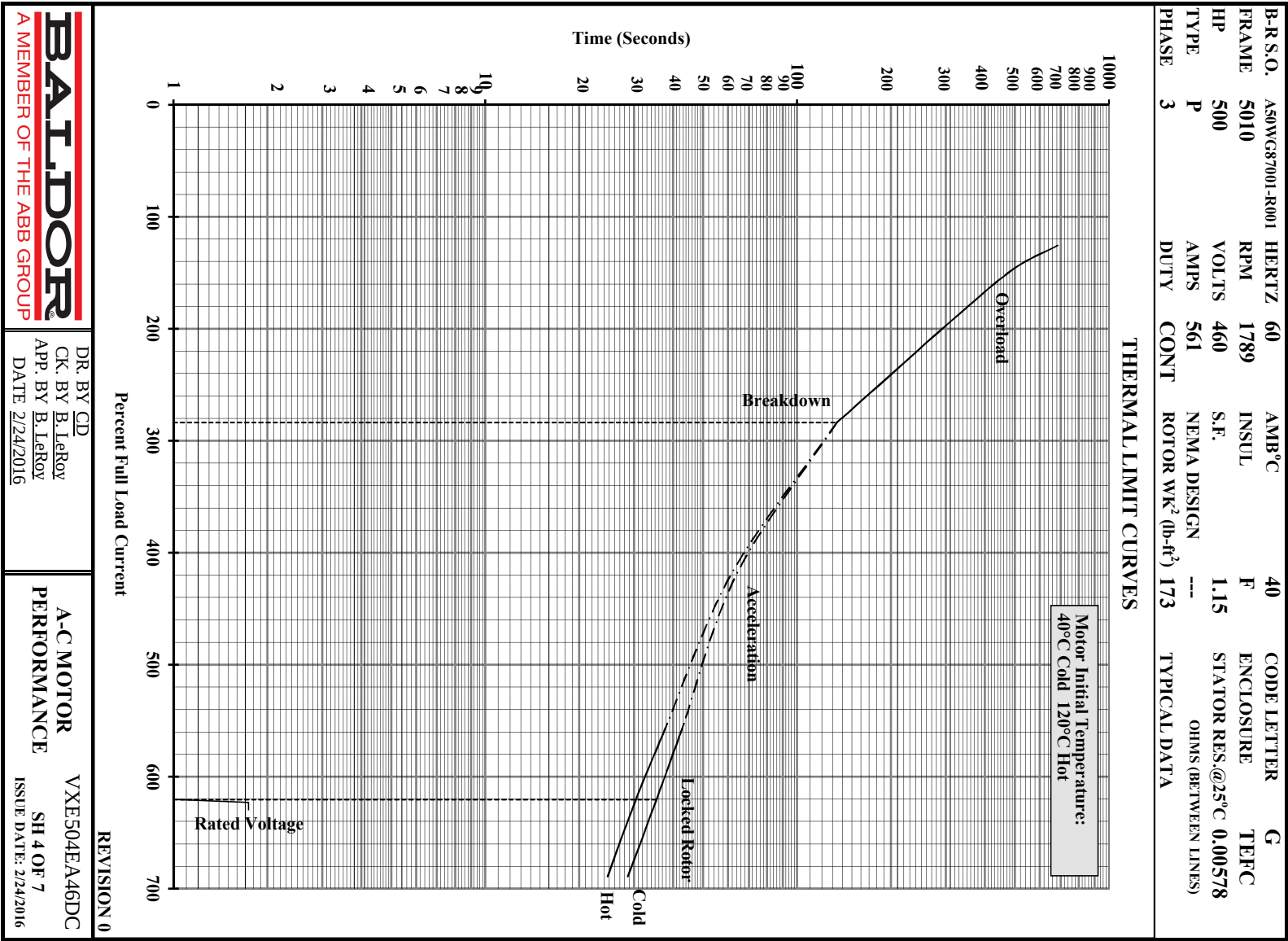
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CK. BY B. LeRoy
APP. BY B. LeRoy
DATE 2/24/2016

A-C MOTOR
PERFORMANCE
VXE504EA46DC
SH 1 OF 7
ISSUE DATE: 2/24/2016



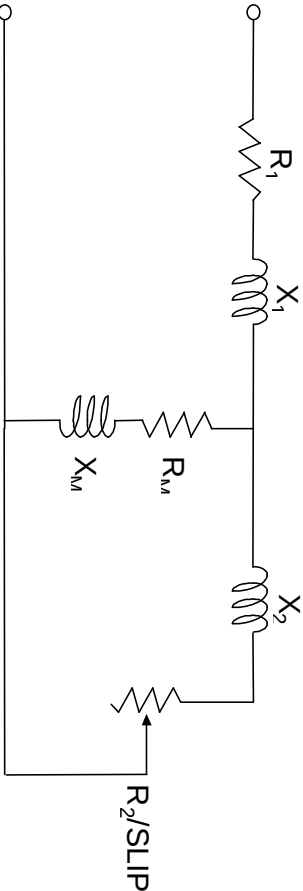




B-R-S.O.	A50WCG87001-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1789	INSUL	F	ENCLOSURE	TEFC
HP	500	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00578
TYPE	P	AMPS	561	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	173	TYPICAL DATA	

EQUIVALENT CIRCUIT DATA
(Per Unit, Per Phase)

FULL LOAD				LOCKED ROTOR			
R ₁	0.00647	X ₁	0.08638	R ₁	0.00539	X ₁	0.08582
R ₂	0.00518	X ₂	0.13089	R ₂	0.03050	X ₂	0.04390
R _m	0.08316	X _m	3.19526	R _m	0.32708	X _m	2.74249
BASE OHMS				BASE VOLTS			
				266			
SC Time Constant				X" = X _S			
				0.12972			
OC Time Constant				X/R Ratio			
				16.71			



Parallel Equivalent			
FL R _m ' pu	122.8547	LR R _m ' pu	23.32222
FL X _m ' pu	3.19742	LR X _m ' pu	2.78150

- R₁ = Stator dc resistance

R₂ = Rotor resistance

R_m = Core loss resistance

SC = Short circuit

OC = Open circuit
- X₁ = Stator leakage reactance

X₂ = Rotor leakage reactance

X_m = Magnetizing reactance

FL = Full load

LR = Locked rotor

X" = X_S = Subtransient reactance

REVISION 0

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CK. BY B. LeRoy

APP. BY B. LeRoy

DATE 2/24/2016

A-C MOTOR

PERFORMANCE

CURVES

VXE504EA46DC

SH 5 OF 7

ISSUE DATE: 2/24/2016

B-R.S.O.	A50WCG87001-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1789	INSUL	F	ENCLOSURE	TEFC
HP	500	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00578
TYPE	P	AMPS	561	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	173	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		93 °C	60 °C
Alarm Total Temperature		96 °C	70 °C
Trip Total Temperature		98 °C	75 °C
Anti-Friction Bearings - Grease Lubricated		Bearing	Grease
Typical Running Total Temperature		90 °C	80 °C
Alarm Total Temperature		110 °C	100 °C
Trip Total Temperature		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
			0.20*	0.30*
All Speeds				

* 0 to 1000 Hz Spectrum

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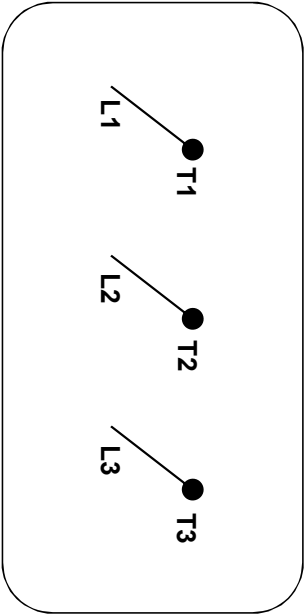
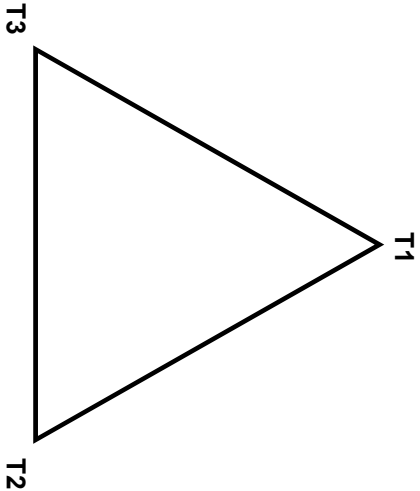
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DATE 2/24/2016

A-C MOTOR VXE504EA46DC
PERFORMANCE SH 6 OF 7
CURVES ISSUE DATE: 2/24/2016

B-R.S.O.	A50WCG87001-R001	HERTZ	60	AMB°C	40	CODE LETTER	G
FRAME	5010	RPM	1789	INSUL	F	ENCLOSURE	TEFC
HP	500	VOLTS	460	S.F.	1.15	STATOR RES.@25°C	0.00578
TYPE	P	AMPS	561	NEMA DESIGN	---	OHMS (BETWEEN LINES)	
PHASE	3	DUTY	CONT	ROTOR WK ² (lb-ft ²)	173	TYPICAL DATA	

A-C MOTOR
CONNECTION DIAGRAM

STANDARD 3 LEAD DELTA CONNECTED



(N.P. 1575-BA)

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		REVISION 0	

DUTY MASTER ALTERNATING CURRENT MOTORS

SQUIRREL-CAGE INDUCTION

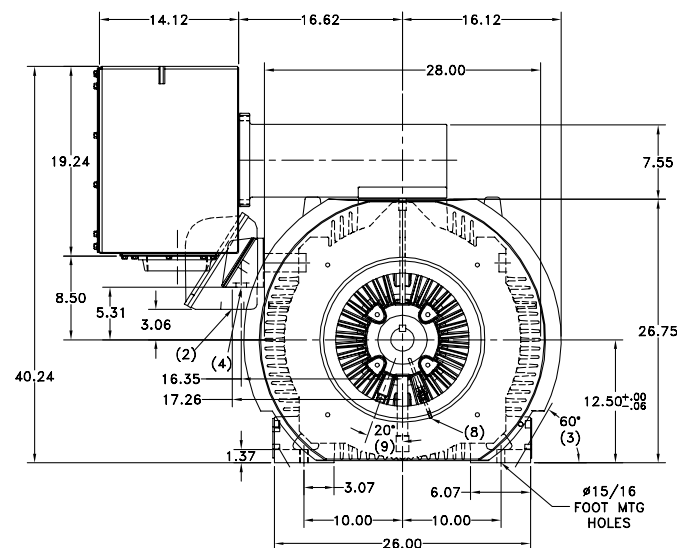
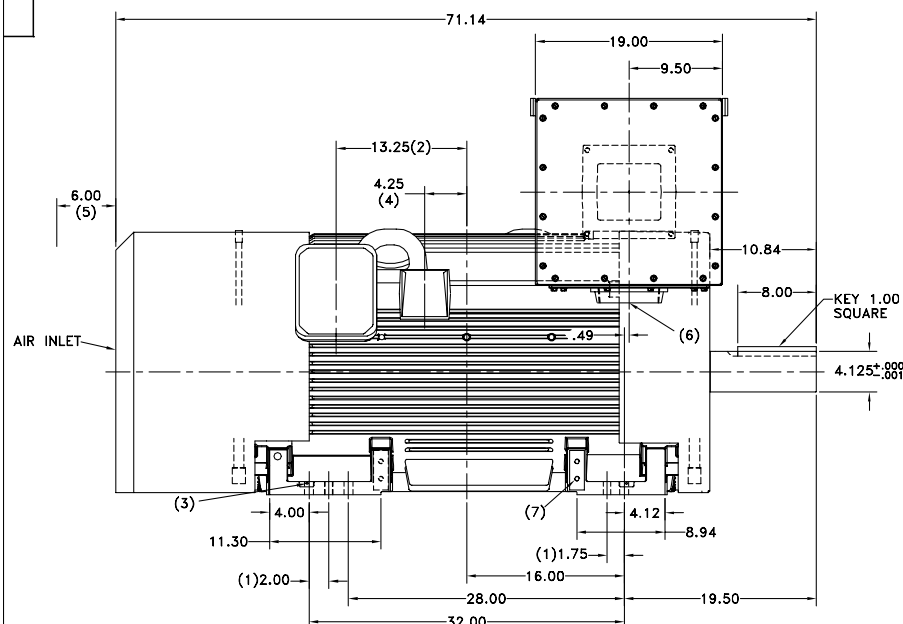
1800 RPM MAX

FRAME G5010Z (COUPLED DUTY)

INCLUDES 5009 FRAME MOUNTING HOLES

ENCLOSURE: TOTALLY ENCLOSED

MOUNTING: FOOT

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

- 1) (4) 3/4-10 JACKSCREW HOLES.
- 2) 2.0" N.P.T. FOR WINDING TEMPERATURE DETECTOR LEADS.
- 3) 11/32 DOWEL PIN PILOT HOLES, 1 HOLE EACH EACH FOOT.
- 4) 3/4 N.P.T. FOR MOTOR SPACE HEATER LEADS.
- 5) WALL OR OBSTRUCTION MUST NOT ENCROACH ON AIR INLET SPACE.
- 6) 6.0" N.P.T. FOR MOTOR POWER LEADS.
- 7) TWO GROUND PADS DIAGONALLY OPPOSITE EACH OTHER WITH TWO 1/2-13 TAPPED HOLES IN EACH.
- 8) DRIVE END GROUND PROBE.
- 9) 1/8" N.P.T. PROVISIONS FOR BEARING TEMPERATURE DETECTOR.

ALL DIMENSIONS ARE IN INCHES

CONDUIT BOX LOCATED ON OPPOSITE SIDE WHEN F-2 MOUNTING IS SPECIFIED.
IF MOUNTING CLEARANCE DETAILS ARE REQUIRED, CONSULT FACTORY.
MAXIMUM PERMISSIBLE SHAFT RUNOUT WHEN MEASURED AT END OF SHAFT IS .003 TIR.

MAXIMUM WEIGHT = 5550 LBS.

CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT BALDOR'S PRODUCT WILL PERFORM SUITABLY IN THE INTENDED APPLICATION.

REV. DESC: REVISED TO NEW COST REDUCED CONDUIT BOX.

REV. LTR: B

VERSION: 02

TDR: 000001000863

FILE: \RSN\00030\236

REVISED: 01:30:00 10/19/2016

BY: RSNKWK

MTL: -

BALDOR

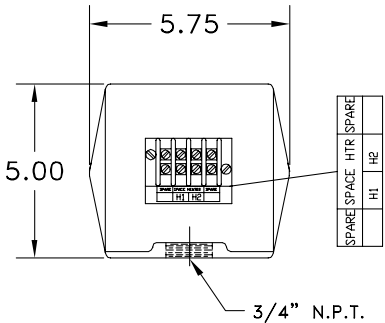
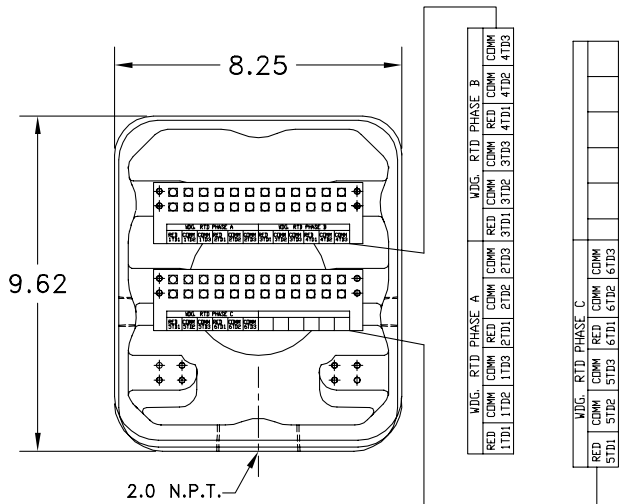
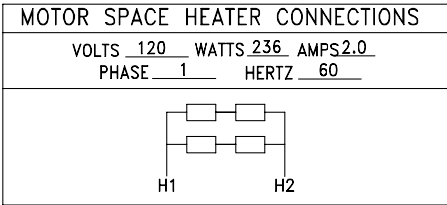
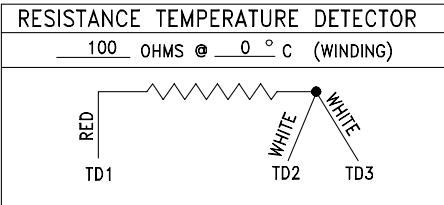
G5010,TEFC,S/N,CPLD,1800,A/F,F1,19X19X12,U=4.125,XBA=19.50

SH 1 of 2

616159-893

AUXILIARY CONNECTION DIAGRAM

VIEWS SHOWN WITHOUT COVERS



616159-893

CUSTOMER IS RESPONSIBLE FOR DETERMINING THAT BALDOR'S PRODUCT WILL PERFORM SUITABLY IN THE INTENDED APPLICATION.			BALDOR	
REV. DESC: REVISED TO NEW COST REDUCED CONDUIT BOX.	VERSION: 02	TDR: 000001000863	G5010,TEFC,S/N,CPLD,1800,A/F,F1,19X19X12,U=4.125,XBA=19.50	
REV. LTR: B	FILE: \RSN\00030\236	REVISD: 01:30:05 10/19/2016	BY: RSNGKW	SH 2 of 2
MTL: -				

