1700 FS PRO

FAIL SAFE
High Traffic Commercial
Brushless DC Slide Gate Operator
The Maximum Level of Gate Control

5 YEARS WARRANTY
PLEASE READ
WARRANTY POLICY

TRUE SECURITY... DSP MOTION CONTROL... HIGH PERFORMANCE

SAFETY SENSORS REQUIRED FOR UL 325 2018

UL 325/991 Compliant
UL 2018 THE NEW STANDARD

MAX 1700 FS PRO FEATURE LIST

MECHANICAL SPECIFICATIONS

- Max 1700 FS PRO Slide Gate Operator dimensions (14.5" W x 19" D x 25.5" H) 7.5" chain height
- Heavy duty direct drive gear box Size 60, 20: 1 gear ratio
- ✓ Max 1700 FS PRO capacity 1700lbs /60ft long gate speed 12" per second for class I and II, adjustable dip switch configuration for UL class III and IV making the operator speed up to 19" per second
- ✓ Independent Opening and Closing speed control for primary and secondary
- Direct gear drive (no internal chains, belts, or pulleys)
- Corrosion protection gold zinc coating and electrostatic powder coating applied
- ✓ Continuous cycle at extreme temperature ranges—overheating not possible
- ✓ Intelligent ramp-up and ramp-down for smooth operation
- Selectable short or long ramp-down
- Shipping weight of Max Slide Gate Operator: Max 1700 FS PRO (156 lbs)
- ✓ Programmable virtual OPEN & CLOSE limit (Limits auto-set in the event of a total power loss)

ELECTRICAL SPECIFICATIONS

- ✓ Mechanical Release: Local switch, keypad, or any dry contact relay will release dynamic braking, allowing gate to be pushed back in case of emergency (see page 4)
- ✓ Brushless DC motor equivalent to 1 1/4 HP AC motor
- ✓ Programmable gate speed controls, 16 selectable speeds
- ✓ Automatic gate position reset requires optional magnets and sensors or when using virtual limits, positive stops on both gate directions
- Modular system design for ease of service
- Switchable 115/230 voltage selection
- ✓ Adaptive DSP control for advanced brushless DC motion control
- ✓ Real time performance analyzer and event log (OBD PORT and Black Box) 8000 events including the history of error failure
- ✓ LCD display that reports past and recent errors
- ✓ Low voltage wiring capabilities for remote power up 500 ft (no battery needed)
- ✓ 'Solar Ready' battery module with built-in advanced solar regulator
- Intelligent power management system with energy saver mode
- ✓ Built-in 12vdc and 24vdc outputs
- Gold contact input connections and automobile grade connectors
- ✓ Selectable open timer 0 to 60 seconds with 'timer off' option
- -4F to 165F (-20C to +74C) operational temperature range including battery performance without needing a heater

✓ **= Unique to Max Slide Gate Operator Series**

- Robust lightning protection up to 20KVolts and 10KAmps on all inputs and outputs (44 channels) including loop detector input connections
- ✔ Motor overcurrent safety shut off for additional protection
- ✔ This operator includes a battery backup module providing on average 200 cycles in case of power failure
- Three modes of selectable battery backup functions
- State machine design electronics with ultra-fast microprocessor
- On-board three button station

SECURITY SPECIFICATIONS

- ✔ High traffic intuitive loop management system for better security
- ✔ Advanced security features with built-in audible and remote alarms
- Magnetic lock control relay outputs with selectable delay times
- ✔ Tamper-alert relay output triggers "on" if gate is forced open
- ✔ Audible alarm if gate is tampered with or ERD is triggered for higher security
- ✔ Gate partial open recorder. Programmable inputs allow partial open cycles for high traffic gates while providing complete open cycles for emergency vehicles
- Lockable cover with key lock release to prevent intruders and vandalism
- ✔ Built-in transaction buffer for high security 8000 events as well as error messaging file
- ✔ Gate status outputs for gate monitoring
- ✔ Advanced anti-tailgate feature provides higher security
- ✔ Optional Chain Drop Sensor detects unauthorized chain drops when using magnets option
- ✔ Fire Department Compliance allows gate to auto-open upon loss of AC power or battery depletion

SAFETY SPECIFICATIONS

- ✔ Adaptive obstruction sensor for much better gate safety system. 16 selectable sensitivity settings
- ✔ UL 325/991 compliant Class I, II, III, and IV. CSA approved
- ✔ Dynamic magnetic brake system stops the gate immediately to prevent damage to obstructions
- Built-in advanced entrapment protection and alarm output
- Built-in gate-in-motion alarm for industrial applications
- ✔ Optional normally close or 10K safety inputs (most safety inputs in the industry)

✔ **= Unique to Max Slide Gate Operator Series**

MAX 1700 FS PRO

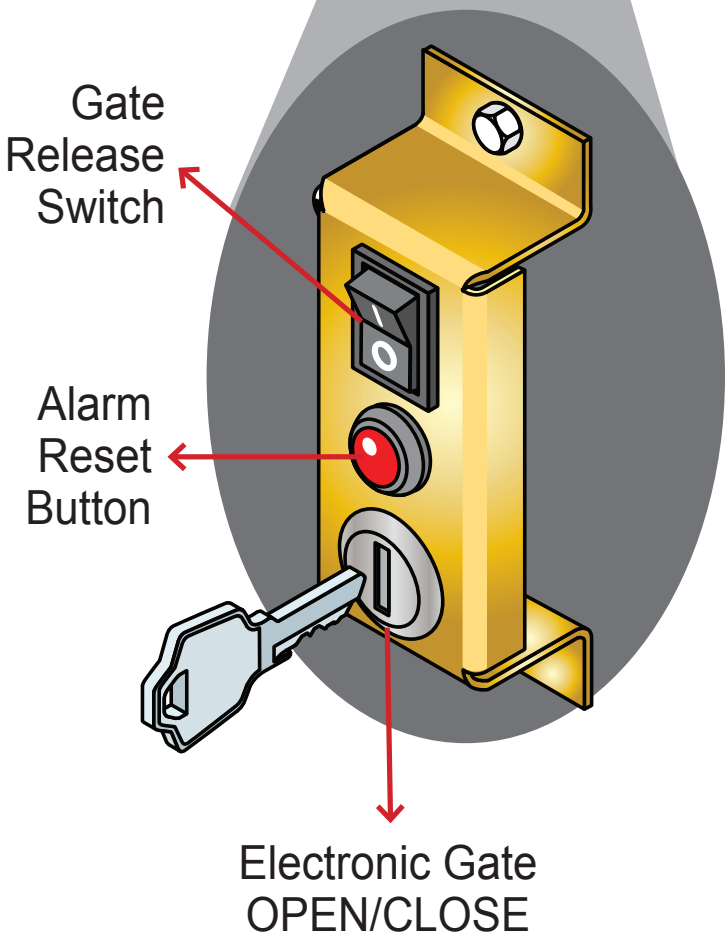
High Traffic Commercial Brushless
24 V DC Sliding Gate Operator-
Fail safe, back drivable manual operation upon loss of AC power or battery depletion

- Local keyed manual disconnect - allows gate to be pushed back
- Remote keyed manual disconnect - allows gate to be pushed back from outside the property by keypad or any dry contact command
- Dynamic braking system, in closed position, will fight back if unauthorized push back is attempted.
- Audible alarm and relay out trigger when unauthorized entry (push back) is attempted
- 25 ft #40 Nickel Plated Chain & Brackets
- Programmable virtual limit
- **Optional magnetic limits sensors available**
- **Patent No. US 9,406,207 B2**

Input AC Power/Amps - Switchable: 115VAC / 6 Amp, Single Phase or 230AVC / 2 Amp, Single Phase

JOG SWITCH

- If the Battery Backup is set to one time open or leave open, the operator's braking system will be released allowing the gate to be pushed back in case of catastrophic failure.
- The Electronic Gate Open / Close is used to disengage the operator's braking system for 15 minutes with local key or remote key switch wired into the jog inputs on the motor controller.
- The Gate Release Switch can also disengage the operator 's braking system for 15 minutes.
- After 15 minutes gate operator returns to normal operation.



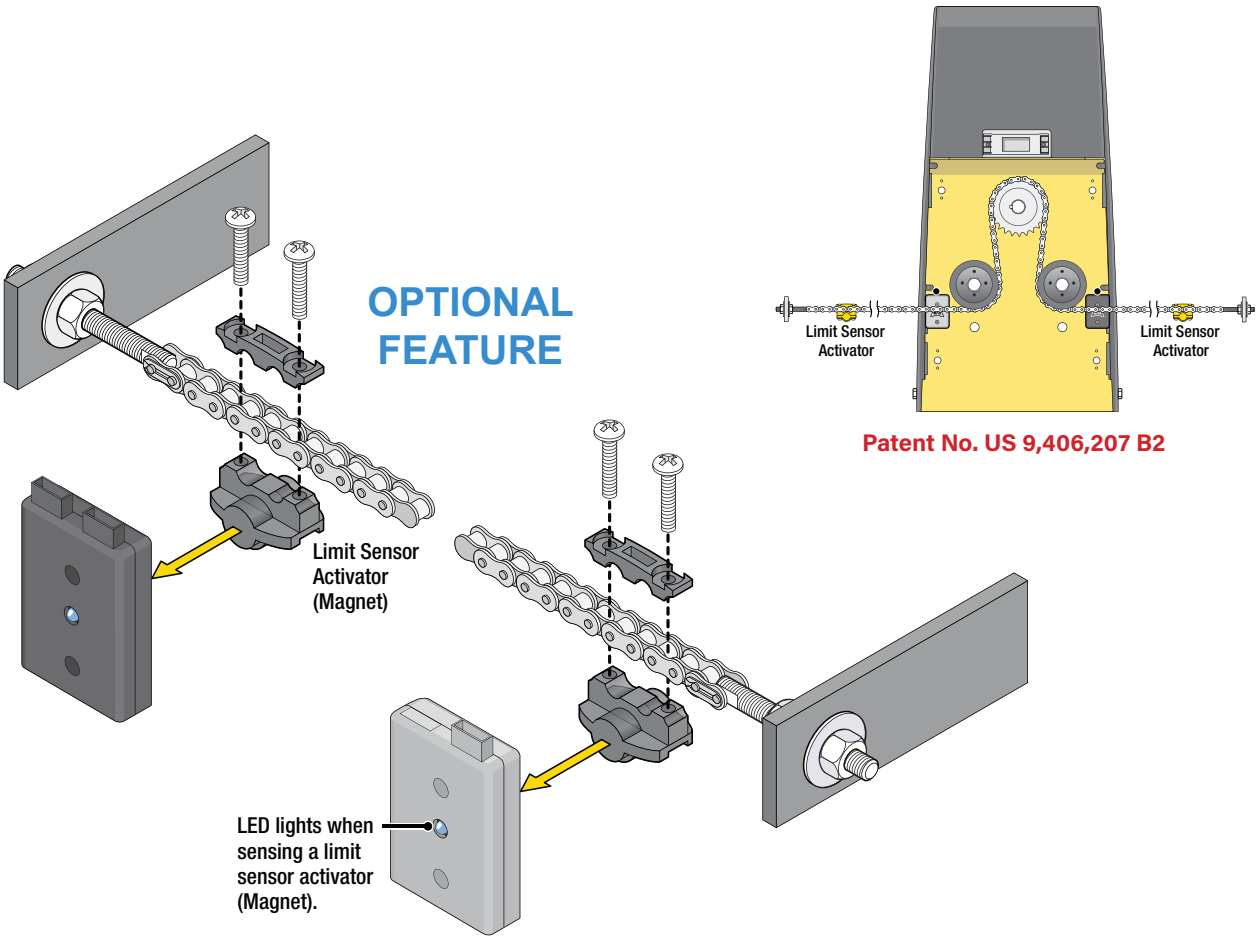
MAGNETIC LIMIT SENSING TECHNOLOGY

OPTIONAL FEATURE

The magnetic sensors are now offered by Maximum Controls as an option. Due to overwhelming request from our customers, all of our sliding gate operators are now shipped with programmable virtual limits as the standard and the sensor harness and chain magnets as an option. For new customers, the following bullet points explain how the magnetic limit sensors work.

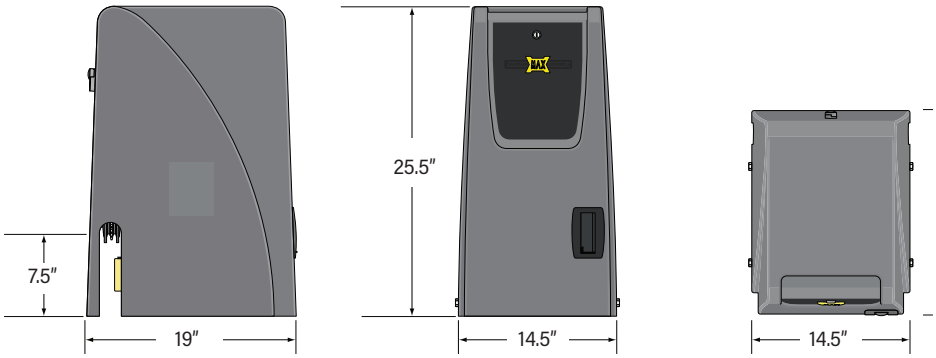
- Hall Effect sensors identify precise rotational positions.
- DSP memory logs 30 samples per inch during every inch of gate travel and retains limit positions in non-volatile RAM.
- The chain magnets are used to establish open and closed position during a learn mode where the gate travels at half speed and the limits are stored.
- The limits are re-learned automatically after a complete power failure, AC and battery, on the first cycle after power restoration.

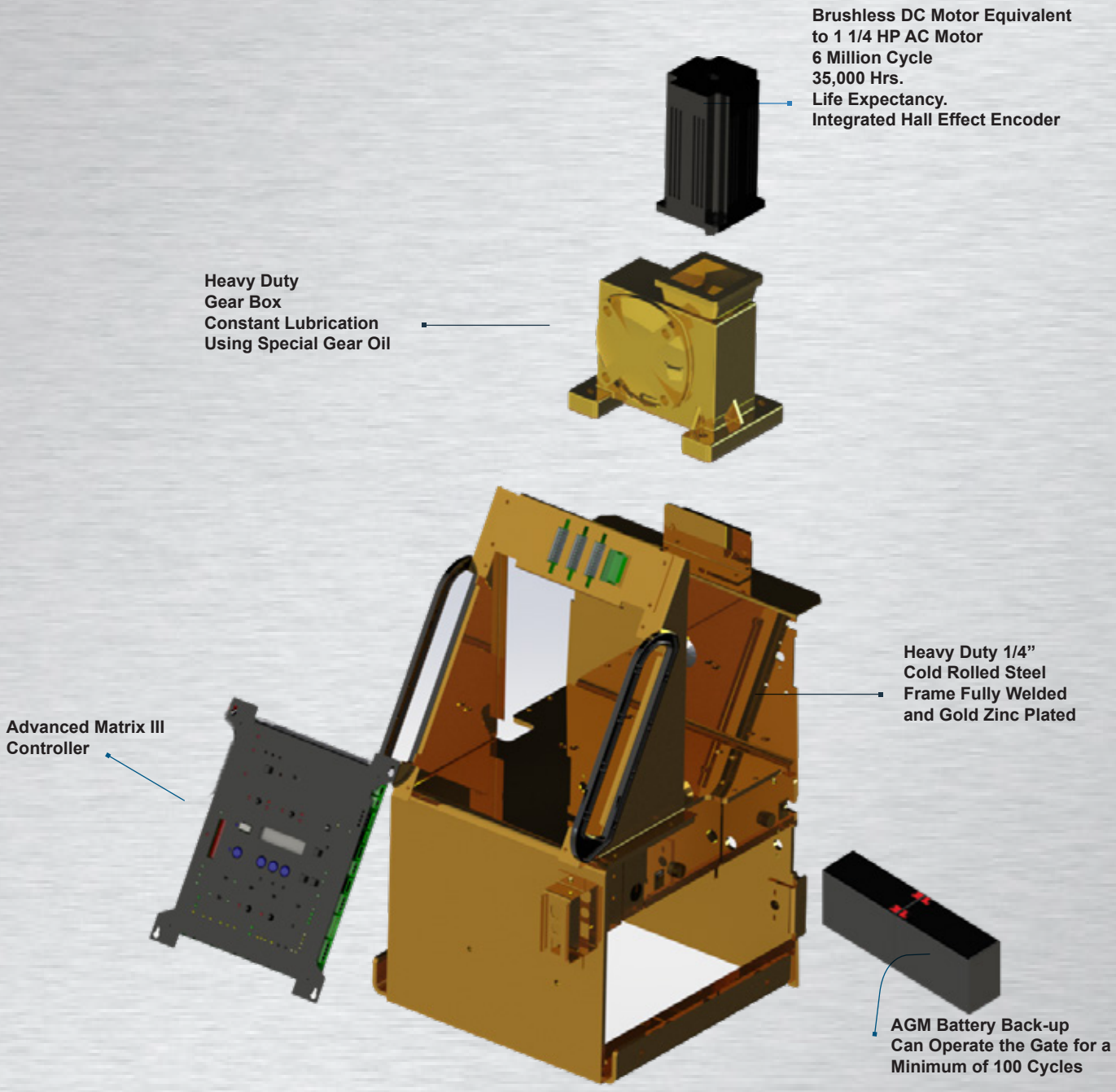
The magnetic sensor option can be ordered factory installed or can be retro-fitted onto any of our sliders in the field.



OPTIONAL

Stainless Steel Cover for 1700 FS PRO





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 Max Slide Gate Operator Series implements 3 various gear boxes depending on the model.

Max 1700 FS PRO: Size 60, 20 to 1, High Efficiency, Heavy Duty Cast Iron Gearbox.

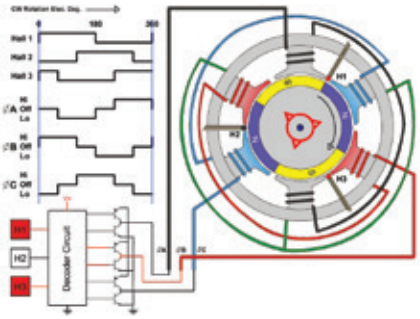
The Max 1700 FS PRO gate operator gearbox is highly efficient; producing maximum torque, maintaining a low amperage draw by reducing resistance, and providing super silent operation.

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 operator functioning 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 Maximum Controls' gearboxes to any other gate operator manufacturers.

BRUSHLESS DC MOTOR

The brushless DC motor in the Max 1700 FS PRO Slide Gate Operator uses "Hall Effect" magnetic sensing to identify precise rotational positions during gate movement. That's over 30 samples per inch 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.

Hall Effect Sensors are utilized to identify the position of the gate at any given moment, synchronizing the gates to open and close at the same speed. This technology is combined 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.

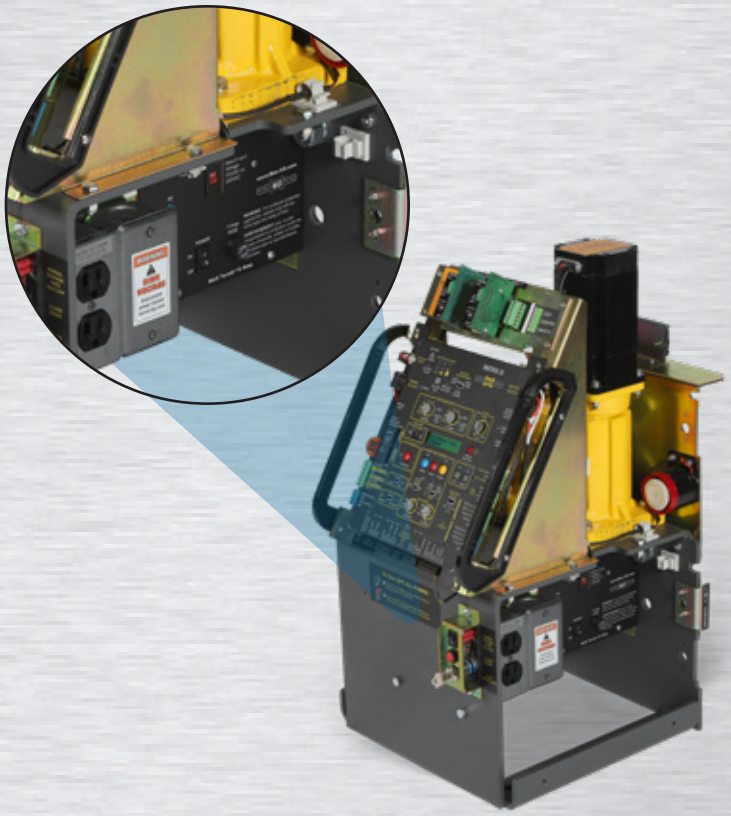
ADVANTAGES OF BRUSHLESS DC MOTOR

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 (30 samples per inch of gate travel)

POWER SUPPLY

Max Slide Gate Operator's power supply utilizes a 15 Amp torroid and power management board. The power supply is designed such that it is not overstressed under any extreme load or temperature conditions. The power supply input accepts 115 or 230 voltage via selection switch. During gate operation, the battery is not utilized while AC is present, thus preserving the life of the battery.

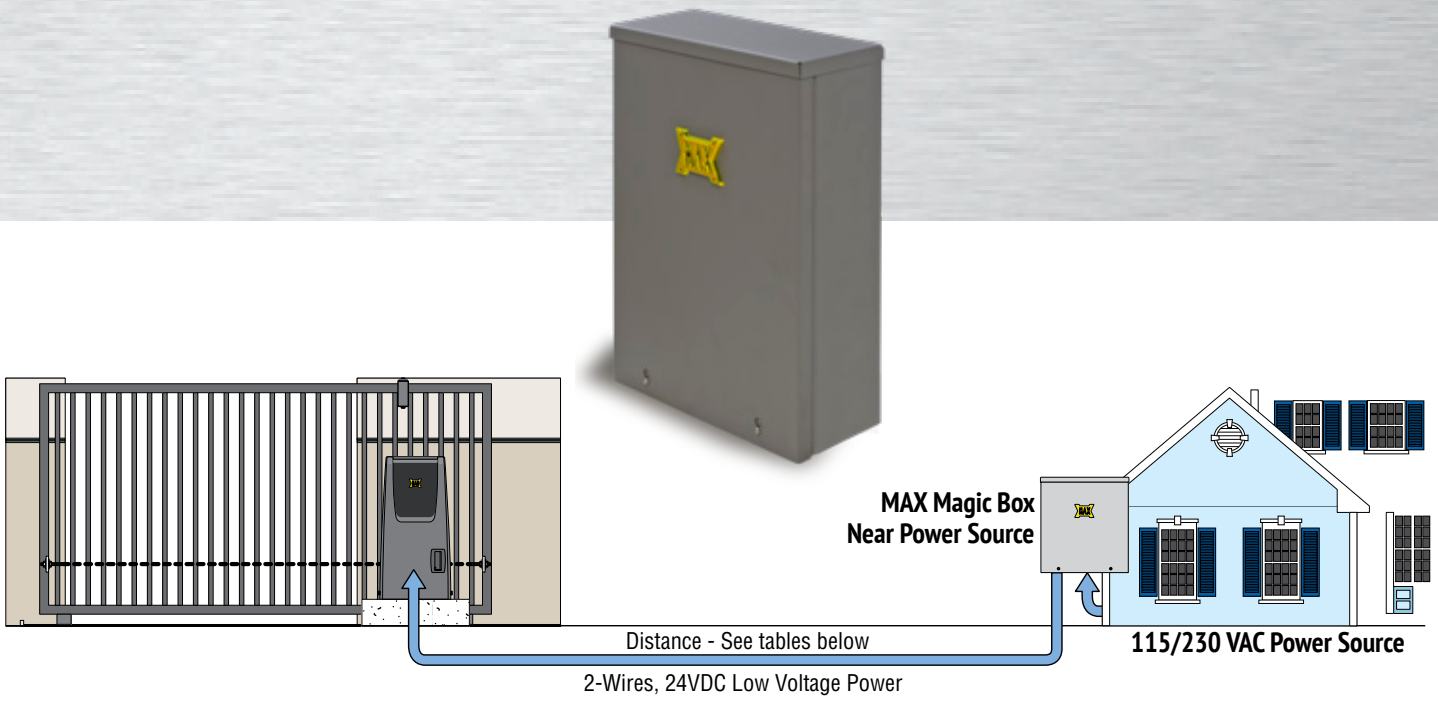
Input AC Power/Amps -
Switchable: 115VAC / 6 Amp, Single Phase
or 230AVC / 2 Amp, Single Phase



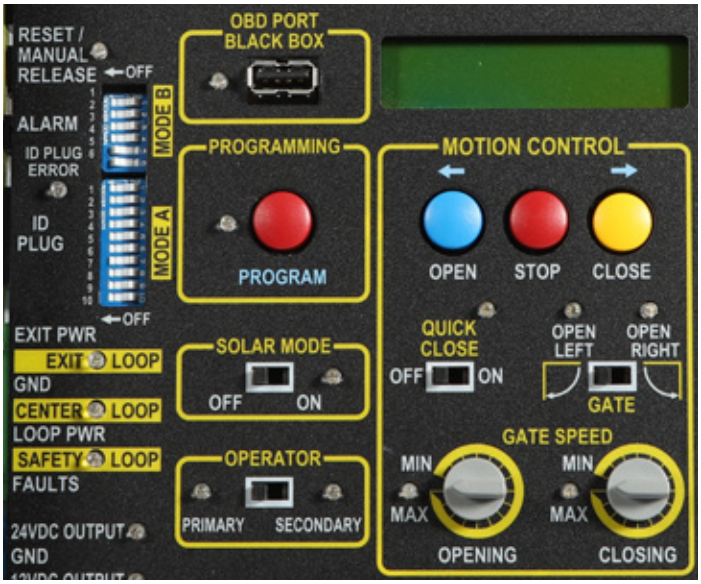
MAGIC BOX

The Max 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, USB DIAGNOSTICS



One of the primary goals of the Max 1700 FS PRO is to provide the most secure, easiest to maintain gate operator with higher gate speed motion and advanced loop management.

Max 1700 FS 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 in a USB thumb drive into the USB port, all the diagnostic history will download, working as a "Black Box" to diagnose what occurred. The event history is stored as a .TXT document which can be emailed to the factory for, if necessary, on-site diagnosis. The .TXT file is a log of the most recent 8000 events reported by each module to the central logger.

ADVANCED SECURITY FEATURES:

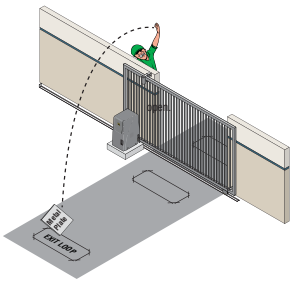
Tamper Alert and Gate Disable

Maximum Controls' patented Tamper Alert triggers a relay when an unauthorized entry attempt by chain-drop or gate movement has occurred. It's simple, if someone cuts the chain the magnet falls off the sensor and the Tamper Alert relay activates. The relay command can trigger an audible alarm, a burglar alarm system or other devices with relay inputs such as a security cameras.

Unique to all Maximum Controls gate operators is the Gate Disable feature which disables normal open commands from devices like a keypad box or exit loop. Gate Disable prevents someone from breaking into a property by tampering with the inputs in a keypad box or triggering the exit loop with a piece of metal to open the gate. The Gate Disable feature is useful when a gated area needs to be secured from all BUT emergency vehicles and/or other authorized vehicles. When Gate Disable is turned ON it gives the occupants 3 minutes BEFORE arming, allowing enough time to leave the property. If there is an attempt to open the gate in an unauthorized manner, the gate will not open but will sound an alarm and trigger the Tamper Alert relay.

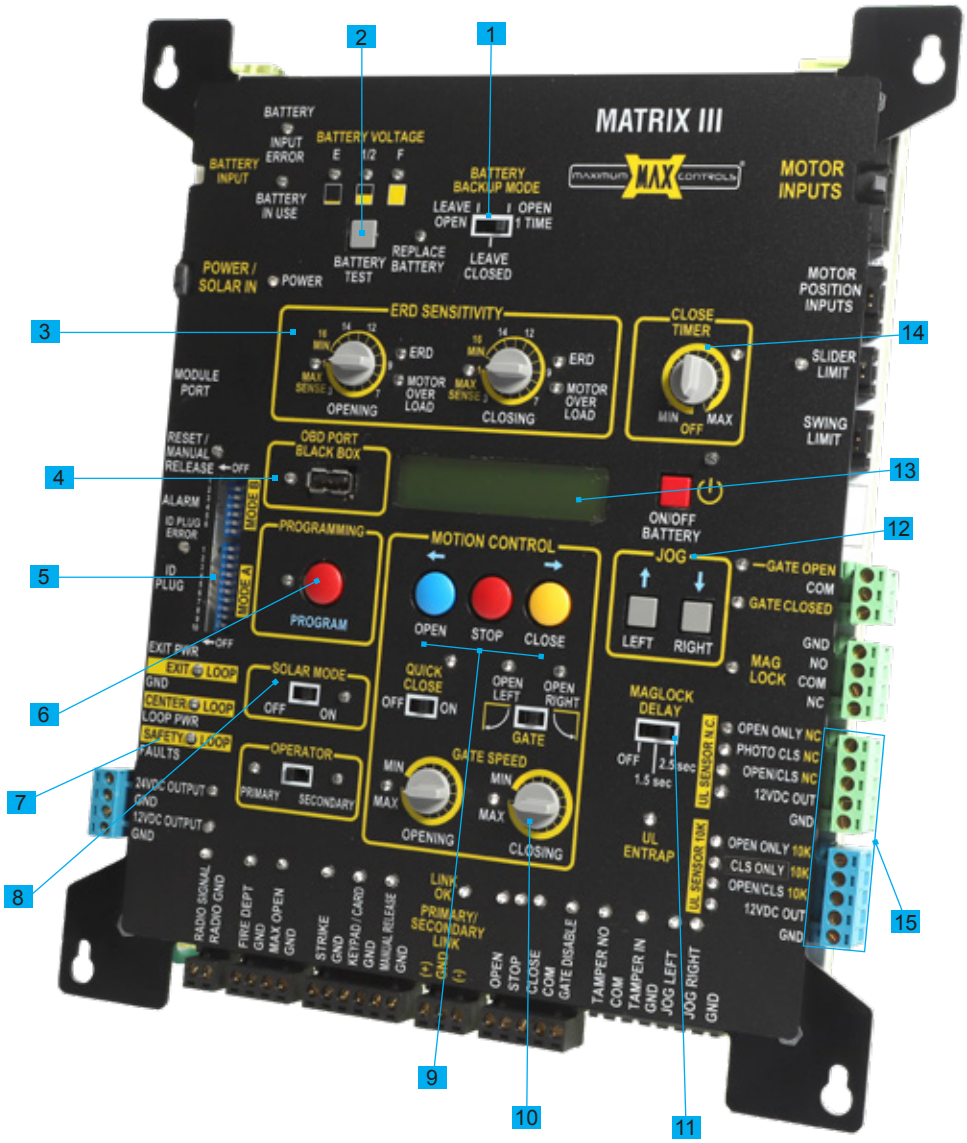
GATE DISABLE
prevents breaking into a keypad box and trying to trigger the wires to get the gate to open.

GATE DISABLE
prevents trying to trigger the exit loop to get the gate to open.

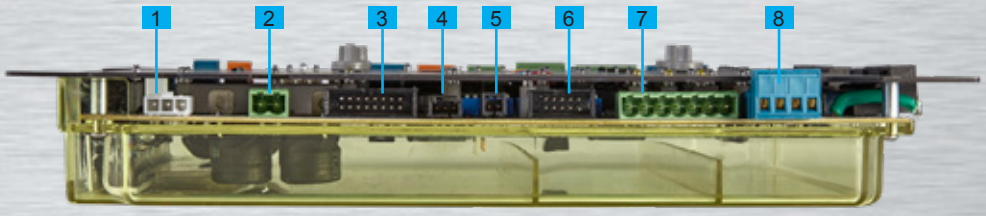


EXIT LOOP
Gate Disable can be activated with a key switch or a 7-day timer. Examples for using Gate Disable would be: during vacation time at a residential home or when a business is closed and no one is available to monitor the property.

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
15. Safety sensor ports for both N.C type and 10k type sensors. Up to 12 sensors support 2018 compliant. 10k sensor inputs allow direct wiring to 10k edges and require less wiring for 10k wireless edge receivers.



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

LIGHTNING PROTECTION

The Max Slide Gate Operator Series offers the most robust lightning protection available in the industry. The Max Slide Gate Operator Series 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 Max Slide Gate Operator Series is guaranteed to withstand any lighting hit more than 50 feet away. Truly protected like no other operator in the world.

Maximum Controls LLC
Warranty and Return Policy
Max 1700 FS PRO

Section I Coverage

a. 5 years on all components
b. 1 year on batteries
c. 1 year on idler sprockets

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

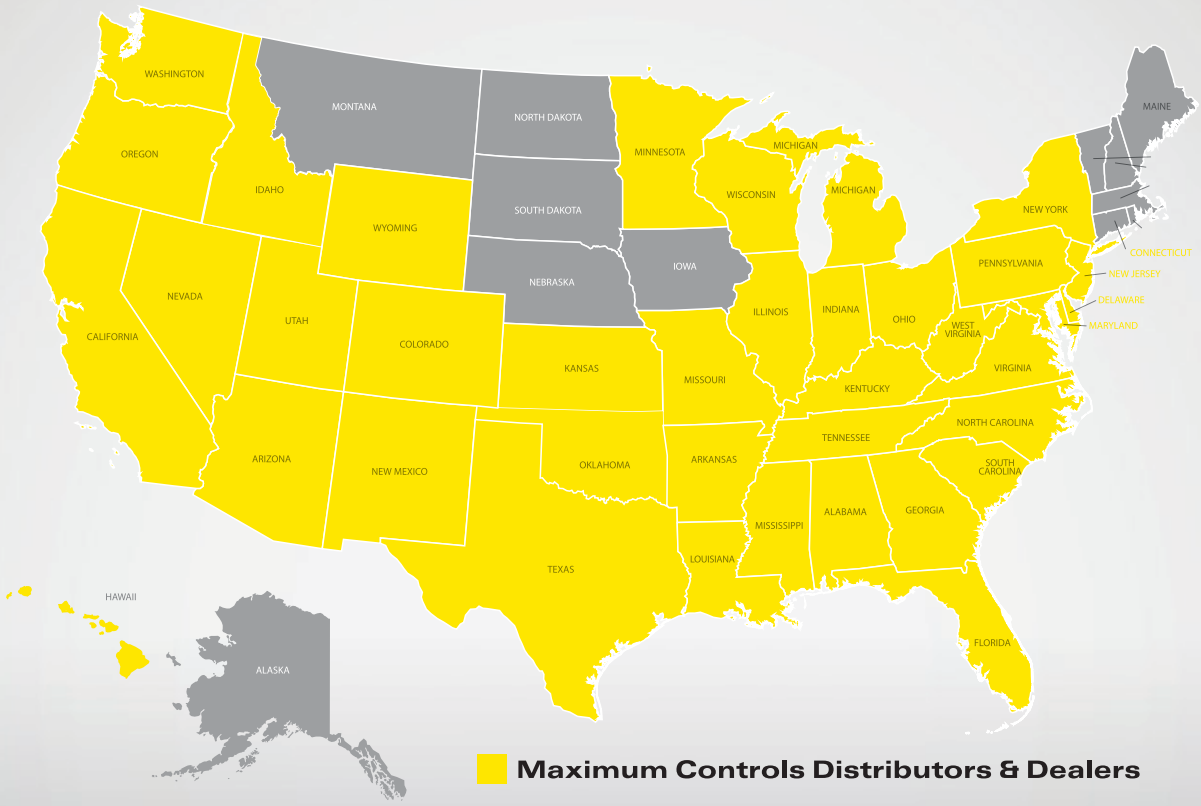
Section III RMA Shipping Policy

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.

www.Max.US.com



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