UT series

M30 Ultrasonic Sensor with Teach-In button

features

- M30 ultrasonic sensor with standard housing and with large front with high performances and high sensing distances
- Adjustable hysteresis function: models with double digital programmable output specific for level detection
- Models with voltage or current output: programmable slope to optimize resolution
- Adjustable working area (window mode or object mode) by Teach-in button on all models for a quick and easy installation
- Models with remote adjustment via cable
- Two multifunction LEDs: orange LED for adjustment procedure and output type and green LED for target alignment
- Plastic and AISI 316L stainless steel housing, plug M12 or cable exit 5 pin

web contents

- Application notes
- Photos
- Catalogue / Manuals



IO-Link

code description(*)

UT ▢ 1 B / G 4 - 0 E SY IO

series	UT	M30 Ultrasonic Sensor
function	▢	Direct diffuse models
housing type	1	Standard housing
	2	Large front transducer, Ø 38.8 mm
	5	Large front transducer Ø 61 mm
nominal sensing distance Sn	B	250 - 3,500 mm direct diffuse
	F	350 – 6,000 mm direct diffuse
	L	600 - 8,000 mm direct diffuse
adjustment	G	Sensitivity adjustment and NO/NC selection by Teach-in button
	H	Sensitivity adjustment and NO/NC selection by Teach-in cable
output	4	NPN - NO/NC digital output + 4 ... 20 mA current analogue output
	6	PNP - NO/NC digital output + 4 ... 20 mA current analogue output
	7	PNP - NO/NC digital output + 0 ... 10 V voltage analogue output
	9	NPN - NO/NC digital output + 0 ... 10 V voltage analogue output
	M	NPN two digital outputs with standard window and adjustable hysteresis functions
	W	PNP two digital outputs with standard window and adjustable hysteresis functions
housing materials	0	Plastic housing
	1	AISI 316L (DIN 1.4404) stainless steel housing
cable exit / connector	A	2 m cable exit
	E	M12 plug cable exit
SYNK/MUX function	SY	SYNK/MUX function
Teach-in by cable	UL	With cable Teach-in function, without SYNC / MUX function
IO-Link	IO	IO-Link version

available models

cULus certified - Double digital output

housing	distance (mm)	output	2 X PNP (isteresi regolabile + finestra standard MD)		2 X NPN (isteresi regolabile + finestra standard MD)	
			Teach-in	Regolazione remota	Teach-in	Regolazione remota
plastic	250...3,500	M12	UT1B/GW-0ESY	UT1B/HW-0ESY	UT1B/GM-0ESY	-
AISI316L			UT1B/GW-1ESY	UT1B/HW-1ESY	UT1B/GM-1ESY	-
plastic	350...6,000		UT2F/GW-0ESY	UT2F/HW-0ESY	UT2F/GM-0ESY	-
AISI 316L housing + plastic transducer	600...8,000		UT5L/GW-1ESY	UT5L/HW-1ESY	UT5L/GM-1ESY	-

available models

cULus certified - Double mixed output (digital + analogue)

corpo	portata (mm)	uscita	1 x PNP - NO/NC + 4...20 mA	1 x NPN - NO/NC + 4...20 mA	1 x PNP - NO/NC + 0...10 V	1 x NPN - NO/NC + 0...10 V
plastic	250...3.500	connettore M12	UT1B/G6-0ESY	UT1B/G4-0ESY	UT1B/G7-0ESY	UT1B/G9-0ESY
AISI 316L			UT1B/G6-1ESY	UT1B/G4-1ESY	UT1B/G7-1ESY	UT1B/G9-1ESY
plastic	350...6.000		UT2F/G6-0ESY	UT2F/G4-0ESY	UT2F/G7-0ESY	UT2F/G9-0ESY
AISI 316L + plastic trasducer	600...8.000		UT5L/G6-1ESY	UT5L/G4-1ESY	UT5L/G7-1ESY	UT5L/G9-1ESY
plastic	250...3.500		UT1B/H6-0ESY	-	UT1B/H7-0ESY	-
AISI 316L Stainless steel			UT1B/H6-1ESY	-	UT1B/H7-1ESY	-
plastic	350...6.000		UT2F/H6-0ESY	-	UT2F/H7-0ESY	-
AISI 316L + plastic trasducer	600...8.000		UT5L/H6-1ESY	-	UT5L/H7-1ESY	-

available models

cULus certified - Double output (IO-Link + analogue)

housing	distance (mm)	output	1 x IO-Link + 4...20 mA	1 x IO-Link + 1 x PNP
AISI 316L	250...3,500	M12	UT1B/G6-1ESYIO	UT1B/GW-1ESYIO
plastic			UT1B/G6-0ESYIO	UT1B/GW-0ESYIO
plastic	350...6,000		UT2F/G6-0ESYIO	UT2F/GW-0ESYIO
AISI 316L	600...8,000		UT5L/G6-1ESYIO	UT5L/GW-1ESYIO

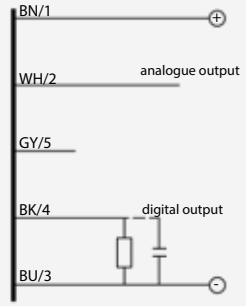
technical specification (cULus certified)

	UT1B/**-****	UT2F/**-****	UT5L/**-****
			
maximum sensing distance	3,500 mm [1]	6,000 mm [2]	8,000 mm [3]
minimum sensing distance	250 mm	350 mm	600 mm
sensing range (Sd)	250...3,500 mm	350...6,000 mm	600...8,000 mm
beam angle	12° ± 2°	15° ± 2°	10° ± 2°
switching frequency (digital output)	1 Hz		
response time (digital output)	1 s		
hysteresis	1 % off full scale value		
repeatibility	0.1 % off full scale value		1 % off full scale value
resolution	4 mm	6 mm	10 mm
linearity error	1 % off full scale value		
temperature range	- 20°C...+ 70°C		
temperature compensation	●		
operating voltage	10 - 30 Vcc		
temperature drift	± 5 %		
ripple	5 %		
leakage current	≤ 10 µA @ 30 Vcc		
output voltage drop	2.2 V max. (IL = 100 mA)		
no-load supply current	25 mA		
output current (digital output)	100 mA		
minimum load resistance (analog voltage output)	3 k Ω		
set point adjustment	Teach-In button (UT**/G*-****) - Remote Teach-in by cable (UT**/H*-****)		
power on delay	≤ 400 ms (digital output)		
power on delay	≤ 9600 ms (analogue output)		
power supply protections	polarity reversal, transient		
digital output electrical protection	short circuit (auto reset), overvoltage pulses		
analog output electrical protections	overvoltage pulses		
EMC	conforming to EMC Directive, according to EN 60947-5-2		
protection degree	IP67 (EN60529); NEMA 4X[4]	IP67 (EN 60529) [4]	
housing material	PBT/AISI 316L	PBT	AISI 316L + PBT
active head material	epoxy-glass resin AISI 316L + PBT		
tightening torque	1.5 Nm (plastic housing) / 100 Nm (metallic housing)	1.5 Nm	100 Nm (metallic housing)
LED	Green: ECHO - Yellow: output		
weight	plastic: 140 g connector / 200 g cable metallic: 215 g connector / 220 g cable	170 g connector / 300 g cable	400 g
storage temperature	- 30°C...+ 80° without freeze		

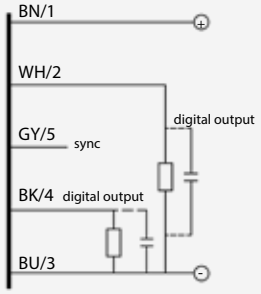
[1] Metallic target 200 x 200 mm [2] Metallic target 400 x 400 mm [3] Metallic target 1000 x 1000 mm [4] Protection guarantee only with plug cable well mounted

electrical diagrams of connections

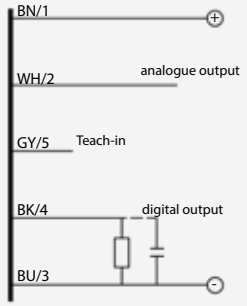
PNP NO/NC + analogue output (UT**/G*-****)



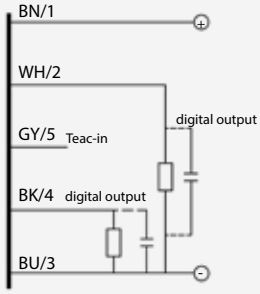
models with double PNP output (UT**/G*-****)



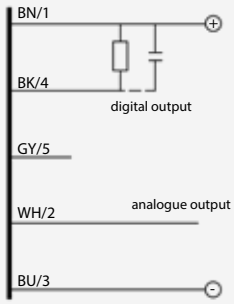
PNP NO/NC + analogue output (UT**/H*-****)



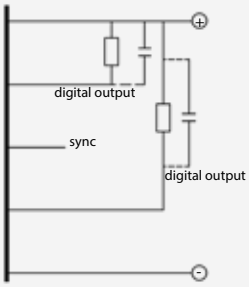
models with double PNP output (UT**/H*-****)



NPN NO/NC models + analogue output



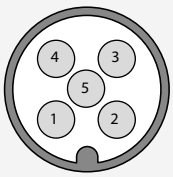
models with NPN double digital output



BN	brown
BU	blu
BK	black
WH	white
GY	gray

plugs

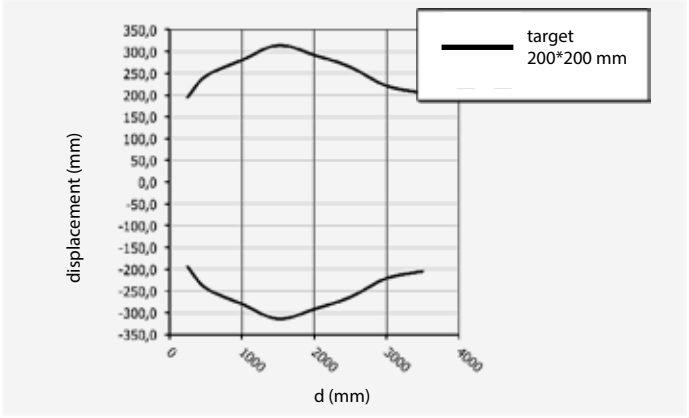
M12



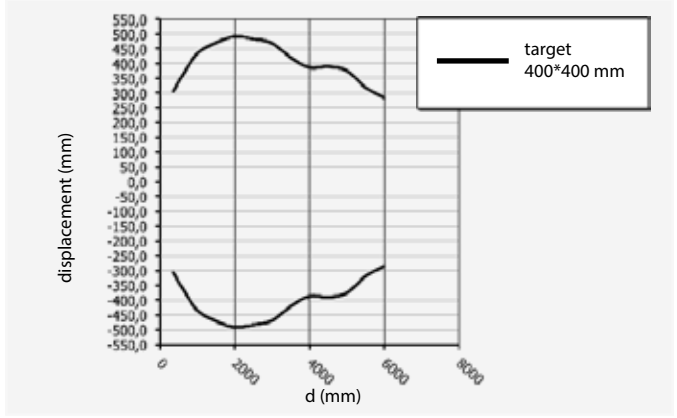
response diagrams

direct diffuse models

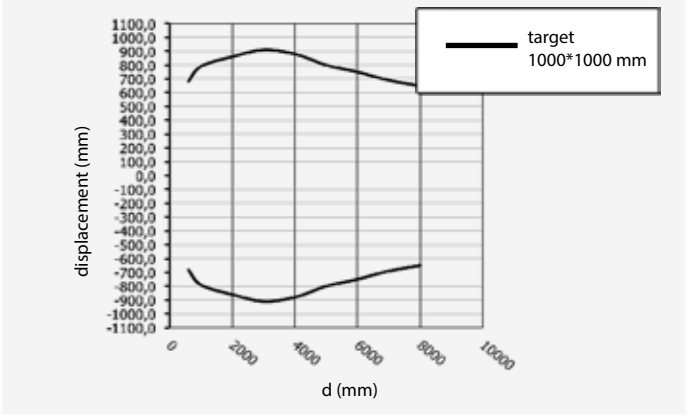
parallel displacement UT1B/**-**



parallel displacement UT2F/**-**

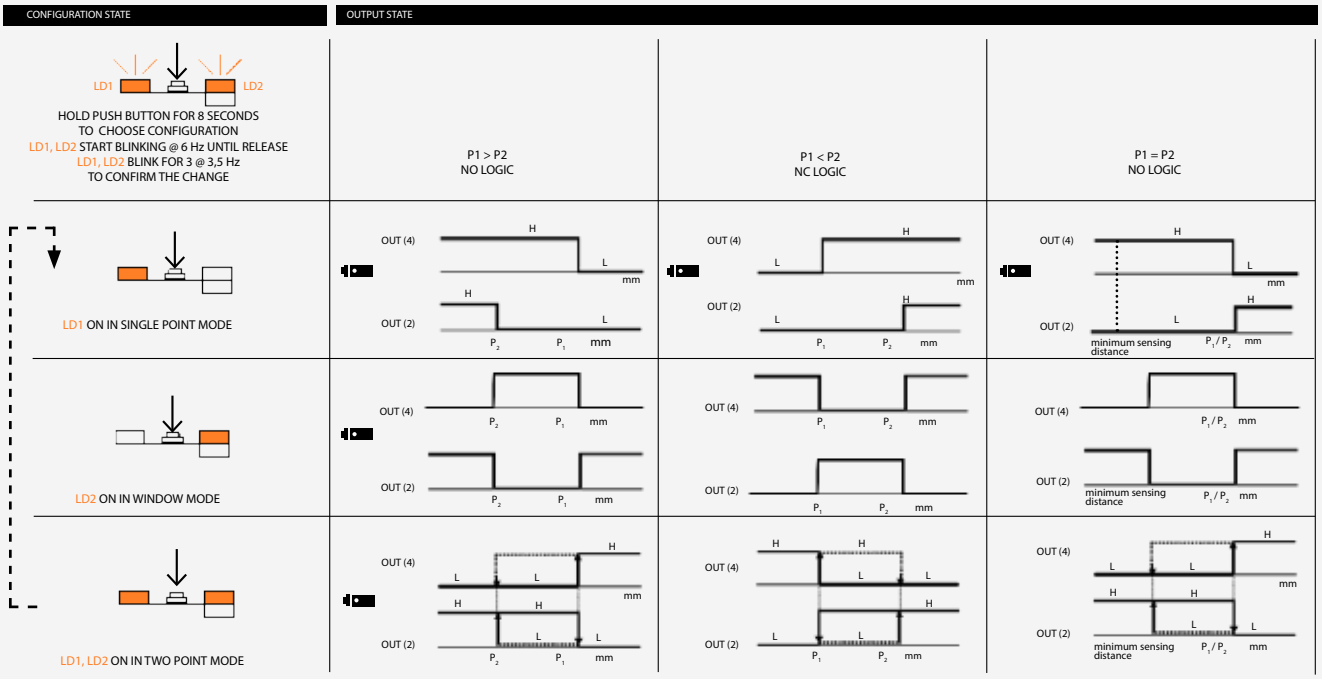


parallel displacement UT5L/**-**

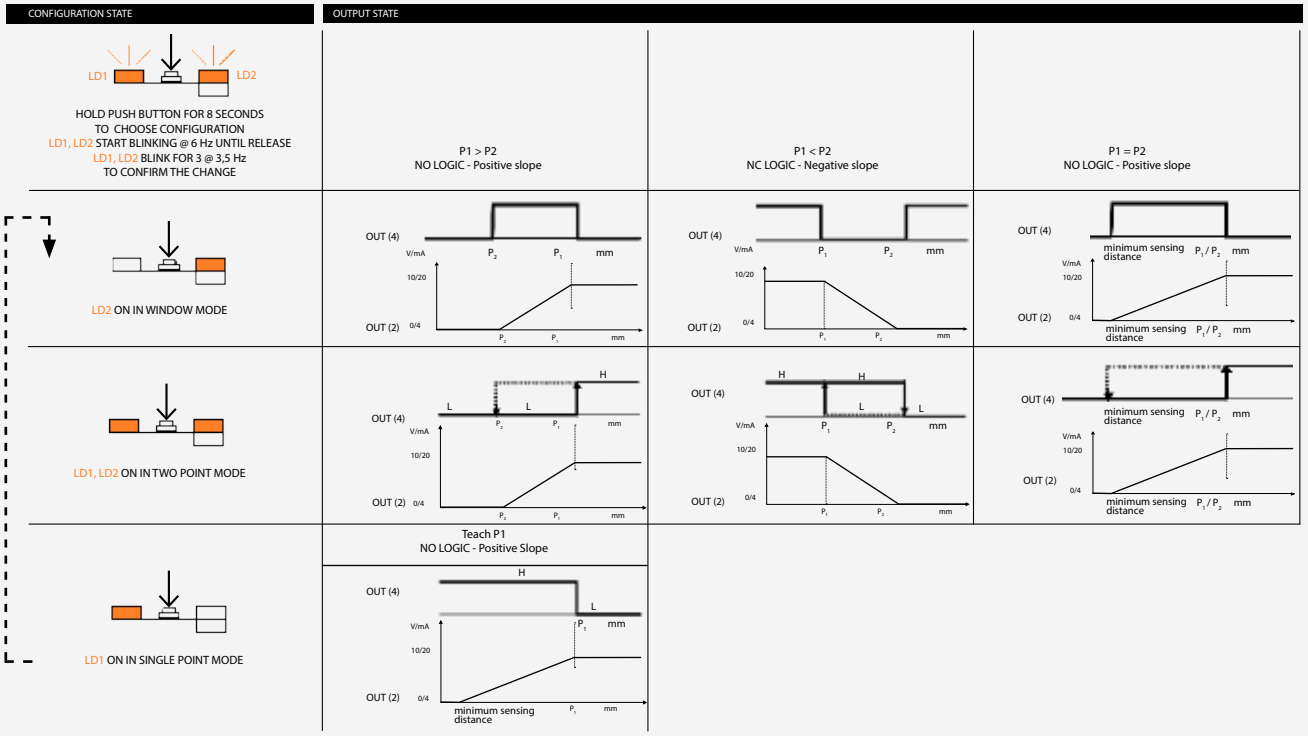


available outputs

double digital output models



mixed digital + analog models [1]



[1] Suitable, also, as single model output.

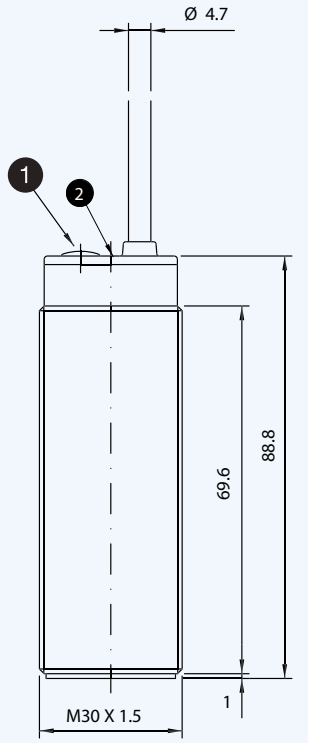
[2] In the double digital output model with the standard window and adjustable hysteresis functions if the target is removed from sensor detection range, the output type switches. These models are not forseen with NO/NC function.

P1	maximum selected working distance and first point to select
P2	minimum selected working distance and second point to select

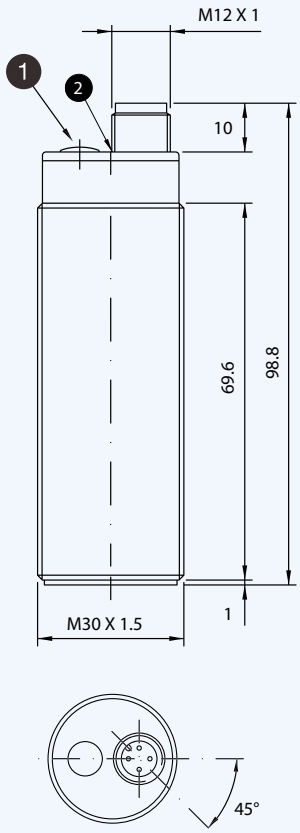
dimensions (mm)

plastic models

UT1B/** - 0A**



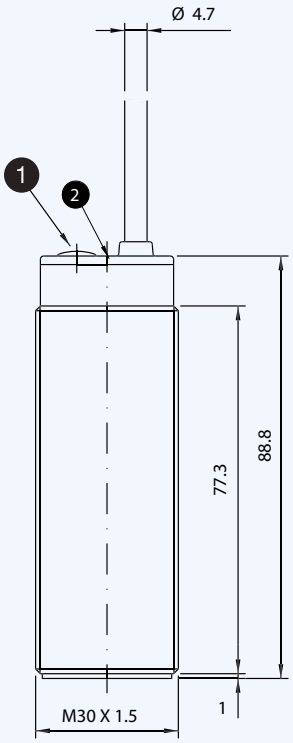
UT1B/** - 0E**



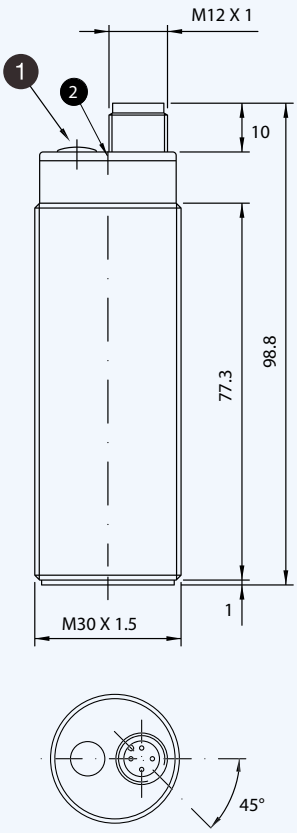
dimensions (mm)

metallic models

UT1B/** - 1A**



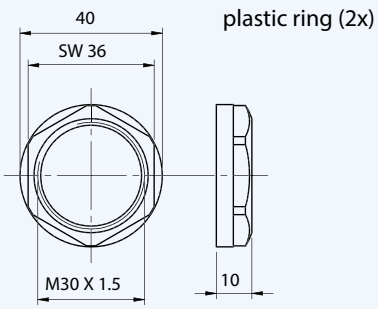
UT1B/** - 1E**



1 Teach-In button 2 LED

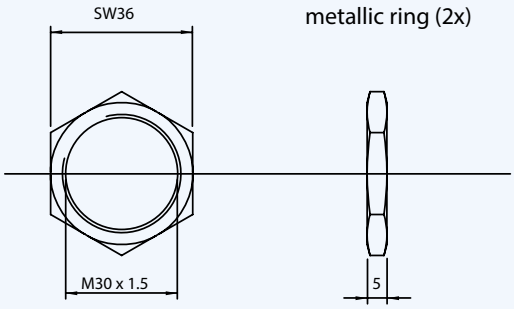
dimensions (mm)

accessories included in all plastic models



dimensions (mm)

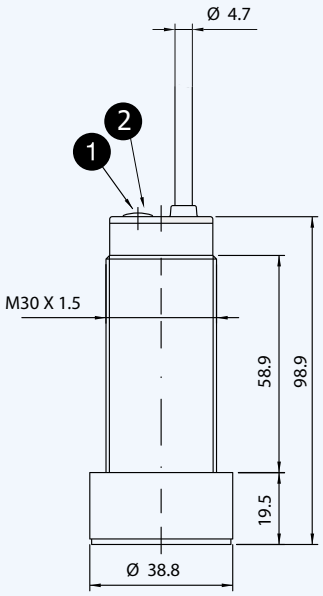
accessories included in all metallic models

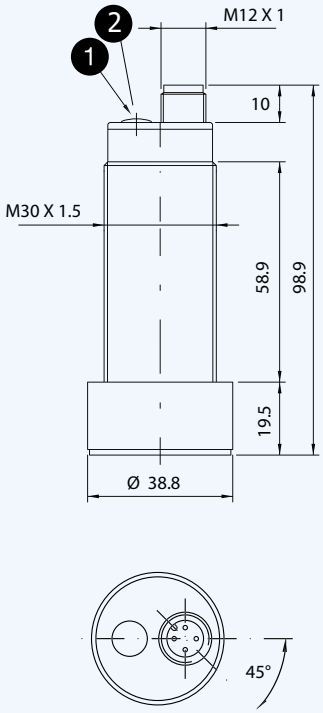


dimensions (mm)

plastic models

UT2F/** - 0A**	UT2F/** - 0E**

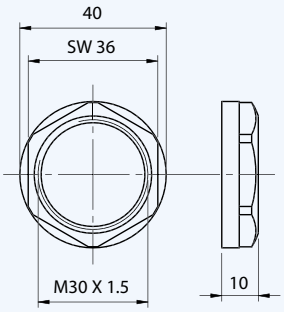




1 Teach-In button 2 LED

dimensions (mm)

accessories included in all plastic models

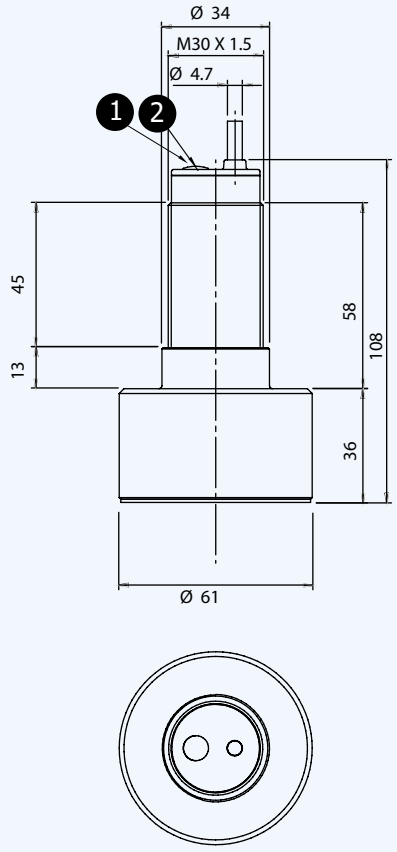


plastic ring (2x)

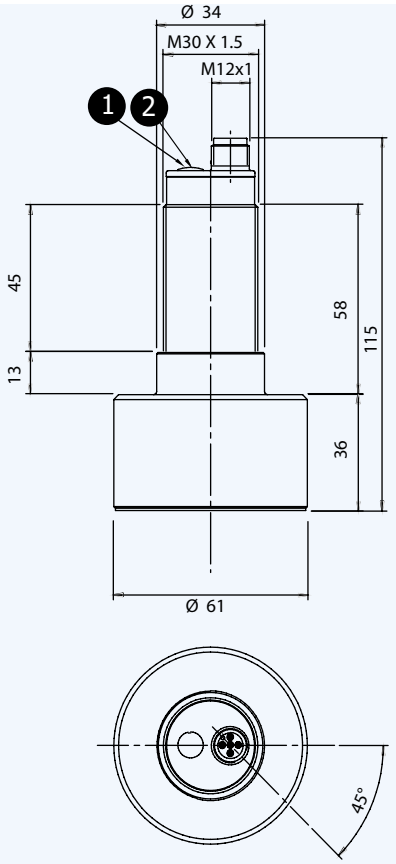
dimensions (mm)

metallic models

UT5L/** - 1A**



UT5L/** - 1E**



1 Teach-In button 2 LED

dimensions (mm)

accessories included in all metallic models

