Voltage Sensor
SDV

CSM_SDV_DS_E_6_4

Overvoltage/Undervoltage Monitoring Relay for AC and DC Input

- Detect overvoltages or undervoltages (switch selectable) from 4 mV to 300 V.
- Detect undercurrent, reverse current, or overcurrent in DC circuits using shunt (SDV-FL).
- Detect three-phase AC current for under and/or overcurrent using current converter.
- Available in 7 supply voltage configurations.
- Single-function model with ON-delay, OFF-delay, or startup lock settings (SDV-FH□T).
- Select either AC or DC voltage input.
- Polarity can be specified (SDV-FL) to enable easy reverse current detection.
- Selectable reset value range from 2% to 30% of operating value (SDV-F).
- LED operation indicator.
- UL, CSA (SDV-F), and RCM approval.

For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

Model Number Structure

■ Model Number Legend

SDV-□□□□□
1 2 3 4 5 6

1. Voltage Sensor

2. Operation

F: Single-function (overvoltage or undervoltage detection)
D: Dual-function (overvoltage and undervoltage detection)

3. Operating Voltage Range

L: 4 to 240 mV (DC input only) (For SDV-F only)
M: 0.2 to 12 V (AC or DC input)
H: 10 to 300 V (AC or DC input)

4, 5. Control Power Supply Voltage

2: 24 VDC
3: 48 VDC
4: 100/110 VDC
5: 125 VDC
51: 200/220 VDC (Single-function models)
6: 100/110 VAC
61: 120 VAC (Single-function models)
7: 200/220 VAC
71: 240 VAC (Single-function models)

6. Timing Function (SDV-FH Only (See Note))

None: Not provided
T: Provided

Note: SDV-FL and SDV-FM models can also be equipped with the timing function as a special specification. Ask your OMRON representative for details.

Note: Not possible for the SDV equipped with the timing function (SDV-FH□T).

SDV-SH □□□□ (Order Separately)

1 2 3 4 5

1. Shunt (For SDV-FL Only)

2, 3, 4, 5. Rated Current

Available Models

Rated current	Rated voltage	Model	Rated current	Rated voltage	Model
5 A	60 mV	SDV-SH5	75 A	60 mV	SDV-SH75
7.5 A		SDV-SH7.5	100 A		SDV-SH100
7.5 A	100 mV	SDV-SH7.5 100MV	150 A		SDV-SH150
10 A	60 mV	SDV-SH10	200 A		SDV-SH200
15 A		SDV-SH15	300 A		SDV-SH300
20 A		SDV-SH20	500 A		SDV-SH500
30 A		SDV-SH30	750 A		SDV-SH750
50 A		SDV-SH50	1,000 A		SDV-SH1000

Note: All the above listed shunts have an accuracy in the 1.0 class.

Connecting Socket (Order Separately)

Applicable models	Socket	
	Type	Model
SDV-F□□/-FH□T	Front Connecting Socket	8PFA1
	Back Connecting Socket	PL08
SDV-D□□	Front Connecting Socket	14PFA
	Back Connecting Socket	PL15

Ordering Information

Single-function Models

Overvoltage or Undervoltage Detection (Switch Selectable)

Control power supply voltage	Input		
	DC	DC or AC (selectable)	
	Input voltage range		
	4 to 240 mV	0.2 to 12 V	10 to 300 V
24 VDC	SDV-FL2	SDV-FM2	SDV-FH2
48 VDC	SDV-FL3	SDV-FM3	SDV-FH3
100/110 VDC	SDV-FL4	SDV-FM4	SDV-FH4
125 VDC	SDV-FL5	SDV-FM5	SDV-FH5
200/220 VDC	---	---	SDV-FH51
100/110 VAC	SDV-FL6	SDV-FM6	SDV-FH6
120 VAC	---	---	SDV-FH61
200/220 VAC	SDV-FL7	SDV-FM7	SDV-FH7
240 VAC	---	---	SDV-FH71

Dual-function Models

Overvoltage and Undervoltage Detection

Control power supply voltage	Input: DC or AC (selectable)	
	Input voltage range	
	0.2 to 12 V	10 to 300 V
24 VDC	SDV-DM2	SDV-DH2
48 VDC	SDV-DM3	SDV-DH3
100/110 VDC	SDV-DM4	SDV-DH4
125 VDC	SDV-DM5	SDV-DH5
100/110 VAC	SDV-DM6	SDV-DH6
200/220 VAC	SDV-DM7	SDV-DH7
240 VAC	SDV-DM71	SDV-DH71

Note: 1. Inquire about production of models with 120- and 240-VAC control power supply.

2. Inquire about models with special processing for high-temperature, high-humidity applications.

3. The ripple factor must be 5% or less for DC power supplies.

Single-function Models with Timing Function

Control power supply voltage	Input: DC or AC (selectable); input voltage range: 10 to 300 V		
	Operating mode		
	ON-delay	OFF-delay	Startup lock
24 VDC	SDV-FH2T		
48 VDC	SDV-FH3T		
100/110 VDC	SDV-FH4T		
125 VDC	SDV-FH5T		
200/220 VDC	SDV-FH51T		
100/110 VAC	SDV-FH6T		
120 VAC	SDV-FH61T		
200/220 VAC	SDV-FH7T		
240 VAC	SDV-FH71T		

Note: Only SDV-FH voltage sensors can be manufactured with a timer.

Specifications

Single-function Models

Overvoltage or Undervoltage Detection (Switch Selectable)

Model	Input voltage	Selectable operating range	Selectable reset value range	Control power supply
SDV-FL□	DC	4 to 240 mV (4 to 12 mV, 10 to 30 mV, 20 to 60 mV, 40 to 120 mV, 80 to 240 mV)	2% to 30% (related to operating value)	24, 48, 100/110, 125, 200/220 VDC (see note); 100/110, 200/220/240 VAC (50/60 Hz)
SDV-FM□	DC or AC (selectable)	0.2 to 12 V (0.2 to 0.6 V, 0.5 to 1.5 V, 1 to 3 V, 2 to 6 V, 4 to 12 V)		
SDV-FH□ SDV-FH□T		10 to 300 V (10 to 30 V, 25 to 75 V, 50 to 150 V, 100 to 300 V)		

Note: Ripple is 5% max. with DC power supplies.

Dual-function Models

Overvoltage and Undervoltage Detection

Model	Input voltage	Selectable operating range			Reset value	Control power supply
		Intermediate voltage of dead band		Dead band voltage		
SDV-DM□	DC or AC (selectable)	0.2 to 12 V	0.2 to 0.6 V	0.02 to 0.1 V	Overvoltage: (Intermediate voltage of dead band + dead band voltage) – (dead band voltage x 2/3) min. Undervoltage: (Intermediate voltage of dead band – dead band voltage) + (dead band voltage x 2/3) max.	24, 48, 100/110, 125 VDC; 100/110, 200/220/240 VAC (50/60 Hz)
			0.5 to 1.5 V	0.05 to 0.25 V		
			1 to 3 V	0.1 to 0.5 V		
			2 to 6 V	0.2 to 1 V		
			4 to 12 V	0.4 to 2 V		
SDV-DH□		10 to 300 V	10 to 30 V	1 to 5 V		
			25 to 75 V	2.5 to 12.5 V		
			50 to 150 V	5 to 25 V		
			100 to 300 V	10 to 50 V		

Note: 1. Inquire about production of models with 120- and 240-VAC control power supply.

2. The ripple factor must be 5% or less for DC power supplies.