

**iControls**®

**PULSE** *Direct Drive DC Operators*  
**PULSE** *with Battery Backup*

# PULSE 500 Series

Pulse DC Direct Drive Door Operators with Battery Backup by iControls set the standard for DC Shaft-Mount Operator Performance. Easy to install, set-up, and trouble-shoot, these high-performance operators are loaded with features, remarkably reliable, and very simple to use.



## STANDARD FEATURES:

- Built-in 24V Battery Backup
- Adjustable Force Monitoring on Open and Close Cycles
- Programmable Speeds up to 24" /s
- Soft Start/Soft Stop
- Integrated Door Balance Check
- 2 Year, 1 Million-Cycle Warranty
- Patented Technology - U.S. Patent No. 11 105138

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**35 East Beaver Creek Rd., Unit 1, Richmond Hill, Ontario Canada L4B 1B3**  
**905-597-8989 • www.icontrols.ca • sales@icontrols.ca**

# **PULSE** *Direct Drive DC Operators* **PULSE** *with Battery Backup*

## **GENERAL FEATURES**

**PATENTED BUILT-IN BATTERY BACKUP:** If power should fail, the included batteries provide power for multiple door cycles (press and hold operation for safe emergency use). Built on a separate circuit, the PULSE battery backup will work even if the control and/or drive board has been damaged (lightning strike, impact, etc) - setting it apart from all other systems that rely on full functionality of the printed circuit board. A built-in trickle charger ensures that the batteries are always charged and ready. Should the batteries be fully drained or missing, a crackshaft socket is also provided as a mechanical backup.

**FORCE MONITORING:** Should the door hit an obstruction or become jammed, the system will sense the change in force and stop the open operation or reverse the close operation to avoid further damage.

**SOFT START/SOFT STOP:** This feature offers smooth, controlled acceleration and deceleration of the door, and helps prolong the life of its mechanical parts. It also aids in the prevention of cable throw. The distance of both the acceleration and deceleration can be programmed to match the door requirements as needed.

**PROGRAMMABLE SPEEDS:** The PULSE operators are built for opening speeds of up to 24" per second, but can be adjusted to best suit the application. Simple menu settings allow for adjustable opening speeds (from 1-5, slowest to fastest) to reach up to ~24" per second. The closing speed also has 5 settings (1-5) ranging from ~8" to 16" per second. (Note: Speeds are provided for reference only, as varying drum sizes/styles will affect actual door speed).

**DOOR BALANCE CHECK:** Pulse operators feature a balance check menu option. Once selected, the door automatically moves through one complete cycle and reports (on the LCD) the difference in force required to open the door versus closing it. Use this data to verify proper door balance without needing to remove the operator, and take the guesswork out of door balancing. A properly balanced door will extend the life of the door springs and maximize battery backup performance. PATENT PENDING

**PROGRAMMABLE CLOSING TIMER:** Set your door to automatically close after a selectable 1-99 second open delay.

**UNIVERSAL SINGLE PHASE INPUT:** The Pulse direct drive operator can accept single-phase voltages from 110 to 240Vac. Simply select the appropriate voltage input range in the setup menu.

**RELIABLE POSITION ENCODER:** Mounted on the top of the gearbox, the encoder allows for easy, fool-proof limit setup, and easy left or ride side mounting of the operator. It also facilitates advanced functionality of the door including soft start/soft stop, dual open limits and motion monitoring - if the door stops moving during its cycle, the encoder senses the lack of motion and halts operation to avoid any added damage to the operator and/or door. The encoder will also monitor the position of the door when the operator is being used in battery backup mode - no need to reset the encoder when the power returns.

**EASY INSTALLATION:** The motor/operator simply slides on the keyed solid shaft of any counter-balanced door, and one bolt secures the torque arm. The Control Panel is mounted at user level, and is secured by four bracket/bolts. 6 wires run between the Junction Box and Control Panel for power, communication and battery back-up needs.

**MAINTENANCE SCHEDULE:** Program a maintenance reminder that will appear on the LCD Display. Factory set for 250,000 cycles (for motor brush replacement), it is adjustable in 10K increments to accommodate for regular door maintenance requirements.

**SEPARATED VOLTAGES:** A Junction Box mounted near the motor contains all incoming power connections, keeping dangerous voltages away from users. The Control Panel requires only 24Vdc (supplied from the operator) and has all connections for peripherals providing easy, safe low-voltage access.

**HIGH PERFORMANCE MOTOR OPTIONS:** Reap the benefits of High Torque, True HP DC Motors and lift counter-balanced doors up to 500 sq. ft./1500 lbs. The PULSE is available in your choice of 1/2HP (up to 200 sq. ft./998 lbs.), 3/4HP (up to 350 sq. ft./1500 lbs.), 1HP motor (up to 500 sq. ft./1500 lbs.). Gearbox options are available to accommodate 1" or 1.25" keyed solid shafts.

**SIMPLE SETUP:** Set Limits, Speed, Opening Height, Closing Timer, etc., at user level on the Control Panel following guided menu options on the easy to read LCD Screen.

**DUAL UPPER LIMITS:** Choose between Fully-Open or Set-Limit heights to increase time and energy efficiency. Available as wired inputs (A1 = Fully Open, A2 = Set Limit), or programmable options for Remote Radio and Push Button Station Inputs.

**CYCLE COUNTER:** Displays up to 10,000,000 door cycles.

**LARGE BACKLIT LCD DISPLAY:** 20x4 character LCD screen facilitates setup and trouble-shooting and provides real time monitoring.

**PROGRAMMABLE DYNAMIC BRAKING OPTIONS:** Ensure safe, controlled deceleration on doors with high inertia. The Dynamic Brake has Off, Low, Medium and High settings.

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## STANDARD INPUTS

**24VDC POWER:** Up to 1A of current available to power peripheral devices.

**REVERSING DEVICES:** Terminals provided for your choice of standard or monitored reversing devices including Re-versing Edge, Photo-Eye, Light Curtains, etc.

**ACTIVATION DEVICES:** Terminals provided for activation devices including Floor Loop Detectors, Pull Cords, Wireless Pull Cords, Motion Detectors, Wireless Radio, etc. A1 terminal opens to Fully-Open Height, A2 terminal opens to Set Limit Height.

**REMOTE RADIO:** Inputs for all types of wireless remote receivers. Can be set to Fully-Open or Set Limit Height.

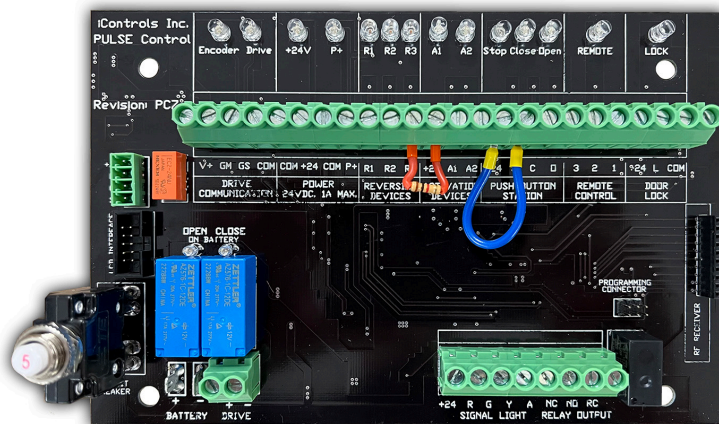
**PUSH BUTTON STATION:** Inputs for a remotely-located wired push button station. Note that the STOP button should be a NC contact, and the OPEN and CLOSE buttons should have NO contacts.

**DOOR LOCK:** Input to connect to a switch or sensor that will disable all door functions. This input is commonly used with a proximity switch that can sense whether the door latch is engaged or not, or with a sensor on the dock leveller to prevent door movement while the leveller is not parked.

## STANDARD OUTPUTS

**TRAFFIC LIGHTS/WARNING FLASHER/ ALARM:** Terminals provided for LED Traffic Lights - signalling Red when door closed or in motion (with option to flash while door is in motion, and to switch to red in open position in a programmable number of seconds prior to close when using closing timer), and signalling Green in open position only. As well, an output is on board for an optional Warning Flasher and Audible Alarm (signalling when door is in motion).

**PROGRAMMABLE RELAY OUTPUTS (NO/NC):** Available to provide signalling for interlocking. Menu selectable to be energized in either Door Open, or Door Closed position.



## SELECTION GUIDE



### PULSE 500: 1/2 HP OPERATORS

1/2HP 90VDC Motor with Size 50 Gearbox for 1" Keyed Solid Shaft includes 24V, 5Ah Battery Backup, Reflective Photo Eye. For Balanced Doors up to 200 sq. ft. / 998 lbs.

#### Model: PDC-500-1-40

PULSE 500 Operator with 40:1 Gearbox Ratio, Opening Speeds up to 20"/s\*. Ideal combination of Speed and Torque. Recommended for most commercial door installations up to 200 sq. ft. / 998 lbs.

#### Model: PDC-500-1-30

PULSE 500 Operator with 30:1 Gearbox Ratio, Opening Speeds up to 24"/s\*. For lighter doors that require highest available opening speed. Applicable for commercial doors installations up to 200 sq. ft. / 750 lbs. that do not include bumper/pusher springs.

#### Model: PDC-500-1-50

PULSE 500 Operator with 50:1 Gearbox Ratio, Opening Speeds up to 16"/s\*. For heavier doors and challenging environments requiring more torque than speed. Applicable for commercial doors installations up to 200 sq. ft. / 998 lbs. Best choice for installations with bumper/pusher springs.

\*Door speeds are dependant on installation variables such as drum size, door balance, door size, etc. Speeds indicated represent figures based on optimal installations and conditions.

### PULSE 750: 3/4 HP OPERATORS

3/4HP 90VDC Motor with Size 50 Gearbox for 1" or Size 75 Gearbox for 1.25" Keyed Solid Shaft. Includes 24V, 7.5Ah Battery Backup, Reflective Photo Eye. For Balanced Doors up to 350 sq. ft. / 1500 lbs.

#### Model: PDC-750-1-40

PULSE 750 Operator with 1" Hollow Shaft 40:1 Ratio Gearbox, Opening Speeds up to 20"/s\*. Ideal combination of Speed and Torque. Recommended for most commercial door installations up to 350 sq. ft. / 1200 lbs.

#### Model: PDC-750-1-30

PULSE 750 Operator with 1" Hollow Shaft 30:1 Ratio Gearbox, Opening Speeds up to 24"/s\*. For lighter doors that require highest available opening speed. Applicable for commercial doors installations up to 350 sq. ft. / 900 lbs. that do not include bumper/pusher springs.

#### Model: PDC-750-1-50

PULSE 750 Operator with 1" Hollow Shaft 50:1 Ratio Gearbox, Opening Speeds up to 16"/s\*. For heavier doors and challenging environments requiring more torque than speed. Applicable for commercial doors installations up to 350 sq. ft. / 1500 lbs. Best choice for installations with bumper/pusher springs.

#### Model: PDC-750-1.25-40

PULSE 750 Operator with 1.25" Hollow Shaft 40:1 Ratio Gearbox, Opening Speeds up to 20"/s\*. Ideal combination of Speed and Torque. Recommended for most commercial door installations up to 350 sq. ft. / 1200 lbs.

#### Model: PDC-750-1.25-30

PULSE 750 Operator with 1.25" Hollow Shaft 30:1 Ratio Gearbox, Opening Speeds up to 24"/s\*. For lighter doors that require highest available opening speed. Applicable for commercial doors installations up to 350 sq. ft. / 899 lbs. that do not include bumper/pusher springs.

#### Model: PDC-750-1.25-50

PULSE 750 Operator with 1.25" Hollow Shaft 50:1 Ratio Gearbox, Opening Speeds up to 16"/s\*. For heavier doors and challenging environments requiring more torque than speed. Applicable for commercial doors installations up to 350 sq. ft. / 1499 lbs. Best choice for installations with bumper/pusher springs.

\*Door speeds are dependant on installation variables such as drum size, door balance, door size, etc. Speeds indicated represent figures based on optimal installations and conditions.



### PULSE 1000: 1 HP OPERATORS

1HP 90VDC Motor with Size 63 Gearbox for 1" or Size 75 for 1.25" Keyed Solid Shaft includes 24V, 9Ah Battery Backup, Through-Beam Photo Eye. For Balanced Doors up to 500 sq. ft. / 1500 lbs.

#### Model: PDC-1000-1-40

PULSE 1000 Operator with 40:1 Gearbox Ratio for 1" Shaft, Opening Speeds up to 20"/s\*. Ideal combination of Speed and Torque. Recommended for most commercial door installations up to 500 sq. ft. / 1350 lbs.

#### Model: PDC-1000-1.25-40

PULSE 1000 Operator with 40:1 Gearbox Ratio for 1.25" Shaft, Opening Speeds up to 20"/s\*. Ideal combination of Speed and Torque. Recommended for most commercial door installations up to 500 sq. ft. / 1500 lbs.

#### Model: PDC-1000-1.25-30

PULSE 1000 Operator with 30:1 Gearbox Ratio for 1.25" Shaft, Opening Speeds up to 24"/s\*. For lighter doors that require highest available opening speed. Applicable for commercial doors installations up to 500 sq. ft. / 1199 lbs. that do not include bumper/pusher springs.

#### Model: PDC-1000-1.25-50

PULSE 1000 Operator with 50:1 Gearbox Ratio for 1.25" Shaft, Opening Speeds up to 16"/s\*. For heavier doors and challenging environments requiring more torque than speed. Applicable for commercial doors installations up to 500 sq. ft. / 1500 lbs. Best choice for installations with bumper/pusher springs.

\*Door speeds are dependant on installation variables such as drum size, door balance, door size, etc. Speeds indicated represent figures based on optimal installations and conditions.