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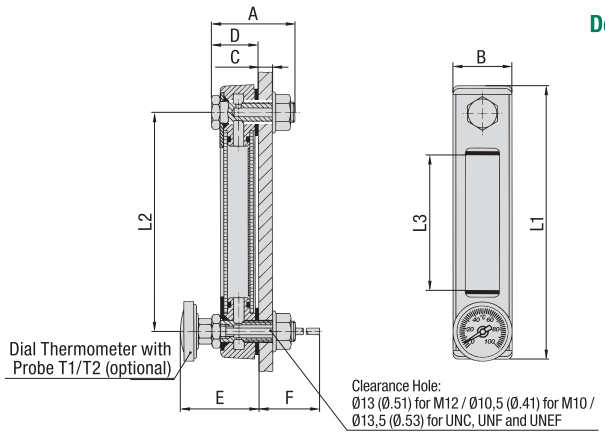
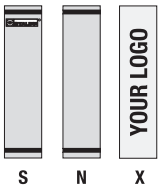
A

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 / 29 PSI

Nominal Sizes and Designs

- 7 nominal sizes from 76 mm / 2.99 in to 381 mm / 15.00 in
- Display either undivided (SNA-076 ... 176) or subdivided by strut(s) into 2 (SNA-254) or 3 sections (SNA-305 and SNA-381)

Please see page 15 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 powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Seals made of NBR (Buna-N®)
- Scale plate made of PVC

For the individual components of the level gauge (sight glass, housing, Seals, bolts), alternative materials for improved UV or chemical resistance, low-temperature applications down to -50°C / -58 °F and use with special media (such as bio-degradable fluids, diesel oils, gasolines) are available on request.

Technical Data

- IP 65 protection rating: Dust tight and protected against water jets
- 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 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
- Floating Ball
- Deutsch Adaptor Cable

Please see pages 18 / 19 / 20 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	28	43,5	165,5	265,5	108	76	31
	1.77	1.36	.32	1.10	1.71	6.52	10.45	4.25	2.99	1.22
SNA-127	45	34,5	8	28	43,5	165,5	265,5	159	127	76
	1.77	1.36	.32	1.10	1.71	6.52	10.45	6.26	5.00	2.99
SNA-150	45	34,5	8	28	43,5	165,5	265,5	182	150	99
	1.77	1.36	.32	1.10	1.71	6.52	10.45	7.17	5.91	3.90
SNA-176	45	34,5	8	28	43,5	165,5	265,5	208	176	124
	1.77	1.36	.32	1.10	1.71	6.52	10.45	8.19	6.93	4.88
SNA-254	45	34,5	8	28	43,5	165,5	265,5	286	254	192
	1.77	1.36	.32	1.10	1.71	6.52	10.45	11.26	10.00	7.56
SNA-305	45	34,5	8	28	43,5	165,5	265,5	337	305	244
	1.77	1.36	.32	1.10	1.71	6.52	10.45	13.27	12.00	9.61
SNA-381	45	34,5	8	28	43,5	165,5	265,5	413	381	319
	1.77	1.36	.32	1.10	1.71	6.52	10.45	16	15	12.56

Order Codes

SNA - 127 - B - S - O - 12 - O - 60

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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
SNA-381 (nominal size of 381 mm / 15.00 in)	381

Please see page 15 for alternative nominal sizes.

③ Sealing Material

NBR (Buna-N®) (standard option)	B
FKM (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 (standard option)	O
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 / Anti-Drain Valve Option

Supplied without Thermo Switch / Temperature Sensor / Anti-Drain Valve	-
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
Anti-Drain Valve Set A	DA
Anti-Drain Valve Set B	DB

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages 18 to 20 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 18 for details.

Dimensional drawings: All dimensions in mm (in).

Level Gauge (Special Options) Type SNA/SNK

Characteristics

Visual fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29 PSI; 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 Ball (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
Depending on the specific application, several different materials are available for the individual components of the level gauge (sight glass, housing, Seals, bolts); please see Inquiry Checklist for details.

STAUFF is always at your service if you need support in choosing the right materials or material combination for improved UV or chemical resistance or for low-temperature applications down to -50°C / -58 °F and use with special media (such as bio-degradable fluids, diesel oils, gasolines).

Accessories / Options
- Red / blue capillary tube thermometers with 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
- Anti-Drain Valve
- Deutsch Adaptor Cable

Please see pages 18 / 19 / 20 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®) ☐ FKM (Viton®) ☐ EPDM

Alternative sealing materials to be defined separately.

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

- ☐ Scale plate made of PVC
- ☐ Scale plate made of Aluminium
- ☐ With STAUFF logo
- ☐ Neutral design without any logo
- ☐ Custom-design (please specify)

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

☐ Floating Ball (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

- ☐ Celsius scale up to +100 °C
- ☐ Dual scale up to +100 °C / +200 °F
- ☐ Length of probe: 200 mm / 7.87 in
- ☐ Length of probe: 300 mm / 11.81 in

☐ Thermo Switch TS-SNA/SNK

- ☐ Break contact; Standard connector
- ☐ Break contact; Connector M12
- ☐ Make contact; Standard connector
- ☐ Make contact; Connector M12
- ☐ Contact switches at +60 °C / +140 °F
- ☐ Contact switches at +70 °C / +158 °F
- ☐ Contact switches at +80 °C / +176 °F
- ☐ Contact switches at +90 °C / +194 °F

☐ Temperature Sensor TS-SNA/SNK-PT100 ☐ Deutsch Adaptor Cable

☐ Anti-Drain Valve ☐ Set A ☐ Set B



Also available:

Level Gauges ▪ Type SNK in Special Lengths

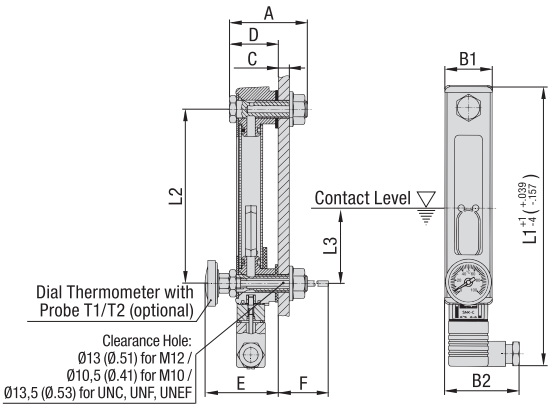
Visual / electrical fluid level indication in hydraulic reservoirs with level gauges up to a maximum nominal size of 950 mm / 37.4 in.

Please do not hesitate to contact STAUFF for further details.

A

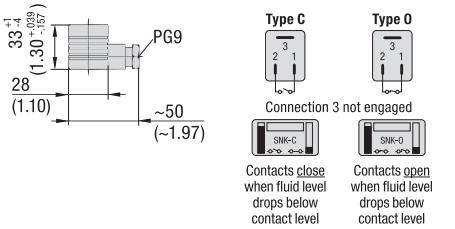
Level Gauge
Type SNK



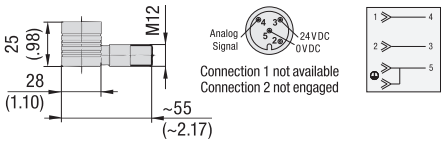


Connection Details and Electrical Functions

Types C and O: Industrial standard connector (contact gap: 11 mm / .43 in), 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 2 bar / 29 PSI

Nominal Sizes and Designs

- 6 nominal sizes from 127 mm / 5.00 in to 381 mm / 15.00 in
- Display either undivided (SNK-127 ... 176) or subdivided by strut(s) into 2 (SNK-254) or 3 sections (SNK-305 and SNK-381)

Media Compatibility

- Suitable for use with mineral and petroleum based hydraulic fluids (HL and HLP)

Materials

- Housing made of Aluminium, black powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polyamide (PA)
- Seals made of FKM (Viton®)

For the individual components of the level gauge (sight glass, housing, Seals, bolts), alternative materials for improved UV or chemical resistance, low-temperature applications down to -50°C / -58 °F and use with special media (such as bio-degradable fluids, diesel oils, gasolines) 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. 10 W (Types C / CD) or 5 W (Types O / OD)
- Switching voltage: max. 50 VAC/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
- Deutsch Adaptor Cable

Please see pages 18 / 19 / 20 for details.

Dimensional drawings: All dimensions in mm (in).

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
SNK-381	56	34,5	~50	8	35,1	51,5	157,5	257,5	459	381	~60
	2.20	1.36	~1.97	.32	1.26	2.03	6.20	10.14	18.07	15	~2.36

Order Codes

SNK - 127 - V - C - O - 12 - O - 60

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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**
SNK-381 (nominal size of 381 mm / 15.00 in)	**381**

Contact STAUFF for alternative nominal sizes and designs.

③ Sealing Material

FKM (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 (standard option)	**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 / Anti-Drain Valve Option

Supplied without Thermo Switch / Temperature Sensor / Anti-Drain Valve	**-**
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**
Anti-Drain Valve Set A	**DA**
Anti-Drain Valve Set B	**DB**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages 18 to 20 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.

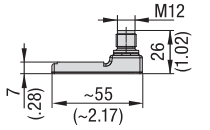
Options T1C/CF and T2C/CF are not available for banjo bolt size M10 and not be used in conjunction with Thermo Switches or Temperature Sensors.
Please see page 18 for details.

A

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)





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

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	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	~55	8	35,1	51,5	157,5	257,5	188	150	~60
	2.20	1.36	~2.17	.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
SNKK-381	56	34,5	~55	8	35,1	51,5	157,5	257,5	343	381	~60
	2.20	1.36	~2.17	.32	1.26	2.03	6.20	10.14	13.50	15	~2.36

Order Codes

SNKK - 127 - V - DD - O - 12 - O - 60

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

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**
SNKK-381 (nominal size of 381 mm / 15.00 in)	**381**

Contact STAUFF for alternative nominal sizes and designs.

③ Sealing Material

FKM (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 (standard option)	**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 / Anti-Drain Valve Option

Supplied without Thermo Switch / Temperature Sensor / Anti-Drain Valve	**-**
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**
Temperature Sensor TS-SNA/SNK-PT100; Equipped with connector M12	**PT100**
Anti-Drain Valve Set A	**DA**
Anti-Drain Valve Set B	**DB**

Thermo Switches / Temperature Sensors only available for banjo bolt size M12. Please see pages 18 to 20 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 18 for details.

Characteristics

Visual / electrical fluid level indication in hydraulic reservoirs with maximum tank pressures not exceeding 2 bar / 29 PSI; ideal for applications in which space is limited

Nominal Sizes and Designs

- 6 nominal sizes from 127 mm / 5.00 in to 381 mm / 15.00 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 and SNKK-381)

Media Compatibility

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

Materials

- Housing made of Aluminium, black powder-coated
- Sight tube and plugs made of Polyamide (PA)
- Float made of Polypropylene (PP)
- Seals made of FKM (Viton®)

For the individual components of the level gauge (sight glass, housing, Seals, bolts), alternative materials for improved UV or chemical resistance, low-temperature applications down to -50°C / -58 °F and use with special media (such as bio-degradable fluids, diesel oils, gasolines) 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 or Deutsch connector
- 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
- Deutsch Adaptor Cable

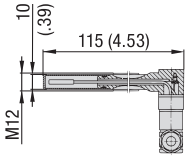
Please see pages 18 / 19 / 20 for details.

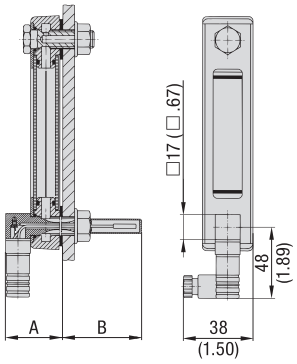
Dimensional drawings: All dimensions in mm (in).

A

Thermo Switch
Type TS

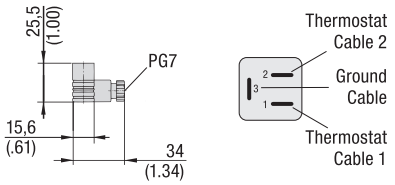




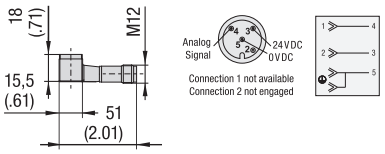


Connection Details and Electrical Functions

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: Ø13 mm / Ø.51 in

Materials
- Metal parts made of Stainless Steel (1.4305)
- 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 φ = 4,45 / 250 V, 135 °C
- Maximum current at 10000 operations: 2,5 A at cos φ = 1,00 / 250 V, 150 °C
- Minimum current: 20 mA

Electrical Specifications (Direct Current)
- Maximum voltage: 42 V

Accessories / Options
- Deutsch Adaptor Cable

Please see page 20 for details.

Order Codes

TS-SNA/SNK - O - 60

① ② ③

① Type

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

② Electrical Function

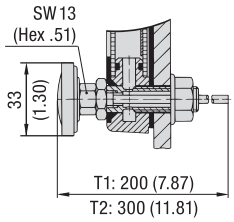
Break contact, opens at switching temperature (normally closed); Equipped with standard connector	**O**
Break contact, opens at switching temperature (normally closed); Equipped with connector M12	**OD**
Make contact, closes at switching temperature (normally open); Equipped with standard connector	**C**
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 contact STAUFF for special versions.

Scale Options
- Celsius scale of 0°C ... +100 °C
- Dual Celsius / Fahrenheit scale of up to +100 °C / +200 °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 14 to 17 for details.

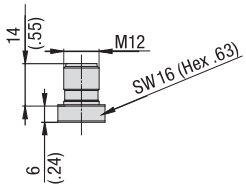
Dimensional drawings: All dimensions in mm (in).

A

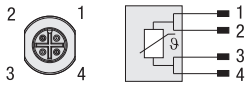
Temperature Sensor
Type TS-SNA/SNK-PT100

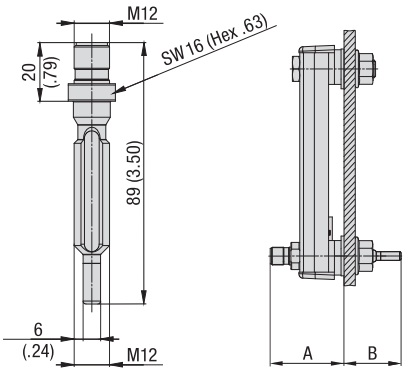
Connection Details and Electrical Functions

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	45,5
	1.71	1.79
In conjunction with Level Gauge **SNK**	51	38
	2.01	1.50
In conjunction with Level Gauge **SNKK**	51	38
	2.01	1.50

Characteristics

Fluid temperature measurement in conjunction with STAUFF Level Gauges SNA, SNK and SNKK; Analysis of signals with required equipment, simply connect to your on board control unit or PLC.

Installation
- Replaces the lower banjo bolt of the Level Gauge
- Available for bolt size M12 only
- Clearance hole: Ø13 mm / Ø.51 in

Technical Data
- Operating temperature range (for the connector area): -25 °C ... +80 °C / -13 °F ... +176 °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

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

Electrical Specifications
- Measuring temperature range: -40 °C ... +150 °C / -40 °F ... +302 °F
- Platinum measuring element PT100 according to DIN EN 60751, class A
- Accuracy: ±(0,15 K + 0,002 x |t|)
- Max. contact current: 2,0 mA
- Equipped with four-pin circular connector M12 with gold-plated contacts
- Power supply 20...32V DC

Accessories / Options
- Deutsch Adaptor Cable

Please see page 20 for details.

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

Order Codes

TS-SNA/SNK-PT100 - T - B

① ② ③

① Type

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

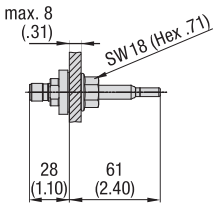
② Direct Adaptor

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

③ Sealing Material

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

The direct installation set can also be used in conjunction with Thermo Switches TS (see page 18). Please contact STAUFF for further information.



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), FKM (Viton®) or EPDM

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

Accessories / Options
- Deutsch Adaptor Cable

Please see page 20 for details.



Characteristics

Direct fluid temperature measurement without STAUFF Level Gauges SNA, SNK and SNKK; Analysis of signals with required equipment, simply connect to your on board control unit or PLC.

Installation
- Direct installation to the outer wall of the hydraulic reservoir or gearbox
- Compact design and easy installation
- Clearance hole: Ø13 mm / Ø.51 in

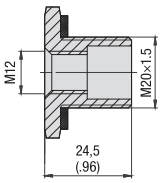
Dimensional drawings: All dimensions in mm (in).

A

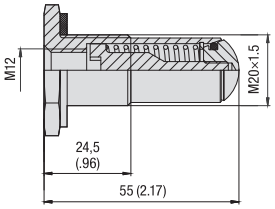
Anti-Drain Valve
Type SDV-SNA/SNK

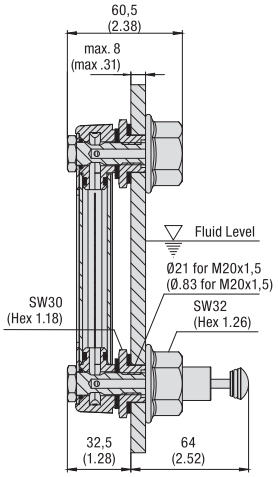


Distance Adaptor

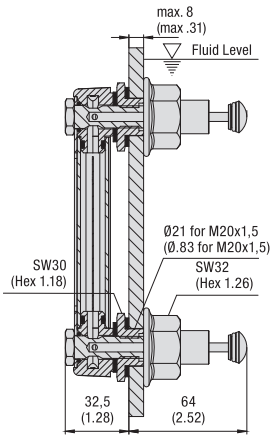


Anti-Drain Valve





Set A
(Max. fluid level of the hydraulic reservoir between the banjo bolts)



Set B
(Max. fluid level of the hydraulic reservoir above the banjo bolts)

Characteristics

Anti-drain valve to be used in conjunction with banjo bolts of level gauges, allowing these to be removed and replaced quickly and easily without spillage of fluid from the hydraulic reservoir

Features
- Used in conjunction with either the lower or both the lower and the upper banjo bolts of the Level Gauge
- Distance adaptor for the upper banjo bolt available when the check valve is used with the lower banjo bolt only
- Available for bolt size M12 only

Materials
- Housing made of Stainless Steel V2A (1.4301)
- Hexagon head nuts made of Steel, zinc/nickel-plated (Fe/Zn Ni 6)
- Seals made of NBR (Buna-N®)

Contact STAUFF for alternative materials.

Order Codes

SDV-SNA/SNK - M12 - B - W4 - A
① ② ③ ④ ⑤

① Type

Anti-Drain Valve for use with Level Gauges SNA, SNK and SNKK	**SDV-SNA/SNK**

② Banjo Bolt Size

Metric ISO thread M12	**M12**

③ Sealing Material

NBR (Buna-N®)	**B**

④ Housing Material

Stainless Steel V2A (1.4301)	**W4**

⑤ Set Type

Set A consisting of 1 anti-drain valve to be used with the lower banjo bolt and 1 distance adaptor to be used with the upper banjo bolt	**A**
Set B consisting of 2 anti-drain valves to be used with both banjo bolts	**B**

Deutsch Adaptor Cable
Type DT04-4P



Characteristics

Deutsch adaptor to use for adaption from M12 to Deutsch Plug DT04-4P.

Installation
- Adapts to cable box M12 of SNK
- Adapts to M12 connector of SNKK and TS-SNA/SNK …
- Adapts to M12 connector of TS-SNA/SNK-PT100
- Adapts to any electrical M12 connector in other Stauff series

Technical Data
- IP 68 protection rating: Dust tight and protected against powerful water jets
- Length: 100mm (3.93 in)
- Operating temperature range: -30 °C ... +80 °C / -22 °F ... +176 °F

Order Codes

EACC-CAB-M12A/5-DT04-4P-0.1
①

① Type

Deutsch Adaptor Cable	**EACC-CAB-M12A/5-DT04-4P-0.1**

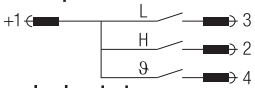
Dimensional drawings: All dimensions in mm (in).

Level-Temperature Switch Type SLTS

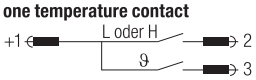
Schemes for float in low position

Wiring Scheme (CB)

two level contacts
one temperature contact

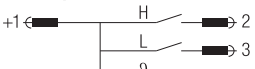


one level contact
one temperature contact

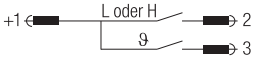


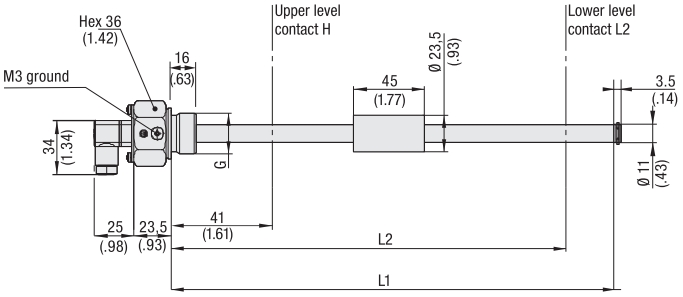
Wiring Scheme (M12)

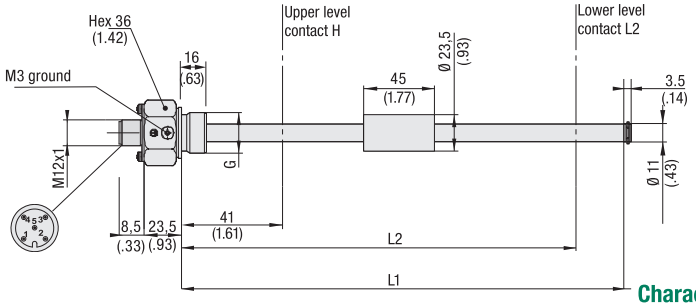
two level contacts
one temperature contact



one level contact
one temperature contact









Order Codes

SLTS	-	12	-	O	-	H41	-	L251	-	B12	-	G048	-	M12
①		②		③		④		⑤		⑥		⑦		⑧

① Series and Type

Level-Temperature Switch	**SLTS**

② Stem Length

L1: 305 mm / 12 in L2: 251 mm / 9.88 in	**12**
L1: 457 mm / 18 in L2: 403 mm / 15.87 in	**18**

③ Switching Temperature

Without temperature switch	**O**
+60 °C / +140 °F	**060**
+70 °C / +158 °F	**070**

④ H (Upper Level Contact)

Without upper level contact	**O**
41 mm / 1.61 in	**H41**

⑤ L (Lower Level Contact)

Without lower level contact	**O**
251 mm / 9.88 in (SLTS-12 only)	**L251**
403 mm / 15.87 in (SLTS-18 only)	**L403**

⑥ Thread Connection

G3/4 (standard option)	**B12**
1 NPT	**N16**
Note: Others on request	

⑦ Voltage (Volt AC/DC)

48 Volt max. (standard option)	**G048**
115 Volt max. (for thread N16 only)	**G115**

⑧ Electrical Connection

similar DIN VDE 0627 / IEV 61984	**CB**
M12 pin terminal	**M12**

Characteristics

The STAUFF Level-Temperature Switches (SLTS Series) are unique in their design and modularity. One of the greatest advantages is the ability of the end-user to adjust the switching level. The internal support wire carrying the level and temperature switches makes it a simple and quick job to change the level switch position.

Level contact positions (L, H) are set as given in the order code. They can be adjusted individually later on. Please consider a minimum distance of 40 mm / 1.57 in between the switching points.

Features

- Suitable for Mineral Oil and HFC fluids, other fluids on request
- Either 1 or 2 level contacts available
- 1 integrated temperature switch (optional)
- Standard electrical function:
  Level contacts: Normally closed, opens with falling level
  Temperature contacts: Normally closed, opens with rising temperature

STAUFF Level-Temperature Switches SLTS are available with other electrical functions on request.

Options

- 1 NPT and others availble on request
- max. 115 Volt switching (for thread N16 only)
- Deutsch Adaptor Cable

Please see page 20 for details.

Materials

- Stem: Brass
- Float/Sealing: NBR (Buna-N®)

- Max. operating temp.: +80 °C / +176 °F

Electrical Data and Output

- Max. current level contact: 0.5 A
- Max. current temp. contact: 2.0 A
- Contact load level contact: 10 VA
- Max. operating voltage: (See ordering code)

- Specific gravity of fluid: ≥0,8 kg/dm³
- Hysteresis: +18 °C / +64.4 °F

Protection Rating

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

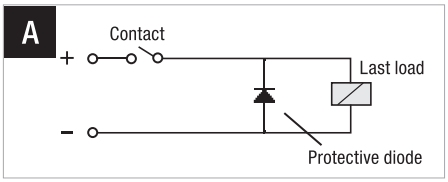
Contact Life Time

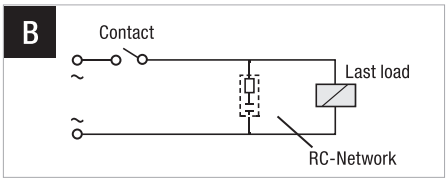
Due to their design Reed contacts have a very high life expectancy. However, it is worthwhile to note the following information.

Contact Protection

To reduce the high reverse voltage produced when a reed switch opens, the following contact protection can be applied.

- DC voltage: a diode parallel to the load, see figure A
- AC voltage: a RC-network parallel to the load, see figure B and table below





Open contact voltage V	10 VA		25 VA		50 VA		75 VA		100 VA	
	R (Ω)	C (µF)	R (Ω)	C (µF)	R (Ω)	C (µF)	R (Ω)	C (µF)	R (Ω)	C (µF)
24	22	0,022	1	0,1	1	0,47	1	1	1	1
48	120	0,0047	22	0,022	1	0,1	1	0,47	1	0,47
110	470	0,001	120	0,0047	22	22	22	0,047	22	0,1

Dimensional drawings: All dimensions in mm (in).