






VSD Drives

Speed control drives for standard industrial induction motors are commonly known as frequency drives, inverters or VSDs. Yaskawa make a range of quality drives for standard industrial 3 phase induction motors most of which can also drive permanent magnet motors. Along with speed control VSDs provide motor protection and soft start functionality. The following types are normally in stock.

J1000	V1000	A1000
Entry level V/F control micro drive. Small size, quiet running and high quality,	More advanced micro drive with higher performance V/F or OLV control, built in PLC and PID controller in a very small physical size	Full featured advanced drive in a larger frame size. A wide range of add on functionality including closed loop encoder feedback and field networks
		
CIMR-JT	CIMR-VT	CIMR-AT

Voltage frequency (V/F) control is the simplest control method. It has a lower speed accuracy and start up torque but is easy to implement and allows a wide speed range. This sort drive type is suitable for simple conveying, fans, pumps and spindle applications. Speed accuracy can be increased on higher performance drives by adding encoder feedback.

Open Loop Vector (OLV) control is a more sophisticated control method where the drive uses a mathematical model of the motor in its control scheme. This allows the drive to directly control motor speed and torque for much tighter speed control, high torque at low speed and torque limiting. This control offers better performance for applications such as lifts, crushing and variable load situations.

Closed Loop Vector (CLV) control is vector control with encoder feedback. Full torque is available at zero rpm and is often referred to as servo like performance. Motor torque can also be directly controlled. Well suited to applications like elevators, hoists, capping, winders and positioning.

All drive types can be connected to the free drive software Drivewizard (J1000 requires additional card). This software allows visual monitoring of drive status, motion oscilloscope, parameter backup, transfer between drives and parameter upgrade of old drive types.



Yaskawa VSDs are rated by their normal rated output current. The table below lists the recommended drive capacity to motor power. Heavy duty rating is for applications with higher overloads tolerance for varying loads. Larger drives can be used to drive smaller motors.

Max Motor Capacity KW	Single Phase 200V ¹		Three Phase 400V ³	
	Normal Duty	Heavy Duty	Normal Duty	Heavy Duty
0.1		BA0001		
0.2	BA0001	BA0002		4A0001
0.4	BA0002	BA0003	4A0001	4A0002
0.75	BA0003	BA0006	4A0002	4A0004
1.1	BA0006			
1.5		BA0010	4A0004	4A0005
2.2	BA0010	BA0012 ²	4A0005	4A0007
3.0	BA0012 ²		4A0007	4A0009
3.7		BA0018 ²	4A0009	4A0011
5.5			4A0011	4A0018
7.5			4A0018	4A0023
11			4A0023	4A0031
15			4A0031	4A0038
18.5			4A0038	

1 – A1000 only available in 3 phase. 2 – V1000 only. 3 - A1000 drives go up to 630kW

Motors can be run directly from the drive control panel. Typical control wiring with default parameters is as below.

