

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

② M16 male connector - 12 contacts

General characteristics

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

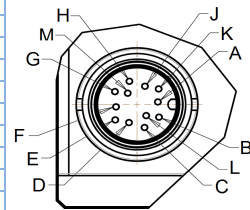
Motor characteristics (1)					
		12 Vdc	24 Vdc	32 Vdc	
At no load					
Max. output speed	rpm	2 900	4 000	4 000	
Current at the max output speed	A	0,34	0,29	0,27	
Standby current	A	0,08	0,09	0,09	+10%
At nominal					
Speed	rpm	1 900	4 000	4 000	+10%
Torque (2)	mNm	193	184	178	
Output power	W	38	77	75	+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 ²		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
E = grey	F = pink
J = black	K = purple
C = green	D = yellow
G = blue	H = red
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		✓	

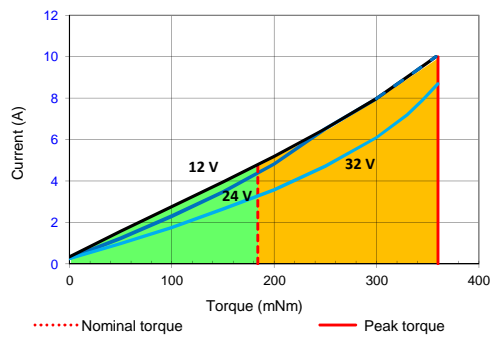
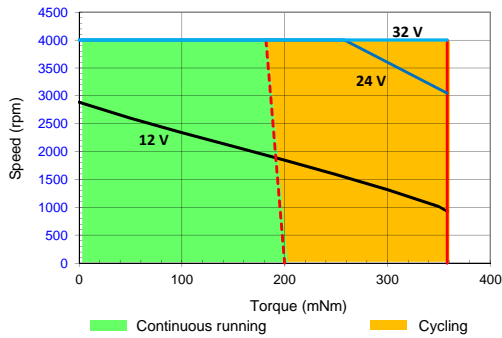
Notes	
Values without tolerances are average production values.	
Added informations are in "TNI21 manual and security" on www.crouzet.com	
Motor not protected in case of reversed power voltage	
(1) Cold motor, 20 ° C ambient temperature, full speed	
(2) Max torque for continuous operation at 20 ° C, 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.	

Drive electrical datas

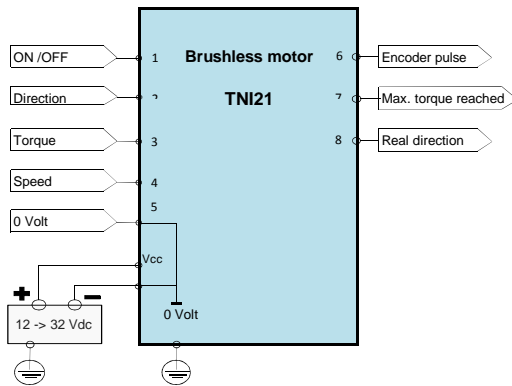
Max. product characteristics			
Parameters			
Max. voltage supply "Vcc"	Vdc		39
Max. current "Icc max"	A		12
Max. voltage on inputs "Vin max"	Vdc		39
Max. voltage on outputs "Vout max"	Vdc		39
Max. output current "Iout max"	mA		50
Running datas			
Parameters			
Voltage supply "Vcc"	Vdc	Min	Typical
Current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

Input datas			
Parameters			
Impedance - Input 1, 2	kΩ	Min	Typical
Impedance - Input 3, 4	kΩ	-	69
Low level - Input 1, 2	Vdc	0	-
High level - Input 1, 2	Vdc	4	-
Low level - Input 3, 4	Vdc	0	-
High level - Input 3, 4	Vdc	7,5	-
PWM frequency	Hz	100	-
2000			
Output datas			
Parameters			
Low level Outputs	Vdc	Min	Typical
with "pull down resistor" = 4,7KΩ and Vcc = 24 V		0	-
High level Outputs	Vdc	Min	Typical
with "pull down resistor" = 4,7KΩ and Vcc = 24 V		Vcc - 0,5	-
= voltage supply added from eventual rejeictive voltage			

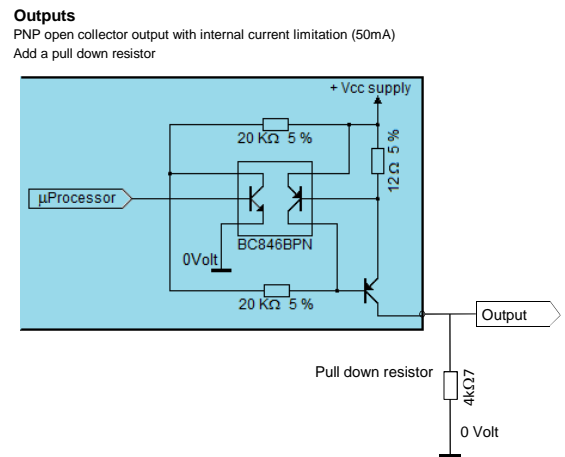
Speed-torque and current-torque curves



Wiring

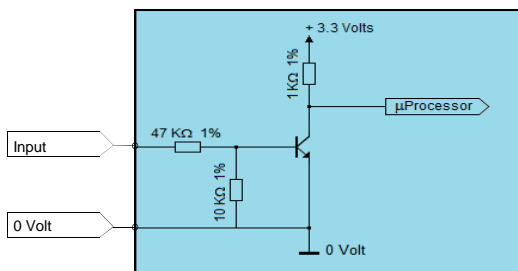


Output equivalent circuit



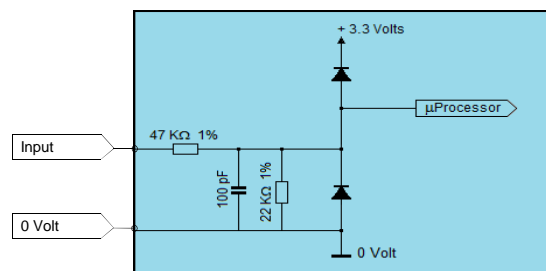
Inputs: ON/OFF and Direction

Inputs: ON/OFF and Direction



Inputs: Torque and Speed

Inputs: Torque and Speed



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