

0.03Hz ~ 120kHz One Pulse response
PERIOMATIC™ Processing

KAZ-723

Velocity analysis by Frequency-to-Voltage (F/V) Converter for A Rotary motion or Mechanical action

One pulse response capability for input pulse train.



Employing rotary encoder, optical sensor or gear speed sensor, KAZ-723 converts the frequency (detected pulse) into analog voltage within 5 μs of processing response. KAZ-723 covers 0.03Hz to 120kHz by PERIOMATIC™ process.

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

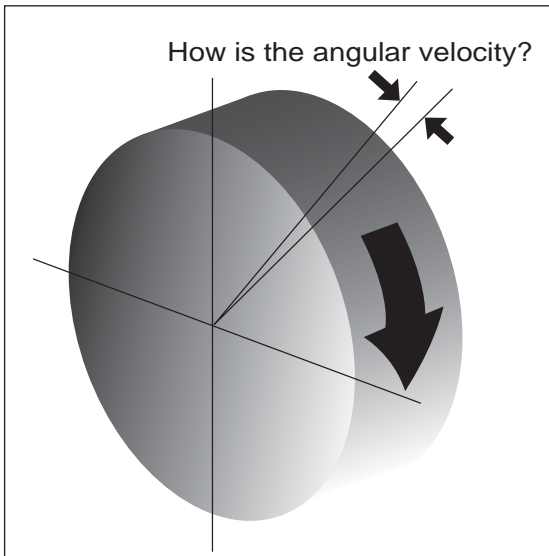
KAZ-723 can be used to obtain several solutions about speed measurement. These are angular velocity, frequency and speed fluctuation.

Applications

Analysis of Rotary motion or Mechanical action, Sudden stop behaviors, Flow speed
Ultra low speed measurement, Load characteristics of a reducer or a speed converter
Frequency or it's fluctuation, Transmission characteristics and Speed fluctuation.

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

KAZ-723 F/V CONVERTER with DEVIATION OUTPUT

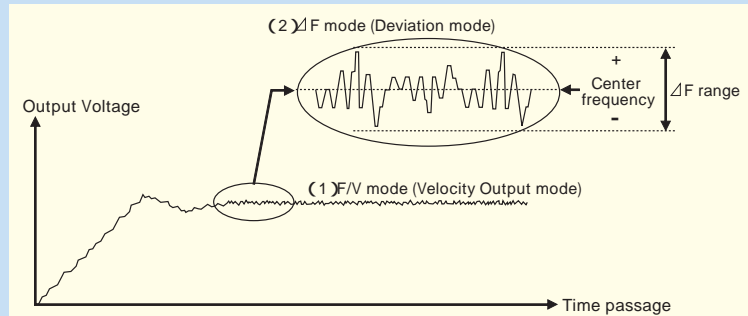
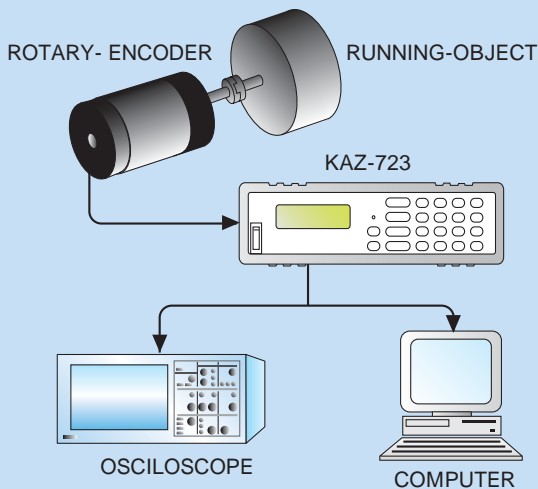


Through the one around
You can catch angular velocity precisely
on real time.

When you need to catch velocity about each 1 degree, use rotary encoder 360 pulse/r to detect rotation. KAZ-723 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

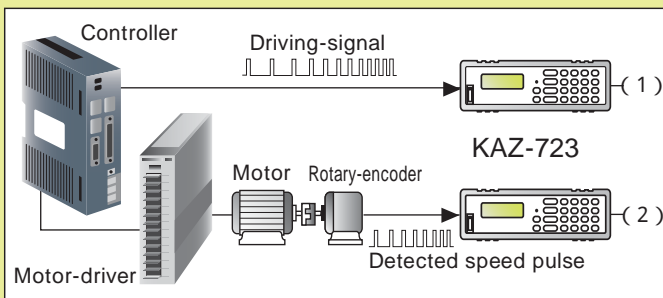
Which DATA is useful for you F/V or ΔF KAZ-723 enables to switch as you wish.



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

(2) The \pm output becomes a voltage proportional to deviation of a settled frequency and a settled sensibility (ΔF range). The applicable center frequency is 1Hz ~ 100kHz. ΔF range has 6 steps 0.5% ~ 20%.

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



The output shows the jitter contained driving pulse and the hunting of the motor.

CONDITIONS

KAZ-723(1)

Mode: F/V mode
Settled Full scale Frequency: 70kHz
Settled Analogue output: 0 to 10V

KAZ-723(2)

Mode: F/V mode
Settled Full scale Frequency : 7kHz
Settled 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.

0.03Hz ~ 120kHz Acceptable One Pulse Response

Features

Wide Range 0.03Hz ~ 120kHz

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

Deviation Output available (ΔF mode)

Corresponding to settled center frequency, the fluctuation (deviation) of frequency is converted into analogue $\pm 10V$ ($\pm 5V$ available) of deviation outputs. The sensibility of ΔF mode can be chosen from 6-steps of $\pm 0.5\%$ to $\pm 20\%$. This ΔF mode is used to check fluctuation of rotary motion mainly.

High Resolution

The input stage processing is satisfied within 8.3ns(120MHz Equivalent) resolution. And the analogue output stage, 16-bit D/A converter employed.

High Response (within $5\mu s$ over all)

The process spends less than only $3\mu s$. Even an over all containing isolation, D/A conversion and analogue output it doesn't over $5\mu s$.

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.

Divider

For an intermittent motion, 1 to 64 dividing rate is prepared. The divider is effective to obtain averaged value.

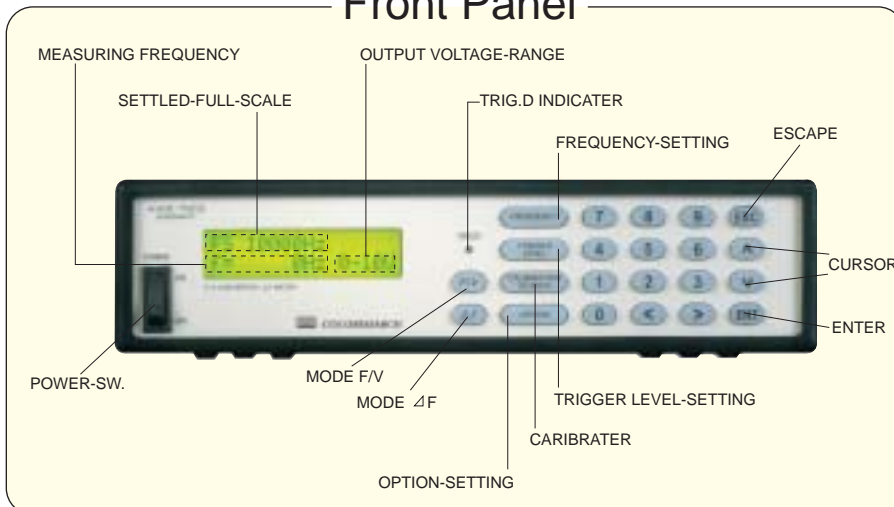
Moving Average

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

Stop forecasting

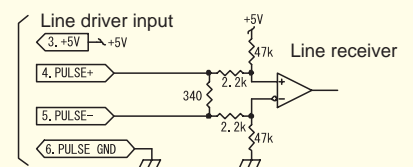
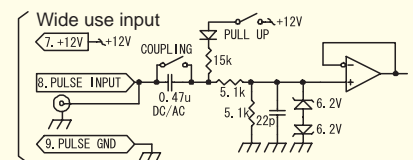
To serve stop motion follow capability in all over range, KAZ-723 has stop forecast computation. It operates stopping output in relation to input frequency.

Front Panel



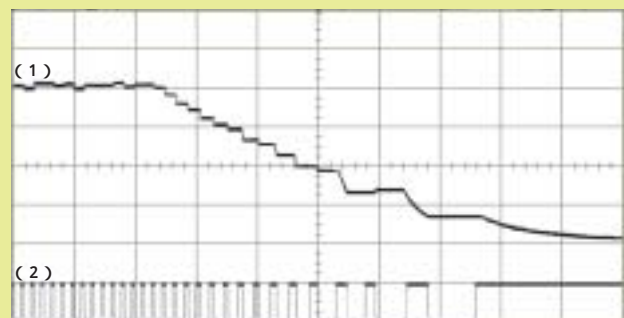
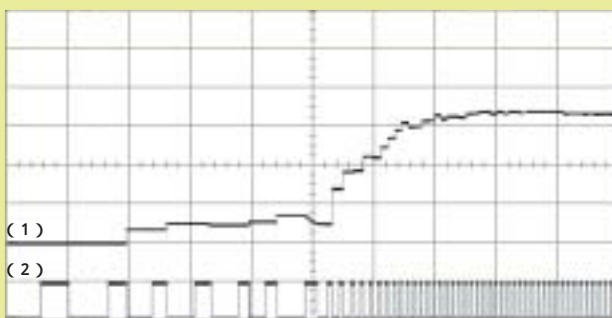
Input Port

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)



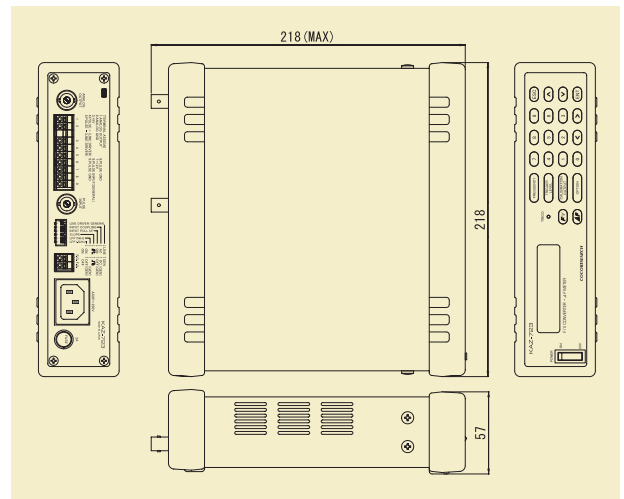
CONDITIONS

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.

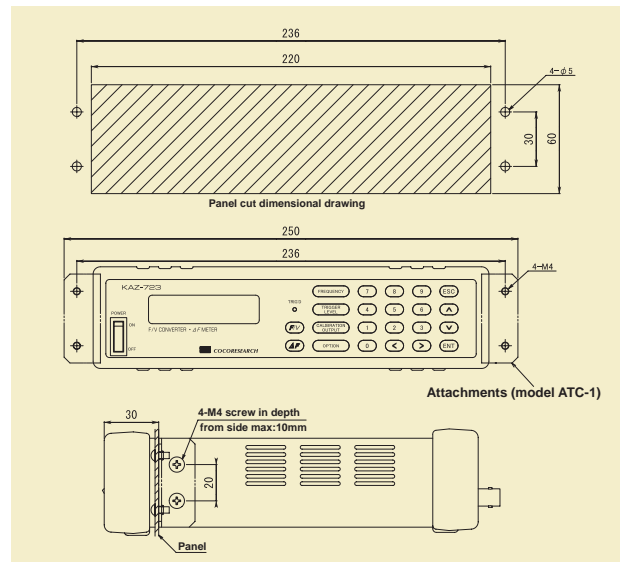
SPECIFICATIONS

	Name Model Measurement method	F/V Converter KAZ-723 PERIOMATIC™ processing
Input Section	Number of inputs Input frequency range Resolution Input circuit (1)General input signals (Wide use signal)	1 0.03Hz—120kHz 8.3ns(120MHz equivalent) 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 10k / Under pull-up +5V:6k 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 : 340 Input connector : Screwless terminal block
	Input pulse width Trigger direction Input indicator Power supply for sensor	Min. 2 μs(both H level and L level) Rise/Fall (selectable) TRIG'D LED : Flashes during pulse input (continuously lit for high-speed pulse) +5V : Max. 150mA +12V : Max. 120mA
Display Section	Display Frequency display digits Zero display Display update time Frequency display accuracy	16×2 character dot matrix LCD(LED backlight illumination) 6 digits Leading zero suppressed 0.3s ± 100ppm / ± 1digit @23
Processing	Measurement mode Operation time Input pulse dividing Output moving average Auto-zero Set value storage	F/V(speed output) / ΔF(deviation output) Max.3 μs 1—64(by software) 1—32(average of input pulse number) 5 stages(DYNAMICFORECAST™) Non-volatile memory(EEPROM)
Analog Output Section	Nmber of outputs F/V mode ΔF(deviation output)mode Output resolution Calibration reference output Output response time Temperature fluctuation Output accuracy Linearity Load resistance Output zero adjustment range Output connector	1 Full scale setting range :1Hz—120kHz Output voltage range :0—10V / 0—5V / 1—5V Center frequency setting range :1Hz—100kHz Output voltage range :± 10V / ± 5V ΔF sensibility range :±0.5% / ±1% / ±2% / ±5% / ±10% / ±20% 16bit(about ± 10.8V) +100% / 0% / -100%(-100% in ΔF mode only) Max. 5 μs(90% response) Max. ± 200ppm/ Max. ± 0.1% of full scale Max. ± 0.1% Min. 4.7k ± 200mV BNC connector / screwless terminal block(loop through)
General Specifications	Power supply input Electric power consumption Isolation Outside dimensions Weight Operating temperature & humidity limits Storage temperature & humidity limits Operating ambient atmosphere	AC85V—250V(50Hz/60Hz) Max.30VA Sensor power source and signal input / analog output / power supply input / housing 57mm(H)×218mm(W)×218mm(D) including protrusions) Approximately 1.8kg 0 — +40 / Max.85%HR(no dewing) -10 — +60 / Max.85%HR(no dewing) No corrosive gas and explosive gas

DIMENSIONS



FITTING REFERENCE



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

TERMINAL ASSIGN

BNC Connector		Screwless Terminal Block									
ANALOG OUTPUT	PULSE INPUT (GENERAL)	1	2	3	4	5	6	7	8	9	FG.
		ANALOG OUTPUT	ANALOG GND	+5V	PULSE- INPUT	PULSE- INPUT	PULSE GND	+12V	PULSE INPUT	PULSE GND	FG.
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 PRECISION SPEED ANALYSIS

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



COCORESEARCH INC.

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