Features

- Designed for 12V agricultural equipment
- 2 versions:
  - 0,205 Nm, 2160 rpm @ output shaft (54T01140)
  - 0,180 Nm; 2970 rpm @ output shaft (54T01148)
- Custom versions upon request.
- CANOpen communication (speed and position control)
- Integrated brushless motor drive
- Signalling LED
- 2 digital inputs (eg. seed sensor or hopper level sensor)

Applications

The DMD2 is an application specific brushless motor with integrated electronic drive. The motor can be used to replace mechanical or hydraulics transmissions in agricultural or other off-highway applications (e.g. variable rate applications).

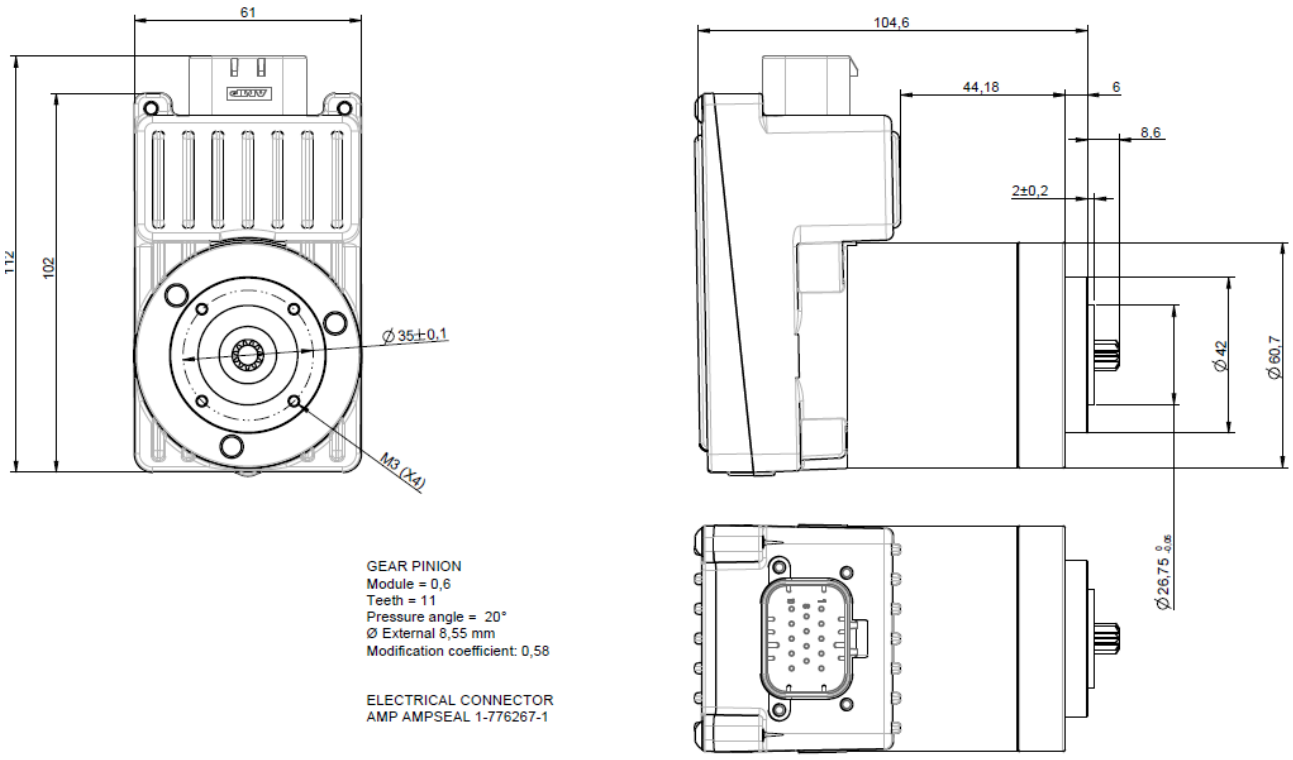
Application example are:

- Actuation of seeding element in pneumatic precision planting machines
- Actuation of seed distributor in air-drills or small grain planters
- Actuation of fertilizer and microganular spreaders in agricultural machines
- Salt, fertilizer, grain spreaders

DMD2 - 54T01140 – 54T01148

Assembly Instructions

Overall dimensions



Dimensions in mm.

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DMD2 - 54T01140 – 54T01148

Technical Specifications

For more details please refer to DMD2 Installation, Operation and Maintenance Manual

Environmental Specifications

Operational Temperature:	-10°C…+55°C (full specs) -10°C…+70°C (derated)	
Storage Temperature:	-40°C…+80°C	
IP grade	IP65, excluding front flange. Integrator must take provision to prevent water ingress from front flange	
Vibrations	Sinusoidal vibration test: Random vibration test: Temperature change test: Shock test:	IEC 600-68-2-6 IEC 600-68-2-64 IEC 60068-2-14 IEC 600-68-2-27

Mechanical Specifications

	54T01140	54T01148
Nominal Torque at output shaft	0,205 Nm	0,180 Nm
Peak Torque at output shaft	0,31 Nm (single pulse, duration 500ms)	0,27 Nm (single pulse, duration 500ms)
Nominal Speed at output shaft	2160 rpm	2970 rpm
Output pinion details	Module = 0,6 Teeth = 11 Pressure angle = 20° Ø External 8,55 mm Modification coefficient: 0,58	

Electrical Specifications

	54T01140	54T01148
EMC	The unit fulfills EN ISO 14982: 2009 standard (Agricultural and forestry machinery)	
Supply voltage	11-16V Note: Voltage is intended at MD connector input pins. Voltage drop due to cable harness shall be taken into account.	
Supply current (at nominal Torque, nominal Speed and minimum supply voltage)	6 A	7,2 A

Input/output and communication

CAN	1 CAN bus line (compliant ISO SO 11898-2 and 5. Up to 1 Mbit/s)
Sensor interface	2 x inputs: 3 pin (8V – 80mA supply, GND, signal), up to 2,5 kHz suitable for NPN output sensors.
Safety switch input	Contact switch input to remove supply to power stage.
Daisy Chain CAN addressing line	Input and output signal for automatic CAN node assignement

Disclaimer

The present specifications are intended to be preliminary. Parameters and values indicated in the document might be subjected to changes. For further information, please contact: mechatronics@roj.com

Water protection
Motor protection degree: **IP65**, excluding the front flange/output shaft.

The system integrator shall provide means of protecting this surface when integrating the motor into the machine
Output connector
The output connector on the motor is a AMP Ampseal 14 poles, with the following pin assignment:

Pin	Signal
1	POWER +12V
2	GND
3	SENSOR_POWER (8V- 80mA)
4	SENSOR_POWER (8V- 80mA)
5	AUX_IN
6	CAN_H
7	CAN_L

Pin	Signal
8	MOTOR_ENABLE_OUT(*)
9	SEED_SENSOR_CNT(*)
10	CAN_SYNCHR_OUT
11	CAN_SYNCHR_IN
12	MOTOR_ENABLE_IN
13	SENSOR_GND
14	SENSOR_GND

It matches with connector **AMP Ampseal 776273-1**.

ROJ can supply standard motor cable harnesses in various lengths and power distribution boxes.

(*) Safety switch
A safety switch shall be connected to signals MOTOR_ENABLE_IN/ MOTOR_ENABLE_OUT. If the contact is open, the DMD0 cannot rotate. The safety switch must be implemented using:

- an electro-mechanical switch with “positive opening” NC contact (condition indicated by the symbol ⊖), or
- an electromagnetic sensor with high reliability (e.g. SICK RE11-SA03 or equivalent)

In order to ensure the requested safety level (Performance Level = c according to EN ISO 13849-1), it is necessary to provide a safety contact with the following characteristics:

- B10d >= 2 x 10e6

Note: B10d is the reliability parameter declared by the device Manufacturer that corresponds to the number of switching operations guaranteed without errors.