

## High Performance DC Motor Speed Control With Pulse Width Modulation (PWM)

New DigiDrive with Pulse Width Modulation technology delivers nearly pure DC power to your volumetric feeder motor. PWM generates a low form factor of  $\leq 1.05$  throughout its 100 : 1 speed range. Although DC SCR rated motors can tolerate a form factor of 1.37, as motor speed decreases, the form factor increases, the motor gets hotter and less efficient, and motor brush life is shortened.

## Smoother, Quieter, Cooler Motor Operation

- High efficiency Pulse Width Modulation design maintains constant voltage (form factor  $\leq 1.05$ ) throughout full operating range: your motor runs nearly as cool and efficient at 18 RPM as at 1800 RPM
- Controls DC motors up to 1.6 kW (2 HP)
- No motor cogging at low speeds
- Longer motor life, longer brush life
- Less maintenance

## Quartz Clock Accuracy $\pm 1$ RPM

- Quartz clock frequency with advanced closed loop digital control and digital speed feedback for speed control accuracy of  $\pm 1$  RPM
- Continuous digital speed regulation
- Insensitive to line and temperature variations
- Automatic error integration and compensation
- Maintenance-free Hall effect speed pickup

## Operating Features

- Microprocessor control brings intelligence and flexibility to volumetric feeding: you see what is happening in your process, and your operator is given clear indications of what to do
- Underload alarm automatically detects flow starvation
- Digital setpoint entry
- Large LED display with floating decimal and leading zero suppression is easy to read and understand
- User selectable display and user selectable calibration units
- Sealed data entry touchpad with tactile keys and LED indicators
- Data entry ramping function (with „fast“ and „slow“ keys): smooths changes when running and eliminates jumps
- Watertight NEMA 4 construction
- Modular, optically isolated electronics with plug in wiring connectors
- Analog or digital input for remote setpoint operation
- Motor load display in amps and % of rated motor load
- Simple setup and calibration
- Operating temperature range: 0...40° C (32...104°F)



### DigiDrive with PWM Delivers Smooth Power

DigiDrive uses Pulse Width Modulation to generate 20'000 power bursts every second. The width of every power pulse is dynamically varied as required to lock the motor at the precise speed selected. With its digital pulse comparison, DigiDrive maintains drift free speed control with no cumulative error.

### Setpoint Control

With its microprocessor power, DigiDrive affords users a new level of application and operating flexibility. Feeder setpoint may be expressed in user calibrated units, such as weight (lb/hr) or volume (liters/hr), motor RPM or % max motor RPM. Setpoint may be entered locally, via DigiDrive's touchpad, remotely via PLC or host computer, or it may be slaved to an external master rate signal.

#### Option

- Version with analog input 0-10 V, 4-20 mA

### Design

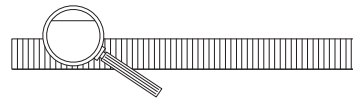
Two models are available depending on the motor to be powered:

- Low rate model  
US: for motors up to 1 HP (115-230 V AC supply)  
Europe/Asia: for motors up to 450 W (115-230 V AC supply)
- High rate model  
US: for motors up to 2 HP (230 V AC supply)  
Europe/Asia: for motors up to 1600 W (115-230 V AC supply)

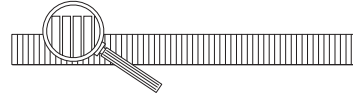
### Mounting

- Standard: the DigiDrive is attached to the volumetric feeder.
- Mounting brackets are available as an option should the unit be built into an electrical control panel (opening in electrical control panel 122 mm x 122 mm, max. 3 mm corner radius).
- Wall-mounting is the third possibility. The corresponding mounting plate is available as an option.

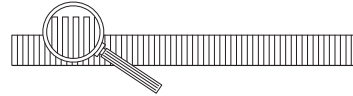
### Pulse Width Modulation



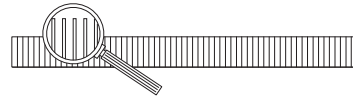
At 100% drive command (2'000 rpm), power is supplied continuously.



At 75% (1'500 rpm), power is supplied 75% of the time in bursts measuring 0.0000375 seconds in width.

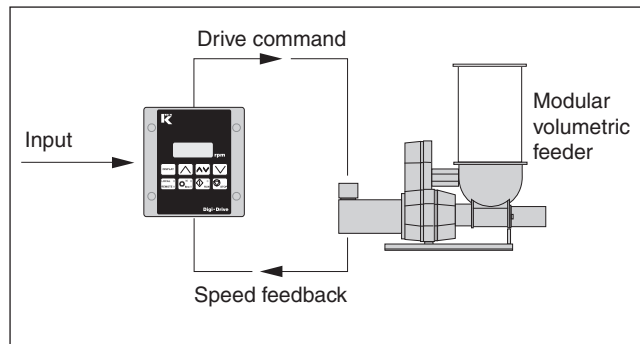


At 50% (1'000 rpm), power is supplied 50% of the time in bursts measuring 0.000025 seconds in width.

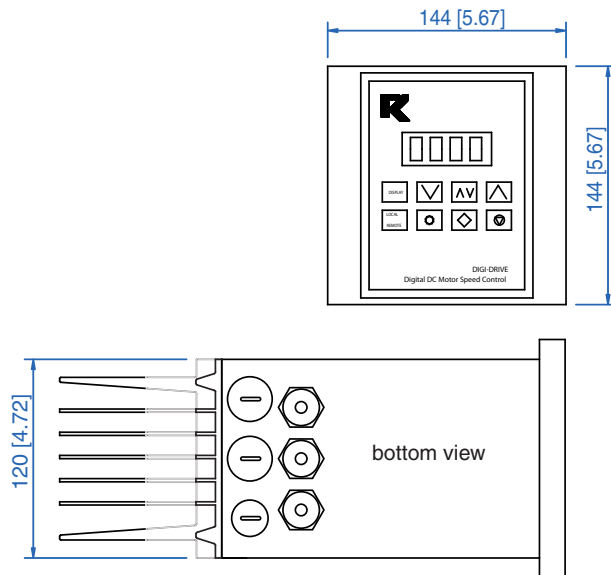
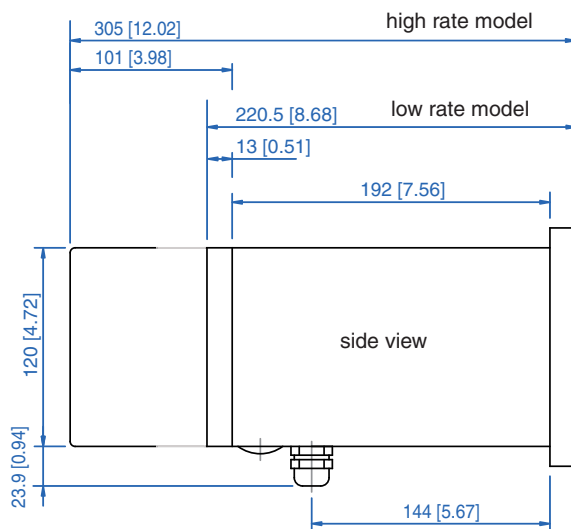


At 25% (500 rpm), power is supplied 25% of the time in bursts measuring 0.0000125 seconds in width.

### Application



### Dimensions [mm(in)]



**Caution:** these measurements are for general reference only. Please consult dimensional drawing for exact measurements