

Coded magnetic sensors SR series



Coded magnetic sensors, SR A series

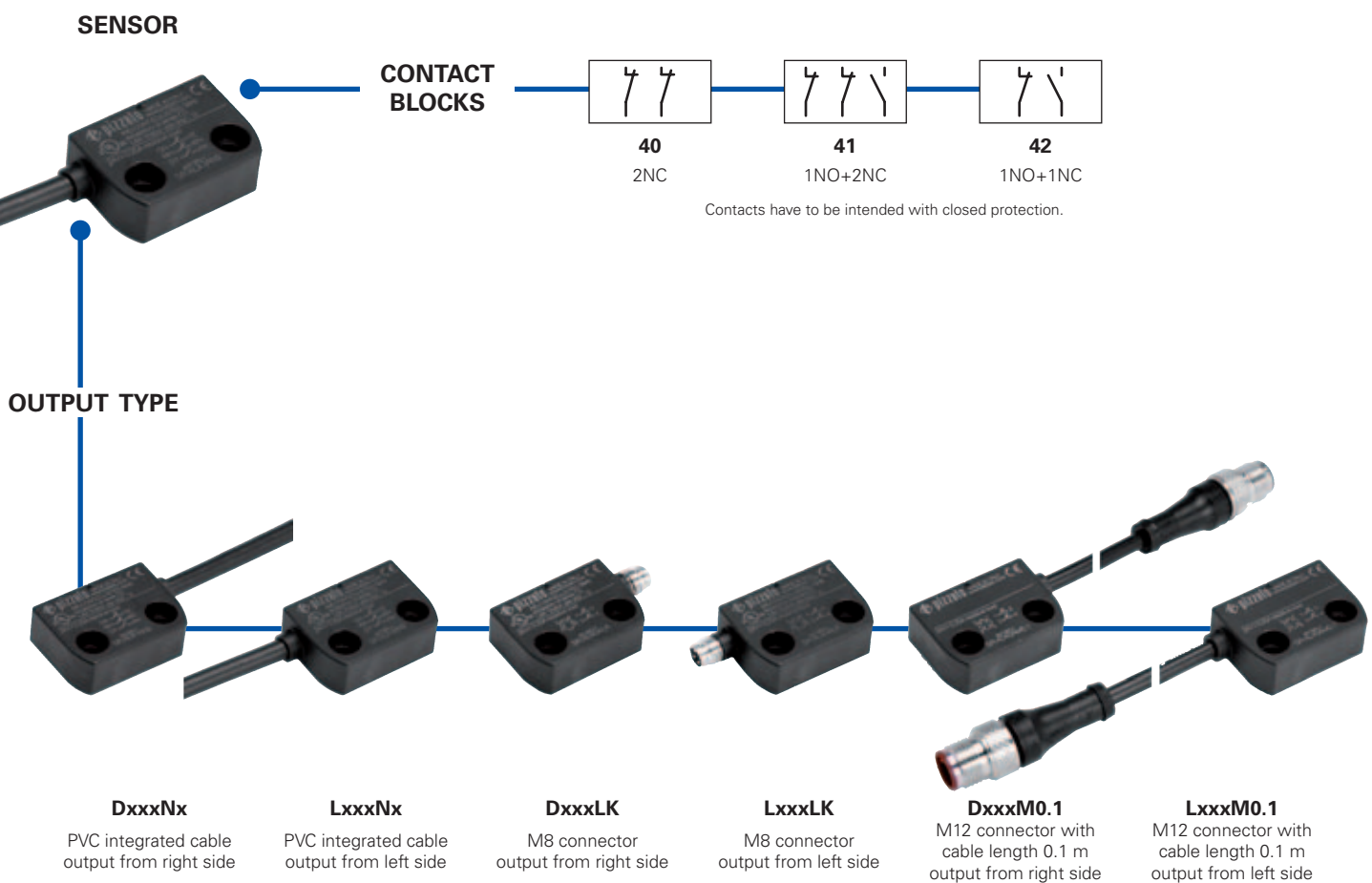
Introduction

Coded magnetic sensors are devices studied to monitor protections and guards that, when linked to a safety module, can create a system with safety category up to SIL 3 according to EN 62061, up to PLe according to EN ISO 13849-1 and up to category 4 according to EN 954-1. These products are composed by a magnetic field monitoring sensor, which is connected to the machine structure and by a coded magnetic actuator, which has to be connected to the mobile guards. When sensor and actuator are neared (closed guard), the sensor recognizes the actuator and provides to actuate electric contacts. The sensor is manufactured to be activated only by the correct coded actuator and not through a common magnet.

Main data

- Long life, no mechanical wear
- Output contacts: 2NC, 1NO+2NC or 1NO+1NC
- Insensitive to dirt
- Protection degree IP67 and IP69K
- Coded actuator
- Polymer housing
- Versions with M8 or M12 connector

Selection diagram



ACTUATOR



SM A01N

actuation distance 5 mm

Sensor with actuator code structure

SR AD40AN2-A01N

Sensor housing		Actuator	
SR	polymer housing	A01N	complete with SM A01N actuator, actuation distance 5 mm
Connection output direction		Type of cable or connector	
D	output from right	N1	integrated PVC cable, length 1 m
L	output from left	N2	integrated PVC cable, length 2 m (standard)
Contacts (with closed protection)	
40	2NC	N10	integrated PVC cable, length 10 m
41	1NO+2NC	M0.1	M12 connector with cable length 0.1 m
42	1NO+1NC	LK	M8 connector (available with 40 and 42 contacts only)

Single sensor code structure

SR AD40AN2

Sensor housing		Type of cable or connector	
SR	polymer housing	N1	integrated PVC cable, length 1 m
Connection output direction		N2	integrated PVC cable, length 2 m (standard)
D	output from right
L	output from left	N10	integrated PVC cable, length 10 m
Contacts (with closed protection)		M0.1	M12 connector with cable length 0.1 m
40	2NC	LK	M8 connector (available with 40 and 42 contacts only)
41	1NO+2NC		
42	1NO+1NC		

Actuator code structure

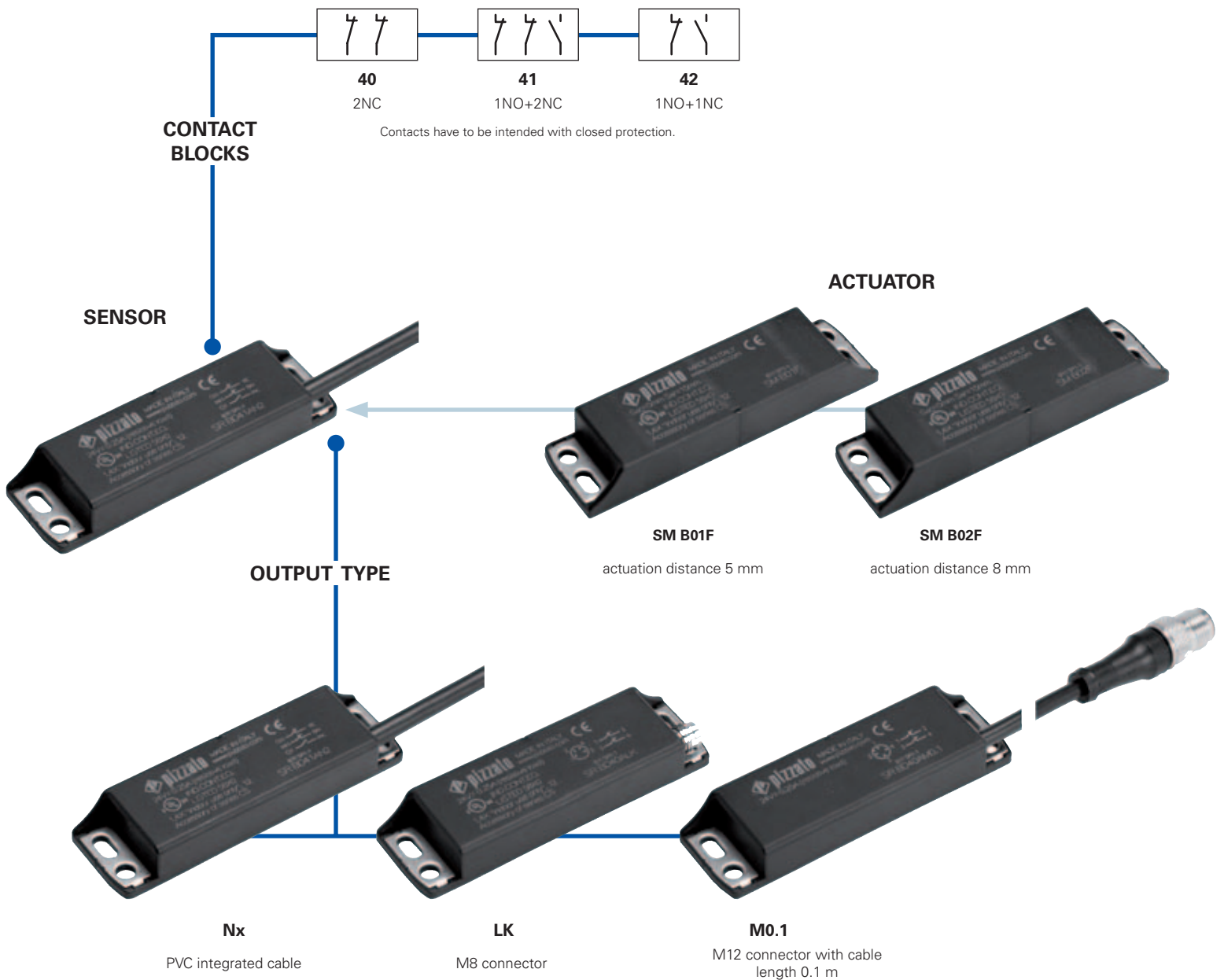
SM A01N

Actuator	
A01N	actuation distance 5 mm

Coded magnetic sensors, SR B series

Introduction

- Long life, no mechanical wear
- Stainless steel fixing plates
- Output contacts: 2NC, 1NO+2NC or 1NO+1NC
- Insensitive to dirt
- Protection degree IP67 and IP69K
- Coded actuator
- Polymer housing
- Versions with M8 or M12 connector



Sensor with actuator code structure

SR BD40AN2-B01F

Sensor housing		Actuator	
SR	polymer housing	B01F	complete with SM B01F actuator, actuation distance 5 mm
		B02F	complete with SM B02F actuator, actuation distance 8 mm
Contacts (with closed protection)		Type of cable or connector	
40	2NC	N1	integrated PVC cable, length 1 m
41	1NO+2NC	N2	integrated PVC cable, length 2 m (standard)
42	1NO+1NC
		N10	integrated PVC cable, length 10 m
		M0.1	M12 connector with cable length 0.1 m
		LK	M8 connector (available with 40 and 42 contacts only)

Single sensor code structure

SR BD40AN2

Sensor housing		Type of cable or connector	
SR	polymer housing	N1	integrated PVC cable, length 1 m
		N2	integrated PVC cable, length 2 m (standard)
	
Contacts (with closed protection)		N10	integrated PVC cable, length 10 m
40	2NC	M0.1	M12 connector with cable length 0.1 m
41	1NO+2NC	LK	M8 connector (available with 40 and 42 contacts only)
42	1NO+1NC		

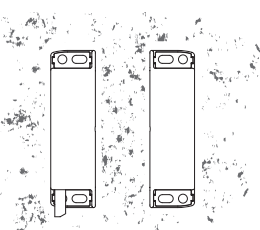
Actuator code structure

SM B01F

Actuator	
B01F	actuation distance 5 mm
B02F	actuation distance 8 mm

Coded magnetic sensors, SR series

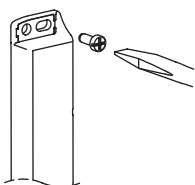
Inensitivity to dirt



Magnetic sensors are totally sealed and maintain unchanged their safety characteristics also where dirt and dust are present (not ferromagnetic material).

This characteristic, joined with the shape without recesses, make them especially proper to be used in the food-industrial sector.

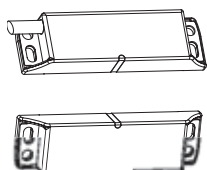
Stainless steel fixing plates (SR B series)



In order to avoid that the fixing on non perfectly plane surfaces could damage the fixing slots, Pizzato Elettrica magnetic sensors are provided with stainless steel fixing plates.

Also in presence of right fixing surfaces, this solution makes the sensor stronger to mechanical stresses and so the whole system becomes safer and more reliable.

Alignment marks



Sensors and magnets are provided with marks on the housing, as reference for operating distances. For a correct working, it is necessary install sensor with facing marks (see figure).

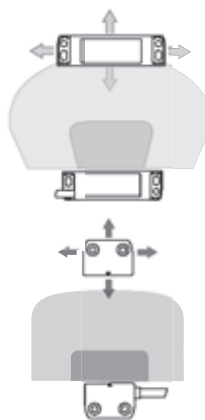
Laser marking



Pizzato Elettrica has introduced a new laser marking for magnetic sensors SR series. Thanks to this new system which excludes the use of labels, markings on the products are indelible.

Furthermore, in case of machineries subjected to intense high pressure water jets, there is no risk of labels detaching from the product.

Wide actuation zone

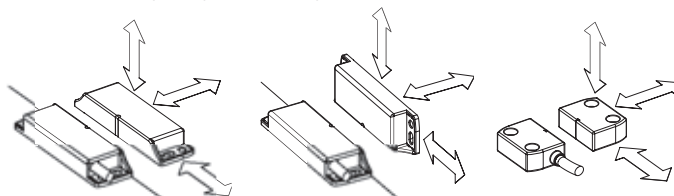


Because of their intrinsic characteristics, magnetic sensors have a wide actuation zone, which make them appreciated in the use of inaccurate protections or for protection that can change their mechanic characteristics through the time.

In this type of sensors actuation distances may change according to the actuator displacement direction from the sensor.

Actuation from many directions

Pizzato Elettrica magnetic sensors have been designed in order to be activated by the related actuator from many directions. In this way, the customer has the max flexibility about the placing of the devices along the protections perimeters.



Protection degree IP69K

IP69K

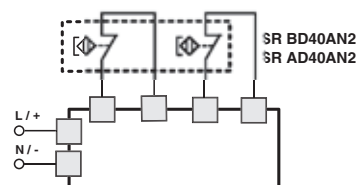
Pizzato Elettrica safety magnetic sensors SR series have passed the test for protection degree IP69K according to standard DIN 40050.

Therefore they are suitable for use in machineries subjected to intense washing with high pressure and high temperature water jets and for any condition or environment where a particular attention for cleanness and hygiene is required, such as in food or pharmaceutical industry.

Coded magnetic sensors used for safety applications

A coded magnetic sensor can not be used alone for safety functions because its working principles are not considered safe by the standards (as are, for example, the positive opening on mechanical switches). For this reason a coded magnetic sensor, in order to be used in safety applications, has to be compulsory connected to a proper safety module which monitors its right working.

Complete safety system



These magnetic sensors have been checked and tested for working with proper Pizzato Elettrica safety modules. Using completed and tested solutions, the customer has the certainty to have no

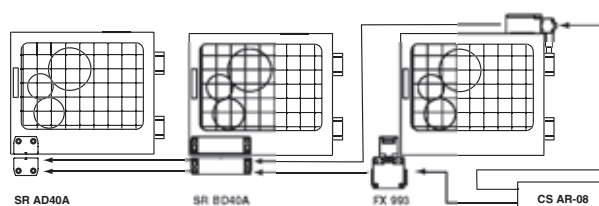
electric incompatibility between sensor and safety module, and has a higher reliability guarantee.

Sensors	Compatible safety modules	Safety module output contacts
SR A•40A•• SR A•41A•• SR BD40A•• SR BD41A••	CS AR-04•024	3NO+1NC
	CS AR-05•••••	3NO+1NC
	CS AR-06•••••	3NO+1NC
	CS AR-08•••••	2NO
	CS AR-94•••••	2NO
	CS AR-95•••••	2NO
	CS AT-0•••••	2NO+1NO (ist. cont.)+2NO (del. cont.)
	CS AT-1•••••	3NO (ist. cont.)+2NO (del. cont.)
	CS AT-3•••••	2NO (ist. cont.)+1NO (del. cont.)
	CS FS-5•••••	1NO+1NC+1CO

Connection of sensors and switches in series

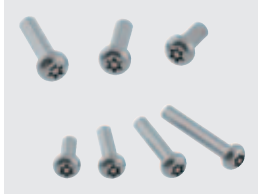
Pizzato Elettrica magnetic sensors could be connected in series with the only limitation that the overall resistance, gave by sensors and the related wiring, has to be not higher than the admitted max value of the module, which typically is equal to 50 ohm (see module features). It is a very high value that, with normal wiring, it allows the use of dozens of sensors without problems. It is also possible to realize mixed circuit solutions connecting in series magnetic sensor to safety switches, with the only limitation of the above mentioned max electric resistance.

We remind you that connection in series of two or more coded sensors reduce the system self-monitoring capacity which passes to category 3 in conformity with EN 954-1.



Safety screws

10 pcs packs

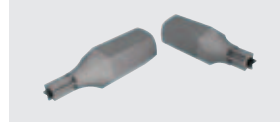


These new screws have tamper-resistant Torx buttonheads. Devices fixed with this kind of screws cannot be removed or tampered by common tools. The safety screws are in stainless steel with different threaded body lengths available: they suit any application where devices are subjected to frequent washing or corroding substances are present.

roding substances are present.

Article	Description
VF VAM4X15BX-X	M4X15 screw, tamper-resistant Torx T20, AISI 304 for SR A series
VF VAM4X20BX-X	M4X20 screw, tamper-resistant Torx T20, AISI 304 for SR A series
VF VAM4X25BX-X	M4X25 screw, tamper-resistant Torx T20, AISI 304 for SR A series
VF VAM5X10BX-X	M5X10 screw, tamper-resistant Torx T25, AISI 304 for SR B series
VF VAM5X15BX-X	M5X15 screw, tamper-resistant Torx T25, AISI 304 for SR B series
VF VAM5X20BX-X	M5X20 screw, tamper-resistant Torx T25, AISI 304 for SR B series

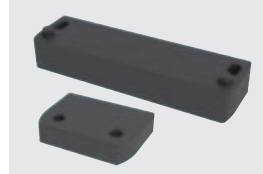
Safety screws bits



Safety screws bits, 1/4" drive.

Article	Description
VF VAIT1T20	Bits for tamper-resistant Torx T20, M4 screw
VF VAIT1T25	Bits for tamper-resistant Torx T25, M5 screw

Spacers



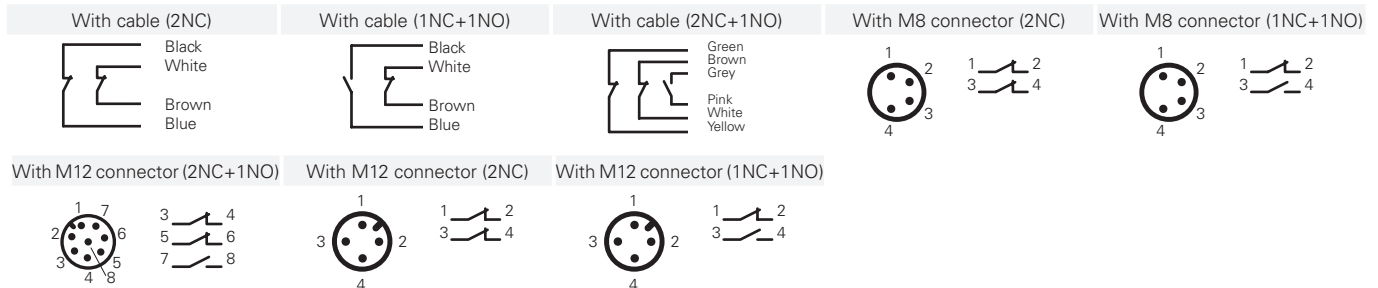
These spacers are placed between the SR magnetic sensors and metal surfaces that can deviate the magnetic field created by the sensor: with these specific spacers between them the sensor activation and deactivation distances remain the same.

Made of a single block material they suit any application where high cleanness is required since they prevent any material in the installation area from getting and settling inside the drain.

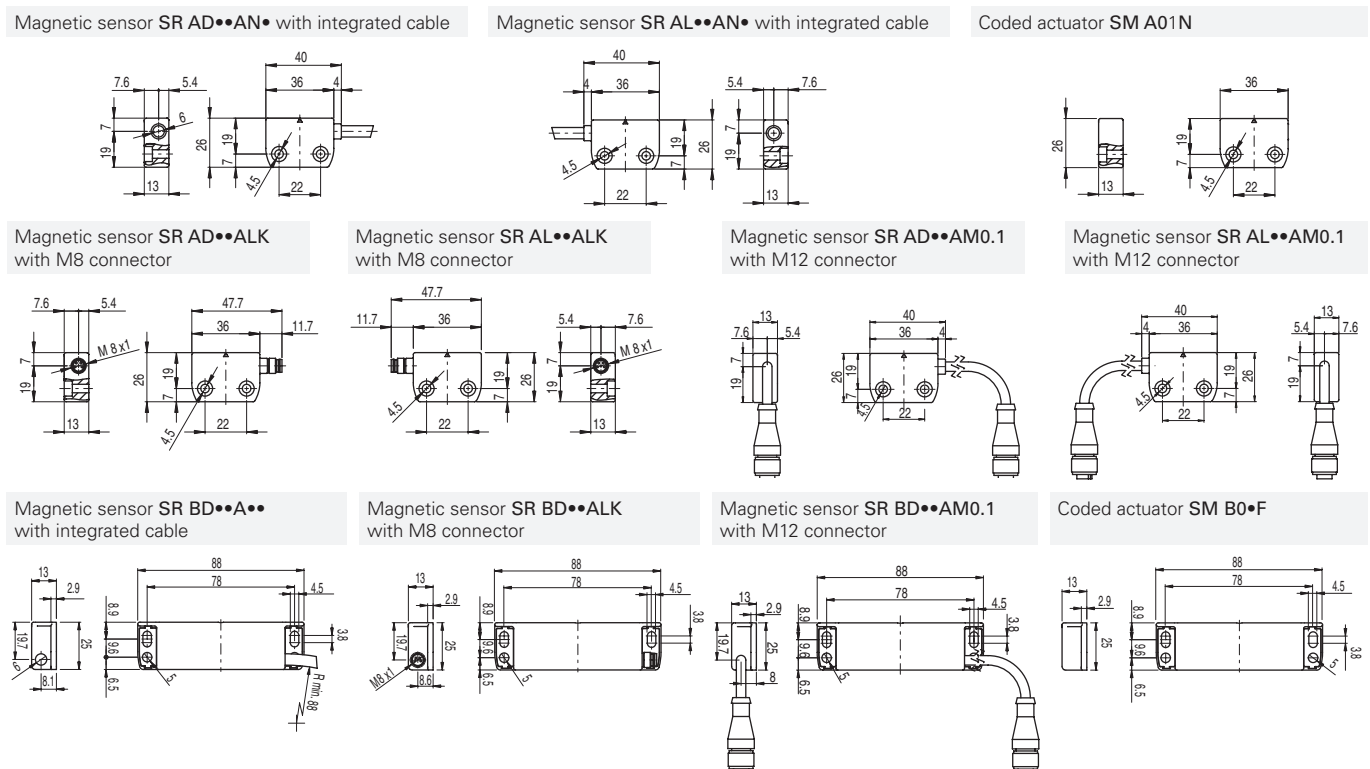
Article	Description
VS SP1AA1	Spacers for SR A series
VS SP1BA1	Spacers for SR B series

Internal connections

Contacts imply closed protection



Dimensional drawings





General catalog



Production program



ATEX brochure



Lift devices
brochure



Cd-rom



Web site
www.pizzato.com



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