Emerson A6220

01 Function and selected configuration

Product function

Emerson A6220 follows the eccentricity collar near a machine thrust bearing during slow roll. Its two independent channels separate the displacement measurement from the alarm and output functions used by the machinery-protection system.

Selected configuration

The monitor accepts eddy-current measuring chains using 6422, 6423, 6424 or 6425 sensors with appropriate CON drivers and key monitoring. A displacement sensor views the eccentricity collar through the bearing case or from an internal mounting. Shaft bow assessment is intended for slow rotation below 600 rpm.

Functional path

Eccentricity collar	Probe and CON driver	A6220 channels	Outputs and alarms

Input channels	Two independent differential eddy-current inputs
Measurement modes	Peak-to-peak, min/max and continuous gap
Proportional outputs	0/4–20 mA and 0–10 V per channel

Measurement range, engineering units and sensor sensitivity are configurable. Peak-to-peak, minimum/maximum and continuous-gap measurements are available, with a 60-second settling period for hot configuration. Buffered sensor signals are available separately from the proportional current, voltage and gap outputs.

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02 Technical operating envelope

Input channels	2 independent differential inputs
Input resistance	>100 kΩ
Measurement modes	Peak-to-peak; min/max; continuous gap
Signal range	0–400 mV peak minimum; 0–8000 mV peak maximum
Sensor supply	Nominal -26.7 VDC
Sensor current	20 mA nominal; 35 mA maximum

Current output	0/4–20 mA per channel; load <500 Ω
Current-output accuracy	±1% of full scale
Voltage output	0–10 VDC per channel; load >10 kΩ
Output settling time	Configurable 0–10 s
Limit multiplier	1.00–4.99
Operating temperature	0 to +65 °C

The slow-roll application is below 600 rpm. Do not confuse buffered-output bandwidth with eccentricity measurement speed. Sensor-current and output-load limits are separate constraints.

Signal interpretation

The sensor must view a suitable eccentricity collar for shaft-bow monitoring. A buffered raw-signal path is separate from the peak-to-peak or gap characteristic value used by proportional outputs and alarms.

Interface boundary

Test normal alarms, channel-not-OK response and the removal of any trip bypass independently. A proportional output agreeing with the display alone does not verify the shutdown path.

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03 System integration and applications

Slow-roll shaft bow

Measure displacement at an eccentricity collar while the rotor turns below 600 rpm.

Two independent channels

Monitor two displacement inputs with individual OK, alert and danger indication.

Gap trending

Use continuous-gap measurement and the separate proportional gap output to observe shaft-position changes.

Protection integration

Send characteristic values to the control system while checking the independently configured alarm and relay paths.

System and supply context

Use A6220 with the matching displacement sensor, CON driver and key-monitoring arrangement in its approved machine-monitoring rack. Field transducers and relay hardware are separate system components.

Application boundary

Eccentricity monitoring supports slow-roll assessment of large sleeve-bearing machines. Shaft-bow interpretation requires the intended collar geometry and low-speed operating condition.

Which measurements can A6220 derive from the displacement signal?

It supports peak-to-peak, minimum/maximum and continuous-gap measurements. Measurement range, engineering units and sensor sensitivity are configurable.

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04 Engineering selection decisions

Why is A6220 used during slow roll rather than only at rated speed?

Eccentricity monitoring detects shaft bow using non-contact displacement at a collar below 600 rpm. This slow-roll condition separates the intended bow assessment from normal operating vibration.

Does the buffered output of A6220 represent the same quantity as its current output?

No. The buffered output carries the raw transducer signal, while 0/4–20 mA is proportional to the configured main characteristic value. Use the correct signal for the test.

How finely can alert and danger thresholds be adjusted on A6220?

The adjustment range is 5–100% of full scale with 1% resolution. Alarm delay is 0–5 seconds per channel; extended delay through an A6740 relay card is a separate system feature.

How should the remote limit multiplier on A6220 be checked?

Verify the selected multiplier in the 1.00–4.99 range and exercise the remote relay input under a controlled test. Restore the approved normal multiplier and remove temporary trip bypass before release.

Match output loading	Keep current-loop load below 500 Ω and voltage-output load above 10 kΩ.
Control bypass states	Record the limit multiplier and trip-bypass state and restore them after testing.

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05 Configuration boundary and references

Lifecycle and support

The current manufacturing and factory-support phase of A6220 is not confirmed. Product availability alone does not establish its lifecycle status.

Replacement assessment

Match the A6220 eccentricity function, channel sensitivity, range, gap scaling and relay configuration. A speed or ordinary vibration card is not a functional substitute.

Document roles

The separate technical reference organizes manufacturer specifications by function and interface. This product brief explains selection and system context. The independent installation guide covers preparation, connection, tests and handover. All three are Apter Power-authored and do not replace manufacturer instructions.

Technical basis

Emerson Protection Cards for AMS 6500 Classic Systems, A6220 specifications, November 2017.

Related product navigation

- Epro PR6423/004-120-CN CON021
- Epro PR6423/010-100-CN CON021

These are related references, not confirmed substitutes or an automatically approved assembly.

Product enquiries