

Integrated brushless servo units

IPM series

A matched IPM integrated servo unit is available for each BLS series servo motor. Alternatively the IPM series can be configured for use with many other Brushless dc servo motors equipped with either a resolver or encoder.



IPM100

Designed for integration in Customer's equipment



IPM240

IPM640

Key features

- Fully digital servo amplifier with embedded intelligence
- Programmable with graphical Technosoft motion studio software that operating on MS WINDOWS platform
- Integrated DSP for optimisation of motor parameters & programmable positional control
- Suitable for use with dc brushed servo motors or 3 phase brushless servo motors
- Choice of analogue ($\pm 10V$) or digital (clock & direction) control input signals
- Variable control modes including torque or velocity or position.
- Programmable position control via RS232 or RS485 or optional CAN bus interface.
- External variables control capability using pressure, flow or temperatures traducers
- 4 programmable digital outputs
5 programmable digital inputs
- Dual track quadrature input for accurate positioning
- Optional motor resolver input for position feedback
- Compact construction with integrated power stage providing up to 640 watts output power

Specification

| Model | | IPM100 | IPM240 | IPM640 |
|-------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------|-----------------------|--------|
| Motor rail supply | Vdc | 24-36 | 24-48 | 24-80 |
| Logic supply | Vdc | 5 | Generated internally | |
| Motor supply voltage | Vdc | As motor rail supply | | |
| Max. continuous motor current | Amps | 3 | 5 | 8 |
| Max. peak motor current | Amps | 6 | 15 | 16 |
| Dimensions | mm | 104 x 63.5 x 10 | 136 x 84.5 x 26 | |
| Minimum motor inductance | μH | 200 | | |
| Power stage switching frequency | KHz | 20 (typical) | | |
| Operating ambient temperature range | Deg C | 0-50 | | |
| Slave control mode inputs | | Digital: Clock / direction Analogue: $\pm 10 V$ | | |
| Position control inputs | | RS232 or RS485 | | |
| Motor types | | Dc brushed servo with tacho or encoder feedback or 3 phase Brushless servo motor with hall effect of encoder feedback | | |
| Control loop modes | | Torque, speed, position | | |
| Programmable digital inputs | | 4 | 4: Optically isolated | |
| Programmable digital outputs | | 5 | 5: Optically isolated | |

Total control flexibility

IPM series drive units utilise the latest DSP technology. The use of a single DSP to provide all internal logic functions provides extreme control flexibility at highly competitive cost.

Using external motion controllers

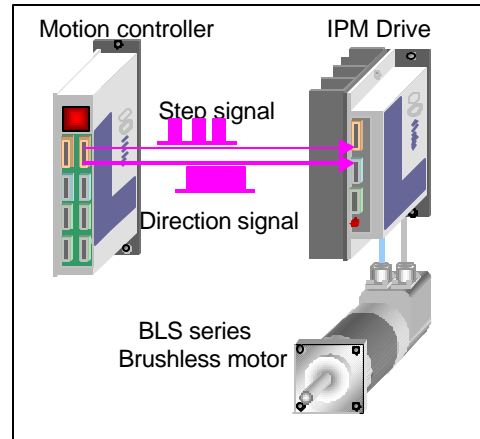
Where users have developed systems using specialist position controllers the IPM drives may be used to provide an efficient velocity or torque control loop drive within the system:

Using external step / direction input signals

IPM drives may be used to replace stepper motor drives while retaining the original stepper system motion controller

The advantages of BLS series Brushless system are:

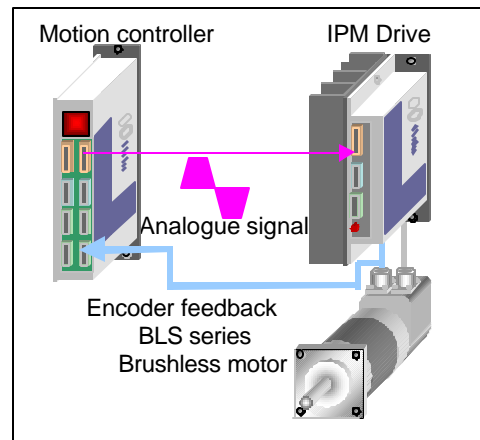
- Closed loop control
- Improved positioning reliability
- Increased resolution



Using $\pm 10V$ analogue input signals

IPM drives may be used with classical servo motor controllers that provide an analogue output signal

The BLS series motors utilise dual track encoders with differential outputs that provide a resolution of 2000 counts per revolution of the motor. These signals may be used by external servo motor motion controllers for closed loop position control



Using the IPM drive's integrated motion controller

The advantage of the IPM drive's advanced technology is that the DSP is not only utilised to provide the brushless drive stage logic but also a full motion control capability with no significant cost penalty.

The ability of the IPM series integrated drive to offer a full stand-alone motion control capability results in considerable overall cost saving.

