

1 4 x M5 threaded holes on 40mm diameter, 4,5 mm thread depth  
2 Input - Output cable with Molex connector

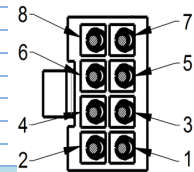
3 Power supply cable

## General characteristics

Power supply		
Direct current voltage supply		✓
Nominal voltage range	Vdc	18 -> 32
Max. current	A	6

Motor characteristics (1)			
		24 Vdc	
<b>At no load</b>			
Max. output speed	rpm	4 200	
Current at the max output speed (6)	A	0,39	
Standby current	A	0,085	+10%
<b>At nominal</b>			
Speed	rpm	3 250	+10%
Torque (2)	mNm	240	
Output power	W	82	+10%
Current	A	4,8	
Efficiency	%	71	
<b>At max. output power</b>			
Speed	rpm	3 000	
Torque	mNm	300	
Output power	W	94	
Current	A	6	
Efficiency	%	65	
<b>At peak torque</b>			
Speed	rpm	3 000	
Torque	mNm	300	
Output power	W	94	
Current	A	6	
<b>Others</b>			
Life (3)	h	20 000	
Rotor inertia	gcm <sup>2</sup>	105	
Thermal Resistance	°/W		
Thermal time constant	mn	15	
Rotor pole number		4	
Cogging torque	mNm	14	
Weight	kg	1,34	
Noise level	dBA	40	

Connecting	
<b>Input - Output cable</b>	<b>With Molex connector ref: 43025-0800</b>
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
0V	5 - Black
Output: Pulse	6 - Brown
Output: Torque limit reached	7 - Purple
Output: Direction	8 - Red
<b>Power supply cable</b>	
Cable UL style 2464 80°C 300V - 2 wires AWG20 - 500 mm	
+ 12Vcc -> + 32 Vdc (5)	Brown
0V	Blue



Drive		
<b>Type</b>	<b>TNI20</b>	
Built-in drive	✓	
Internal encoder	12 pulses per turn	
<b>Control</b>		
Speed	PWM	
Torque	PWM	
4 quadrants - low braking	✓	
4 quadrants with regenerative energy	✓	
"Trapezoidal" type	✓	
<b>Security</b>		
Short-circuit of outputs	✓	
Input inverted	✓	
Low voltage	Vdc	< 16
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 500
Motor insulation	CEI60085	class	E
Salt spray	CEI60068-2-58	severity	
Degree of protection (output shaft not included)	CEI60529	IP	54
<b>EMC</b>			
Electrostatic Discharge	CEI61000-4-2	level	
Electrical fast transient / burst test	CEI61000-4-4	level	
Surge test	CEI61000-4-5	level	
Radiated emission	EN55022	class	B
<b>Approvals</b>			
ROHS	2002/95/CE	✓	
EC		✓	

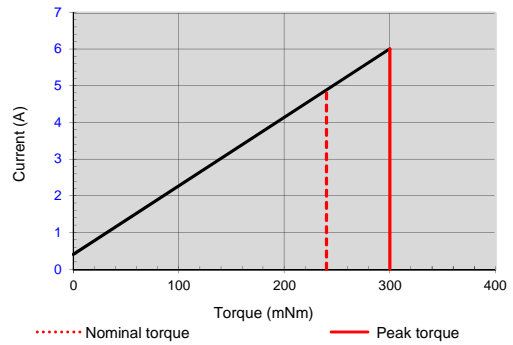
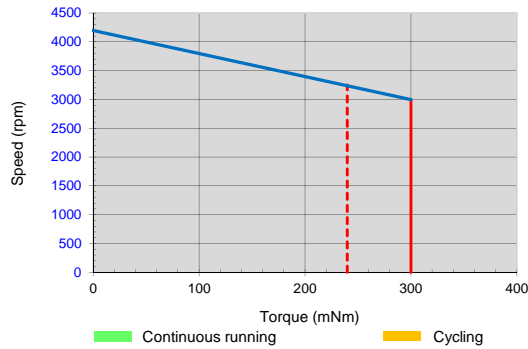
Notes	
Values without tolerance are average production values.	
Added informations are in "SMI21 manual and security". Available on <a href="http://www.crouzet-motors.com">www.crouzet-motors.com</a> .	
Motor not protected in case of reversed power voltage	
(1) Cold motor, 20 °C ambient temperature, full 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

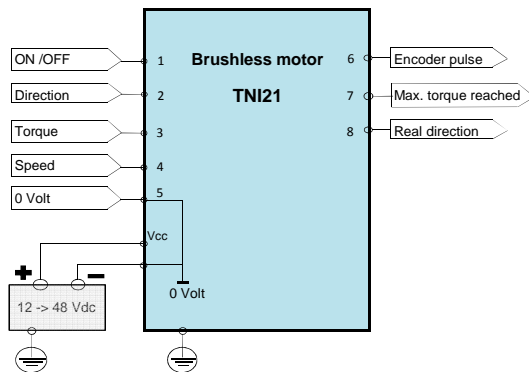
Max. product characteristics			
Parameters			
Max. voltage supply "Vcc"	Vdc		36
Max. current "Icc max"	A		6
Max. voltage on inputs "Vin max"	Vdc		36
Max. voltage on outputs "Vout max"	Vdc		40
Max. output current "Iout max"	mA		50
Running datas			
Parameters			
Voltage supply "Vcc"	Vdc	Min	Typical
		18	24
Current "Icc"	A	-	4
Standby power "Wo"	W	-	2
Speed setting	rpm	120	-
Torque setting	mNm	100	-

Input datas			
Parameters			
Impedance - Input 1, 2	kΩ	-	-
Impedance - Input 3, 4	kΩ	-	19
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	11,5	-
PWM frequency	Hz	150	-
1000			
Output datas			
Parameters			
Low level Outputs	Vdc	Min	Typical
		0	-
with "pull down resistor" = 4,7KΩ and Vcc = 24 V			0,2
High level Outputs	Vdc	Vcc - 0,5	-
with "pull down resistor" = 4,7KΩ and Vcc = 24 V			Vcc
= voltage supply added from eventual rejective voltage			

## Speed-torque and current-torque curves



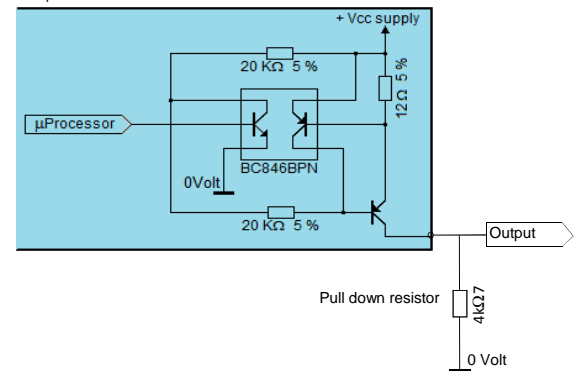
## Wiring



## Output equivalent circuit

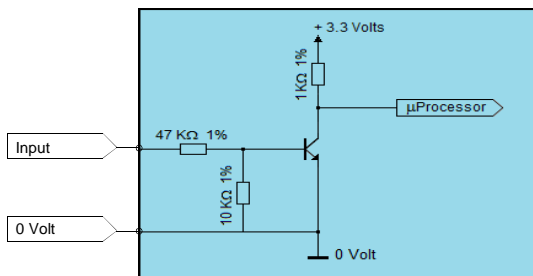
### Outputs

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

