VM-7
MONITORING SYSTEM

SPECIFICATIONS

VM-704B TEMPERATURE MONITOR MODULE

CE

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

VM-704B /NB1 /CS1 /TRP /TB□

Non-incendive		Monitor Function	Tropical spec.	I/O terminal block for	
1	CSA C/US: Class I, Division 2, Groups A,B,C and D	Custom setup		1	VM-761B instrument rack
				2	VM-762B instrument rack

Specification

INPUT

Input points : 6 points

Input impedance : more than 1MΩ (Thermo-couple)

Input trancdusor : Thermo-couple (Type E, Type J, Type K, Type T)
100Ω 3wireRTD (R100/R0 =1.3851)
100Ω 4wireRTD (R100/R0 =1.3851)

MONITOR RANGE

Thermo-couple (Type E) : -200°C to 990°C
Thermo-couple (Type J) : -140°C to 1190°C
Thermo-couple (Type K) : -200°C to 1362°C
Thermo-couple (Type T) : -200°C to 390°C
100Ω RTD : -200°C to 850°C

MEASURE LIMIT

Thermo-couple (Type E) : -270°C to 1000°C
Thermo-couple (Type J) : -210°C to 1200°C
Thermo-couple (Type K) : -270°C to 1372°C
Thermo-couple (Type T) : -270°C to 400°C
100Ω RTD : -200°C to 850°C

COLD JUNCTION COMPENSATION SENSOR(RJC)

Attachment : To monitor output connector (1piece/module)

Compensation accuracy : ±1°C at 25°C

MEASURE

Mode : Direct, Composite, Differential

Direct : Direct temperature

Composite : Average temperature of the selected input channel (If the number of the selected input channel is one, the value of Composite is the same as Direct.)

Differential : Temperature difference obtained by subtracting Composite from Direct

Note)

- Composite and Differential can be enabled/disabled by the setting.
- Input channels to be selected for Composite can be set by the channel, but they must be from the same slot.
- To the recorder output and the output via Modbus communication, users can assign one of the modes above.
- When this monitor is used for intrinsically safe explosion proof construction, the OK alarm set point may fall within the range, depending on the input transducer and the specified monitoring range.

OUTPUT

Indicator : OK LED (Green)
When channel is normal : ON, When alarming : Flashing

Recorder output : Voltage or current output proportional to measurement value.
Measurement value of each channel can be assigned to any output channel of its own module.
Number of output points : 6points
Output range : 1 to 5V, 4 to 20mA
0 to 5V, 0 to 10V
I/O conversion accuracy: ±(1% of F.S.+1°C) at 25°C
± (2% of F.S. +1°C) at 0°C to 65°C
(Monitor range: 200°C or more)
Max. load resistance : 600Ω (current mode)
Output impedance : Approx. 500Ω (voltage mode)
Insulation resistance : 10MΩ at 100VDC
Burnout function : Down scale 0%
Down scale 0mA / 0mV
Up scale +110% or more

Contact output : Number of relay: 6 points (logic changeable)
Contact type: Dry contact (SPDT)
Energization method : Normally de-energized or Normally energized field changeable
Contact capacity: 250VAC/5A, 30VDC/5A

ALARM

Alarm set point : Up to 4 points for each channel, each mode, from 0 to 100% of monitor range, field changeable.
H-DANGER, H-ALERT, L-ALERT, L-DANGER

Alarm set accuracy : ± (0.2% of F.S. +1digit) or less at 25°C
Alarm set repeatability : ±1digit or less at 25°C
Alarm delay time : 0 to 99sec (0.1 sec step, field changeable)
Alarm reset : AUTO-RESET or SELF-HOLD field changeable.
Alarm bypass function : Block off alarm output (DANGER)

VM-704B TEMPERATURE MONITOR MODULE

Specification

ENVIRONMENTAL CONDITION

Operating temperature : 0 to +65°C
Operating temperature at explosion proof construction
: 0 to +60°C
Storage temperature : -30 to +85°C
Relative humidity : 20 to 95%RH (non-condensing)

POWER CONSUMPTION

Module : Less than 15W

MATERIAL AND FINISH

Face plate : ABS (Black)
Sheet : Polyester tough top (Gray)
Base plate : Alminium alloy (Silver)

MASS

Body : Max. 1.0kg (2.2lb)

ACCOMPANIMENT

Cold junction compensation sensor (VZ-73) : 1piece/module

ACCESSORY SPECIFICATION CODE / IDENTIFIED BY TB□

Code	Accessory	Quantity (Part Code)
/TB1	Transducer input terminal plug (15pin) FRONT-MC-1.5/15-STF-3.81 (PHOENIX CONTACT)	2pieces *2 (7072NAB)
	Recorder output terminal plug (6pin) FRONT-MC-1.5/6-STF-3.81 (PHOENIX CONTACT)	2pieces *2 (7072NAC)
	Contact output terminal plug (18pin) FRONT-MC-1.5/18-STF-3.81 (PHOENIX CONTACT)	1piece (7072NAA)
/TB2	Contact output terminal plug (18pin) FRONT-MC-1.5/18-STF-3.81 (PHOENIX CONTACT)	1piece (7072NAA)

Note)*1 D-sub plugs and hoods are not included in this code. Please make necessary arrangement separately, if required.
*2 When individually ordering specify the parts code,it is require to arrange for a necessary amount.

⚠ WARNING
Some functions may not be available with old version.
For details, please refer to "infiSYS Family Improvement Information" (6H16-011).

Default Value

INPUT

Input points : 6 points
Input transducer : 100Ω 3-wire RTD (R100/R0=1.3851) (non-intrinsic safety)
Monitor range : 0 to 200°C

MEASURE

Mode : Direct only

RECORDER OUTPUT

Output range : 4 to 20mA (4mA at the burnout)

ALARM

Alarm(Direct)
H-DANGER set point : 160°C
H-ALERT set point : 120°C
L-ALERT set point : None
L-DANGER set point : None
Alarm delay time : 3sec (DANGER, ALERT)
Alarm reset : AUTO-RESET

CONTACT

Contact (RELAY1) : OR (DANGER-1 / DANGER-2 / DANGER-3)
Contact (RELAY2) : OR (ALERT-1 / ALERT-2 / ALERT-3)
Contact (RELAY3) : OR (NOT-OK-1 / NOT-OK-2 / NOT-OK-3)
Contact (RELAY4) : OR (DANGER-4 / DANGER-5 / DANGER-6)
Contact (RELAY5) : OR (ALERT-4 / ALERT-5 / ALERT-6)
Contact (RELAY6) : OR (NOT-OK-4 / NOT-OK-5 / NOT-OK-6)
Enagization method : Normally de-energized

OTHERS

Initial low alarm bypass : OFF
First out : OFF
Timed OK channel defeat : ON
Burnout(Direct) : Downscale 0%

Alarm Contact Operation

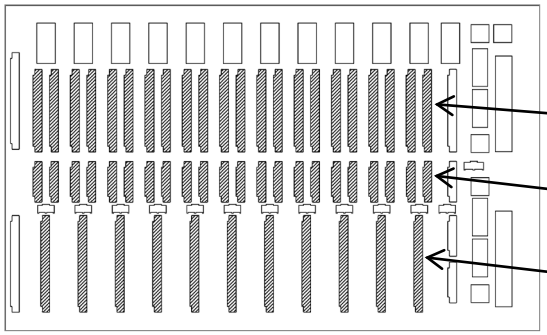
Contact type	Energization method	Power OFF	Power ON	
			Normal state	Alarm state
N.O. contact	NORMALLY DE-ENERGIZED	OPEN	OPEN	CLOSE
	NORMALLY ENERGIZED	OPEN	CLOSE	OPEN
N.C. contact	NORMALLY DE-ENERGIZED	CLOSE	CLOSE	OPEN
	NORMALLY ENERGIZED	CLOSE	OPEN	CLOSE

VM-704B TEMPERATURE MONITOR MODULE

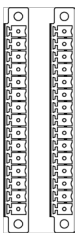
Plug/ Terminal Block (Connector) Pin Assignment

VM-761B Instrument Rack

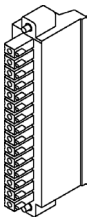
(Back)



① Transducer Input Terminal Block

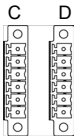


A1	CH1 S-1	B1	CH4 S-1
A2	CH1 S-2	B2	CH4 S-2
A3	CH1 S-3	B3	CH4 S-3
A4	CH1 S-4	B4	CH4 S-4
A5	CH1 SHIELD	B5	CH4 SHIELD
A6	CH2 S-1	B6	CH5 S-1
A7	CH2 S-2	B7	CH5 S-2
A8	CH2 S-3	B8	CH5 S-3
A9	CH2 S-4	B9	CH5 S-4
A10	CH2 SHIELD	B10	CH5 SHIELD
A11	CH3 S-1	B11	CH6 S-1
A12	CH3 S-2	B12	CH6 S-2
A13	CH3 S-3	B13	CH6 S-3
A14	CH3 S-4	B14	CH6 S-4
A15	CH3 SHIELD	B15	CH6 SHIELD

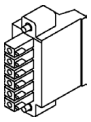


Note2) 7072NAB

② Recorder Output Terminal Block

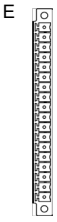


C1	REC1 +	D1	REC4 +
C2	REC1 -	D2	REC4 -
C3	REC2 +	D3	REC5 +
C4	REC2 -	D4	REC5 -
C5	REC3 +	D5	REC6 +
C6	REC3 -	D6	REC6 -

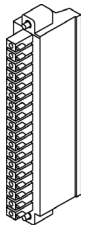


Note2) 7072NAC

③ Contact Output Terminal Block



E1	RL1 N.O.	E10	RL4 N.O.
E2	RL1 COM	E11	RL4 COM
E3	RL1 N.C.	E12	RL4 N.C.
E4	RL2 N.O.	E13	RL5 N.O.
E5	RL2 COM	E14	RL5 COM
E6	RL2 N.C.	E15	RL5 N.C.
E7	RL3 N.O.	E16	RL6 N.O.
E8	RL3 COM	E17	RL6 COM
E9	RL3 N.C.	E18	RL6 N.C.



7072NAA

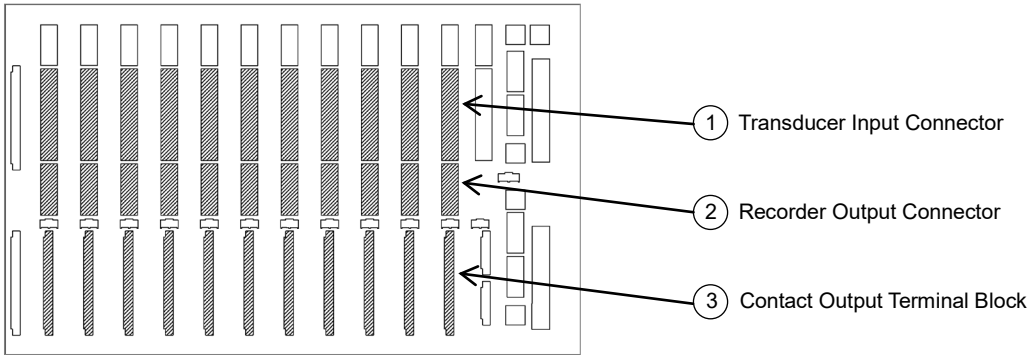
Note1) For the accessory specification code "/TB1", the fitting terminal block plugs ① ② ③ are included.
Note2) When individually ordering specify the parts code, it is require to arrange for a necessary amount.

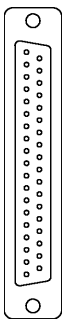
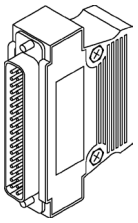
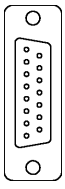
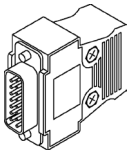
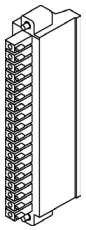
VM-704B TEMPERATURE MONITOR MODULE

Plug/ Terminal Block (Connector) Pin Assignment

VM-762B Instrument Rack

(Back)



	Back of Instrument Rack	Plug/ Terminal Block (Connector) Pin Assignment	Fitting Plug	Part Code
①	A 	A1 CH1 S-1 / A20 CH4 S-1 A2 CH1 S-2 / A21 CH4 S-2 A3 CH1 S-3 / A22 CH4 S-3 A4 CH1 S-4 / A23 CH4 S-4 A5 CH1 SLD / A24 CH4 SLD A6 CH2 S-1 / A25 CH5 S-1 A7 CH2 S-2 / A26 CH5 S-2 A8 CH2 S-3 / A27 CH5 S-3 A9 CH2 S-4 / A28 CH5 S-4 A10 CH2 SLD / A29 CH5 SLD A11 CH3 S-1 / A30 CH6 S-1 A12 CH3 S-2 / A31 CH6 S-2 A13 CH3 S-3 / A32 CH6 S-3 A14 CH3 S-4 / A33 CH6 S-4 A15 CH3 SLD / A34 CH6 SLD A16 N/A / A35 N/A A17 N/A / A36 N/A A18 N/A / A37 N/A A19 N/A		Plug 7072NAF Hood 7072NAJ
②	C 	C1 REC1 + / C9 REC4 + C2 REC1 - / C10 REC4 - C3 REC2 + / C11 REC5 + C4 REC2 - / C12 REC5 - C5 REC3 + / C13 REC6 + C6 REC3 - / C14 REC6 - C7 N/A / C15 N/A C8 N/A		Plug 7072NAE Hood 7072NAH
③	E 	E1 RL1 N.O. / E10 RL4 N.O. E2 RL1 COM / E11 RL4 COM E3 RL1 N.C. / E12 RL4 N.C. E4 RL2 N.O. / E13 RL5 N.O. E5 RL2 COM / E14 RL5 COM E6 RL2 N.C. / E15 RL5 N.C. E7 RL3 N.O. / E16 RL6 N.O. E8 RL3 COM / E17 RL6 COM E9 RL3 N.C. / E18 RL6 N.C.		7072NAA

Note) For the accessory specification code “/TB2”, the fitting terminal block plug ③ is included.
For the accessory specification code “/TB2”, the D-sub plugs and hoods ① ② are not included. If required, please make necessary arrangement separately referring to the part code above.