

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 diar			
<b>At no load</b>				
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%
<b>At nominal</b>				
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
<b>At max. output power</b>				
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
<b>At peak torque</b>				
Speed	rpm	930	3 050	4 000
Torque	mNm	358	358	358
Output power	W	35	114	150
Current	A	10	10	10 +-10%
<b>Others</b>				
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		Lumberg 0315 12
M16 male connector - 12 contacts		
+ 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	
<b>2 meters shielded cable with M16 female connector - 12 pins</b>	
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
<b>Control</b>	
Speed	0/10 V
Torque	0/10 V
4 quadrants - low braking	✓
4 quadrants with regenerative energy	
Type" Trapezoidal"	✓
<b>Security</b>	
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
<b>EMC</b>	
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
<b>Approvals</b>	
ROHS	2002/95/CE ✓
EC	✓

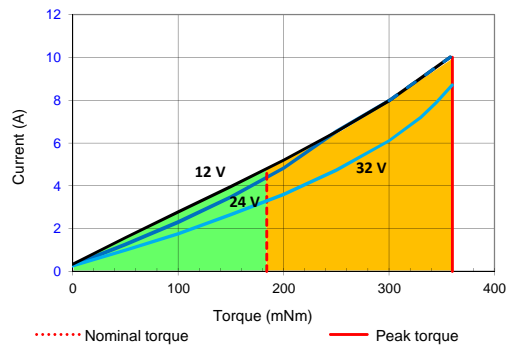
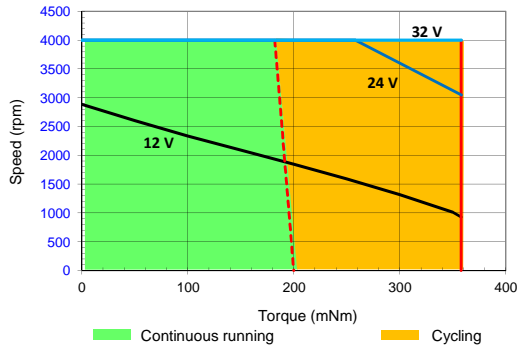
Brake	
Type	Static
Power OFF brake	✓
Voltage supply	Vdc 24 +- 10%
Nominal holding torque	Nm 0,5
Input power	W 6,6

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.	

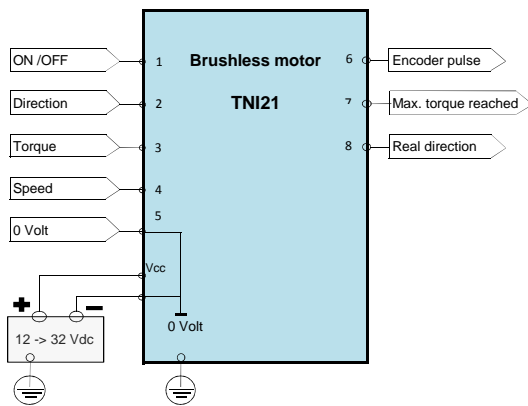
## Drive electrical datas

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
		10	12/24/32	36
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	-	57	-
Impedance - Input 3, 4	kΩ	-	69	-
Low level - Input 1, 2	Vdc	0	-	2
Hlgh level - Input 1, 2	Vdc	4	-	39
Low level - Input 3, 4	Vdc	0	-	2
High level - Input 3, 4	Vdc	7,5	-	39
PWM frequency	Hz	100	-	2000
Output datas				
Parameters				
Low level Outputs	Vdc	Min	Typical	Max
		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				

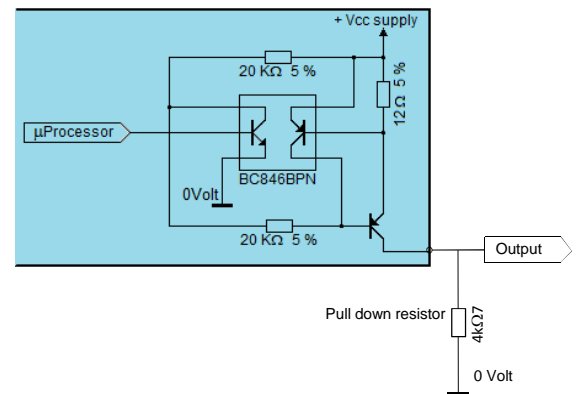


## Wiring



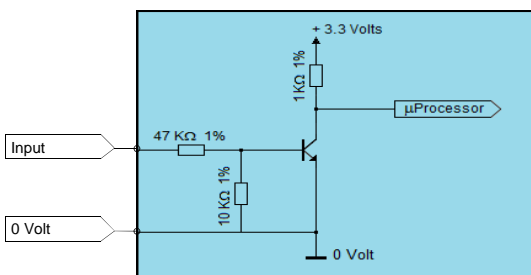
## Output equivalent circuit

**Outputs**  
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

