

# MAGNETIC PROXIMITY SWITCHES

## SERIES CSV

Reed Contact  
Magneto-resistive - Hall effect



The Mod. CSV magnetic proximity switches, with 2- or 3-wire cable for V-slot, detect the position of the magnetic piston in compatible cylinders.

When actuated by the magnetic field generated by the piston magnet, they open or close the electrical circuit and provide an output signal to actuate directly a solenoid valve or a PLC.

An LED diode indicates sensor switching, facilitating functional checks and on-machine diagnostics.

Mounting in the integrated cylinder slot, or by means of dedicated adapters, allows quick adjustment of the detection point and reliable position feedback.

### General Data

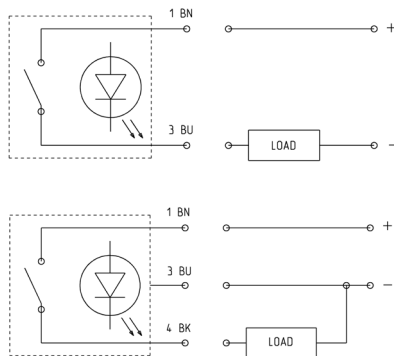
<b>Operation</b>	Reed contact Magneto-resistive
<b>Output</b>	Static or electronic PNP
<b>Contact in Reed switches</b>	Normally Open (NO)
<b>Voltage output</b>	10 ÷ 110 V AC/DC-230 V AC (CSV-220..) 10 ÷ 110 V AC/DC (CSV-250N..) 5 ÷ 30 V AC/DC (CSV-232..CSV-262..) 10 ÷ 27 V DC (CSV-352..CSV-362..)
<b>Max. current</b>	250 mA ( Reed ) - 100 mA ( Magneto-resistive )
<b>Max. load</b>	8 W - 10 VA ( Reed ) - 6 W ( Magneto-resistive )
<b>Protection class</b>	IP67
<b>Materials</b>	Plastic body encapsulating epoxy resin Cable in PU
<b>Mounting</b>	Directly into the groove or by means of adapters directly into the groove
<b>Signalling</b>	Signalling by means of a yellow diode Led
<b>Protection</b>	See the characteristics of each model
<b>Switching time</b>	<1,8 ms (Reed); <1 ms (Magneto-resistive - Hall effect)
<b>Operating temperature [°C]</b>	-10°C + 80°C
<b>Electrical duration</b>	10.000.000 cycles (Reed); 1.000.000.000 cycles (Magneto-resistive)
<b>Electrical connection</b>	With a 2-wire cable, section 2x0.14, 2m (standard), high flexibility; With a 3-wire cable, section 3x0.14, 2m (standard), high flexibility; With a M8 connector and cable of 0.3 m

**MAGNETIC PROXIMITY SWITCHES**  
**SERIES CSV - CODING EXAMPLES**
**Coding Example**

<b>CS</b>	<b>V</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>N</b>	<b>5</b>	<b>EX</b>
<b>CS</b>	SERIES						
<b>V</b>	TYPE OF SLOT: V = V-slot						
<b>2</b>	OPERATION: 2 = Reed NO 3 = Magnetoresistive						
<b>2</b>	CONNECTIONS: 2 = 2 wires (Reed only) 3 = 3 wires 5 = 2 wires with M8 connector (Reed only) 6 = 3 wires with M8 connector						
<b>0</b>	POWER SUPPLY VOLTAGE: 0 = 10 ÷ 110 V DC; 10 ÷ 230 V AC (PNP) 2 = 5 ÷ 30 V AC/DC (Reed) 10 = 27 V DC (Magnetoresistive)						
<b>N</b>	NOTE (CSV-250N only): N = according to norm						
<b>5</b>	LENGTH OF THE CABLE: = 2m 5 = 5m						
<b>EX</b>	CERTIFICATION = No certification EX = ATEX						

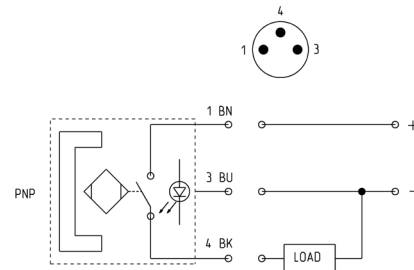
## Switches electrical connections

### Reed switches



**Legend:**  
 BN = brown  
 BU = blue  
 BK = black

### Magnetoiresistive



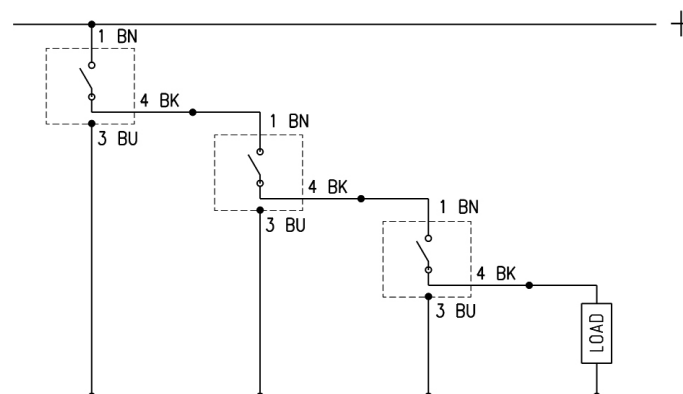
**Legend:**  
 BN = brown  
 BU = blue  
 BK = black

## Connecting schemes in series

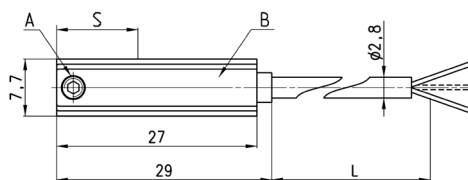
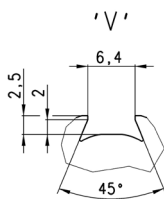
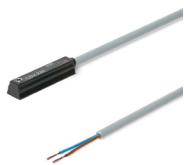
The 3-wire version of the Reed sensors has been designed to allow the connection of several sensors in series, as there is no voltage drop between the supply and the load.

See connecting scheme.

The voltage drop is 2.8V for the 2-wire Reed sensors and 1.0V for 3-wire Magnetoiresistive and Hall effect sensors.



**Legend:**  
 BN = Brown  
 BU = Blue  
 BK = Black

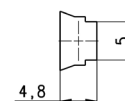
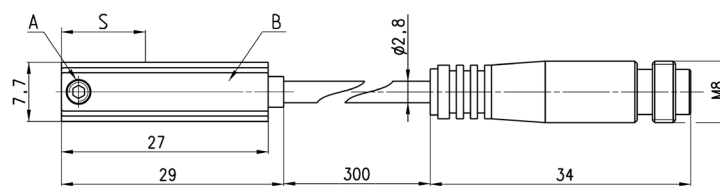
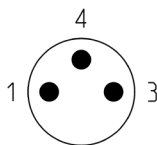
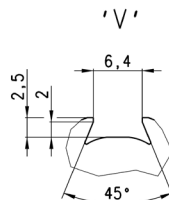
**MAGNETIC PROXIMITY SWITCHES**  
**SERIES CSV - DIMENSIONS**
**Magnetic proximity switches with 2 or 3 wire cable for V-slot**


A = Fixing screw  
 B = Led indicator  
 S = Sensing point  
 L = Length cable

Mod.	Operation	Connections	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CSV-220*	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	2 m	14,5 mm	Yellow
CSV-220-5	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	5 m	14,5 mm	Yellow
CSV-220-5EX	Reed	2 wires	10 ÷ 110 V AC/DC-230 V AC	-	250 mA	10 VA / 8 W	None	5 m	14,5 mm	Yellow
CSV-232	Reed	3 wires	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	2 m	14,5 mm	Yellow
CSV-332	Magneto resistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	2 m	7,5 mm	Yellow
CSV-332-5	Magneto resistive	3 wires	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	5 m	7,5 mm	Yellow

\*Mod. CSV-220:

In case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

**Magnetic proximity switches with M8 3-pin connector for V-slot**


A = Fixing screw  
 B = Led indicator  
 S = Sensing point  
 L = Length cable

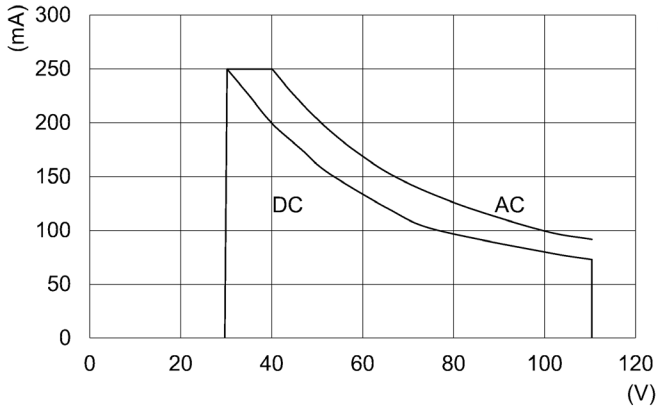
Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CSV-250N*	Reed	2 wires M8 male 3 pin	10 ÷ 110 V AC/DC	-	250 mA	10 VA / 8 W	None	0,3 m	14,5 mm	Yellow
CSV-262	Reed	3 wires M8 male 3 pin	5 ÷ 30 V AC/DC	PNP	250 mA	10 VA / 8 W	Against polarity reversing	0,3 m	14,5 mm	Yellow
CSV-362	Magneto resistive	3 wires M8 male 3 pin	10 ÷ 27 V DC	PNP	100 mA	6 W	Against polarity reversing and overvoltage	0,3 m	7,5 mm	Yellow

\*Mod. CSV-250N:

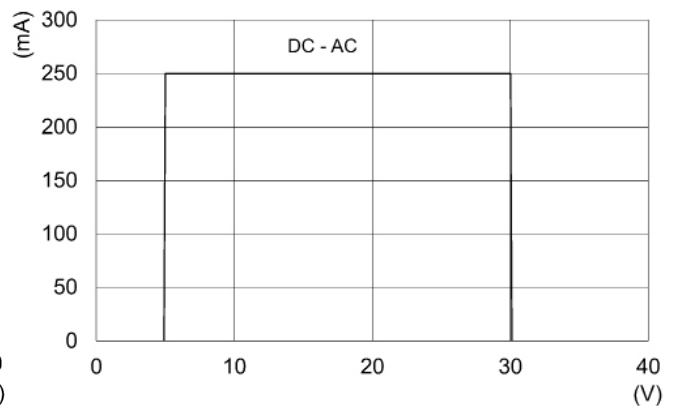
In case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

**Load curves of sensors Mod. CSV**

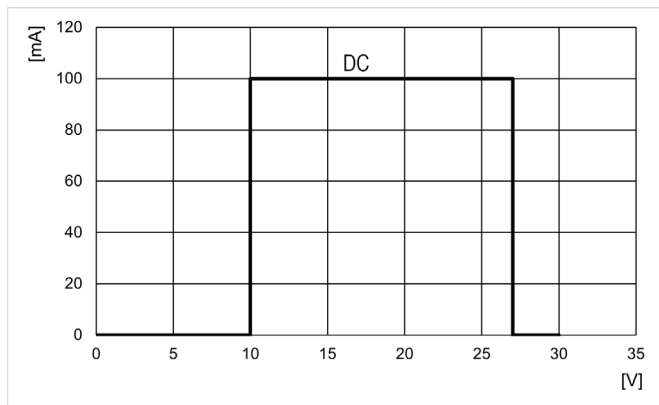
**CSV-250N**



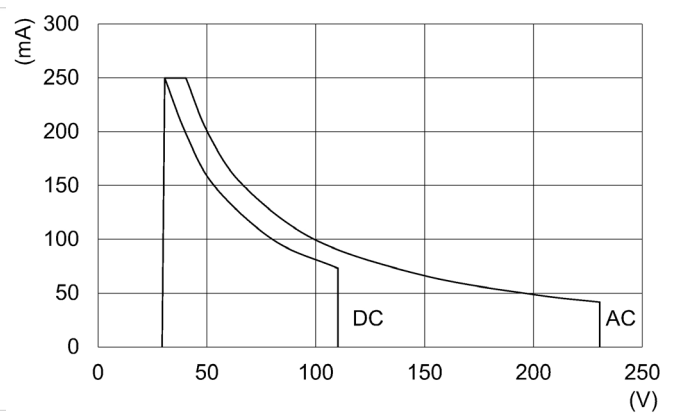
**CSV-232, CSV-262**



**CSV-332, CSV-362**



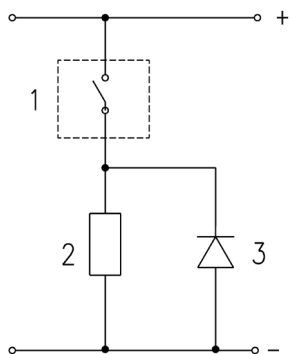
**CSV-220**



## Electric circuit with protection against voltage spikes

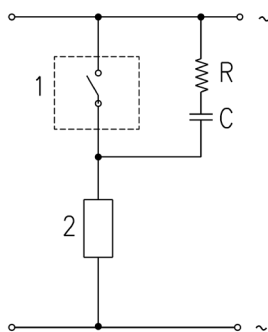
There is no protection on the Reed sensors on the inductive load, therefore it is advisable to use an electric circuit with protection against the voltage spikes.  
See picture for a typical example.

### DC applications



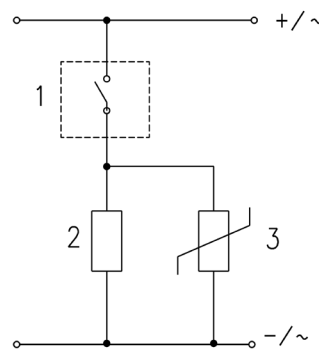
Legend:  
 1 = Sensor  
 2 = Load  
 3 = Protection diode

### AC applications



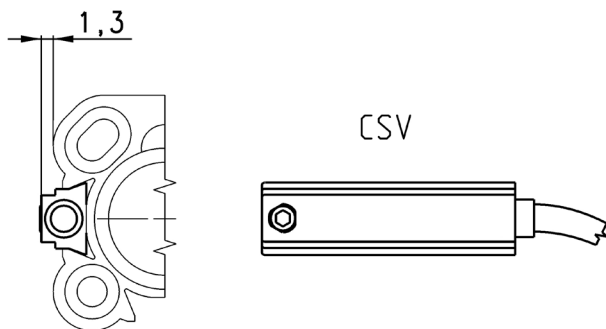
Legend:  
 1 = Sensor  
 2 = Load  
 C + R = Series of resistor and protection capacitor

### DC and AC applications



Legend:  
 1 = Sensor  
 2 = Load  
 3 = Protection varistor

## Mounting of Series CSV sensors



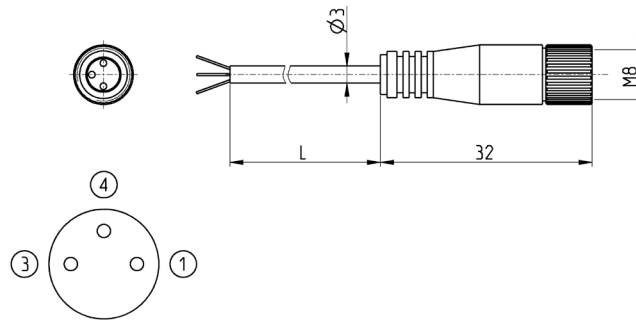
CSV sensors must be assembled directly into the groove of cylinders:

- Series 50  $\varnothing$  16 ÷ 25
- Series QP - QPR  $\varnothing$  12 ÷ 16

### 3-wire extension with M8 3-pin female connector



With PU sheathing, non shielded cable.  
Protection class: IP65



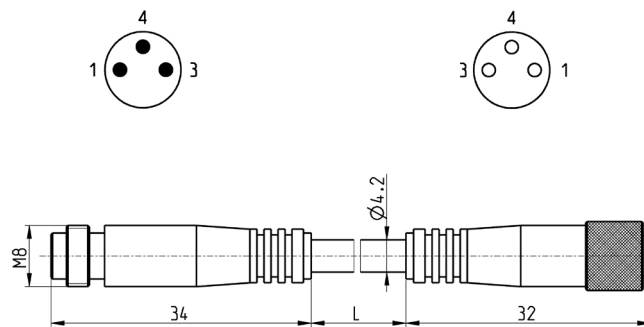
1 BN = Brown +/-  
4 BK = Black +/-  
3 BU = Blue NC

Mod.	Cable length [mm]
CS-2	2
CS-5	5
CS-10	10

### Extension with M8 connector, 3 pin male/female (Non shielded)



Non shielded  
General Purpose Input/  
Output (GPIO)



Mod.	Description	Type of connector	Connection	L (cable length) [m]
CS-DW03HB-C250	Moulded cable	Straight	M8 3 pin male / female	2,5
CS-DW03HB-C500	Moulded cable	Straight	M8 3 pin male / female	5