MODEL VM-5C ECCENTRICITY MONITOR

CE

Model Code / Additional Spec. Code (No entry if additional spec. code is not specified.)

VM-5C-☐☐☐☐☐☐

	Monitor range pk-pk	Monitor range direct		Input signal (Rotor pulse:CH1)		Input signal (Ecc:CH2)		Direct Eccentricity polarity *2	Measurement range *3		Recorder output
1	0 to 100μm pk-pk	-50 to 0 to +50μm	1	VK-202A,VK-202P *1	1	VK-202A,VK-202P,FK-202F	1	Direct	1	1 to approx.300rpm	0	4 to 20mADC
2	0 to 200μm pk-pk	-100 to 0 to +100μm	2	RD,FK Series	2	VK-302P,FK-302F	2	Reverse	2	1 to approx.600rpm	1	1 to 5VDC
3	0 to 250μm pk-pk	-125 to 0 to +125μm	3	MS Series	3	VK-452A,FK-452F						
4	0 to 500μm pk-pk	-250 to 0 to +250μm		4 or more pulses per revolution with even duty	4	VK-602P,FK-602F					2	Output card /IS☐ or /RE☐ option
5	0 to 1000μm pk-pk	-500 to 0 to +500μm			5	VC Series(Voltage output only)						
6	0 to 5mils pk-pk	-2.5 to 0 to +2.5mils										
7	0 to 10mils pk-pk	-5 to 0 to +5mils										
8	0 to 20mils pk-pk	-10 to 0 to +10mils										
A	0 to 30mils pk-pk	-15 to 0 to +15mils										
B	0 to 50mils pk-pk	-25 to 0 to +25mils										

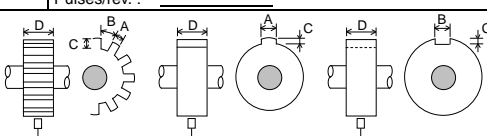Note) *3 The measurement range for direct eccentricity is less than 12rpm.

Note) *1 VK transducer can not detect the wire break in the sensor system, so RD tacho driver which can detect the wire break shall be recommended.

Note) *2 FK/VK Direct eccentricity polarity

Polarity	Indication and rec. output	
	Toward sensor	Away from sensor
Direct	Increase	Decrease
Reverse	Decrease	Increase

VC Direct eccentricity polarity

Polarity	Indication and rec. output	
	Toward sensor	Away from sensor
Direct	Decrease	Increase
Reverse	Increase	Decrease

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	Hysteresis set value (shaped waveform circuit)		Alarm reset (DANGER)		Alarm reset (ALERT)		Alarm reset (OK)		Relay mode (DANGER)		Relay mode (ALERT)		Relay mode (OK)		First out *4		Phase marker input
0	1.0V	0	AUTO-RESET	0	AUTO-RESET	0	AUTO-RESET	0	NORMALLY DE-ENERGIZED	0	NORMALLY DE-ENERGIZED	0	NORMALLY DE-ENERGIZED	0	OFF	0	CH1(VM-5C)
1	0.1V	1	SELF-HOLD	1	SELF-HOLD	1	SELF-HOLD	1	NORMALLY ENERGIZED	1	NORMALLY ENERGIZED	1	NORMALLY ENERGIZED	1	ON	1	CH1(VM-5P)
2	0.2V																
3	0.5V																

/(IS ☐ or RE ☐)/5G ☐ /TRP/EX ☐

Isolate output		Recorder option output		Input power supply requirements		Tropical spec.	Sensitivity correction	
0	4 to 20mADC	2	0 to -10VDC	0	85 to 264VAC		1	TIIS(IEC)
1	1 to 5VDC	3	0 to 10VDC	1	24VDC		2	FM
2	0 to -10VDC	4	0 to -5VDC	2	110VDC		4	CSA
3	0 to 10VDC	5	0 to 5VDC				5	ATEX
4	0 to -5VDC							
5	0 to 5VDC							

When recorder output code 2 is selected, specify this option code.

Note) *4 It is necessary to set all monitor units in the same rack in first out function ON when it is used first out function.

Note) Input abnormal alarm is not applicable in case of VC input signal. Short circuit is not detectable in case of MS input signal.

Ordering Information

ALARM SET VALUE	DANGER1 : _____
	ALERT1 : _____
	H-DANGER2 : _____
	H-ALERT2 : _____
	L-ALERT2 : _____
	L-DANGER2 : _____

DANGER1,ALERT1 : For eccentricity pk-pk
DANGER2,ALERT2 : For direct
Unless specified otherwise, preset to :
DANGER1 : 100% of monitor range
ALERT1 : 90% of monitor range
H-DANGER2 : Invalid
H-ALERT2 : Invalid
L-ALERT2 : Invalid
L-DANGER2 : Invalid

NO. OF INPUT P/R	Can be specified from 1 to 120 pulse. Pulses/rev. : _____

DIMENSION OF TARGET (Model VK,RD,FK)

Note) To detect a projection (gear), provide surface A of the projection with a concentric curve. Do not make it flat.

Input	VK-202A RD-05A FK-202F	VK-452A FK-452F	VK-302P
A	≧6	≧16	≧8
B	≧7	≧20	≧8
C	≧2.5	≧4.5	≧2.5
D	≧16	≧36	≧20
Set gap [recommended](mm)	1.0 to 1.5	2.5 to 3.5	1.0 to 1.5

Dimension of target [recommended](mm)

A=_____ mm
B=_____ mm
C=_____ mm
D=_____ mm

SUPPRESSION FUNCTION SET VALUE	: _____ 0.0 to 10.0 % of monitor range (0.1 % step) Preset to 2.0 % unless specified otherwise. CAUTION : When the measurement value is not more than suppression function set value, indication and recorder output shall be as 0 %.

Standard Specifications

ALARM SET POINT	Eccentricity pk-pk : 2 points (DANGER1,AELRT1) Direct : 4 points (H-DANGER2,H-ALERT2,L-ALERT2,L-DANGER2)
ALARM SET RANGE	0 to 110% of monitor range (eccentricity pk-pk) -10 to +110% of monitor range (direct)
ALARM SET ACCURACY	±1.0% of F.S. or less
ALARM SET REPEATABILITY	±0.1% of F.S. or less
ALARM OUTPUT	5 points (DANGER1,ALERT1,DANGER2,ALERT2,OK) or 6 points (DANGER1,ALERT1,DANGER2,ALERT2,OK1,OK2) (H,L are OR output)

Standard Specifications

MEASURED VALUE	LCD digital meter with 5 digits (7 segments,with back light) LCD bar graph meter (40 segments,with back light) * Measurement value and alarm set value are indicated on the digital meter and bar graph meter simultaneously.
ALAMR INDICATOR	DANGER : (red LED) ALERT : (yellow LED)
ABNOR. ALAMR INDICATOR	OK : (green LED)
BYPASS INDICATOR	BYPASS : (red LED)
TRANSDUCER INPUT	VK-202A,VK-202P,FK-202F, VK-302P,FK-302F,VK-452A,FK-452F,VK-602P,FK-602F (only eccentricity), VC Series(only eccentricity), RD-05A(only phase marker),MS Series(only phase marker) Number of input points : 2 points(phase marker,eccentricity)
INPUT IMPEDANCE	Approx.50kΩ
MIN. PULSE WIDTH	Approx.50μsec
NO. OF INPUT PULSE	1 to 120 pulse
TRIGGER MODE	AUTO, MANUAL (selectable) In case of auto trigger mode, input pulse duty ratio should be between 10 and 90% and input pulse frequency should be 1Hz and over. It depends on the target.
EXTERNAL CONTACT INPUT (FROM REAR PANEL)	Contact type : Dry contact Contact for external reset
BAR GRAPH METER	Recorder output conversion accuracy ±2.5% of F.S.
ZERO SHIFT	0 to 100% of monitor range
DIGITAL METER	Recorder output conversion accuracy ±1.0% of F.S.
RECORDER OUTPUT CONVERSION ACCURACY	±1.0% of F.S. at 25°C ±2.0% of F.S. at 0 to 65°C
RECORDER OUTPUT (FROM REAR PANEL)	Voltage or current output proportional to monitor range 1 to 5VDC (output impedance : 250Ω) 4 to 20mADC (max. load resistance : 500Ω) 0 to -10VDC*,0 to 10VDC*,0 to -5VDC*,0 to 5VDC* (output impedance : 100Ω) (*option) Number of output points : 2 points(eccentricity pk-pk,direct)
MONITOR/PULSE OUTPUT (FROM FRONT,REAR PANEL)	Monitor output/Pulse output, selectable (preset to CH1 : Pulse output, CH2 : Monitor output) Monitor output : Input signal via a buffer amplifier. Signal level : -0.8 to -22VDC (VK,RD),±15V (MS), 0 to 5VDC(VC) Pulse output : Shaped pulse signal is output via a buffer amplifier. Signal level : -1 to +1V(P_L),4 to 6V(P_H) Output impedance : Approx.100Ω (load resistance 50kΩ or more)
TEMPERATURE RANGE	Operating temperature : 0 to 65°C (32 to 149°F REF.) Storage temperature : -30 to +85°C (-22 to +185°F REF.) Relative humidity : 20 to 95%RH (noncondensing)
MATERIAL AND FINISH	Face plate : Aluminum Munsell N-4.0 (equiv.)
MASS	Monitor :max.0.7kg (including single unit instrument rack : max.2.5kg)