

# Level Sensors Amplifier, Capacitive Types SV 150/250, SV 160/260

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SV 150/250



SV 160/260

- Level control for solid, fluid, or granulated substances
- SV 150/250: Max./min. control of DISCHARGING
- SV 160/260: Max./min. control of CHARGING
- Factory-set sensitivity
- For capacitive sensors VR.. and VRY..
- 10 A SPDT or 8 A DPDT output relay
- LED-indication: SV 150/250: Power supply and relay ON
- SV 160/260: Relay ON
- AC or DC power supply

## Product Description

Level control relays for capacitive sensors, types VR and VRY. The relays can control one or two levels of charging (SV 160/260) or discharging (SV 150/250).

## Ordering Key

**SV 150 024**

Housing \_\_\_\_\_  
Output \_\_\_\_\_  
Power supply \_\_\_\_\_

## Type Selection

Plug	Output	Function	Supply: 24 VAC	Supply: 115 VAC	Supply: 230 VAC	Supply: 24 VDC
Circular	SPDT	Discharging	SV 150 024	SV 150 115	SV 150 230	SV 150 724
	DPDT	Discharging	SV 250 024	SV 250 115	SV 250 230	SV 250 724
	SPDT	Charging	SV 160 024	SV 160 115	SV 160 230	SV 160 724
	DPDT	Charging	SV 260 024	SV 260 115	SV 260 230	SV 260 724

## Input Specifications

<b>Sensitivity</b>	depends on sensor type and material
<b>Sensor voltage</b>	max. 24 VDC terminal 6 is negative
<b>Sensor current</b>	Activated: min. 15 mA, max. 20 mA Not activated: max. < 5 mA
<b>Sensor short-circuit current</b>	max. 45 mA

## General Specifications

<b>Indication for</b> Output ON Power supply	LED, red LED, green (only SV 150/250)
<b>Environment</b> Degree of protection Pollution degree Operating temperature Storage temperature	IP 20 B 3 (IEC 60664) -20° to +50°C (-4° to +122°F) -50° to +85°C (-58° to +185°F)
<b>Approvals</b> <b>CE-marking</b>	UL, CSA Yes

## Supply Specifications

<b>Power supply AC-types</b> Rated operational voltage through pin 2 & 10	230 115 024	Overvoltage cat. II (IEC 60664) 230 VAC ± 15% 115 VAC ± 15% 24 VAC ± 15% ≥ 2.0 kVAC (rms)
Rated insulation voltage Rated impulse withstand voltage		4 kV (1.2/50 µs) (line/neutral)
<b>Power supply DC-types</b> Rated operational voltage Rated insulation voltage Rated transient protection volt.	724	Installation cat. II (IEC 60664) 24 VDC ±15% (pin 2 pos.) None 800 V (1.2/50 µs)



Output Specifications

			SV150/SV160	SV250/SV260
<b>Output</b>			SPDT relay	DPDT relay
Rated insulation voltage			250 VAC (rms) (cont./elec.)	250 VAC (rms) (Cont./elec., cont./cont.)
<b>Contact ratings</b> (Ag-CdO)			μ (micro gap)	μ (micro gap)
Resistive loads	AC 1		10 A/250 VAC (2500 VAC)	8 A/250 VAC (200 VA)
	DC 1		1 A/250 VAC (250 W)	0,4 A/250 VDC (100 W)
Small inductive loads		or	10 A/25 VDC (250 W)	4 A/25 VDC (100 W)
	AC 15		2.5 A/230 VAC	2.5 A/230 VAC
	DC 13		5 A/24 VDC	5 A/24 VDC
<b>Mechanical life</b>			≥ 5 x 10 <sup>7</sup> operations	≥ 5 x 10 <sup>7</sup> operations
<b>Electrical life</b>			≥10 <sup>5</sup> operations	≥10 <sup>5</sup> operations
<b>Operation frequency</b>			≤ 7200 operations/h	≤ 7200 operations/h
<b>Insulation voltages</b>				
Rated insulation voltage	AC		≥ 2.0 kVAC (rms) (cont./elect.)	≥ 2.0 kVAC (rms) (cont./elect.)
	DC		None	None
Rated impulse withstand voltage	AC		4 kV (1.2/50 μs) (cont./elect.) (IEC 60664)	4 kV (1.2/50 μs) (cont./elect.) (IEC 60664)
	DC		800 V	800 V

Mode of Operation

Max. and/or min. control of solid, fluid or granulated substances, e.g. sand, gravel, sugar or chemicals.

SV 150/250: Relay control of DISCHARGING

SV 160/260: Relay control of CHARGING

**Example 1**  
The diagram shows the level control connected as max. and min. control, i.e. registration of 2 levels during charging (discharging).

The relay releases (operates) when the max. sensor is in contact with the substance,

provided that the min. sensor is immersed. The relay operates (releases) when the min. sensor is no longer in contact with the substance.

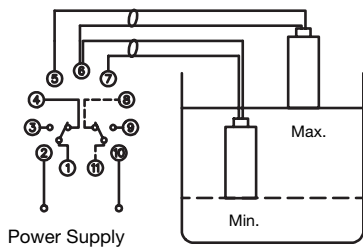
**Example 1**  
The diagram shows the level control connected as max. or min. control, i.e. registration

of 1 level during charging (discharging).

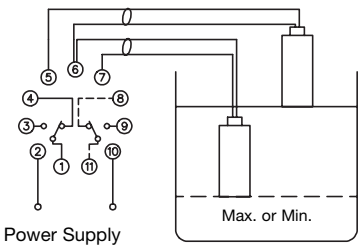
The relay releases (operates) when the sensor is in contact with the substance.

Wiring Diagrams

Example 1: Two levels max./min.



Example 2: One level

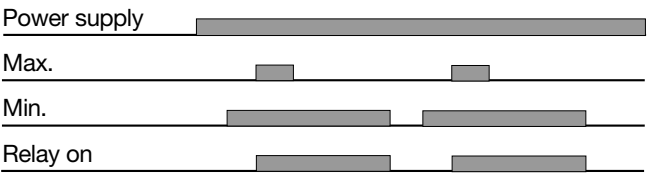




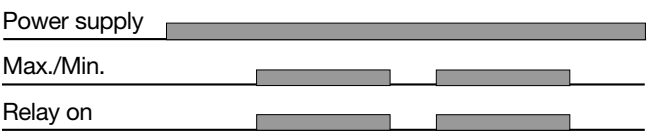
Operation Diagrams

SV 150/250 DISCHARGING

Example 1

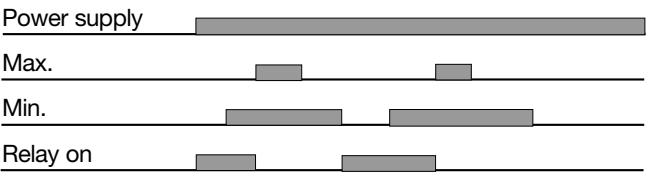


Example 2

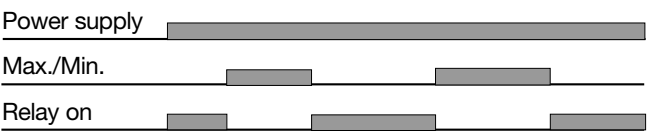


SV 160/260 CHARGING

Example 1



Example 2



Accessories

Sensors: Types VR and VRY

- Bases
- Hold down spring
- Base covers
- Front mounting bezel
- Optical: VP
- Capacitive: DR, EC