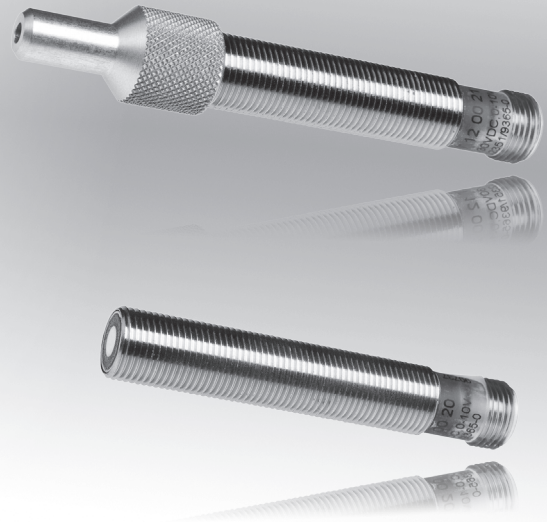


dimensions	M12x1		
dif. reflection sensors (norm.)	measuring range	10 ...	200mm
dif. reflection sensors (beam column.)	measuring range	2 ...	82mm
dif. reflection sensors (norm.)	detection range	30 ...	200mm
dif. reflection sensors (beam column.)	detection range	5 ...	70mm

- ✓ very small angle of beam spread
- ✓ version with attached beam columnator for nearly linear sound cone
- ✓ LED switching state display and setting control
- ✓ setting via teach-in input
- ✓ integrated amplifier



analog output 0 to 10V or switching output with teach-in



description

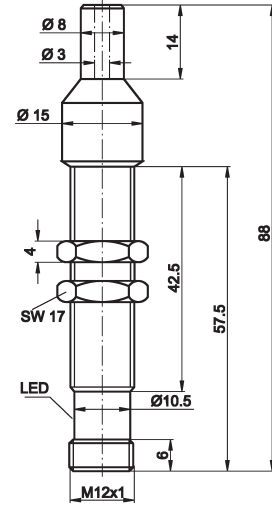
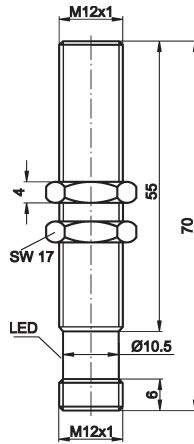
The ultrasonic sensors from *ipf electronic* make possible contactless and non-contacting position detection. The distances are determined using the echo propagation time process. Here, the propagation time measurement is temperature compensated and makes possible very accurate detection of sound-reflecting objects of any color and material over a large temperature range. Due to the high sound frequency, the ultrasonic sensor is insensitive to interference even in harsh industrial environments. To teach-in the analog output or the switching point, the supply voltage is applied to the teach-in input. Serving as an alignment and setting control is an LED display that supports the adjustment in teach-in mode. Analog sensors: any interval within the measuring range (measuring range section $\geq 5\text{mm}$) can be taught in for the analog output.

Switching sensors: the sensing range within the detection range can be taught in very exactly for the PNP output. Version with beam columnator: by calibrating the sensors to this attachment element, which was manufactured specifically for this purpose, the lateral spread of the sound cone is reduced and straightened (quasi linear).

application examples

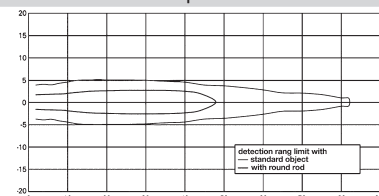
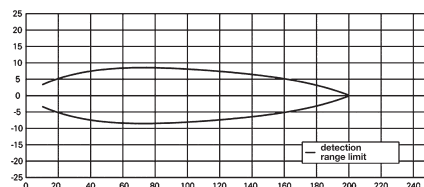
- ▶ filling level measurement of a wide range of materials
- ▶ measurement of heights, e.g., packages on conveyor belts or pallets
- ▶ distance measurement of optically undetectable materials
- ▶ winding and unwinding control of any type of foil
- ▶ control of material tension by means of sag measurement
- ▶ detection of thicknesses and diameters
- ▶ length and distance measurement systems

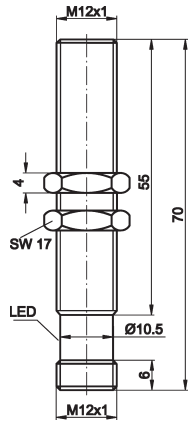
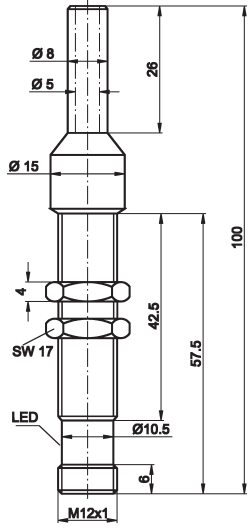
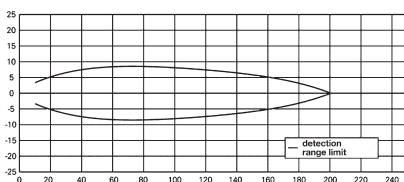
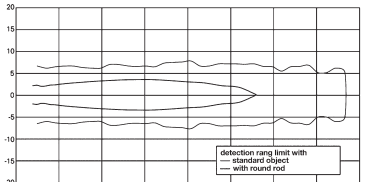
article-no.	UT120020	UT120021
version	dif. reflection sensor	dif. reflection sensor with beam columnator
measuring range	20 ... 200mm	2 ... 82mm
output signal	0 ... 10V DC	0 ... 10V DC



TECHNICAL DATA

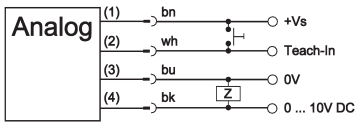
measuring range	20 ... 200mm	2 ... 82mm
output signal	0 ... 10V DC	0 ... 10V DC
operating voltage	15 ... 30V DC	15 ... 30V DC
current consumption (w/o load)	≤ 35mA	≤ 35mA
output current (w/o load)	≤ 20mA	≤ 20mA
resolution	≤ 0.3mm	≤ 0.3mm
temperature drift	≤ 2% S teach	≤ 2% S teach
repeat accuracy	≤ 0.5mm	≤ 0.5mm
carrier frequency	380kHz	380kHz
response/decay time	≤ 30ms / ≤ 30ms	≤ 30ms / ≤ 30ms
sound frequency	16Hz	16Hz
display (teach)	yellow + red LED	yellow + red LED
display (measuring range)	yellow LED	yellow LED
display (alarm)	red LED below measuring range	red LED below measuring range
setting	remote-teach input (supply on pin 2)	remote-teach input (supply on pin 2)
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	M12x1	M12x1
length (thread/complete)	55mm / 70mm	42.5mm / 88mm
housing material	nickel-plated brass	nickel-plated brass
operating temperature	-10 ... +60°C	-10 ... +60°C
degree of protection (EN 60529)	IP67	IP67
connection	M12-connector, 4-pin	M12-connector, 4-pin
connection accessories	e.g. VK200325	e.g. VK200325
mounting accessories (universal holder)	AY000115	AY000115
accessories	teach adapter: AV000114	teach adapter: AV000114



article-no.	UT120120	UT120121
version	dif. reflection sensor	dif. reflection sensor with beam columnator
sensing range	10 ... 200mm	5 ... 70mm
output	pnp, no	pnp, no
article-no.	UT120220	-
output	pnp, nc	-
article-no.	UT121120	-
output	npn, no	-
		
TECHNICAL DATA		
sensing range	10 ... 200mm	5 ... 70mm
output signal	see above	see above
operating voltage	12 ... 30V DC	12 ... 30V DC
current consumption (w/o load)	≤ 35mA	≤ 35mA
output current (max. load)	≤ 200mA	≤ 200mA
voltage drop (max. load)	2V DC	2V DC
temperature drift	≤ 0.18% S teach	≤ 0.18% S teach
hysteresis	4%	4%
repeat accuracy	≤ 0.5mm	≤ 0.5mm
carrier frequency	380kHz	380kHz
response/decay time	≤ 10ms / ≤ 10ms	≤ 10ms / ≤ 10ms
switching frequency	50Hz	50Hz
display (teach)	green flashing LED	green flashing LED
display (signal)	green LED	green LED
setting	remote-teach input (supply on pin 2)	remote-teach input (supply on pin 2)
short-circuit protection	+	+
reverse polarity protection	+	+
dimensions	M12x1	M12x1
length (thread/complete)	55mm / 70mm	42.5mm / 100mm
housing material	nickel-plated brass	nickel-plated brass
operating temperature	-10 ... +60°C	-10 ... +60°C
degree of protection (EN 60529)	IP67	IP67
connection	M12-connector, 4-pin	M12-connector, 4-pin
connection accessories	e.g. VK200325	e.g. VK200325
mounting accessories (universal holder)	AY000115	AY000115
accessories	teach adapter: AV000114	teach adapter: AV000114
		

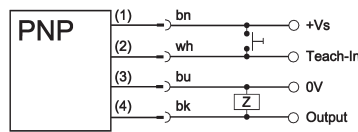
connection

analog

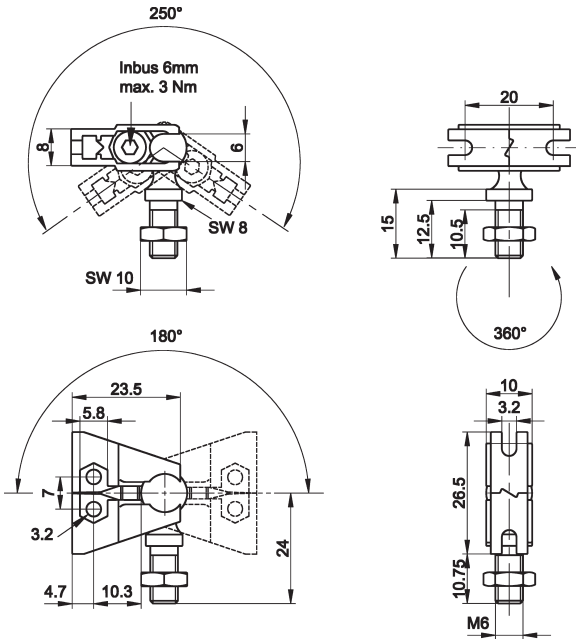


wire colors: bn = brown (1), wh = white (2), bu = blue (3), bk = black (4)

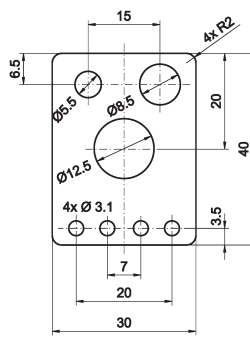
digital



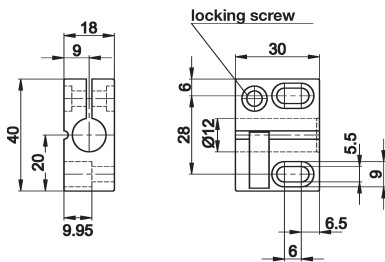
universal mounting AY000115 consisting of base module ...



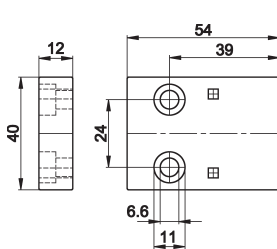
... and fitting panel



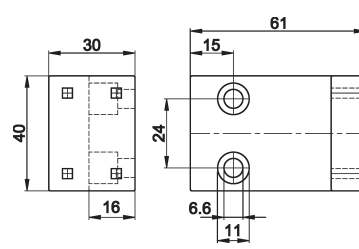
AY000049



AY000053



AY000054



ACCESSORIES

article-no.	description	note
AY000088	base module *	jaws: stainless steel, ball pin: galvanized steel
AY000115	mounting kit for M5, M8, M12 sensors	stainless steel
AY000049	quick clip 12, plastic	for M12-sensor, round
AY000053	base, straight, plastic	for quick clip 12 and 18, round
AY000054	base, angular, plastic	for quick clip 12 and 18, round
AV000114	teach-in, adapter	M12-socket/M12-connector

* The AY000088 base module is included with each mounting kit. Material of the screw and nuts: 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 (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