RELIANCE ELECTRIC

WebPak 3000

Digital DC Winder Drive

The easy-to-use three-phase digital DC drive for web-handling applications from 1.5 to 150 HP

Whether your web processing application requires a simple speed regulator for pull rolls or a complex flying splice unwind with wide ranges of diameter changes and tension, the WebPak 3000 will meet your application needs in a reliable, simple-to-use package.

Today's web-handing applications require many different and complex features. In order to minimize this complexity, WebPak 3000 has been designed to incorporate web-handling functionality directly in the drive. There is no need to add optional cards to gain this control functionality.

The WebPak 3000 has been designed around the proven FlexPak 3000 which features a unique user interface that makes for easy drive set up, operation, maintenance, and service.

All control, signal, and power wiring is easily accessible through supplied terminal boards to streamline installation. A "Quick Start" menu combines with self-tuning of speed and current loops to ensure straightforward drive set up.

The WebPak 3000 is easily modifiable for input line voltages and frequencies. Optional kits are available to expand the drive's capability with ease.

Standard Features

- Diameter Calculator
  - 20:1 build up/build down ratio
  - 3 diameter presets
  - Variable update rate
- Field Shaping
  - 6:1 field range
  - 8 point look-up table
  - Speed or diameter shaping type
  - Voltage and field control
- 3 Outer Loops
  - Tension, current, position with gain profiling
  - Taper tension (linear, hyperbolic, user defined)
  - Stall tension
  - Dancer loading
  - Slack take-up
  - Cascade or parallel outer loops
- Inertia Compensation
- Losses Compensation
  - Windage and frictional
- 2 Timed Level Detectors
- Current Memory
- Speed Loop Gain Profiling
- Current to Speed Switch via Network Control
- WebPakCS Configuration Software
  - 8 configurable applications
  - Upload/download
  - Drive control
  - File compare
  - Parameter monitor
  - PC scope
- AC Supply
  - 50/60 Hz AC line frequency input
  - Phase-insensitive AC line input
  - Semi-conductor fuse protection
  - AC “N” contactor
- Power Section
  - Full-wave, full-control 6-SCR power conversion for smooth, efficient operation and high performance
  - Burst firing of SCRs
  - Capable of 150% full-load current for one minute & 200% for 5 sec.
- User Adjustments (All adjustable in Quick Start menu)
  - Maximum speed
  - Minimum speed
  - Linear acceleration
  - Gear-in speed

WebPak 3000

Standard Features Con't

- User Adjustments (All adjustable in Quick Start menu) (continued)
  - Linear deceleration
  - Current limit (positive and negative on regenerative modules)
  - I/R compensation (voltage regulated drives)
  - Jog speed
  - Jog acceleration/deceleration rate
- Analog Signals (12-bit resolution)
  - 0-10 VDC diameter/taper range reference
  - User selectable ±10 V or 4-20 mA line speed reference
  - (4) 0-10 VDC analog outputs that are user steerable
  - Speed feedback from analog tachometer (250 VDC maximum input)
- Other Significant Standard Features
  - Self-tuning of speed and current loops without disconnecting the fields
  - Field (current) loss protection
  - User selectable stop modes
  - Coast
  - Current limit
  - Ramp

Standard Operator Interface Features

- Complete operator controls for run, stop, jog forward, control source select, and fault log.
- "Quick Start" sequence for easy, complete drive set up
- Large, easy-to-read LCD display provides the following:
  - Built-in digital metering which is selectable in units proportional to speed or current such as FPM (feet per minute), percent load, or other user defined units
  - Display text in any of the following languages:
    - English
    - German
    - French
    - Spanish
    - Italian
    - Code
- Monitoring of multiple parameter values in a single display such as speed and load
- Adjustments and monitoring using on-screen menus and full, non-abbreviated text
- Drive status display indicators:
  - Drive fault
  - Drive alarm
  - Interlocks are o.k.
  - Drive ready
  - Drive running
  - Current/torque limit
- Extensive Diagnostics (with recommended corrective action displayed)
  - AC line voltage high/low alarm
  - Motor brush wear alarm
  - Loss of AC line synchronization fault
  - Failed SCR fault
  - Motor thermostat fault
  - Control thermostat fault
  - Drive (inverse time) overload fault
  - Drive IET (instantaneous electronic trip) fault
  - Tachometer loss fault
  - Overspeed fault
  - Field current loss fault
  - Network communication fault

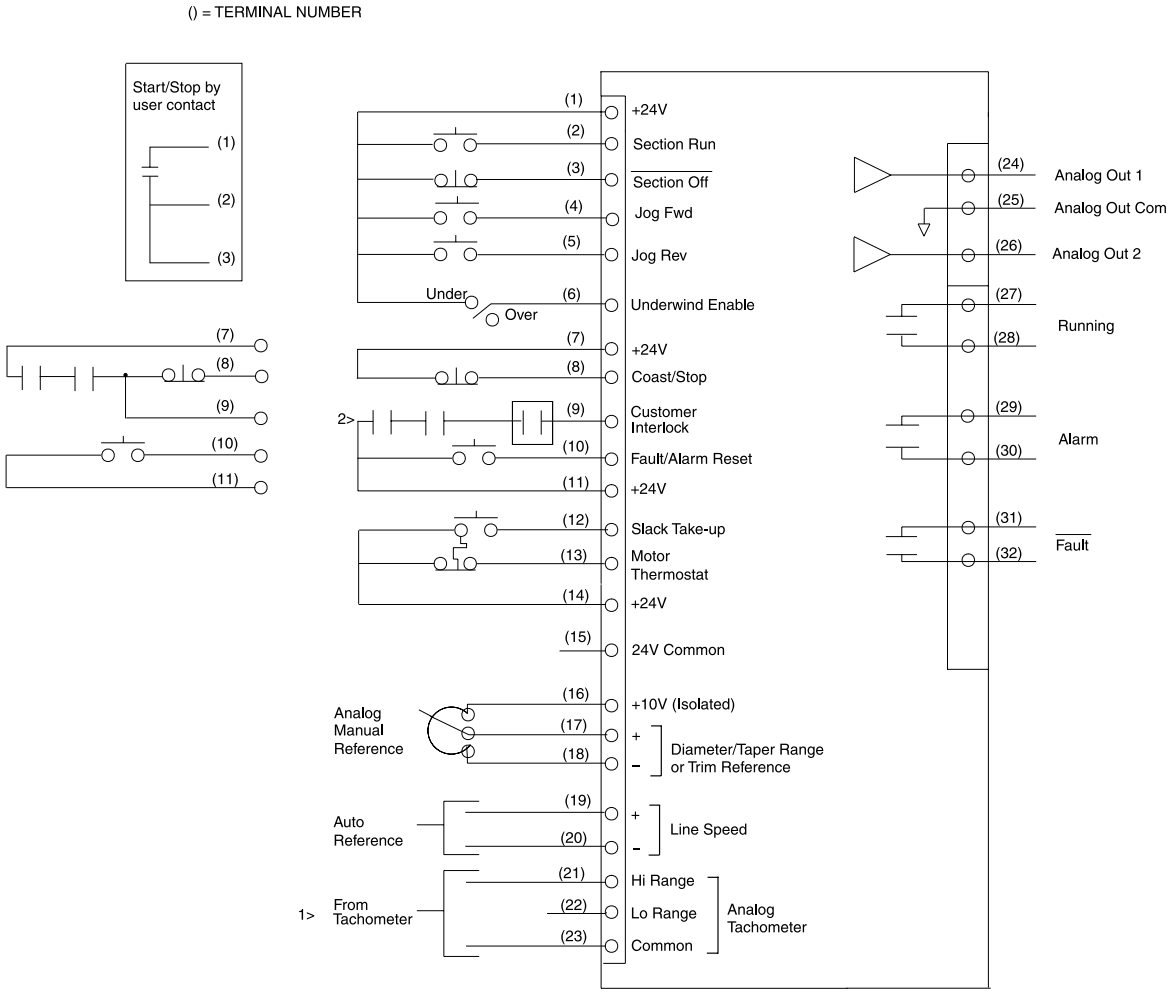
Optional Features

- Incoming AC line disconnect
- Fused blower motor starter with adjustable overload
- NEMA 1 conversion kit or floor-mount NEMA 1 and NEMA 12 enclosures
- Remote mountable OIM kit for mounting in cabinet doors
- Dynamic braking kits available for customer panel mount or NEMA 1 enclosed
- Pulse encoder feedback interface kit for 0.01% speed regulation via pulse encoder feedback
- Automax network communication option card
- ControlNet communication option card
- Profibus communication option card
- Interbus-s communication option card

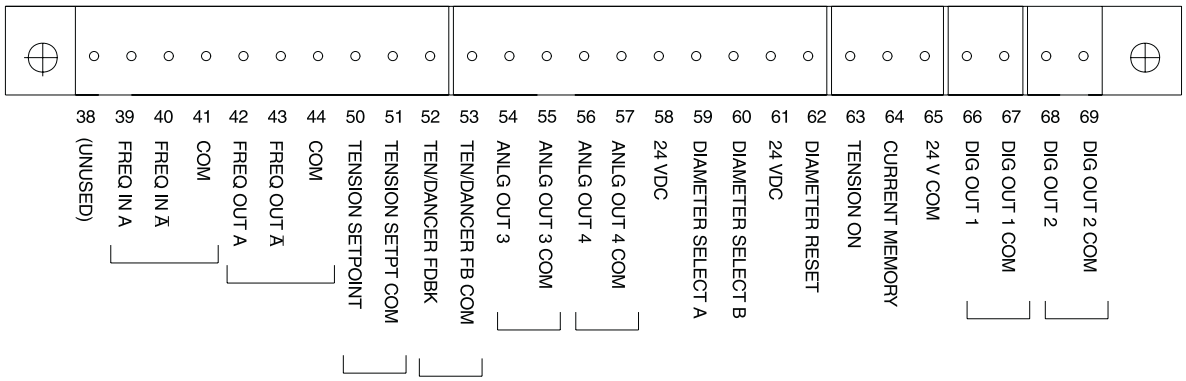
WebPak 3000
1.5-30 HP at 230 V
3-60 HP at 460 V

WebPak 3000
40-75 HP at 230 V
75-150 HP at 460 V

Typical Control Wiring



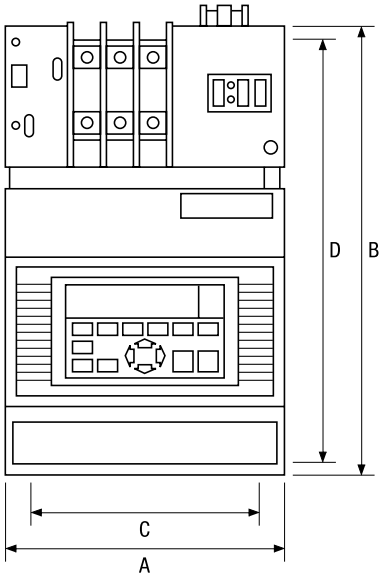
1>DC tachometer voltage polarity should be based on the polarity of the reference and the selection of the Over/Under switch.
2>All customer interlock contacts must be closed for drive operation.



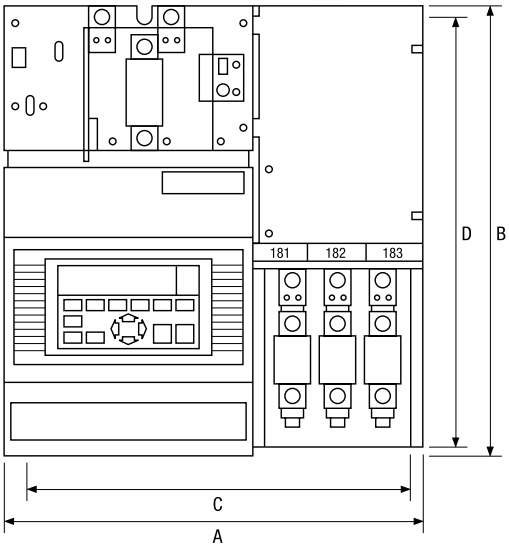
Source: Hardware Manual D2-3443

WebPak 3000

Dimensions by Model Number



Dimensions in mm (inches)						
Model Number	A	B	C	D	Depth	Weight
1WR2012 2WR2012 3WR2012 5WR2012 7WR2012 10WR2012 15WR2012 20WR2012 25WR2012 30WR2012	270.5 (10.65)	477.3 (18.79)	224.9 (8.86)	463.0 (18.23)	310.6 (12.23)	26.4 kg (58 lb)
3WR4012 5WR4012 7WR4012 10WR4012 15WR4012 20WR4012 25WR4012 30WR4012 40WR4012 50WR4012 60WR4012	270.5 (10.65)	477.3 (18.79)	224.9 (8.86)	463.0 (18.23)	310.6 (12.23)	26.4 kg (58 lb)



Dimensions in mm (inches)						
Model Number	A	B	C	D	Depth	Weight
40WR2012 50WR2012 60WR2012 75WR2012	460.0 (18.11)	490.0 (19.29)	375.0 (14.76)	464.6 (18.29)	341.9 (13.46)	55 kg (122 lb)
75WR4012 100WR4012 125WR4012 150WR4012	460.0 (18.11)	490.0 (19.29)	375.0 (14.76)	414.6 (18.29)	341.9 (13.46)	55 kg (122 lb)

Controller Ratings(1)

HP Ratings	Full Load Rated RMS AC Line Current (Amperes)		Full Load Rated RMS DC Armature Current (Amperes)		Rated Field Current (Amperes)	
	230 VAC	460 VAC	240 VDC	500 VDC	150 VDC	300 VDC
1.5	10	-	7	-	10	-
2	11	-	9	-	10	-
3	13	10	12	6	10	10
5	19	12	20	10	10	10
7.5	26	15	29	14	10	10
10	33	18	38	19	10	10
15	48	24	55	27	10	10
20	63	31	73	35	15	10
25	80	39	93	45	15	10
30	94	45	110	52	15	10
40	125	63	146	73	15	15
50	154	74	180	86	15	15
60	186	86	218	100	15	15
75	226	110	265	129	15	15
100	-	143	-	167	-	15
125	-	177	-	207	-	15
150	-	213	-	250	-	15

Service Conditions

- Standard altitude: To 3300 feet (1000 meters)
- Standard ambient temperature
  - Cabinet units: 0-40°C (32°F to 104°F)
  - Chassis units: 0-55°C (32°F to 131°F)
- AC line voltage variation: ±10%
- AC line frequency: 48/62 Hz
- AC line distribution system KVA capacity(1)
- Maximum 3 drives per transformer(1)
- WebPak 3000 drives are 50/60 Hz
- Atmosphere: Non-condensing relative humidity 5 to 95%

Efficiency and Power Factor

- Displacement power factor at maximum speed: 88%
- Efficiency of power module at:
  - 100% speed and 100% load: 99.3%
  - 100% speed and 25% load: 98.5%
  - 25% speed and 100% load: 96.8%
  - 25% speed and 25% load: 94.0%
- Efficiency of drive including motor is typically 87%

Capacities

- Service factor: 1.0
- Maximum load: 150% for one minute, 200% for 5 seconds

Speed Range(2)

- Operator's speed adjustment: 0 to rated speed
- Specification speed range: 100:1 based on top speed and tachometer

(1) When applying WebPak 3000 drives to power distribution systems with KVA capacity in excess of five times the smallest drive rating, use of an isolation transformer or line reactors of similar impedance is required.

(2) Dependent on top speed and pulse encoder used.
5PY = 30:1
RD120-1 and -2 = 70:1
RL1024 = 100:1

Speed Regulation

Regulation Arrangement	Speed Change with 95% Load Change	Speed Change from All Other Variables
Armature Voltage w/ IR Compensation	2-3%	15%
Closed Loop		
w/ 5PY tachometer(3)	1%	2%
w/ RD120-1 encoder(4)	0.01%	0.01%
w/ RD120-2 encoder(4)	0.01%	0.01%
w/ RL1024 encoder(4)	0.01%	0.01%

(3)Standard DC tachometer interface included with drive; no pulse encoder feedback kit required

(4)Optional pulse encoder feedback interface kit required; model number 907FK0101

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NOTE: This material is not intended to provide operational instructions. Appropriate Reliance Electric Drives instruction manuals precautions should be studied prior to installation, operation, or maintenance of equipment.

This document located at:
http://www.reliance.com/drives

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