SAF series

SPEC.SHEET

Pulse Isolator

Model : **SAFI**

(With indication function & sensor power)

■ Model

SAFI– 0 □ □–□

Input
0 : Open collector
1 : Voltage pulse
2 : Line driver
3 : Contact switch

Output
0 : Open collector
1 : 5V voltage pulse
2 : 12V voltage pulse

Power supply
0 : 100 to 240V AC
1 : 24V AC/DC

■ How to order

Specify a model and frequency.
(e.g.) SAFI-000-0 (Frequency 800Hz)

Default value (If not specified, shipped as the following default value)

Input frequency	9999Hz

■ Input specifications

Open collector

Frequency range : 0.001Hz to 15kHz
Minimum pulse width : 5μs or more (for ON and OFF)
Input detection voltage/current : ON: Max. 30mA (30V or less)
OFF: Residual voltage 0.5V or less
Action input conditions : ON: 200Ω or less
OFF: 100kΩ or more
Max rated input frequency : 20kHz

Voltage pulse

Frequency range : 0.001Hz to 15kHz
Minimum pulse width : 5μs or more (for High and Low)
Waveform : Rectangular, sine waveforms or similar
Detection level : Low: 1V DC or less
High: 2V DC or more
Input impedance : 10kΩ or more
Input amplitude : 2 to 50V_{p-p}
Max rated input frequency : 20kHz

Line driver

AM26LS31 or equivalent
Receiver: AM26LS32 or equivalent

Contact switch

Frequency range : 0.001 to 10Hz
Minimum pulse width : 10ms or more (for ON and OFF)
Action input conditions : ON: 200Ω or less
OFF: 100kΩ or more

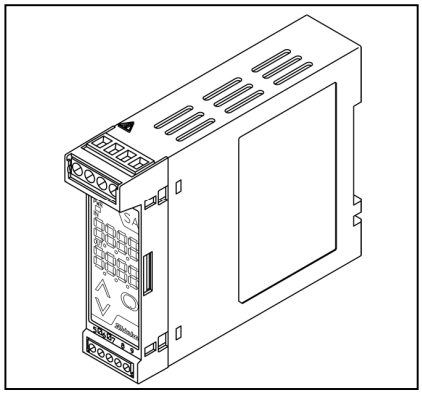
■ Output Specifications

Open collector

Output rating : 12V DC/30mA
Max. frequency : 15kHz

Voltage pulse

Output rating : 5V, 12V DC±10%
Allowable load resistance: 500Ω or more
Max. frequency : 15kHz

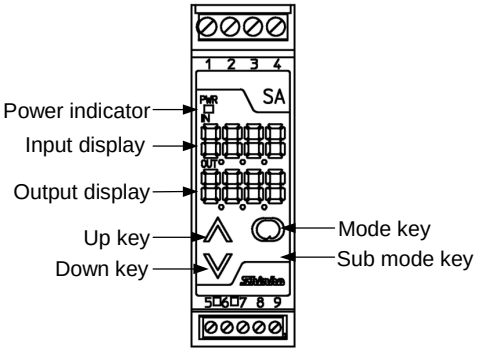


■ Performance

Accuracy : Within ±0.1%
Display accuracy : Within Accuracy±1 digit
Response time : 15μs or less
For open collector output, rising time delays depend on load.
Insulation resistance: 10MΩ or more, at 500V DC
(Input - Output - Power)
Dielectric strength : 2.0kV AC for 1 minute
(Input - Output - Power)

■ General structure

Case : Flame-resistant resin Color: Light gray
Front panel : Membrane sheet
Setting : By the front keypad
Displays, indicator : Input display
7-segment, Red LED display 4-digit
Character size, 7.4 x 4.0mm (H x W)
Output display:
7-segment, Green LED display 4-digit
Character size, 7.4 x 4.0mm (H x W)
Power indicator: Green LED



Installation specifications

Power supply : 100 to 240V AC, 50/60Hz
24V AC/DC, 50/60Hz
Allowable voltage range: 85 to 264V AC
20 to 28V AC/DC
Power consumption : Approx. 9VA
Power supply for sensor: 12V DC±5%, 25mA
Ambient temperature : -5 to 55℃ (23 to 131℉)
Ambient humidity : 35 to 85%RH (non-condensing)
Weight : Approx 120g
Mounting : DIN rail mounting
External dimensions : 22.5 (W) x 75 (H) x 100 (D)mm

Attached functions

Power failure countermeasure:
The data is backed up in non-volatile IC memory.
Self diagnosis:
The CPU is monitored by a watchdog timer, and when an abnormal status is found on the CPU, the unit is switched to warm-up status after turning all outputs off.
Detecting unconnected sensor:
If pulse is not detected for a constant period, the unit will revert to the initial status (0Hz).
(Low pulse: 1000sec or 100sec, Frequency: 1sec)

Settings

Function keys
(1) Up key : Increases the numeric value.
(2) Down key : Decreases the numeric value.
(3) Mode key : Switches the setting mode.
(4) Sub mode key: Press with the Mode key to proceed to the Setup mode.

Setting items
Setting by the Mode key and Sub mode key
(1) Set value lock
(2) Frequency type/unit
(3) Frequency high limit value
(4) Output 0% value
(5) Output 100% value
(6) Decimal point place
(7) One-shot output pulse width
(8) Output Normal/Reverse
(9) Display selection
(10) Indication time

Displays and indicators

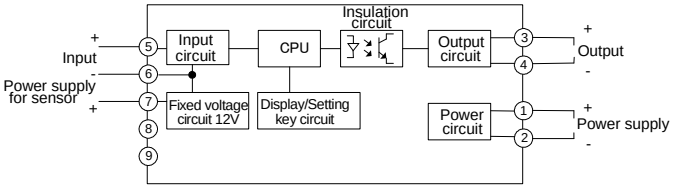
Input display : Indicates the input frequency.
Indication of 10000 or more:
The lower 4 digits flash. 0 flashes when pulse is absent.
Over range: " " flashes on the Input display.
(1.1 times frequency high limit value)
Warm-up indication: For approx. 2 seconds after power-on, the model name is indicated on the Input display,
Output display : Unlit. Indicates set values during Setup mode.
Power indicator : The green LED lights when power-on.

Ferrules

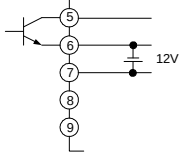
Terminals from 1 to 4
Insulation sleeve attached (Phoenix Contact GMBH & CO.)
AI0.25-8YE 0.2－0.25mm^2
AI0.34-8TQ 0.25－0.34mm^2
AI0.5-8WH 0.34－0.5mm^2
AI0.75-8GY 0.5－0.75mm^2
AI1.0-8RD 0.75－1.0mm^2
AI1.5-8BK 1.0－1.5mm^2
Crimping pliers (Phoenix Contact GMBH & CO.)
CRIMPFOX ZA3
CRIMPFOX UD6

Terminals from 5 to 9
Insulation sleeve attached (Phoenix Contact GMBH & CO.)
AI0.25-8YE 0.2－0.25mm^2
AI0.34-8TQ 0.25－0.34mm^2
AI0.5-8WH 0.34－0.5mm^2
Crimping pliers (Phoenix Contact GMBH & CO.)
CRIMPFOX ZA3
CRIMPFOX UD6

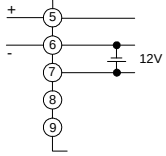
Circuit configuration and Terminal arrangement



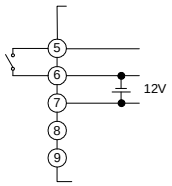
Input connection example



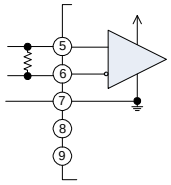
Open collector



Voltage pulse



Contact switch


Line driver

External Dimensions (Scale: mm)