



### GENERAL FEATURES

Resistance thermometers are used in the locations where precise temperature measurement is demanded in the industry. It is based on change of electrical resistance of conductor subject to the temperature.

It is used the resistance detector that is wound from thin platinum or nickel wire insulated within enamel, glass or ceramic as conductor.

Detector provides 100 ohm resistance output in 0 °C.

Increasing or decreasing values of resistance subject to temperature are measured and then, temperature is detected.

Copper, silver or nickel-chromium connection wires are added into two ends of resistance detector. It can be used from -200°C to +850 °C. Analogue output information is taken through pt100 sensors in compliance with EN60751 and then, assessed in the automation system.

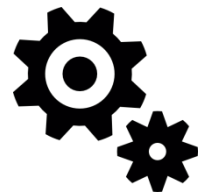
In order that resistance thermometers can measure accurately, it is recommended that it has dipping length as much as 6 and 15 times of dipping diameter.

### Advantages:

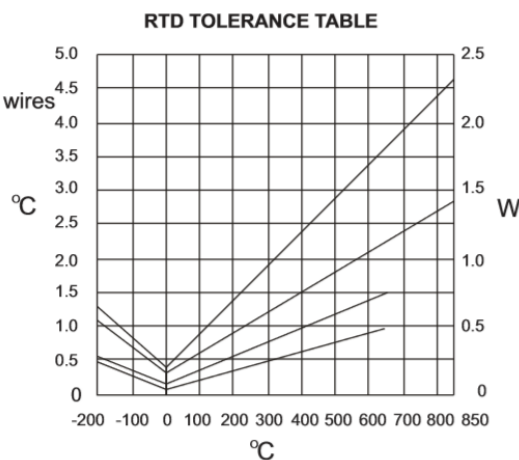
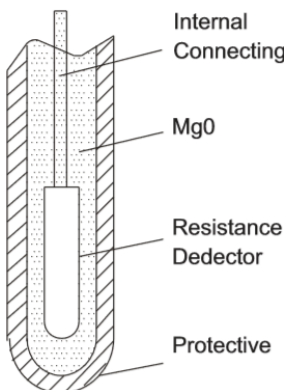
- \* Models up to max. of 600 bar
- \* Pratical and economical
- \* Digital display can be mounted

### APPLICATIONS

- Machines
- Tanks
- Boilers
- Gas and liquid fluids
- Surface temp. measurement
- Ambient temp. measurement



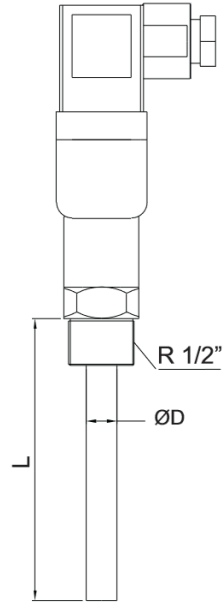
### PT100 RESISTANCE THERMOMETER TOLERANCE TABLE



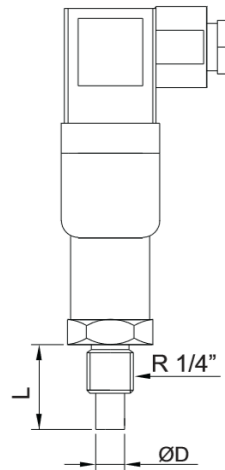
TEMP. °C	TOLERANCE EN 60751			
	A CLASS		B CLASS	
	±°C	±OHM	±°C	±OHM
-200	0.55	0.24	1.3	0.56
-100	0.35	0.14	0.8	0.32
0	0.15	0.06	0.3	0.12
100	0.35	0.13	0.8	0.30
200	0.55	0.20	1.3	0.48
300	0.75	0.27	1.8	0.64
400	0.95	0.33	2.3	0.79
500	1.15	1.38	2.8	0.93
600	1.35	1.43	3.3	1.06
650	1.45	1.46	3.6	1.13
700			3.8	1.17
800			4.3	1.28
850			4.6	1.34

## TECHNICAL SPECIFICATIONS

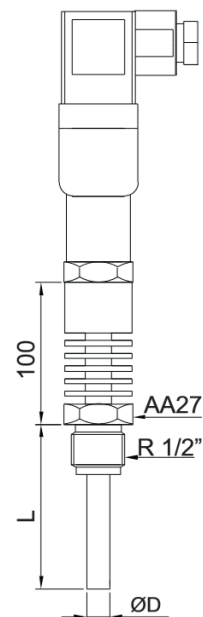
<b>ETT 21</b>	
<b>Type</b>	In-Line
<b>Measuring Range</b>	-50...200 °C
<b>Mechanical Connection</b>	R 1/2" BSP (Std)
<b>Electrical Connection</b>	DIN 43650 (ISO 4400)
<b>Sensor</b>	1xpt100 3 wire Class B (EN 60751)
<b>Output</b>	2 wire 4-20mA std. 3 wire 4-20mA,0-20mA 0-5V,1-5V,0-10V
<b>Power Supply</b>	10 - 30 VDC
<b>Material</b>	Stainless Steel
<b>Steam Length (L)</b>	On request
<b>Protection Class</b>	IP 65
<b>Pipe Diameter</b>	8 mm



<b>ETT 22-23</b>	
<b>Type</b>	In-Line
<b>Measuring Range</b>	-50...200 °C
<b>Mechanical Connection</b>	R 1/4" BSP (Std)
<b>Electrical Connection</b>	DIN 43650A (ISO 4400)
<b>Sensor</b>	1xpt100 3 wire Class B (EN 60751)
<b>Output</b>	2 wire 4-20mA std. 3 wire 4-20mA,0-20mA 0-5V,1-5V,0-10V
<b>Power Supply</b>	10 - 30 VDC
<b>Material</b>	Stainless Steel
<b>Steam Length (L)</b>	25 mm
<b>Protection Class</b>	IP 65
<b>Pipe Diameter</b>	8 mm

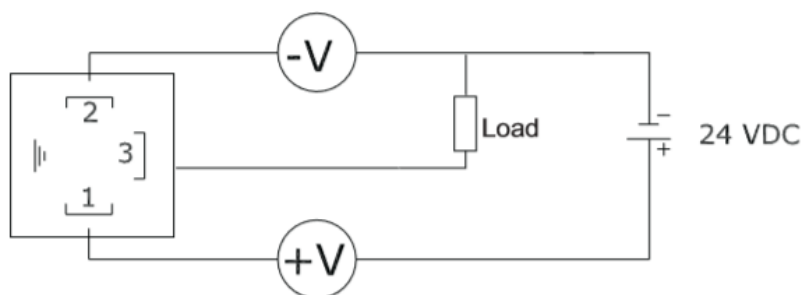


<b>ETT 31</b>	
<b>Type</b>	In-Line - Extension
<b>Measuring Range</b>	-50...650 °C
<b>Mechanical Connection</b>	R 1/2" BSP (Std)
<b>Electrical Connection</b>	DIN 43650A (ISO 4400)
<b>Sensor</b>	1xpt100 3 wire Class B (EN 60751)
<b>Output</b>	2 wire 4-20mA std. 3 wire 4-20mA,0-20mA 0-5V,1-5V,0-10V
<b>Power Supply</b>	10 - 30 VDC
<b>Material</b>	Stainless Steel
<b>Steam Length (L)</b>	On request
<b>Protection Class</b>	IP 65
<b>Pipe Diameter</b>	8 mm

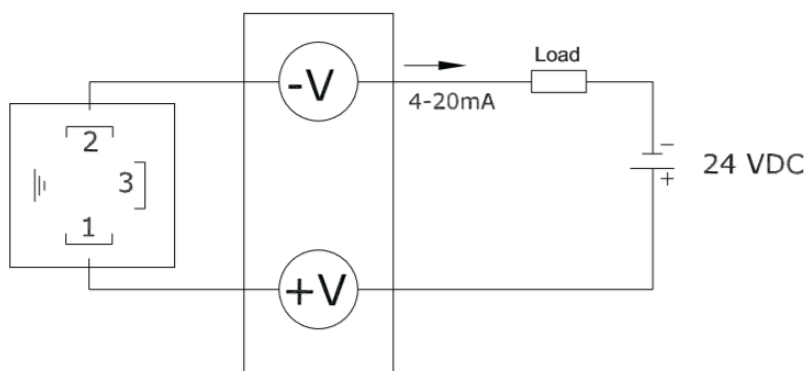


## ELECTRICAL CONNECTION

**ETT 21, ETT 22, ETT 23, ETT 31 (3 wire)**



**ETT 21, ETT 22, ETT 23, ETT 31 (2 wire)**



## ORDER CODING

### 1 MODEL

ETT 21  
ETT 22  
ETT 23  
ETT 31

### 2 CERTIFICATE

None.....0 (EN10204-3-1) Material Certification.....1

### 3 HOUSING

None.....00	Aluminium Housing, B20x .....378
Plastic Housing , B10p .....050	Aluminium, Double Cover (B010).....306
Plastic Housing, B20p .....016	Alüminyum , B035.....309
Aluminium Housing , B10x .....333	Stainless Steel Housing , B101x.....102
	Special.....x

### 4 ELECTRICAL CONNECTION

Terminal (For Housing Models).....00	M12-2 Pin.....70
Polyamide Big Socket P01.....50	M12-5 Pin.....71
Polyamide Small Socket P02.....51	M12-8 Pin.....72
Polyamide Big Light Socket P03.....52	PVC Cable (Max. 60 °C).....80
Military Socket ML-2 , 2 Pin.....60	PVC Cable (Max. 105 °C).....81
Military Socket ML-5 , 5 Pin.....61	Silicon Cable (Max. 200 °C).....82
	PTFE Cable (Max. 230 °C).....83
	Special Cable.....x
	Special Socket.....x

## 5 NUMBER OF SENSOR

Single Sensor.....	1	Double Sensor.....	2
		Special.....	x

## 6 OUTPUT

4-20 mA Two Wire.....	19	Pt-100 (Sınıf A) .....	41
4-20 mA Three Wire.....	20	Pt-100 (Sınıf B).....	42
0-10 V Three Wire .....	21	Special.....	x
0-20 V Three Wire.....	22		

## 7 CONNECTION MEASUREMENT

1/4"BSP.....	002	DN 25 PN40 Flanged ISO 1092-1.....	303
1/2"BSP.....	004	DN 32 PN40 Flanged ISO 1092-1.....	304
3/4"BSP.....	005	DN 50 PN40 Flanged ISO 1092-1.....	306
1"BSP.....	006	DN 80 PN40 Flanged ISO 1092-1.....	308
M10 x 1,5.....	082	DN 100 PN40 Flanged ISO 1092-1.....	309
DN 25 PN16 Flanged ISO 1092-1.....	103	DN 50 ANSI 150 Flanged .....	606
DN 50 PN 6 Flanged ISO 1092-1.....	106	DN 80 ANSI 150 Flanged .....	608
DN 25 Clamp ISO 2852.....	850	DN 100 ANSI 150 Flanged .....	609
DN 32 Clamp ISO 2852.....	851	Special.....	x
DN 50 Clamp ISO 2852.....	852		
DN 65 Clamp ISO 2852.....	853		

## 8 CONNECTION MATERIAL

304 Stainless Steel.....	01	Delrin.....	63
316 Stainless Steel .....	02	PVDF.....	64
Brass.....	41	PBT.....	65
PVC.....	61	PTFE.....	66
Polypropylene.....	62	Special.....	x

## 9 PROTECTIVE SHEATING DIAMETER (PIPE SIZE)

6 mm.....	06	12 mm.....	12
8 mm.....	08	14 mm.....	14
9 mm.....	09	15 mm.....	15
11 mm.....	11	22 mm.....	22
		Special.....	x

## 10 EXTERNAL PROTECTIVE TUBE

None.....	00	321 Stainless Steel.....	05
304 Stainless Steel.....	01	PTFE.....	66
316 Stainless Steel.....	02	Special.....	x

## 11 STEM LENGHT

15 mm.....	01	400 mm.....	40
25 mm.....	02	500 mm.....	50
50 mm.....	05	710 mm.....	71
100 mm.....	10	1000 mm.....	100
160 mm.....	16	1200 mm.....	120
200 mm.....	20	1500 mm.....	150
250 mm.....	25	Special.....	x
300 mm.....	30		

## 12 OPTIONAL

None.....	/ 0	Double Cell Digital Display.....	/ EDS 02
Cooling.....	/ 1	Termovel.....	/ ELX ??
Local Digital Display .....	/ EDS 01	Special.....	x

## SAMPLE

ETT 02 - 0 - 050 - 00 - 1 - 19 - 004 - 01 - 08 - 00 - 05 / 0  
ETT 02 4-20 mA , 304 Stainless Steel , 1/2" BSP , Ø 8 mm , L= 500 mm

Iran agent

Tel: 021 66 3939 00  
Mob: 0912 147 3023  
www.IranAtek.ir

Atek Sensor Technologies



Tuzla KOSB Organize Sanayi Bölgesi Melek Aras Bulvarı, No:67 34956 Tuzla-İstanbul / TÜRKİYE



Tel: +90 216 399 44 04



Fax: +90 216 399 44 02



[www.ateksensor.com](http://www.ateksensor.com)



[Info@ateksensor.com](mailto:Info@ateksensor.com)