

design	<b>M18x1</b>	
dif. reflection sensor	measuring range	60 to 300mm 100 to 600mm 200 to 1500mm
dif. reflection sensor	sensing range	60 to 300mm 100 to 600mm 200 to 1500mm



- ✓ synchronization option for operation with multiple sensors
- ✓ very accurate position detection of any object with high repeat accuracy
- ✓ status display by LED
- ✓ adjustable switch-point of the PNP-output
- ✓ connection with M12-connector

**analog output for measuring tasks  
adjustable PNP-switching output**



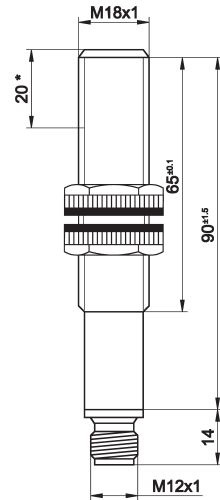
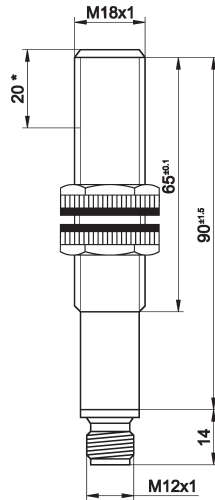
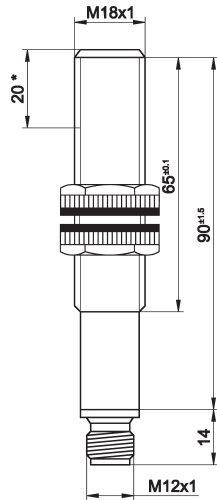
**description**

ipf-ultrasonic sensors operate contactless as non-contacting position switches determining distances by the echo propagation time process. The temperature compensated propagation time measurement enables a very exact sensing of position over a wide temperature range for sound reflecting objects of any color and material. The high sonor frequency makes the ultrasonic sensor insensitive to interference. The synchronization line remains open during normal operation for devices of this data sheet. Connecting it to 0V interrupts the transmitting operation. The sensing range is stored and corresponds to the latest measurement taken. Several sensors may be synchronized by connecting synchronization lines with each other. This is recommended where the sensors are installed close together, so as to avoid two or more sensors of the same type interfering with each other.

**application examples**

- ▶ detection of optically non-recognizable materials
- ▶ filling level measurement of bulk materials and liquids in containers
- ▶ measurement of heights, e.g. packages on conveyer belts, piling devices or pallets
- ▶ distance measurement, e.g. for driverless vehicles
- ▶ winding and unwinding control for any film or foil
- ▶ detection of thicknesses and diameters
- ▶ regulation of material tension by way of measuring the slack
- ▶ goods positioning in automatic storage systems
- ▶ length measuring systems

article-no.	-	UT180025	UT180024
measuring range	-	100 ... 600mm	200 ... 1500mm
output	-	4 ... 20mA	4 ... 20mA
article-no.	UT180026	UT180027	UT180028
measuring range	60 ... 300mm	100 ... 600mm	200 ... 1500mm
output	0 ... 10V	0 ... 10V	0 ... 10V



### TECHNICAL DATA

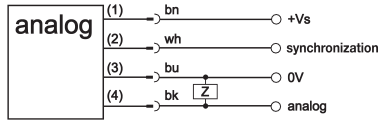
measuring range	60 ... 300mm	100 ... 600mm	200 ... 1500mm
sonic cone angle	8°	8°	8°
output	analog (see above)	analog (see above)	analog (see above)
operating voltage	19 ... 30V DC	19 ... 30V DC	19 ... 30V DC
current consumption (w/o load)	≤ 35mA	≤ 35mA	≤ 35mA
output current (max. load)	-	-	-
carrier frequency	330kHz	300kHz	180kHz
linearity deviation	< 0.3%	< 0.3%	< 0.3%
repeat accuracy	0.2%	0.2%	0.2%
response time	< 60msec	< 60msec	< 120msec
display (signal)	-	-	-
setting	-	-	-
input	enabled / disabled / snchron.	enabled / disabled / snchron.	enabled / disabled / snchron.
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
design	M18x1	M18x1	M18x1
length (thread/complete)	65mm / 104mm	65mm / 104mm	65mm / 104mm
housing material	plastic	plastic	plastic
operating temperature	-15 ... +70°C	-15 ... +70°C	-15 ... +70°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	M12-connector, 4-pin	M12-connector, 4-pin	M12-connector, 4-pin
connection accessories	e.g. VK205325, 2m, PUR straight, shielded	e.g. VK205325, 2m, PUR straight, shielded	e.g. VK205325, 2m, PUR straight, shielded
mounting accessories (clip)	e.g. AY000051	e.g. AY000051	e.g. AY000051
mounting accessories (univ. mounting)	AY000117	AY000117	AY000117
accessories	90° deflect. reflector AU000012	90° deflect. reflector AU000012	90° deflect. reflector AU000012

\* observe the distance of the sensor head to the mounting clip

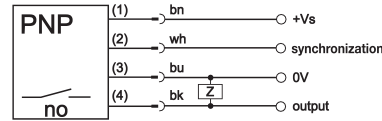
article-no.	UT180126	UT180127	UT180128
measuring range	60 ... 300mm	100 ... 600mm	200 ... 1500mm
output	pnp, no	pnp, no	pnp, no
<b>TECHNICAL DATA</b>			
measuring range	60 ... 300mm	100 ... 600mm	200 ... 1500mm
sonic cone angle	8°	8°	8°
output	pnp, no	pnp, no	pnp, no
operating voltage	19 ... 30V DC	19 ... 30V DC	19 ... 30V DC
current consumption (w/o load)	≤ 35mA	≤ 35mA	≤ 35mA
output current (max. load)	500mA	500mA	500mA
carrier frequency	330kHz	300kHz	180kHz
hysteresis	2.5%	2.5%	2.0%
repeat accuracy	0.2%	0.2%	0.2%
sampling frequency	20Hz	20Hz	10Hz
display (signal)	LED yellow	LED yellow	LED yellow
setting	potentiometer	potentiometer	potentiometer
input	enabled / disabled / snchron.	enabled / disabled / snchron.	enabled / disabled / snchron.
short-circuit protection	+	+	+
reverse polarity protection	+	+	+
design	M18x1	M18x1	M18x1
length (thread/complete)	65mm / 92mm	65mm / 92mm	65mm / 92mm
housing material	plastic	plastic	plastic
operating temperature	-15 ... +70°C	-15 ... +70°C	-15 ... +70°C
temperature compensation	0 ... +60°C	0 ... +60°C	0 ... +60°C
system of protection (EN 60529)	IP67	IP67	IP67
connection	M12-cable connector, 4-pin	M12-cable connector, 4-pin	M12-cable connector, 4-pin
connection accessories	e.g. <b>VK200325</b> , 2m PUR, straight	e.g. <b>VK200325</b> , 2m PUR, straight	e.g. <b>VK200325</b> , 2m PUR, straight
mounting accessories (clip)	e.g. <b>AY000051</b>	e.g. <b>AY000051</b>	e.g. <b>AY000051</b>
mounting accessories (univ. mounting)	<b>AY000117</b>	<b>AY000117</b>	<b>AY000117</b>
accessories	90° deflect. reflector <b>AU000012</b>	90° deflect. reflector <b>AU000012</b>	90° deflect. reflector <b>AU000012</b>
* observe the distance of the sensor head to the mounting clip			

### connection

#### analog output



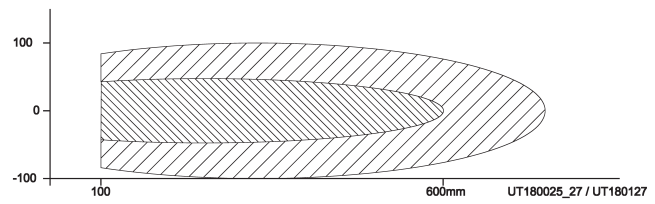
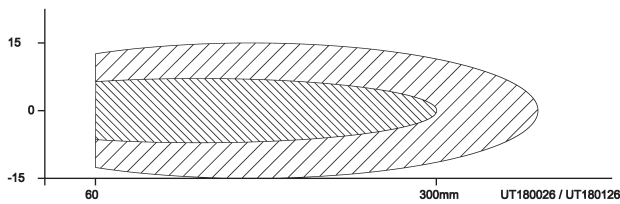
#### Schaltausgang



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

sensor locked: connect PIN 2 with 0V  
 synchronization: connect PIN 2 with +Vs  
 unlocked: PIN 2 not connected

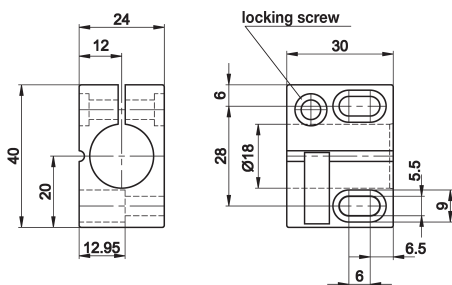
### detection ranges of the ultrasonic sensors



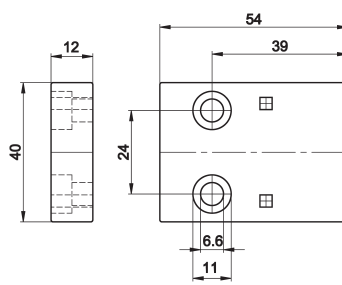
definite detection of an object 10 x 10cm possible detection of a large object

definite detection of an object 10 x 10cm possible detection of a large object

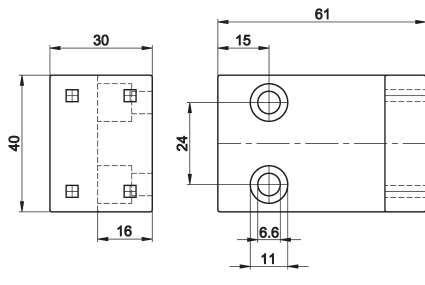
#### AY000051



#### AY000053



#### AY000054



### ACCESSORIES

article-no.	description	notes
AY000051	quick clip Ø18, plastic	for sensor M18
AY000053	base, straight, plastic	for quick clip Ø12 and Ø18
AY000054	base, angular, plastic	for quick clip Ø12 and Ø18
AY000117	mounting accessories (univ. mounting)	stainless steel fitting panel

This data sheet contains the standard versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets **ipf-SENSORFLEX**" or search our website [www.ipf-electronic.com](http://www.ipf-electronic.com) for "VK".

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