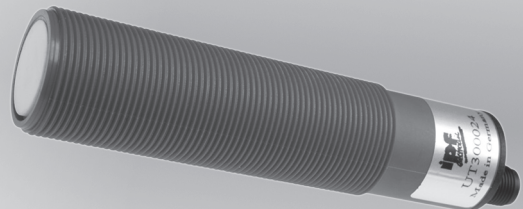


dimensions **M30x1.5**

dif. reflection sensors      measuring range / sensing range      **150 ... 3500mm**

- ✓ **large measuring range**
- ✓ **current or voltage output and two switching outputs**
- ✓ **simple adjustability by means of teach-in button and LED displays**
- ✓ **high sound intensity**
- ✓ **adjustable normally open and normally closed function**



**analog output measuring range as well as two adjustable PNP switching points**



**description**

*ipf* ultrasonic sensors operate as contactless and non-contacting position switches or as position meters. The distances are determined using the echo propagation time process. The propagation time measurement is temperature compensated and makes possible very accurate position detection of sound-reflecting objects of any color and material over a large temperature range.

Through the use of a microprocessor, the ultrasonic sensors are insensitive to interference.

The devices have one analog voltage output (0 ... 10V) or one current output (4 ... 20mA) and two additional PNP outputs whose switching point can be freely defined.

The start and end of the analog range are also defined by teaching-in (teach-in button on the sensor) the two corresponding switching points, depending on whether the characteristic curve is to be positive or negative. The switching characteristic of the normally closed (nc) and normally open contact (no) can also be programmed in this way.

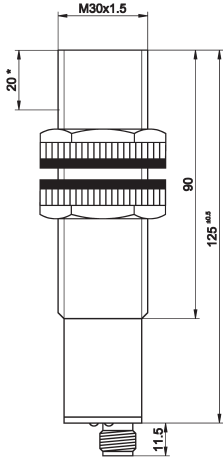
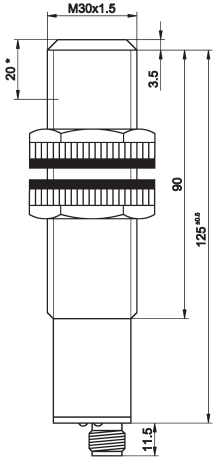
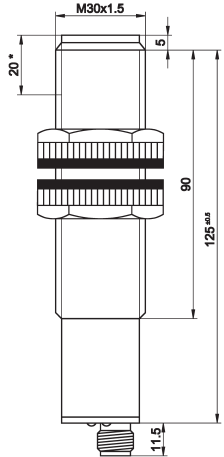
Using just a single teach-in button, the start and end of the

analog range can be set independent of one another. The end points determine the position of the switching points. Three LED displays facilitate simple adjustment of the sensor.

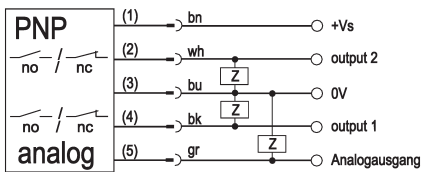
**application examples**

- ▶ filling level measurement of bulk materials and liquids in containers
- ▶ measurement of heights and positioning tasks, e.g. packages on conveyor belts, pallets or stacking
- ▶ distance measurement, e.g., with automatic or driverless transport vehicles
- ▶ detection of materials that are not detectable with optical sensors
- ▶ winding and unwinding control of any type of foil
- ▶ detection of thicknesses and diameters
- ▶ control of material tension by means of sag measurement
- ▶ positioning of goods in automatic storage systems
- ▶ length measurement systems for a wide range of objects



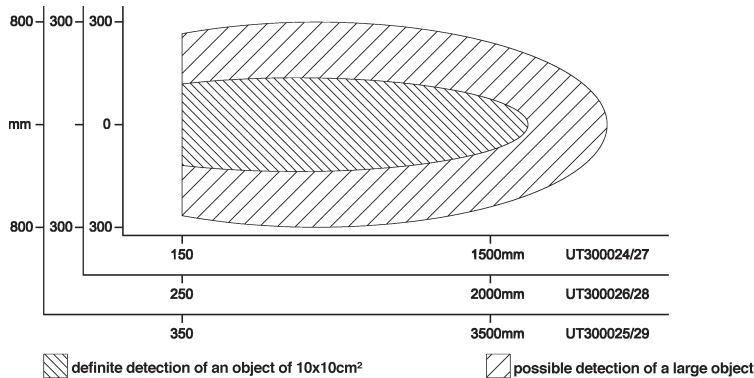
article-no.	UT300024	UT300026	UT300025
operating range	150 ... 1500mm	250 ... 2000mm	350 ... 3500mm
output	4 ... 20mA / 2x PNP no/nc	4 ... 20mA / 2x PNP no/nc	4 ... 20mA / 2x PNP no/nc
article-no.	UT300027	UT300028	UT300029
operating range	150 ... 1500mm	250 ... 2000mm	350 ... 3500mm
output	0 ... 10V / 2x PNP no/nc	0 ... 10V / 2x PNP no/nc	0 ... 10V / 2x PNP no/nc
			
TECHNICAL DATA			
measuring range / sensing range	150 ... 1500mm	250 ... 2000mm	350 ... 3500mm
sound cone (angle of beam spread)	8°	8°	8°
resolution	1mm	1mm	1mm
output signal	analog (see above) / 2x PNP no/nc	analog (see above) / 2x PNP no/nc	analog (see above) / 2x PNP no/nc
operating voltage	19 ... 30V DC	19 ... 30V DC	19 ... 30V DC
current consumption (w/o load)	≤ 45mA	≤ 45mA	≤ 45mA
output current (max. load)	100mA	100mA	100mA
carrier frequency	200kHz	180kHz	130kHz
linearity deviation	0.5%	0.5%	0.5%
hysteresis	1%	1%	1%
repeat accuracy	0.4% / >2mm	0.4% / >2mm	0.4% / >2mm
switching frequency	2Hz	2Hz	1Hz
response time	300ms	300ms	500ms
display (measuring range)	2x yellow LED	2x yellow LED	2x yellow LED
display (alignment aid)	green LED	green LED	green LED
setting	teach-in button	teach-in button	teach-in button
temperature compensation	0 ... +50°C	0 ... +50°C	0 ... +50°C
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
dimensions	M30x1.5	M30x1.5	M30x1.5
length (thread/complete)	90mm / 136mm	90mm / 140mm	90mm / 141mm
housing material	plastic	plastic	plastic
operating temperature	-15 ... +70°C	-15 ... +70°C	-15 ... +70°C
degree of protection (EN 60529)	IP65	IP65	IP65
connection	M12-connector, 5-pin	M12-connector, 5-pin	M12-connector, 5-pin
connection accessories	e.g. <b>VK205625</b>	e.g. <b>VK205625</b>	e.g. <b>VK205625</b>
mounting accessories (clip)	<b>AY000061</b>	<b>AY000061</b>	<b>AY000061</b>
accessories	90° deflection reflector <b>AU000010</b>	90° deflection reflector <b>AU000010</b>	90° deflection reflector <b>AU000010</b>
* observe distance from mounting clip to sensor head			

**connection**

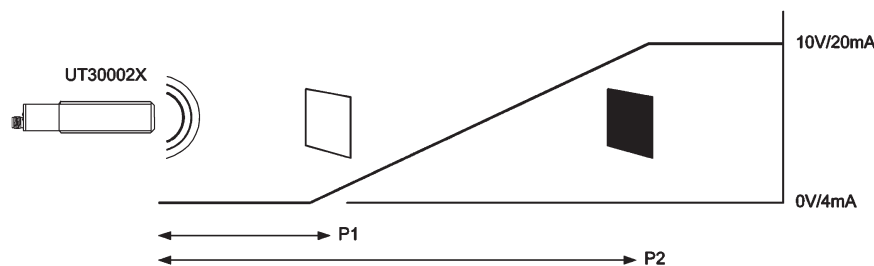


**wire colors:** bn = brown (1), wh = white (2), bu = blue (3), bk = black (4), gr = gray (5)

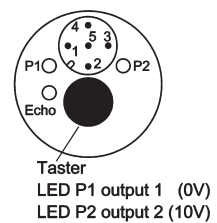
**detection ranges of the ultrasonic sensors**



**analog characteristic curve**

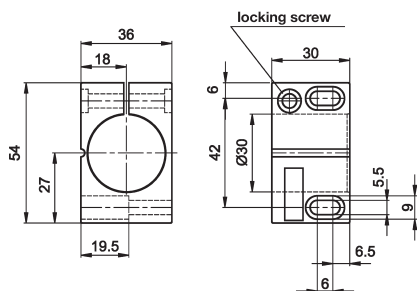


**control elements**



The characteristic curve can also be inverted during the teach-in process.

**mounting clip AY000061**



**ACCESSORIES**

article-no.	description	sensor diameter	article material	screw material
AY000061	quick clip	Ø 30mm	PA6	galvanized steel

This data sheet only contains the available standard variants. For other output / connection variants, we kindly ask that you contact us.

We are happy to supply the right cable socket for the plug equipment. You will find a list in the "accessories" section of the catalog under **ipf-SENSORFLEX**® "cable sockets" or in the search window on our homepage [www.ipf-electronic.com](http://www.ipf-electronic.com) (using the search term "VK").

**Warning:** Never use these devices in applications where the safety of a person depends on their functionality.

You also find this data sheet, as well as contact details under [www.ipf-electronic.com](http://www.ipf-electronic.com)

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**NOTES**

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page below the 'NOTES' header.