

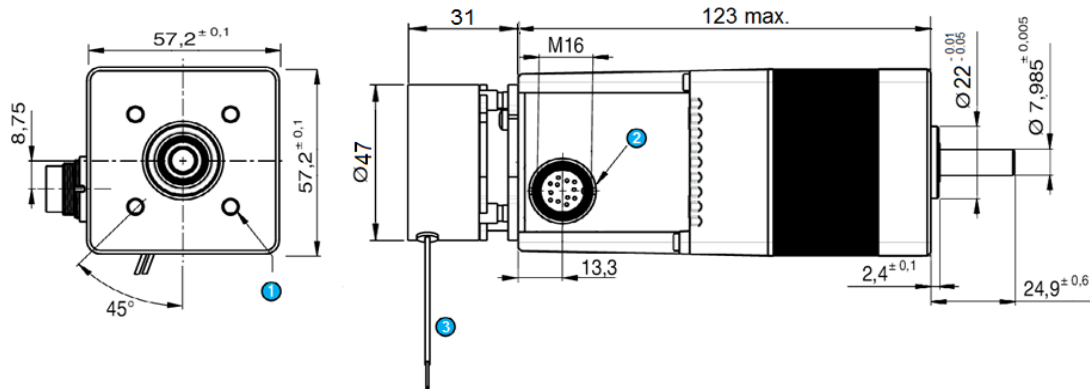
# DCmind Brushless motor

## Data sheet

80 140 080

Series

80 140 TNI21



① 4 x M5 threaded holes on 40mm diameter, 4,5 mm thread depth

② M16 male connector - 12 contacts  
③ Brake wires: 2 x AWG26 - 400 mm

### General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	12 -> 32
Max. current	A	10

Motor characteristics (1)		x 6 x 28	M6 x 16	5mm diam
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At no load					
Max. output speed	rpm	2 900	4 000	4 000	
Current at the max output speed	A	0,34	0,29	0,27	
Standby current	A	0,08	0,09	0,09	+10%

At nominal					
Speed	rpm	1 900	4 000	4 000	+10%
Torque (2)	mNm	193	184	178	
Output power	W	38	77	75	+10%
Current	A	5,2	4,4	3,2	
Efficiency	%	62	74	73	

At max. output power					
Speed	rpm	1 600	3 050	4 000	
Torque	mNm	250	358	358	
Output power	W	42	114	150	+10%
Current	A	6,5	10	10	
Efficiency	%	53	48	47	

At peak torque					
Speed	rpm	930	3 050	4 000	
Torque	mNm	358	358	358	
Output power	W	35	114	150	
Current	A	10	10	10	+10%

Others			
Life (3)	h		20 000
Rotor inertia	gcm <sup>2</sup>		75
Thermal Resistance	°/W		3
Thermal time constant	mn		20
Rotor pole number			4
Cogging torque	mNm		11
Weight	kg		0,95
Noise level	dBA		40

### Connecting

M16 male connector - 12 contacts	Lumberg 0315 12
+ 12Vdc -> + 32 Vdc	E + F
0V	G + M
0V	H
Input: ON/OFF	C
Input: Direction	B
Input: Speed	J
Input: Torque limit	D
Output: Pulse	A
Output: Torque limit reached	K
Output: Direction	L

### Accessory

2 meters shielded cable with M16 female connector - 12 pins			
Part number	15 275 008	Cable with 12 wires AWG24	
Note: G and M wires have to be connected together. E and F wires have to be connected together			
A = white	B = brown	C = green	D = yellow
E = grey	F = pink	G = blue	H = red
J = black	K = purple	L = grey/pink	M = red/blue

Drive	
Type	TNI21
Built-in drive	✓
Internal encoder	12 pulses per turn
Control	
Speed	PWM
Torque	PWM
4 quadrants - low braking	✓
4 quadrants with regenerative energy	
Type* Trapezoidal"	✓
Security	
Short-circuit of outputs	✓
Input inverted	✓
Low voltage	Vdc < 10
Short high voltage	Vdc > 36
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	
Motor insulation	CEI60085	class	E
Salt spray	CEI60068-2-58	severity	48h
Degree of protection (output shaft not included)	CEI60529	IP	65M
EMC			
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
Approvals			
ROHS	2002/95/CE	✓	
EC		✓	

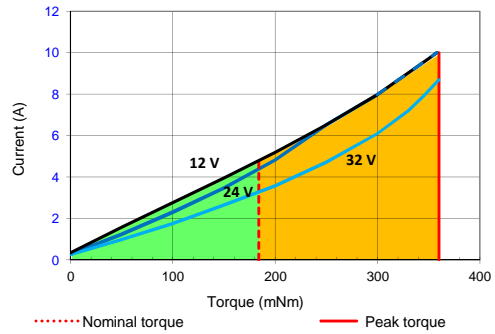
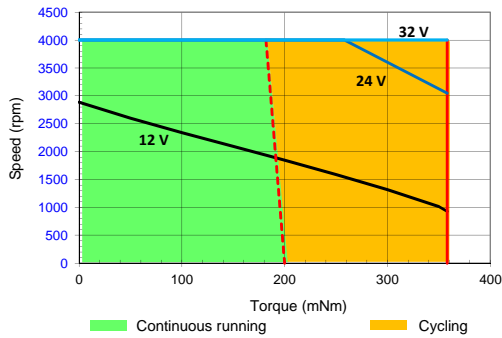
Brake	
Type	Static
Power OFF brake	✓
Voltage supply	Vdc 24 +- 10%
Nominal holding torque	Nm 0,5
Input power	W 6,6

Notes	
Values without tolerances are average production values.	
Added informations are in "TNI21 manual and security" on <a href="http://www.crouzet.com">www.crouzet.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.	

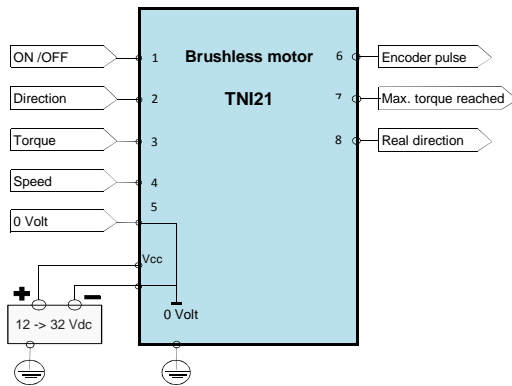
## Drive electrical datas

Max. product characteristics				
Parameters				
Max. voltage supply "Vcc"	Vdc		39	
Max. current "Icc max"	A		12	
Max. voltage on inputs "Vin max"	Vdc		39	
Max. voltage on outputs "Vout max"	Vdc		39	
Max. output current "Iout max"	mA		50	
Running datas				
Parameters				
Voltage supply "Vcc"	Vdc	Min	Typical	Max
Current "Icc"	A	-	6	12
Standby power "Wo"	W	-	2	-
Speed setting	rpm	120	-	4 000
Torque setting	mNm	35	-	360
Holding torque setting	mNm	35	-	150

Input datas				
Parameters				
Impedance - Input 1, 2	kΩ	Min	Typical	Max
Impedance - Input 3, 4	kΩ	-	69	-
Low level - Input 1, 2	Vdc	0	-	2
High level - Input 1, 2	Vdc	4	-	39
Low level - Input 3, 4	Vdc	0	-	2
High level - Input 3, 4	Vdc	7,5	-	39
Fréquence des PWM	Hz	100	-	2000
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 rejeptive voltage				



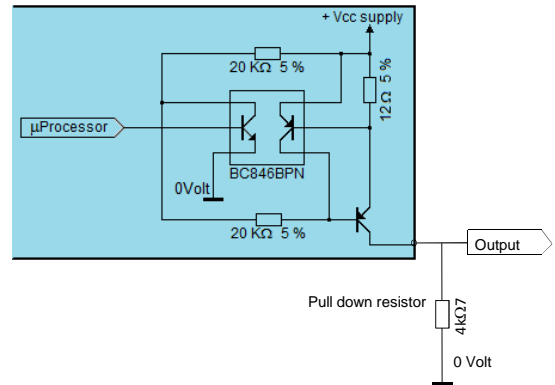
## Wiring



## Output equivalent circuit

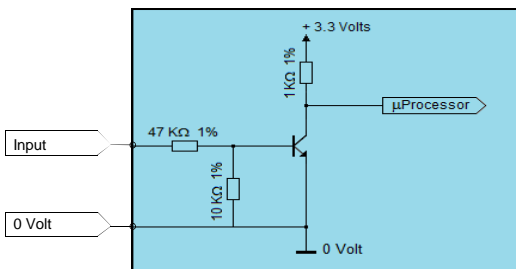
### Outputs

PNP open collector output with internal current limitation (50mA)  
Add a pull down resistor



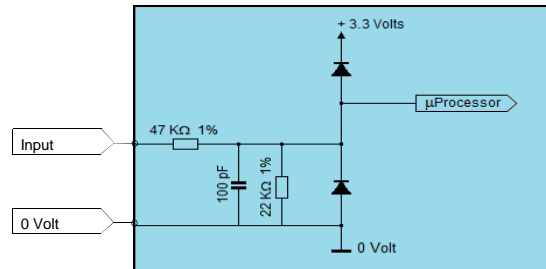
## Inputs: ON/OFF and Direction

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## Inputs: Torque and Speed

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Specifications subject to change without notice. Updated July 8, 2013.