Operating Instructions

for

Ball Type Flow Indicator

Model: DKB

1. Contents

Manufactured and sold by:

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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 instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

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.

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.
Diagram 8, Pipe, Group 1 dangerous fluids

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:
- Ball Type Flow Indicator model: DKB

4. Regulation Use

Any use of the Ball Type Flow Indicator, model: DKB, 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

During flow the plastic ball heaves out of its seat and indicates a flow movement in the pipeline. If the flow stops the ball will fall back into its seat.

6. Mechanical Connection

Before installation

- Remove all transport restraints and make sure that none of the packing remains in the instrument.
- Make sure that the maximum allowed operating pressures and service temperatures are not exceeded (see 7. Technical Information)
- Mount the Flow Indicator horizontally with the glass dome on top and tension-free into the pipe.
- Avoid water hammer in the measuring tube e.g. caused through a sudden shut off the flow.
- If possible, check after mechanical installation that the threaded joint/pipe connection is tight.

7. Technical Information

DKB-11...

Housing:	brass (MS-58)
Glass dome:	Borosilicate glass
Ball:	POM
Sealing:	EPDM
Rings:	brass (MS-58)
Screws:	st. steel

DKB-21...

Housing:	brass (MS-58)
Glass dome:	Borosilicate glass
Ball:	PTFE
Sealing:	FPM
Rings:	brass (MS-58)
Screws:	st. steel

DKB-22...

Housing:	stainless steel 1.4436, 1.4410
Glass dome:	Borosilicate glass
Ball:	PTFE
Rings:	Klinger SIL® C4400, FPM
Screws:	st. steel, rust-proof

Connection DKB-x1

G 1/8 R06	G 1/4 R08	G 3/8 R10	G 1/2 R15	G 3/4 R20	G 1 R25
1/8” NPT N06	1/4” NPT N08	3/8” NPT N10	1/2” NPT N15	3/4” NPT N20	1” NPT N25

Connection DKB-22

G 1/4 R08	G 3/8 R10	G 1/2 R15	G 3/4 R20	G 1 R25	G 1 1/2 R40

8. Order Codes

Order example: **DKB-1101H R06**

Indication range		Model		Connection	
Water [L/min]	**∆ P* [bar]**	**DKB-11..**	**DKB-21..**	**G-thread**	**NPT-thread**
0.05 - 15	1	**DKB-1101H..**	**DKB-2101H..**	**R06**	**N06**
0.05 - 20	1	**DKB-1102H..**	**DKB-2102H..**	**R08**	**N08**
0.06 - 45	1	**DKB-1103H..**	**DKB-2103H..**	**R10**	**N10**
0.07 - 50	1	**DKB-1104H..**	**DKB-2104H..**	**R15**	**N15**
0.18 - 105	0.5	**DKB-1105H..**	**DKB-2105H..**	**R20**	**N20**
0.14 - 105	0.5	**DKB-1106H..**	**DKB-2106H..**	**R25**	**N25**

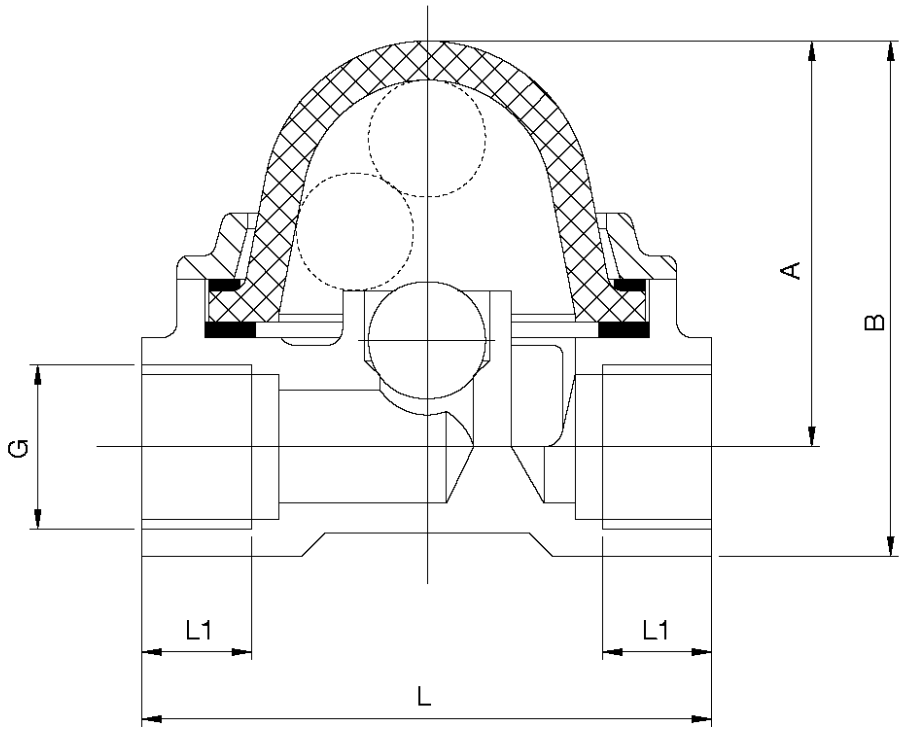
* max. flow

Order example: **DKB-2202H R08**

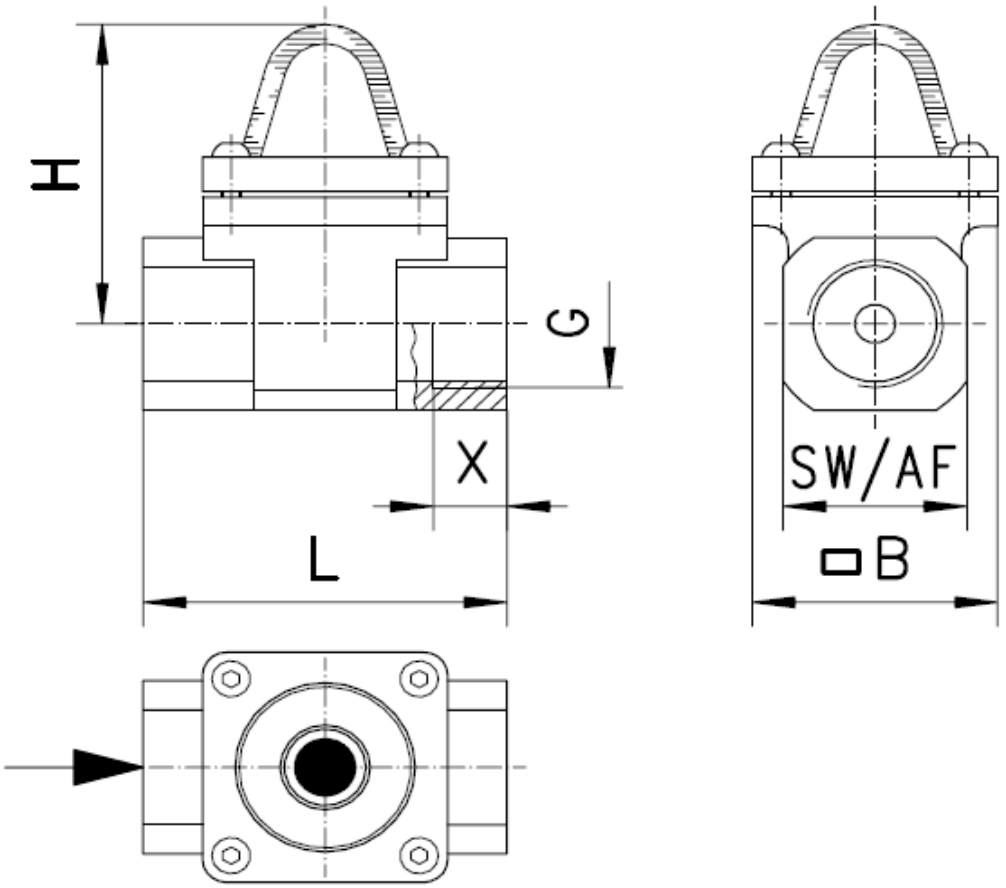
Indication range		Model	Connection
Water [L/min]	**∆ P* [bar]**	**DKB-22..**	**G-thread**
0.3 – 4	0.1	**DKB-2202H..**	**R08**
0.3 - 8	0.1	**DKB-2203H..**	**R10**
0.3 – 12	0.1	**DKB-2204H..**	**R15**
2.5 – 25	0.2	**DKB-2205H..**	**R20**
4 – 40	0.2	**DKB-2206H..**	**R25**
11 - 60	0.3	**DKB-2207H..**	**R40**

* at 2m/s

9. Dimensions



Model	P_{max}	T_{max}	G	NPT	L1 [mm]	L [mm]	A [mm]	B [mm]	Weight [kg]
DKB-..01H	6 bar	120 °C	G ⅛	⅛"	8	56	41	50	0,3
DKB-..02H	6 bar	120 °C	G ¼	¼"	10	56	41	50	0,28
DKB-..03H	6 bar	120 °C	G ⅜	⅜"	14	73	53	67	0,57
DKB-..04H	6 bar	120 °C	G ½	½"	14	73	53	67	0,54
DKB-..05H	6 bar	120 °C	G ¾	¾"	16	109	72	94	1,41
DKB-..06H	6 bar	120 °C	G 1	1"	18	109	72	94	1,30



Model	P_{max}	T_{max}	G	SW	X [mm]	L [mm]	H [mm]	B [mm]	Weight [kg]
DKB-2202H	16 bar	200 °C	G ¼	28	12	76	67	60	0,8
DKB-2203H	16 bar	200 °C	G ⅜	28	16	76	67	60	0,7
DKB-2204H	16 bar	200 °C	G ½	28	14	76	67	60	0,7
DKB-2205H	16 bar	200 °C	G ¾	45	18	89	78	60	1,4
DKB-2206H	16 bar	200 °C	G 1	45	18	89	78	60	1,3
DKB-2207H	16 bar	200 °C	G 1½	62	30	118	95	77	2,5

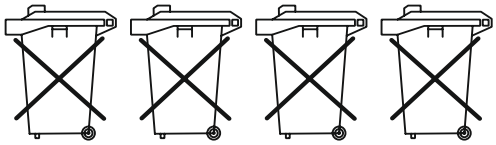
10. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

Batteries

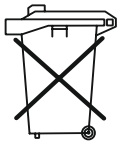
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



Cd[1] Hg[2] Pb[3] Li[4]

1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



11. EU Declaration of Conformance

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

Ball Type Flow Indicator **Model: DKB**

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

EN IEC 63000:2018 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:

2011/65/EU **RoHS** (category 9)
2015/863/EU Delegated Directive (RoHS III)

Hofheim, 06 Oct. 2021

H. Volz
General Manager

M. Wenzel
Proxy Holder

12. UK Declaration of Conformity

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

Ball Type Flow Indicator **Model: DKB**

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

BS EN IEC 63000:2018
Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances.

Also, the following UK guidelines are fulfilled:

S.I. 2012/3032 The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Hofheim, 06 Oct. 2021

H. Volz
General Manager

M. Wenzel
Proxy Holder