

- 1 Key way 6 x 6 x 28 DIN6885A
- 2 M6 x 16
- 3 4 x M6 on 65mm diam - 12 depth

- 4 Input - Output cable - 500 mm +- 20
- 5 Power supply cable - 500 mm +- 20

L1 = 92,2 ±0,6
L2 = 112 max.

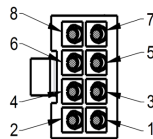
General characteristics

| Power supply | | |
|-------------------------------|-----|----------|
| Direct current voltage supply | | ✓ |
| Nominal voltage range (5) | Vdc | 12 -> 48 |
| Max. current | A | 15 |

| Gearmotor type | | 80 289 7 TNI21 | | |
|------------------------------------|----|----------------|--|--|
| Motor type | | 80 280 013 | | |
| Gearbox type | | 81 041 0 | | |
| Ratio | | 19,2 | | |
| Number of stages | | 2 | | |
| Max. permissible continuous torque | Nm | 60 | | |
| Max. backlash | ° | 0,55 | | |

| Motor characteristics (1) | | 12 Vdc | 24 Vdc | 32 Vdc | |
|-------------------------------------|-------|--------|--------|--------|------|
| At no load | | | | | |
| Max. output speed | rpm | 104 | 206 | 206 | |
| Current at the max output speed (6) | A | 0,5 | 0,7 | 0,6 | |
| Standby current | A | 0,08 | 0,09 | 0,09 | +10% |
| At nominal | | | | | |
| Speed | rpm | 73 | 169 | 203 | +15% |
| Torque (2) | Nm | 7,5 | 6,0 | 5,5 | |
| Output power | W | 57 | 106 | 116 | |
| Current | A | 8,5 | 6,9 | 5,5 | |
| Efficiency | % | 56 | 64 | 66 | |
| At max. output power | | | | | |
| Speed | rpm | 42 | 99 | 125 | +15% |
| Torque | Nm | 15,4 | 15,4 | 15,4 | |
| Output power | W | 67 | 159 | 201 | |
| Current | A | 15,3 | 14,6 | 12,5 | |
| Efficiency | % | 37 | 45 | 50 | |
| At peak torque | | | | | |
| Speed | rpm | 42 | 99 | 125 | +15% |
| Torque | Nm | 15,4 | 15,4 | 15,4 | |
| Output power | W | 67 | 159 | 201 | |
| Current | A | 15,3 | 14,6 | 12,5 | |
| Others | | | | | |
| Weight | kg | 4,14 | | | |
| Noise level | dB(A) | 55 | | | |

| Connecting | |
|---------------------------------------|--------------------------------------|
| Input - Output cable | With Molex connector ref: 43025-0800 |
| 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 |
| OV | 5 - Black |
| Output: Pulse | 6 - Brown |
| Output: Torque limit reached | 7 - Purple |
| Output: Direction | 8 - Red |
| Power supply cable | |
| Cable UL style 2517 105°C 300V | - 2 wires AWG16 - 500 mm |
| + 12Vcc -> + 48 Vdc (5) | Brown |
| OV | Blue |



| Drive | |
|--|--------------------|
| Type | TNI21 |
| Built-in drive | ✓ |
| Internal encoder | 24 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 < 9 |
| Short high voltage | Vdc > 56 |
| 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 600 |
| Max. axial force(4) | N 120 |
| Temperature range | CEI60068-2-1/2 °C -30 -> +70 |
| Storage temperature | °C -40 -> +80 |
| Dielectric | 1min 2mA 50Hz CEI60335 Vac 1 000 |
| Motor insulation | CEI60085 class E |
| Salt spray | CEI60068-2-58 severity 48h |
| Degree of protection (output shaft not included) | CEI60529 IP 65 |
| 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 | 2011/65/UE ✓ |
| EC | 2014/30/UE ✓ |

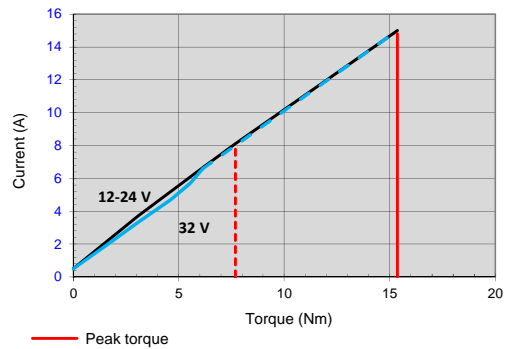
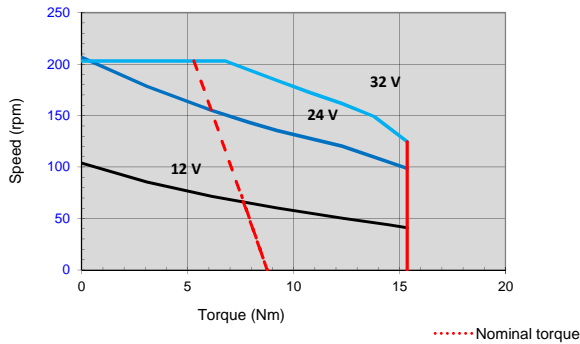
| Notes | |
|--|--|
| Values without tolerance are average production values. | |
| Added informations are in "TNI21 manual and security". Available on www.crouzet-motors.com . | |
| Motor not protected in case of reversed power voltage | |
| (1) Cold motor, 20 ° C ambient temperature, full speed | |
| (2) Max torque for continuous operation at 20 ° C, decrease this value for higher ambient temperature | |
| (4) Pinion or pulley fitting are done at the Crouzet factory, before final assembly. | |
| (5) Before September 2015: Nominal was 12 -> +32Vdc, Short high voltage was > 36Vdc, Absolute max. was 39Vdc | |
| (6) Value without gearbox. With gearbox, the value increases and varies depending on grease temperature. | |

Drive electrical datas

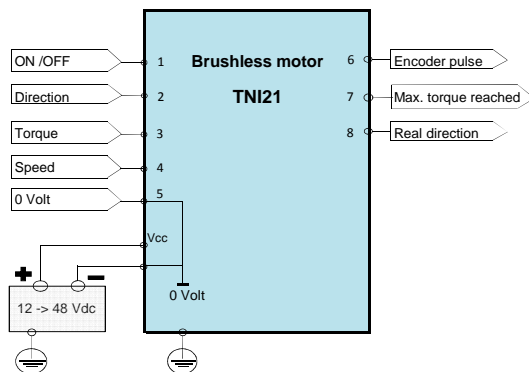
| Absolute maximum ratings | | | |
|--|-----|--------|---------|
| Parameters | | | |
| Max. voltage supply "Vcc" (5) | Vdc | | 85 |
| Max. current "Icc max" | A | | 20 |
| Max. voltage on inputs "Vin max" (5) | Vdc | | 50 |
| Max. voltage on outputs "Vout max" (5) | Vdc | | 85 |
| Max. output current "Iout max" | mA | | 50 |
| Running datas | | | |
| Parameters | | | |
| Voltage supply "Vcc" (5) | Vdc | Min | Typical |
| Current "Icc" | A | | Max |
| Standby power "Wo" | W | | |
| Speed setting | rpm | 0/ 6,3 | - 208 |
| Torque setting | Nm | 0,6 | - 15,4 |
| Holding torque setting | Nm | 0,6 | - 4,8 |

| Input datas | | | |
|---|-----|-----|---------|
| Parameters | | | |
| Impedance - Input 1, 2 | kΩ | Min | Typical |
| Impedance - Input 3, 4 | kΩ | | Max |
| Low level - Input 1, 2 | Vdc | | |
| High level - Input 1, 2 | Vdc | | |
| Low level - Input 3, 4 | Vdc | | |
| High level - Input 3, 4 | Vdc | | |
| PWM frequency | Hz | | |
| Output datas | | | |
| Parameters | | | |
| Low level Outputs | Vdc | Min | Typical |
| High level Outputs | Vdc | | Max |
| with "pull down resistor" = 4,7KΩ and Vcc = 24 V | | | |
| with "pull down resistor" = 4,7KΩ and Vcc = 24 V = voltage supply added from eventual rejective voltage | | | |
| Notes | | | |
| Outputs are destroyed if they are connected to zero ground or to a capacitive load | | | |

Speed-torque and current-torque curves



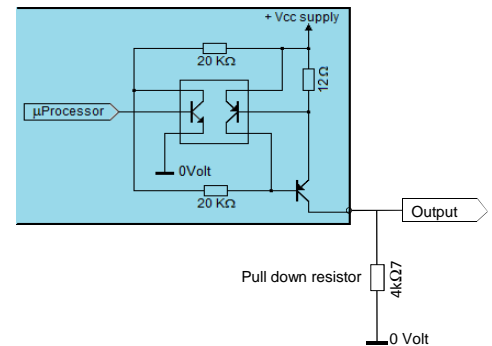
Wiring



Output equivalent circuit

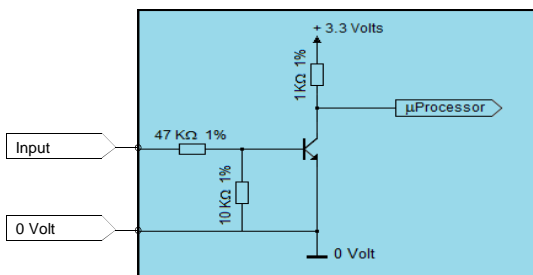
Outputs

PNP open collector output with internal current limitation (50mA)
Add a pull down resistor

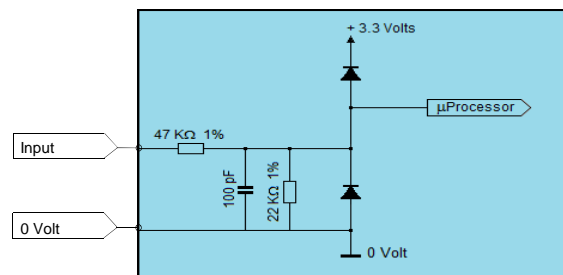


Input equivalent circuits

Inputs: ON/OFF and Direction



Inputs: Torque and Speed



Specifications subject to change without notice. Updated 25/07/2016