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ブラシレスDCサーボモータ仕様書
BRUSHLESS DC SERVOMOTOR SPECIFICATION

TBL-S

形式 MODEL	TS4073 N9 E31

外形図 OUTLINE	040730008F30 (F3-72437)	動作温度範囲 OPERATING TEMP RENGE	0～+40℃
銘板 NAMEPLATE	615001473N40 (N6144)	保存温度範囲 NO OPERATING TEMP RENGE	-10～+80℃
モータ方式 MOTOR FORM	マグネット4極 3相 Y結線 P, M, 4POLES 3φ Y CONNECT	重量 WEIGHT	2.5 Kg

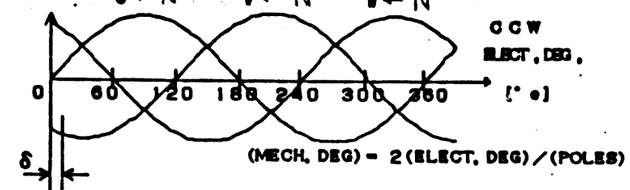
1. モータ部 MOTOR

	項目 ITEM	記号 SYMBOL	単位 UNIT	仕様値 SPEC	備考 NOTE
*	定格出力 RATED OUTPUT	PR	W	300	
*	定格トルク RATED TORQUE	TR	Kgf-cm	9.7	
	瞬時最大トルク PEAK TORQUE	TP(N)	Kgf-cm	29.1	
*	定格回転数 RATED SPEED	NR	rpm	3000	
	最高回転速度 MAXIMUM SPEED	NMAX	rpm	4000	
	定格線間電圧 RATED TERMINAL VOLTAGE	VT	V rms	104	VT = √3 V φR (NOTE1)
*	定格等価直流機電機子電流 RATED ARMATURE CURRENT OF E, D, C, M,	IR	A rms	1.9	IR = I φR (NOTE1)
	等価直流機トルク定数 TORQUE CONSTANT OF E, D, C, M,	KT	±10% Kgf-cm/A	5.35	KT = 3KT φ (NOTE1)
☆	等価直流機電圧定数 VOLTAGE CONSTANT OF E, D, C, M,	KE	±10% V/Krpm	54.9	KE = 3KE φ (NOTE1)
☆	等価直流機抵抗 ARMATURE RESISTANCE OF E, D, C, M,	Ra	±10% Ω	7.5	Ra = 3R φ (NOTE1)
	等価直流機インダクタンス ARMATURE INDUCTANCE OF E, D, C, M,	La	±20% mH	19.5	La = 3L φ (NOTE1)
	ロータイナーシャ ROTOR MOMENT OF INERTIA	JM	gf-cm-s²	0.69	モータ部のみ
	機械的時定数 MECHANICAL TIME CONSTANT	tm	ms	1.9	
	電気的時定数 ELECTRICAL TIME CONSTANT	te	ms	2.6	
☆	軸摩擦トルク STATIC FRICTION TORQUE	Tf	Kgf-cm	0.3	
*	熱抵抗 THERMAL RESISTANCE	Rθ	℃/W	1.3	
*	熱時定数 THERMAL TIME CONSTANT	tθ	minutes	20	
	最大巻線温度 MAXIMUM WINDING TEMPERATURE	θ	℃	130	
☆	絶縁抵抗 INSULATION RESISTANCE	—	MΩ	100	at DC500V
☆	絶縁耐圧 INSULATION STRENGTH	—	—	AC 1000V 60 sec	
	軸方向遊び SHAFT END PLAY	—	mmMAX	0.04	
	半径方向遊び SHAFT RADIAL PLAY	—	mmMAX	0.04	
	軸振れ SHAFT RUNOUT	—	mmMAX	0.02	
	許容スラスト荷重 MAXIMUM THRUST SHAFT LOAD	—	KgfMAX	4.0	
	許容ラジアル荷重 MAXIMUM RADIAL SHAFT LOAD	—	KgfMAX	12.0	取付面より 10mmの位置
	回転方向 DIRECTION OF ROTATION	—	—	CCW at U→V→W Viewing Motor shaft	

位相関係 PHASE SEQUENCE	—	—	fig1-1	—
角度誤差 ANGLE ERROR	δ	·eMAX	±θ	fig1-1

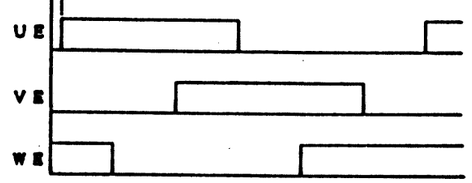
fig1-1

(1)MOTOR BACK E.M.F WAVE FORM at CCW Viewing Motor shaft



(MECH. DEG) = 2(ELECT. DEG)/(POLES)

(2)ENCODER OUTPUT

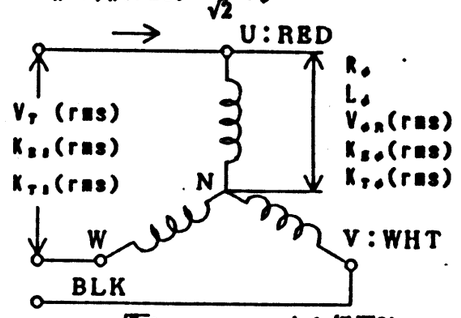


(NOTE2)E.D.C.M;EQUIVALENT d.c MACHINE

fig1-2

(NOTE1)

$I_R = I_{\phi R}(rms) = \frac{1}{\sqrt{2}} \hat{I}_\phi$



$V_T = \sqrt{3} V_{\phi R} = \sqrt{\frac{3}{2}} \hat{V}_\phi$

$K_E = 3K_{E\phi} = \sqrt{3} K_{E\ell} = \sqrt{\frac{3}{2}} \hat{K}_{E\ell}$

$K_T = 3K_{T\phi} = \sqrt{3} K_{T\ell} = \sqrt{\frac{3}{2}} \hat{K}_{T\ell}$

φ ; 相間Phase
ℓ ; 線間 line
^ , Peak

2. エンコーダ部仕様 ENCODER

☆	形式 MODEL No	EU803N22	分解能 N RESOLUTION	2000 cycle/rev	別紙参照 see attached sheet

(NOTE3) ☆:出荷検査項目

(NOTE4) ALL VALUES ARE MEASURED AT 20℃ to 30℃
各値は20℃~30℃における値である。

(NOTE5) THE VALUE WITHOUT TOLERANCE IS NOMINAL.
公差のない値は公称値とする。

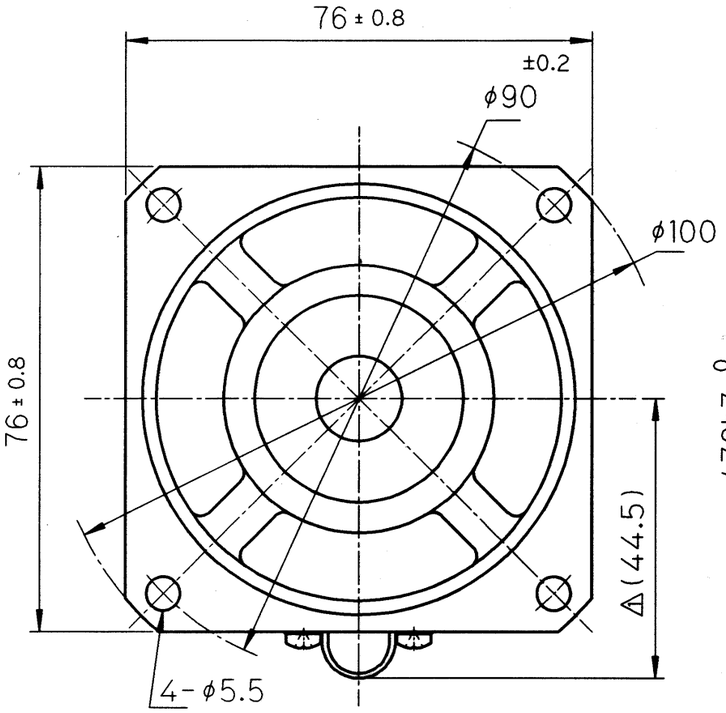
(NOTE6) VALUES WITH MARK ‡ MEASURED AT 40℃ WITH HEAT SINK
300×300×T12 ALMINIUM
‡印の仕様値は、300×300×T12 アルミ放熱板に取り付けたときの周囲温度40℃における値

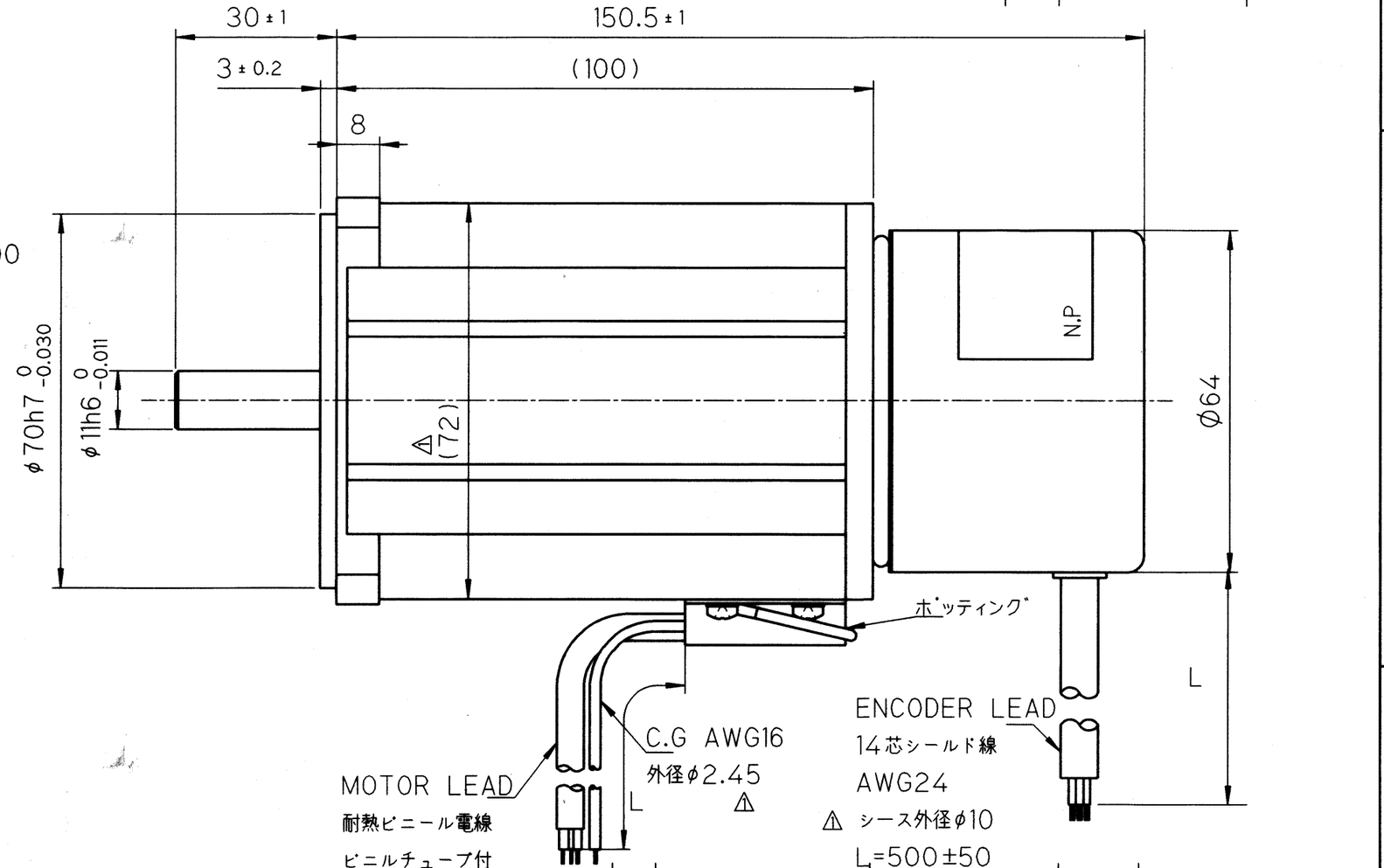
TSC 2023-04-04 PC

1	2	3	4	5	ED'N№

DS'D	DATE	MODEL No.	TITLE
CH'D K. Shiroshita	12.27.90	TS4073N9 E31	ブラシレスDCサーボモータ仕様書 BRUSHLESS DC SERVOMOTOR SPECIFICATION
APP'D T. SUGIURA	DWG NO. 040730012S30		SHEET /

REVISIONS		
No.	DESCRIPTION	DATE / SIGN
2版	C.G線追記	4.2.`91
⚠1	寸法追記	4.27.`92





ITEM NO.	PART NO.	PART NAME	QTY	MATERIAL / SPEC

LIST OF MATERIAL

DS'D M. Nakata	DATE 12.26.`90	MODEL NO. TS4073N9.N10.N11	TITLE BRUSH LESS DC MOTOR ENCODER OUTLINE
CH'D K. Shiroshita	SCALE 1/1	3RD ANGLE PROJECTION	
APP'D T. SUGIURA	DWG NO. 0407300008F30		SHEET

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