COCORESEARCH

F/V CONVERTER with DEVIATION METER

KAZ-723A

0.04Hz～200kHz 5μs response

PERIOMATIC™ Processing

High Speed Frequency-to-Voltage (F/V) Converter for measurement and analysis of rotary motion

The analog output is updated once for each incoming pulse.

Employing rotary encoder,optical sensor or gear speed sensor,KAZ-723A converts the frequency (detected pulse) into analog voltage within 5 μ s of processing response. KAZ-723A covers 0.04Hz to 200kHz by PERIOMATIC™ process.

That is ——— KAZ-723 is Frequency to Voltage Converter (F/V converter)

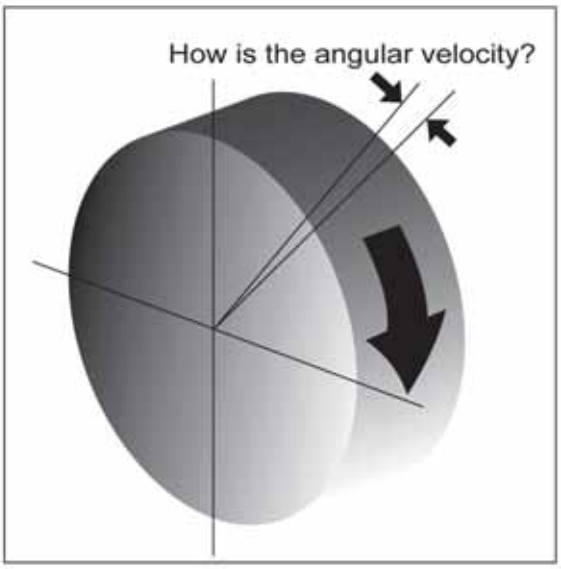
KAZ-723A can be used to obtain several solutions about frequency measurement for angular velocity, frequency and speed fluctuation.

Applications

Measurement and Analysis of Rotary Motion, Mechanical Action, Sudden Stop Behaviors, Flow Speed, Ultra Low Speed, Reducer, Speed Converter,Speed Fuctuation.

ROBOTS COPY-MACHINE AUTOMOBILE CASTING-MACHINE STIRRER FLOW-CONTROL SPEED-GOVERNOR ELECTRIC-POWER-PLANT OIL-PRESSURE-MACHINE ENGINE BRAKE LINEAR ACTUATOR PULSE MOTOR SEMICONDUCTOR MACHINE

KAZ-723A F/V CONVERTER with DEVIATION OUTPUT



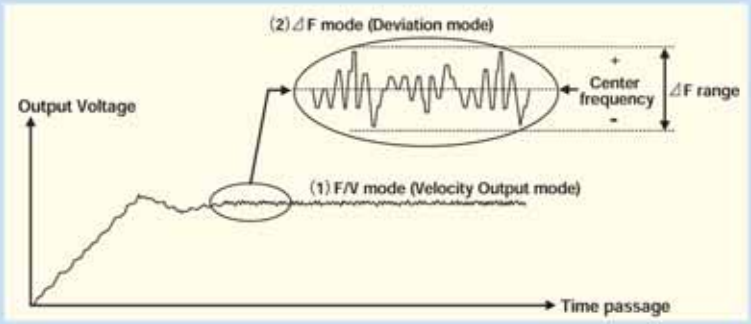
You can catch angular velocity precisely on real time while rotating.

You can catch velocity about each 1 degree, using rotary encoder 360 pulse/r to detect rotation. KAZ-723A converts detected pulse into analogue voltage signal on real time.

The technology PERIOMATIC™ that is known as interval method has been put to practical use by COCORESEARCH leading in the world

Which data is useful for you F/V or ⊿F

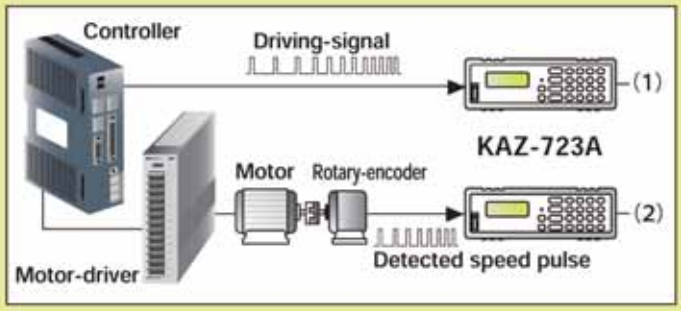
KAZ-723 enables to switch as you wish.

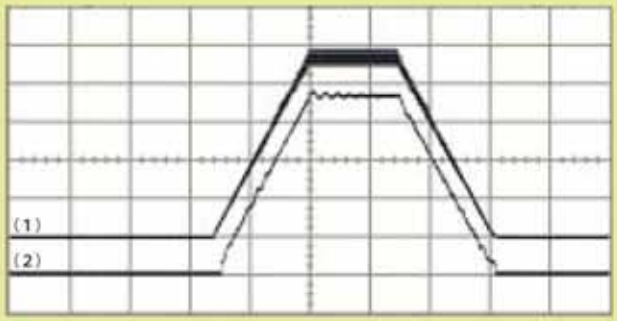


(1) The output becomes a voltage proportional to input frequency on F/V mode.

(2) The ±output becomes a voltage proportional to deviation of a settled frequency and a settled sensibility (⊿F range). The applicable center frequency is 1Hz～100kHz. ⊿F range has 8 steps, ±0.5%～±100%.

An Example of Driving Pulse and Motor behavior for a Pulse motor





The output shows driving pulse(1) and the hunting of the motor(2).

■CONDITIONS

KAZ-723A (1)
Mode: F/V mode
Settled Full scale Frequency: 70kHz
Settled Analogue output: 0 to 10V

KAZ-723A (2)
Mode: F/V mode
Full scale Frequency : 7kHz
Analogue output: 0 to 10V

Input Signal
Input Frequency (1) : 0 to 65kHz
Input Frequency (2) : 0 to 6.5kHz

Oscilloscope
Time axis : 50ms/div.
Voltage axis : 2V/div.

Input : 0.04Hz～200kHz　　One Pulse Response

Features

Wide Range 0.04Hz～200kHz
In the range of 0.03Hz to 120kHz KAZ-723A can operate within one pulse response. The full scale value of F/V mode and the center frequency of ⊿F mode can be set in each 1 Hz.

Deviation Output (⊿F mode)
Corresponding to settled center frequency, the fluctuation (deviation) of frequency is converted into analogue ± 10V(±5V available) of deviation outputs. The sensibility of ⊿F mode can be chosen from 8-steps of ±0.5% to ± 100%. This ⊿F mode is used to check fluctuation of rotary motion mainly.

High Resolution
The input within 6.25ns(160MHz Equivalent) resolution. output stage, 16-bit D/A converter.

High Response (within 5μs over all)
The process spends less than only 3μs. Even an over all containing isolation, D/A conversion and analogue output it doesn't over 5μs.

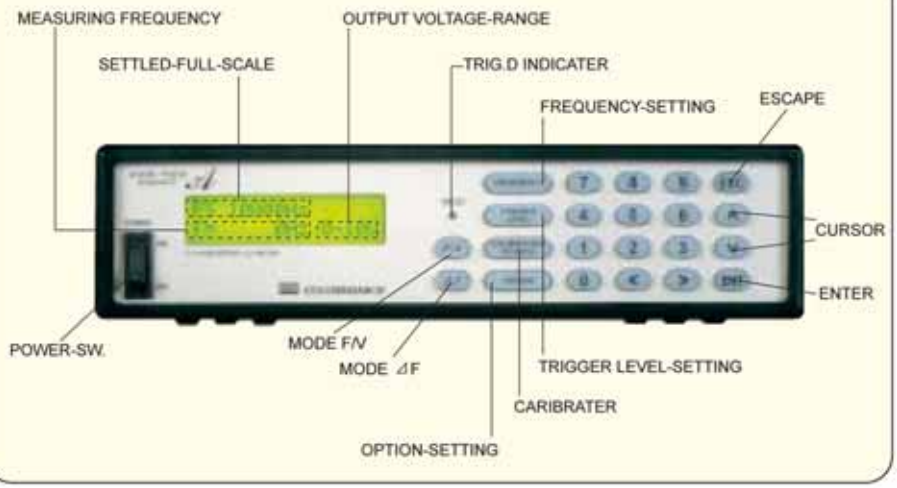
Manyfold Signal available
A Logic square wave, a NPN open-collector signal, a wide use AC-signal and a balanced line-driver signal are applicable.

Pulse Divider
Pulse dividing can be set from 1 to 64. The pulse dividing is effective to measure intermittent incoming pulses.

Moving Average
To avoid delay effect of averaging, the moving average can respond each input change keeping average effect. KAZ-723A is provided 1 to 32 register of moving data.

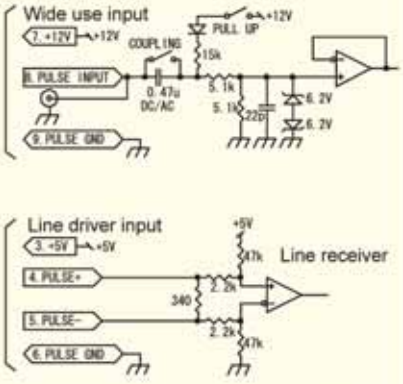
PERIOMATIC technology
The KAZ-723A has the advanced forecast computation, PERIOMATIC™, which was invented by Cocoresearch. So the analog output can follow even so heavy fluctuation. The PERIOMATIC™ also includes stop (zero speed) forecasting, so the KAZ-723A can respond to sudden stop of the incoming pulses.

Front Panel



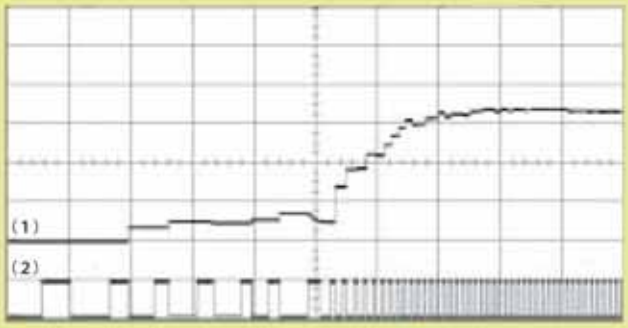
Input Port

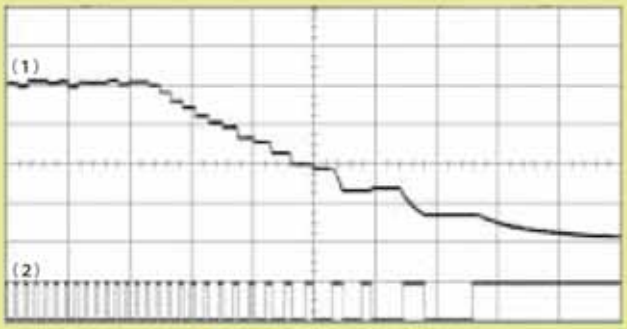
Isolated block



The Pulse GND is isolated to Frame.

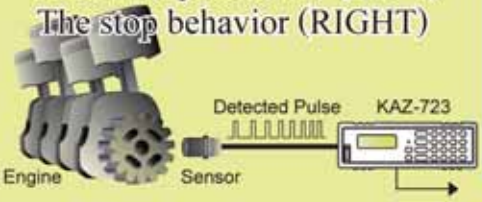
An Example of Start Up and Stop behavior for a reciprocal engine





■CONDITIONS
KAZ-723 (1)
Mode: F/V mode
Settled Full scale Frequency: 150Hz
Settled Analogue output : 0 to 10V
Input Signal (2) Input Frequency: 0 to 100Hz
Oscilloscope
Time axis : 100ms/div.
Voltage axis (1): 2V/div.
Voltage axis (2): 10V/div.

The start up behavior (LEFT)
The stop behavior (RIGHT)

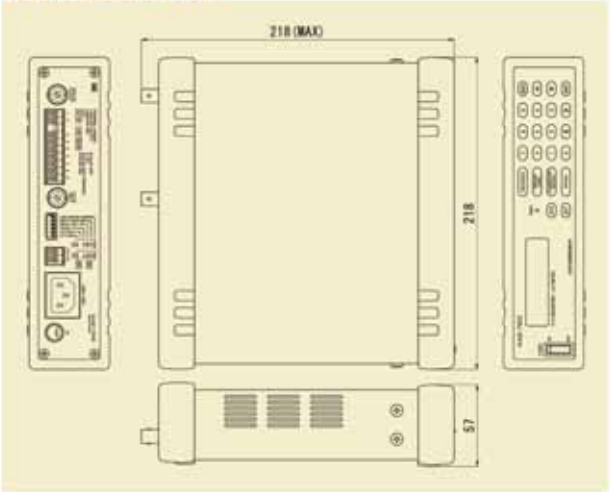


■CONDITIONS
KAZ-723 (1)
Mode: F/V mode
Settled Full scale Frequency: 150Hz
Settled Analogue Output : 0 to 10V
Input Signal (2) Input Frequency : 60 to 0Hz
Oscilloscope
Time axis : 100ms/div.
Voltage axis (1): 1V/div.
Voltage axis (2): 10V/div.

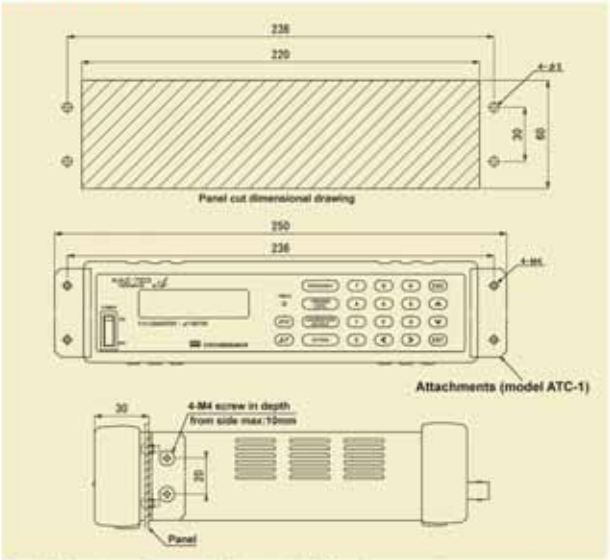
SPECIFICATIONS

	Name	F/V Converter
	Model	KAZ-723 A
	Measurement method	PERIOMATIC™ processing
Input	Number of inputs	1
	Input frequency range	0.04Hz—200kHz
	Resolution	6.25ns (160MHz equivalent)
	Input circuit	
	(1)General input signals (Wide use signal)	Input signal : Logic / zero cross(AC) Trigger level : 0.0—9.9V(accuracy ± 0.1 V max.) Input sensitivity : Min. 0.2 V p-p Allowable rating : ±80V Input resistance : Under non-pull-up 10kΩ/ Under pull-up +5V.6kΩ Input coupling : DC/AC AC coupling frequency characteristic : 35Hz(-3dB、6dB/oct) Low-pass filter : None/15kHz(-3dB、6dB/oct)/ 1.5kHz(-3dB、6dB/oct) Input connector : BNC connector / screwless terminal block (loop through)
	(2)Line driver input	Input signal : Line driver signal Input sensitivity : Min. 1 V(differential voltage) Input withstand voltage : ±25V(for PULSE GND) : ±25V (differential voltage) Recommended line driver : AM26LS31 or equivalent Input resistance : 340Ω Input connector : Screwless terminal block
	Input pulse width	Min. 2μs (both H level and L level)
	Trigger direction	Rise/Fall (selectable)
	Input indicator	TRIG'D LED : Flashes during pulse input (continuously lit for high-speed pulse)
	Power supply for sensor	+5V : Max.150mA +12V : Max.120mA
Display	Display	16×2 character dot matrix LCD (LED backlight illumination)
	Frequency display digits	6 digits
	Zero display	Leading zero suppressed
	Display update time	0.3s
	Frequency display accuracy	±100ppm / ℃ ±1digit @23℃
	Display unit	Hz / rpm
Processing	Measurement mode	F/V (speed output) / ⊿F (deviation output)
	Operation time	Max.3μs
	Input pulse dividing	1—64 (by software)
	Output moving average	1—32 (average of input pulse number)
	Auto-zero	5 stages(DYNAMICFORECAST™)
	Set value storage	Non-volatile memory (EEPROM)
Analog Output	Nnmber of outputs	1
	F/V mode	Full scale setting range : 1Hz—200kHz Output voltage range : 0—10V / 0—5V / 1—5V
	⊿F (deviation output) mode	Center frequency setting range : 1Hz—100kHz Output voltage range : ±10V / ±5V ⊿F sensibility range : ±0.5% / ±1% / ±2% / ±5% / ±10% / ±20% ±50% / ±100%
	Output resolution	16bit (about ±10.8V)
	Calibration reference output	+100% / 0% / -100% (-100% in ⊿F mode only)
	Output response time	Max. 5 μs (90% response)
	Temperature fluctuation	Max. ± 200ppm/℃
	Output accuracy	Max. ± 0.1% of full scale
	Linearity	Max. ±0.1%
	Load resistance	Min. 4.7kΩ
	Output zero adjustment range	±200mV
	Output connector	BNC connector / screwless terminal block (loop through)
General	Power supply input	AC85V—250V (50Hz/60Hz)
	Electric power consumption	Max.30VA
	Isolation	Sensor power source and signal input / analog output / power supply input / housing
	Outside dimensions	57mm (H) ×218mm (W) ×218mm (D) (including protrusions)
	Weight	Approximately 1.8kg
	Operating temperature & humidity limits	0℃—+40℃ / Max.85%HR (no dewing)
	Storage temperature & humidity limits	-10℃—+60℃ / Max.85%HR (no dewing)
	Operating ambient atmosphere	No corrosive gas and explosive gas

DIMENSIONS



FITTING



A pair of Attachment for panel fitting (model ATC-1) is as a option.

TERMINAL

BNC Connector		Screwless Terminal Block								
		1	2	3	4	5	6	7	8	9	F.G.
ANALOG OUTPUT	PULSE INPUT (GENERAL)	ANALOG OUTPUT	ANALOG GND	+5V	PULSE+ INPUT	PULSE- INPUT	PULSE GND	+12V	PULSE INPUT	PULSE GND	F.G.
		ANALOG OUTPUT		PULSE INPUT(LINE DRIVER)				PULSE INPUT(GENERAL)			
Analog output	General input signal	Analog output		Line driver input				General input signal			

■If there is a possibility of secondary damages that may result from operation or mal-function of this product, take appropriate preventive measures to ensure safety.(fail-safe structure)

■Specifications are subject to change without any obligation on the part of manufacturer.

WE SUPPORT PRECISE SPEED ANALYSIS

THE INTERVAL METHOD BEGAN TO USE FROM COCORESEARCH BY THE NAME OF PERIOMATIC™

COCORESEARCH INC.

The TRADEMARK of GENTLE RAIN

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