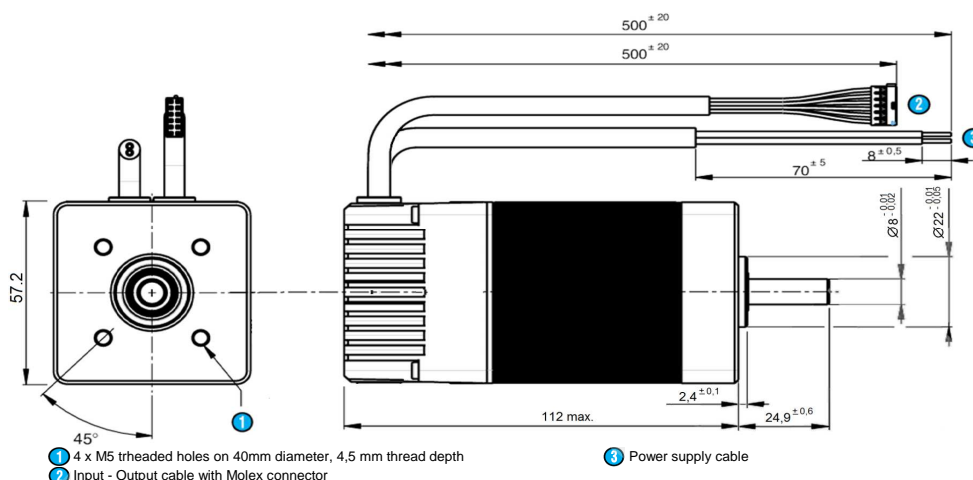


# DCmind Brushless motor Data sheet

## 80 280 007

Series

# 80 280 TNI21

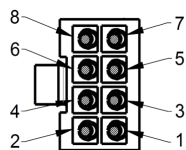


## General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range (5)	Vdc	12 -> 48
Max. current	A	15

Motor characteristics (1)					
		12 Vdc	24 Vdc	32 Vdc	
<b>At no load</b>					
Max. output speed	rpm	2 000	3 950	3 950	
Current at the max output speed (6)	A	0,5	0,7	0,6	
Standby current	A	0,08	0,085	0,09	±10%
<b>At nominal</b>					
Speed	rpm	1 400	3 250	3 900	±10%
Torque (2)	mNm	490	390	355	
Output power	W	72	133	145	±10%
Current	A	8,5	6,9	6	
Efficiency	%	70	80	82	
<b>At max. output power</b>					
Speed	rpm	800	1 900	2 400	
Torque	mNm	1 000	1 000	1 000	
Output power	W	84	199	251	±10%
Current	A	15	15	12,5	
Efficiency	%	46	57	63	
<b>At peak torque</b>					
Speed	rpm	800	1 900	2 400	±10%
Torque	mNm	1 000	1 000	1 000	
Output power	W	84	199	251	
Current	A	15	15	12,5	±10%
<b>Others</b>					
Life (3)	h		20 000		
Rotor inertia	gcm <sup>2</sup>		120		
Thermal Resistance	°/W		2,4		
Thermal time constant	mn		30		
Rotor pole number			8		
Cogging torque	mNm		33		
Weight	kg		1,44		
Noise level	dBA		50		

Connecting	
<b>Input - Output cable</b>	With Molex connector ref: 43025-0800
Output cable, UL style 2464 80°C 300V - 8 wires AWG24	
Input: ON/OFF	1 - Green
Input: Direction	2 - Yellow
Input: Torque limit	3 - Blue
Input: Speed	4 - Orange
0V	5 - Black
Output: Pulse	6 - Brown
Output: Torque limit reached	7 - Purple
Output: Direction	8 - Red
<b>Power supply cable</b>	
Cable UL style 2517 105°C 300V - 2 wires AWG16 - 500 mm	
+ 12Vcc -> + 48 Vdc (5)	Brown
0V	Blue



Drive	
<b>Type</b>	TNI21
Built-in drive	✓
Internal encoder	24 pulses per turn
<b>Commande</b>	
Speed	0/10 V
Torque	0/10 V
4 quadrants - low braking	✓
4 quadrants with regenerative energy	
"Trapezoidal" type	✓
<b>Security</b>	
Short-circuit of outputs	✓
Input inverted	✓
Low voltage	Vdc < 10
Short high voltage	Vdc > 56
Stop at max internal drive temperature (2)	°C 110
Drive temperature allowing to restart	°C 90

Generic parameters			
Output shaft with ball bearings		✓	
Max. Radial force (12mm from front face)	N	40	
Max. axial force(4)	N	20	
Temperature range	CEI60068-2-1/2	°C	-30 -> +70
Storage temperature		°C	-40 -> +80
Dielectric	1min 2mA 50Hz CEI60335	Vdc	1 000
Motor insulation	CEI60085	class	B
Salt spray	CEI60068-2-58	severity	48h
Degree of protection	CEI60529	IP	65M
(output shaft not included)			
<b>EMC</b>			
Electrostatic Discharge	CEI61000-4-2	level	3
Electrical fast transient / burst test	CEI61000-4-4	level	3
Surge test	CEI61000-4-5	level	1
Radiated emission	EN55022	class	B
<b>Approvals</b>			
ROHS	2002/95/CE	✓	
EC		✓	

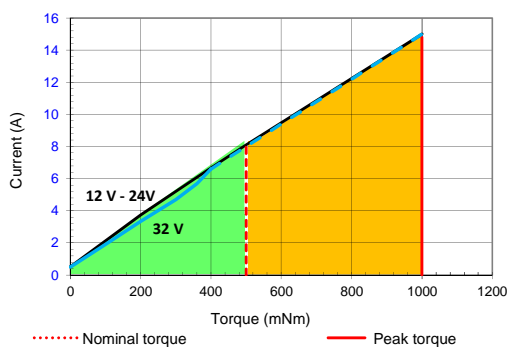
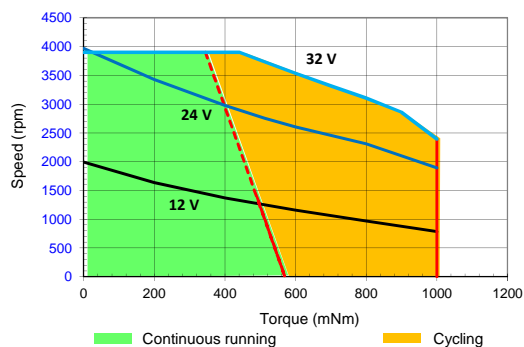
Notes	
Values without tolerance are average production values.	
Added informations are in "SMI21 manual and security". Available on <a href="http://www.crouzet-motors.com">www.crouzet-motors.com</a> .	
Motor not protected in case of reversed power voltage	
(1)	Cold motor, 20 ° C ambient temperature, full speed
(2)	Max torque for continuous operation at 20 ° C, decrease this value for higher ambient temperature
(3)	Continuously rated torque, zero radial and axial loads
(4)	Pinion or pulley fitting are done at the Crouzet factory, before final assembly.
(5)	Before September 2015: Nominal was 12 -> +32Vdc, Short high voltage was > 36Vdc, Absolute max. was 39Vdc

## Drive electrical datas

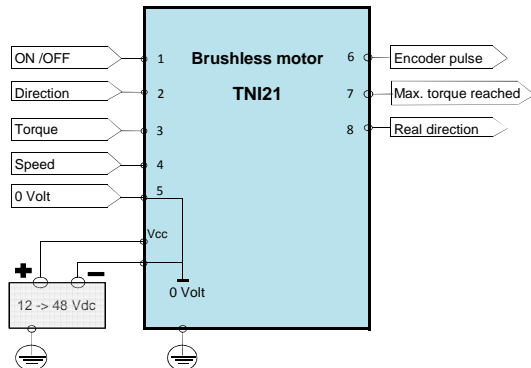
Max. product characteristics				
Parameters				
Max. voltage supply "Vcc" (5)	Vdc		60	
Max. current "Icc max"	A		20	
Max. voltage on inputs "Vin max" (5)	Vdc		39	
Max. voltage on outputs "Vout max" (5)	Vdc		60	
Max. output current "Iout max"	mA		50	
Running datas				
Parameters				
Voltage supply "Vcc" (5)	Vdc	Min	Typical	Max
Current "Icc"	A	-	10	17
Standby power "Wo"	W	-	2	-
Speed setting	rpm	120	-	4000
Torque setting	mNm	40	-	1 000
Holding torque setting	mNm	40	-	310

Input datas				
Parameters				
Impedance - Input 1, 2	kΩ	Min	Typical	Max
Impedance - Input 3, 4	kΩ	-	57	-
Low level - Input 1, 2	Vdc	0	-	2
High level - Input 1, 2	Vdc	4	-	39
Voltage level - Input 3, 4	Vdc	0	-	10
Output datas				
Parameters				
Low level Outputs	Vdc	Min	Typical	Max
with "pull down resistor" = 4,7KΩ and Vcc = 24 V		0	-	0,2
High level Outputs	Vdc	Vcc - 0,5	-	Vcc
with "pull down resistor" = 4,7KΩ and Vcc = 24 V				
= voltage supply added from eventual rejeitive voltage				

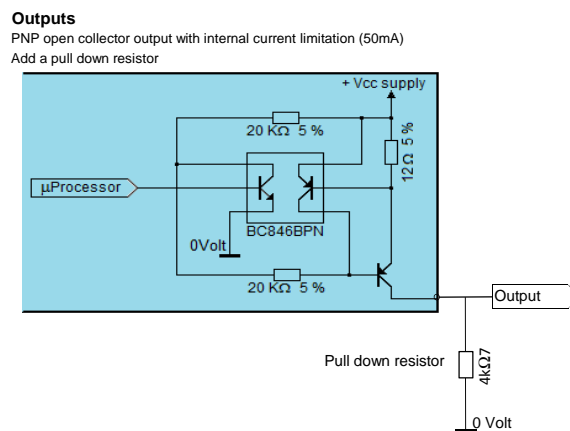
## Speed-torque and current-torque curves



## Wiring

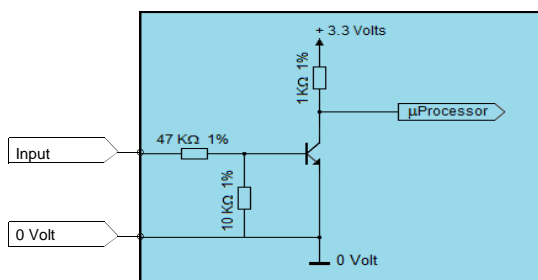


## Output equivalent circuit



## Inputs: ON/OFF and Direction

Inputs: ON/OFF and Direction



## Inputs: Torque and Speed

Inputs: Torque and Speed

