

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 |

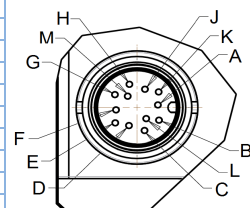
| Motor characteristics (1) | | | | | |
|---------------------------------|-----|--------|--------|--------|------|
| | | 12 Vdc | 24 Vdc | 32 Vdc | |
| At no load | | | | | |
| Max. output speed | rpm | 2 900 | 4 000 | 4 000 | |
| Current at the max output speed | A | 0,34 | 0,29 | 0,27 | |
| Standby 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 | | ✓ | |

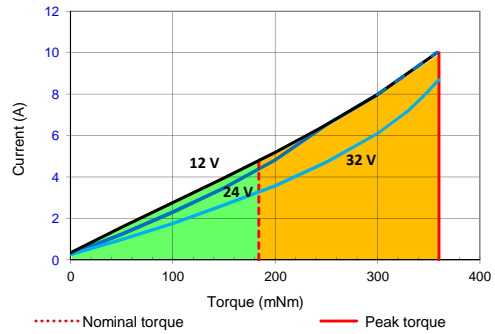
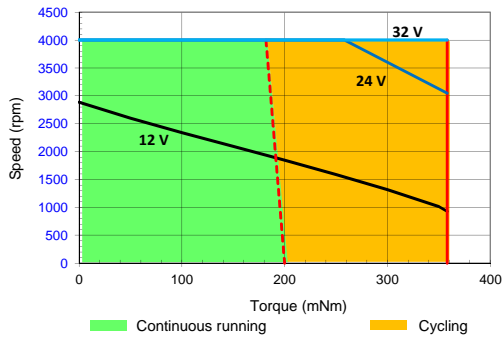
| Notes | |
|---|--|
| Values without tolerances are average production values. | |
| Added informations are in "TNI21 manual and security" on www.crouzet.com | |
| Motor not protected in case of reversed power voltage | |
| (1) Cold motor, 20 ° C ambient temperature, full speed | |
| (2) Max torque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

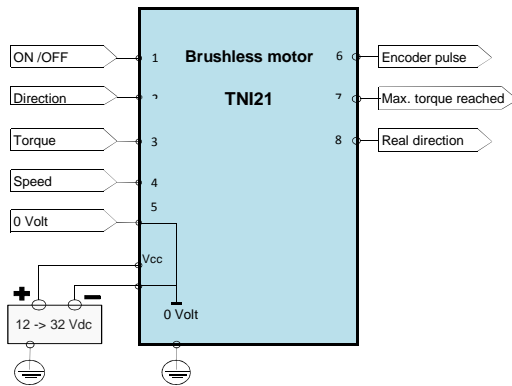
| Max. product characteristics | | | |
|------------------------------------|-----|-----|---------|
| Parameters | | | |
| Max. voltage supply "Vcc" | Vdc | | 39 |
| Max. current "Icc max" | A | | 12 |
| Max. voltage on inputs "Vin max" | Vdc | | 39 |
| Max. voltage on outputs "Vout max" | Vdc | | 39 |
| 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 | 4 000 |
| Torque setting | mNm | 35 | 360 |
| Holding torque setting | mNm | 35 | 150 |

| Input datas | | | |
|--|-----|-----------|---------|
| Parameters | | | |
| Impedance - Input 1, 2 | kΩ | Min | Typical |
| 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 |
| with "pull down resistor" = 4,7KΩ and Vcc = 24 V | | 0 | 0,2 |
| 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 | | | |

Speed-torque and current-torque curves



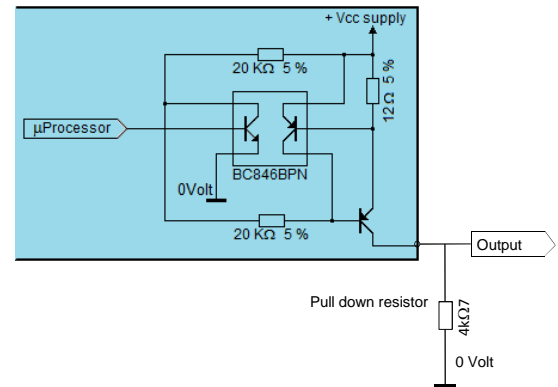
Wiring



Output equivalent circuit

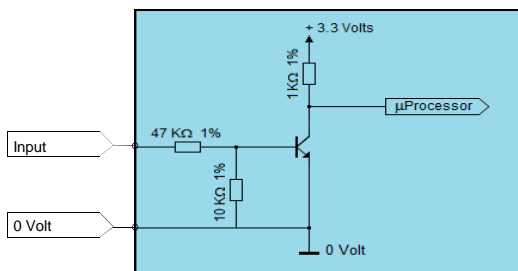
Outputs

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

