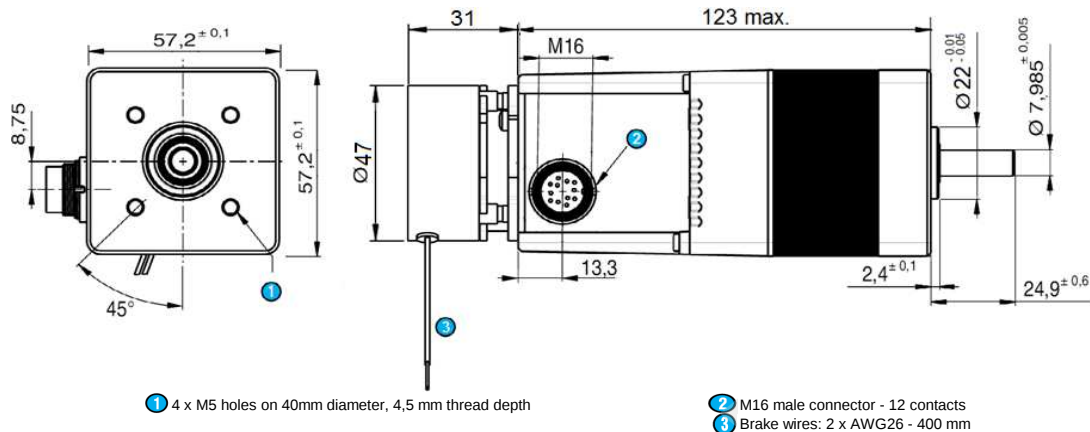


DCmind Brushless motor

Data sheet

80 140 0
PWM + M16 + brake

Series
80 140 TNI20



General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	18 -> 32
Max. current	A	3

Motor characteristics (1)		24 Vdc	
At no load			
Max. output speed	rpm	2 900	
Current at the max output speed (6)	A	0,18	
Standby current	A		
At nominal			
Speed	rpm	2 100	+10%
Torque (2)	mNm	150	
Output power	W	33	+10%
Current	A	2,0	
Efficiency	%	69	
At max. output power			
Speed	rpm	1 700	
Torque	mNm	230	
Output power	W	41	
Current	A	3	
Efficiency	%	57	
At peak torque			
Speed	rpm	1 700	
Torque	mNm	230	
Output power	W	41	
Current	A	3	
Others			
Life (3)	h	20 000	
Rotor inertia	gcm²	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	
+ 18Vcc -> + 32 Vdc	E + F
0V	G + M
0V	B
Input: ON/OFF	K
Input: Direction	J
Input: Speed	C
Input: Torque limit	A
Output: Pulse	D
Output: Torque limit reached	H
Output: Direction	L

Lumberg 0315 12

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
E = grey	F = pink
J = black	K = purple
C = green	G = blue
D = yellow	H = red
L = grey/pink	M = red/blue

Drive	
Type	TNI20
Built-in drive	✓
Internal encoder	12 pulses per turn
Control	
Speed	PWM
Torque	PWM
4 quadrants - low braking	✓
4 quadrants with regenerative energy	
"Trapezoidal" type	✓
Security	
Short-circuit of outputs	✓
Input inverted	✓
Low voltage	Vdc < 14
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 54
EMC	
Electrostatic Discharge	CEI61000-4-2 level 3

Electrical fast transient / burst test	CEI61000-4-4	level	3
Surge test	CEI61000-4-5	level	3

Radiated emission	EN55022	class	1
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 tolerance are average production values.	
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

Absolute maximum ratings

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

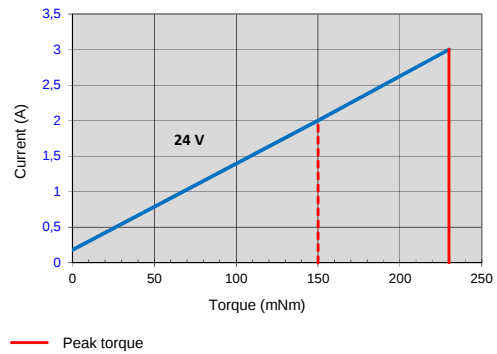
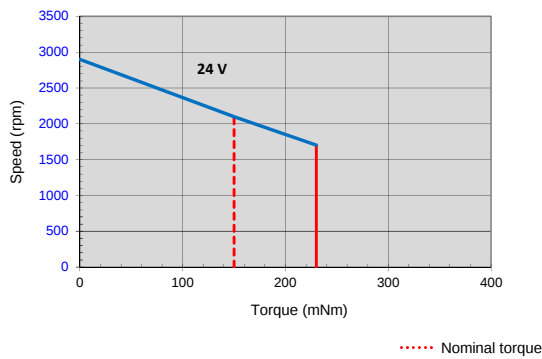
Parameters		Min	Typical	Max
Voltage supply "Vcc"	Vdc	18	24	36
Current "Icc"	A	-	2	3
Standby power "Wo"	W	-	2	-
Speed setting	rpm	0 / 120	-	3 100
Torque setting	mNm	80	-	230

Input datas

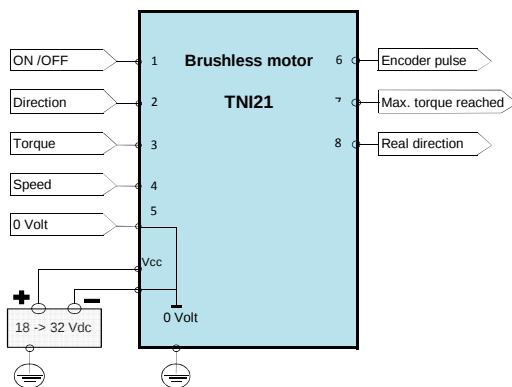
Parameters		Min	Typical	Max
Impedance - Input 1, 2 (On/Off - Direction)	kΩ	-	59	-
Impedance - Input 4 (speed)	kΩ	-	18,8	-
Low level - Input 1, 2	Vdc	0	-	2
High level - Input 1, 2	Vdc	4	-	36
Low level - Input 3, 4	Vdc	0	-	2,5
High level - Input 3, 4	Vdc	11,5	-	36
PWM frequency	Hz	150	-	1000

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 rejeptive voltage				



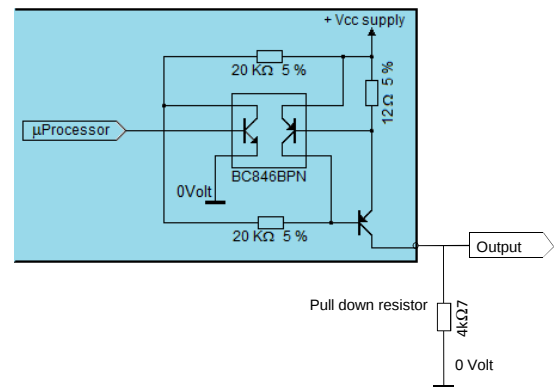
Wiring



Output equivalent circuit

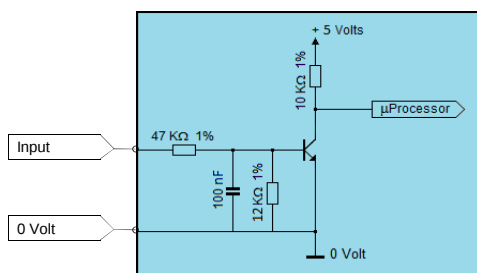
Outputs

Add a pull down resistor

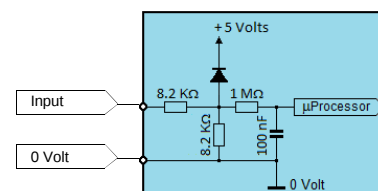


Input equivalent circuits

Inputs 1; 2: ON/OFF and Direction



Input 3: Torque



Input 4: Speed

