1 General information

Electro-motor-pump is the simplest and more compact unit able to supply hydraulic power, as flow and pressure, to oil-dynamic actuators.
The Electro-motor-pumps are largely used on industrial operating machines particularly on mobile machines, where, through simple valves and hoses connections it makes possible to operate and control different hydraulics actuators.

In the present technical catalogue the most common versions, obtained as combination of DC motors and External Gear Pumps, either 05 (AP05) and 1 (AP100) group, are shown, although, many and different customised versions have been designed and realised in order to satisfy to specific and dedicated customer' requests.

Directives and standards

- Atex:

The equipment and protective systems of these catalogue ARE NOT intended for use in potentially explosive atmospheres that is to say where there is an explosive atmosphere referred to in Article 2 of the Directive 99/92/EC and referred to Article 1.3 of the Directive 94/9/EC.

- ISO 9001: 2000

Bucher Hydraulics S.p.A. is certified for research, development and production of directional control valves, power units, gear pumps and motors, electro pumps, cartridge valves and integrated operating blocks for hydraulic applications.

2 D.C. Electric motors

2.1 Technical information

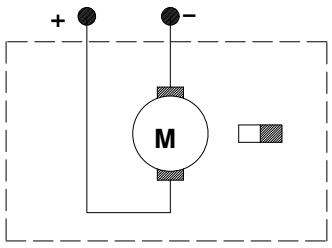
Versions:
Available voltage: 12-24 V D.C.
Available power rating: 0.8 - 3 kW.
For other input voltage and power rating, consult our Sales Department.

Direction of rotation:
Unless otherwise stated, all motors are specified clockwise rotation, suitable for driving counterclockwise pumps.

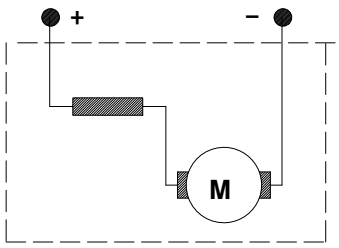
Type of winding:
D.C. motors can be manufactured with different types of field windings:

- Permanent magnets
- Series
- Compound

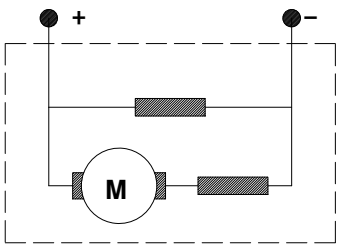
Permanent magnets



Series



Compound



Insulation class:

The class of electric insulation reflects the maximum temperature motor can register during operation without damage to the insulating material internally of motor itself.
The following table indicates insulation classes to CEI 15-26.

Class	Y	A	E	B	F	H
Temperature (°C)	90	105	120	130	155	180

Type of duty:
To ensure selection of the electric motor best suited to a given set of operating conditions, the duty cycle needs to be verified. Duty cycles S1, S2 and S3 are defined below in accordance with CEI 2-3

Continuous duty S1:
Operation on-load (Steady conditions) for a period of indefinite duration, during which the motor reaches thermal equilibrium without exceeding the maximum permissible temperature.

Short time duty S2
Operation on-load (steady conditions) for a period of limited duration, denoted td, during which maximum permissible temperature is reached, followed by an off-load period of duration sufficient for the temperature of the motor to return to ambient temperature.

Intermittent duty S3
A sequence of identical cycles, each 10 minutes in duration, the single cycle comprises a period of operation on-load (td), during which the motor may reach its maximum permissible temperature followed by an off-load period of limited duration (tm), insufficient for the temperature of the motor to return to ambient temperature. The value of S3 indicates the duration of the on-load period (td) in relation to the overall cycle time (tp), as a percentage.