Operating Instructions

for

Bimetal temperature switch for liquids

Model: TBS

We don’t accept warranty and liability claims neither upon this publication nor in case of improper treatment of the described products.

The document may contain technical inaccuracies and typographical errors. The content will be revised on a regular basis. These changes will be implemented in later versions. The described products can be improved and changed at any time without prior notice.

1. Contents

Manufactured and sold by: KOBOLD Instruments Inc.
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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.
The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC-machine guidelines.

The minimum service life is 100,000 switching cycles at a maximum of 150° C if the switching capacities specified in the operating instructions are observed

as per PED 2014/68/EU
In acc. with Article 4 Paragraph (3), "Sound Engineering Practice", of the PED 2014/68/EU no CE mark.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.
Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:
The standard delivery includes:
- Bimetal temperature switch for liquids model: TBS
- Operating Instructions

4. Regulation Use

Any use of the device, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

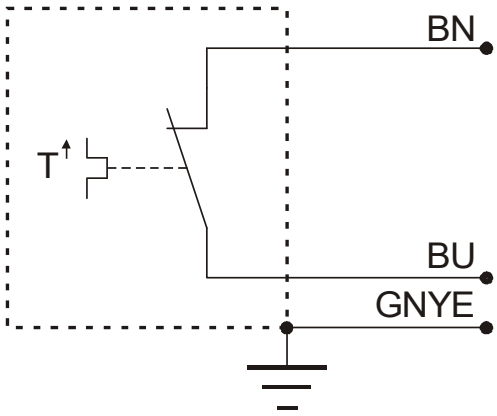
Bimetal temperature switches are used for temperature monitoring and control. They are characterized by a long service life and operational reliability.
A particular advantage is the high repeatability, since bimetal temperature switches are largely independent of ambient conditions. The bimetal temperature switches of the type TBS are supplied in a robust housing made of brass or stainless steel with female NPT or G 1/4 to 1-1/2 thread, and 1.5 m silicone armored cable and are therefore also suitable for rough use. The temperature contacts have a fixed switching point in the range from -10° C to 50° C in steps of 5° C and in the range from 60° C to 120° C in steps of 10° C and are designed as NC contacts.

Application
The TBS bimetal temperature switches can be used universally. They are used wherever temperature monitoring or control is required.

6. Mechanical Connection

The fitting of the bimetal temperature switch is installed with a suitable sealing material in the pipe in a thread-sealing manner.
Inlet or outlet straight piping runs are not required.

7. Electrical Connection



8. Commissioning

After the mechanical and electrical connection, the devices are ready for operation.

9. Technical Information

Material:	
Housing:	brass or stainless steel
Sealing:	FPM
Cable:	1.5 m silicone armoured cable, (longer cable on request)
Pressure:	version brass PN 16 version stainless steel PN 25
Permissible ambient temp.:	-30 °C... +105 °C
Tolerance:	± 3 K
Reset hysteresis:	6 K±2 K
Contact function:	normally closed With increasing temperature
DC voltage:	max. 24 V_{DC}
AC voltage:	max. 240 VAC
Continious current:	max. 1.3 A
Contact resistance:	<30 mOhm
Protection:	IP 65
Switching cycles:	max.100 000 at nominal load

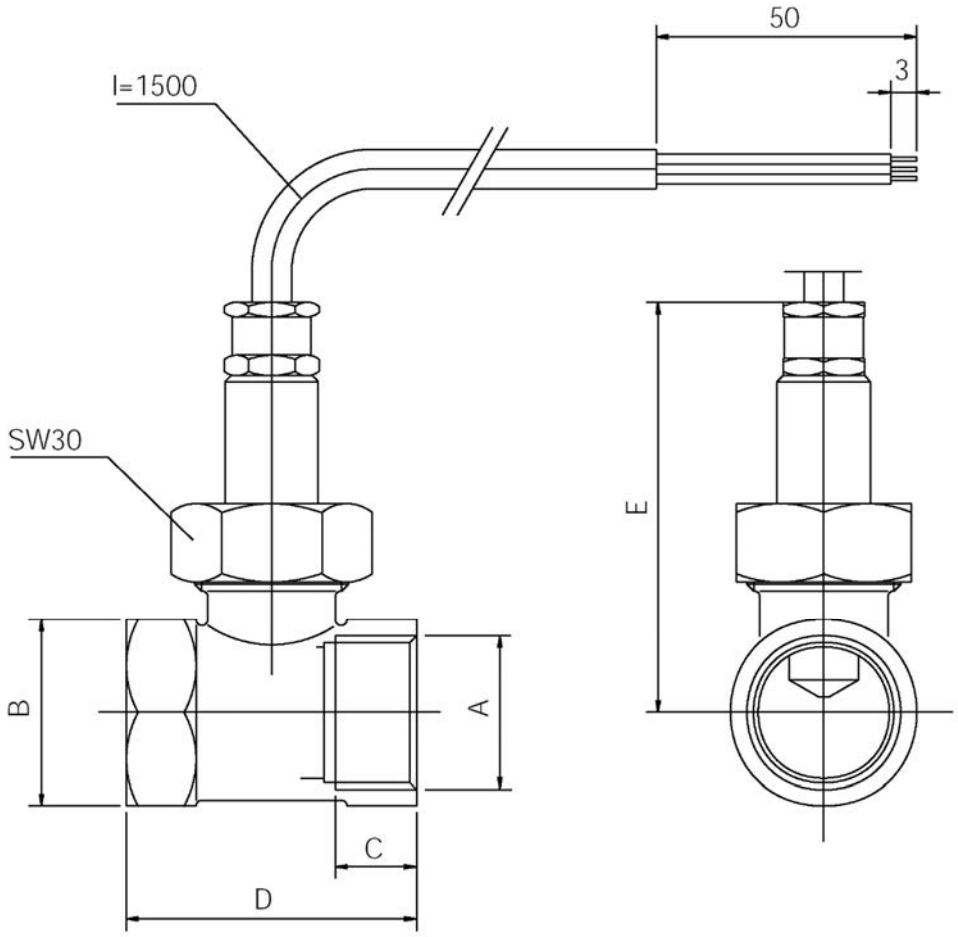
We recommend the use of contact protection relays to switch higher powers (see brochure Z2).

10. Order Codes

Note: See KOBOLD USA Datasheet for USA Order Codes

Model	Connection female thread		Switching point NC with increasing temperature	
	G-thread	NPT-thread		
TBS-12.. = Housing VA **TBS-11..**= Housing Ms	**..R08..**= G 1/4	**..N08..**= 1/4 NP	**...M10** = 10 °C **...M15** = 15 °C **...020** = 20 °C **...025** = 25 °C **...030** = 30 °C **...M10** = -10 °C **...M05** = -5 °C **...000** = 0 °C **...005** = 5 °C	**...050** = 50 °C **...060** = 60 °C **...035** = 35 °C **...040** = 40 °C **...045** = 45 °C **...070** = 70 °C **...080** = 80 °C **...090** = 90 °C **...100** =100 °C
	..R10..= G 3/8	**..N10..**= 3/8 NPT		
	..R15..= G 1/2	**..N15..**= 1/2 NPT		
	..R20..= G 3/4	**..N20..**= 3/4 NPT		
	..R25..= G 1	**..N25..**= 1 NPT		
	..R32..= G 1 1/4	**..N32..**= 1 1/4 NPT		
	..R40..= G 1 1/2	**..N40..**= 1 1/2 NPT		

11. Dimensions



12. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Hofheim-Ts, Germany, declare under our sole responsibility that the product:

Bimetal temperature switch for liquids **Model: TBS**

to which this declaration relates is in conformity with the standards noted below:

EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

EN 60529:2014 Degrees of protection provided by enclosures (IP Code)

EN 50581:2012 Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Also the following EC guidelines are fulfilled:

2014/35/EU **Low Voltage Directive**
2011/65/EU **RoHS** (category 9)
2015/863/EU Delegated Directive (RoHS III)

Hofheim, 04 June 2020

H. Peters
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