

With rigid temperature sensor

## Application

The battery-operated digital thermometer models LILLY<sub>plus</sub> consist of an easy-to-read LC display and a platinum resistance thermometer built into a robust thermometer standard case made of stainless steel. They can be manufactured with the same construction types (according to DIN EN 13190) as mechanical thermometers. They can be applied as an alternative to mechanical thermometers when these reach their limits due to difficult installation conditions, vibrations or accuracy requirements. Due to their high accuracy, the instruments of the LILLY<sub>plus</sub> series are also suitable as an alternative for mercury-in-glass thermometers.

## Standard Versions

### Measuring Element

Platinum measuring resistor Pt1000 according to DIN EN 60751 in 4-wire connection

### Measuring Ranges

-50.0 / +250.0 °C (-58.0 / +482.0 °F)  
-99.9 / +500.0 °C (-147.8 / +932.0 °F)  
Resolution 0.1 K

### Unit

Switchable °C / °F

### Ambient Temperature Ranges

Operation and storage -20 °C to +70 °C (-4 °F to +158 °F)

### Accuracy

±0.1 % FS ±1 digit

### Measuring Rate

Adjustable from 1 s to 30 s

### Display

LC display  
Digit height 25 mm (0.98")

### Battery

AA, 2600 mAh (Li-SOCl<sub>2</sub>), 3.6 V  
Included in the scope of delivery, replaceable by the customer  
Battery life > 1 year, depending on application

### Error Monitoring

Battery voltage, sensor short circuit, sensor break

### Temperature Sensor (Stem)

Material	stainless steel 316Ti (1.4571)
Max. static operating pressure	25 bar
Stem types	E1, E3, E4, E4.1, E5 or E6
Stem Ø dF	6, 8 or 10 mm (0.24, 0.31 or 0.39")
Stem length L	max. 2.50 m (8.2')

### Case

With bayonet ring polished, stainless steel 304 (1.4301), with pressure equalising element

### Nominal Case Size

100 mm (4")

### Degree of Protection (DIN EN 60529)

IP65



### Window

Aluminum with PE membrane keypad

### Case Configuration

- Connection to temperature sensor
- rigid mount with neck tube
- Stem position
- vertical bottom position
  - angular bottom position (**w**, **wst**, **wl**, **wr**)
  - centre back position (**rm**)
- Mounting device
- without
  - back flange for surface mounting for
  - centre back connection (**rmRh**)

## Ordering Information, Options

See page 4

## Further Options

- Other stem types, e.g. with connection for food / bio / pharmaceutical industries
- Contact stem for temperature measurement at the outside of tanks and pipe barrels
- Position of connection radial at 3 o'clock, 9 o'clock, 12 o'clock
- Front foil neutral

## Special Versions Upon Request

- Other stem Ø, connection threads and materials
- Turnable and adjustable version with pivot (every angle)
- Case parts stainless steel 316L (1.4404)
- Other position of connection
- Front foil customised
- Certificates and approvals, e.g. GOST (see also website)

## Accessories

- Thermowells, see data sheet 8.8110 ff.
- Compression fittings

# Stem Position, Code Letters, Dimensional Data and Weight

## Vertical Bottom Stem Position

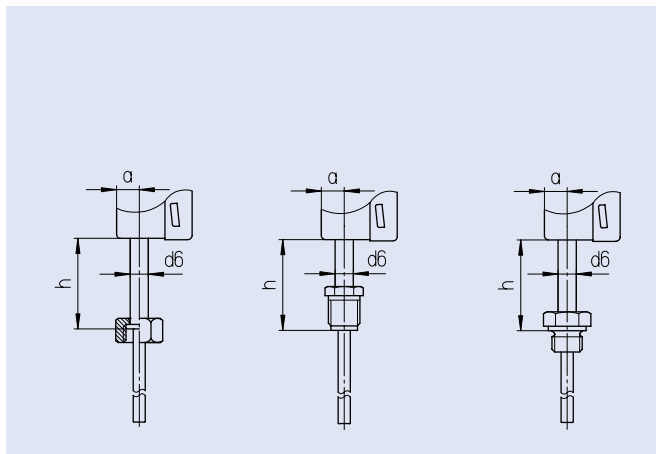
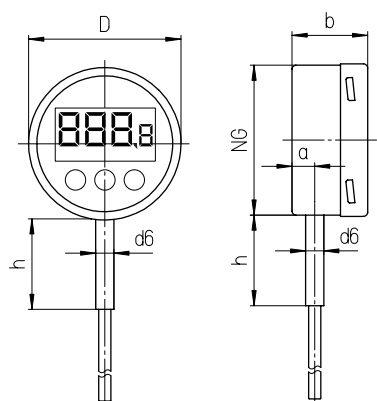
Stem type E1 (and E5)

Stem type E3 (and E6)

Stem type E4

Stem type E4.1

without code letters



## Angular Bottom Stem Position

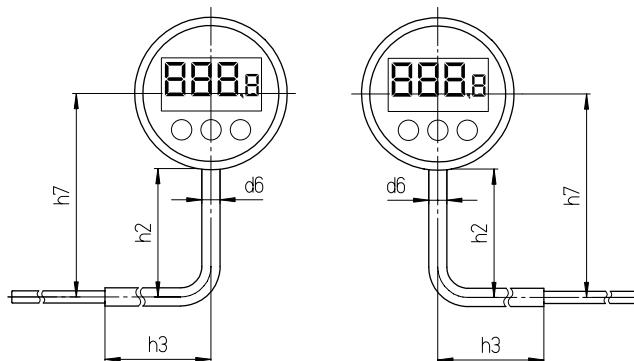
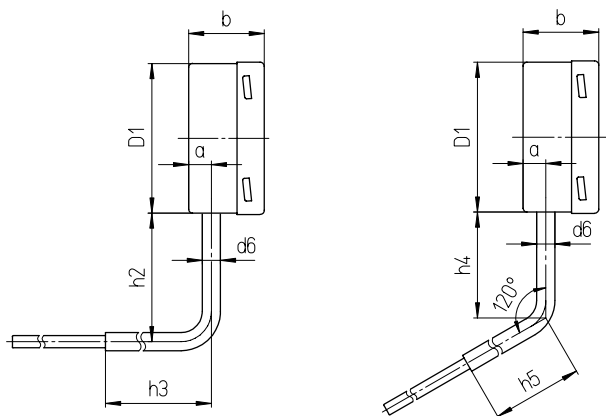
with angle

90° to the back  
code letter **w**

120° obtuse to the back  
code letters **wst**

90° to the left  
code letters **wl**

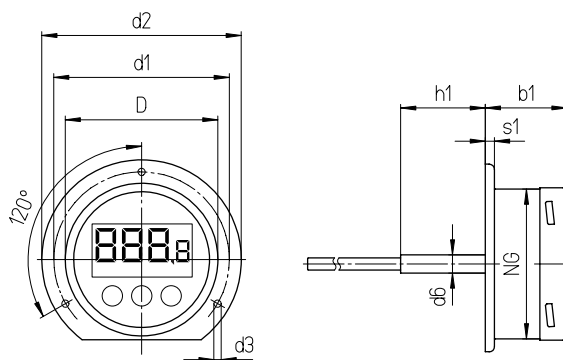
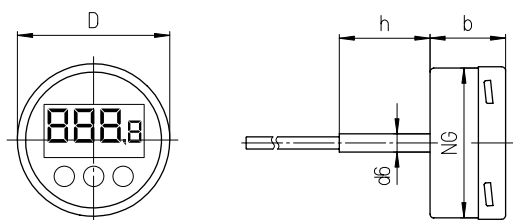
90° to the right  
code letters **wr**



## Centre Back Stem Position

code letters **rm**

back flange for surface mounting  
code letters **rmRh**



## Dimensional Data (mm / inch) and Weight (kg / lb)

NCS	a	b	b1	b3	D	D1	d1	d2	d3	d6	h	h1	h2	h3	h4	h5	s	approx. weight <sup>1)</sup>
100	15	50	50	53.5	101	99	116	132	4.8	12	60	56.5	85	120	70	120	6	0.46
4"	0.59	1.97	1.97	2.11	3.98	3.9	4.57	5.2	0.19	0.47	2.36	2.22	3.35	4.72	2.76	4.72	0.24	1.01

<sup>1)</sup> example, data for version with stem E1, Ø 8 mm (0.31"), length 100 mm (4")

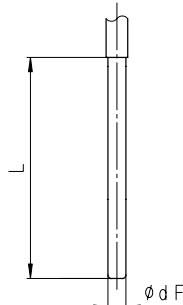
# Process Connections

## Process Connection

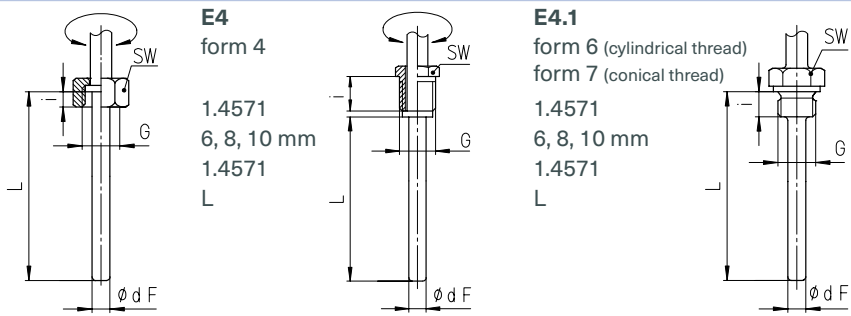
**without screw fitting, plain stem**

**Stem type** E1  
**Form acc. to DIN EN 13190** form 1  
**Stem material** 1.4571  
**Stem  $\varnothing$  dF** 6, 8, 10 mm  
**Order length** L

**Suitable thermowell models** SK1 (8.8140)  
 (data sheet) SK2 (8.8141)



	union nut	male thread, turnable	male thread, rigid
<b>Stem type</b>	E3	E4	E4.1
<b>Form acc. to DIN EN 13190</b>	form 5	form 4	form 6 (cylindrical thread) form 7 (conical thread)
<b>Stem material</b>	1.4571	1.4571	1.4571
<b>Stem <math>\varnothing</math> dF</b>	6, 8, 10 mm	6, 8, 10 mm	6, 8, 10 mm
<b>Screw fitting material</b>	1.4571	1.4571	1.4571
<b>Order length</b>	L	L	L
<b>Suitable thermowell models</b>	SF4.1 (8.8111), SF4.1F (8.8113) SF8 (8.8130), SF9 (8.8131)	SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)	SF4 (8.8110), SF4F (8.8112) SF5 (8.8120), SF6, SF7 (8.8121)



**Thread**  
 (dimensional data in mm / inch)

G	SW	i
G 1/2 B	27	10
1/2" BSP	1.06	0.39
G 3/4 B	32	12
3/4" BSP	1.26	0.47
M20x1.5	27	10
	1.06	0.39
M24x1.5	32	12
	1.26	0.47
M27x2	32	12
	1.26	0.47

G	SW	i
G 1/2 B	22	20
1/2" BSP	0.87	0.79
G 3/4 B	27	23
3/4" BSP	1.06	0.91
M18x1.5	22	14
	0.87	0.55
M20x1.5	22	20
	0.87	0.79

**Thermowell required!**

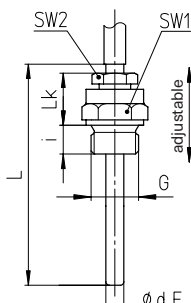
G	SW	i
G 1/2 B	27	14
1/2" BSP	1.06	0.55
G 3/4 B	32	16
3/4" BSP	1.26	0.63
1/2" NPT	27	19
	1.06	0.75
3/4" NPT	27	19
	1.06	0.75
M18x1.5	24	14
	0.94	0.55
M20x1.5	27	14
	1.06	0.55

## male thread / compression fitting      male thread, turnable / double male adapter

**Stem type** E5  
 (E1 with compression fitting)

**Form acc. to DIN EN 13190** form 2 (cylindrical thread)  
 form 3 (conical thread)

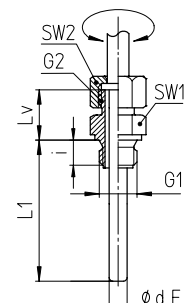
**Stem material** 1.4571  
**Stem  $\varnothing$  dF** 6, 8, 10 mm  
**Screw fitting material** 1.4571  
**Order length** L



**Stem type** E6  
 (E3 with double male adapter)

**Form acc. to DIN EN 13190** —

**Stem material** 1.4571  
**Stem  $\varnothing$  dF** 6, 8, 10 mm  
**Screw fitting material** 1.4571  
**Order length** L1



**Suitable thermowell models** SF4 (8.8110), SF4F (8.8112)  
 (data sheet) SF5 (8.8120), SF6, SF7 (8.8121)

**Suitable thermowell models** SF4 (8.8110), SF4F (8.8112)  
 SF5 (8.8120), SF6, SF7 (8.8121)

**Thread**  
 (dimensional data in mm / inch)

G	SW1	SW2	i	Lk
G 1/2 B	27	22	14	42
1/2" BSP	1.06	0.87	0.55	1.65
G 3/4 B	32	22	16	42
3/4" BSP	1.26	0.87	0.63	1.65
1/2" NPT	27	22	19	42
	1.06	0.87	0.75	1.65
3/4" NPT	27	22	19	42
	1.06	0.87	0.75	1.65
M20x1.5	27	22	14	42
	1.06	0.87	0.55	1.65

G1	G2	SW1	SW2	i	Lv
G 1/2 B	G 1/2 B	27	27	14	28
1/2" BSP	1/2" BSP	1.06	1.06	0.55	1.1
G 3/4 B	G 1/2 B	32	27	16	28
3/4" BSP	1/2" BSP	1.26	1.06	0.63	1.1
1/2" NPT	G 1/2 B	27	27	19	28
	1/2" BSP	1.06	1.06	0.75	1.1
3/4" NPT	G 1/2 B	27	27	19	28
	1/2" BSP	1.06	1.06	0.75	1.1
M20x1.5	M20x1.5	27	27	14	28
		1.06	1.06	0.55	1.1
M24x1.5	M20x1.5	32	27	14	28
		1.26	1.06	0.55	1.1
M27x2	M20x1.5	32	27	16	28
		1.26	1.06	0.63	1.1

## Ordering Information, Options

Basic Model	Digital Thermometer Model LILLYplus	TDPSCh	
<b>Nominal case size</b>	case Ø 100 mm (4")	<b>100</b>	
<b>Stem position / case configuration</b>	vertical bottom position	without mounting device	without code letters
	angular bottom position	90° to the back	<b>w</b>
		120° obtuse to the back	<b>wst</b>
		90° to the left	<b>wl</b>
		90° to the right	<b>wr</b>
	centre back position	without mounting device	<b>rm</b>
	back flange for surface mounting	<b>rmRh</b>	
<b>Temperature ranges</b>	-50.0 / +250.0 °C (-58.0 / +482.0 °F)	<b>NT</b>	
	-99.9 / +500.0 °C (-147.82 / +932.0 °F)	<b>HT</b>	
<b>Process connection</b>	without screw fitting, plain stem	<b>E1</b>	
	union nut	<b>E3</b>	
	male thread, turnable	<b>E4</b>	
	male thread, rigid	<b>E4.1</b>	
	male thread / compression fitting	<b>E5</b>	
	male thread, turnable / double male adapter	<b>E6</b>	
<b>Stem Ø dF</b>	6 mm (0.24")	<b>dF = 6 mm</b>	
	8 mm (0.31")	<b>dF = 8 mm</b>	
	10 mm (0.39")	<b>dF = 10 mm</b>	
<b>Stem length</b>	L or L1 in mm	e.g. <b>L = 100 mm</b>	
<b>Connection thread</b>	see page 3	e.g. <b>G ½ B</b>	

**These options are to be ordered in written form. Please contact us to ensure compatibility when combining options.**

### Case polished

**Instrument tag** stainless steel plate 12 x 55 mm (0.47 x 2.17")  
sticker on the case

**Example** TDPSCh 100, NT, E4.1, dF = 6 mm, L = 100 mm, G ½ B

**Special Versions:** Please describe your requirements in cleartext!