



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



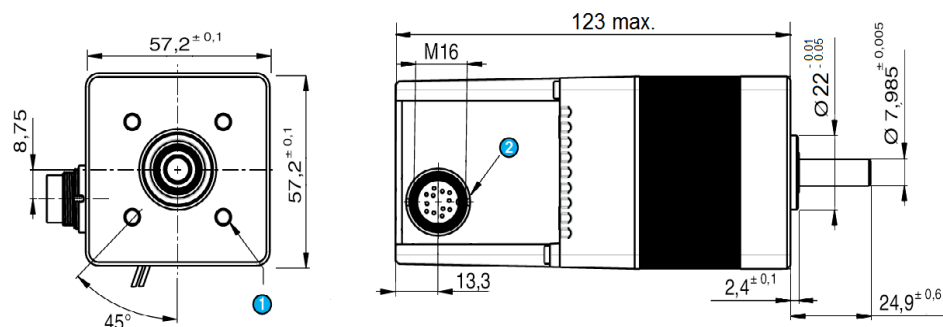
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① 4 x M5 threaded holes on 40mm diameter, 4,5 mm thread depth

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		
+ 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	0/10 V
Torque	0/10 V
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	✓

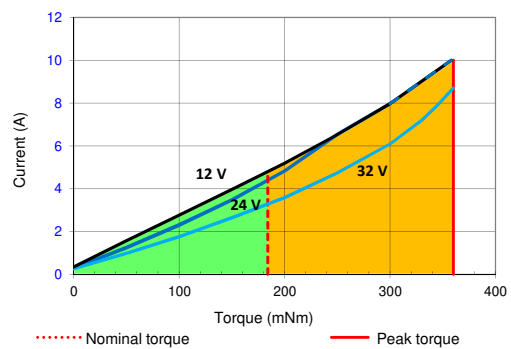
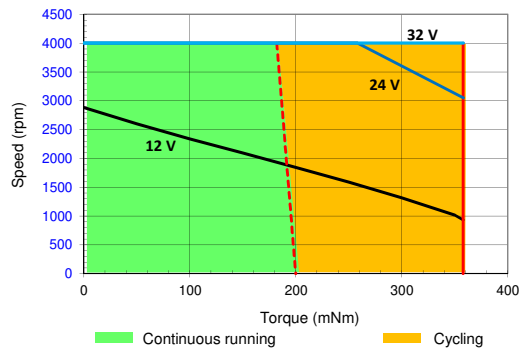
Notes	
Values without tolerances are average production values.	
Added informations are in "TNI21 manual and security" on www.crouzet.com	
Motor not protected in case of reversed power voltage	
(1) Cold motor, 20 °C ambient temperature, full speed	
(2) Max torque for continuous operation at 20 °C, decrease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

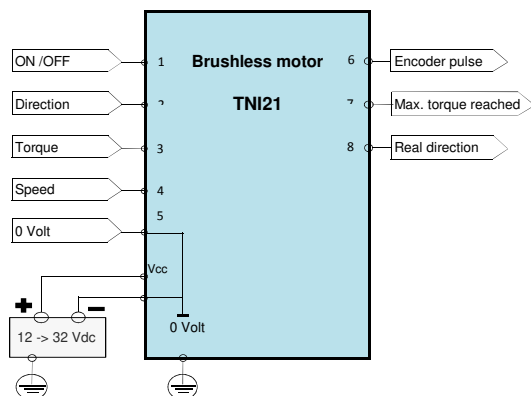
Max. product characteristics				
Parameters				
Max. voltage supply "Vcc"	Vdc		39	
Max. current "Icc max"	A		12	
Max. voltage on inputs "Vin max"	Vdc		39	
Max. voltage on outputs "Vout max"	Vdc		39	
Max. output current "Iout max"	mA		50	
Running datas				
Parameters				
Voltage supply "Vcc"	Vdc	Min	Typical	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	Min	Typical	Max
		-	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
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 rejective voltage				

Speed-torque and current-torque curves



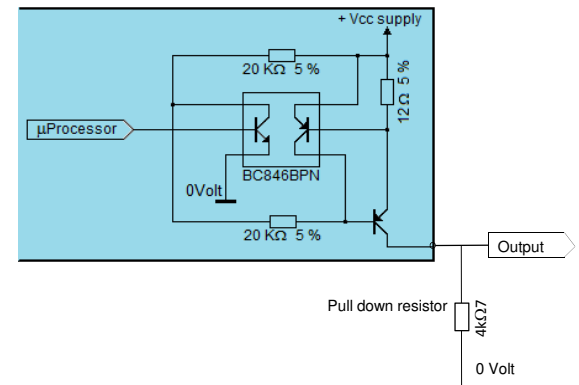
Wiring



Output equivalent circuit

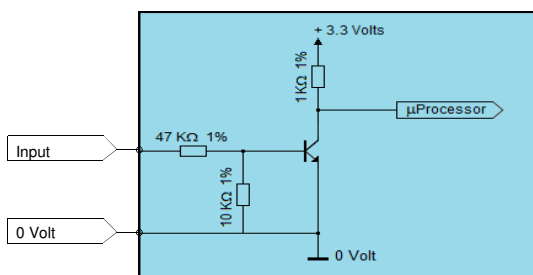
Outputs

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

