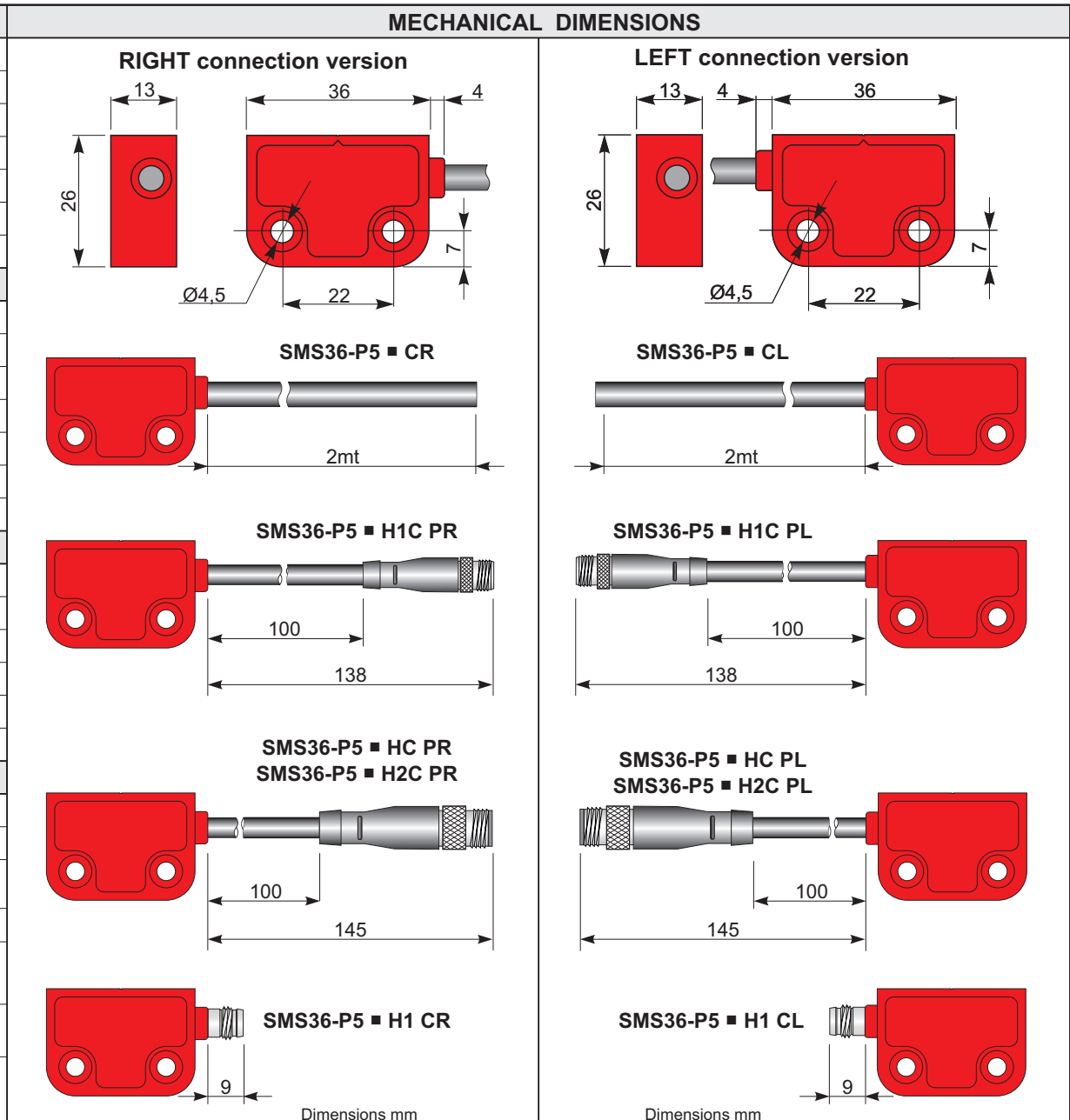


MECHANICAL CHARACTERISTICS	
Operating range	-25 ... +80 °C
Protection degree	IP67
Pollution degree	3
Shock resistance	30 gn; 11 ms according to EN 60068-2-27
Vibrations resistance	10 gn; (10...150 Hz) EN 60068-2-6
Connection type	See Tab. 1 to page 2
Housing material	PBT+FV
ELECTRICAL CHARACTERISTICS	
Rated operation voltage Ue	24 Vac/dc
Rated operational current Ie	0,25 A (resistive load)
Max switching load	6 W (resistive load)
Thermal current Ith	0,25 A
Rated insulation voltage Ui	See Table 2 to pag2
Rated impulse withstand voltage Uimp	6 kV(with cable) / 1.5KV (with connector)
Electrical endurance	1 million operations cycles
ACTUATING CHARACTERISTICS	
Assured operating distance Sao	5 mm with actuator AMS36-P5
Assured release distance Sar	15 mm with actuator AMS36-P5
Repeat accuracy	≤ 10%
Switching frequency	200 Hz
Response time	≤ 10 ms
Distance between two sensors	Min. 50 mm
SAFETY CHARACTERISTICS AND CONFORMITY	
SIL level (SIL CL)	Up to SIL 3 according to EN IEC 62061 (2)
Performance level (PL)	Up to PL e according to EN ISO 13849-1 (2)
B10a for each channel	400.000 operations cycles (full load). (2) Mechanical endurance 20 million operations cycles (2)
Service time	20 years
Conforms to the standards	EN 60947-1, EN 60947-5-1, EN 60947-5-2, EN 60947-5-3 (2), EN ISO 14119, EN ISO 12100, EN ISO 13849-1, EN ISO 13849-2, EN 60204-1, EN 60529.
Conforms to the directives	2006 / 42 / EC - MACHINERY DIRECTIVE 2014/30/EU - ELECTROMAGNETIC DIRECTIVE
Note:	
(1) Upon request cable for sensors with different lengths 5 - 10m is available	
(2) It is achieved by connecting the single sensor to the AECO safety module MS-ER MA R01 ■ series	



MODELS DESIGNATION

SMS 36 - P 5 ■■■

- Safety Magnetic Sensor according to Machinery Directive 2006/42/EC
- Version 36 : Housing L=36 x W=26 x H=13 mm
- Housing material P : Plastic
- Sensing distance in mm 5 : With magnetic target AMS36-P5
- Output type
 - 2NC : 2NC outputs
 - NO+2NC : 1NO output + 2NC outputs
 - NO+NC : 1NO output + 1NC output
- Connection type
 - Nullo : Cable
 - H1 : Male Connector M8x1 (4 poles)
 - H1C : Male connector M8x1 (4 poles) + cable
 - HC : Male connector M12x1 (4 poli) + cable
 - H2C : Male connector M12x1 (8 poli) + cable (model with NO+2NC outputs only)
- Connection position
 - CR : Cable positioned to RIGTH
 - CL : Cable positioned to LEFT
 - PR : H1, H1C, HC and H2C connector positioned to RIGHT
 - PL : H1, H1C, HC and H2C connector positioned to LEFT

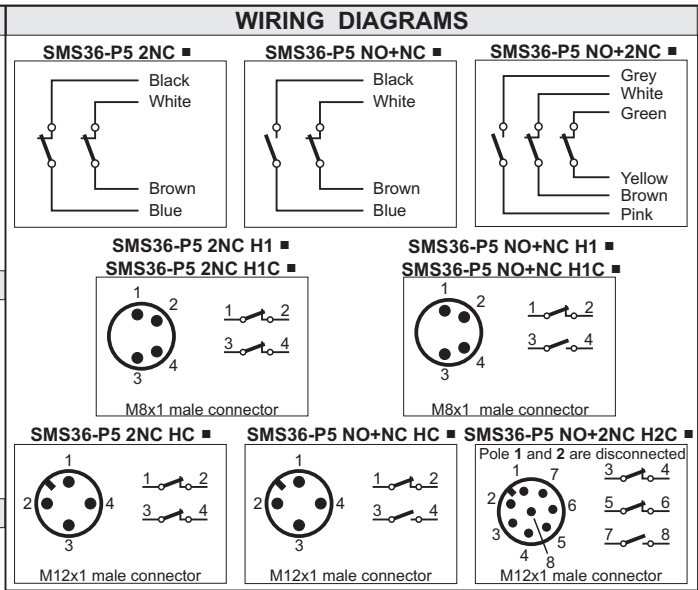
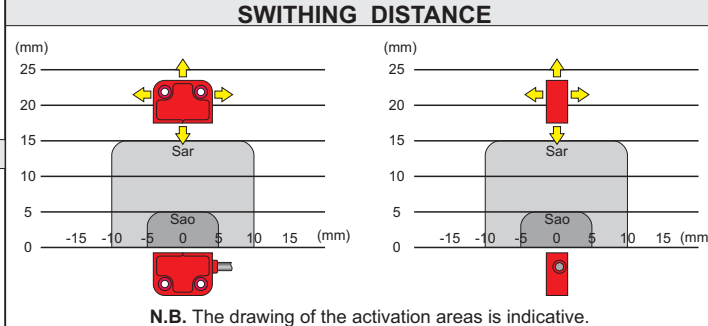
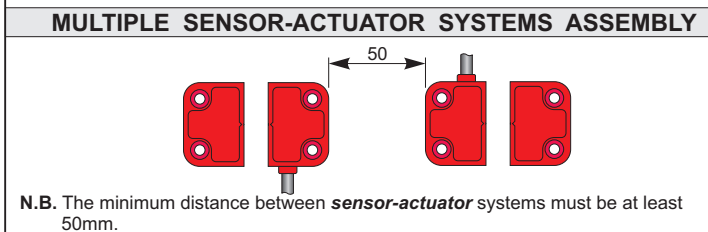
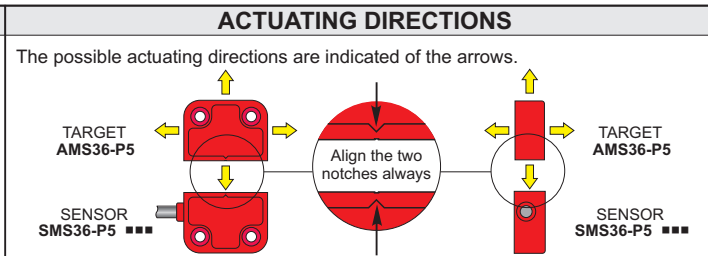
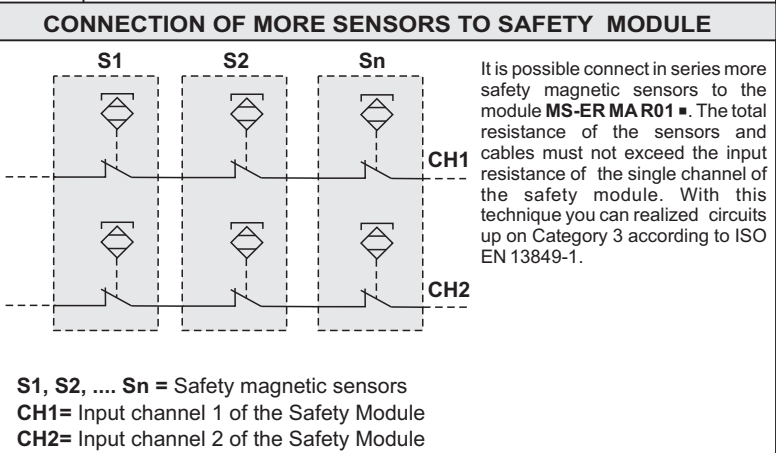
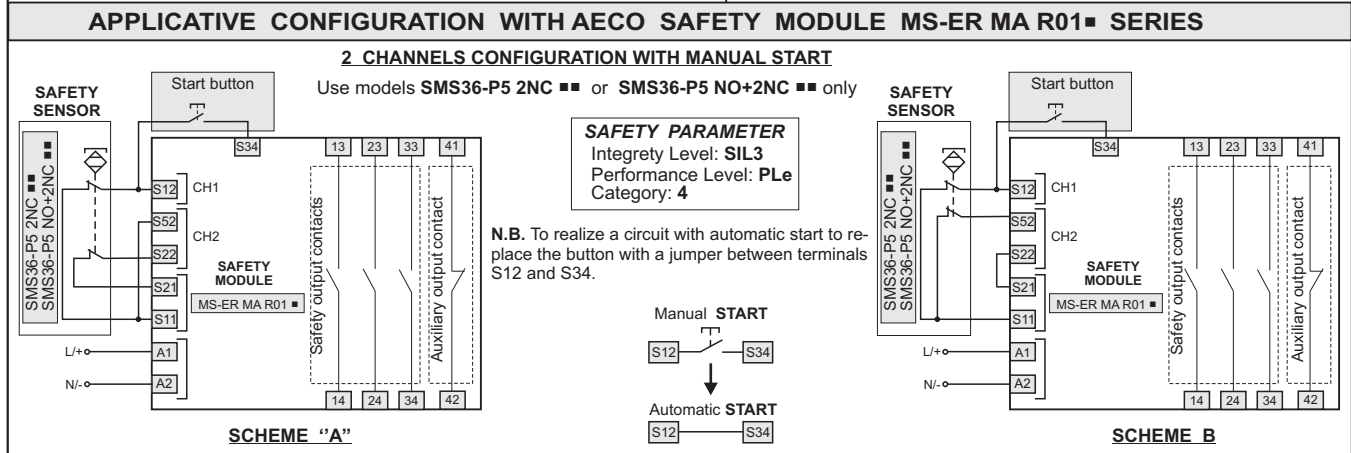


TABLE 2 - RATED INSULATION VOLTAGE Ui

Models	Ui Value	Connection type
SMS36-P5 ■■	120Vac	Cable
SMS36-P5 ■ H1■	60Vac / 75Vdc	Connector M8x1 4 poles
SMS36-P5 ■ H1C ■	60Vac / 75Vdc	Cable + connector M8x1 4 poles
SMS36-P5 ■ HC ■	120Vac	Connector M12x1 4 poles
SMS36-P5 NO+2NC H2C ■	30Vac / 36Vdc	Connector M12x1 8 poles

TABLE 1 - TYPES OF CONNECTION

Models	Connection type	Cable lenght
SMS36-P5 2NC ■	4x0.25mm ² PVC cable	2mt
SMS36-P5 NO+NC ■	4x0.25mm ² PVC cable	2mt
SMS36-P5 NO+2NC ■	6x0.25mm ² PVC cable	2mt
SMS36-P5 2NC H1 ■	M8x1 4 poles connector	-
SMS36-P5 NO+NC H1 ■	M8x1 4 poles connector	-
SMS36-P5 NO+2NC H2C ■	M12x1 8 poles connector	-
SMS36-P5 2NC H1C ■	M8x1 4 poles connector + Cable	10cm
SMS36-P5 NO+NC H1C ■	M8x1 4 poles connector + Cable	10cm
SMS36-P5 2NC HC ■	M12x1 4 poles connector + Cable	10cm
SMS36-P5 NO+NC HC ■	M12x1 4 poles connector + Cable	10cm



MECHANICAL CHARACTERISTICS		MECHANICAL DIMENSIONS	
Operating range	-25 ... +80 °C	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>RIGHT connection version</p> </div> <div style="text-align: center;"> <p>LEFT connection version</p> </div> </div>	
Protection degree	IP67		
Pollution degree	3		
Shock resistance	30 gn; 11 ms according to EN 60068-2-27		
Vibrations resistance	10 gn; (10...150 Hz) EN 60068-2-6		
Connection type	See Tab. 1 to page 2		
Housing material	PBT+FV		
ELECTRICAL CHARACTERISTICS			
Rated operation voltage Ue	24 Vac/dc		
Rated operational current Ie	0,25 A (resistive load)		
Max switching load	6 W (resistive load)		
Thermal current Ith	0,25 A		
Rated insulation voltage Ui	See Table 2 to pag2		
Rated impulse withstand voltage Uimp	6 kV(with cable) / 1.5KV (with connector)		
Electrical endurance	1 million operations cycles		
ACTUATING CHARACTERISTICS			
Assured operating distance Sao	5mm with AMS88-P5 and 8mm with AMS88-P8		
Assured release distance Sar	15mm with AMS88-P5 and 20mm with AMS88-P8		
Repeat accuracy	≤ 10%		
Switching frequency	200 Hz		
Response time	< 10 ms		
Distance between two sensors	Min. 50 mm		
SAFETY CHARACTERISTICS AND CONFORMITY			
SIL level (SIL CL)	Up to SIL 3 according to EN IEC 62061 (2)		
Performance level (PL)	Up to PL e according to EN ISO 13849-1 (2)		
B10 _a for each channel	400.000 operations cycles (full load), (2) Mechanical endurance 20 million operations cycles (2)		
Service time	20 years		
Conforms to the standards	EN 60947-1, EN 60947-5-1, EN 60947-5-2, EN 60947-5-3 (2), EN ISO 14119, EN ISO 12100, EN ISO 13849-1, EN ISO 13849-2, EN 60204-1, EN 60529.		
Conforms to the directives	2006 / 42 / EC - MACHINERY DIRECTIVE 2014/30/EU - ELECTROMAGNETIC DIRECTIVE		
Note:			
(1) Upon request cable for sensors with different lengths 5 - 10m is available			
(2) It is achieved by connecting the single sensor to the AECO safety module MS-ER MA R01 ■ series			

MODELS DESIGNATION

SMS 88 - P 5 ■■■

- Safety Magnetic Sensor according to Machinery Directive 2006/42/EC
- Version: 88 : Housing L=88 x W=25 x H=13 mm
- Housing material: P : Plastic
- Sensing distance: 5 : 5mm with magnetic target AMS88-P5 and 8mm with magnetic target AMS88-P8
- Output type:
 - 2NC : 2NC outputs
 - NO+2NC : 1NO output + 2NC outputs
 - NO+NC : 1NO output + 1NC output
- Connection type:
 - Nullo : Cable
 - H1 : Male Connector M8x1 (4 poles)
 - H1C : Male connector M8x1 (4 poles) + cable
 - HC : Male connector M12x1 (4 poli) + cable
 - H2C : Male connector M12x1 (8 poli) + cable (model with NO+2NC outputs only)
- Connection position:
 - CR : Cable positioned to RIGTH
 - CL : Cable positioned to LEFT
 - PR : H1, H1C, HC and H2C connector positioned to RIGHT
 - PL : H1, H1C, HC and H2C connector positioned to LEFT

ACTUATING DIRECTIONS

The possible actuating directions are indicated of the arrows.

Align the two notches always

WIRING DIAGRAMS

SMS88-P5 2NC ■

SMS88-P5 NO+NC ■

SMS88-P5 NO+2NC ■

SMS88-P5 2NC H1 ■
SMS88-P5 2NC H1C ■

SMS88-P5 NO+NC H1 ■
SMS88-P5 NO+NC H1C ■

SMS88-P5 2NC HC ■

SMS88-P5 NO+NC HC ■

SMS88-P5 NO+2NC H2C ■

MULTIPLE SENSOR-ACTUATOR SYSTEMS ASSEMBLY

N.B. The minimum distance between *sensor-actuator* systems must be at least 50mm.

SWITCHING DISTANCE

N.B. The drawing of the activation areas is indicative.

TABLE 2 - RATED INSULATION VOLTAGE Ui

Models	Ui Value	Connection type
SMS88-P5 ■■	120Vac	Cable
SMS88-P5 ■■ H1■	60Vac / 75Vdc	Connector M8x1 4 poles
SMS88-P5 ■■ H1C ■	60Vac / 75Vdc	Cable + connector M8x1 4 poles
SMS88-P5 ■■ HC ■	120Vac	Connector M12x1 4 poles
SMS88-P5 NO+2NC H2C ■	30Vac / 36Vdc	Connector M12x1 8 poles

TABLE 1 - TYPES OF CONNECTION

Models	Connection type	Cable length
SMS88-P5 ■■ 2NC ■	4x0.25mm ² PVC cable	2mt
SMS88-P5 ■■ NO+NC ■	4x0.25mm ² PVC cable	2mt
SMS88-P5 ■■ NO+2NC ■	6x0.25mm ² PVC cable	2mt
SMS88-P5 ■■ 2NC H1 ■	M8x1 4 poles connector	-
SMS88-P5 ■■ NO+NC H1 ■	M8x1 4 poles connector	-
SMS88-P5 ■■ NO+2NC H2C ■	M12x1 8 poles connector	-
SMS88-P5 ■■ 2NC H1C ■	M8x1 4 poles connector + Cable	10cm
SMS88-P5 ■■ NO+NC H1C ■	M8x1 4 poles connector + Cable	10cm
SMS88-P5 ■■ 2NC HC ■	M12x1 4 poles connector + Cable	10cm
SMS36-P5 NO+NC HC ■	M12x1 4 poles connector + Cable	10cm

APPLICATIVE CONFIGURATION WITH AECO SAFETY MODULE MS-ER MA R01 ■ SERIES

2 CHANNELS CONFIGURATION WITH MANUAL START

Use models SMS88-P5 2NC ■■ or SMS88-P5 NO+2NC ■■ only

SCHEME "A"

SCHEME B

SAFETY PARAMETER
Integrity Level: SIL3
Performance Level: PLe
Category: 4

N.B. To realize a circuit with automatic start to replace the button with a jumper between terminals S12 and S34.

CONNECTION OF MORE SENSORS TO SAFETY MODULE

It is possible connect in series more safety magnetic sensors to the module MS-ER MA R01 ■. The total resistance of the sensors and cables must not exceed the input resistance of the single channel of the safety module. With this technique you can realized circuits up on Category 3 according to ISO EN 13849-1.

S1, S2, ... Sn = Safety magnetic sensors
CH1= Input channel 1 of the Safety Module
CH2= Input channel 2 of the Safety Module