

A6312

Speed Key Monitor

Emerson A6312 is a dual-channel speed and key monitor for IMR6000/10 and IMR6000/30 machinery monitoring systems. It processes eddy-current or differential sensor inputs for speed, zero-speed, key and direction-related functions.

IDENTITY	VERIFIED VALUE
Manufacturer	Emerson
Complete model	A6312
Product role	Speed Key Monitor
System family	AMS 6500 Classic Protection System
Country of origin	USA

DOCUMENT SCOPE

Exact identity, manufacturer-supported technical data, installation checks, applications, precautions and controlled verification records.

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Technical Specifications

PARAMETER	VERIFIED VALUE
Complete model	A6312
Channels	2
Systems	IMR6000/10 and IMR6000/30
Input types	Eddy-current or differential sensor
Input range	0 to ±27.3 VDC
Frequency range	0–20 kHz
Speed range	Up to 65,535 RPM
Zero-speed marks	1–255 trigger marks
Zero-speed time	1–1700 seconds
Power	6 W / 250 mA at 24 VDC

Model-Specific Engineering Note

ENGINEERING BOUNDARY

Record tooth count, trigger thresholds, zero-speed time and channel combination logic before replacing A6312. Verify each sensor input independently, then prove calculated speed, key reference and any direction or speed-difference function.

Pre-Installation Checks

NO.	REQUIRED CHECK
1	Verify the exact A6312 model; do not substitute the different A6312-8 record.
2	Record both sensor locations and trigger targets.
3	Capture tooth count, trigger thresholds and channel polarity.
4	Preserve zero-speed mark count and timeout.
5	Place any speed-dependent trip function in maintenance state.

System Role and Architecture

Emerson A6312 is a dual-channel speed and key monitor for IMR6000/10 and IMR6000/30 machinery monitoring systems. It processes eddy-current or differential sensor inputs for speed, zero-speed, key and direction-related functions.

FUNCTION 1
Measures two independent speed or key channels

FUNCTION 2
Supports zero-speed timing and trigger-mark counts

FUNCTION 3
Combines channels for rotation direction

FUNCTION 4
Calculates speed difference between two inputs

Common Applications

APPLICATION	ENGINEERING CONTEXT
Shaft speed monitoring	Converts probe pulses into rotational speed.
Key reference generation	Processes a once-per-turn reference for phase-related monitoring.
Zero-speed detection	Uses configured mark count and timeout to identify stopped rotation.
Rotation-direction supervision	Combines two phase-shifted channels to determine direction.

CONTROLLED ACCEPTANCE DUTY
Confirm identity, physical interface, companion hardware, configured values and functional response against the installed-system record before release.

Engineering Precautions

NO.	PRECAUTION
1	Verify the exact A6312 model; do not substitute the different A6312-8 record.
2	Record both sensor locations and trigger targets.
3	Capture tooth count, trigger thresholds and channel polarity.
4	Preserve zero-speed mark count and timeout.
5	Place any speed-dependent trip function in maintenance state.
6	Use ESD controls and label both inputs before removal.
7	Test each frequency input independently after startup.
8	Prove calculated RPM, key, zero speed and combined-channel logic before release.

Model-Specific FAQ - Part 1

QUESTION	ANSWER
How does Emerson A6312 differ from A6312-8?	A6312 is the dual-channel speed and key monitor described for IMR6000/10 and IMR6000/30; the suffix version is a different catalog record and must not be treated as the same model.
What is the maximum input frequency of Emerson A6312?	The documented frequency range extends to 20 kHz.
What is the maximum displayed speed for Emerson A6312?	The card reference lists a maximum of 65,535 RPM.
Which sensor signals can Emerson A6312 accept?	It supports eddy-current or differential sensor inputs over 0 to ± 27.3 VDC.

Model-Specific FAQ - Part 2

QUESTION	ANSWER
How many trigger marks can Emerson A6312 use for zero-speed detection?	Each channel can be configured for 1–255 trigger marks.
What zero-speed timeout is available on Emerson A6312?	The selectable zero-speed time is 1–1700 seconds.
How does Emerson A6312 determine rotation direction?	Direction is derived by combining the phase relationship of the two configured channels.
What proves a correct Emerson A6312 replacement?	Inject known frequencies on both inputs and verify RPM scaling, key pulse, zero-speed timeout, direction and speed-difference results against the saved configuration.

Related Products on Apter Power

MODEL	APTER POWER PAGE
Bently Nevada 200151-40-03-00	View Bently Nevada 200151-40-03-00
Bently Nevada 200151-XX-XX-X X-MOD-323357-15-03-00	View Bently Nevada 200151-XX-XX-XX-MOD-323357-15-03-00
Bently Nevada 200152-XX-XX-X X-MOD-323357-10-03-10	View Bently Nevada 200152-XX-XX-XX-MOD-323357-10-03-10
Bently Nevada 200155-00-CN	View Bently Nevada 200155-00-CN
Bently Nevada 200155-02-CN	View Bently Nevada 200155-02-CN
Bently Nevada 200350-02-00-00-00	View Bently Nevada 200350-02-00-00-00
Bently Nevada 200350-02-00-01	View Bently Nevada 200350-02-00-01
Bently Nevada 200350-02-00-CN	View Bently Nevada 200350-02-00-CN

MANUFACTURER SOURCE RECORD

Protection Cards for AMS 6500 Classic Systems
Protection Cards for AMS 6500 Classic Systems; November 2017

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