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AC MOTORS with independent (battery) power supply for electric fork-lift

One of the directions in the Innovative Program of CAPRONI is focused on the alternative for the application of AC motors instead of DC motors in the process of starting motion of electric fork-lift.

The basic motives for the efforts of the design and management team in this direction are the well-known advantages and opportunities of AC motors with independent power supply compared to DC motors such as:

- higher efficiency
- longer operational life of the motor due to the lack of collector-brush machine
- longer duration of battery use
- lower noise rate
- lower service expenses

The new Caproni Production line presents a variety of AC engines for adjustable drive of electric fork-lifts and includes:

*** Traction electrical engines, developed in a standard order:**

	Rated power Pn (Kw)	Voltage (Vdc)	Rated speed (min ⁻¹)
ACM 4/8/14	4	80	1400
ACM 5/4.8/21	5	48	2100
ACM 6/8/14	6	80	1400
ACM 7.5/8/23	7.5	80	2300
ACM 9/8/12	9	80	1200
For electric fork-lifts 3T and over 3T			
ACM 12/8/12	12	80	1200
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ACM 15/8/14	15	80	1400

*** Pump electric motors, developed in a standard order:**

	Rated power Pn (Kw)	Voltage (Vdc)	Rated speed (min ⁻¹)
ACM 5.2/4.8/28	5.2	48	2800
ACM 6.5/4.8/28	6.5	48	2800
ACM 6.5/8/28	6.5	80	2800
ACM 10/4.8/28	10	4.8	2800
ACM 10/8/28	10	80	2800
For electric fork-lifts 3T and over 3T			
ACM 14.5/8/28	14.5	80	2800

*** ACM motors for servo steering – immersion version (servo motors):**

	Rated power Pn (Kw)	Voltage (Vdc)	Rated speed (min ⁻¹)
ACM 0.75/4.8/14	0.75	48	1500
ACM 0.75/8/14	0.75	80	1500

The motors are used in compact AC servo units for electric fork-lifts and other vehicles with independent (battery) power supply. The servo units can achieve high energy efficiency and significantly decreased noise during operation.

GENERAL:

All sizes of the motors are developed as ventilated versions. The construction is patent protected.

The developed wide standard order of supply powers, voltage, rotation frequency, dimensions and lengths create an opportunity to form different energy efficient solutions for tangible application.

Joining surfaces and shafts – identical to those of the already used electric motors with direct current supply.

Dimensional sizes – smaller compared to those of the direct current supply motors with similar application.

Degree of protection IP21 according to IEC 60034-5

ACM MOTORS for other applications

Application of golf trucks and small transport trolleys

The development includes two types of motors:

	Rated power Pn (Kw)	Voltage (Vdc)	Rated speed (min ⁻¹)
ACM 3/4.8/30	3	48	3000
ACM 4/4.8/30	4	48	3000

Application in electric cars

The development is in direction of application at conversion of conventional cars with internal combustion engine motors.

The development is restricted to application in movement within the town at short distances.

	Rated power Pn (Kw)	Voltage (Vdc)	Rated speed (min ⁻¹)
ACM 16.5/20/26	16.5	200	2600
ACM 25/32/26	25	320	2600

All the motors are tested in order to guarantee the defined parameters of power, torque, starting characteristics, overheating, level of noise and vibrations.



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