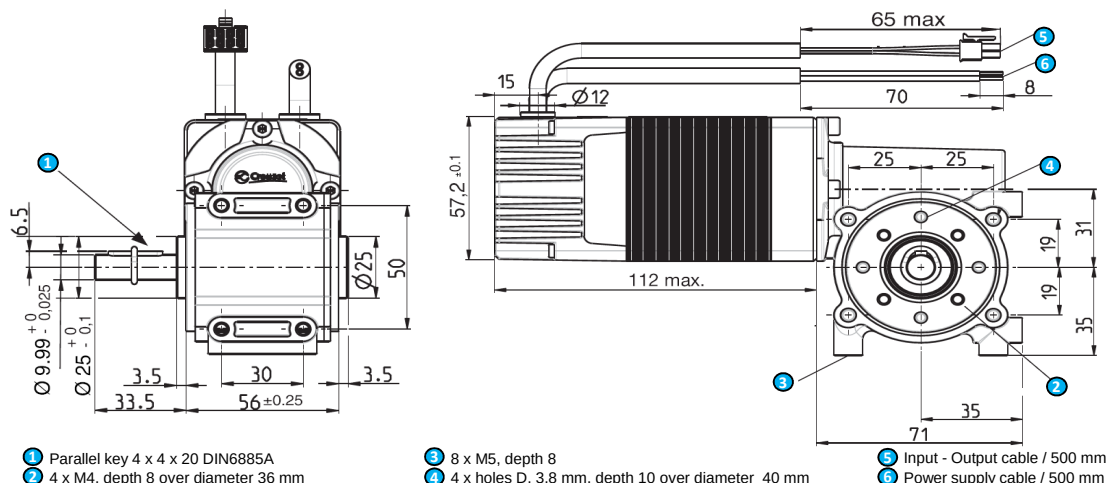


DCmind Brushless motor

Data sheet

80 181 011
0/10V - ratio 10

Series
80 181 TNI20



General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	12 -> 32
Max. current	A	6

Gearmotor type 80 181 TNI20		
Motor type		80 180 002
Gearbox type		81 041 0
Ratio		10
Shaft output		Left
Max. permissible continuous torque	Nm	10
Max. backlash	°	0,5

Motor characteristics (1)			24 Vdc	
At no load				
Max. output speed	rpm		420	
Current at the max output speed (6)	A		0,39	
Standby current	A		0,09	+/-10%
At nominal				
Speed	rpm		325	+/-10%
Torque (2)	Nm		1,1	
Output power	W		39	+/-10%
Current	A		4,8	
Efficiency	%		34	
At max. output power				
Speed	rpm		300	
Torque	Nm		1,4	
Output power	W		45	
Current	A		6,0	
Efficiency	%		31	
At peak torque				
Speed	rpm		300	
Torque	Nm		1,4	
Output power	W		45	
Current	A		6,0	
Others				
Weight	kg		1,65	
Noise level	dBA		40	

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	
OV	5 - Black	
Output: Pulse	6 - Brown	
Output: Torque limit reached	7 - Purple	
Output: Direction	8 - Red	
Power supply cable		
Cable UL style 2464 80°C 300V - 2 wires AWG20 - 500 mm		
+ 12Vcc -> + 32 Vdc (5)	Brown	
OV	Blue	

Drive		
Type		TNI20
Built-in drive		✓
Internal encoder		12 pulses per turn
Control		
Speed		0/10 V
Torque		0/10 V
4 quadrants - low braking		✓
4 quadrants with regenerative energy		
"Trapezoidal" type		✓
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)	daN	15
Max. axial force(4)	daN	10
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 E
Salt spray	CEI60068-2-58	severity 48h
Degree of protection (output shaft not included)	CEI60529	IP 65
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		✓

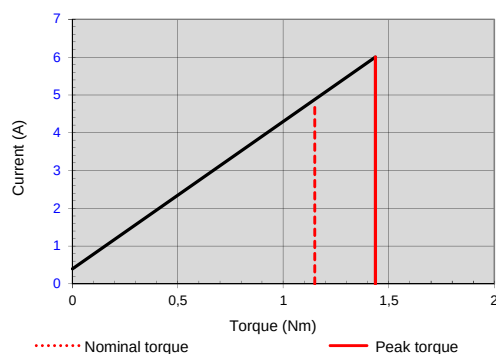
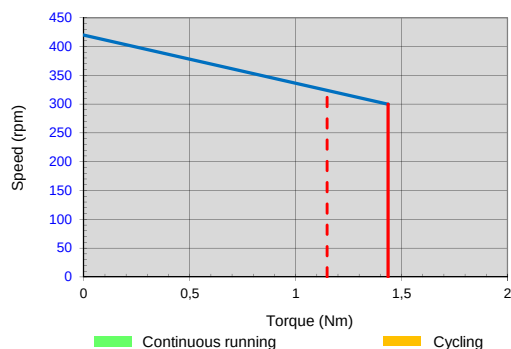
Notes	
Values without tolerance are average production values.	
Added informations are in "SMI21 manual and security". Available on www.crouzet-motors.com .	
Motor not protected in case of reversed power voltage	
(1) Cold motor, 20 ° C ambient temperature, full speed	
(2) Max torque for continuous operation 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.	
(5) Before September 2015: Nominal was 12 -> +32Vdc, Short high voltage was > 36Vdc, Absolute max. was 39Vdc	
(6) Value without gearbox. With gearbox, the value increases and varies depending on grease temperature.	

Drive electrical datas

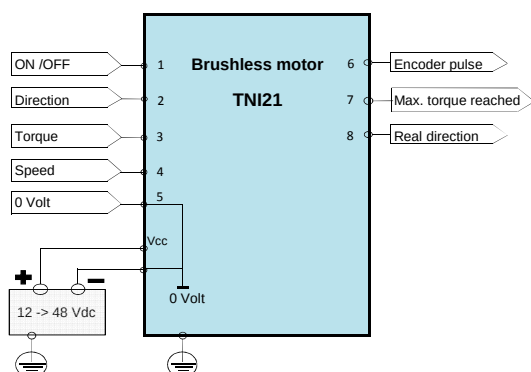
Max. product characteristics				
Parameters				
Max. voltage supply "Vcc"	Vdc		36	
Max. current "Icc max"	A		6	
Max. voltage on inputs "Vin max"	Vdc		36	
Max. voltage on outputs "Vout max"	Vdc		36	
Max. output current "Iout max"	mA		50	
Running datas				
Parameters		Min	Typical	Max
Voltage supply "Vcc"	Vdc	18	24	36
Current "Icc"	A	-	4	6
Standby power "Wo"	W	-	2	-
Speed setting	rpm	12	-	420
Torque setting	Nm	0,48	-	1,44

Input datas				
Parameters		Min	Typical	Max
Impedance - Input 1, 2	kΩ	-	0	-
Impedance - Input 3, 4	kΩ	-	440	-
Low level - Input 1, 2	Vdc	0	-	2
High level - Input 1, 2	Vdc	4	-	36
Voltage level - Input 3, 4	Vdc	0	-	10
	Vdc	-	-	-
	Hz	-	-	-
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



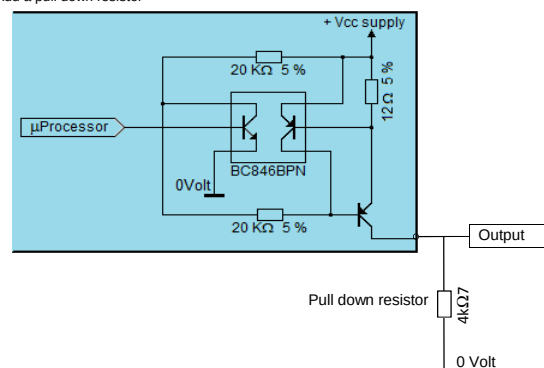
Wiring



Output equivalent circuit

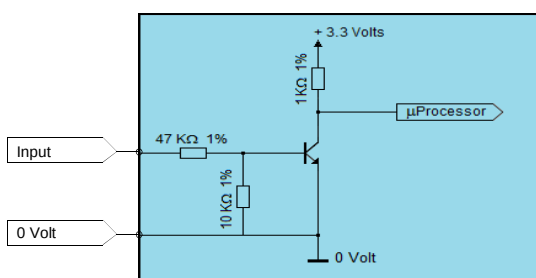
Outputs

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



Inputs: ON/OFF and Direction

Inputs: ON/OFF and Direction



Inputs: Torque and Speed

Inputs: Torque and Speed

