



## intelligent pressure / temperature sensor

with unique software programming function

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PRESSURE / TEMPERATURE SENSORS



## A sensor like no other!

You will find a host of innovative functions in the intelligent ipf pressure and temperature sensors. Highest levels of precision and highly reliable switching outputs are combined with straightforward programmability and software which is convenient to use.

Make the most of the advantages of this unique combination with the ipf quality you expect.

### Couldn't be simpler operability



Use the film keyboard in order to carry out fast and uncomplicated settings on the sensor. Change the two independent switching points (hysteresis and output logic) as well as the time delay function. The settings can be clearly read on the four digit LED display.

**You can even simulate various pressures without applying pressure to the sensor!**  
**The test function can be controlled via the PC.**

## MAXIMUM PRECISION

Measure values with a tolerance of  $\pm 0.5\%$ !

## OPTO-USB-INTERFACE

You can also program the sensor device when the device is operational, not just in an idle state.

## COUNTER

The sensor has an internal counter which counts each switching operation at output 2.

## BANDWIDTH

The DW35 measures from 0 to 600bar and the DW36 measures from -1 to +1bar. The YT35 has a measurement range of -40 to + 300°C.

## STANDARDS

The sensors adhere to various automotive standards and the alarm output conforms to the DESINA standards.

## HIGHLY RELIABLE

The switching outputs deliver up to 1A per channel.

Output 2 can be switched between the switch output, analog output and alarm output.

## PARAMETERABLE ANALOG OUTPUT

According to the sensor, select between factors 1:5 (DW35/YT35) or 1:2 (DW36) with the highest resolution up to 12 bit (14 bit as an option).

## CLEAR AND PRECISE

Thanks to the high level of brightness, the display can be read very easily.

## THE LATEST PROCESSORS

16 bit AD converters provide you with top results.

## PC SOFTWARE

Via this software, you are able to simply and clearly set the desired functions of the sensors.

## MAXIMUM FLEXIBILITY

Following installation, the sensor body can be rotated by 350° and the sensor display can be rotated by 180° by means of the software.

## PRESSURE PICK-UP

The parts that come into contact with the media are made from stainless steel 1.4435 or ceramics and as such, are suitable for gaseous and fluid media.



## Comfortable software

From the first moment on, all functions can be seen straight away and are quickly changeable.

### GRAPHIC INTERFACE

The software user interface is excellently represented as graphics; this makes it possible to operate easily.

### TEST FUNCTION

The test function offers a simple and quick possibility to check the function of the device and/or the analyses which have been activated. In connection with this, each incidence of pressure can be simulated by the operating buttons or the PC software.

### DATA LOGGER

The software is equipped with an integrated data logger. This enables measured values to be recorded. The data that are established are logged in an Excel file.

### OPTO-USB INTERFACE



Even during the running operation, you can communicate with the pressure sensor or temperature sensor via the opto USB interface (galvanically separated).



## LIKE ON A CONVEYOR BELT

Set parameters can be saved in a file and are transferrable to other sensors at no time at all.

## SECURE FROM MANIPULATION

The keypad lock can be adjusted via the film keyboard or as a hard lock. The hardlock can only be operated via the software.

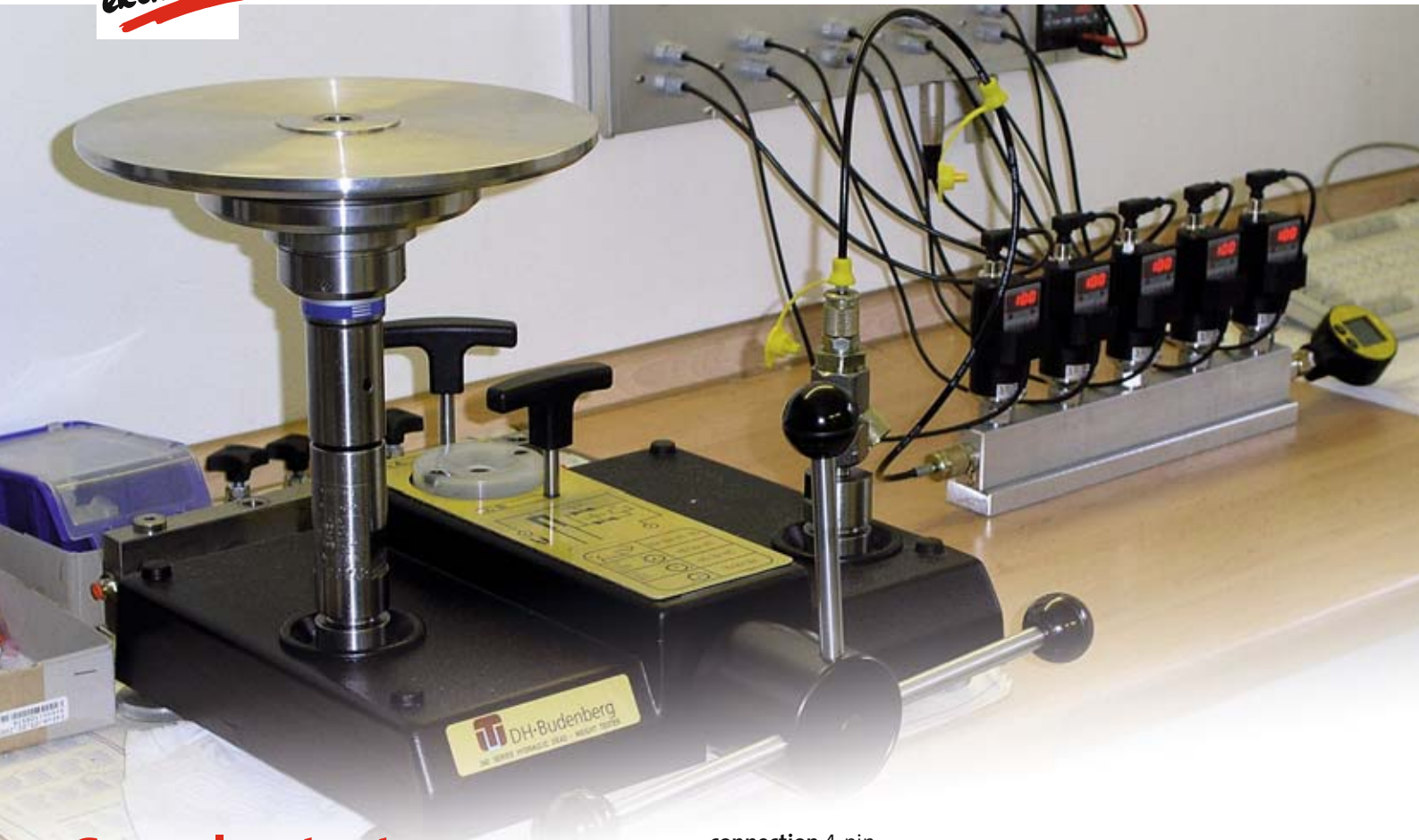
## SELF CRITICAL

The pressure sensor's automatic self-test system exhibits the following functions: Falling short of or exceeding the measurement range, short-circuit output 1 / output 2, defective pressure sensor, internal error and open analog output. The onward transmission of the faults to the control can take place via the alarm or analog output.

## VERY SWIFT

Quick detection of the peak pressures is possible within 2msec.





## Complex test procedure

In order to satisfy the high requirements with respect to precision, linearity etc., each sensor is individually aligned and/or calibrated through appropriate specifications.

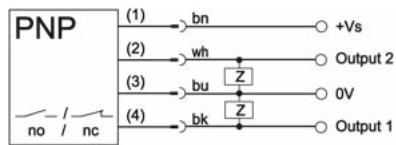
The internal electronics offer a high level of flexibility and operational security.

All settings are implemented digitally, i.e. no potentiometer etc. is used.

This makes changes and special adjustments possible at any time without any need for the device to be opened.

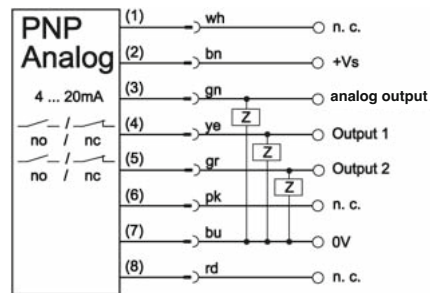


### connection 4-pin



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

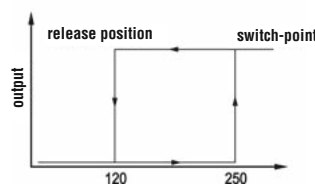
### connection 8-pin



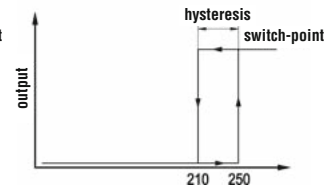
wire colors:  
wh = white (1),  
bn = brown (2),  
gr = green (3),  
ye = yellow (4),  
gy = grey (5),  
pk = pink (6),  
bu = blue (7),  
rd = red (8)  
n.c. not connected

### programmable switching functions

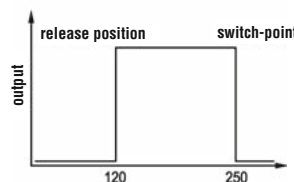
switch-point with release position



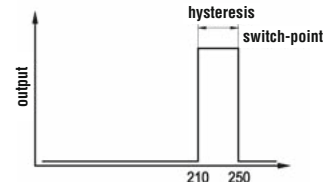
switch-point with hysteresis



switch-point with release position



switch-point with hysteresis



# pressure sensors

figure 1

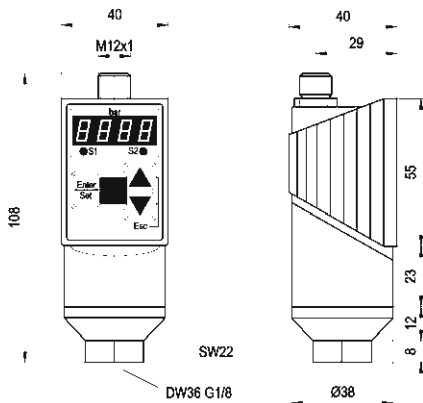
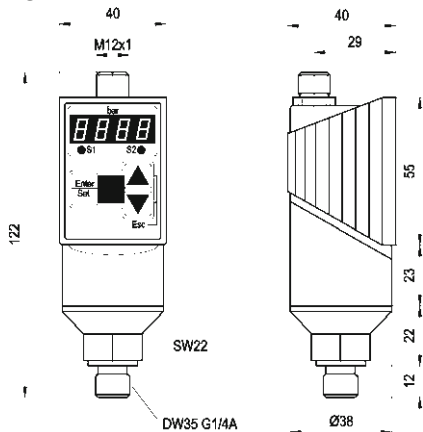


figure 2



## TECHNICAL DATA

pressure ranges [bar]	see list of articles
overload [bar]	150% of the nominal pressure (Pn) for the DW35 (6bar for the DW36)
output	0/4 ... 20mA, 20 ... 0/4mA / 2x pnp no / nc
operating voltage	12 ... 32V DC
output current (max. load)	1A
current consumption (w/o load)	< 60mA
voltage drop (max. load)	< 2.0V DC
delay time	0 ... 20sec on- and off-delayed
adjustment range	1 ... 100% of the accumulated value    switch-point 0 ... 99% of the accumulated value    release position
sampling frequency	max. 125Hz
repeatability	< ±0.1% of the accumulated value
analog output	
burden	max. RL [Ω] = (Ub-8V)/20mA
error recognition	in case of line break, overload, measurement error
rise time	5msec (10 ... 90% of the accumulated value)
adjustable damping	0 ... 20sec
linearity deviation	max. ±0.25% of Pn
system pressure display	4 x 7 segment LED
adjustable display damping	0 ... 20sec
switching function display	2 x red LED
short-circuit protection	+
reverse polarity protection	+
housing material	PA6.6, polyester
design	Ø38x118mm
operating temperature	-20 ... +80°C
temperature drift	< ±0.2% / 10K, (-10 ... +70°C)
system of protection (EN 60529)	IP65
connection	M12-connector 4-pin / M12-connector 8-pin
connection accessories	e.g. <b>VK205325</b> , 2m, straight, 4-wire, PUR e.g. <b>VK205A25</b> , 2m, straight, 8-wire, PUR
optical interface	opto-adapter to USB + software <b>AD000011</b>
mounting accessories	<b>AY000060</b>

article-no.	design	description	notes	housing	voltage	output	current	connection	fig.
DW36311H	36-1/8	pressure sensor	-0.5...+0.5 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	1
DW36311J	36-1/8	pressure sensor	-1...+1 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	1
DW363110	36-1/8	pressure sensor	-1.0 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	1
DW363111	36-1/8	pressure sensor	0...+1 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	1
DW35311K	35-1/4A	pressure sensor	-1.10bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW35311D	35-1/4A	pressure sensor	10bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW35311F	35-1/4A	pressure sensor	50bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW353114	35-1/4A	pressure sensor	100bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW35311G	35-1/4A	pressure sensor	200bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW353116	35-1/4A	pressure sensor	400bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW353117	35-1/4A	pressure sensor	600bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 4-pin	2
DW36312H	36-1/8	pressure sensor	-0.5...+0.5 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	1
DW36312J	36-1/8	pressure sensor	-1...+1 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	1
DW363120	36-1/8	pressure sensor	-1.0 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	1
DW363121	36-1/8	pressure sensor	0...+1 bar,ceramic	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	1
DW35312K	35-1/4A	pressure sensor	-1.10bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW35312D	35-1/4A	pressure sensor	10bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW35312F	35-1/4A	pressure sensor	50bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW353124	35-1/4A	pressure sensor	100bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW35312G	35-1/4A	pressure sensor	200bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW353126	35-1/4A	pressure sensor	400bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
DW353127	35-1/4A	pressure sensor	600bar, st. steel	polyester/st. steel	12 ... 32V DC	pnp, no/nc, 0/4 ... 20mA	2x1A	M12-con. 8-pin	2
AD000011		accessories sensor, pressure	optical interface		connection USB, software			1.5m cable	w/o
AY000060		accessories sensor, pressure	clip						w/o

This data sheet contains the standard DC-(pnp) and analog versions only. Kindly request the availability of other output- and connection functions.

We will be pleased to supply the matching cable socket e.g. **VK205321** 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".

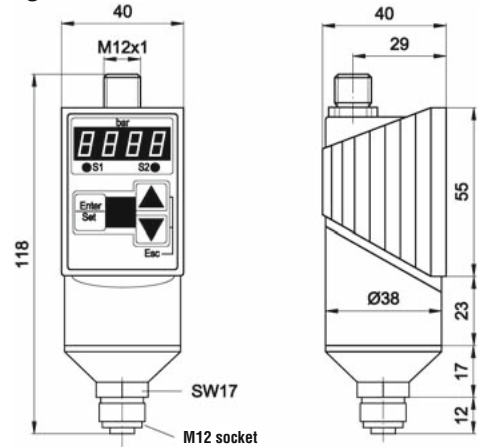
**Warning:** Never use these devices in applications where the safety of a person depends on their functionality.

# temperature sensors

## TECHNICAL DATA

temperature range	-40 ... +300°C
temperature detection	resistance thermometer PT100 (2-, 3- or 4-wire)
output	0/4 ... 20mA, 20 ... 0/4mA / 2x pnp no / nc
operating voltage	12 ... 32V DC
output current (max. load)	1A
current consumption (w/o load)	< 60mA
voltage drop (max. load)	< 2.0V DC
delay time	0 ... 20sec on- and off-delayed
adjustment range	1 ... 100% of the accumulated value switch-point 0 ... 99% of the accumulated value release position
sampling frequency	max. 125Hz
repeatability	< ±0.1% of the accumulated value
analog output	
burden	max. $RL [\Omega] = (U_b - 8V) / 20mA$
error recognition	in case of line break, overload, measurement error
rise time	5msec (10 ... 90% of the accumulated value)
adjustable damping	0 ... 20sec
linearity deviation	max. ±0.25% of Pn
system pressure display	4 x 7 segment LED
adjustable display damping	0 ... 20sec
switching function display	2 x red LED
short-circuit protection	+
reverse polarity protection	+
housing material	PA6.6, polyester
design	Ø38x118mm
operating temperature	-20 ... +80°C
temperature drift	< ±0.2% / 10K, (-10 ... +70°C)
system of protection (EN 60529)	IP65
connection	M12-connector 4-pin / M12-connector 8-pin
connection accessories	e.g. <b>VK205325</b> , 2m, straight, 4-wire, PUR e.g. <b>VK205A25</b> , 2m, straight, 8-wire, PUR
temperature connection	M12-cable socket, 4-pin, with rotatable coupling ring
optical interface	opto-adapter to USB + software <b>AD000011</b>
mounting accessories	<b>AY000060</b>

figure 3



article-no.	design	notes	housing	voltage	output	current	connection	fig.
<b>YT353100</b>	Ø35	-40 ... +300°C	polyester/st. steel	12 ... 32V DC	pnp,no/nc,0/4 ... 20mA	2x1A	M12-connector, 4-pin	3
<b>YT353120</b>	Ø35	-40 ... +300°C	polyester/st. steel	12 ... 32V DC	pnp,no/nc,0/4 ... 20mA	2x1A	M12-connector, 8-pin	3

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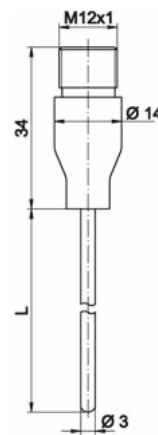
We will be pleased to supply the matching cable socket e.g. **VK205321** for your devices with connector. Please refer to the list in catalog chapter "accessories" under "cable sockets **ipf-SENSORFLEX**" or search our website [www.ipf-electronic.com](http://www.ipf-electronic.com) for "VK".

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



TECHNICAL DATA	RESISTANCE THERMOMETER
temperature (medium)	-30 ... +350°C
assembly	close-packed magnesium oxide isolation
length	100 / 150 / 250 / 350 / 500 / 1000mm
operating voltage	connection to <b>YT353100</b> or <b>YT353120</b>
resistance value	100Ω at 0°C according to IEC 751 class A
measuring accuracy	±0.06Ω at 0°C ±0.15°C
hysteresis	depending on medium
isolation resistance	100Ω at 100Vcc
bending radius	min. 9mm
outer diameter	Ø3mm
outer jacket material	stainles steel 1.4401

figure 4



TECHNICAL DATA	SCREW-IN SLEEVE
temperature (medium)	-40 ... +300°C
length	40 / 100 / 900mm
mounting connection	G¼" or G½" according to DIN ISO 228
outer diameter	Ø5mm
material	stainles steel 1.4401
ring socket material	fixing (PT100) with stainles steel ring
pressure (max.)	100bar at +350°C

figure 5

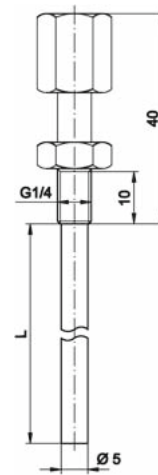


figure 6

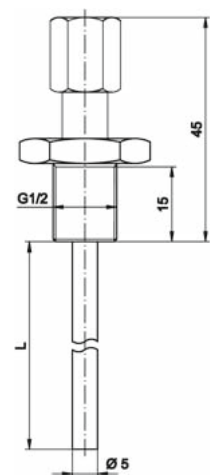
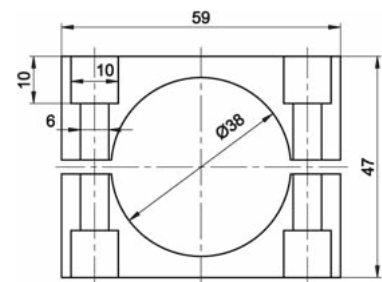


figure 7 mounting clip



artikel-no	design / [L]	notes	connection	fig.
YT036020	Ø3 / 100 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
YT036021	Ø3 / 150 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
YT036022	Ø3 / 250 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
YT036023	Ø3 / 350 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
YT036024	Ø3 / 500 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
YT036025	Ø3 / 1000 long	-30 ... +350°C / 4-wire, PT100	M12-connector, 4-pin	4
AT000001		screw-in sleeve 1/4" 100 long		5
AT000002		screw-in sleeve 1/2" 100 long		6
AT000003		screw-in sleeve 1/2" 40 long		6
AT000005		screw-in sleeve 1/4" 400 long		5
AT000004		adapter for tube fixing YT35, hose clip needed		w/o
AD000011	accessories	optical interface connection USB, software	1.5m cable	w/o
AY000060	accessories	mounting clip Ø38mm		7

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