



KSM™

KAPower Starting Module

Eliminate No-Starts from "Dead" Batteries

When you install KSM™ in your equipment



KOLD-BAN INTERNATIONAL
We Are The Expert Leader In Engine Starting Solutions
www.koldban.com

ISO 
9001:2008
REGISTERED



How to Eliminate Engine No-Starts from Lead-Acid Battery Failures in Your Equipment

KSM™

Avoid downtime from the failure of lead-acid batteries with the innovative KSM™ Starting Module. Engineered with a commercial grade supercapacitor, KSM™ gives your engine the power to start every time, regardless of the state of charge of your lead-acid batteries.

- **Quick recharge**—In 30 seconds, and the charge lasts for several months
- **Maintenance free**—Just install it, and it's ready to use again and again
- **Versatile**—Operates in temperatures from -40°F to 149°F
- **Long life**—Lasts over 1,000,000 cycles, up to 20 years
- **Easy to install**—Install in any orientation, vertically, or even upside down!
- **Made in the USA**



The KSM™ assures you will never experience a "no-start" from a dead battery again. It's a supercapacitor, and when it is installed in your equipment, downtime from a dead battery is completely eliminated.

The device is initially energized from the equipment's electrical system and stores the energy until needed. Even with a rundown battery, the KSM™ provides an engine the power it needs to start. It is virtually unaffected by temperatures and is completely maintenance free.

KSM™ has a long service life, with upwards of one million cycles without the loss of cranking power, compared to an average battery's life of 300 – 500 cycles. It often outlasts the equipment it is installed in. Thousands of units are in service and have been operating effectively for many years.

KSM™ is 100% maintenance free, so you don't have to access it until you move it to your next piece of equipment.





KSM™ Advantages

Lightweight

Substantial weight savings over a lead-acid battery

“DEAD” Battery Starts

KSM™ is the ONLY supercapacitor (ultracapacitor) design that allows an engine to crank regardless of the state of charge of the batteries.

Full Recharge in 30 Seconds

KSM™ recharges to 100% capacity in as little as 15 – 30 seconds.

Virtually Unaffected by Temperatures

KSM™ is used for engine starting applications in temperatures that range from -40°F to 149°F.

Long Storage Life

KSM™ is a supercapacitor (ultracapacitor) design that will hold its energy for extended periods of time without needing a charge or degrading performance.

Simple Design

Just plug and play, the KSM™ requires no sophisticated electronic controls. The PLC (Programmable Logic Controller) provides years of trouble free operation.

Long Life

The KSM™ maintains cranking performance for upwards of 1,000,000 cycles and has a 15 – 20 year life.

Easy to Install

KSM™ has several PATENTED methods for installation, depending on what power needs are trying to be achieved.



Where to Use KSM™

To eliminate engine no-starts due to battery failure



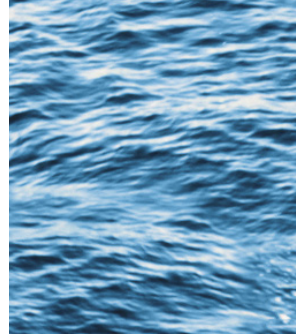
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Farm equipment



Construction equipment



Boats



Buses



Trucks

KSM™ often outlives the equipment!

Specifications

	12 V 6 Cell Unit	12 V 10 Cell Unit	24 V 10 Cell Unit	24 V 12 Cell Unit
Electrical Characteristics				
Operating Voltage Window	7 – 14.5 V	7 – 14.5 V	8 – 29 V	8 – 29 V
Maximum Voltage	18 V	18 V	30 V	33 V
Minimum Voltage	0 V	0 V	0 V	0 V
Internal Resistance	0.0011 ohms	0.0008 ohms	0.0019 ohms	0.0022 ohms
Capacitance	525 F	1260 F	315 F	263 F
Energy Stored within Operating Voltage Window	42.3 kJ	101.6 kJ	122.4 kJ	102 kJ
Energy Stored at Max Voltage	85.1 kJ	141.8 kJ	141.8 kJ	142.9 kJ
Maximum Power	47 kW	112 kW	112 kW	94 kW
Leakage Current at Max Voltage	4.5 mA	4.5 mA	4.5 mA	4.5 mA

Operating Conditions

Operating Temperature Range	-40° – 149°F (-40° – 65°C)	-40° – 149°F (-40° – 65°C)	-40° – 149°F (-40° – 65°C)	-40° – 149°F (-40° – 65°C)
Cycle Life	>1,000,000	>1,000,000	>1,000,000	>1,000,000

Dimensions and Weight

Length x Width x Height	14.79" x 7.75" x 8"	19.44" x 7.75" x 8"	19.44" x 7.75" x 8"	19.44" x 7.75" x 8"
Weight	22 lb	32.5 lb	32.5 lb	34.5 lb