













# ***APPLICATION USE***



## **After 10 years in business, here are 10 reasons Maximum Controls is a technological leader in the industry.**

- Long life motor capable of 5 million cycles
- Hands down, the most robust lightning protection available
- Branded reliability
- Diagnostic tools you can count on, LCD display and USB download
- The quietest machines on the market
- Superior gate control and motion, true RPM ramp up, ramp down
- Faithful battery back up standard on all models
- Years of loyal operation in extreme temperatures, Phoenix to Winnipeg
- The only proven solution to windy conditions
- Direct drive drivetrain, minimum moving parts

These are just a few of many reasons you should consider Maximum Controls



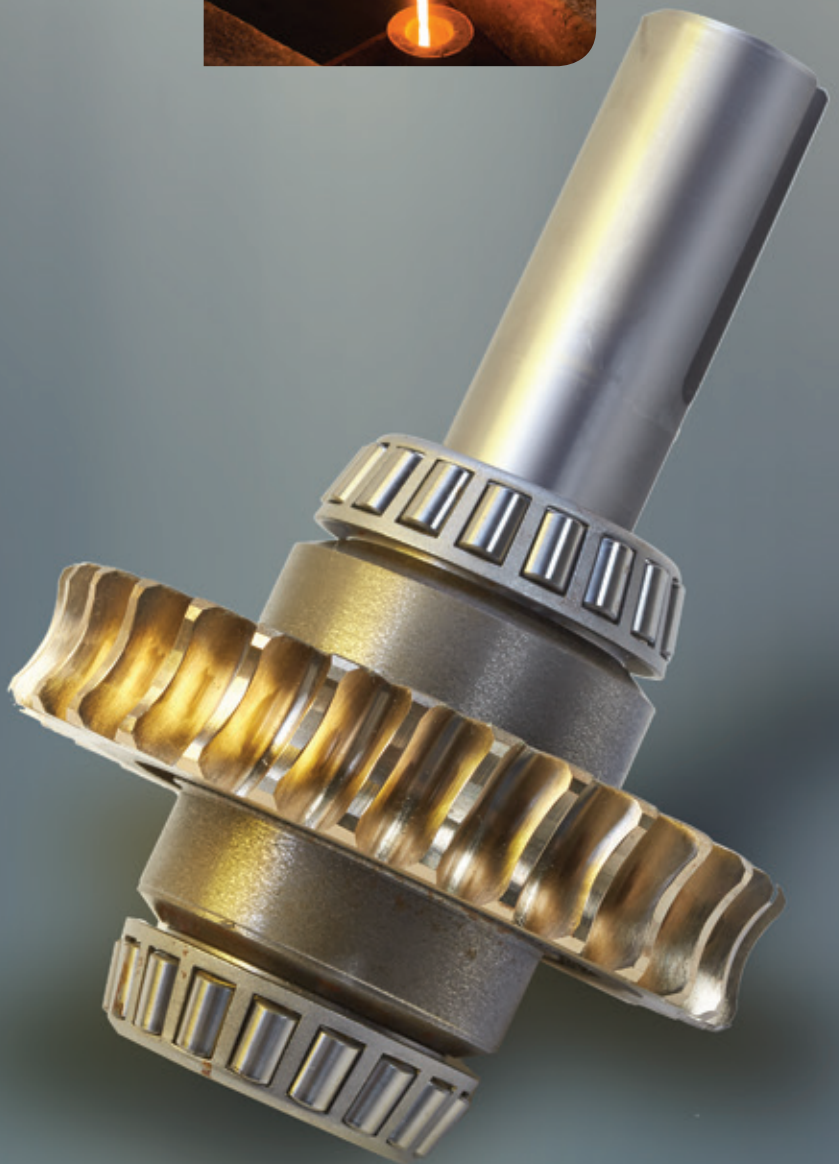
## **GEARBOX**

The Megatron 2200 PRO implements a size 80, 900 to 1, dual gear reduction, high efficiency cast iron gearbox.

The Megatron 2200 PRO gearbox is highly efficient, producing maximum torque, maintaining a low amperage draw by reducing resistance, providing super silent operation. The rugged cast iron housing, bronze gears, and double sealed heat-treated solid shafts have been designed by a team with over 40 years of experience in the gearbox industry.

High speed ball bearings and a synthetic oil bath keep the dual gear reduction operating flawlessly through extreme temperature ranges without need for belts, chains, or pulleys which are subject to wear, raising maintenance issues.

We invite you to compare our Maximum Controls gearboxes to any of those used by other manufacturers.

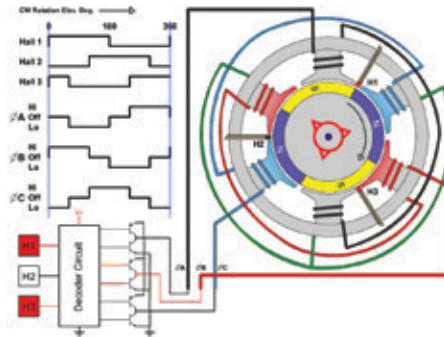


## **BRUSHLESS DC MOTOR**

The brushless DC motor in the Megatron 2200 PRO uses "Hall Effect" magnetic sensing to identify over five thousand precise rotational positions during 90 degrees of gate movement. That's over 50 samples per degree of gate travel. Using this positional feedback, intelligent ramp-up and ramp-down of the gate speed is employed to minimize stress on all mechanical components.

We utilize Hall Effect sensors to know the position of the gate at any given moment which synchronizes the gates to open and close at the same speed. We combine this technology with a dynamic magnetic brake system which stops the gate instantly when colliding with an obstacle.

Our brushless DC motors can withstand and operate in extreme high temperatures up to 165F (+74C); this surpasses any other motor technology we know of in the market today.



The Max brushless DC motor's torque is equivalent to a 1 1/4 HP AC output torque motor and can operate approximately 35,000 hours, which is about 6 million cycles. This means the motor can last for decades to come. Maximum Controls stands behind our motors with a 5 year warranty.

Brushless motors controlled by DSP is the same motor technology used in advanced robotics for automobile assembly.

## **MOTOR CONTROL TECHNOLOGY**

Maximum Controls' brushless dc motor control enables precision movement that traditional brushed motors can not replicate. For example, no overcoasting. This ability is crucial in bi-parting slide gates on the same track, as well as catch posts or columns that can't be avoided.

Another advantage of precise gate control is the ability to stop instantly. In an emergency situation, this is critical. When a safety edge is struck, stopping on a dime to reduce risk of injury or damage to equipment is imperative. Our motor control technology is absolutely the most advanced on the market.

## ***ADVANTAGES OF BRUSHLESS DC MOTOR***

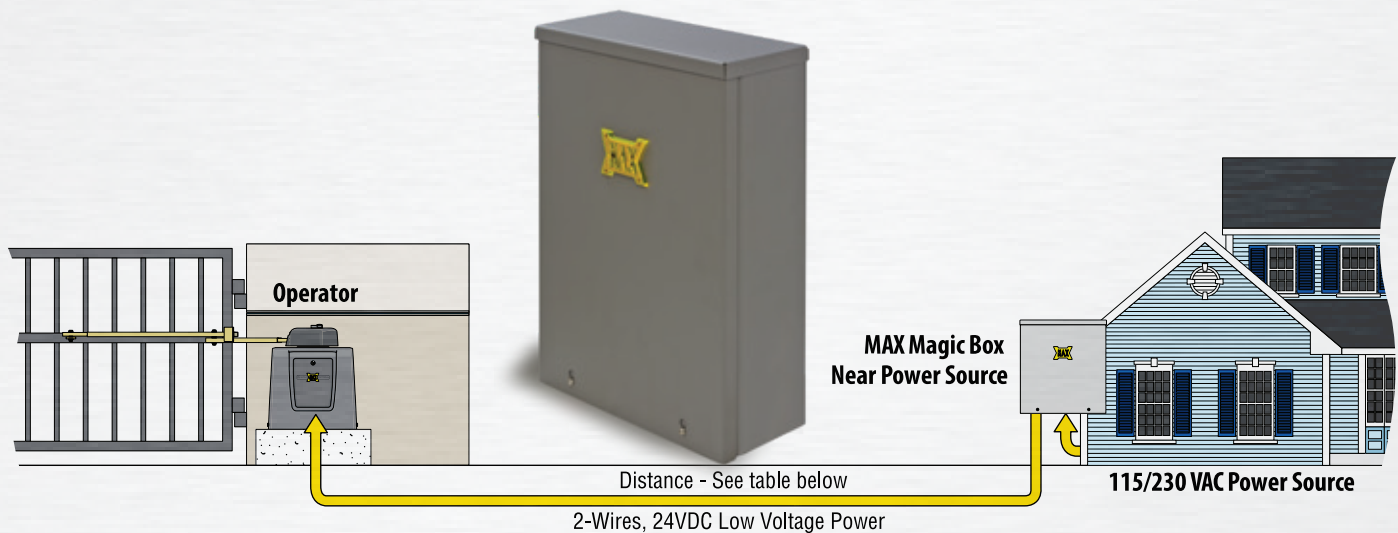
FEATURE	BRUSHED DC MOTORS	BRUSHLESS DC MOTOR MAX
Commutation	Mechanical	Electrical
Maintenance	High	Very Low
Electronic Noise EMI	High	Super Low
Life	Short	Much Longer 6,000,000 Cycles
Speed/Torque Characteristics	Moderately Flat	Flat (Enables Operation at All Speeds)
Efficiency	Medium	High
Motor Speed	Limited Speed Control	Variable Speed Control
Audible Noise	High at High Speeds Because of Brushes	Super Quiet
Drive Complexity	Inexpensive	Advanced DSP Control
Loss of Torque Due to Aging	Yes	No
Energy Consumption	Higher	Lower
Magnetic Hall Sensors	No	Yes (50 samples per degree of gate travel)

## POWER SUPPLY

The Megatron 2200 PRO's power supply utilizes a 15 Amp torroid and power management board. The maximum Amp draw from the Megatron is 3.5 - 4.5 Amps depending on gate weight. The power supply is efficiently designed with ample headroom and is not overstressed under any extreme load or temperature conditions. The power supply input accepts 115V or 230V AC via selection switch. During gate operation the battery is not utilized while AC is present, preserving the life of the battery.

### Input AC Power/Amps -

Switchable: 115VAC / 6 Amp, Single Phase  
or 230VAC / 2 Amp, Single Phase



## MAGIC BOX

The Megatron 2200 PRO MAGIC BOX feature can save thousands of dollars in trenching and costly permit fees. Unforeseen complications like rock formations or utility lines that have to be trenched around can be avoided by using the Magic Box. This feature is a power management system that does not rely on battery power and as a result the battery life is not compromised.

Because the Magic Box does not rely on the batteries as a booster, the gate remains operational regardless of whether the batteries are malfunctioning or the batteries are removed. This technology is unique only to Maximum Controls.

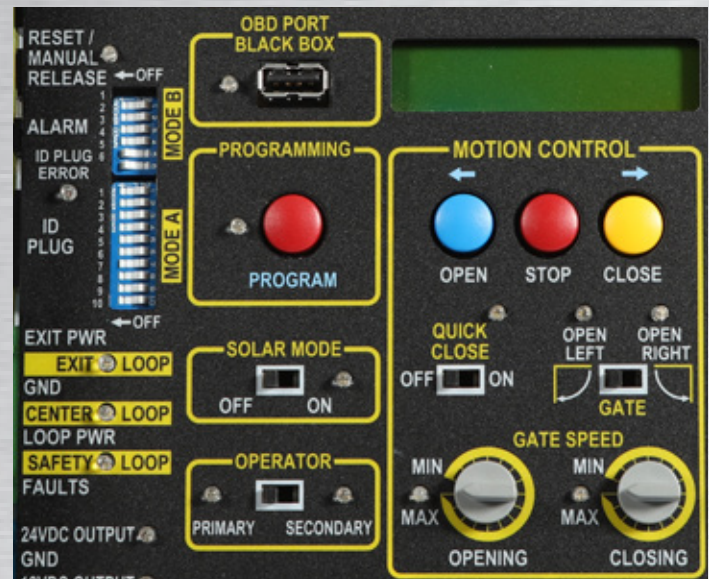
# BLACK BOX, LOOP MANAGEMENT & SECURITY

One of the primary goals of the Megatron 2200 PRO is to provide the most secure, easiest to maintain gate operator with higher gate speed motion and advanced loop management.

The Megatron 2200 PRO uses non-volatile memory to continuously log performance characteristics and input/output events. A service technician can access this data via USB port to download the event history, quickly diagnosing complex or intermittent problems that traditionally have been very difficult to isolate and repair. By plugging a USB thumb drive into the USB port, all the Megatron's diagnostic history will download, working as a "Black Box" to diagnose what occurred. The Megatron's event history is stored as a .TXT document which can be emailed to the factory if necessary, for on-site diagnosis. The .TXT file is a log of the most recent 1000 events reported by each module to the central logger.

The Megatron 2200 PRO's standard intuitive loop management system, when enabled, will discourage tailgating, increasing security for residential and high traffic installations. When the anti-tailgate switch is activated, any car tailgating a legitimate access will be forced to stop by a rapidly closing gate, forcing the tailgater to back up and thereby triggering the gate to close and deny unauthorized access.

When disabled, loop management will allow multi-access, with the gate opening on each successive trigger in the traditional loop management manner.

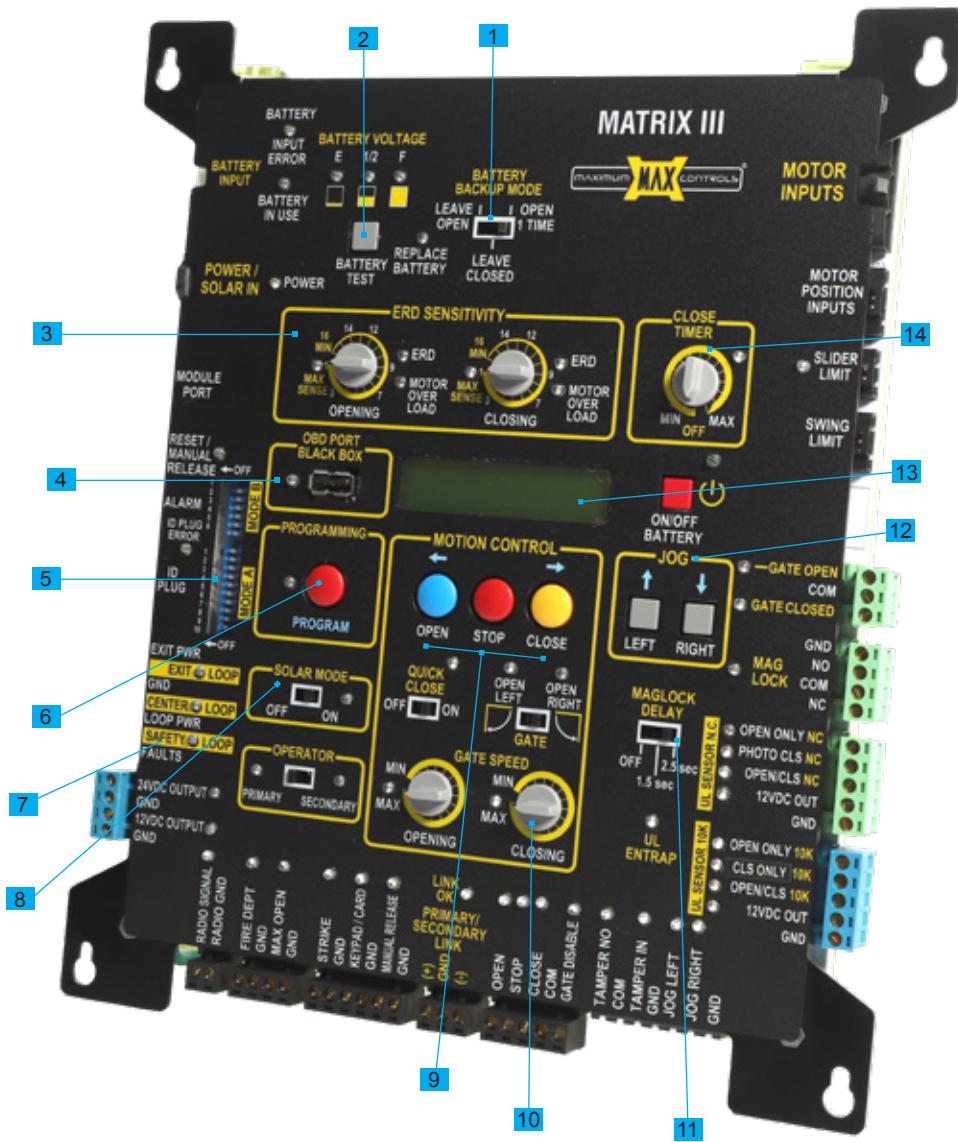


## ADVANCED SECURITY FEATURES

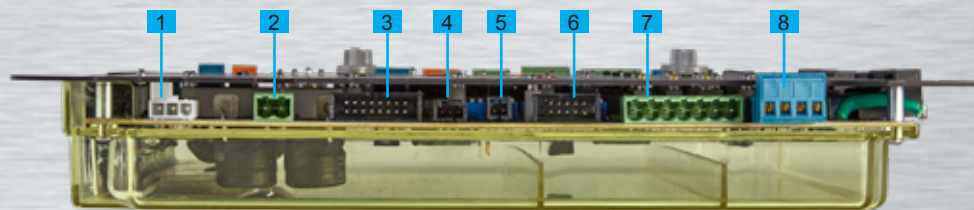
### Anti-Vandalism/Burglar Alarm

As a security device, the Megatron 2200 PRO supplies a gate tamper relay output that triggers whenever a gate has encountered an unauthorized movement. This can be configured to activate an alarm system or camera. The Megatron 2200 PRO also has a gate disable feature which can disable operator open commands during a vacation or overnight for commercial applications.

# CONTROL FEATURES AND CONNECTIONS



1. Battery backup mode switch
2. Battery test switch
3. ERD Sensitivity
4. OBD Port
5. DIP Switches
6. Program Button
7. Loop Status
8. Solar Mode Application
9. Motion Control Buttons
10. Closing gate speed
11. Maglock Delay
12. Jog Open/Close
13. LCD Display
14. Close Timer Switch



- |                      |   |
|----------------------|---|
| 1. Battery Input     | 5. UL Alarm                                   |
| 2. Power/Solar Input | 6. ID Plug                                    |
| 3. Module Port       | 7. Loop Rack Input                            |
| 4. Reset             | 8. 12vdc & 24vdc limited current power output |

## LIGHTNING PROTECTION



The Megatron 2200 PRO offers the most robust lightning protection available in the industry. The Megatron 2200 PRO protects all peripheral inputs, loop inputs, power inputs, relay outputs, and all communication lines (over 44 channels of protection) in 1/1,000,000,000 of a second. With special emphasis on power supply protection, the Megatron 2200 PRO is guaranteed to withstand any lightning hit more than 50 feet away. Truly protected like no other operator in the world.

# **Maximum Controls LLC Warranty And Return Policy Megatron 2200 HP PRO**

## **Section I Coverage**

- a. 5 years on all components
- b. 1 Year on batteries

## **Section II Not Covered**

- a. Damages due to flooding
- b. Damages due to fire
- c. Damages due to negligence i.e. leaving the cover off in the rain, improper wiring of AC or peripheral systems
- d. Damages due to product misuse i.e. gate and operator combination mismatch
- e. Damages due to vandalism

## **Section III RMA Shipping Policy**

- a. Maximum Controls LLC will pay for return shipping via standard ground UPS or USPS FOB CA on all RMA's within one year of Distributor's purchase
- b. Any form of "Expedited Shipping" on any RMA will be paid by Distributor

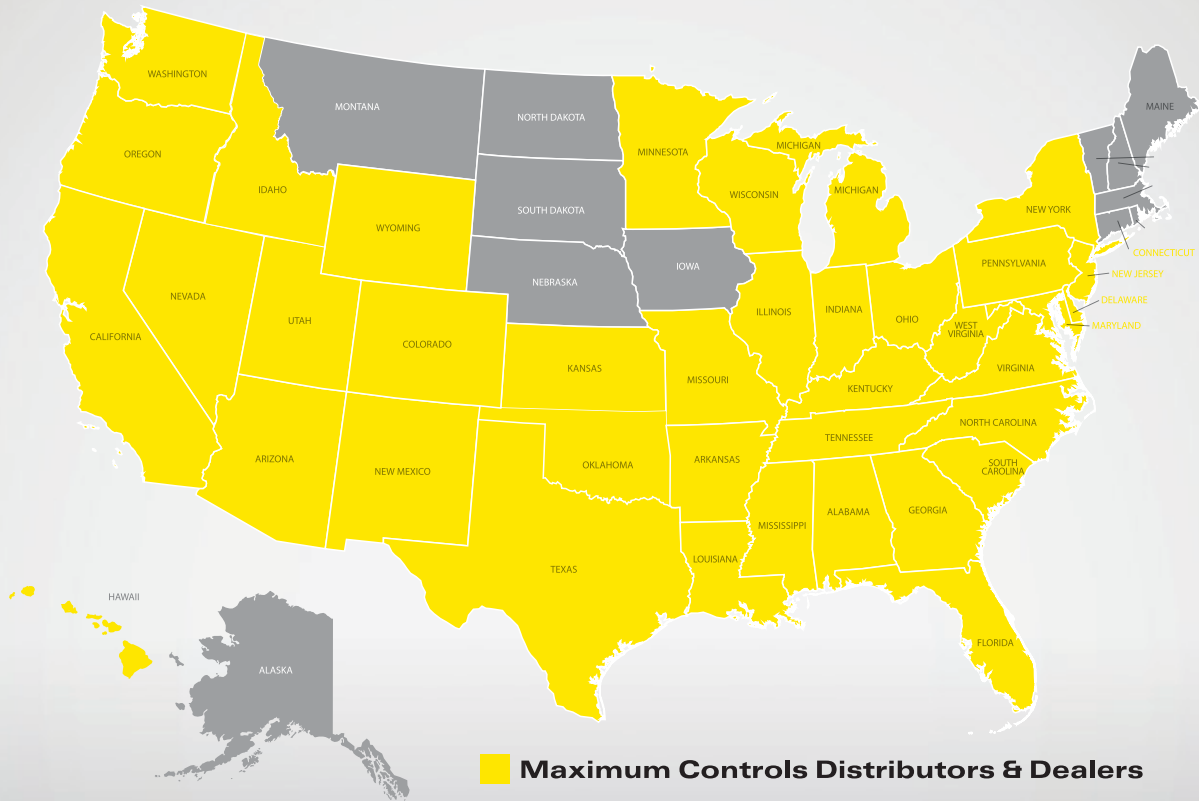
## **Section IV Product Returns**

- a. Products must be in original, resalable condition with all warranty information, manuals, and original packaging.
- b. A re-stock fee of 10% will be charged on all returned products.
- c. All returned products must reference a Maximum Controls RMA number or it will be refused.
- d. Maximum Controls is not responsible for freight charges associated with returned merchandise.





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Independent Dealer or Distributor