Digital Thermometers Model LILLY

With connection cable to the temperature sensor

TDKCh 63
TDKCh 100

Application

The battery-operated digital thermometer models LILLY consist of an easy-to-read LC display and a platinum resistance thermometer that are built into a robust thermometer standard case made of stainless steel. They can be manufactured with the same construction types (according to DIN EN 13 190) as mechanical thermometers. They can be applied as an alternative to mechanical thermometers if these reach their limits due to difficult installation conditions, vibrations or accuracy requirements.

Standard Versions

Measuring Element
Platinum measuring resistor Pt1000 according to DIN EN 60 751

Measuring Ranges

TDKCh 63		TDKCh 100	
measuring range	resolution	measuring range	resolution
–50.0 / +199.9 °C	0.1 K	–50.0 / +250.0 °C	0.1 K
–50 / +550 °C	1 K	–99.9 / +550.0 °C	0.1 K

Ambient Temperature Ranges
Operation: –10 °C to +60 °C
Storage: –20 °C to +70 °C

Accuracy
Display: ±0.3 % FS ±1 digit
Sensor: class B acc. to DIN EN 60 751 (±0.3 K at 0 °C)

Measuring Rate
15 s

Display	TDKCh 63	TDKCh 100
	LC display	LC display
Digits	3.5	4
Digit height	10 mm (0.39")	18 mm (0.71")

Battery	TDKCh 63	TDKCh 100
Lithium battery ($Li\text{-}SOCl_2$) 3.6 V	½ AA, 1200 mAh	AA, 2600 mAh

included in the scope of delivery, replaceable by the customer
battery life approx. 5 – 7 years, depending on application

Error Monitoring
Battery voltage, sensor short circuit, sensor break
Error codes:

ERR1 / LOBAT	battery voltage low
ERR2	sensor short circuit or fallen below lower limit
ERR3	sensor break or upper limit exceeded

Temperature Sensor (Stem)
Up to +250 °C version as cable sensor
with stainless steel 316Ti (1.4571) sleeve
From +250 °C upwards version as sheathed resistance thermometer

Max. static operating pressure:	25 bar
Stem models:	E1 or E5
Stem Ø dF:	6 mm (0.24")
Connection cable:	up to +180 °C made of silicone rubber up to +250 °C made of PFA

Case
With bayonet ring, stainless steel 1.4301,
with pressure equalising element

Nominal Case Size
63, 100 mm (2½, 4")

Degree of Protection (DIN EN 60 529)
IP65

Window
Instrument glass

Case Configuration
Connection to temperature sensor:
- with connection cable

Cable position:
- vertical bottom position
- lower back position (**r**)

Mounting device:
- for bottom cable position:
  - back flange for surface mounting (**Rh**)
  - mounting device for gauge holder bracket (**Mgh**)
- for lower back cable position:
  - back flange for surface mounting (**rRh**)
  - front flange for panel mounting (**rFr**)

Ordering Information

See page 4

Special Versions and Further Options

- Other stem models, e.g. with connection for food / bio / pharmaceutical industries
- Special connection cables upon customer requirement
- Contact stem for temperature measurement at the outside of tanks and pipe barrels
- Other stem Ø, connection threads and materials upon request
- Case parts stainless steel 316L (1.4404) upon request
- Position of the connection radial at 3 o'clock, 9 o'clock, 12 o'clock, others upon request
- Other than vertical installation (90°)
- Rugged version (IP68) completely cast with polyurethane (only NCS 100)
- Shielded cable with spiral protection hose
- Pluggable cable with M 12x1 plug connector

Accessories

- Thermowells, see data sheet 8.8110 ff.
- Compression fittings
- Gauge holder bracket

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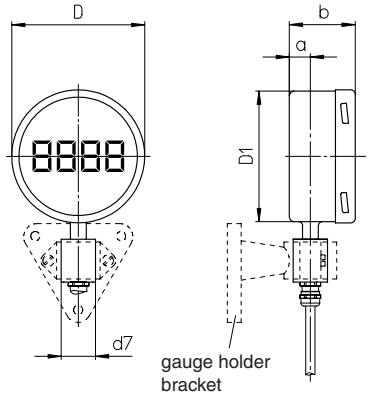
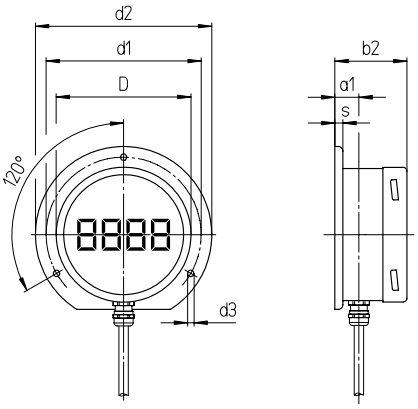
Cable Position, Code Letters, Dimensional Data and Weights

Vertical Bottom Cable Position

mounting device for gauge holder bracket
code letters: **Mgh**

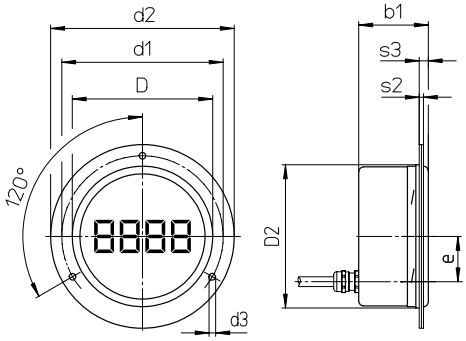


back flange for surface mounting
code letters: **Rh**

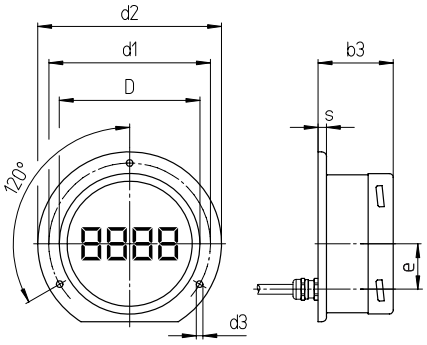


Lower Back Cable Position

front flange for panel mounting
code letters: **rFr**



back flange for surface mounting
code letters: **rRh**



Dimensional Data (mm/inch) and Weights (kg/lb)

NCS	a	a1	b	b1	b2	b3	D	D1	D2	d1	d2	d3	d5	d7	s	s1	s2	s3	s5	weight
63	12	15	39	39	42	42	64	62	66	75	85	3.6	M3	26	5	1	2	5.5	7	0.38
2½"	**0.47**	**0.59**	**1.54**	**1.54**	**1.65**	**1.65**	**2.52**	**2.44**	**2.6**	**2.95**	**3.35**	**0.14**		**1.02**	**0.2**	**0.04**	**0.08**	**0.22**	**0.28**	**0.84**
100	15	18.5	50	50	53.5	53.5	101	99	103	116	132	4.8	M4	26	6	1	2	5.5	7	0.6
4"	**0.59**	**0.73**	**1.97**	**1.97**	**2.11**	**2.11**	**3.98**	**3.9**	**4.06**	**4.57**	**5.2**	**0.19**		**1.02**	**0.24**	**0.04**	**0.08**	**0.22**	**0.28**	**1.32**

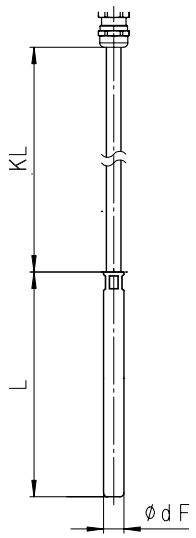
Process Connections

Process Connection

without screw fitting, plain stem

Stem model: **E1**
Stem material: 1.4571
Stem Ø dF: 6 mm
Order length: L, KL

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



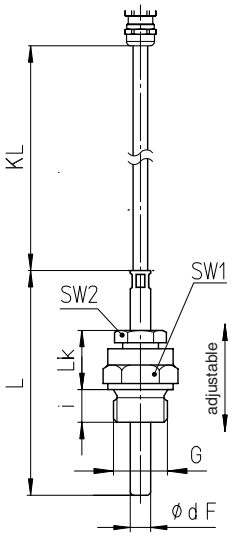
male thread/compression fitting

Stem model: **E5**
(E1 with compression fitting)
Stem material: 1.4571
Stem Ø dF: 6 mm
Order length: L, KL

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

Thread (dimensional data in mm/inch):

G	SW1	SW2	i	Lk
G ½ B **½" BSP**	27 **1.06**	22 **0.87**	14 **0.55**	42 **1.65**
G ¾ B **¾" BSP**	32 **1.26**	22 **0.87**	16 **0.63**	42 **1.65**
½" NPT	27 **1.06**	22 **0.87**	19 **0.75**	42 **1.65**
¾" NPT	27 **1.06**	22 **0.87**	19 **0.75**	42 **1.65**
M20x1.5	27 **1.06**	22 **0.87**	14 **0.55**	42 **1.65**



Ordering Information

Basic Model:	Digital Thermometer Model LILLY			TDKCh
Nominal case size:	case Ø 63, 100 mm (2½, 4")			**63, 100**
Cable position/ case configuration:	vertical bottom position	mounting device for gauge holder bracket		**Mgh**
		back flange for surface mounting		**Rh**
	lower back position	front flange for panel mounting		**rFr**
		back flange for surface mounting		**rRh**
Temperature ranges:	–50.0 / +199.9 °C (NCS 63) or –50.0 / +250.0 °C (NCS 100)			**NT**
	–50 / +550 °C (NCS 63) or –99.9 / +550.0 °C (NCS 100)			**HT**
Process connection:	without screw fitting, plain stem			**E1**
	male thread/compression fitting			**E5**
Stem Ø dF:	6 mm (0.24")			**dF = 6 mm**
Stem length:	L or L1 in mm		e.g.	**L = 100 mm**
Cable length:	KL ≥ 1 to 15 m		e.g.	**KL = 3000 mm**
Connection thread:	see page 3		e.g.	**G½B**
Options:	window	laminated safety glass		
		acrylic glass (PMMA)		
		polycarbonate (PC)		
	case polished			
	bayonet ring polished			
	instrument tag	stainless steel plate 12 x 55 mm (0.47 x 2.17")		
		sticker on the case		

Example:	**TDKCh 100 Rh, HT, E1, dF = 6 mm, L = 50 mm, KL = 5000 mm, G½B**

Special Versions: Please describe your requirements in cleartext!