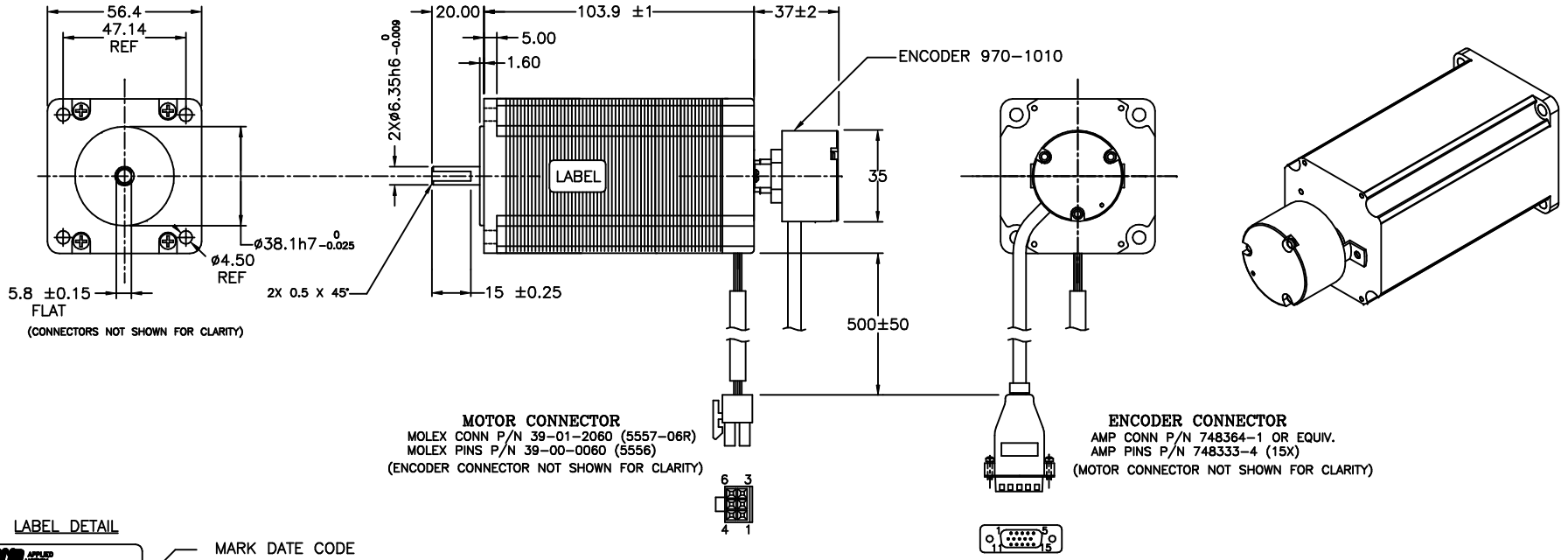
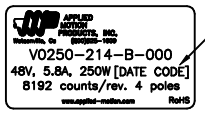
REVISIONS				
REV	ECO	DESCRIPTION	DATE	APPROVED
A	5628	INITIAL RELEASE	1/16/08	R. Hazelwood
B	5770	TITLE BLOCK REVISED	5/21/08	J. Kordik
C	5795	ADD LABEL	8/1/08	J. Kordik
D	5798	REVISE LABEL, TITLE BLOCK	8/5/08	J. Kordik
E	5801	REMOVE GND LUG	8/14/08	J. Kordik
F	5818	REVISE ELEC SPEC NUMBER	9/24/08	J. Kordik
G	6140	ADD ELEC SPECS	8/19/10	J. Kordik
H	6176	REVISE WATTAGE	9/16/10	J. Kordik



LABEL DETAIL



MARK DATE CODE

NOTES, UNLESS OTHERWISE SPECIFIED:

1. ENCODER MOUNTED AND ALIGNED FOR COMMUTATION.
2. CONNECTORS AND CABLES OMITTED FROM SOME VIEWS FOR CLARITY.
3. LABEL TO INCLUDE PART NUMBER, DATE CODE, ROHS COMPLIANCE, VOLTAGE, AMPS AND WATTS.

MOTOR CONNECTION		
PIN #	FUNCTION	COLOR
1	U	RED
2	V	WHT
3	W	BLK
4	C,G	GRN/YEL
5	–	–
6	–	–

ENCODER CONNECTION

PIN	WIRE COLOR	FUNCTION	PIN	WIRE COLOR	FUNCTION
1	BLUE	Ach Output	9	BROWN	Uch Output
2	BLUE/BLACK	$\overline{\text{Ach}}$ Output	10	BROWN/BLACK	$\overline{\text{Uch}}$ Output
3	GREEN	Bch Output	11	GRAY	Vch Output
4	GREEN/BLACK	$\overline{\text{Bch}}$ Output	12	GRAY/BLACK	$\overline{\text{Vch}}$ Output
5	YELLOW	Zch Output	13	WHITE	Wch Output
6	YELLOW/BLACK	$\overline{\text{Zch}}$ Output	14	WHITE/BLACK	$\overline{\text{Wch}}$ Output
7	RED	DC +5V	15	GROUND SHIELD	DRAIN
8	BLACK	GND (0V)	–		

TOLERANCES	THIRD ANGLE PROJECTION
DECIMALS: MM (INCH) X.XXX= ± (.005) X.XX = ±0.13 (.010) X.X = ±0.25 (.020) ANGLES: MACH. = ±.5° CHAM. = ±5°	
COMPUTER DATA BASE DRAWING	

APPROVALS	DATE
DRAWN R.JONEZ	1/16/08
CHECKED	
APPROVED	

APPLIED MOTION PRODUCTS, INC.

SERVO MOTOR OUTLINE

SIZE	DWG NO.	REV
B	V0250-214-B-000	H

SCALE: NONE SHT 1 OF 3

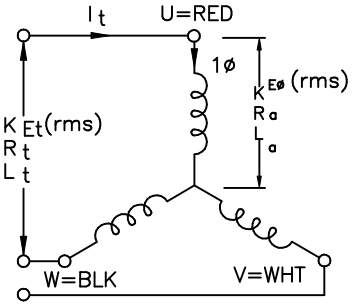
BRUSHLESS SERVOMOTOR SPECIFICATION:

PERMANENT MAGNET 4 POLES, 3 PHASE Y CONNECTED MOTOR
OPERATING TEMP RANGE: 0 – +40°C
NON-OPERATING TEMP RANGE: –10 – +85°C
WEIGHT: 1.7 Kg

	ITEM	SYM	UNIT	SPEC
*	RATED OUTPUT:	P_R	W	250
*	RATED TORQUE:	T_R	N–m (kgf–cm)	0.57(5.85)
*	STALL TORQUE:	T_S	N–m (kgf–cm)	0.57(5.85)
	PEAK TORQUE:	T_P	N–m (kgf–cm)	1.72(17.5)
*	RATED SPEED: (DC24V 2300)	N_R	r/min	3350
	MAXIMUM SPEED:(DC24V 2900)	N MAX	r/min	4000
	ROTOR MOMENT OF INERTIA:	J_M	$(GD^2/4)$ kg–m ^{2} $(gf–cm–s^2)$	0.027×10^{-4} (0.28)
	RATED POWER RATING:	Q_R	kW/s	11.8
	MECHANICAL TIME CONSTANT:	t_m	ms	2.3
Φ	STATIC FRICTION TORQUE:	$\overline{T_f}$	N–mMAX(kgf–cmMAX)	0.02 (0.2)
	INSULATION CLASS:			B
Φ	INSULATION RESISTANCE:		100 MΩ MIN@	500 VDC
Φ	INSULATION STRENGTH:		AC 1500V/60sec	
	SHAFT END PLAY:		0.1mm MAX	29.4N(3kgf)
	MAXIMUM RADIAL SHAFT LOAD:		N (kgf)	58.8(6)(20mm)
	MAXIMUM THRUST SHAFT LOAD:		N (kgf)	29.4 (3)
	DIRECTION OF ROTATION:			U→V→W CCW
	SENSOR MISALIGNMENT:	δ	°e MAX	FIG 2

	ITEM	SYM	UNIT	SPEC
	VOLTAGE RATING:		DC	48V
*	RATED WINDING CURRENT: E.D.C.M	I_R	A (rms)	5.8
*	CONTINUOUS STALL CURRENT: E.D.C.M	I_S	A (rms)	5.6
	NO LOAD WINDING CURRENT: E.D.C.M	I_{OR}	A (rms)	0.2
	PEAK WINDING CURRENT: E.D.C.M	I_P	A (rms)	17.0
	TORQUE CONSTANT: E.D.C.M	K_T	N–m/A $^{\pm10\%}$ (kgf–cm/A)	0.10 (1.02)
Φ	VOLTAGE CONSTANT: E.D.C.M	K_E	V/(r/min) $^{\pm10\%}$	10.7×10^{-3}
Φ	WINDING RESISTANCE: E.D.C.M	Ra	Ω ±10%	0.89
Φ	WINDING INDUCTANCE: E.D.C.M	La	mH ±30%	4.2
	ELECTRICAL TIME CONSTANT:	te	ms	4.7

FIGURE 1



1.

	E.D.C.M.	LINE	PHASE
CURRENT	I (rms)	= It(rms)	= Iø (rms)
VOLTAGE CONSTANT	K_E(rms)	$=\sqrt{3}\times K_E t(rms)$	$=3\times K_E ø(rms)$
RESISTANCE	R_a	= 1.5xR_t	= 3xRø
INDUCTANCE	L_a	= 1.5xL_t	= 3xLø

2. VALUES WITH MARK * MEASURED AT 40°C WITH HEAT SINK, 305mm X 305mm X T 12 ALUMINUM.
3. VALUES WITH MARK Φ ARE INSPECTION ITEMS. ALL VALUES ARE MEASURED AT 20 TO 30°C. VALUES WITHOUT TOLERANCE ARE NOMINAL.
4. SENSOR ZERO ALIGNMENT IS NOT CONTROLLED.

CONTRACT NO.		APPLIED MOTION PRODUCTS, INC.
APPROVALS	DATE	SERVO MOTOR ELECTRICAL SPEC
DRAWN R.JONEZ	7/9/10	
CHECKED		
APPROVED		B / FSCM NO. / DWG NO. V0250-214-B-000 / REV H
APPROVED		SCALE: NONE / SHEET 2 OF 3

FIGURE 2

PHASE SEQUENCE (SINE WAVE)

(1) MOTOR BACK E.M.F. WAVE FORM
AT CCW VIEWING MOTOR SHAFT
(MECH. DEG)=2x(ELECT.DEG)/(POLES)

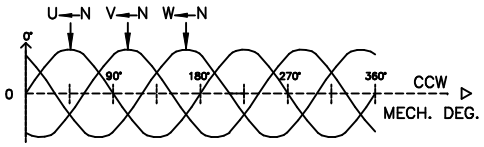
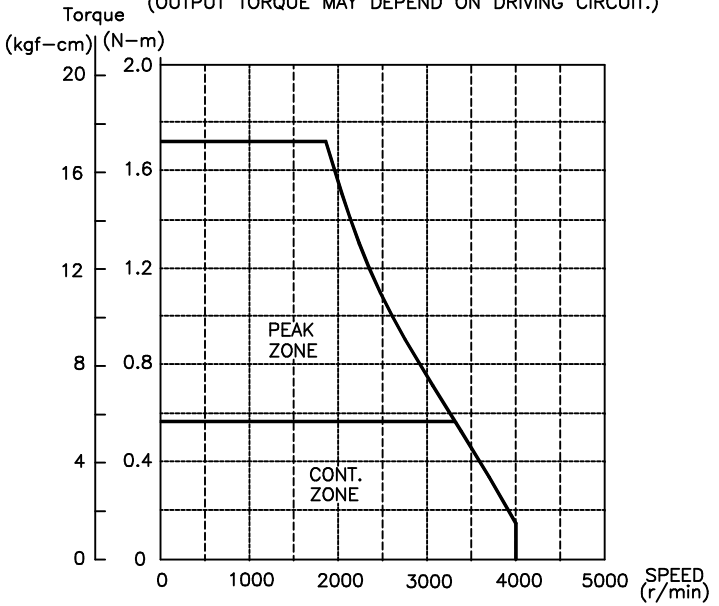


FIGURE 3

N–T CURVE

DC BUS VOLTAGE (LINE TO LINE) DC48V.
(OUTPUT TORQUE MAY DEPEND ON DRIVING CIRCUIT.)



THIRD ANGLE PROJECTION		APPLIED MOTION PRODUCTS, INC.	
APPROVALS	DATE	SERVO MOTOR ELECTRICAL SPEC	
DRAWN R.JONEZ	7/9/10	B	DWG NO. V0250–214–B–000 REV H
CHECKED		SCALE: NONE	SHEET 3 OF 3
APPROVED			