

# Axial Flux Traction Motor

**DESIGNED IN GERMANY. MADE IN INDIA.**

DOL Mobility, in partnership with PPM (India) and ATMTec (Germany), presents a new Axial-Flux Motor designed for traction applications & battery powered systems. The ATM 130FA & ATM 160FA Drives, specifically engineered for traction purposes, can be used across a wide range of battery powered applications, including electric cars, LEVs, microcars, hybrid systems, forklift trucks & transporters, turf & agricultural machinery, electric lawn mowers, electric boats, & many others.

- Axial magnetic flux design ✦
- Air or Liquid cooled ✦
- Very compact, flat construction ✦
- High power density & high efficiency ✦
- Reduced diameter and length ✦
- Excellent torque / weight / volume ratio ✦
- High overload capability ✦
- Customized solutions possible ✦



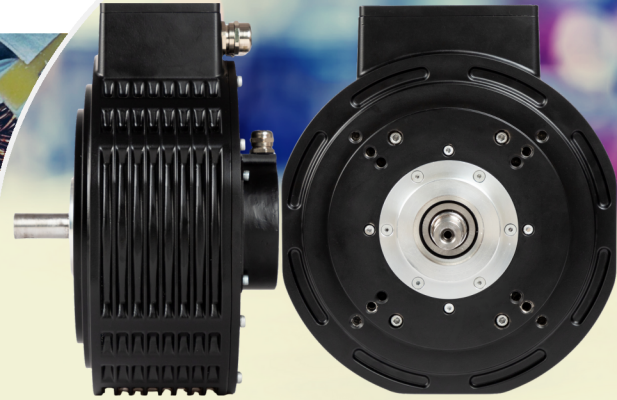
## AXIAL FLUX TRACTION MOTOR

Its adaptability to various applications is achieved through a highly flexible design, customized winding options, & a very compact assembly. The ATM Drives can be combined with different gearboxes & braking systems. Suitable motor controllers with regenerative braking are available across a broad range of power & voltage levels.



# TECHNICAL DATA SHEET

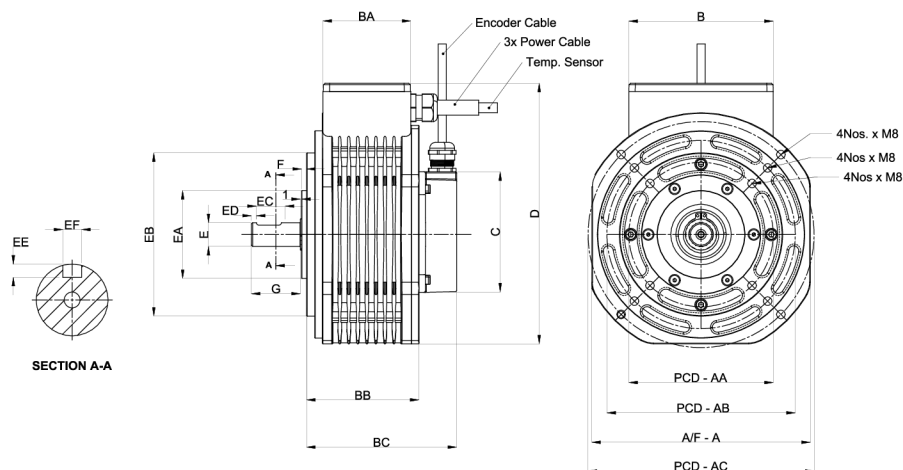
- Axial Flux Permanent Magnet Synchronous Motor
- S1 duty for Industry, S2 duty with 60 min rating for traction
- Forced Air cooling with at least 6m/s
- IP65/IP54 (Shaft)
- Class F Insulation
- Amb. Temperature -25°C to +40°C
- Weight ATM 130FA~6.5kg | ATM 160FA~15.5kg
- Max Torque ATM 130FA~25Nm | ATM 160FA~60Nm



| Model     | Type    | Rated Voltage   | Rated Power     | Rated Current  | Rated Torque   | Rated Speed    | Max Speed        | Voltage Constant | Torque Constant | Efficiency |
|-----------|---------|-----------------|-----------------|----------------|----------------|----------------|------------------|------------------|-----------------|------------|
|           |         | V <sub>DC</sub> | P <sub>TN</sub> | I <sub>N</sub> | M <sub>N</sub> | n <sub>N</sub> | n <sub>Max</sub> | K <sub>e</sub>   | K <sub>m</sub>  | η          |
|           |         | [V]             | [kW]            | [Arms]         | [Nm]           | [rpm]          | [rpm]            | [V/krpm]         | [Nm/A]          | [%]        |
| ATM 130FA | 1AM1130 | 24              | 1,6             | 95             | 5,1            | 3000           | 3600             | 3,99             | 0,053           | 90,7       |
|           |         |                 | 1,7             | 96             | 3,6            | 4500           | 5200             | 2,76             | 0,037           | 91,7       |
|           |         |                 | 1,7             | 94             | 2,7            | 6000           | 6700             | 2,15             | 0,029           | 90,7       |
|           |         | 36              | 1,8             | 71             | 5,73           | 3000           | 3500             | 6,13             | 0,081           | 89,5       |
|           |         |                 | 2,4             | 94             | 5,1            | 4500           | 5400             | 3,98             | 0,054           | 91,6       |
|           |         |                 | 2,5             | 95             | 4,0            | 6000           | 7000             | 3,07             | 0,042           | 92,1       |
|           |         | 48              | 1,7             | 48             | 5,4            | 3000           | 3500             | 8,28             | 0,114           | 90,0       |
|           |         |                 | 2,5             | 74             | 5,5            | 4500           | 5300             | 5,52             | 0,075           | 91,7       |
|           |         |                 | 3,2             | 93             | 5,1            | 6000           | 7200             | 3,98             | 0,055           | 92,8       |
|           |         |                 |                 |                |                |                |                  |                  |                 |            |
| ATM 160FA | 1AM1160 | 48              | 6,2             | 190            | 19,7           | 3000           | 3500             | 7,5              | 0,103           | 92,5       |
|           |         |                 | 6,5             | 180            | 13,8           | 4500           | 4750             | 5,6              | 0,076           | 93,4       |
|           |         |                 | 6,5             | 185            | 9,6            | 6500           | 7100             | 3,8              | 0,051           | 92,4       |
|           |         | 96              | 5,8             | 89             | 18,5           | 3000           | 3500             | 15,0             | 0,207           | 92,7       |
|           |         |                 | 7,8             | 105            | 16,5           | 4500           | 5200             | 11,3             | 0,158           | 93,7       |
|           |         |                 | 9,6             | 145            | 15,3           | 6000           | 7100             | 8,8              | 0,015           | 94,0       |
|           |         | 560             | 5,2             | 11,8           | 16,5           | 3000           | 3400             | 101              | 1,39            | 92,8       |
|           |         |                 | 8,2             | 17,3           | 17,4           | 4500           | 4800             | 71               | 1,00            | 94,0       |
|           |         |                 | 9,6             | 21,5           | 15,3           | 6000           | 6700             | 51               | 0,710           | 93,7       |
|           |         |                 |                 |                |                |                |                  |                  |                 |            |

## OPTIONS

- Shafts available with keyway in 19mm & 24mm diameters. Sun-wheel for PGR gearbox & splined shaft for standard gearbox are also available.
- Encoders available with 8-bit sine/cosine output, 12-bit SSI output, 12-bit incremental output, & Tamagawa Smartsyn TS2640 resolver.
- Motors with holding & working brakes are available, with torque ratings of 8 Nm for ATM130FA & 16 Nm for ATM160FA.
- Mounting options available in IMB14 (IM3601) & IMB3 (IM1001).
- Winding temperature sensing options include PT1000, KTY84, or PTC sensors.



\*All Dimensions are in mm



DOL MOBILITY PVT. LTD.  
R-479 MIDC Rabale, Navi  
Mumbai – 400701, MH-INDIA.

mobility@dolgroup.in  
www.dolgroup.in/mobility

+91 98204 50266

| MOTOR TYPE | A   | AA  | AB  | AC  | B   | BA | BB  | BC  | C  | D   | E  | EA | EB  | EC | ED | EE  | EF | F | G  |
|------------|-----|-----|-----|-----|-----|----|-----|-----|----|-----|----|----|-----|----|----|-----|----|---|----|
| 1AM1130    | 180 | 115 | 150 | 180 | 115 | 70 | 90  | 120 | 96 | 215 | 19 | 70 | 130 | 20 | 4  | 3,5 | 6  | 4 | 39 |
| 1AM1160    | 230 | 130 | 150 | 180 | 124 | 82 | 109 | 139 | 92 | 267 | 19 | 70 | 165 | 25 | 6  | 3,5 | 6  | 4 | 39 |

\*The information given in this document only contains measurements from type test of a product which may undergo modification in the course of further development of the products.