

M18 Short Body Ultrasonic Sensor UK6

- M18 diffuse and retro-reflective models
- Digital output
- Analogue output



Options & Ordering Codes

Note: The feasibility of a code number does not mean the effective availability of a product

UK			6	A / H	1 - 0	E
Series						
M18 Ultrasonic Sensor		UK				
Function						
Diffuse models						
Retro-reflective models			R			
Housing Type						
M18 Short housing			6			
Nominal Sensing Distance Sn						
40...300 mm (diffuse models), 50...300 mm (retro-reflective models)				A		
60...800 mm (diffuse models), 80...800 mm (retro-reflective models)				C		
80...1,200 mm (diffuse models), 100...1,200 mm (retro-reflective models)				D		
Adjustment						
Teach-In by cable				H		
Cable Exit/Connector						
E						M12 plug cable exit
A						2 m cable exit
Housing Materials						
0						Axial plastic housing
1						AISI 316L (DIN 1.4404) stainless steel housing (axial)
Output						
1						0...10 V single voltage analogue output
2						4...20 mA single current analogue output
P						PNP - NO/NC digital output
N						NPN - NO/NC digital output

(*) Sensitivity adjustment and status selection available by external Teach-In.

Available models
Diffuse models

Housing	Material	Output	Distance (mm)	PNP - NO/NC	NPN - NO/NC	Analogue output 0...10 V	Analogue output 4...20 mA
M18	Plastic	M12	40...300	UK6A/HP-0E	UK6A/HN-0E	UK6A/H1-0E	UK6A/H2-0E
			60...800	UK6C/HP-0E	UK6C/HN-0E	UK6C/H1-0E	UK6C/H2-0E
			80...1,200	UK6D/HP-0E	UK6D/HN-0E	UK6D/H1-0E	UK6D/H2-0E
		Cable	40...300	UK6A/HP-0A	UK6A/HN-0A	UK6A/H1-0A	UK6A/H2-0A
			60...800	UK6C/HP-0A	UK6C/HN-0A	UK6C/H1-0A	UK6C/H2-0A
			80...1,200	UK6D/HP-0A	UK6D/HN-0A	UK6D/H1-0A	UK6D/H2-0A

Housing	Material	Output	Distance (mm)	PNP - NO/NC	NPN - NO/NC	Analogue output 0...10 V	Analogue output 4...20 mA
M18	Metal	M12	40...300	UK6A/HP-1E	UK6A/HN-1E	UK6A/H1-1E	UK6A/H2-1E
			60...800	UK6C/HP-1E	UK6C/HN-1E	UK6C/H1-1E	UK6C/H2-1E
			80...1,200	UK6D/HP-1E	UK6D/HN-1E	UK6D/H1-1E	UK6D/H2-1E
		Cable	40...300	UK6A/HP-1A	UK6A/HN-1A	UK6A/H1-1A	UK6A/H2-1A
			60...800	UK6C/HP-1A	UK6C/HN-1A	UK6C/H1-1A	UK6C/H2-1A
			80...1,200	UK6D/HP-1A	UK6D/HN-1A	UK6D/H1-1A	UK6D/H2-1A

Available models
Retro-reflective models

Housing	Output	Distance (mm)	Plastic housing		Metal housing	
			PNP - NO/NC	NPN - NO/NC	PNP - NO/NC	NPN - NO/NC
M18	M12	50...300	UKR6A/HP-0E	UKR6A/HN-0E	UKR6A/HP-1E	UKR6A/HN-1E
		80...800	UKR6C/HP-0E	UKR6C/HN-0E	UKR6C/HP-1E	UKR6C/HN-1E
		100...1,200	UKR6D/HP-0E	UKR6D/HN-0E	UKR6D/HP-1E	UKR6D/HN-1E
	Cable	50...300	UKR6A/HP-0A	UKR6A/HN-0A	UKR6A/HP-1A	UKR6A/HN-1A
		80...800	UKR6C/HP-0A	UKR6C/HN-0A	UKR6C/HP-1A	UKR6C/HN-1A
		100...1,200	UKR6ADHP-0A	UKR6D/HN-0A	UKR6D/HP-1A	UKR6D/HN-1A

Specifications

Diffuse models

	UK6A/H*..**	UK6C/H*..**	UK6D/H*..**
			
Nominal sensing distance	300mm	800mm	1,200mm
Minimum sensing distance	40 mm	60 mm	80 mm
Beam angle	$7^\circ \pm 2^\circ$	$8^\circ \pm 2^\circ$	
Switching frequency	8 Hz	5 Hz	5 Hz
Operating voltage	10...30 Vdc		
Max ripple content	5 %		
Output type	PNP or NPN - NO/NC selectable analogue output: 0...10 V - 4...20 mA		
Output current	100 mA		
Output voltage drop	$\leq 2,2 \text{ V}$ (@ I = 100 mA)		
No-load supply current	$\leq 35 \text{ mA}$ @ Val = 30 V		
Leakage current	$\leq 10 \mu\text{A}$ @ 30 V		
Power on delay	$\leq 100 \text{ ms}$		
Temperature range	$-20^\circ\text{C} \dots +70^\circ\text{C}$		
Temperature drift of Sr	$\leq 5 \%$		
Short-circuit protection	● (autoreset)		
Induction protection	●		
Voltage reversal protection	●		
Weight	plastic version: 65 g connector / 75 g cable metallic housing: 80 g connector / 140 g cable		
LEDs	yellow: output green: alignment		
Protection degree	IP67		
EMC	IEC60947-5-2		
Housing material	plastic housing: PTB metal housing: AISI316L		
Active head material	epoxy - glass resin		
Connection	M12 plug cable exit 2 m cable exit		

⁽¹⁾ metal target 100 x 100

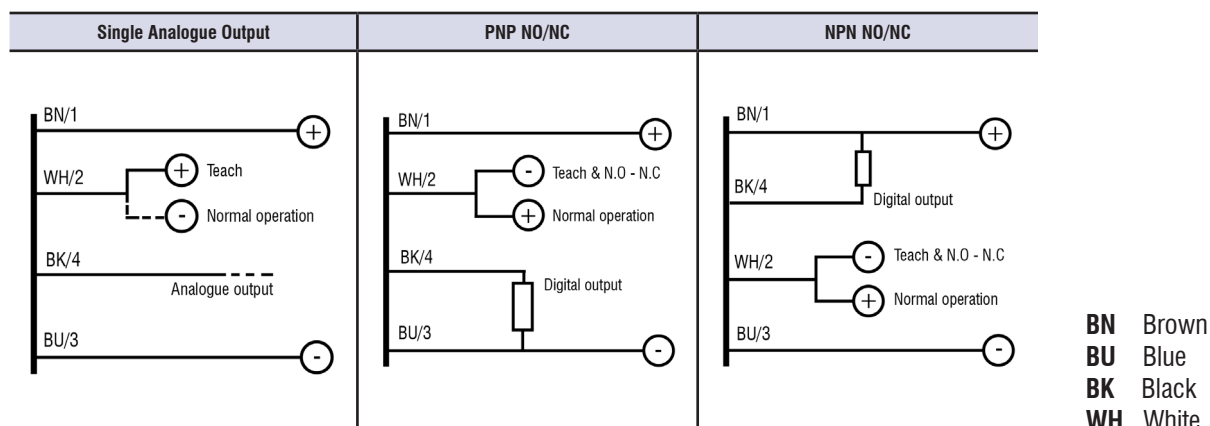
⁽²⁾ metal target 200 x 200

Specifications

Retro-reflective models

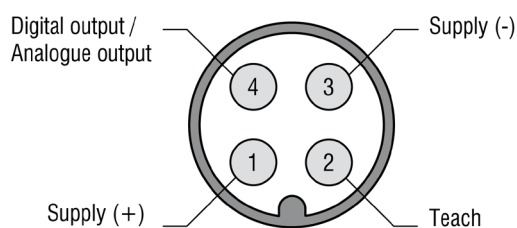
	UK6RA/H*..**	UKR6C/H*..**	UKR6D/H*..**
			
Nominal sensing distance	300mm	800mm	1,200mm
Detection distance S_r	270 mm	720 mm	1,080 mm
Minimum distance from background	50 mm	80 mm	100 mm
Beam angle	$7^\circ \pm 2^\circ$	$8^\circ \pm 2^\circ$	
Switching frequency	8 Hz	5 Hz	3 Hz
Operating voltage	10...30 Vdc		
Max ripple content	5 %		
Output type	PNP or NPN - NO/NC selectable		
Output current	100 mA		
Output voltage drop	$\leq 2,2 \text{ V}$ (@ $I = 100\text{mA}$)		
No-load supply current	$\leq 35 \text{ mA}$ @ $V_{al} = 30 \text{ V}$		
Leakage current	$\leq 10 \mu\text{A}$ @ 30 V		
Power on delay	$\leq 100 \text{ ms}$		
Temperature range	$-20^\circ\text{C} \dots +70^\circ\text{C}$		
Temperature drift of S_r	$\leq 5 \%$		
Short-circuit protection	● (autoreset)		
Induction protection	●		
Voltage reversal protection	●		
Weight	65 g plastic version / 80 g metallic version		
LEDs	yellow: output green: alignment		
Protection degree	IP67		
EMC	IEC60947-5-2		
Housing material	plastic housing: PTB metal housing: AISI316L		
Active head material	epoxy - glass resin		
Connection	M12 plug cable exit 2 m cable exit		

Wiring diagrams



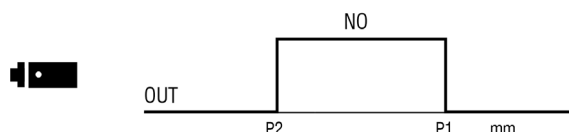
Plug

M12

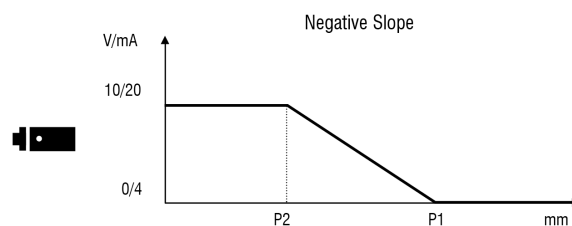
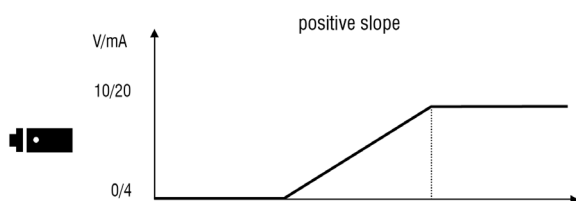


Available Outputs

Single Digital Output



Single Analogue Output



Setting up instructions

Reflector detection (Sd)

Install the sensor in the correct position. Install the background (any solid, flat, fixed surface) perpendicularly to the sensor's axes. Connect the Teach-in wire to +24V (PNP models) or to 0V (NPN models) for 2 sec. Yellow LED blinks for 5 times, after that, the sensor acquires the background position (Sd distance).

NO/NC selection

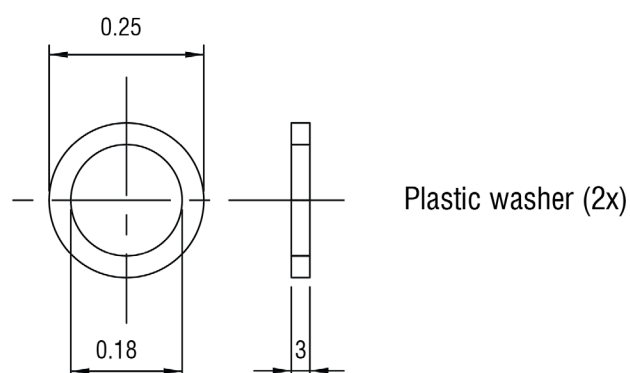
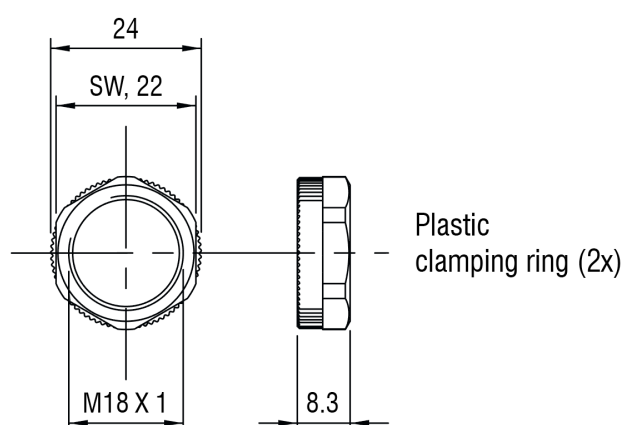
Connect the Teach-in wire to +24V (PNP models) or to 0V (NPN models) for a time > 8 sec. Yellow LED blinks quickly until the teach-in wire is released, then 5 blinks confirm the change of working state. The sensor change its working mode from NO to NC and vice versa.

Operating distance (Sr)

The effective operating distance (Sr) is equivalent to background diastance (Sd) decreases of 10%. This hysteresis allows the correct detection of the target even if the background is vibrating during the machine normal operations.

Dimensions (mm)

Cable exit	M12 Plug exit

Dimensions (mm)
Included with all plastic models

Dimensions (mm)
Included with all metal body models
