



ESD

# Digital Series

## >> FULLY DIGITAL AC SERVO DRIVE

**Easy operation**  
**Excellent performance & features**  
**Variety control modes**  
**High resolution and precise**  
**High bandwidth of speed, current, position loop**  
**Windows based operation software available**  
**Sinusoidal output**

### INPUT VOLTAGE:

AC: 90-240 AC  $\pm 10\%$ , 50/60 Hz      DC: 48-325 VDC  
 ESD04, ESD08: 1phase or 3phase input, ESD12: 3phase input  
 DC: 90-320 VDC  $\pm 10\%$

### OUTPUT VOLTAGE:

AC: 0-240 VAC RMS sinusoidal three phase

### ENVIRONMENT:

Storage temperature: -10 to 70 °C  
 Operating temperature: 0 to 40 °C  
 Humidity: 5-90% non-condensing  
 Altitude: 1500m/5000ft; derate current 1% per 300m above 1500m  
 Vibration: 0,50max/20-50Hz/0,1G max (> 50Hz)  
 Shock: 1,0g @ 10m/sec

### OPERATING MODES:

#### Torque

Reference: 0  $\pm$  10 VDC or 0 to 10 VDC, scalable  
 Accuracy:  $\pm$  0.01 amp  
 Current-Loop Bandwidth: up to 2.4 kHz

#### Velocity

Reference: 0  $\pm$  10 VDC or 0 to 10 VDC  
 Accuracy:  $\pm$  0.5 RPM  
 Velocity-Loop Bandwidth: up to 400 Hz  
 Speed Range: up to 8000:1 with 5000 pr encoder

#### Position

Reference: Step and direction signals or Master Encoder full quadrature signal (software selectable).  
 Minimum Pulse Width: 167 nanoseconds  
 Reference Max frequency: 2 MHz  
 Position-Loop Bandwidth: Up to 200 Hz  
 Accuracy:  $\pm$  1 encoder count

### CONNECTIONS:

Serial: 9-pin D-shell  
 Encoder feedback: 15 pin D-shell  
 I/O: 15-pin removable terminal block and 25-pin D-shell

### SERIAL COMMUNICATIONS:

RS232



### DIGITAL INPUTS:

#### 4 Dedicated:

- Enable
- Quadrature encoder feedback (2,5 MHz max)
- Step (2,5 MHz max)
- Direction

#### 1 Programmable (select one)

- Brake
- Externale fault
- Reverse

### ANALOG INPUTS:

#### 1 Dedicated:

- Velocity or torque reference (0 to  $\pm 10V$ , 16 bit)

### DIGITAL OUTPUTS:

#### 2 Dedicated:

- Ready (non isolated open collector)
- Encoder output (pass through unbuffered)

#### 1 Programmable (non isolated source, or isolated open collector) (select one):

- Zero speed
- In speed wondows
- Current limit
- Run time error

### DIAGNOSTIC LED'S:

For ready, over current, over voltag, power and one programmable

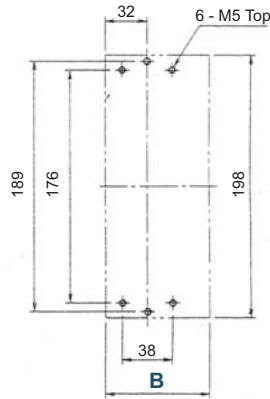
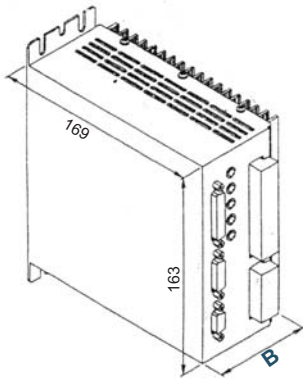
### ANALOG OUTPUTS:

#### 1 Programmable (0 $\pm$ 10V, 8 bit) (select one):

- RMS phase current
- Peak phase current

MODEL	ESD 04	ESD 08	ESD 12	ESD 25
Continuous output current	4 Amps	8 Amps	12 Amps	25 Amps
Continuous power	750 W	1,5 Kw	2,5 Kw	5 Kw
Peak current	8 Amps	16 Amps	24 Amps	50 Amps
Peak power	1,5 Kw	3,0 Kw	5,0 Kw	10 Kw

**DIMENSIONS** mm



	<b>B</b>
ESD 04	80
ESD 08	100
ESD 12	104
ESD 25	160

**SOFTWARE MOTION VIEW**

*FIRST INSTALL THE SOFTWARE AND OPEN MOTIONVIEW™*

**1**  
SELECT A MOTOR<sup>A</sup>      1.1 The ESD Servo has a growing database of popular servo motors!

**2**  
SELECT OPERATING  
MODE AND I/O      2.1 Select velocity, torque  
2.2 Program your inputs and outputs  
2.3 Select operating limits

**3**  
TUNE THE DRIVE<sup>B</sup> IN  
THE COMFORT OF  
YOUR OWN OFFICE      3.1 Select a velocity reference and (optional) reversing frequency  
3.2 Watch motor response on the oscilloscope  
3.3 Adjust the intuitive loop filters; repeat step 3, if necessary



**4**  
ENGINEERING CUSTOM  
MOTOR PARAMETERS IS  
EASY TOO      4.1 Enter electrical constants  
4.2 Enter mechanical constants  
4.3 Enter feedback information

*(you can get this information from the manufacturer's motor drawing)*

You do not need to have a drive connected to accomplish steps 1 & 2. You do need to have a drive connected to a motor and powered to accomplish step 3.

<sup>A</sup> - If your motor is listed in our database. If is not adding it is simple too

<sup>B</sup> - Velocity and position modes only; no tuning necessary when running in current mode