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TECHNOLOGY GROUP

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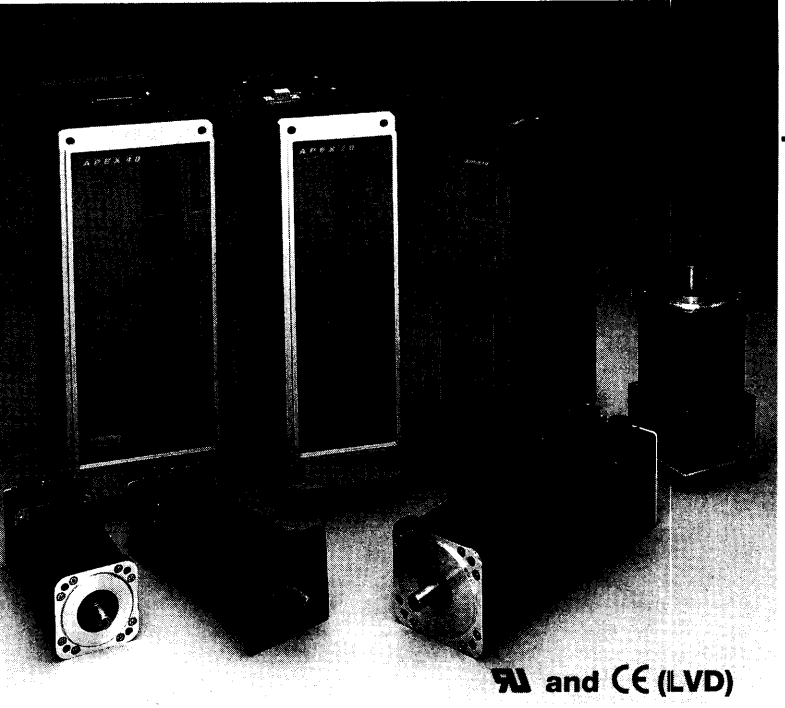
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Find the *Parker / Compumotor APEX20* at our website: *Click HERE*



APEX10, APEX20 and APEX40

The APEX Series offers a competitively priced analog servo system for a wide variety of brushless servo applications. The APEX drives were designed with the user in mind, offering excellent servo performance while being easy to configure, tune, and apply.

The drives are designed by a concurrent engineering group with the goal to produce the easiest to use and highest reliability servo system available. Each drive incorporates the latest developments in power electronics, including a smart power block which interfaces directly to the control board. Each drive was designed for efficient and reliable manufacturing. The number of internal connections and fasteners is greatly reduced, increasing the reliability of the drive assembly.

The APEX10, APEX20 and APEX40 are offered with a variety of brushless servo motors to cover the majority of applications. They can accept either hall effect or resolver commutation feedback and can be configured for different pole pair motors.

The APEX10, APEX20 and APEX40 packages were made for easy and reliable installation. All connections are on removable screw terminals allowing simple installation and cable routing without having to cut off and re-attach a connector. The power and motor connections are separated (top and bottom of the unit) and recessed from the front panel for greater operator safety.

All APEX drives can operate in velocity or torque mode and are an excellent match with a servo controller for applications from point to point positioning to contouring.

Features:

Performance

- Analog servo drive operates in torque mode or velocity mode
- Accepts a standard ±10V torque or velocity command input
- Sinusoidal commutation for smooth, cog-free motion
- Accepts brushless resolver feedback
- Provides an incremental encoder output for analog servo controller
- Simple velocity loop adjustments: Collective gain, and velocity integral gain.
- No drive adjustments necessary when used in torque mode with a 6000 series controller.
- Brushless servo motors are available from Compumotor:
  - Brushless resolver feedback
  - Speeds in excess of 7500 RPM
  - Torques up to 273 lb-in (31 NM) continuous, and 517 lb-in (58 NM) peak
- Configurable to operate with other brushless servo motors:
  - Hall effect inputs for 6-state operation
  - Configurable motor pole pair count

Protection

- Over temperature, over voltage, short circuit protected
- Internal power dump circuit to dissipate regenerated power from motor
- Motors include over temperature sensor

Physical

- 120–240VAC, single- or three-phase, depending on model
- Separate motor and logic power inputs
- Nine diagnostic LEDs
- Removable connectors on all signals for easy installation
- High voltage leads (motor/power) are separated from low voltage signals
- Dip switch configurable for easy set-up for Compumotor servo motors

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Parameter	Description		
Performance			
Repeatability	±5 arcmin		
Resolver Accuracy	±22 arcmin		
Resolution	4096 post quadrature counts		
Output Power	**APEX10**	**APEX20**	**APEX40**
Voltage	170 or 340VDC (nominal); 420VDC (max)	340VDC (nominal); 420VDC (max)	340VDC (nominal); 420VDC (max)
Frequency	0–400 Hz fundamental (15 kHz PWM)	0–400 Hz fundamental (8 kHz PWM)	0–400 Hz fundamental (8 kHz PWM)
Current (max continuous)	8A continuous/phase sinusoidal (5.65A rms); 16A peak per phase sinusoidal (11.3A rms)	12A continuous/phase sinusoidal (8.5A rms); 24A peak per phase sinusoidal (17.0A rms)	20A continuous/phase sinusoidal (14.14A rms); 40A peak per phase sinusoidal (28.3A rms)
Input Power	**APEX10**	**APEX20**	**APEX40**
Motor Supply Voltage	120-240VAC (1-phase)	205-252VAC (1- or 3-phase)	205-252VAC (1- or 3-phase)
Frequency Range	47-66 Hz	47-66 Hz	47-66 Hz
Current (max continuous)	14A (rms) @ 120VAC single phase; 10A (rms) @ 240VAC single phase	8A (rms) 3-phase	15A (rms) 3-phase
Power (max continuous)	2.4 KVA	3.3 KVA	6.2 KVA
Fuses	No internal fuses. Recommend external fuse.		
Isolation Transformer	Not required	Not required	Not required
Logic Supply Voltage	85-252 (1-phase)	85-252 (1-phase)	85-252 (1-phase)
Frequency Range	47-66 Hz	47-66 Hz	47-66 Hz
Current (max continuous)	1.0A	1.0A	1.0A
Power (max continuous)	0.08 KVA	0.08 KVA	0.08 KVA
Fuses	3.0A 250VAC internal fuse. Not user replaceable.		
Isolation Transformer	Not required	Not required	Not required
Protection			
Short Circuit	Phase-to-phase, phase-to-earth		
Brownout	Below 100VAC		
Overvoltage	385VDC (provision for power dump)		
Overtemperature	Motor 170°C (330°F); drive 65°C (149°F)		
I^2T	Current foldback (motor dependent)		
Inputs			
Command	±10V differential (velocity or torque)		
Enable	Logic high – amplifier disabled; Logic low – amplifier enabled		
Reset, Vel. Int. Enable	TTL compatible		
Outputs			
±15V Reference	15 mA available		
Encoder	CHA, CHB, CHZ. Differential, optically isolated. Maximum frequency – 300 kHz		
Fault	Open collector 5-24V		
Tach out	Nominal 1V/1kRPM		
Physical			
Connections			
Drive-to-Servo Controller	13-pin removable for control; 7 pin removable for encoder		
Drive-to-Motor	8-pin high power removable connector		
Resolver-to-Drive	13-pin removable		
Power	7-pin high power removable connector		
Environment			
Drive Temp	32°–122°F (0°–50°C)		
Maximum Heat Sink Temp	162°F (75°C)		
Motor Temp	32°–104°F (0°–40°C)		
Maximum Motor Case Temp	257°F (125°C)		
Humidity	0-95% non-condensing		
Storage	–40–185°F		
Tuning			
Torque Mode	Offset balance		
Velocity Mode	Offset balance, collective gain, velocity integral gain		
Diagnostics			
Test Points	Torque Cmd, velocity error		
LEDs	Enable, Bridge Fault, Drive Fault, Motor Fault, Overvoltage, I^2T Limit, Regen Fault, Regen Active		

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