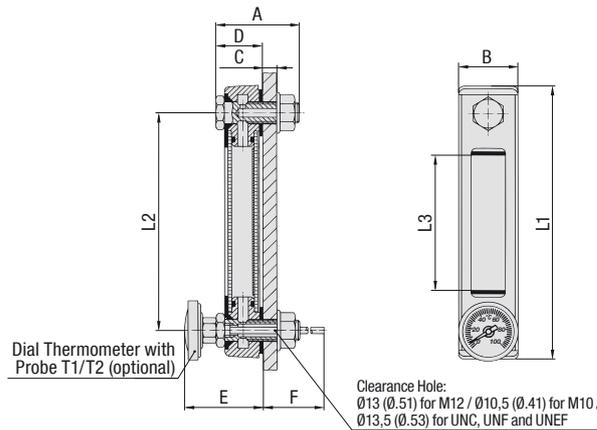
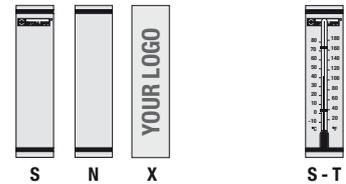


Level Gauge ■ Type SNA



Design of Scale Plates Thermometer Options

Capillary Tube Thermometer with a dual Celsius / Fahrenheit scale up to +80 °C / +180 °F



Characteristics

Visual fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29PSI

Nominal Sizes and Designs

- 6 nominal sizes from 76 mm / 2.99 in to 305 mm / 12.00 in
- Display either undivided (SNA 076 ... 176) or subdivided by strut(s) into 2 (SNA 254) or 3 sections (SNA 305)

Please see page E5 for alternative nominal sizes and designs.

Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Steel St 12, black epoxy-coated
- Sight tube and plugs made of Polyamide (PA)
- Sealings made of NBR (Buna-N®)
- Scale plate made of PVC

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials, e.g. FPM (Viton®), and scale plate materials, e.g. Aluminium, are available on request.

Please see page E5 for alternative housing materials.

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets (IP 67 on request)
- Operating temperature range: -30 °C ... +80 °C / -22 °F ... +176 °F
- Recommended tightening torque: 8 N·m / 5.9 ft·lb

Accessories / Options

- Red / blue capillary tube thermometers with a dual Celsius / Fahrenheit scale and a temperature display range of up to +80 °C / +180 °F
- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo Switches
- Temperature Sensors

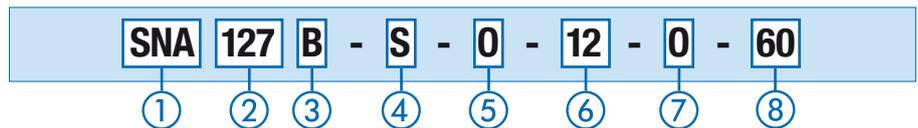
Please see pages E8 and E9 for details.

Dimensions

Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20 mm / .008 in for all nominal sizes.

Nominal Size	Dimensions (mm/in)									
	A	B	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNA 076	45	34,5	8	27	43,5	165,5	265,5	108	76	31
	1.77	1.36	.32	1.06	1.71	6.52	10.45	4.25	2.99	1.22
SNA 127	45	34,5	8	27	43,5	165,5	265,5	159	127	76
	1.77	1.36	.32	1.06	1.71	6.52	10.45	6.26	5.00	2.99
SNA 150	45	34,5	8	27	43,5	165,5	265,5	182	150	99
	1.77	1.36	.32	1.06	1.71	6.52	10.45	7.17	5.91	3.90
SNA 176	45	34,5	8	27	43,5	165,5	265,5	208	176	124
	1.77	1.36	.32	1.06	1.71	6.52	10.45	8.19	6.93	4.88
SNA 254	45	34,5	8	27	43,5	165,5	265,5	285	254	192
	1.77	1.36	.32	1.06	1.71	6.52	10.45	11.22	10.00	7.56
SNA 305	45	34,5	8	27	43,5	165,5	265,5	336	305	244
	1.77	1.36	.32	1.06	1.71	6.52	10.45	13.23	12.00	9.61

Order Codes



① Type

Level Gauge with visual fluid level indication **SNA**

② Nominal Size

SNA 076 (nominal size of 76 mm / 2.99 in)	076
SNA 127 (nominal size of 127 mm / 5.00 in)	127
SNA 150 (nominal size of 150 mm / 5.91 in)	150
SNA 176 (nominal size of 176 mm / 6.93 in)	176
SNA 254 (nominal size of 254 mm / 10.00 in)	254
SNA 305 (nominal size of 305 mm / 12.00 in)	305

Please see page E5 for alternative nominal sizes.

③ Sealing Material

NBR (Buna-N®) (standard option)	B
FPM (Viton®)	V

④ Design of Scale Plate

With STAUFF logo (standard option)	S
Neutral design without any logo	N
Custom-designed scale plate (please specify)	X

⑤ Thermometer Option

Supplied without thermometer	0
Red Capillary Tube thermometer on scale plate	T
Blue Capillary Tube thermometer on scale plate	TB
Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100 °C	T1C
Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100 °C	T2C
Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100 °C / 200 °F	T1CF
Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100 °C / 200 °F	T2CF

⑥ Banjo Bolt Size

Metric ISO thread M12 (standard option)	12
Metric ISO thread M10	10
Unified coarse thread 1/2–13 UNC	U1
Unified fine thread 1/2–20 UNF	U2
Unified extra-fine thread 1/2–28 UNEF	U3

⑦ Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor	-
Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with standard connector	0
Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with connector M12	0D
Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with standard connector	C
Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with connector M12	CD
Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12	PT100

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

⑧ Switching Temperature

Contact switches at +60 °C / +140 °F	60
Contact switches at +70 °C / +158 °F	70
Contact switches at +80 °C / +176 °F	80
Contact switches at +90 °C / +194 °F	90

Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.

Level Gauge (Special Options) ■ Type SNA

Characteristics

Visual fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29PSI; ideal for custom applications in terms of reservoir capacities and dimensions

Nominal Sizes

- Special sizes beyond the normal of 305 mm / 12 in up to a maximum nominal size of 950 mm / 37.4 in – even for small and medium quantities
- High-precision manufacturing within 1 mm tolerance to customer requirements

Design

- Robust design thanks to one or more struts that subdivide the display into 2 or more sections
- Positioning of the strut(s) based on engineering considerations and/or according to particular customer requirements
- Precise visual indication of the fluid level by use of scale plates (only available for nominal sizes smaller than 670 mm / 26.4 in) or by use of a coloured floating element (recommended option for nominal sizes larger than 670 mm / 26.4 in)
- Plastic dampening clips to reduce vibration of the sight tube are used for nominal sizes larger than 450 mm / 17.7 in

Materials

- Housing made of Steel, Aluminium or Stainless Steel
- Sight tube and plugs made of Polyamide (PA)
- Sealings made of NBR (Buna-N®)
- Scale plate made of PVC
- Floating element made of Polyamide (PA)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials, e.g. FPM (Viton®), and scale plate materials, e.g. Aluminium, are available on request.

Please also ask for our special low-temperature versions, suitable for extreme temperatures up to -40 °C / -40 °F.

Accessories / Options

- Capillary tube thermometers with a dual Celsius / Fahrenheit scale and a temperature display range of up to +80 °C / +180 °F
- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo switches
- Temperature sensors

Please see pages E8 and E9 for details.

Inquiry Checklist

In case that you require a special property or custom-designed level gauge, please use this checklist to provide us with details. If necessary, please also include further details, like the type of fluid in use, its temperature and viscosity.

Nominal Size
 Bolt centre distance (in mm)

Housing Material
 Aluminium Steel Stainless Steel

Housing Design
 Regular housing design with positioning of strut(s) based on engineering considerations

Please provide additional details / drawing for custom housing designs.

Banjo Bolt Size
 M12 M10 1/2–13 UNC

 1/2–20 UNF 1/2–28 UNEF

Banjo Bolt Material
 Steel Stainless Steel

Sealing Material
 NBR (Buna-N®) FPM (Viton®) EPDM

Alternative sealing materials to be defined separately.

Level Indication
 Scale plate (only for nominal sizes smaller than 670 mm / 26.4 in)

- | | |
|--|--|
| <input type="checkbox"/> Scale plate made of PVC | <input type="checkbox"/> With STAUFF logo |
| <input type="checkbox"/> Scale plate made of Aluminium | <input type="checkbox"/> Neutral design without any logo |
| | <input type="checkbox"/> Custom-design (please specify) |

- Without thermometer on scale plate
- Capillary tube thermometer with dual Celsius / Fahrenheit scale up to +80 °C / +180 °F

 Floating element (recommended option for nominal sizes larger than 670 mm / 26.4 in)

Other types of level indication (magnetic floats, etc.) to be defined separately.

Options
 Dial thermometer with probe

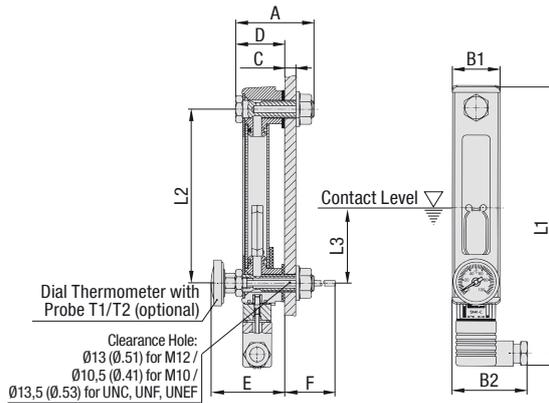
- | | |
|---|---|
| <input type="checkbox"/> Celsius scale up to +100 °C | <input type="checkbox"/> Length of probe: 200 mm / 7.87 in |
| <input type="checkbox"/> Dual scale up to +100 °C / +200 °F | <input type="checkbox"/> Length of probe: 300 mm / 11.81 in |

 Thermo Switch TS-SNA/SNK

- | | |
|--|---|
| <input type="checkbox"/> Break contact; Standard connector | <input type="checkbox"/> Contact switches at +60 °C / +140 °F |
| <input type="checkbox"/> Break contact; Connector M12 | <input type="checkbox"/> Contact switches at +70 °C / +158 °F |
| <input type="checkbox"/> Make contact; Standard connector | <input type="checkbox"/> Contact switches at +80 °C / +176 °F |
| <input type="checkbox"/> Make contact; Connector M12 | <input type="checkbox"/> Contact switches at +90 °C / +194 °F |

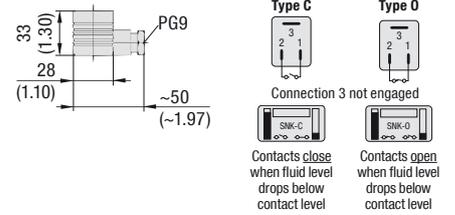
 Temperature Sensor TS-SNA/SNK-PT100


Level Gauge ■ Type SNK

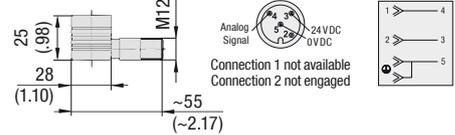


Connection Details and Electrical Functions

Types C and O: Industrial standard connector (contact gap: 11 mm / .43in), similar to DIN EN 175301-803-B / ISO 6952



Types CD and OD: Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



Characteristics

Visual / electrical fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 1 bar / 14.5PSI

Nominal Sizes and Designs

- 5 nominal sizes from 127 mm / 5.00 in to 305 mm / 12.00 in
- Display either undivided (SNK 127 ... 176) or subdivided by strut(s) into 2 (SNK 254) or 3 sections (SNK 305)

Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Aluminium, plastic coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polyamide (PA)
- Sealings made of FPM (Viton®)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials are available on request.

Electrical Specifications

- Magnetic float activates switch when fluid level drops below contact level within 60 mm / 2.36 in of lower banjo bolt
- Available as a break contact (normally closed) or make contact (normally open)
- Either equipped with industrial standard connector (types C / O) or five-pin circular connector M12 (types CD / OD)
- Direction of the electrical contact box (right / left) can be chosen when assembling the electrical contacts (types C / D) or is right by default (types CD / OD)
- Contact ratings: max. 10W (types C / CD) or 5W (types O / OD)
- Switching voltage: max. 50VAC/DC
- Switching current: max. 0,25 A

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets (IP 67 on request)
- Operating temperature range: -30°C ... +80°C / -22°F ... +176°F
- Recommended tightening torque: 8 N·m / 5.9 ft·lb
- Minimum lateral distance to other magnetic components and cables: 10 mm / .39 in

Accessories / Options

- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100°C / +200°F
- Thermo Switches
- Temperature Sensors

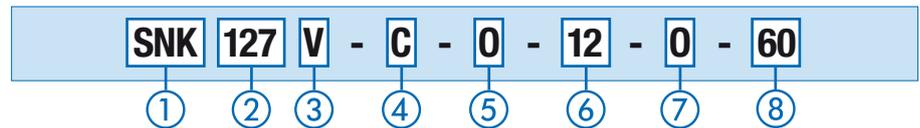
Please see pages E8 and E9 for details.

Dimensions

Table shows dimension L1 for the version with industrial standard connector (types C and O) only. Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20 mm / .008 in for all nominal sizes.

Nominal Size	Dimensions (mm/in)										
	A	B1	B2	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNK 127	56	34,5	~50	8	35,1	51,5	157,5	257,5	205	127	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.07	5.00	~2.36
SNK 150	56	34,5	~50	8	35,1	51,5	157,5	257,5	228	150	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.98	5.91	~2.36
SNK 176	56	34,5	~50	8	35,1	51,5	157,5	257,5	254	176	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	10.00	6.93	~2.36
SNK 254	56	34,5	~50	8	35,1	51,5	157,5	257,5	332	254	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	13.07	10.00	~2.36
SNK 305	56	34,5	~50	8	35,1	51,5	157,5	257,5	383	305	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	15.08	12.00	~2.36

Order Codes



① Type

Level Gauge with visual / electrical fluid level indication **SNK**

② Nominal Size

SNK 127 (nominal size of 127 mm / 5.00 in) **127**
 SNK 150 (nominal size of 150 mm / 5.91 in) **150**
 SNK 176 (nominal size of 176 mm / 6.93 in) **176**
 SNK 254 (nominal size of 254 mm / 10.00 in) **254**
 SNK 305 (nominal size of 305 mm / 12.00 in) **305**

Consult STAUFF for alternative nominal sizes and designs.

③ Sealing Material

FPM (Viton®) **V**

④ Electrical Function

Break contact, opens at contact level (normally closed); Equipped with standard connector **O**
 Break contact, opens at contact level (normally closed); Equipped with connector M12 **OD**
 Make contact, closes at contact level (normally open); Equipped with standard connector **C**
 Make contact, closes at contact level (normally open); Equipped with connector M12 **CD**

⑤ Thermometer Option

Supplied without thermometer **O**
 Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100°C **T1C**
 Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100°C **T2C**
 Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100°C / 200°F **T1CF**
 Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100°C / 200°F **T2CF**

⑥ Banjo Bolt Size

Metric ISO thread M12 (standard option) **12**
 Metric ISO thread M10 **10**
 Unified coarse thread 1/2-13 UNC **U1**
 Unified fine thread 1/2-20 UNF **U2**
 Unified extra-fine thread 1/2-28 UNEF **U3**

⑦ Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor -
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with standard connector **O**
 Thermo Switch TS-SNA/SNK; Break contact (normally closed); Equipped with connector M12 **OD**
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with standard connector **C**
 Thermo Switch TS-SNA/SNK; Make contact (normally open); Equipped with connector M12 **CD**
 Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12 **PT100**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

⑧ Switching Temperature

Contact switches at +60°C / +140°F **60**
 Contact switches at +70°C / +158°F **70**
 Contact switches at +80°C / +176°F **80**
 Contact switches at +90°C / +194°F **90**

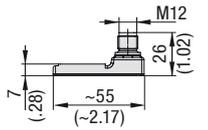
Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.

Level Gauge (Compact Design) ■ Type SNKK

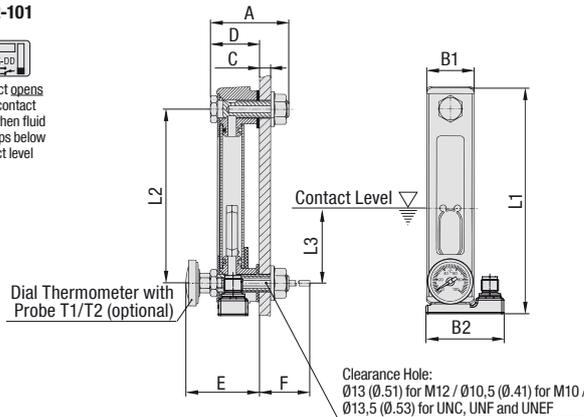
Connection Details and Electrical Functions

Type DD: Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



1 Contact opens and 1 contact closes when fluid level drops below contact level

Pin assignment at empty reservoir (default setting at point of delivery)



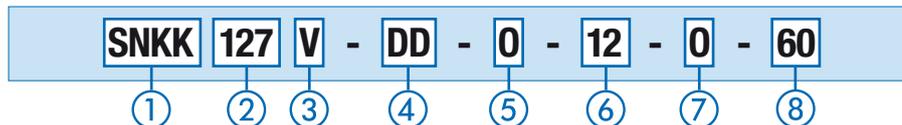
~40mm / ~1.57in in comparison with Level Gauges SNK

Dimensions

Maximum admissible tolerance for the bolt center spacing (dimension L2) according to DIN ISO 2768-f: ±0,20mm / .008in for all nominal sizes.

Nominal Size	Dimensions (mm/in)										
	A	B1	B2	C (Max.)	D	E	F (with T1)	F (with T2)	L1	L2	L3
SNKK 127	56	34,5	~55	8	35,1	51,5	157,5	257,5	165	127	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	6.50	5.00	~2.36
SNKK 150	56	34,5	~50	8	35,1	51,5	157,5	257,5	188	150	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	8.98	5.91	~2.36
SNKK 176	56	34,5	~55	8	35,1	51,5	157,5	257,5	214	176	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	8.43	6.93	~2.36
SNKK 254	56	34,5	~55	8	35,1	51,5	157,5	257,5	292	254	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	11.50	10.00	~2.36
SNKK 305	56	34,5	~55	8	35,1	51,5	157,5	257,5	343	305	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	13.50	12.00	~2.36

Order Codes



1 Type

Level Gauge with visual / electrical fluid level indication (compact design) **SNKK**

2 Nominal Size

SNKK 127 (nominal size of 127 mm / 5.00 in) **127**
 SNKK 150 (nominal size of 150 mm / 5.91 in) **150**
 SNKK 176 (nominal size of 176 mm / 6.93 in) **176**
 SNKK 254 (nominal size of 254 mm / 10.00 in) **254**
 SNKK 305 (nominal size of 305 mm / 12.00 in) **305**

Consult STAUFF for alternative nominal sizes and designs.

3 Sealing Material

FPM (Viton®) **V**

4 Electrical Function

SPDT (Single Pole Double Throw) contacts, 1 contact opens and 1 contact closes at contact level; Equipped with connector M12 **DD**

5 Thermometer Option

Supplied without thermometer **0**
 Dial thermometer with probe (200 mm / 7.87 in) and a Celsius scale up to 100 °C **T1C**
 Dial thermometer with probe (300 mm / 11.81 in) and a Celsius scale up to 100 °C **T2C**
 Dial thermometer with probe (200 mm / 7.87 in) and a dual scale up to 100 °C / 200 °F **T1CF**
 Dial thermometer with probe (300 mm / 11.81 in) and a dual scale up to 100 °C / 200 °F **T2CF**

6 Banjo Bolt Size

Metric ISO thread M12 (standard option) **12**
 Metric ISO thread M10 **10**
 Unified coarse thread 1/2–13 UNC **U1**
 Unified fine thread 1/2–20 UNF **U2**
 Unified extra-fine thread 1/2–28 UNEF **U3**

7 Thermo Switch / Temperature Sensor Option

Supplied without Thermo Switch / Temperature Sensor - Break Contact, opens at contact level (normally closed); Equipped with standard connector **0**
 Break Contact, opens at contact level (normally closed); Equipped with connector M12 **OD**
 Make Contact, closes at contact level (normally open); Equipped with standard connector **C**
 Make Contact, closes at contact level (normally open); Equipped with connector M12 **CD**
 Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12 **PT100**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages E8 and E9 for details.

8 Switching Temperature

Contact switches at +60 °C / +140 °F **60**
 Contact switches at +70 °C / +158 °F **70**
 Contact switches at +80 °C / +176 °F **80**
 Contact switches at +90 °C / +194 °F **90**

Only to be indicated when using a Thermo Switch.

Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors. Please see page E8 for details.

Characteristics

Visual / electrical fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 1 bar / 14.5PSI; ideal for applications in which space is limited

Nominal Sizes and Designs

- 5 nominal sizes from 127 mm / 5.00 in to 305 mm / 12.00 in
- Compact design allows space-saving installation: Always 40 mm / 1.57 in shorter than Level Gauges SNK of the comparable nominal size
- Display either undivided (SNKK 127 ... 176) or subdivided by strut(s) into 2 (SNKK 254) or 3 sections (SNKK 305)

Media Compatibility

- Suitable for use with Mineral and Petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Aluminium, plastic coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polyamide (PA)
- Sealings made of FPM (Viton®)

Special sight tube materials for improved UV or chemical resistance and use with special media (such as bio-degradable fluids, diesel oils, gasolines, etc.) as well as special sealing materials are available on request.

Electrical Specifications

- Magnetic float activates switch when fluid level drops below contact level within 60 mm / 2.36 in of lower banjo bolt
- Available as a SPDT (Single Pole Double Throw) contact
- Equipped with five-pin circular connector M12
- Direction of the electrical contact box is right to top by default

Technical Data

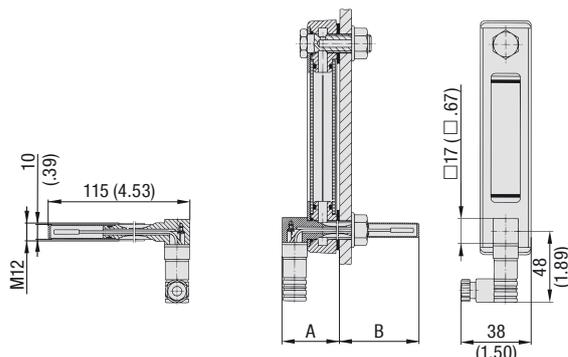
- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time (IP 69K on request)
- Operating temperature range: -30 °C ... +80 °C / -22 °F ... +176 °F
- Recommended tightening torque: 8 N·m / 5.9 ft·lb
- Minimum lateral distance to other magnetic components and cables: 10 mm / .39 in

Accessories / Options

- Dial thermometers with probe and a Celsius or a dual Celsius / Fahrenheit scale with a temperature display range of up to +100 °C / +200 °F
- Thermo Switches
- Temperature Sensors

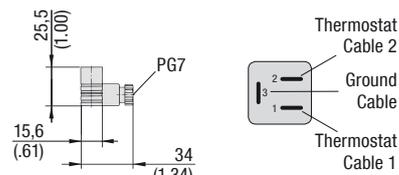
Please see pages E8 and E9 for details.

Thermo Switch - Type TS

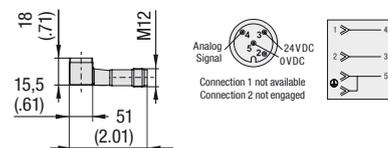


Connection Details and Electrical Functions

Types C and O: Industrial standard connector (contact gap: 9,4 mm / .37 in), similar to DIN EN 175301-803-C / ISO 6952



Types CD and OD: Five-pin circular connector M12, A-coded, according to IEC 61076-2-101



Characteristics

Fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK

Installation

- Replaces the lower banjo bolt of the Level Gauge
- Available for bolt size M12 only
- Clearance hole: $\varnothing 13$ mm / $\varnothing .51$ in

Materials

- Metal parts made of Steel (1.0718)
- Plastic parts made of glass-fibre reinforced Polyamide (PA)

Electrical Specifications (General)

- Thermo switch is activated when the fluid temperature reaches the respective switching temperature
- Available with switching temperatures of $+60$ °C / $+140$ °F, $+70$ °C / $+158$ °F, $+80$ °C / $+176$ °F or $+90$ °C / $+194$ °F (with a switching tolerance of ± 5 °C / ± 9 °F and a hysteresis of 35 °C / 63 °F)
- Available as a break contact (normally closed) or make contact (normally open)
- Either equipped with industrial standard connector (types C / O) or five-pin circular connector M12 (types CD / OD)
- Thermo switch can be rotated by 360° to its final direction

Dimensions

	Dimensions (mm/in)	
	A	B
In conjunction with Level Gauge SNA	39	76
	1.54	2.99
In conjunction with Level Gauge SNK	47	68
	1.85	2.68
In conjunction with Level Gauge SNKK	47	68
	1.85	2.68

Electrical Specifications (Alternating Current)

- Maximum voltage: 250 V, 2,5 (1,6) A, 50 Hz
- Maximum current at 2000 operations: 4,0 A at $\cos \varphi = 4,45 / 250$ V, 135 °C
- Maximum current at 10000 operations: 2,5 A at $\cos \varphi = 1,00 / 250$ V, 150 °C
- Minimum current: 20 mA

Electrical Specifications (Direct Current)

- Maximum voltage: 42 V

Order Codes



① Type

Thermo Switch TS for use with Level Gauges SNA, SNK and SNKK **TS-SNA/SNK**

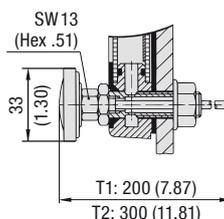
② Electrical Function

- Break contact, opens at switching temperature (normally closed); Equipped with standard connector **O**
- Break contact, opens at switching temperature (normally closed); Equipped with connector M12 **OD**
- Make contact, closes at switching temperature (normally open); Equipped with standard connector **C**
- Make contact, closes at switching temperature (normally open); Equipped with connector M12 **CD**

③ Switching Temperature

- Contact switches at $+60$ °C / $+140$ °F **60**
- Contact switches at $+70$ °C / $+158$ °F **70**
- Contact switches at $+80$ °C / $+176$ °F **80**
- Contact switches at $+90$ °C / $+194$ °F **90**

Dial Thermometer with Probe - Types T1/T2



Characteristics

Visual fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK

Nominal Sizes and Designs

- Probe lengths of 200 mm / 7.87 in or 300 mm / 11.81 in
- Scale diameter of 33 mm / 1.30 in

Please consult STAUFF for special versions.

Scale Options

- Celsius scale of $0^\circ\text{C} \dots +100^\circ\text{C}$
- Dual Celsius / Fahrenheit scale of up to $+100^\circ\text{C} / +200^\circ\text{F}$

Materials

- Probe made of Stainless Steel V4A (1.4571)

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets

Installation

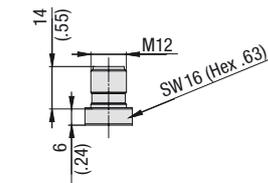
- Requires a special banjo bolt (with internal M8 port for the dial thermometer with probe) to replace the lower standard banjo bolt of the Level Gauge
- Use suitable wrench (SW 13 / Hex .51) to fasten; turning on the body itself may damage the product

Please note that Dial Thermometers with Probe can only be ordered in conjunction with Level Gauges SNA, SNK and SNKK. Please see page E4 to E7 for details.

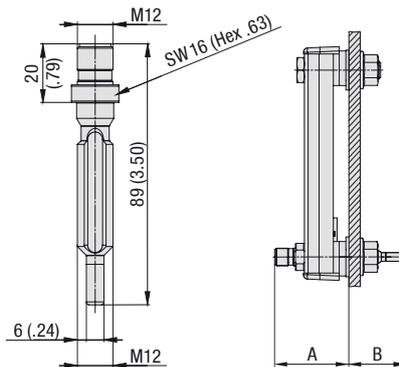
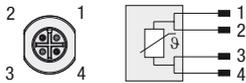
Temperature Sensor ■ Type TS-SNA/SNK-PT100

Connection Details and Electrical Functions

Four-pin circular connector M12,
A-coded, according to IEC 61076-2-101



Pin Assignment



Order Codes

TS-SNA/SNK-PT100

①

① Type

 Temperature Sensor PT100 **TS-SNA/SNK-PT100**

Dimensions

	Dimensions (mm/in)	
	A	B
In conjunction with Level Gauge SNA	43,5 1.71	45,5 1.79
In conjunction with Level Gauge SNK	51 2.01	38 1.50
In conjunction with Level Gauge SNKK	51 2.01	38 1.50

Characteristics

Fluid temperature measurement in conjunction with STAUFF Level Gauges **SNA**, **SNK** and **SNKK**; Analysis of signals with **TS-SNA/SNK-PT100-D Display / Evaluation Unit**, **TS-SNA/SNK-PT100-C Signal Converter** or system-sided amplifier or transducer

Installation

- Replaces the lower banjo bolt of the Level Gauge
- Available for bolt size M12 only
- Clearance hole: $\varnothing 13$ mm / $\varnothing .51$ in

Materials

- Metal parts (including all fluid-affected parts) made of Stainless Steel V2A (1.4305)

Electrical Specifications

- Measuring temperature range: $-40^{\circ}\text{C} \dots +150^{\circ}\text{C}$ / $-40^{\circ}\text{F} \dots +302^{\circ}\text{F}$
- Platinum measuring element PT100 according to DIN EN 60751, class A
- Accuracy: $\pm(0,15 \text{ K} + 0,002 \times |t|)$
- Max. contact current: 2,0 mA
- Equipped with four-pin circular connector M12 with gold-plated contacts

Technical Data

- Operating temperature range (for the connector area): $-25^{\circ}\text{C} \dots +80^{\circ}\text{C}$ / $-13^{\circ}\text{F} \dots +176^{\circ}\text{F}$
- IP 68 protection rating: Dust tight and protected against powerful water jets; even immersion (beyond 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time

Order Codes

TS-SNA/SNK-PT100-T-B

①

②

③

① Type

 Temperature Sensor PT100 **TS-SNA/SNK-PT100**

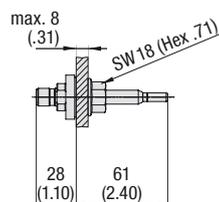
② Direct Adaptor

 Direct installation set including M12 screw nut, gasket, front ring and O-ring **T**

③ Sealing Material

NBR (Buna-N®) (standard option)	B
FPM (Viton®)	V
EPDM	E

The direct installation set can also be used in conjunction with Thermo Switches TS (see page E8). Please consult STAUFF for further information.


 Temperature Sensor with Direct Installation Set
Type TS-SNA/SNK-PT100-T


Characteristics

Direct fluid temperature measurement without STAUFF Level Gauges **SNA**, **SNK** and **SNKK**; Analysis of signals with **TS-SNA/SNK-PT100-D Display / Evaluation Unit**, **TS-SNA/SNK-PT100-C Signal Converter** or system-sided amplifier or transducer

Installation

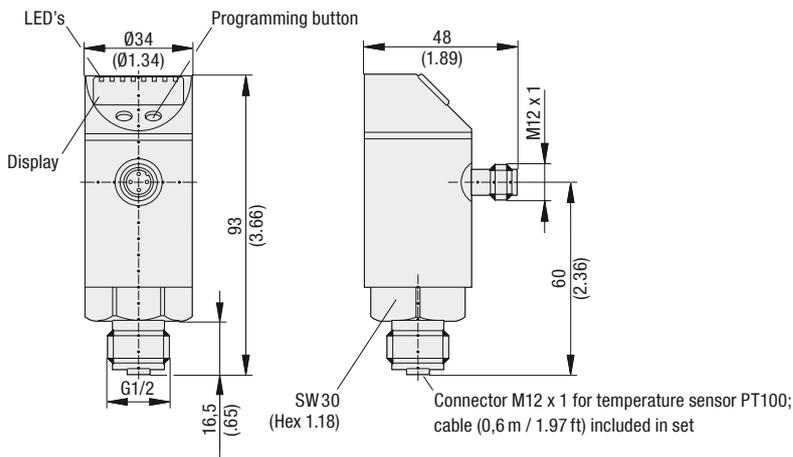
- Direct installation to the outer wall of the hydraulic reservoir or gearbox
- Compact design and easy installation
- Clearance hole: $\varnothing 13$ mm / $\varnothing .51$ in

Materials

- Fluid-affected parts made of Stainless Steel V2A (1.4305)
- M12 screw nut made of Steel, zinc-plated
- Front ring made of Stainless Steel V2A (1.4305)
- O-ring and gasket made of NBR (Buna-N®) (standard option), FPM (Viton®) or EPDM

Please see top of this page for Technical Details and Electrical Specifications for the Temperature Sensor.

Display / Evaluation Unit - Type TS-SNA/SNK-PT100-D



Characteristics

Mobile or stationary fluid temperature indication and evaluation in conjunction with STAUFF Temperature Sensor TS-SNA/SNK-PT100

Features

- Connection of temperature sensor as 4-wire sensor
- Display of the current system temperature in °C or °F with 4-digit alpha-numeric display
- Measuring temperature range: -40 °C ... +300 °C / -40 °F ... +572 °F (may be limited by connected sensor)
- Generation of 2 output signals according to parameter setting:
 Switching output - normally open / closed (programmable)
 Analog output - 4 ... 20 mA or 0 ... 10 V (scaleable)
- Provision of process data via IO-Link 1.0 (38.4 kBaud)
- Designed for bi-directional connection

Electrical Specifications

- Operating voltage: 18 ... 32 VDC
- Current rating: 250 mA
- Voltage drop: <2 mA
- Response time of switching output: 130 ms
- Analog output: 4 ... 20 mA or 0 ... 10 V (scaleable)
- Accuracy of switching output: ±0,3 °C / ±.54 °F
- Accuracy of analog output: ±0,3 °C / ±.54 °F
- Resolution of switching output: 0,1 °C / .18 °F
- Resolution of analog output: 0,1 °C / .18 °F
- Resolution of display: 0,1 °C / .18 °F
- Temperature coefficient (of the span per 10 K): 0,1 %
- Short-circuit protection (pulsed)
- Protection against reverse polarity and overload
- Equipped with four-pin circular connector M12 with gold-plated contacts

Technical Data

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Operating temperature range: -25 °C ... +70 °C / -13 °F ... +158 °F

Order Codes

SET-TS-SNA/SNK-PT100-D

1

1 Type

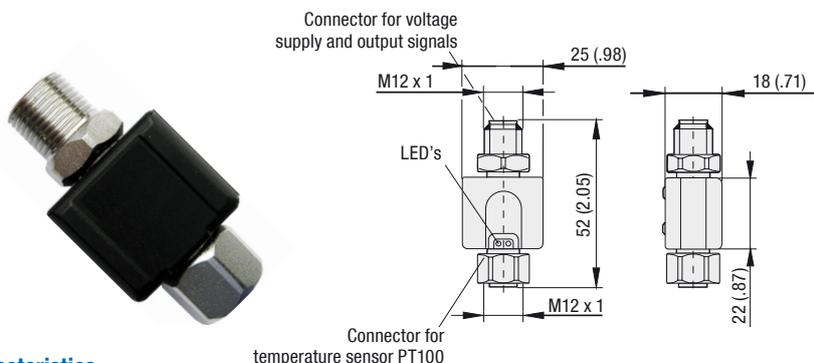
Complete set of Display / Evaluation Unit for use with Temperature Sensor **SET-TS-SNA/SNK-PT100-D** TS-SNA/SNK-PT100

Complete sets include the following components:

- Display / Evaluation Unit TS-SNA/SNK-PT100-D
- Cable with M12 plug / M12 socket (0,6 m / 1.97 ft)
- External power supply unit 100 ... 240 V AC (50 ... 60 Hz) / 200 mA
- User manual (CD-ROM)

All components included in the complete set are also available as single parts. Consult STAUFF for further information.

Signal Converter - Type TS-SNA/SNK-PT100-C



Characteristics

Signal converter for use with STAUFF Temperature Sensor TS-SNA/SNK-PT100

Features

- Converts the measured signal into a proportional analog signal: Analog output - 4 ... 20 mA (scaleable)
- Measuring temperature range (factory setting): -50 °C ... +150 °C / -58 °F ... +302 °F
- Provision of process data via IO-Link 1.0 (38.4 kBaud)
- Designed for bi-directional connection

Electrical Specifications

- Operating voltage: 20 ... 32 VDC
- Analog output: 4 ... 20 mA (scaleable)
- Maximum load: 300 Ω
- Rise time analog output: 400 ms
- Accuracy of analog output: ±0,3 °C / ±.54 °F + (±0,1 % of measuring span)
- Resolution: ≤0,1 °C / ≤.18 °F
- Temperature coefficient (of the span per 10 K): 0,1 %
- Short-circuit protection (pulsed)
- Protection against reverse polarity and overload
- Equipped with four-pin circular connector M12 with gold-plated contacts

Order Codes

TS - SNA/SNK - PT100-C

1

1 Type

Signal Converter for use with Temperature Sensor **TS-SNA/SNK-PT100-C** TS-SNA/SNK-PT100

Technical Data

- IP 67 protection rating: Dust tight and protected against powerful water jets; even immersion (up to 1 m / 3.28 ft) in water is possible under defined conditions of pressure and time
- Operating temperature range: -25 °C ... +70 °C / -13 °F ... +158 °F