

CROUZET - BLDC PLANETARY GEARED MOTOR WITH INTEGRATED SMI21 DRIVE

801495XX SMI21
Planetary 52mm gearmotor 92W 12→48Vdc
13→578rpm 25Nm max

- 12→48 V dc, 52→81 mmØ, 25→120 Nm, 9→756 rpm
- Speed, torque & position control
- Reduce control panel space & cabling
- Long life (>20,000 hours)
- IP65 as standard



PRODUCT DESCRIPTION

The SMI21 integrated drive is ideal for applications where speed, torque & positional control is required.

The motor also incorporates a high resolution 4096ppr incremental encoder ideal for precise positioning applications.

Motion programming, configuring & set-up performed through the dedicated user friendly DCmind-soft PC software. The program can be controlled via basic switches or by external PLC.

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.

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

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

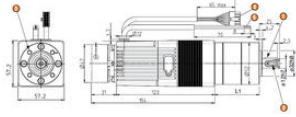
* Product datasheets & 3D drawing for standard IP65 cable version attached as an example. Further information for braked version available upon request. Full documentation & user manuals also available upon request.

TECHNICAL DATA

Diameter	52 mm
Integrated control	SMi21
IP class	IP65
Life span	20,000h
Max. torque	25 Nm
Number of pulses per revolution	4096
Positioning feedback	Yes
Power	92 W
Ratio	i=6,75→308:1

Shaft diameter	12 mm
Speed options	13rpm→578rpm
Supply voltage	12 V DC, 24 V DC, 48 V DC
Type of gearbox	Planetary 1→3 stages

801495 - SMA21 - PS2 with or without brake



- L1 1 stage: 55.3 ±0.5
- L1 2 stages: 69.5 ±0.5
- L1 3 stages: 82.1 ±0.5
- Input key: 4 x 4 x 16 DIN 6895 A
- Shaft: 12
- Shaft MS at 90°, depth 10 mm D12
- Connect cable 12 x AWG16 / 500 mm
- Power cable 2 x AWG16 / 500 mm

GEARBOXES FOR DCminid BRUSHLESS RANGE

4 to 120 Nm

- Planetary and worm gearboxes
- Stainless steel bearings
- Long service life
- IP65



Part numbers

Gearboxes	Planetary 2.5:1	Planetary 3:1	Planetary 5:1	Worm
Type	312495	312496	312497	312498
Dimensions	80x46	80x46	80x46	80x46
Output	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 2	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 3	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 4	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 5	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 6	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 7	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 8	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 9	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 10	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 11	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21
Output 12	801495 SMA21	801496 SMA21	801497 SMA21	801498 SMA21

Planetary characteristics

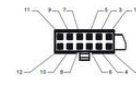
	4	5	6	8	10	15	20	30	40	60	120	150
Maximum permitted torque (Nm)	4	5	6	8	10	15	20	30	40	60	120	150
Efficiency	0.85	0.76	0.71	0.68	0.68	0.7	0.8	0.8	0.9	0.9	0.9	0.9
Anti-dynamic load (dIN)	6	10	15	7	10	15	8	10	20	10	10	10
Static dynamic load (dIN)	20	30	45	30	30	45	40	60	100	150	150	150
Operating temperature	-20 → +70°C											
Weight (kg)	0.2	0.3	0.3	0.4	0.5	0.6	0.8	1.0	1.2	1.5	2.0	2.5

Other ratios possible: 15:1, 100:1

Worm gearbox: Metal gears on all stages, IP65 apart from the output shaft.
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 metal gears turn on needle bearings, IP65 apart from the output shaft.
Worm gearbox: 14 gears on metal and turn on needle bearings, resulting in excellent robustness and a very long service life. The wheel is coated with grease, ensuring an excellent slip coefficient and good heat dissipation. Springs and ball 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.
Worm gearbox: The gearbox combines a planetary steel worm and a steel 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. Springs and ball 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 housing is made of aluminum to maximize heat exchanges with its supporting surface on the machine.
 However, due to the high current that can be transmitted by the 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 (input/output on both sides).

Connection

Connector (Molex 0430251200)



Pin	Logic cable	Wires color	Power cable	Wires color
1	Input 1 - logic	Green	+12 V _{DC} → 48 V _{DC}	Brown
2	Input 2 - logic	Yellow	0 V _{DC}	Blue
3	Input 3 - logic	White		
4	Input 4 - logic	White/brown		
5	Input 5 - analog	Blue		
6	Input 6 - analog	Orange		
7	0 V _{DC}	Black		
8	0 V _{DC}	White/black		
9	Output 1 - PWM	Brown		
10	Output 2 - PWM	Purple		
11	Output 3 - logic	Black		
12	Output 4 - logic	Grey		