

Selecting the optimum motor & drive combination

Depending on type, Brushless servo motors are either provided with an a resolver or encoder that may be used to detect motor position. The motors are supplied together with matched drives that enable the full dynamic performance of the motor to be obtained. The Brushless construction provides increased torque coupled with low inertia and consequently very high response is obtained, making the motors ideal for rapid positioning where high repetition rates and long life is required.

When selecting a brushless servo motor a number of factors require consideration to ensure that an optimum motor-drive & control package is chosen.



- Output power required:**

The output power will be a function of the torque & speed required as described in the section entitled @ selecting the suitable power rating'

The motor power required = Trms Torque(Nm) x peak speed (rad/sec.)

Output power options

Maximum power	Motor range	Drive	Type	Supply
0.15 kW	23BLS series	IPM240	Brushless dc servo	48 Vdc
0.4 kW	HC PQ series	MRC	Brushless AC servo	230 Vac
0.4 kW	34BLS series	IPM640	Brushless dc servo	80 Vdc
0.6 kW	HA-FF series	MR-J2	Brushless AC servo	230 Vac
0.75 kW	HC-MF series			
3.5 kW	HC-SF series			
0.8 kW	ACG Series	631	Brushless AC Servo	230 Vac
1.3 kW	ACM series			
5.0 kW	ACM series	637	Brushless AC Servo	415 Vac

- Advantages of a geared motor for low speed applications:**

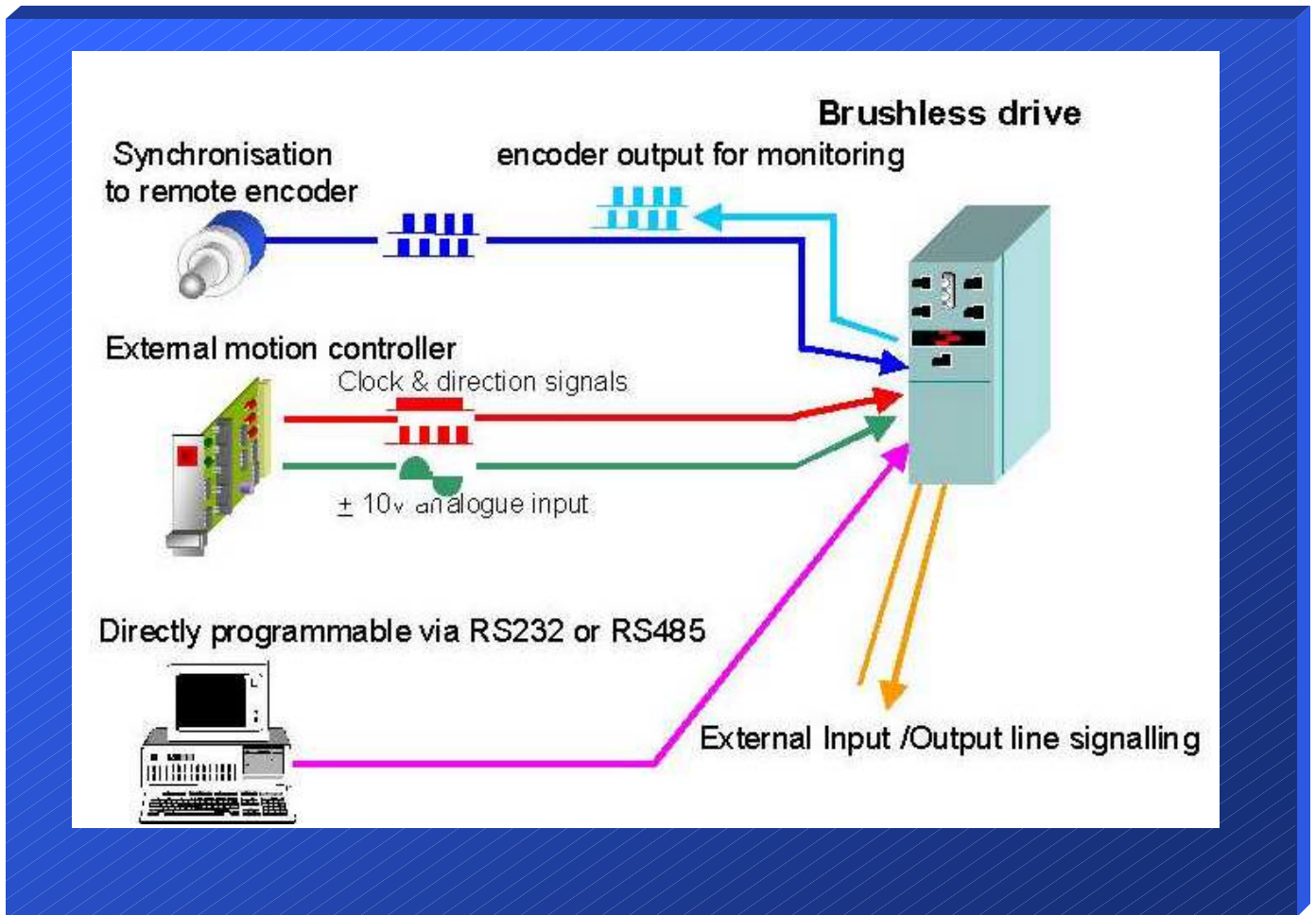
Where operating speeds less than 600rpm are required a planetary gearhead is recommended. Planetary Geared Brushless servo motor offer:

- Optimised power matching in low speed applications
- Improved inertia matching to load resulting in improved stability
- Increased Torque up to 1200 Nm
- Increased control sensitivity in applications requiring a wide speed range



Brushless servo system control options:

Depending on the type, the brushless drives may be controlled in a number of alternative ways:



The quick reference guide below describes the control features available with the Drives programme

Control Features		Drives				
		BLS series	MRC series	MRJ2 series	631 Series	637 Series
Clock/direction input		✓	✓	✓	✓	✓
±10V analogue input		✓		✓	✓	✓
Encoder synchronisation		✓	✓	✓	✓	✓
Encoder monitoring signal				✓	✓	✓
Programmable motion control		✓			✓	✓
Digital I/O for system integration		✓			✓	✓

✓ Optional

High performance PM 600 *digiloop* motion controllers

The PM600 motion controller is the latest introduction to the range and provides exceptional servo loop control making it ideal for use in applications which require high accuracy positioning of one or more axes.

The PM600 provides a choice of communication, RS232 being typical and is equipped with both digital and analogue I/O to enable it to be integrated with other machine functions as well as a PLC. An onboard memory enables a number of sequences to be downloaded for stand-alone operation while standard 'electronic gearbox and electronic cam' software enables the PM600 to be readily used for multi-axis synchronisation and flying shear applications.



Complete system integration

