MAGNETIC PROXIMITY SWITCHES
SERIES CSG

Reed Contact
Magnetoresistive

The Mod. CSG magnetic proximity switch, available in Reed or Magnetoresistive versions, is used on cylinders with T-slot to detect the piston position inside the actuator.
When actuated by the magnetic field generated by the piston magnet, it switches the electrical circuit and provides an output signal for direct interfacing with a solenoid valve or a PLC.

An LED indicates sensor switching, facilitating functional checks and on-machine diagnostics.
Its integration into the actuator profile, together with top mounting and the new fixing system, ensures neat installation and reliable position feedback; ATEX and UL versions are also available

General Data

Operation	Reed contact Magnetoresistive
Output	Static or electronic PNP and NPN
Contact in Reed switches	Normally Open (NO)
Voltage output	10 ÷ 30 V AC/DC (CSG-233..CSG-263..) 10 ÷ 28 V DC (CSG-324..CSG-334..CSG-534..CSG-734..CSG-634..CSG-354..CSG-364..CSG-564) 5 ÷ 240 V AC/DC (CSG-220..CSG-253..) 5 ÷ 30 V AC/DC (CSG-223..)
Max. current	500 mA (CSG-233..CSG-263..) 200 mA (CSG-334..CSG-534..CSG-734..CSG-634..CSG-364..CSG-564..) 100 mA (CSG-223..CSG-220..CSG-253..CSG-233..CSG-334..CSG-534..) 60 mA (CSG-223..) 50 mA (CSG-324..CSG-354..) 40 mA (CSG-324..)
Max. load	10 W (CSG-233..CSG-220..CSG-253..CSG-263..) 5,5 W (CSG-334..CSG-534..CSG-734..CSG-634..CSG-564..) 3 W (CSG-223..CSG-233..CSG-334..CSG-534..) 1,8 W (CSG-223..) 1,5 W (CSG-324..CSG-324..CSG-354) 1,2 W (CSG-324..)
Protection class	IP67
Materials	Plastic body encapsulating epoxy resin; Cable in PU
Mounting	Directly into the groove or by means of adapters directly into the groove
Signalling	By means of a LED (colours are indicated in the code tables)
Protection	Never exceed the maximum voltages and currents
Switching time	<5 ms (Reed); <1 ms (Magnetoresistive)
Operating temperature [°C]	-10°C ÷ 70°C (-10°C ÷ 60°C only for Reed version, 2 wires UL)
Electrical connection	With a 2-wire cable, external section 2,8 x 2 wires PU; With a 3-wire cable, external section 2,8 x 3 wires PU

MAGNETIC PROXIMITY SWITCHES
SERIES CSG - CODING EXAMPLES

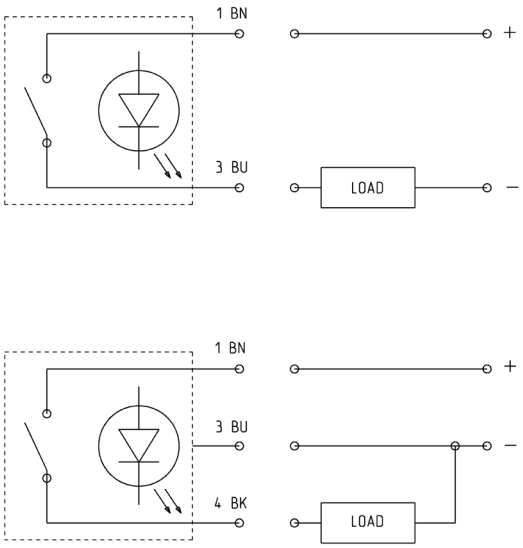
Coding Example

CS	G	2	2	3	2	UL

CS	SERIES
G	TYPE OF SLOT G = T-slot
2	OPERATION 2 = Reed Normally Open 3 = Magnetoresistive PNP 5 = Magnetoresistive NPN 6 = Magnetoresistive PNP Normally Closed 7 = Magnetoresistive NPN Normally Closed
2	CONNECTIONS: 2 = 2 wires (Reed only) 3 = 3 wires 5 = 2 wires with M8 connector (Reed only) 6 = 3 wires with M8 connector
3	POWER SUPPLY VOLTAGE 3 = 5/10 ÷ 30 V AC/DC (PNP) 4 = 10 ÷ 28 V DC (PNP)
2	LENGTH OF THE CABLE 2 = 2m 5 = 5m 10 = 10 m
UL	CERTIFICATION = No certification EX = ATEX certification UL = UL certification

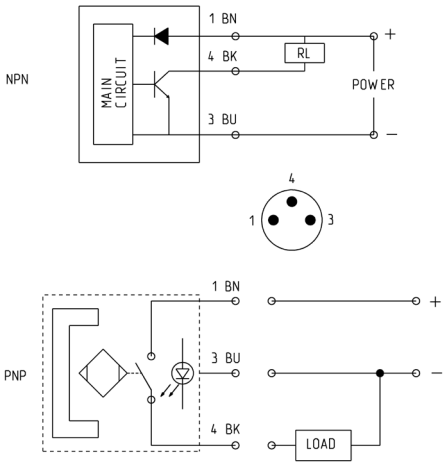
Switches electrical connections

Reed switches



Legend:
BN = brown
BU = blue
BK = black

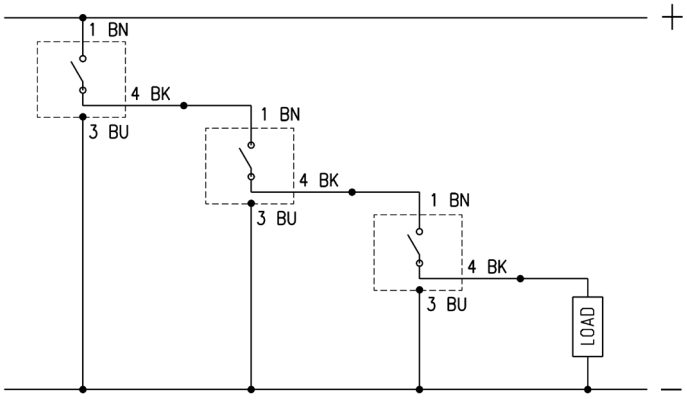
Magnetoresistive and Hall effect switches



Legend:
BN = brown
BU = blue
BK = black

Connecting schemes in series

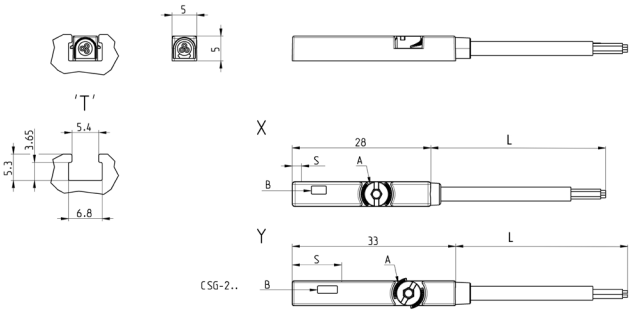
The 3-wire version of the Reed sensors has been designed to allow the connection of several sensors in series, as there is no voltage drop between the supply and the load.
See connecting scheme.
The voltage drop is 2.8V for the 2-wire Reed sensors and 1.0V for 3-wire Magnetoresistive and Hall effect sensors.



Legend:
BN = Brown
BU = Blue
BK = Black

MAGNETIC PROXIMITY SWITCHES
SERIES CSG - DIMENSIONS

Magnetic proximity switches, ATEX "II 3 GD" certified, T-slot, straight



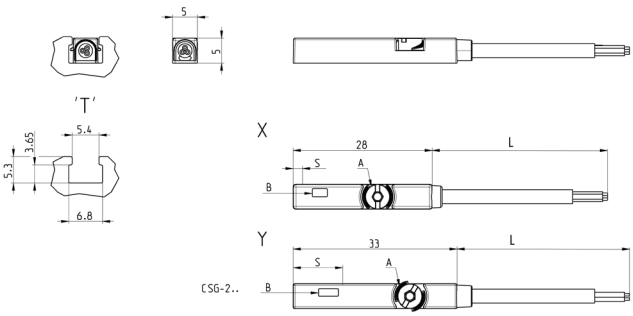
Top mounting with the new fixing system

X = Magnetoresistive version
Y = Reed version
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
CSG-223-2-EX*	Reed NO	2 wires	5 ÷ 30 V AC/DC	-	100 mA	3 W	IP67	2 m	10 mm	Red
CSG-223-5-EX*	Reed NO	2 wires	5 ÷ 30 V AC/DC	-	100 mA	3 W	IP67	5 m	10 mm	Red
CSG-233-2-EX	Reed NO	3 wires	10 ÷ 30 V AC/DC	PNP	500 mA	10 W	IP67	2 m	10 mm	Yellow
CSG-233-5-EX	Reed NO	3 wires	10 ÷ 30 V AC/DC	PNP	500 mA	10 W	IP67	5 m	10 mm	Yellow
CSG-324-2-EX*	Magnetoresistive NO	2 wires	10 ÷ 28 V DC	-	50 mA	1,5 W	IP67	2 m	2,3 mm	Red
CSG-324-5-EX*	Magnetoresistive NO	2 wires	10 ÷ 28 V DC	-	50 mA	1,5 W	IP67	5 m	2,3 mm	Red
CSG-334-2-EX	Magnetoresistive NO	3 wires	10 ÷ 28 V DC	PNP	200 mA	5,5 W	IP67	2 m	2,3 mm	Yellow
CSG-334-5-EX	Magnetoresistive NO	3 wires	10 ÷ 28 V DC	PNP	200 mA	5,5 W	IP67	5 m	2,3 mm	Yellow
CSG-534-2-EX	Magnetoresistive NO	3 wires	10 ÷ 28 V DC	NPN	200 mA	5,5 W	IP67	2 m	2,3 mm	Red
CSG-534-5-EX	Magnetoresistive NO	3 wires	10 ÷ 28 V DC	NPN	200 mA	5,5 W	IP67	5 m	2,3 mm	Red
CSG-734-2-EX	Magnetoresistive NC	3 wires	10 ÷ 28 V DC	NPN	200 mA	5,5 W	IP67	2 m	2,3 mm	Red
CSG-734-5-EX	Magnetoresistive NC	3 wires	10 ÷ 28 V DC	NPN	200 mA	5,5 W	IP67	5 m	2,3 mm	Red
CSG-634-2-EX	Magnetoresistive NC	3 wires	10 ÷ 28 V DC	PNP	200 mA	5,5 W	IP67	2 m	2,3 mm	Yellow
CSG-634-5-EX	Magnetoresistive NC	3 wires	10 ÷ 28 V DC	PNP	200 mA	5,5 W	IP67	5 m	2,3 mm	Yellow

*Mod. CSG-223-2-EX, CSG-223-5-EX, CSG-324-2-EX, CSG-324-5-EX:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Magnetic proximity switches T-slot, straight



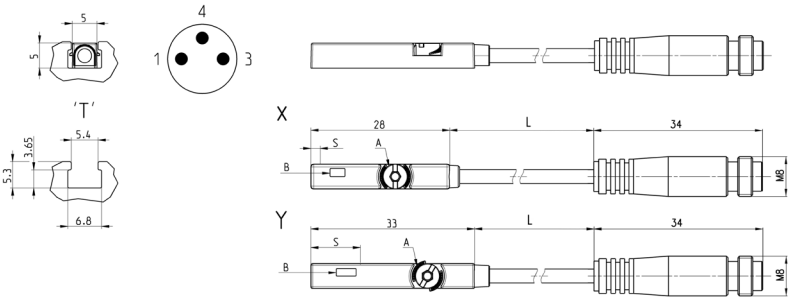
Top mounting with the new fixing system

X = Magnetoresistive version
Y = Reed version
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
CSG-220-2*	Reed	2 wires	5 ÷ 240 V AC/DC	-	100 Ma	10 W	IP67	2 m	10 mm	Red
CSG-220-5*	Reed	2 wires	5 ÷ 240 V AC/DC	-	100 mA	10 W	IP67	5 m	10 mm	Red
CSG-233-2	Reed	3 wires	10 ÷ 30 V AC/DC	PNP	500mA	10 W	IP67	2 m	10 mm	Yellow
CSG-233-5	Reed	3 wires	10 ÷ 30 V AC/DC	PNP	500mA	10 W	IP67	5 m	10 mm	Yellow
CSG-324-2*	Magnetoresistive	2 wires	10 ÷ 28 V DC	-	50mA	1,5 W	IP67	2 m	2,3 mm	Red
CSG-324-5*	Magnetoresistive	2 wires	10 ÷ 28 V DC	-	50mA	1,5 W	IP67	5 m	2,3 mm	Red
CSG-334-2	Magnetoresistive	3 wires	10 ÷ 28 V DC	PNP	200mA	5,5 W	IP67	2 m	2,3 mm	Yellow
CSG-334-5	Magnetoresistive	3 wires	10 ÷ 28 V DC	PNP	200mA	5,5 W	IP67	5 m	2,3 mm	Yellow
CSG-534-2	Magnetoresistive	3 wires	10 ÷ 28 V DC	NPN	200mA	5,5 W	IP67	2 m	2,3 mm	Red
CSG-534-5	Magnetoresistive	3 wires	10 ÷ 28 V DC	NPN	200mA	5,5 W	IP67	5 m	2,3 mm	Red

* Mod.CSG-220-2, CSG-220-5, CSG-324-2, CSG-324-2:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Magnetic proximity switches T-slot, straight M8

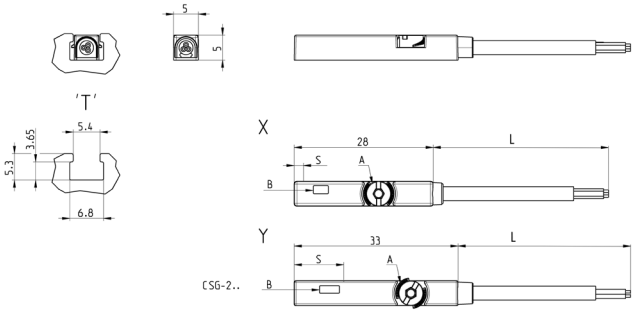


Top mounting with the new fixing system

X = Magnetoresistive version
Y = Reed version
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
CSG-253*	Reed	2 wires with connector M8	5 ÷ 240 V AC/DC	-	100 mA	10 W	IP67	0,3 m	10 mm	Red
CSG-263	Reed	3 wires with connector M8	10 ÷ 30 V AC/DC	-	500 mA	10 W	IP67	0,3 m	10 mm	Yellow
CSG-354*	Magnetoresistive	2 wires with connector M8	10 ÷ 28 V DC	-	50 mA	1,5 W	IP67	0,3 m	2,3 mm	Red
CSG-364	Magnetoresistive	3 wires with connector M8	10 ÷ 28 V DC	PNP	200 mA	5,5 W	IP67	0,3 m	2,3 mm	Yellow
CSG-564	Magnetoresistive	3 wires with connector M8	10 ÷ 28 V DC	NPN	200 mA	5,5 W	IP67	0,3 m	2,3 mm	Red

Magnetic proximity switches, UL certified, T-slot, straight



Top mounting with the new fixing system

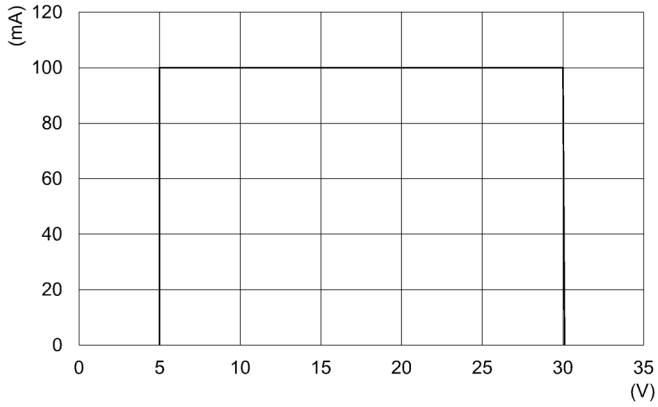
X = Magnetoresistive version
Y = Reed version
A = Fixing screw
B = Led indicator
S = Sensing point
L = Length cable

Mod.	Operation	Connection	Voltage	Output	Max. current	Max Load	Protection	L	S	LED colour
CSG-223-2-UL*	Reed	2 wires	5 ÷ 30 V AC/DC	-	60 mA	1,8 W	IP67	2 m	10 mm	Red
CSG-223-5-UL*	Reed	2 wires	5 ÷ 30 V AC/DC	-	60 mA	1,8 W	IP67	5 m	10 mm	Red
CSG-223-10-UL	Reed	2 wires	5 ÷ 30 V AC/DC	-	60 mA	1,8 W	IP67	10 m	10 mm	Red
CSG-233-2-UL	Reed	3 wires	10 ÷ 30 V AC/DC	PNP	100 mA	3 W	IP67	2 m	10 mm	Yellow
CSG-233-5-UL	Reed	3 wires	10 ÷ 30 V AC/DC	PNP	100 mA	3 W	IP67	5 m	10 mm	Yellow
CSG-233-10-UL	Reed	3 wires	10 ÷ 30 V AC/DC	PNP	100 mA	3 W	IP67	5 m	10 mm	Yellow
CSG-324-2-UL*	Magnetoresistive	2 wires	10 ÷ 28 V DC	-	40 mA	1,2 W	IP67	2 m	2,3 mm	Red
CSG-324-5-UL*	Magnetoresistive	2 wires	10 ÷ 28 V DC	-	40 mA	1,2 W	IP67	5 m	2,3 mm	Red
CSG-334-2-UL	Magnetoresistive	3 wires	10 ÷ 28 V DC	PNP	100 mA	3 W	IP67	2 m	2,3 mm	Yellow
CSG-334-5-UL	Magnetoresistive	3 wires	10 ÷ 28 V DC	PNP	100 mA	3 W	IP67	5 m	2,3 mm	Yellow
CSG-534-2-UL	Magnetoresistive	3 wires	10 ÷ 28 V DC	NPN	100 mA	3 W	IP67	2 m	2,3 mm	Red
CSG-534-5-UL	Magnetoresistive	3 wires	10 ÷ 28 V DC	NPN	100 mA	3 W	IP67	5 m	2,3 mm	Red

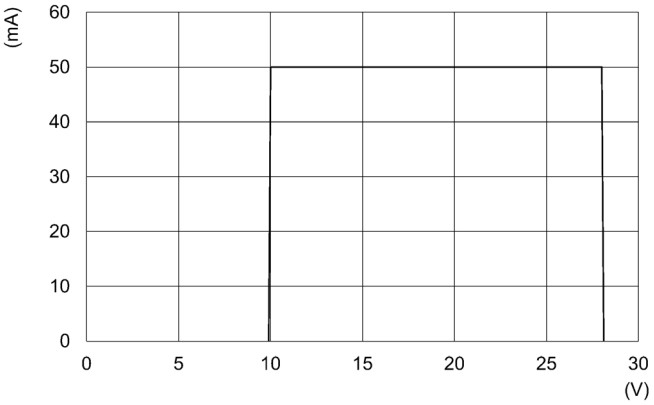
*Mod. CSG-223-2-UL, CSG-223-5-UL, CSG-324-2-UL, CSG-324-5-UL:
in case of polarity reversing the sensor will still be operating, but the LED diode won't turn on.

Load curves of sensors Mod. CSG

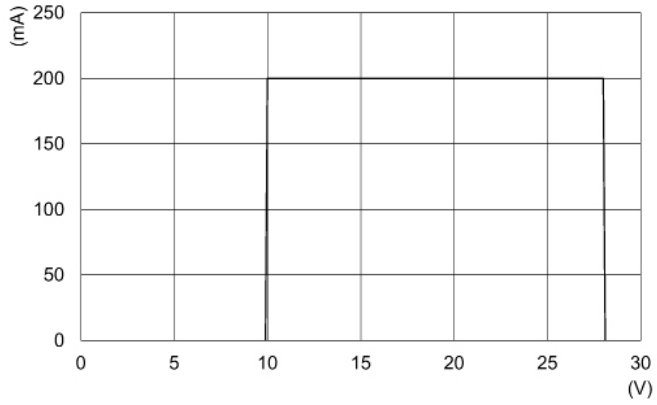
CSG-223-EX



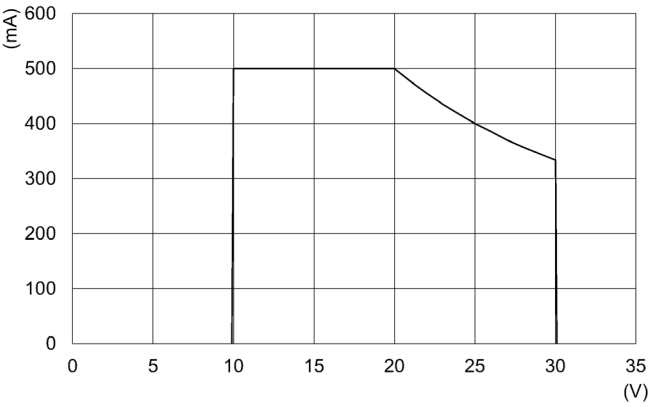
CSG-324-EX



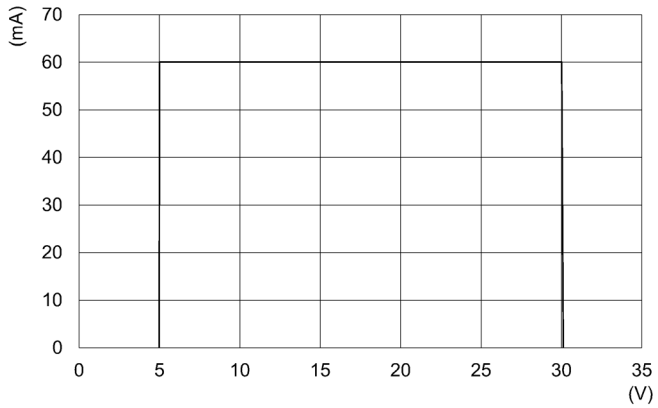
CSG-334-EX, CSG-534-EX, CSG-634-EX, CSG-734-EX



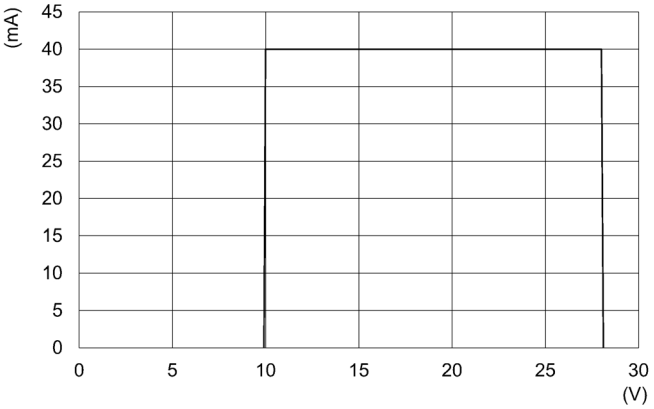
CSG-233-EX



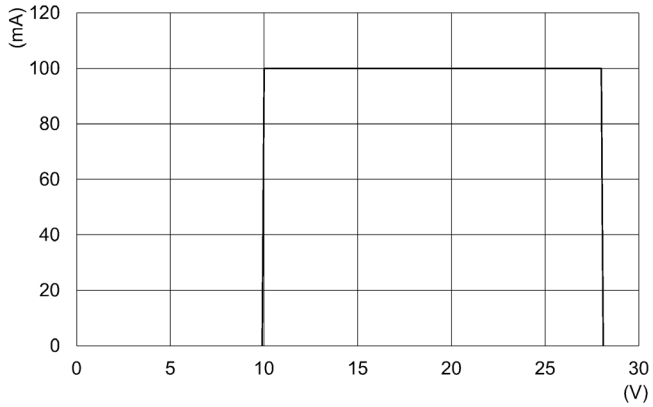
CSG-223-UL



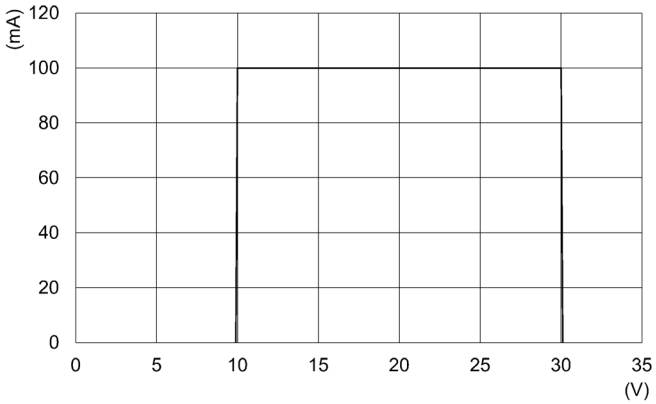
CSG-324-UL



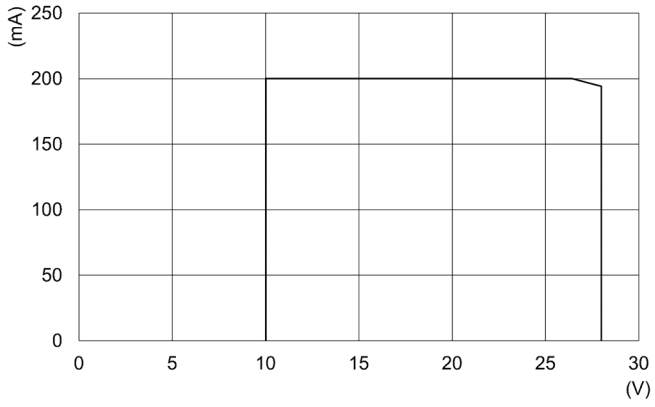
CSG-334-UL, CSG-534-UL



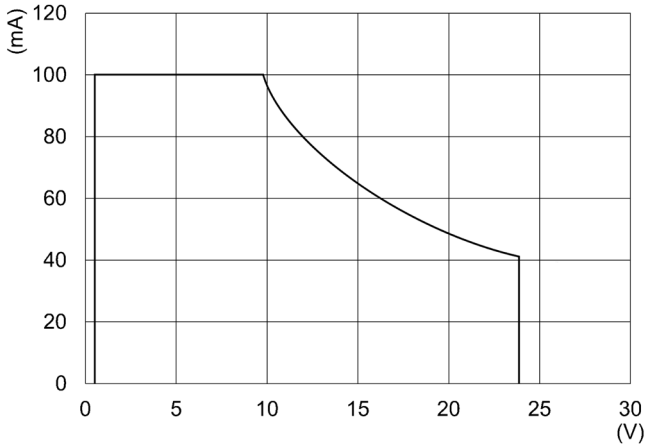
CSG-233-UL



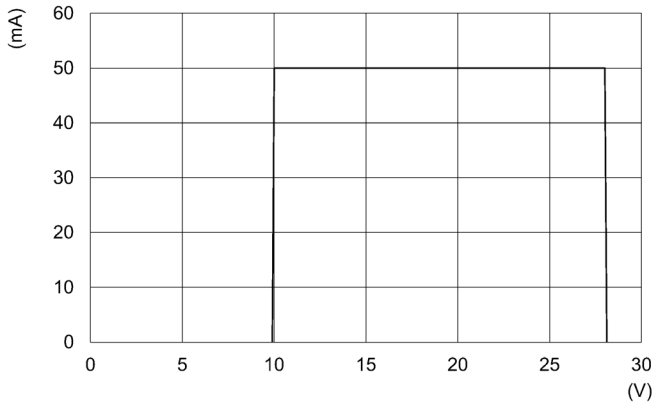
CSG-334, CSG-364, CSG-534, CSG-5674



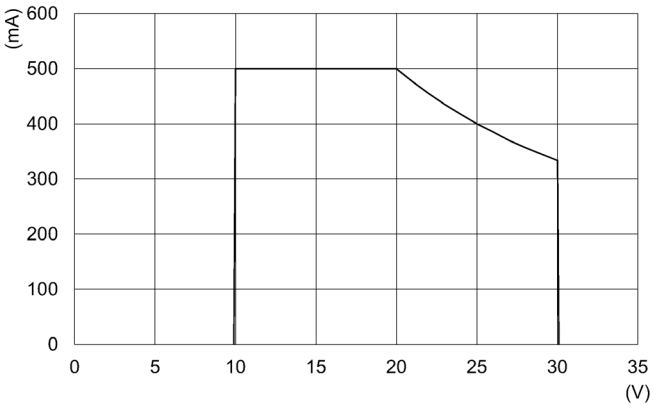
CSG-220, CSG-253



CSG-324, CSG-354



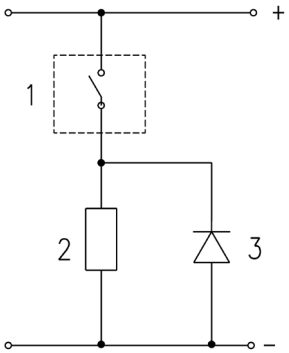
CSG-233, CSG-263



Electric circuit with protection against voltage spikes

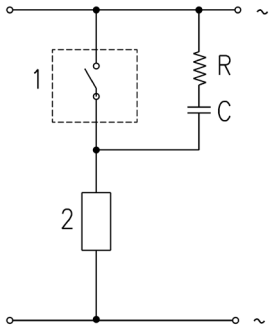
There is no protection on the Reed sensors on the inductive load, therefore it is advisable to use an electric ciruit with protection against the voltage spikes.
See picture for a typical example.

DC applications



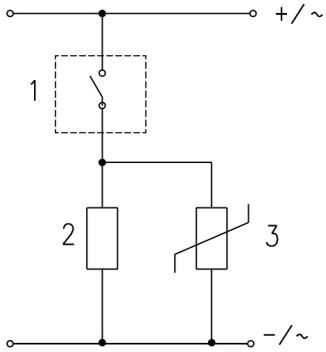
Legend:
1 = Sensor
2 = Load
3 = Protection diode

AC applications



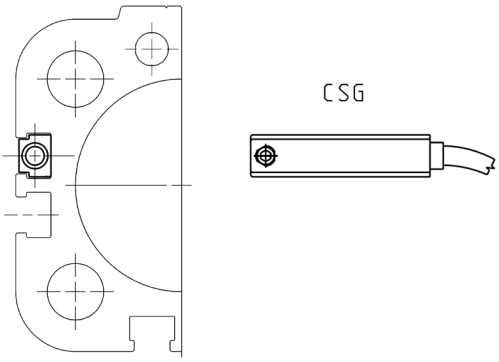
Legend:
1 = Sensor
2 = Load
C + R = Series of resistor and protection capacitor

DC and AC applications



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

Mounting of Series CSG sensors

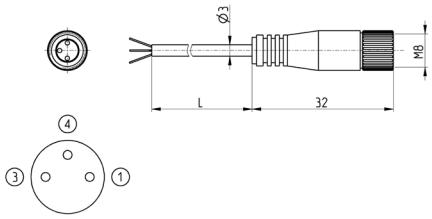


CSG sensors can be directly mounted on cylinders:

- Series 31, 31R, 32, 32R
- Series 52
- Series 61
- Series 69
- Series 6PF
- Series QC, QCBF, QCTF

3-wire extension with M8 3-pin female connector

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

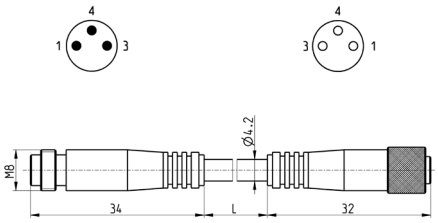


1 BN = Brown +/-
4 BK = Black +/-
3 BU = Blue NC

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

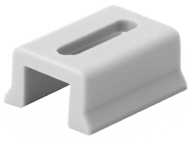
Extension with M8 connector, 3 pin male/female (Non shielded)

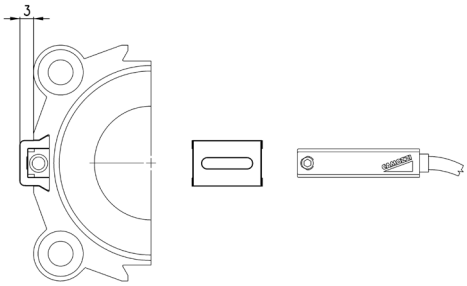
Non shielded
General Purpose Input/
Output (GPIO)



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

Adapters for Series CST-CSG sensors, V-slot



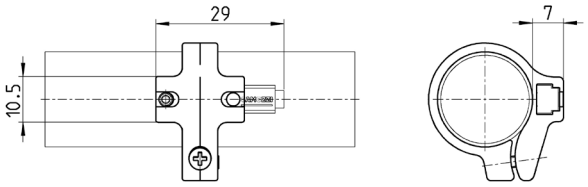


Mod.	Series QP-QPR cylinders	Series 50 cylinders
S-CST-01	Ø 20 ÷ 100	Ø 32 ÷ 80

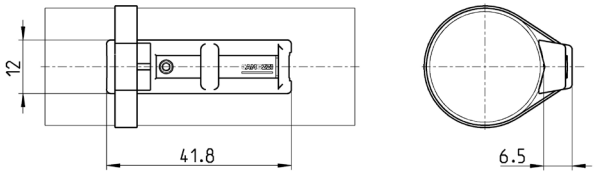
Adapters for Series CST-CSG sensors

Materials:
technopolymer
(S-CST-02÷04)

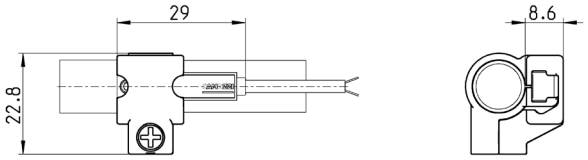
S-CST-02÷04 S-CST-18÷21



S-CST-05÷12

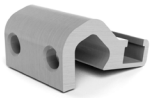


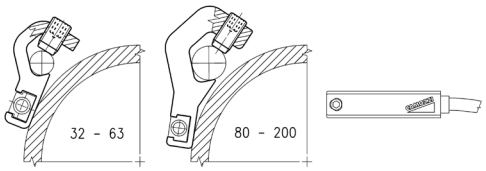
S-CST-32÷33



Mod.	Cylinders Series	Ø
S-CST-02	23, 24, 25, 27	16
S-CST-03	23, 24, 25, 27	20
S-CST-04	23, 24, 25, 27	25
S-CST-05	94, 95	16-20-25 (94), 16-20 (95)
S-CST-06	90, 97, 95	32 (90-97), 25 (95)
S-CST-07	90, 97	40
S-CST-08	90, 97	50
S-CST-09	90, 97	63
S-CST-10	90	80
S-CST-11	90	100
S-CST-12	90	125
S-CST-16	63	32
S-CST-18	27, 42	32
S-CST-19	27, 42	40
S-CST-20	27, 42	50
S-CST-21	27, 42	63
S-CST-32	24	10
S-CST-33	24	12

Adapters for Series CST-CSG sensors



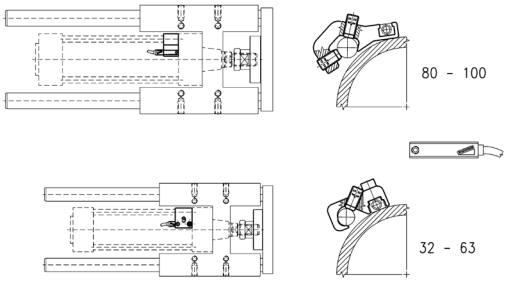


Material:
anodized aluminium

Mod.	Cylinders Series	Ø
S-CST-25	90, 63MT	32 ÷ 63
S-CST-26	90, 63MT	80 ÷ 100
S-CST-27	90, 63MT	125
S-CST-28	40	160 - 200

Adapters for Series CST-CSG sensors

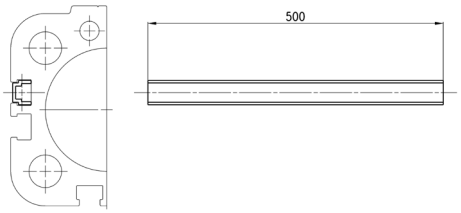
For Series 63MT cylinders mounted with guides 45NHT or 45NHB.



Mod.	Cylinders Series	Ø
S-CST-45N1	90, 63MT	32 ÷ 63
S-CST-45N2	90, 63MT	80 ÷ 100

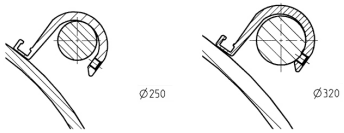
Slot cover profile Mod. S-CST-500

Supplied with 500 mm tube



Mod.	Series of cylinders
S-CST-500	31, 31 Tandem and Multi-position, QCT, QCB, QCBT, QCBF, 61, 63MP, 6E, 5E, 69, 32, 32 Tandem and Multi-position

Adapters for Series CST-CSG sensors



Material:
aluminium

Mod.	Series	Ø
S-CST-29	40K	250-320