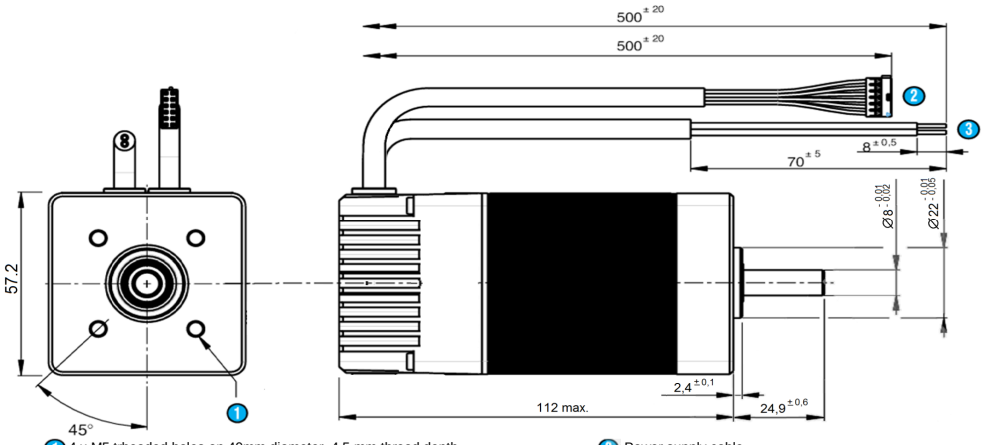
DCmind Brushless motor
Data sheet 80 280 007

Series

80 280 TNI21



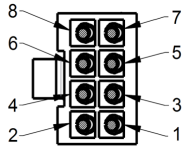
1 4 x M5 trheaded holes on 40mm diameter, 4,5 mm thread depth
2 Input - Output cable with Molex connector
3 Power supply cable

General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	12 -> 32
Max. current	A	17

Motor characteristics (1)		12 Vdc	24 Vdc	32 Vdc	
At no load					
Max. output speed	rpm	2 000	3 950	3 950	
Current at the max output speed	A	0,5	0,7	0,6	
Standby current	A	0,08	0,085	0,09	+-10%
At nominal					
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	
At max. output power					
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	
At peak torque					
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%
Others					
Life (3)	h	20 000			
Rotor inertia	gcm²	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	
Input - Output cable	**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
Power supply cable	
Cable UL style 2517 105°C 300V - 2 wires AWG16 - 500 mm	
+ 12Vdc -> + 32 Vdc	Brown
0V	Blue



Electronique		
Type	**TNI21**	
Electronique Intégrée dans le moteur	✓	
Codeur intégré	24 pulses per turn	
Commande		
Speed	0/10 V	
Torque	0/10 V	
4 quadrants - low braking	✓	
4 quadrants with regenerative energy		
Type" Trapezoidal"	✓	
Protections		
Court-circuit des sorties	✓	
Inversion des entrées	✓	
Sous-tension	Vdc	< 10
Sur-tension brève	Vdc	> 36
Arrêt température électronique excessive (2)	°C	110
Température électronique autorisant un redémarrage	°C	90

Caractéristiques générales			
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	B
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 transsient / 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		✓	

Notes
Values without tolerences are average production values.
Added informations are in "TNI21 manual and security" on www.crouzet.com
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.

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

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Drive electrical datas

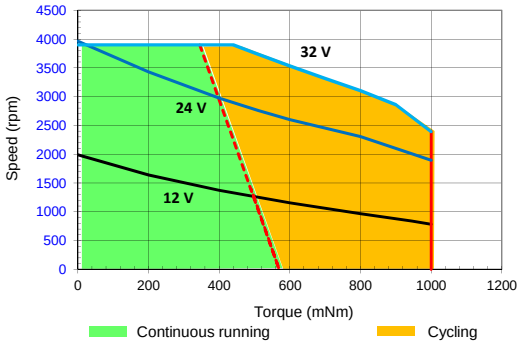
Max. product characteristics		
Parameters		
Max. voltage supply "Vcc"	Vdc	39
Max. current "Icc max"	A	20
Max. voltage on inputs "Vin max"	Vdc	39
Max. voltage on outputs "Vout max"	Vdc	39
Max. output current "Iout max"	mA	50

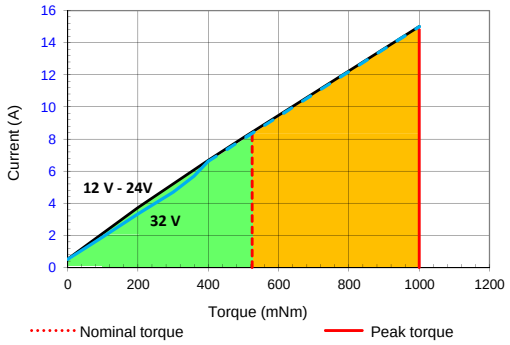
Running datas				
Parameters		Min	Typical	Max
Voltage suplly "Vcc"	Vdc	10	12/24/32	36
Current "Icc"	A	-	10	17
Standby power "Wo"	W	-	2	-
Vitesse réglable de	rpm	120	-	4000
Couple moteur réglable de	mNm	40	-	1 000
Couple de maintien réglable de	mNm	40	-	310

Input datas				
Parameters		Min	Typical	Max
Impedance - Input 1, 2	kΩ	-	57	-
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

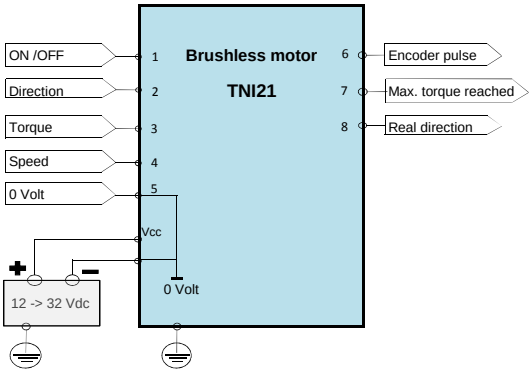
Output datas				
Parameters		Min	Typical	Max
Low level Outputs	Vdc	0	-	0,2
with "pull down resistor" = 4,7KΩ and Vcc = 24 V				
High level Outputs	Vdc	Vcc - 0,5	-	Vcc
with "pull down resistor" = 4,7KΩ and Vcc = 24 V				
= voltage supply added from eventual rejective voltage				

Speed-torque and current-torque curves





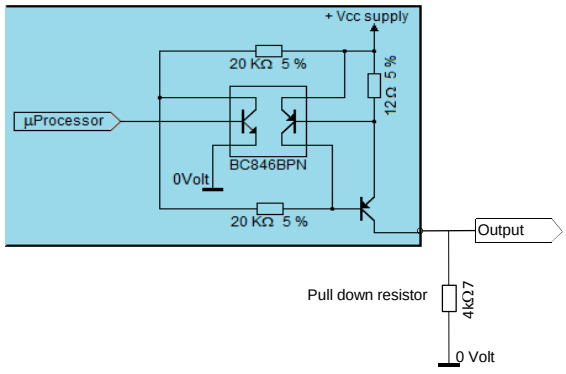
Wiring



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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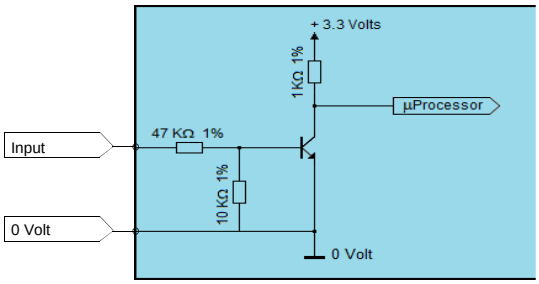

Inputs: Torque and Speed

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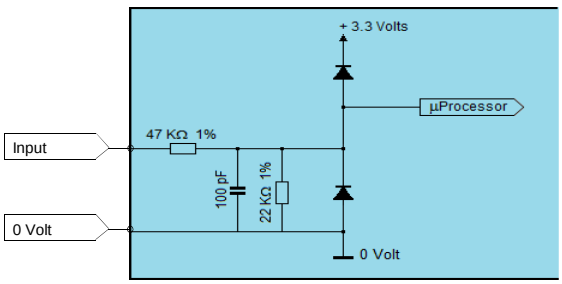

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