

## CROUZET - BLDC PLANETARY GEARED MOTOR WITH INTEGRATED TNi21 DRIVE

801897XX TNi21  
Planetary 81mm gearmotor 100W 12→32Vdc 14?  
670rpm 120Nm max

- 12→32 V dc, 52→81 mmØ, 25→120 Nm, 11→775 rpm
- Speed & torque control. Easy use
- Reduce control panel space & cabling
- Long life (>20,000 hours)
- IP65 as standard



### PRODUCT DESCRIPTION

The TNi21 integrated drive is ideal for applications where speed and torque control is required.

The long lifetime of the brushless motor (>20,000 hours with rated load) means it is ideal for continuous or long duty applications.

Having the drive integrated into the motor can also save control panel space, reduce cabling and save set-up time.

3 motor sizes available with the same diameter (57mm x 57mm), with increasing motor lengths for more power/torque.

Planetary & worm gearbox options available for reducing the speed & increasing the output torque.

Pre-set I/O mean that the motor can be used immediately without any complex preliminary set-up. It can be controlled via basic switches or by external PLC.

Motor power and logic connections are via cable output or connector options.

The motors are rated to IP65 dust/water protection class as standard.

Options for adaptation to the standard motor include adding an encoder, holding brake, special output shaft, special connectors, upgraded IP protection & special firmware developed according to your specific application requirements.

\* Product datasheets & 3D drawing for 0-10Vdc, cable version attached as an example. Further information for PWM version, brake options & connector version available upon request.

Full documentation & user manuals also available upon request.

### TECHNICAL DATA

Diameter	81 mm
Integrated control	TNi21
IP class	IP65
Life span	20,000h
Max. torque	120
Number of pulses per revolution	12
Positioning feedback	Yes
Power	100 W
Ratio	i=5→236:1
Shaft diameter	19 mm

## Speed options

14rpm→670rpm

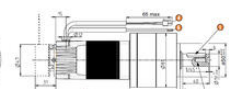
## Supply voltage

12 V DC, 24 V DC

## Type of gearbox

Planetary 1→3 stages

801897 - 802097 - T1N21 - P61 with or without brake



L1 1 stage: 70.5 c.d.6  
L1 2 stages: 92.2 c.d.6  
L1 3 stages: 113.8 c.d.6  
L2 80180-80200: 112 max.  
L3 80180-80200: 143 max.

Parallel key 6 x 6 x 28 DIN 6885 A  
Shaft x 16  
Shaft x 16 at 90° depth 12 over 0.65  
Terminal cable 6 x AWG24 / 500 mm  
Power cable 2 x AWG16 / 500 mm

## GEARBOXES FOR DCmind BRUSHLESS RANGE

4 to 120 Nm

- Planetary and worm gearboxes
- Shafts on ball bearings
- Long service life
- IP65



### Part numbers

Box	Planetary 0.5 Nm	Planetary 0.8 Nm	Planetary 0.1 Nm	Worm
Type	801897	801898	801899	801900
801897 T1N21	801897 T1N21	801898 T1N21	801899 T1N21	801900 T1N21
801898 T1N21	801898 T1N21	801899 T1N21	801900 T1N21	801901 T1N21
801899 T1N21	801899 T1N21	801900 T1N21	801901 T1N21	801902 T1N21
801900 T1N21	801900 T1N21	801901 T1N21	801902 T1N21	801903 T1N21
801901 T1N21	801901 T1N21	801902 T1N21	801903 T1N21	801904 T1N21
801902 T1N21	801902 T1N21	801903 T1N21	801904 T1N21	801905 T1N21

**Technical characteristics**

Maximum permitted torque (Nm)	4	12	25	8	25	50	20	60	120	12
Efficiency	0.8	0.78	0.7	0.9	0.8	0.7	0.9	0.8	0.7	0.4 → 0.3
Rated dynamic load (N)	8	10	15	10	15	20	10	15	20	15
Rated dynamic load (N)	20	30	40	24	36	48	40	60	80	15
Operating temperature	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C
Weight (kg)	0.3	0.8	1.1	0.8	1.2	1.6	1.8	2.5	3.2	0.3
Standard reduction ratio	6.75	25	95	6.75	19	100	5	10	100	5 : 10 : 20 : 30 : 50
	46	108	308	46	108	236	28	139	236	

Other ratios possible

13 - 100

**Notes:**

**0.5 Nm planetary gearbox:** Metal gears on all stages. IP65 apart from the output shaft.

**0.8 Nm planetary gearbox:** On the first stage, the planet gears are made of composite materials which improve efficiency and service life. On the other stages, the main gears turn on needle bearings. IP65 apart from the output shaft.

**0.1 Nm planetary gearbox:** All gears are metal and turn on needle bearings, resulting in excellent robustness and a very long service life. IP65 apart from the output shaft.

**Worm gearbox:** This gearbox contains a hardened steel worm and a hard bronze helical gear wheel, thus ensuring a long service life. The wheel is coated with grease, ensuring an excellent slip coefficient and good heat dissipation. Gears and bearings are used in combination with a compression spring to create a tight seal at the gearbox output shaft and the motor input shaft. IP65 gearbox.

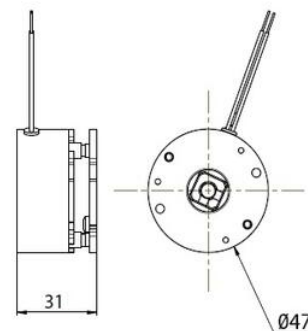
The casing is made of aluminium to maximize heat exchange with its supporting surface on the machine.

However, due to the high power that can be transmitted by this gearbox and the low efficiency inherent in large worm gearbox reduction ratios, make sure that the gearbox casing temperature does not exceed 70°C during operation.

The output shaft can be placed on the right or left, or can be a double shaft (shaft output on both sides).

## Options

Holding brake 0.5 Nm - 24 VDC



## Connections

Connector	Cable
M8	color
Power ground	Grey
Power supply +12 to +24 V DC	Red
Light ground	Blue
Input 1 On/Off	AWG24 Black (1)
Input 2 On/Off	AWG24 Green (1)
Input 3 On/Off	AWG24 Yellow (1)
Input 4 On/Off	AWG24 Orange (1)
Input 5 On/Off	AWG24 Brown (1)
Output 1 Forward	L
Output 2 Reverse	L
Input 6 Torque	AWG24 Blue (1)
Output 6 Torque at max	AWG24 Purple (1)

1: 10 pins, and 24 for 802097 motor

## GEARBOXES FOR DCmind BRUSHLESS RANGE

4 to 120 Nm

- Planetary and worm gearboxes
- Shafts on ball bearings
- Long service life
- IP65



### Part numbers

Box	Planetary 0.5 Nm	Planetary 0.8 Nm	Planetary 0.1 Nm	Worm
Type	801897	801898	801899	801900
801897 T1N21	801897 T1N21	801898 T1N21	801899 T1N21	801900 T1N21
801898 T1N21	801898 T1N21	801899 T1N21	801900 T1N21	801901 T1N21
801899 T1N21	801899 T1N21	801900 T1N21	801901 T1N21	801902 T1N21
801900 T1N21	801900 T1N21	801901 T1N21	801902 T1N21	801903 T1N21
801901 T1N21	801901 T1N21	801902 T1N21	801903 T1N21	801904 T1N21
801902 T1N21	801902 T1N21	801903 T1N21	801904 T1N21	801905 T1N21

**Technical characteristics**

Maximum permitted torque (Nm)	4	12	25	8	25	50	20	60	120	12
Efficiency	0.8	0.78	0.7	0.9	0.8	0.7	0.9	0.8	0.7	0.4 → 0.3
Rated dynamic load (N)	8	10	15	10	15	20	10	15	20	15
Rated dynamic load (N)	20	30	40	24	36	48	40	60	80	15
Operating temperature	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C	-20 → +25°C
Weight (kg)	0.3	0.8	1.1	0.8	1.2	1.6	1.8	2.5	3.2	0.3
Standard reduction ratio	6.75	25	95	6.75	19	100	5	10	100	5 : 10 : 20 : 30 : 50
	46	108	308	46	108	236	28	139	236	

Other ratios possible

13 - 100

**Notes:**

**0.5 Nm planetary gearbox:** Metal gears on all stages. IP65 apart from the output shaft.

**0.8 Nm planetary gearbox:** On the first stage, the planet gears are made of composite materials which improve efficiency and service life. On the other stages, the main gears turn on needle bearings. IP65 apart from the output shaft.

**0.1 Nm planetary gearbox:** All gears are metal and turn on needle bearings, resulting in excellent robustness and a very long service life. IP65 apart from the output shaft.

**Worm gearbox:** This gearbox contains a hardened steel worm and a hard bronze helical gear wheel, thus ensuring a long service life. The wheel is coated with grease, ensuring an excellent slip coefficient and good heat dissipation. Gears and bearings are used in combination with a compression spring to create a tight seal at the gearbox output shaft and the motor input shaft. IP65 gearbox.

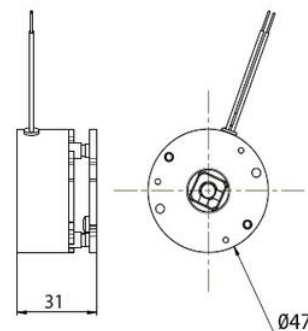
The casing is made of aluminium to maximize heat exchange with its supporting surface on the machine.

However, due to the high power that can be transmitted by this gearbox and the low efficiency inherent in large worm gearbox reduction ratios, make sure that the gearbox casing temperature does not exceed 70°C during operation.

The output shaft can be placed on the right or left, or can be a double shaft (shaft output on both sides).

## Options

Holding brake 0.5 Nm - 24 VDC



## Connections

Connector	Cable
M8	color
Power ground	Grey
Power supply +12 to +24 V DC	Red
Light ground	Blue
Input 1 On/Off	AWG24 Black (1)
Input 2 On/Off	AWG24 Green (1)
Input 3 On/Off	AWG24 Yellow (1)
Input 4 On/Off	AWG24 Orange (1)
Input 5 On/Off	AWG24 Brown (1)
Output 1 Forward	L
Output 2 Reverse	L
Input 6 Torque	AWG24 Blue (1)
Output 6 Torque at max	AWG24 Purple (1)

1: 10 pins, and 24 for 802097 motor