

## Machine glass thermometers Model 32, V-Form

WIKA data sheet TM 32.02



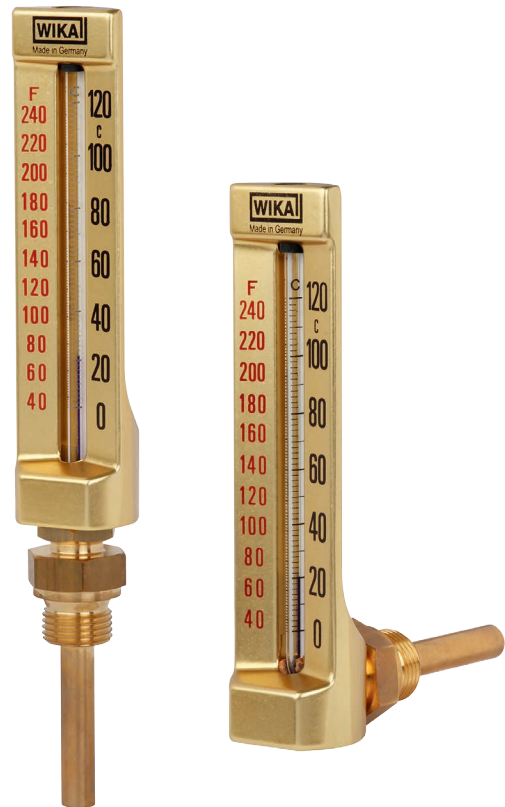
for further approvals  
see page 5

### Applications

- Universal application
- Machine building
- Vessel construction
- Central and large heating systems
- Plant construction

### Special features

- Insensitive to vibrations
- Non-toxic thermometric liquid
- Measuring ranges from -30 ... +200 °C



Machine glass thermometer model 32

Fig. left: Straight design

Fig. right: 90° angle version

### Description

The model 32 machine glass thermometer is mainly used in industrial applications such as machine building and also in heating, air-conditioning and refrigeration technology.

It is notable for its high accuracy and very long service life (since there is no mechanical wear).

## Standard version

### Nominal size in mm

110, 150 and 200

### Measuring principle

Liquid expansion

### Error limit

DIN 16195

### Permissible working pressure at the stem

Max. 6 bar

### Stem

Ø 10 mm

Ø 6.5 mm for NS 200 x 36 with union nut M24 x 1.5

### Case

Aluminium, brass-coloured, anodised

### Scale setting

printed with special ink, protected by anodised finish

### Thermometer glass insert

Rod shape, prismatic capillary

### Thermometric liquid

Blue, wetting

## Nominal size 110 x 30 mm

### Connection type

Design E, male thread

#### ■ Straight design per DIN 16181

Threaded connection

- G ½ B, M20 x 1.5 (form B per DIN)

- G ¾ B, M16 x 1.5 (form B1 per DIN)

Threaded connections screwed into housing

Insertion length  $l_1$  = 30, 40, 63, 100, 160, 250 mm

Copper alloy

#### ■ 90° angle version per DIN 16182

Threaded connection

- G ½ B, M20 x 1.5 (form S per DIN)

- G ¾ B, M16 x 1.5 (form S1 per DIN)

Threaded connectors inserted into housing, removable

Insertion length  $l_1$  = 30, 40, 63, 100, 160, 250 mm

Copper alloy

#### ■ 135° angle version

Threaded connection

- G ½ B, M20 x 1.5

- G ¾ B, M16 x 1.5

Threaded connections screwed into housing

Insertion length  $l_1$  = 30, 40, 63, 100, 160, 250 mm

Copper alloy

## Nominal size 150 x 36 mm

### Connection type

Design E, male thread

#### ■ Straight design per DIN 16185

Threaded connection

- G ½ B, M20 x 1.5 (form B per DIN)

- G ¾ B, M27 x 2

Threaded connections screwed into housing

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

#### ■ 90° angle version per DIN 16186

Threaded connection

- G ½ B, M20 x 1.5 (form S per DIN)

- G ¾ B, M27 x 2

Threaded connectors inserted into housing, removable

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

#### ■ 135° angle version

Threaded connection

- G ½ B, M20 x 1.5

- G ¾ B, M27 x 2

Threaded connections screwed into housing

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

## Nominal size 200 x 36 mm

### Connection type

Design E, male thread

#### ■ Straight design per DIN 16189

Threaded connection

- G ½ B, M20 x 1.5 (form B1 per DIN)

- G ¾ B, M27 x 2 (form B per DIN)

Threaded connections screwed into housing

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

#### ■ 90° angle version per DIN 16190

Threaded connection

- G ½ B, M20 x 1.5 (form S1 per DIN)

- G ¾ B, M27 x 2 (form S per DIN)

Threaded connectors inserted into housing, removable

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

#### ■ 135° angle version

Threaded connection

- G ½ B, M20 x 1.5 (form B1 per DIN)

- G ¾ B, M27 x 2 (form B per DIN)

Threaded connections screwed into housing

Insertion length  $l_1$  = 63, 100, 160, 250 mm

Copper alloy

## Scale ranges

Nominal size in mm	Scale range in °C	Scale spacing in °C	Error limit in °C
NS 110	-30 ... +50	1	2
	0 ... 60	1	1.5
	0 ... 100	2	2
	0 ... 120	2	2
	0 ... 160	4	4
	0 ... 200	5	5
NS 150	-30 ... +50	1	2
	0 ... 60	1	1.5
	0 ... 100	2	2
	0 ... 120	2	2
	0 ... 160	2	4
	0 ... 200	2	4
NS 200	-30 ... +50	1	2
	0 ... 60	1	1.5
	0 ... 100	1	2
	0 ... 120	1	2
	0 ... 160	2	4
	0 ... 200	2	4

## Models

Nominal size in mm	Model	Connection location	DIN
NS 110	G 3200	straight	DIN 16181
	W 3201	90° angle	DIN 16182
	W 3202	135° angle	-
NS 150	G 3210	straight	DIN 16185
	W 3211	90° angle	DIN 16186
	W 3212	135° angle	-
NS 200	G 3220	straight	DIN 16189
	W 3221	90° angle	DIN 16190
	W 3222	135° angle	DIN 16191

## Options (for all nominal sizes)

- Dual scale °F/°C
- Other scale ranges
- Threaded connections from other materials
- Thermowells in accordance with DIN from copper alloy, steel, stainless steel or other materials
- Connection design (selectable): Design 3, union nut
- Variants
  - **Straight design per DIN 16189**
    - Union nut
      - G 1/2, M20 x 1.5 (form C1 per DIN)
      - G 3/4, M27 x 2 (form C per DIN)
      - M24 x 1.5 (form F per DIN)
    - Adapter screwed into housing, removable
    - Insertion length  $l_1$ :
      - Form C1:  $l_1 = 89, 126, 186, 276, 426$  mm
      - Form C:  $l_1 = 93, 130, 190, 280, 430$  mm
      - Form F:  $l_1 = 155, 215, 275, 295, 355, 415$  mm
    - Union nut and copper alloy adapter, pipe st. 35

### - 90° angle version per DIN 16190

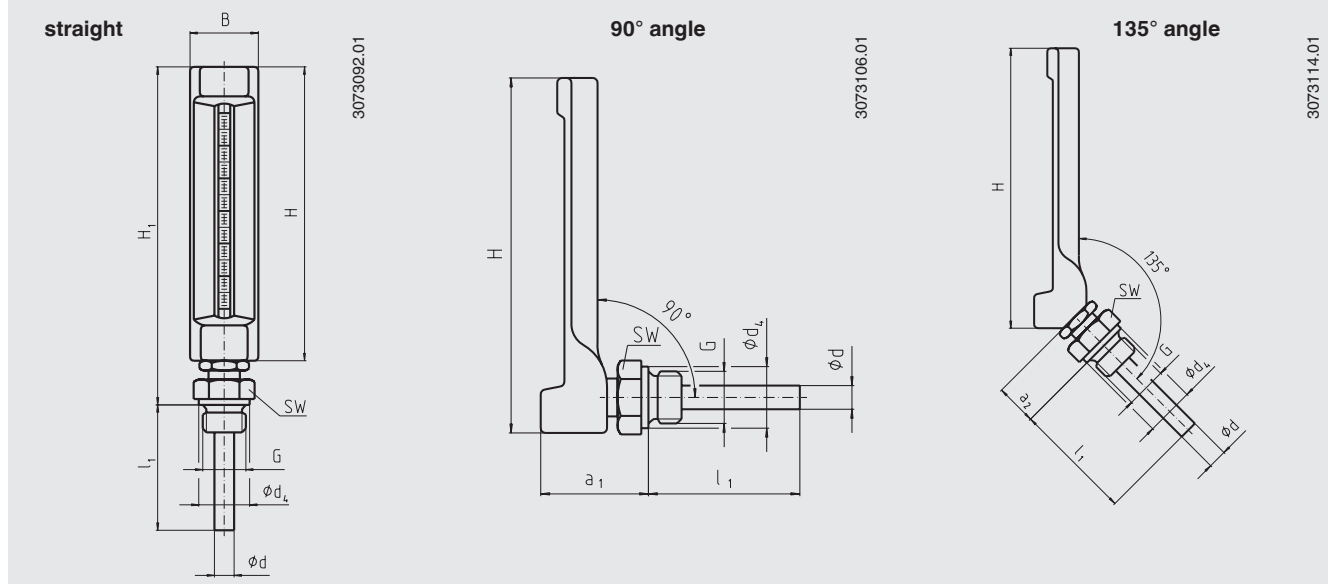
- Union nut
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  - Form F:  $l_1 = 155, 215, 275, 295, 355, 415$  mm
- Union nut and copper alloy adapter, pipe st. 35

### - 135° angle version per DIN 16191

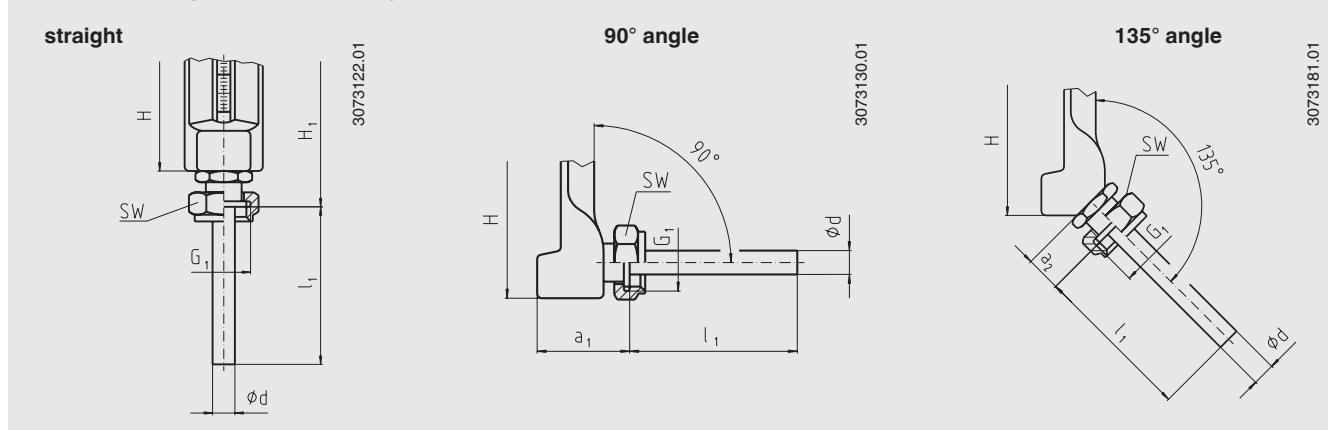
- Union nut
  - G 1/2, M20 x 1.5 (form C1 per DIN)
  - G 3/4, M27 x 2 (form C per DIN)
  - M24 x 1.5 (form F per DIN)
- Adapter screwed into housing, removable
- Insertion length  $l_1$ :
  - Form C1:  $l_1 = 89, 126, 186, 276, 426$  mm
  - Form C:  $l_1 = 93, 130, 190, 280, 430$  mm
  - Form F:  $l_1 = 155, 215, 275, 295, 355, 415$  mm
- Union nut and copper alloy adapter, pipe st. 35

## Dimensions in mm

Connection design E, male thread



Connection design 3, union nut (only with NS 200)



NS	Dimensions in mm										Weight in kg
	a <sub>1</sub>	a <sub>2</sub>	B	Ø d	Ø d <sub>1</sub>	G	G <sub>1</sub>	H	H <sub>1</sub>	SW	
110	44	20	30	10	22	G 3/8 B	-	110	130	22	0.25
	44	20	30	10	21	M16 x 1.5	-	110	130	22	0.25
	44	20	30	10	26	G 1/2 B	-	110	130	27	0.25
	44	20	30	10	25	M20 x 1.5	-	110	130	27	0.25
150	46	21	36	10	26	G 1/2 B	-	150	170	27	0.30
	46	21	36	10	25	M20 x 1.5	-	150	170	27	0.30
	46	21	36	10	32	G 3/4 B	-	150	170	32	0.30
	46	21	36	10	32	M27 x 2	-	150	170	32	0.30
200	46	21	36	10	26	G 1/2 B	G 1/2	200	220	27	0.35
	46	21	36	10	25	M20 x 1.5	M20 x 1.5	200	220	27	0.35
	46	21	36	10	32	G 3/4 B	G 3/4	200	220	32	0.35
	46	21	36	10	32	M27 x 2	M27 x 2	200	220	32	0.35
	46	21	36	6.5	-	-	M24 x 1.5	200	220	32	0.35

## Approvals

- **GL** <sup>1)</sup>, ships, shipbuilding (e.g. offshore), Germany
- **CRN**, safety (e.g. electr. safety, overpressure, ...), Canada

1) For straight and 90° angle versions

Approvals and certificates, see website

## Ordering information

Model / Nominal size / Scale range / Connection design / Length  $l_1$  / Options

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