



High Velocity Magnetic
Gate Operators

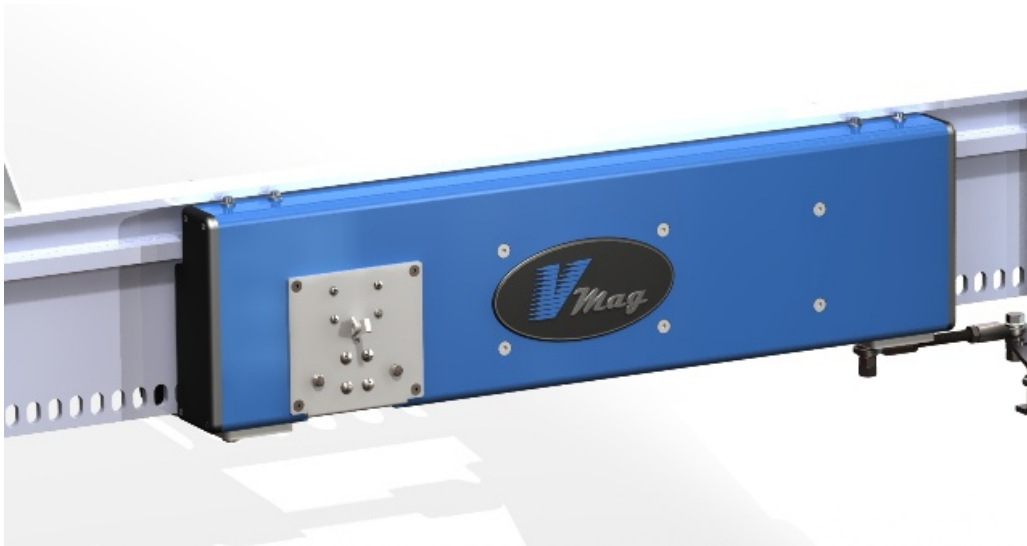
Product Description

VMAG High Velocity Magnetic Gate Operators are the world's fastest and most reliable because they are the first and only to incorporate electro-magnetic "Linear Induction Motor" (LIM) technology. The contact-less drive eliminates chains, hydraulic pinch wheels, gears, fluids & lubricants and is capable of speeds up to 8 feet per second.

The VMAG operator is designed to enhance physical security for government, critical infrastructure, commercial and industrial applications where its programmable speed control offers dramatic enhancements in vehicle throughput and is an effective deterrent against unauthorized access and tailgating.

VMAG's industry leading XCP TM (*Xtreme Corrosion Protection*) materials and special coatings, with marine grade options, provide additional protection in coastal regions, industrial areas, or other corrosive environments. The unique floating design and self-calibrating feature adapt to any application and the integrated locking mechanism is virtually impossible to defeat. Additional equipment options and upgrades are available to accommodate a variety of operational and environmental requirements.

The standard VMAG operator consists of a control cabinet, linear induction motor assembly, aluminum reaction fin and mounting hardware for a standard 20' opening. Additional reaction fin sections and hardware are available separately to accommodate larger openings, while the standard LIM assembly will handle most openings up to 30'. Custom operator configurations for larger openings, heavier gates, crash-rated gates or other special designs are available upon request. The aluminum reaction fin is mounted to the gate using supplied brackets and hardware. The control cabinet can be mounted on a post, an adjacent wall or factory recommended controller stand. The LIM operator assembly is also typically secured to the controller stand using the provided motor linkage assembly. Additional options for securing the LIM assembly are available contingent upon factory consultation and approval. A licensed electrician is required for proper electrical hook up and a factory authorized and trained installer is required to supervise the installation. VMAG gate operator models VM1220 & VM1420 are UL325 listed with certification by an independent testing agency and listed according to UL-325. VMAG gate operators must be installed with appropriate safety and entrapment devices according to current UL-325 guidelines





Operator Models

VM1220 - (208-240 VAC, Single or 3-Phase)

VM1420 - (440-480 VAC, Single or 3-Phase)

VM1425 - (480 VAC, 3-Phase)

Operators include reaction fins and mounting hardware for a standard 20' gate opening.

Model VM1220 (208-240 VAC, 1 or 3-Phase, 20A Ckt. Standard; 30A Ckt. required with V UPS): Accommodates most standard gate openings and is compatible with the optional V UPS battery back-up system.

Model VM1420 (440-480 VAC, 3-Phase, 30A Ckt.): Recommended for maximum performance, heavy gates, and/or openings of 30' or more.

VM1425 (480 VAC, 3-Phase, 30A-40A Ckt.): Recommended for very large openings and gates with significant mass. Step-up transformers may be necessary depending on available power and the desired level of performance.

Models VM1220 and VM1420 are UL-325 listed and certified for Class III & IV applications.

Model VM1425 is functionally compliant with UL-325 safety standards but is NOT UL-325 listed. Installation of external entrapment protection devices is required to meet UL-325 and industry safety guidelines.

Linear Induction Motors

Type: Linear Induction with internal thermal protection

Winding Insulation: Class H 1800C (3550F)

Class F 1550C (3100F)

Protection class: IP60

Required Electrical Supply

VM1220 * 208-240 VAC, 1 or 3 Ph, 50-60 Hz, 20 A Ckt

VM1420 * 440-480 VAC, 1 or 3 Ph, 50-60 Hz, 30 A Ckt

VM1425 * 480 VAC, 3 Ph, 60 Hz, 40 A Ckt

** Model selection is based on gate mass, size of opening and desired level of performance.*

Shipping Specifications – (Complete Operator Package): VM12XX, VM14XX*

Complete operator package for standard 20' opening includes LIM assembly, control cabinet and (3) full RF1 reaction fins, (1) RF1RHK right hand end kit, (1) RF1LHK left hand end kit, (6) HB1 hangar brackets and all necessary mounting hardware.

Operator Pallet: (L x W x H) 42" x 42" x 19", Wt: 425 lbs.

Reaction Fin Pallet: (L x W x H) 86" x 10.5" x 17", Wt: 200 lbs.

* Add 20 lbs. to Operator Pallet for VM14XX models.





Options & Upgrades

V RF FIN MIDDLE KIT – Reaction Fin (6.58 feet ea.) includes 2 RF1HB hangar brackets and mounting hardware.

The RF1 Reaction Fin is an integral part of VMAG's patented design and installs directly to new or existing gates using RF1HB Hangar Brackets. RF1 sections are connected using supplied hardware and may be added to accommodate gates of any length.

The RF1's precision machining also interacts with the LIM assembly's integrated locking mechanism making VMAG virtually impossible to defeat.

VMAG gate operators include: (3) RF1 Reaction Fins, (1) RFRHK right hand end kit, (1) RFLHK left hand end kit, (6) RF1HB Hangar Brackets and mounting hardware for a standard 20' gate opening.

Additional V RF Middle Kits required for clear openings exceeding 20'.

Formula for estimating total number of RF1 Reaction Fins required for installation:

(Total Feet of Clear Opening + 6 feet) Divided by 6.58 = Number of RF1s Required (Round up.)

Example: (24' Opening + 6') / 6.58' = 4.5 (Round up to 5 total Reaction Fins)

Material: 6061-T6 Aluminum Extrusion

Wt.: 37.55 lbs. ea. (approx. 5.3 lbs. per foot)

Length: 6.83 ft. (82") Overall

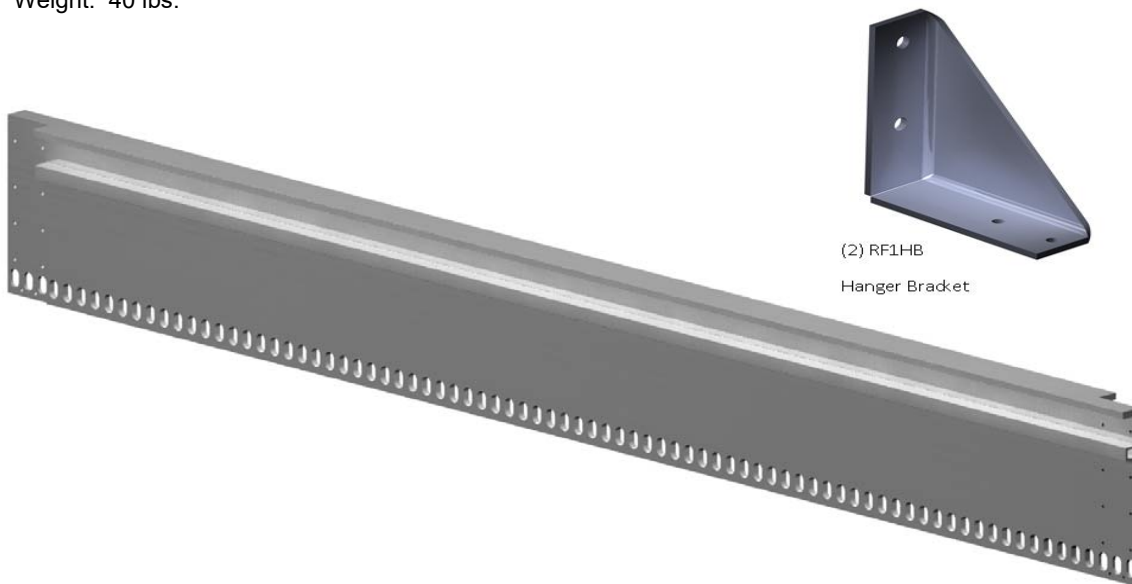
Width: Top 2.5", Main Fin 0.375"

Height: 9.78"

Finish: Aluminum

Shipping Specifications: (L x W x H): x 86" x 10.5" x 3.25"

Weight: 40 lbs.





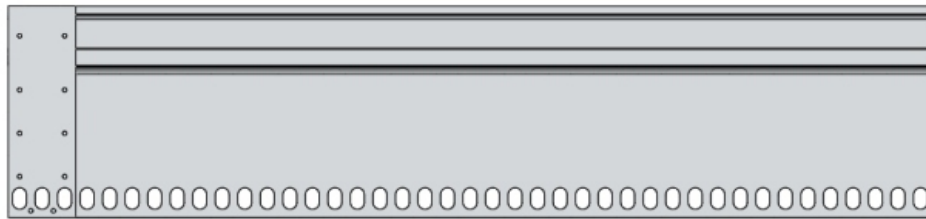
Options & Upgrades

V RF FIN RIGHT KIT - Reaction Fin End Kit Right Hand Side (Includes 1 RF1HB hangar bracket and mounting hardware.)

Material: 6061-T6 Aluminum Extrusion
Weight: 18.78 lbs.
Length: 38" (41") Overall
Width: Top 2.5", Main Fin 0.375"
Height: 9.78"
Finish: Aluminum

Shipping Specifications:

(L x W x H): 86" x 10.5" x 3.25"
Wt.: 20 lbs.

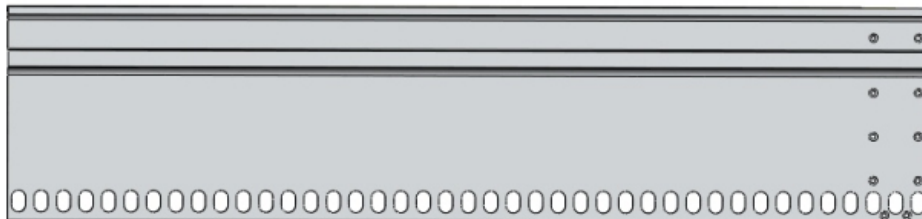


V RF FIN LEFT KIT - Reaction Fin End Kit Left Hand Side (Includes 1 RF1HB hangar bracket and mounting hardware.)

Material: 6061-T6 Aluminum Extrusion
Weight: 18.78 lbs.
Length: 38" (41") Overall
Width: Top 2.5", Main Fin 0.375"
Height: 9.78"
Finish: Aluminum

Shipping Specifications:

(L x W x H): 86" x 10.5" x 3.25"
Wt: 20 lbs.





Options & Upgrades

V ENCL SS UPGRADE - 316 Stainless Steel NEMA 4X Control Cabinet Upgrade

The VMAG 316 stainless steel control cabinet is marine grade and provides maximum protection for coastal regions, industrial areas, or other corrosive environments. Upgrading to the optional VMSSCC316 Control Cabinet completes VMAG's industry leading XCP™ (*Xtreme Corrosion Protection*) materials package.

Material: 14 gauge, 316-stainless steel.

Weight: 43 lbs.

Control box dimensions: 24" wide x 30" height x 13 depth

Mounting hole dimensions: Four 3/8" holes on 28.5" x 22.5" centers

Allow room for door to open (opens to left)

Listings:

UL 508 Types 3R, 4, and 12

CSA Type 3R, 4, and 12

Complies with:

NEMA Type 3R, 4, and 12

IEC 60529, IP66





Options & Upgrades

V HEATER KIT - Cabinet Heater w/Thermostat (Includes factory installation)

Recommended for environments where ambient temperatures may fall below the normal operating range of 0 degrees Fahrenheit.

Weights & Dimensions:

Heater

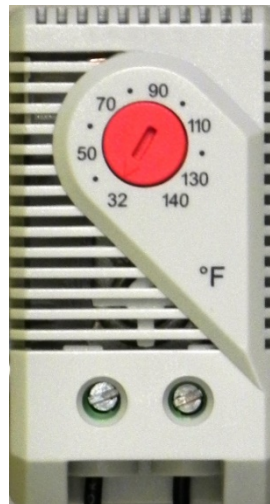
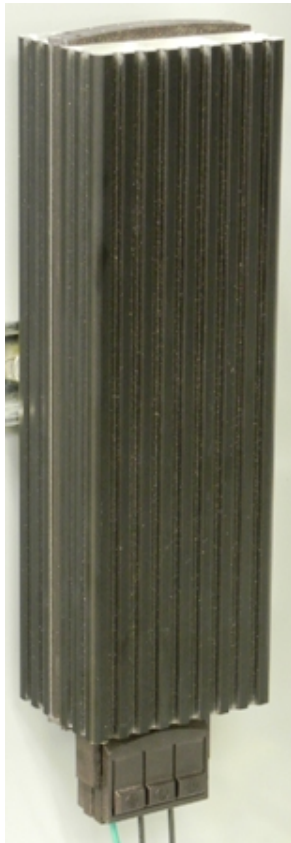
Weight: 1.6 lbs.

(L x W x H): 10" x 3" x 2"

Thermostat

Weight: 0.096 lbs.

(L x W x H): 2-21/2" x 1-1/2" x 1-1/2"





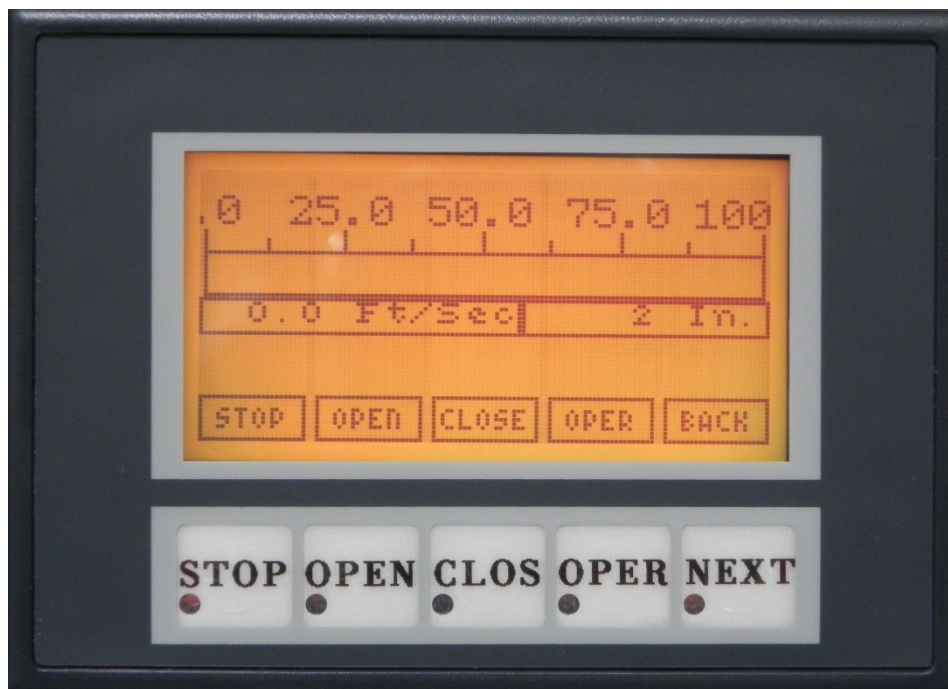
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Options & Upgrades

V PROGRAMMER - Programmer with Cable (Certified Installers & trained end-users only)

The VMAG Programmer allows direct interface with the operator control unit for initial set-up, variable speed control, system diagnostics and other advanced settings for customizing gate operation. Physical push buttons and touch screen controls.

Weight: 0.368 lbs.
(L x W x H): 4-1/2" x 3-1/2" x 1-1/5"



Options & Upgrades

V KEEP ALIVE - Retains operator settings during brief disruptions in power or generator switching



Keep Alive

Eliminates the need to relearn the Vmag after power interruptions or backup generator switch over.

The Keep Alive maintains power to the programmable logic controller and proximity sensors in the event of a power loss or drop. The kit includes two 12VDC rechargeable batteries, battery bracket, control module and wire for field installation or may be factory installed if requested.



Will your gate operator keep working during power outages?

NEW



VMUPS - Uninterruptible Power Supply

The VMUPS is designed for use with the VM1220 linear induction gate operator and may also be used with any other electrical equipment for continued operation during power outages. The VMUPS has been tested¹ to provide up to 8,000 linear feet (200 cycles) of gate travel when used with the VM1220.

- TWO 12 VOLT 75 AMPERE HOUR BATTERIES INCLUDED
- PURE SINE WAVE INVERTER AND PFC (POWER FACTOR CORRECTED) BATTERY CHARGER PROVIDES CLEAN, RELIABLE INVERTER POWER WITH LOW HARMONIC DISTORTION OF LESS THAN 5%
- POWER FACTOR CORRECTED CHARGER USES 25%-30% LESS AC CURRENT THAN STANDARD CHARGERS
- MULTIPLE PORTS INCLUDING RS485 COMMUNICATION PORT FOR NETWORK EXPANSION
- DOOR MOUNTED LED PANEL LIGHT ILLUMINATES WHEN OPERATING ON BATTERIES

SPECIFICATIONS:	Enclosure	14 ga. steel powder coated gray (316 stainless steel enclosure optional)
	Batteries	Two 12 volt 75 Ah AGM (Absorbent Glass Mat) sealed lead acid batteries (included).
	Inverter/Charger	
	Input power:	120 VAC or 208 - 240 VAC, Single Phase, 30 Amp service
	Output Power:	240 VAC (Split Phase 120 - Neutral - 120), 60 HZ, 30 Amp Max.
	Transfer time:	16 milliseconds (1 cycle of 60 Hz)
	Waveform:	Pure Sine Wave
	Operating temperature:	-20° F - 140° F (with heater & insulation option)
OPTIONS:	VMSSCC	316 stainless steel enclosure upgrade (shown)
	VMHPI	Enclosure heater w/thermostat (shown) and insulation package factory installed

Note 1. Test Conditions: Model VM1220 used with a 20' clear opening aluminum cantilever gate operating at 50% speed, 1 cycle per minute. Ambient air temperature 70°F.



www.vmagtech.com 210 495-3000

Note: V UPS is currently compatible with Model VM1220 (208-240) ONLY. 30A Ckt. Required.

12089 Starcrest Drive San Antonio, TX 78247
Phone: (210) 495-3000 Email: sales@vmagtech.com Web: www.vmagtech.com

Options & Upgrades

V EMERG RELEASE - Emergency Remote Manual Release



VRMR - Vmag Remote Manual Release

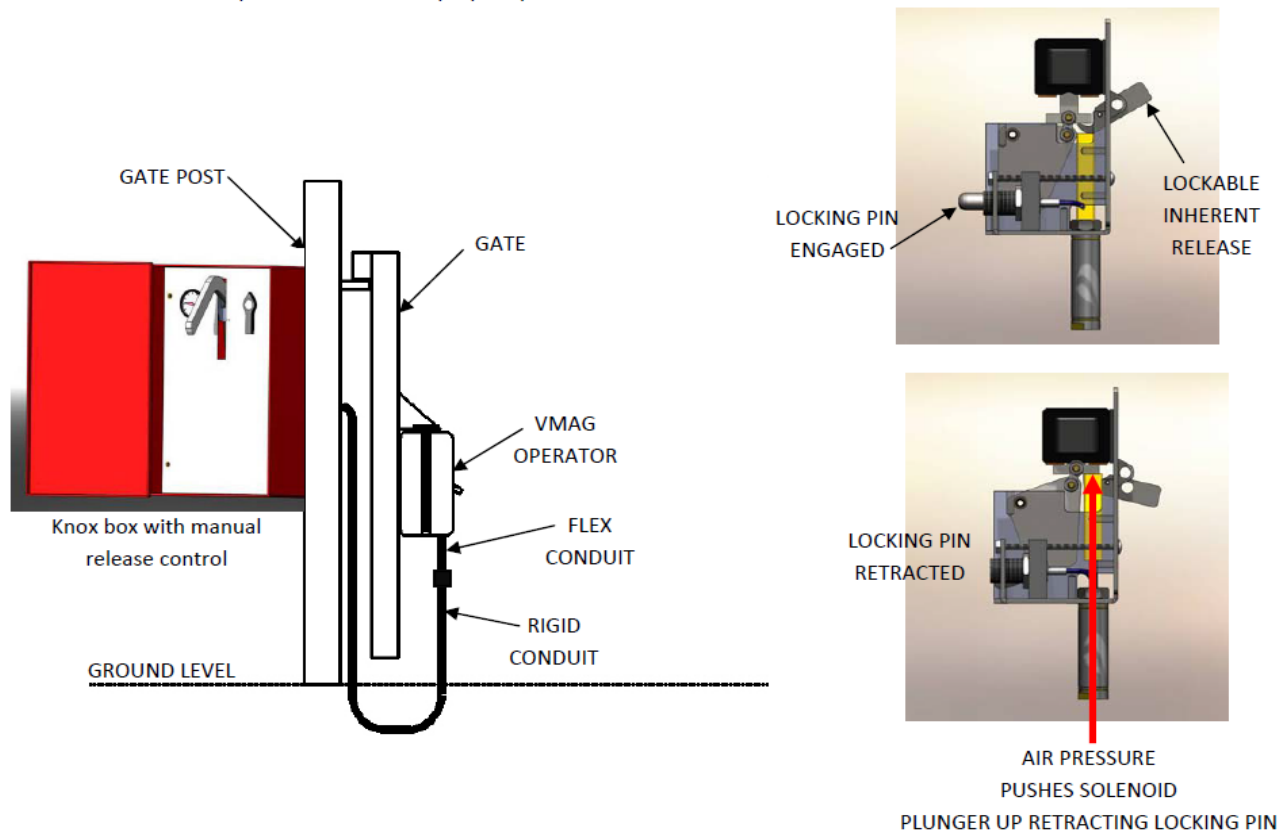
The VRMR remote manual release allows emergency access for manual gate operation in the event of a power outage.

Normal emergency access is achieved through a limit switch sending an OPEN command to the gate operator when the EMERGENCY Knox box door is opened. In the event of a power outage a manual lever located inside of the Knox box is activated by sending pneumatic pressure to a stainless steel cylinder mounted to the operator which mechanically pushes the lock solenoid up thereby retracting the locking pin allowing the gate to be opened manually. Once the pressure is relieved the locking pin will drop back to a normal condition.

The remote manual release overrides the inherent operator manual release whether it is secured with a padlock or not.

The pneumatic line from the Knox box to the operator should be run through rigid 1/2" conduit on the unsecured side but must be continued to the operator with flex conduit on the secured side to allow the operator to float with the gate movement.

Periodic tests should be performed to assure proper operation.





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Options & Upgrades - V DE-ICE KIT - De-Icing Option (VM1-IOEXP required for this option.)

VMDEICE De-Icing Package



Prevents ice & snow accumulation on the motor assembly, lock assembly and reaction fin in the vicinity of the motor assembly when icing conditions exist. Can be retrofitted in the field or factory installed when ordered as an option.

Available for VM1220, VM1420, VM1425 slide gate operators.

Requires PLC & Programmer version 021415.01 or later.

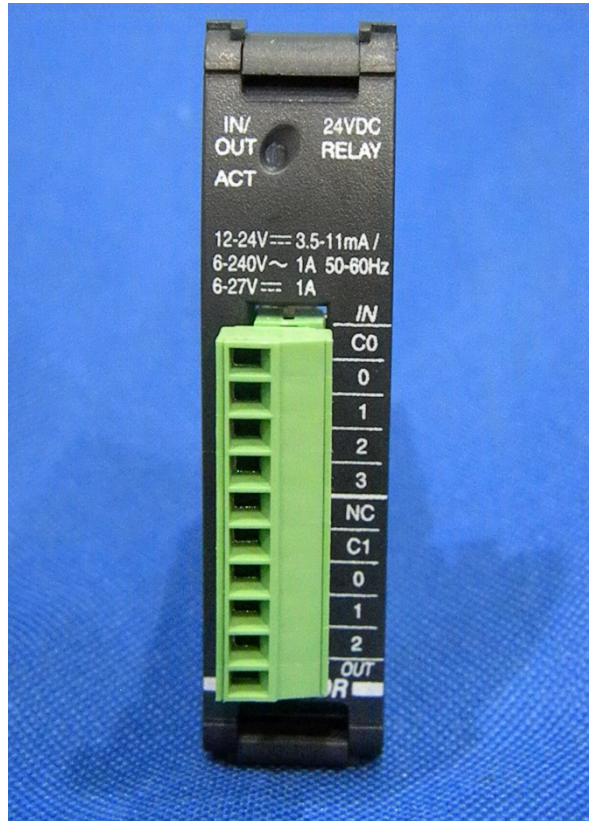
Requires I/O Expansion Module – specified with option and included with operator build.



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Options & Upgrades

V I/O EXPANSION MODULE



I/O Expansion Module (*Required for certain optional equipment & functionality.)

- V DE ICE KIT
- V KLOCK Interface for OEM locking mechanisms.
- E-CLOSE Emergency Close Override.
- Other optional equipment or functionality.

Options & Upgrades

V DUAL KIT - Dual Gate Interface Kit (One kit required for dual gate system) *Requires Belden Cable 8102 & Conduit Not Included)

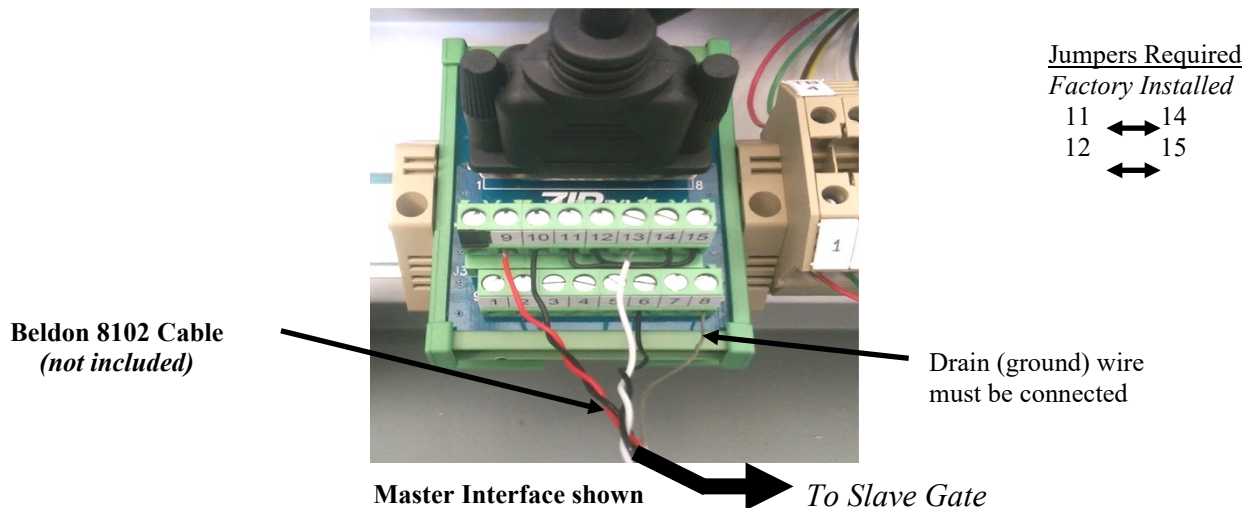
DUAL GATE CONFIGURATION OPTION

The Vmag VMDIK Dual Interface Kit consists of (2) interface modules and (2) internal cables. The factory installed cable connects the interface module to the PLC.

Both gates are connected using **Beldon 8102 or equivalent to be supplied by the installer.**

The cable should be run in buried conduit from controller to controller. This cable is a low capacitance communications cable and should only be substituted (*if necessary*) with cable that has equivalent specifications.

The P1 Programmer will operate only the controller it is connected to. Use **FREE EXIT** TB2 -9 & -10 to test dual operation.



Note: RED & BLACK must be a twisted pair
WHITE & BLACK must be a twisted pair

MASTER Interface Module

9	RED		6	BLACK
10	BLACK		13	RED
8	SHIELD		8	SHIELD
13	WHITE		10	BLACK
6	BLACK		9	WHITE

SLAVE Interface Module

Using the programmer go to **SYSTEM**

Set the master side to **DUAL/MASTER** & the slave side to **DUAL/SLAVE** with the programmer

If the auto close feature is required, the **AUTO CLOSE** timer must be **ENABLED** on both gates.

The **MASTER** determines the close time.

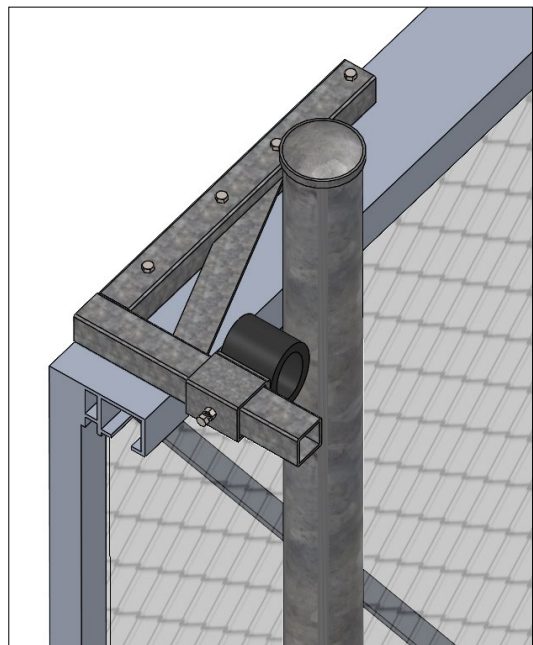
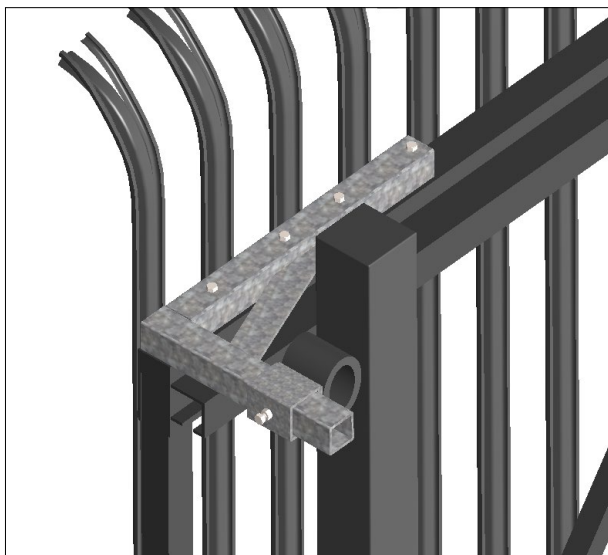
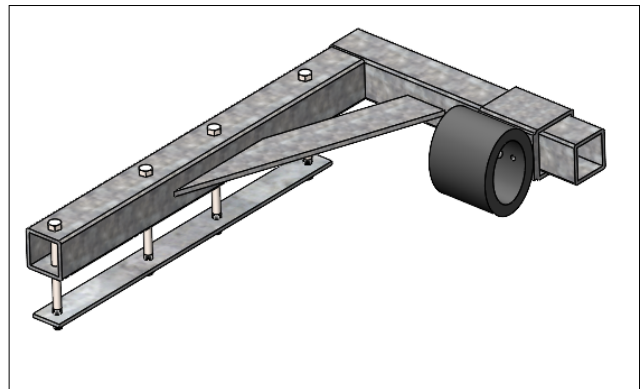
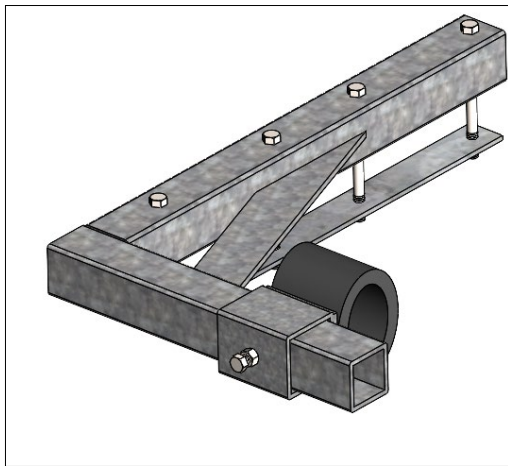


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Options & Upgrades

V HDU STOP KIT - Heavy Duty Universal Stop Kit for single or dual track gates and box frame gates (requires two kits). HD Stops are recommended for gates > 1,000 lbs. and/or operated at VMAG operating speeds > 50% capacity.

- *Universal design for heavier gates*
- *Includes all mounting hardware*
- *Includes 1/2" spacers for lock pin adjustments*
- *Hot dipped galvanized finish*
- *Adjustable width*
- *Welded nuts on bottom plate*

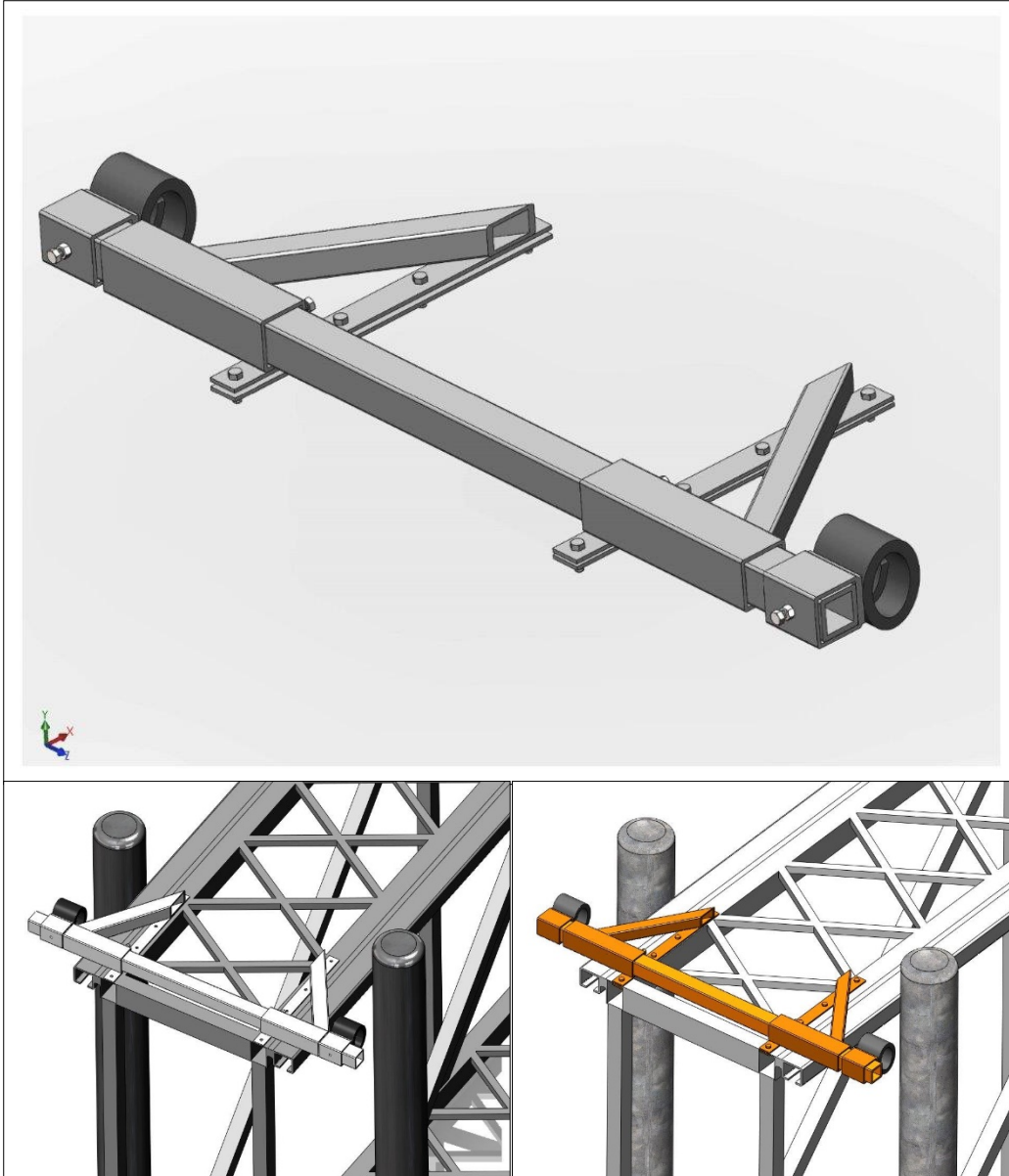




Options & Upgrades

V HD STOP KIT BOX

Heavy Duty Stop Kit for Box Frame Gates (Inc. 2 adjustable stops.)

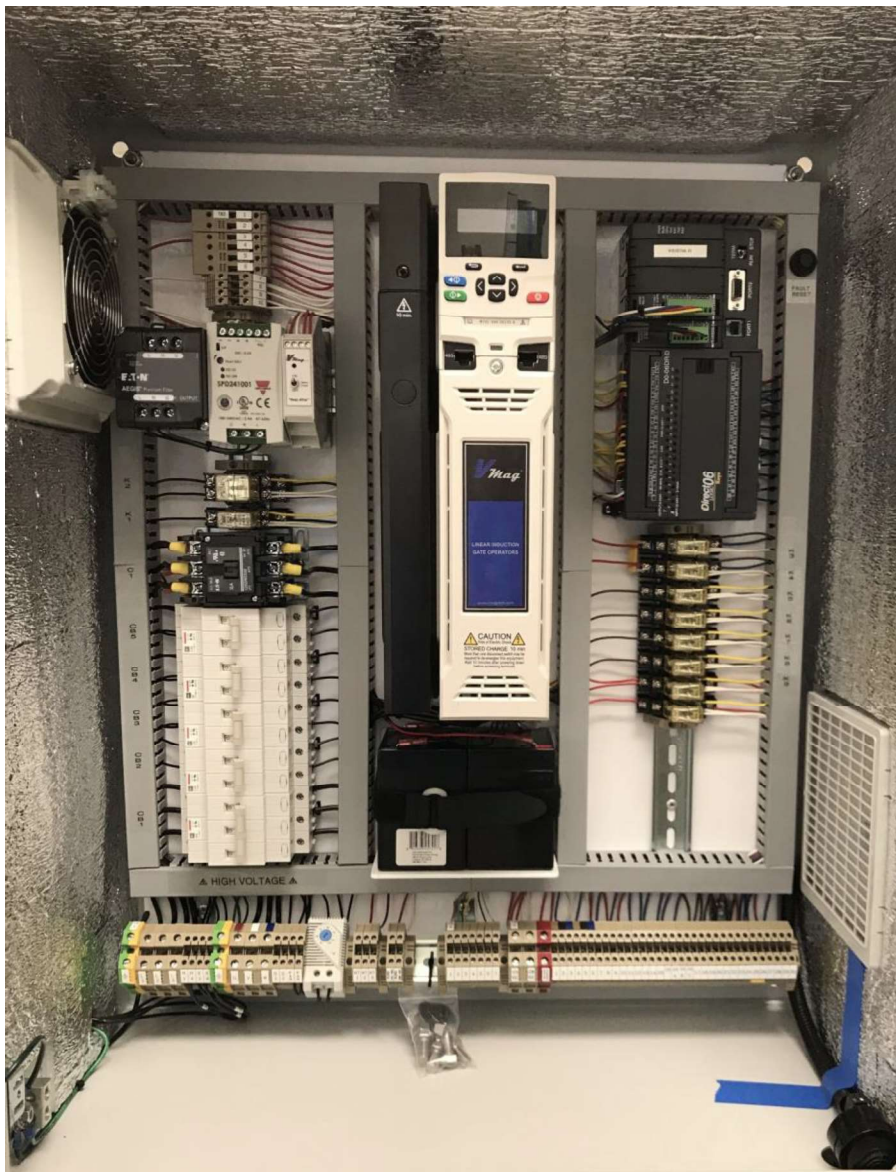




Options & Upgrades

V ENCL THERMAL PKG

Thermal Insulation Upgrade for Control Cabinet and V UPS Enclosures.
Factory installed thermal barrier for extreme hot or cold climates.



(Photograph is for thermal insulation reference only and may not accurately represent certain details and features for other applications)