



# SA series

M18 DC high performances  
with rear adjustment



M18 with high performances



## features

- Wide range of models: diffuse, retro-reflective, polarized and fixed-focus
- All models are available with sensitivity adjustment trimmer
- Double LED indicator (ON/OFF - supply)
- NO/NC selectable output
- IP65 protection degree
- Complete protection against electrical damage
- Wide range of plugs, accessories and reflectors available
- Approvals: CE

## web contents



- Application notes
- Photos
- Catalogue / Manuals



## code description

SA 2 / 0 N - 0 C

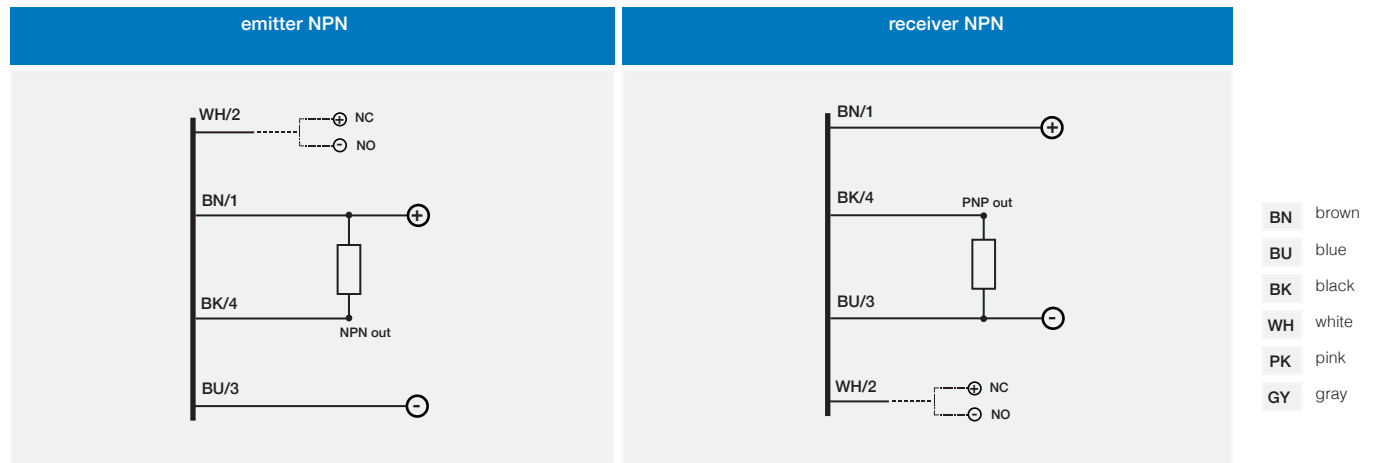
series	SA	M18 photoelectric sensor with high performance
	2	150 mm diffuse reflection
type	6	400 mm diffuse reflection
	8	1000 mm diffuse reflection
	C	6 m retro-reflective
	P	3.5 m polarized
	T	Diffuse reflection fixed-focus
NO / NC	0	NO/NC selectable
NPN / PNP output	N	NPN output logic
	P	PNP output logic
housing material	0	Plastic housing
	1	Metal housing
cable / plug exit	C	Right angle cable output 2 m
	K	M12 right angle plug cable exit



## available models

output	function	distance	plastic models		metal models	
			PNP NO/NC	NPN NO/NC	PNP NO/NC	NPN NO/NC
right angle cable	diffuse reflection	150 mm	SA2/0P-0C	SA2/0N-0C	SA2/0P-1C	SA2/0N-1C
		400 mm	SA6/0P-0C	SA6/0N-0C	SA6/0P-1C	SA6/0N-1C
		1.000 mm	SA8/0P-0C	SA8/0N-0C	SA8/0P-1C	SA8/0N-1C
	retro-reflective	6 m	SAC/0P-0C	SAC/0N-0C	SAC/0P-1C	SAC/0N-1C
	polarized	3 m	SAP/0P-0C	SAP/0N-0C	SAP/0P-1C	SAP/0N-1C
	focalized with STF-12	12 mm	SAT/0P-0C	SAT/0N-0C	SAT/0P-1C	SAT/0N-1C
	focalized with STF-25	25 mm				
	focalized with STF-50	50 mm				
M12 right angle plug	diffuse reflection	150 mm	SA2/0P-0K	SA2/0N-0K	SA2/0P-1K	SA2/0N-1K
		400 mm	SA6/0P-0K	SA6/0N-0K	SA6/0P-1K	SA6/0N-1K
		1.000 mm	SA8/0P-0K	SA8/0N-0K	SA8/0P-1K	SA8/0N-1K
	retro-reflective	6 m	SAC/0P-0K	SAC/0N-0K	SAC/0P-1K	SAC/0N-1K
	polarized	3 m	SAP/0P-0K	SAP/0N-0K	SAP/0P-1K	SAP/0N-1K
	focalized with STF-12	12 mm	SAT/0P-0K	SAT/0N-0K	SAT/0P-1K	SAT/0N-1K
	focalized with STF-25	25 mm				
	focalized with STF-50	50 mm				

## electrical diagrams of the connections



In case of combined load, resistive and capacitive, the maximum admissible capacity C is 0,2µF, for maximum load voltage and current.

Indications NO and NC are referred to the diffuse reflection sensors (on target absence). For retro-reflective models the indication NO to be replaced by NC and NC becomes NO.

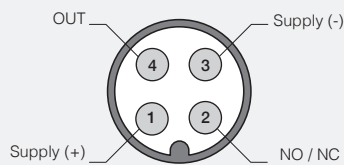


	iffuse reflection			retro-reflective		fixed-focus		
	standard			standard	polarized	STF-12	STF-25	STF-50
	SA2/0*-**	SA6/0*-**	SA8/0*-**	SAC/0*-**	SAP/0*-**	SAT/0*-**		
nominal sensing distance	150 mm <sup>(1)</sup>	400 mm <sup>(1)</sup>	1.000 mm <sup>(2)</sup>	6 m <sup>(3)</sup>	3 m <sup>(3)</sup>	12 mm	25 mm	50 mm
emission	infrared (880 nm)					red (660 nm)		
tolerance	+15...-10 % Sn							
hysteresis	≤ 10 %							
repeatability	5 %							
operating voltage	10...30 Vdc							
ripple	≤ 10 %							
no-load supply current	≤ 30 mA	≤ 35 mA	≤ 30 mA	≤ 35 mA	≤ 30 mA			
load current	≤ 100 mA							
leakage current	≤ 10 µA							
output voltage drop	2 V max. IL = 100 mA							
output type	NPN or PNP, NO/NC selectable							
switching frequency	1 kHz max.							
power on delay	200 ms							
power supply protections	polarity reversal, transient							
output protection	short circuit (autoreset)							
operating temperature range	- 25°C...+ 70°C (without freeze)							
temperature drift	≤ 10 % Sr							
protection degree	IP67 (EN60529) <sup>(4)</sup>							
EMC	in conformity with the EMC Directive according to EN 60947-5-2							
external light interference	3,000 lux (incandescent lamp), 10,000 lux (sunlight)							
LEDs	yellow (output energized), green (supply), red (activated output)							
housing material	BT (plastic housing), nickel-plated brass (metal housing), nylon (cable exit)							
optic material	PMMA					glass (STF-**)		
tightening torque	1 Nm (plastic housing) / Nm (metal housing)							
weight (approximate)	plastic version: 40 g connector / 75 g cable metallic version: 100 g connector / 140 g cable							

<sup>(1)</sup> With 100x100 mm white matt paper <sup>(2)</sup> With 200x200 mm white matt paper <sup>(3)</sup> With standard reflector Ø 80 mm (RL110 supplied separately) <sup>(4)</sup> Protection guaranteed only with plug cable well mounted.

## plug

### M12



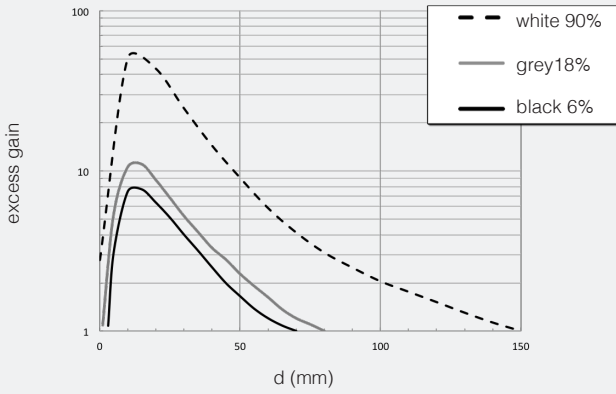


# response diagrams

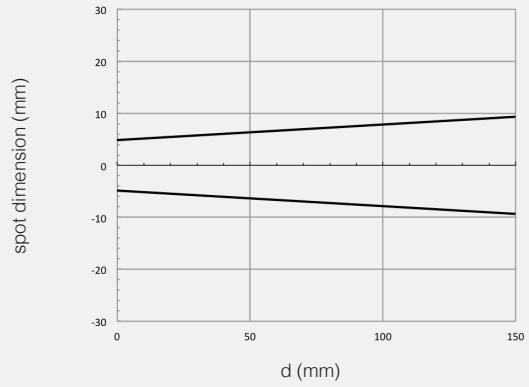
direct diffuse models

M18 with high performances

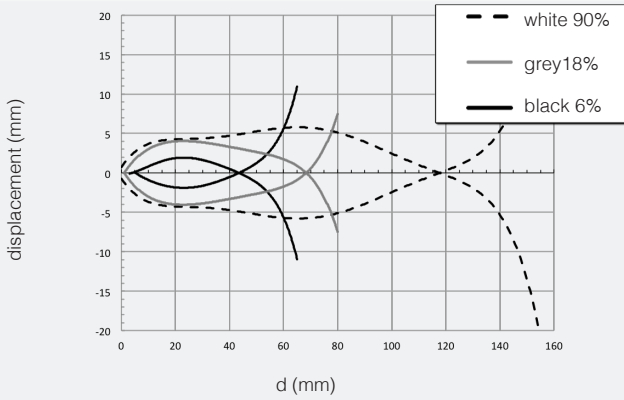
SA2/0\*-\*\* excess gain



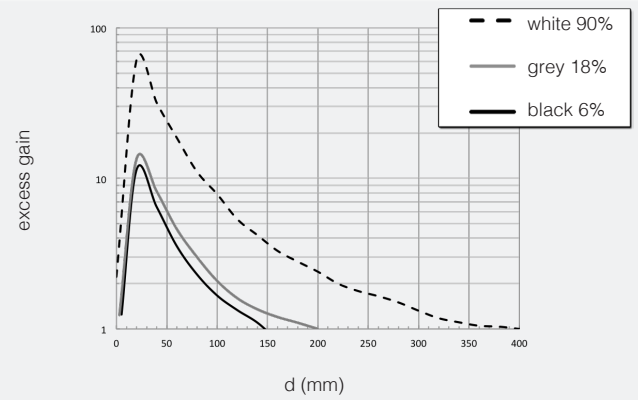
SA2/0\*-\*\* spot dimension



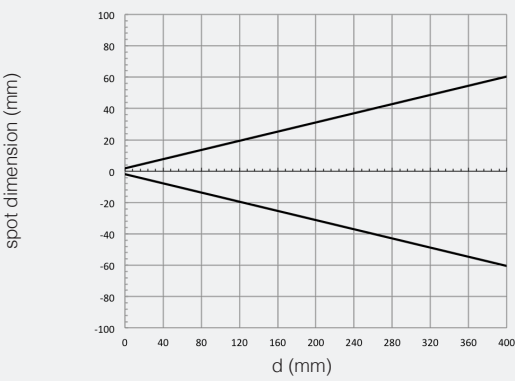
SA2/0\*-\*\* parallel displacement



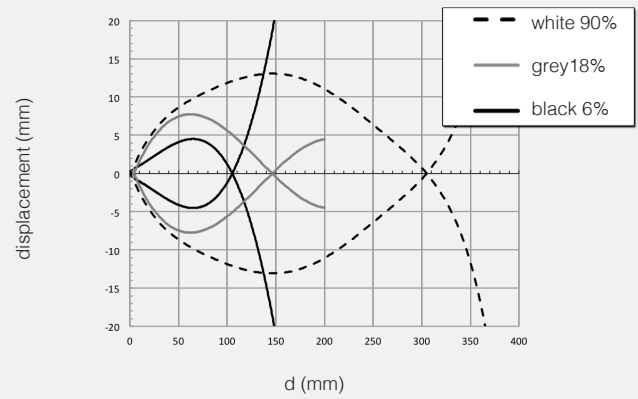
SA6/0\*-\*\* excess gain



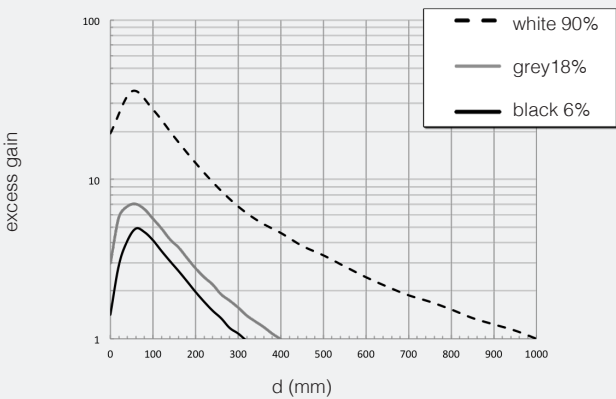
SA6/0\*-\*\* spot dimension



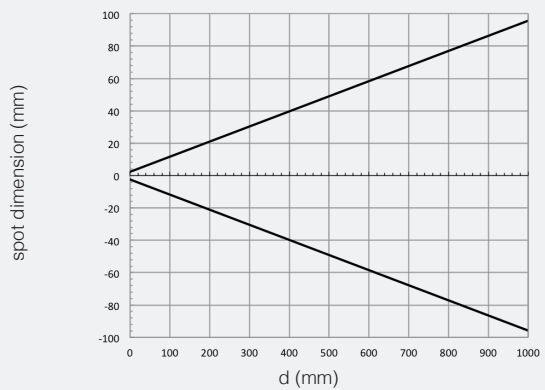
SA6/0\*-\*\* parallel displacement



SA8/0\*-\*\* excess gain



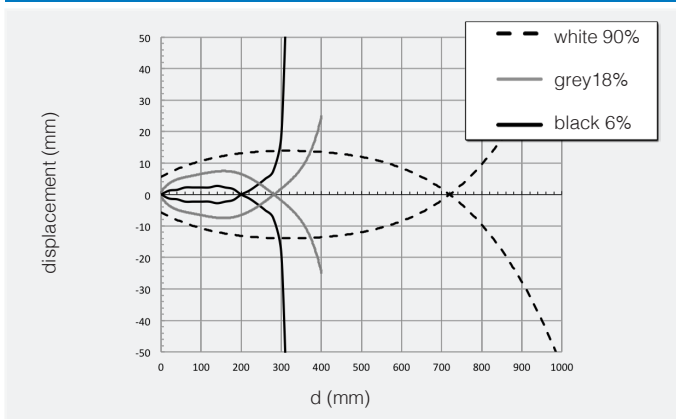
SA8/0\*-\*\* spot dimension



SA



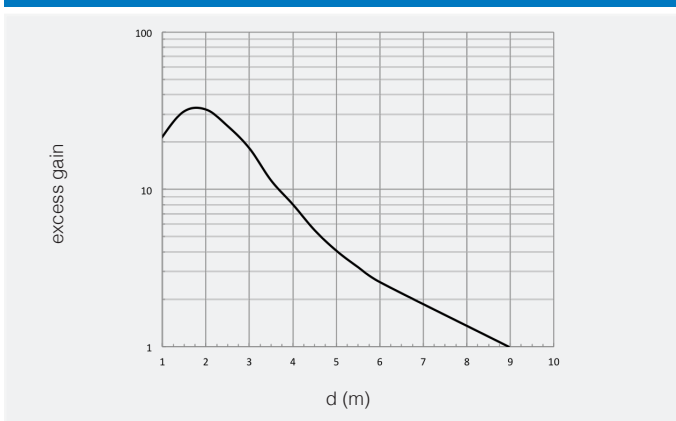
SA8/0\*-\*\* parallel displacement



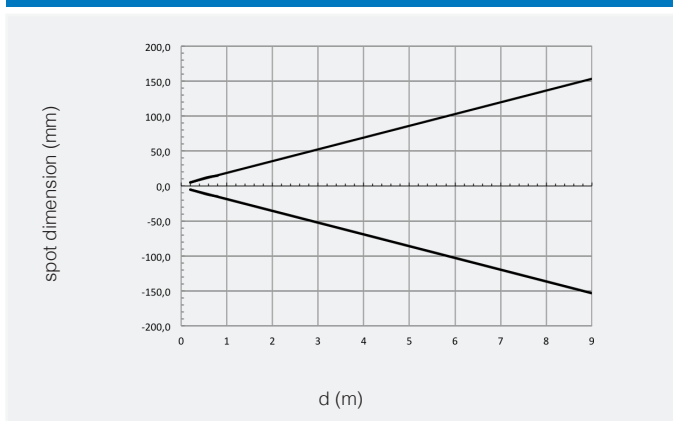
## response diagrams

direct diffuse models

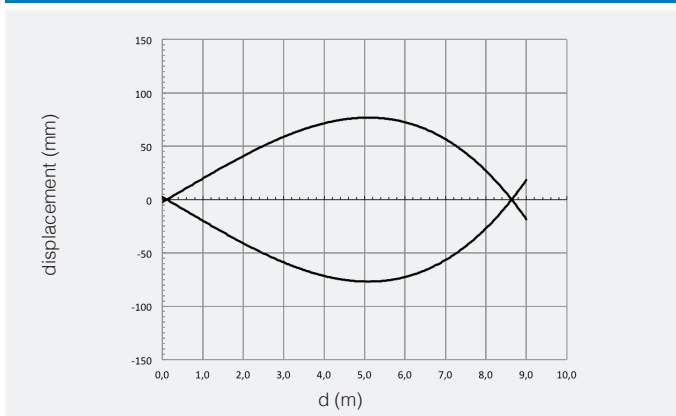
SAC/0\*-\*\* excess gain



SAC/0\*-\*\* spot dimension



SAC/0\*-\*\* parallel displacement



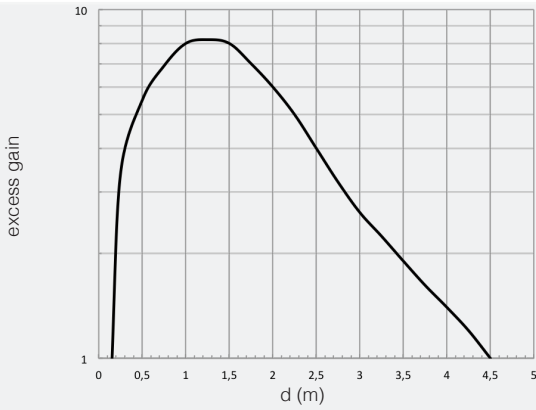


## response diagrams

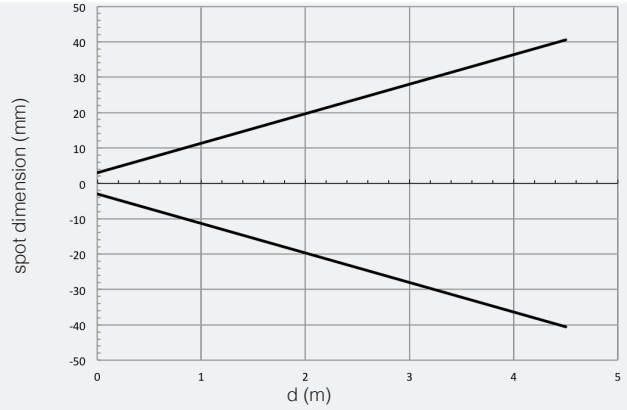
polarized models (diagrams detected with RL110)

M18 with high performances

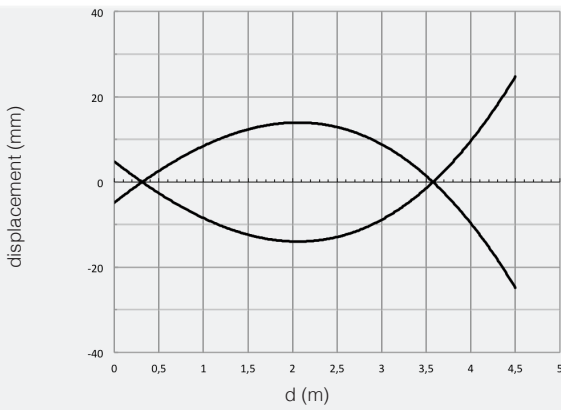
SAP/\*\*-\*\* excess gain



SAP/\*\*-\*\* spot dimension



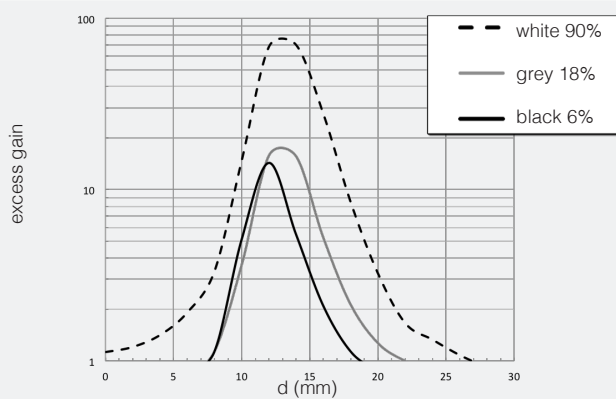
SAP/\*\*-\*\* parallel displacement



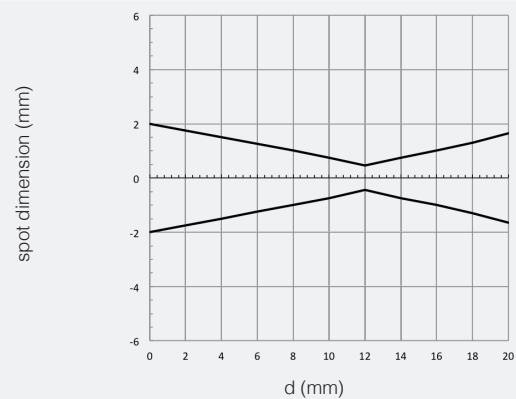
## response diagrams

direct diffuse models

S\*T/\*\*-\*\* + STF-50 excess gain



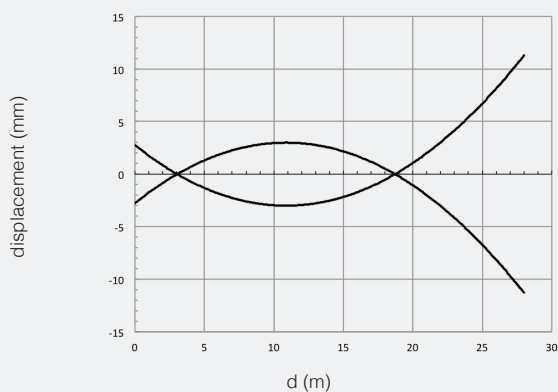
S\*T/\*\*-\*\* + STF-50 spot dimension



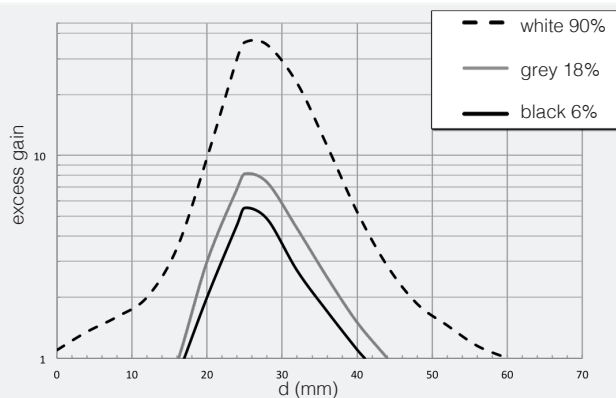
SA



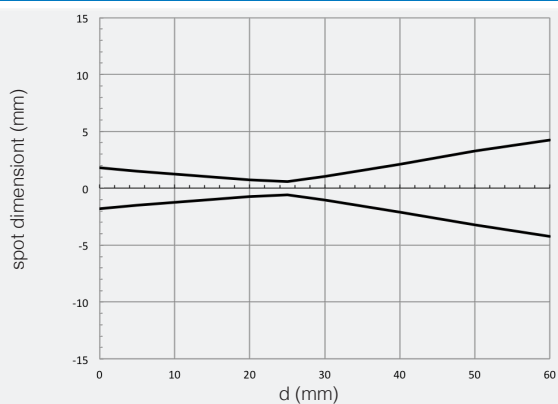
S\*T/\*\*-\*\* + STF-50 parallel displacement



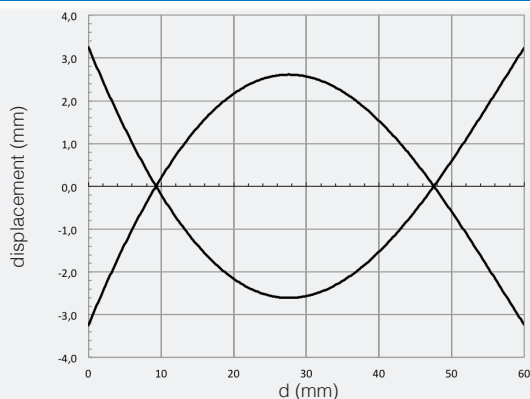
S\*T/\*\*-\*\* + STF-50 excess gain



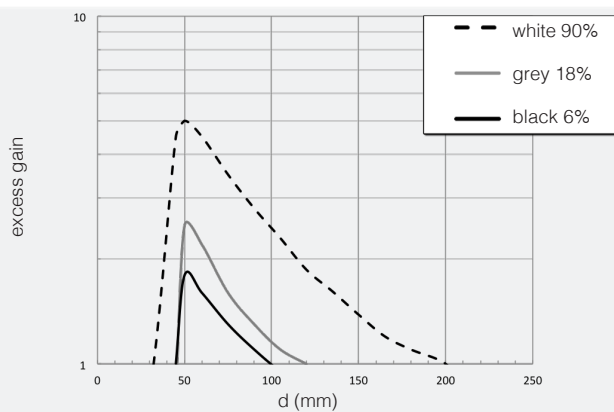
S\*T/\*\*-\*\* + STF-50 spot dimension



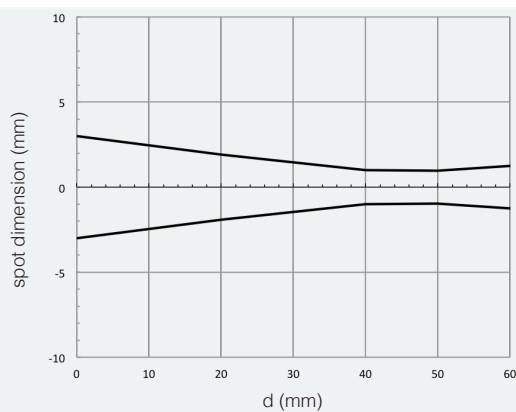
S\*T/\*\*-\*\* + STF-50 parallel displacement



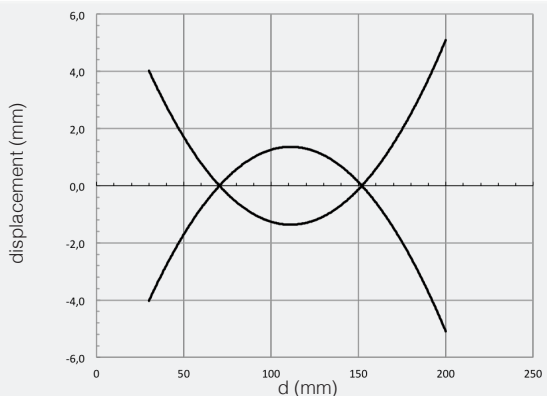
S\*T/\*\*-\*\* + STF-50 excess gain



S\*T/\*\*-\*\* + STF-50 spot dimension



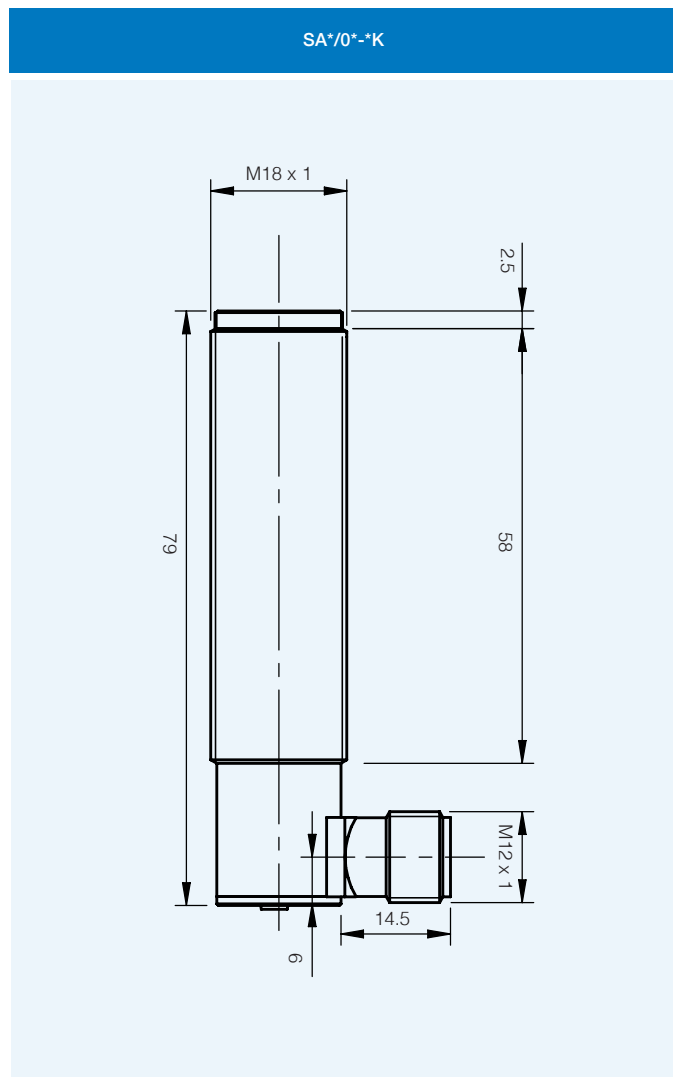
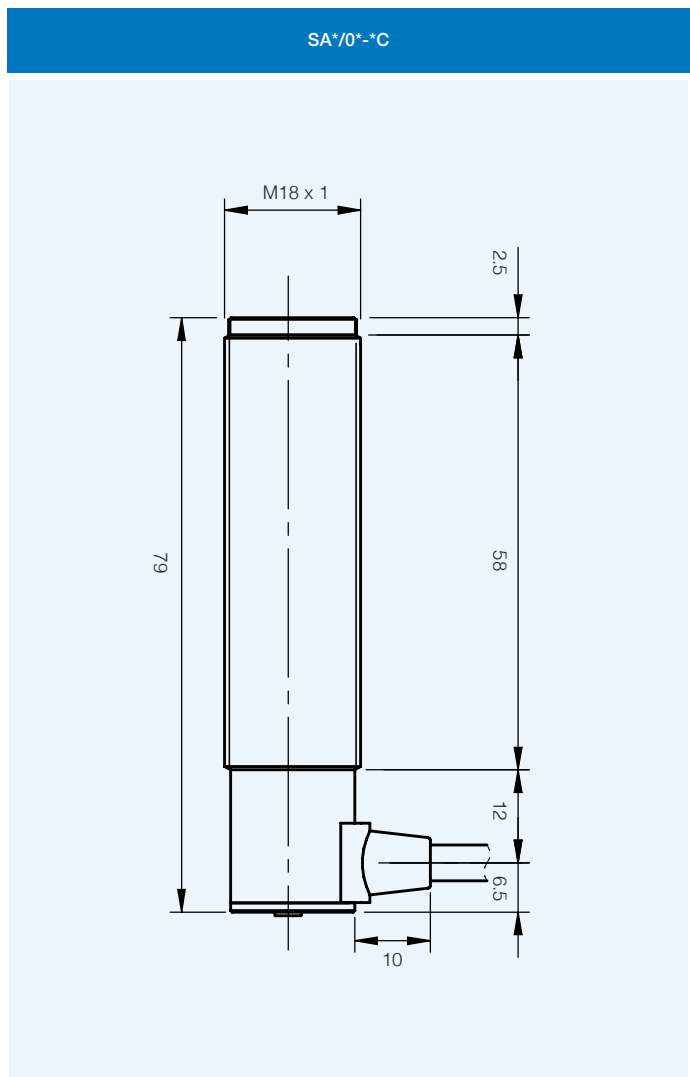
S\*T/\*\*-\*\* + STF-50 parallel displacement





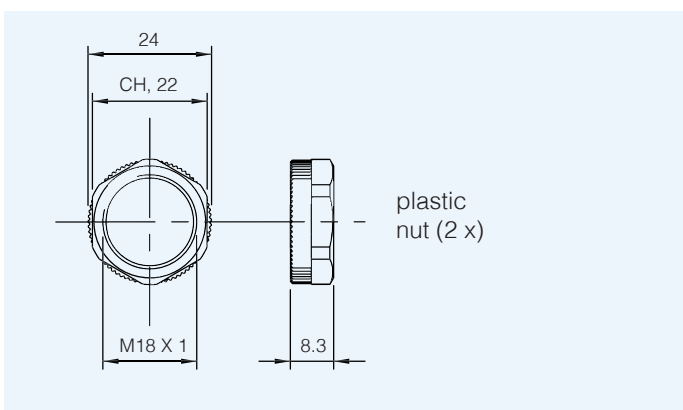
# dimensions (mm)

M18 with high performances



# dimensions (mm)

accessories included in all plastic models



# dimensions (mm)

accessories included in all metallic models

