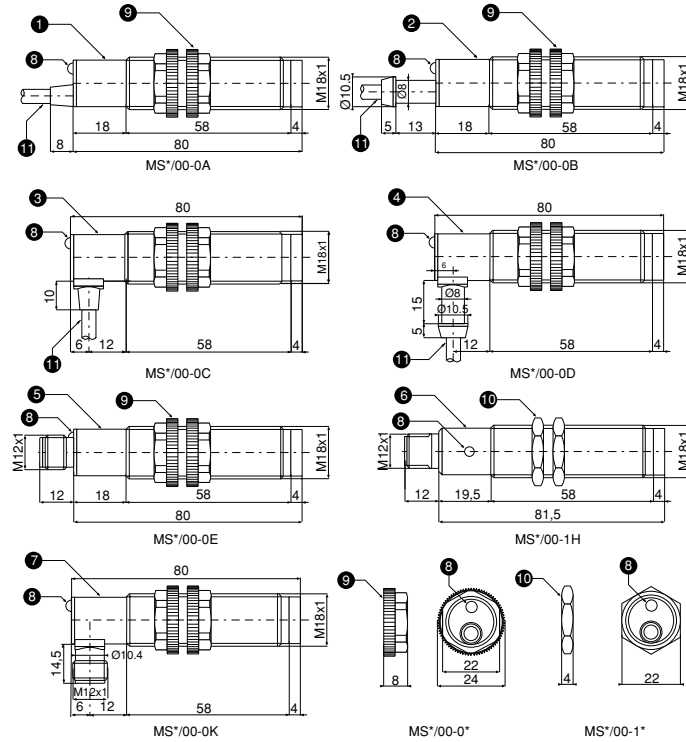



**SERIE**
**MS-MP**

**M18 photoelectric sensors DECOU<sup>®</sup>**  
 axial and with right angle optics - DC

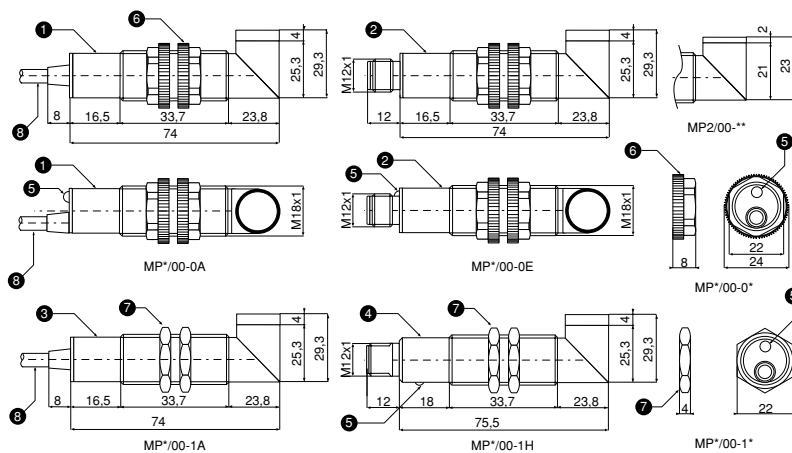
- ◆ Wide range of models: diffuse, retro-reflective, polarized, through-beam detection and with background suppression
- ◆ Through-beam models with high sensing range
- ◆ Retro-reflective models with polarized light (with visible beam)
- ◆ Models with right angle optic (MP)
- ◆ Models with fixed distance background suppression (MS0 and MS1)
- ◆ 7 cable exit options to suit any installation
- ◆ M12 plug cable exit in axial or right angle shape (also available in all metal construction - MS)
- ◆ Check available for all through-beam models
- ◆ IP67 protection degree
- ◆ Complete protection against electrical damage
- ◆ Wide range of connectors, accessories and reflectors available


**DIMENSIONAL DRAWING**

**Key**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>1 Axial cable exit</li> <li>2 Axial cable exit with tang <sup>(1)</sup></li> <li>3 Right angle cable exit</li> <li>4 Right angle cable exit with tang <sup>(1)</sup></li> <li>5 M12 plastic plug cable exit</li> <li>6 M12 metal plug cable exit</li> <li>7 M12 right angle plug cable exit</li> </ul> | <ul style="list-style-type: none"> <li>8 Red LED (output state MS2-4-6-C-P-D-R)<br/>Red LED (supply/check MSE)</li> <li>9 Tightening nut plastic housing</li> <li>10 Tightening nut metal housing (SW24)</li> <li>11 Cable 4(2)x0,34 mm<sup>2</sup>, Ø4,7mm, PVC, 2m</li> </ul> |
|---|---|

Connectors **CD** serie  
 Accessories **ST** serie

(1) Available only on request

**DIMENSIONAL DRAWING**

**Key**

- 1 Axial cable exit
- 2 M12 plug cable exit (plastic housing)
- 3 Axial cable exit (metal housing)
- 4 M12 plug cable exit (metal housing)
- 5 LED
- 6 Tightening nut plastic housing
- 7 Tightening nut metal housing (SW24)
- 8 Cable 4(2)x0,34 mm<sup>2</sup>, Ø4,7mm, PVC, 2m

Connectors **CD** serie  
 Accessories **ST** serie

**Multifunctional output DECOUT®  
(NPN, PNP, NO, NC all in a single sensor)**

The first sensor with multifunctional output able to perform all output configurations thus reducing operating and stocking costs. M.D. creation which became a standard on the market for the high flexibility in all possible applications thanks to the decoupled output.

**Wide range of models with high sensing range**

diffuse 100, 200 and 400mm;  
retro-reflective 4m;  
polarized 3m;  
through-beam 16 and 32m (also available with check for the remote control of the system)  
new fixed distance 50 and 100mm background suppression.



Plastic or metal housing

**Cable exit in 7 different versions**

To meet any installation need:  
standard cable exit,  
standard cable exit with tang,  
right angle cable exit,  
right angle cable exit with tang,  
plastic and metal M12 axial plug cable exit  
and M12 right angle plug cable exit.

2.1



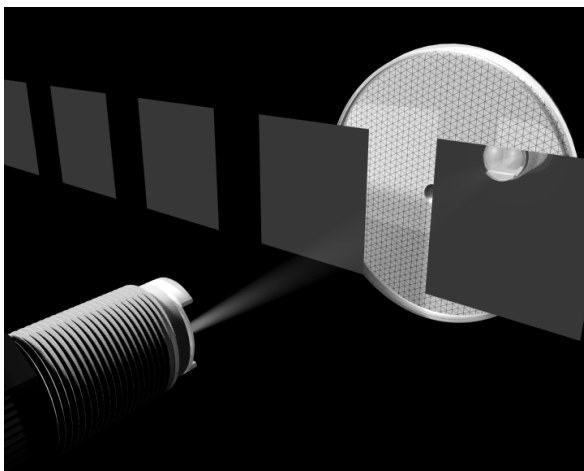
**New through-beam with high sensing range**

MS series keeps the first place in the market for the high distance which can be reached thanks to the introduction of new MSE-MSD through-beam with sensing range of 32m.



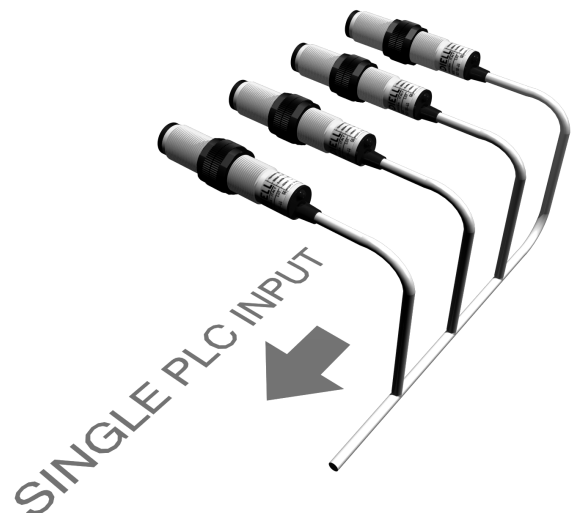
**The decoupled DECOUT®**

- The multifunction output allows:
- 1) to perform all the 4 possible output configurations (NPN, PNP, NO, NC) without changing model.
  - 2) to obtain logic control through series/parallel connections of different sensors without numerical restriction thus reducing the number of employed inputs



**New polarized models with visible red light**

MSP retro-reflective and polarized model represent the most suitable solution for correct detection of high reflecting targets.




**ORDERING SYSTEM**

		<b>M S 0 / 0 0 - 0 A</b>		diffuse - retro-reflective - background suppression	
serie					
M18 DECOU <sup>®</sup> photoelectric sensor	<b>MS</b>			<b>A</b>	cable exit
M18 photoelectric sensor with right angle optic	<b>MP</b>			<b>B</b>	axial cable exit
model				<b>C</b>	<sup>(2)</sup> axial cable exit with tang
50mm background suppression <sup>(1)</sup>	<b>0</b>			<b>D</b>	<sup>(3)</sup> right angle cable exit
100mm background suppression <sup>(1)</sup>	<b>1</b>			<b>E</b>	<sup>(2)(3)</sup> right angle cable exit with tang
100mm diffuse reflection	<b>2</b>			<b>H</b>	M12 plug cable exit (plastic housing)
200mm diffuse reflection	<b>4</b>			<b>K</b>	M12 plug cable exit (metal housing)
400mm diffuse reflection	<b>6</b>			<b>O</b>	<sup>(3)</sup> M12 right angle plug cable exit
4m retro-reflective	<b>C</b>			<b>0</b>	housing plastic housing
3m polarised retro-reflective	<b>P</b>			<b>1</b>	metal housing
output state					
NO/NC output state	<b>0</b>				
logic					
NPN/PNP output type	<b>0</b>				

(1) The background suppression are available on MS serie only. (2) Available only on request. (3) Not available on MP serie

**SPECIFICATIONS**

Model	M*0/**-**	M*1/**-**	M*2/**-**	M*4/**-**	M*6/**-**	M*C/**-**	M*P/**-**
<b>Type</b>	diffuse reflection					retro-reflective	
	background suppression		standard			standard	polarized
<b>Nominal sensing distance (Sn)</b>	50mm <sup>(1)</sup>	100mm <sup>(1)</sup>	100mm <sup>(1)</sup>	200mm <sup>(1)</sup>	400mm <sup>(2)</sup>	4m <sup>(3)</sup>	3m <sup>(3)</sup>
<b>Emission</b>	infrared (880nm)						red (660nm)
<b>Tolerance</b>	0...+10% Sn		+15/ -10% Sn				
<b>Differential travel</b>	≤5%		≤10%				
<b>Repeat accuracy</b>			5%				
<b>Operating voltage</b>	10 - 30 Vdc						
<b>Ripple</b>	≤10 %						
<b>No-load supply current</b>	40mA		30mA				
<b>Load current</b>	≤100 mA						
<b>Leakage current</b>	≤ 10µA						
<b>Voltage drop</b>	1,2V max. I <sub>L</sub> =100mA						
<b>Output type</b>	DECOU <sup>®</sup> (NPN, PNP, NO, NC)						
<b>Switching frequency</b>	80Hz						
<b>Time delay before availability</b>	200 ms						
<b>Supply electrical protections</b>	transient						
<b>Output electrical protections</b>	short circuit (with hold)						
<b>Temperature range</b>	-25°....+70°C (without freeze)						-25°....+60°C
<b>Temperature drift</b>	5%		≤10% Sr				
<b>Interference to external light</b>	3000 lux (incandescent lamp), 10000 lux (sunlight)						
<b>Protection degree (DIN 40 050)</b>	IEC IP67						
<b>LED indicators</b>	red (output energized)						
<b>Housing material</b>	PBT (plastic housing), nickel-plated brass (metal housing), polycarbonate (cable exit)						
<b>Lenses material</b>	plexiglas 7N						
<b>Tightening torque</b>	40Nm (metal housing)						
<b>Weight (approx.)</b>	150g						

(1) with 100x100mm white matt paper; (2) with 100x100mm white matt paper; (3) with standard reflector Ø80mm (RL110 supplied separately).

**CONNECTORS**

M12 (emitters)	M12 (emitters with check)	M12



**ORDERING SYSTEM**

		<b>M S E / 0 0 - 0 A</b>			
serie					through-beam
M18 DECOU <sup>®</sup> photoelectric sensor	<b>MS</b>				cable exit
M18 photoelectric sensor with right angle optic	<b>MP</b>				axial cable exit
model					
standard emitter	<b>E</b>				
standard receiver 16m	<b>R</b>				
high distance receiver 32m	<b>D</b>				
output state					
standars emitter / DECOU <sup>®</sup> output	<b>0</b>				
emitter with check	<b>X</b>				
logic					
DECOU <sup>®</sup> output / emitter	<b>0</b>				
				<b>A</b>	
				<b>B</b>	<sup>(1)</sup> axial cable exit with tang
				<b>C</b>	<sup>(2)</sup> right angle cable exit
				<b>D</b>	<sup>(1)(2)</sup> right angle cable exit with tang
				<b>E</b>	M12 plug cable exit (plastic housing)
				<b>H</b>	M12 plug cable exit (metal housing)
				<b>K</b>	<sup>(2)</sup> M12 right angle plug cable exit
				<b>0</b>	housing plastic housing
				<b>1</b>	metal housing

(1) Available only on request.  
 (2) Not available on **MP** serie.

**SPECIFICATIONS**

Model	M*E/**-** and M*R/**-**	M*E/**-** and M*D/**-**
<b>Type</b>	through-beam	
	standard	high distance
<b>Nominal sensing distance (Sn)</b>	16m	32m
Minimum detectable object	Ø7,5mm	
Emission	infrared (880nm)	
Tolerance	see Sr (glossary)	
Differential travel	≤10%	
Repeat accuracy	5%	
<b>Operating voltage</b>	10 - 30 Vdc	
Ripple	≤10 %	
No-load supply current	15mA (emitter), 35mA (emitter with check), 25mA (receiver)	
<b>Load current</b>	≤100 mA	
Leakage current	≤ 10µA	
Voltage drop	1,2V max. I <sub>L</sub> =100mA	
<b>Output type</b>	DECOU <sup>®</sup> (NPN, PNP, NO, NC)	
Switching frequency	30Hz	
Time delay before availability	200 ms	
<b>Supply electrical protections</b>	transient	
Output electrical protections	short circuit (with hold)	
<b>Temperature range</b>	-25°....+70°C (without freeze)	
Temperature drift	10% Sr	
Interference to external light	3000 lux (incandescent lamp), 10000 lux (sunlight)	
<b>Protection degree (DIN 40 050)</b>	IEC IP67	
LED indicators	red (output energized)	
<b>Housing material</b>	PBT (plastic housing), nickel-plated brass (metal housing), polycarbonate(cable exit)	
Lenses material	plexiglas 7N	
Tightening torque	40Nm (metal housing)	
Weight (approx.)	250g	

**WIRING DIAGRAMS**

DECOU <sup>®</sup> output	emitter with MSE/X0
In case of combined load, the maximum admissible capacity C = 68nF, for max. output voltage and current.	See <b>Description on technical terms.</b>


**CHARACTERISTIC CURVES**

<b>Background suppression</b> <b>MS0</b> 	<b>Background suppression</b> <b>MS1</b> 	<b>Excess gain</b> <b>M*2</b> 	<b>Parallel displacement</b> <b>M*2</b> 
<b>Distance / target size</b> <b>M*2</b> 	<b>Excess gain</b> <b>M*4</b> 	<b>Parallel displacement</b> <b>M*4</b> 	<b>Distance / target size</b> <b>M*4</b> 
<b>Excess gain</b> <b>M*6</b> 	<b>Parallel displacement</b> <b>M*6</b> 	<b>Distance / target size</b> <b>M*6</b> 	<b>Excess gain</b> <b>M*C</b> 
<b>Parallel displacement</b> <b>M*C</b> 	<b>Excess gain</b> <b>M*P</b> 	<b>Parallel displacement</b> <b>M*P</b> 	<b>Excess gain</b> <b>M*E - M*R</b> 
<b>Parallel displacement</b> <b>M*E - M*R</b> 	<b>Angular displacement</b> <b>M*E - M*R</b> 	<b>Mutual interference</b> <b>M*E - M*R</b> 	<b>Excess gain</b> <b>M*E - M*D</b> 
<b>Parallel displacement</b> <b>M*E - M*D</b> 	<b>Angular displacement</b> <b>M*E - M*D</b> 	<b>Mutual interference</b> <b>M*E - M*D</b> 	