

# 標準 DC ブラシレスモータ (13H シリーズ)

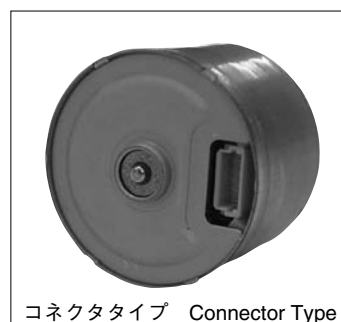
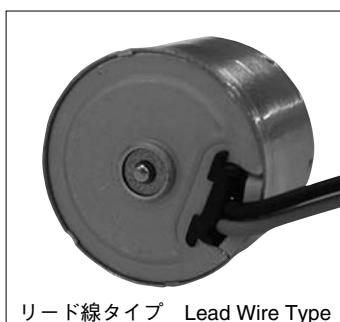
## ■特徴

- ・時計回り（反時計回りオプション）
- ・信号機能
- ・モータロック保護
- ・低イナーシャ化
- ・静音化
- ・小型
- ・出力～3Wクラス

## Characteristic

- ・ Clockwise Rotation (CCW Optional)
- ・ Signal Function Available
- ・ Locked Rotor Protection
- ・ Low Inertia
- ・ Quiet Operation
- ・ Compact  $\phi 24.2 \times 19.1$ mm Case
- ・ Power  $\sim 3$ W Class

## ● 13H Type



## ■主要特性 Major Characteristic Parameters

Parameter	Symbol	Conditions	Min.	Nom.	Max.	Units
動作電圧 Operating Voltage	$V_M$	Model 13H-12 Model 13H-24	8.0 15	12 24	15 26.4	V V
動作電流 Operating Current	$I_{RUN}$	Model 13H-12, continuous operation Model 13H-24, continuous operation	— —	— —	0.50 0.34	A A
負荷トルク Run Torque	$T_{RUN}$	Model 13H-12, continuous operation Model 13H-24, continuous operation	— —	— —	6.2 5.3	mN · m mN · m
出力 Power	$P_{OUT}$	Model 13H-12, continuous operation Model 13H-24, continuous operation	— —	— —	1.5 2.7	W W
無負荷回転数 No Load Speed	$\omega_{NL}$	Model 13H-12 Model 13H-24	— —	6,200 8,700	— —	min <sup>-1</sup> min <sup>-1</sup>
ロータイナーシャ Rotor Inertia	$J_M$	—	—	0.7	—	g · cm <sup>2</sup>
騒音 Sound Pressure	$N_M$	No load, f=0 to 20 kHz, 30cm from motor	—	—	50	dB(A)
動作温度 Operating Temperature	$T_A$	Relative humidity 5% - 90%, non-condensing	10	—	50	°C
寿命 Life Expectancy <sup>†</sup>	$L_{10}$	Continuous operation, no load, $T_A=+20^\circ\text{C}$	5,000	—	—	hours
重量 Motor Weight	$W_M$	—	—	30	—	g

(注) データは代表特性値です。

† L10寿命は、試験サンプル中の残存率90%を示し、特性の±20%以上変化したときが寿命の対象となります。試験条件は、湿度5～95%、結露無きことです。

Note: Current, power, speed, sound level, and life expectancy ratings are at nominal voltage.

\*Automatic shutdown at locked rotor condition: Restart at power OFF/ON.

† L10 bearing life expectancy, relative humidity 5% - 90%, non-condensing: The point in time at which 90 percent of a sample lot can be expected to survive. Failure criteria for life testing that establishes this figure include a 20% reduction in speed or a 20% increase in operating current.

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## ■ 特性グラフ Performance Characteristics

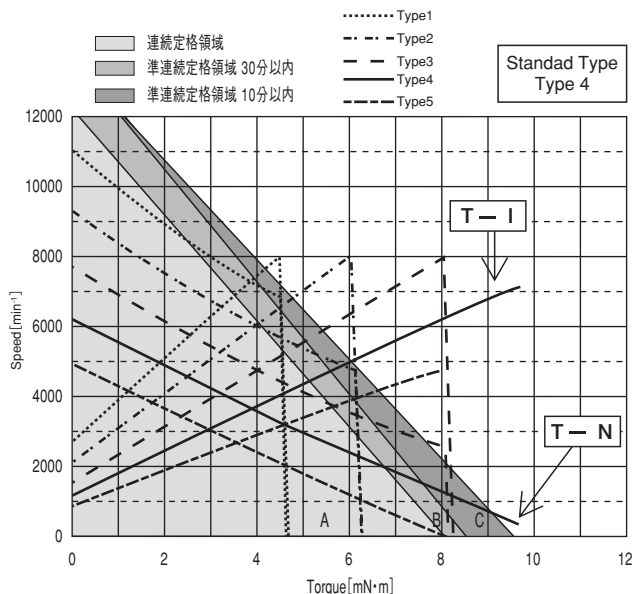
連続定格領域： 全時間(A)

準連続定格領域： 30分以内(B)/10分以内(C)

Continuous Operation: All time (A)

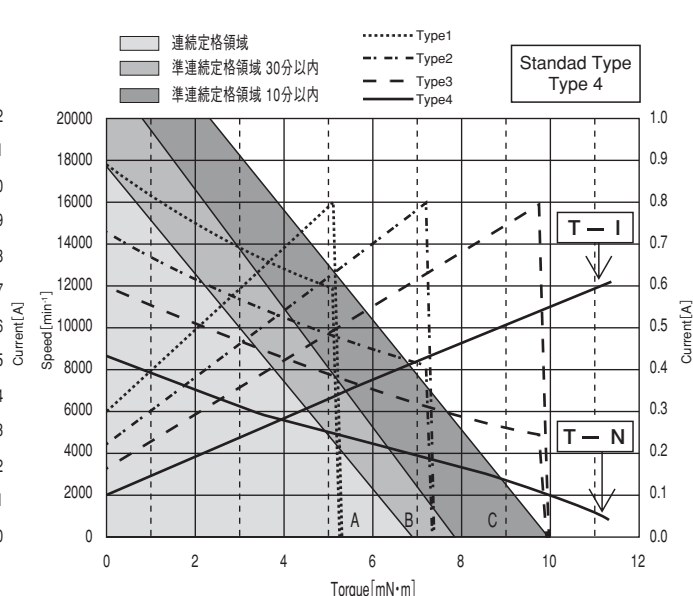
Quasi continuous Operation :  $\leq 30$  minutes(B)/ $\leq 10$  minutes(C)

(12V仕様@20℃)



\* 表面積 170 cm<sup>2</sup>、アルミニウムのモータ固定台を使用。  
\* 温度条件は 20℃

(24V仕様@20℃)



\* Motor mounted on 170 cm<sup>2</sup> aluminum fixtures.  
\* Operating Temperature  $T_a = 20^\circ\text{C}$

## ■ モータ、回路構成オプション Motor and Drive Circuit Options

Feature	13H Standard	13H Options
回転方向 Direction of Rotation <sup>(1)</sup>	CW	CCW(also see rotational direction control option below)
シャフト形状 Shape of Motor Shaft	Round	D-Cut
シャフト表面 Surface of Motor Shaft	Smooth	Knurled
シャフト長さ Length of Motor Shaft	12mmT-N	7mm or 22mm
軸受けタイプ Bearing Type	Sleeve	Ball
モータ端子 Motor Terminations <sup>(2)</sup>		
Power In	$V_M$	—
Ground	GND	—
CW/CCW Select	—	High = CW/Low = CCW.
Start/Stop Control	—	High = Start/Low = Stop.
PWM Input	—	$f_{in} = 0.5\text{kHz to } 50\text{kHz}$ , $V_{in(Low)} < 1.0\text{V}$ , $V_{in(High)} = 2.5\text{ to } 5.0\text{V}$ , duty cycle = 20% to 100%.
Locked Rotor Alarm	—	Open-collector circuit, high-pass/low-fail, $I_C = 3.0\text{mA}$ , maximum.
Tachometer1	—	Open-collector circuit, $I_C = 3.0\text{mA}$ , maximum square wave pulses per revolution = motor poles/2.
Tachometer2	—	Open-collector circuit, $I_C = 3.0\text{mA}$ , maximum square wave pulses per revolution = motor poles $\times 3/2$ .

- (1) 回転方向：モータ出力軸からみたもの  
(2) モータ接続：6オプション中、最大3つの採用可能  
(3) オプション仕様、カスタム仕様につきましては弊社営業までお問い合わせください。

- (1) Rotational orientation : Looking toward the load end of the motor shaft.  
(2) 13H designs support any three (max.) of six motor termination options shown above.  
(3) Please make a contact with our sales division for options and customized.