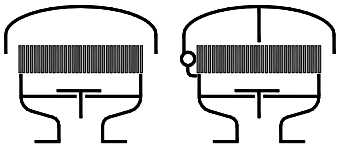
KITO Armaturen GmbH

Type sheet

Deflagration and endurance burning proof pressure relief valve

KITO® DS/KS-BEH-…-IIB1-…-A

KITO® DS/KS-BEH-…-IIB1-…-K

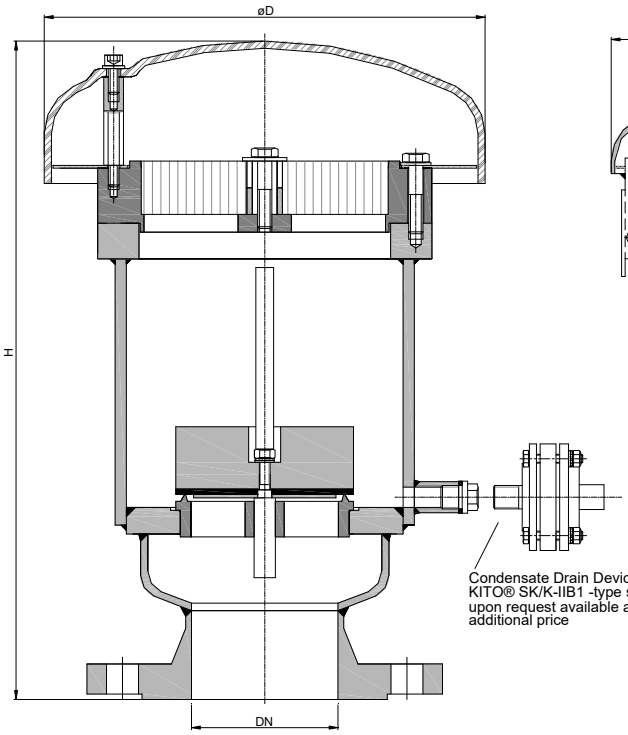


Application

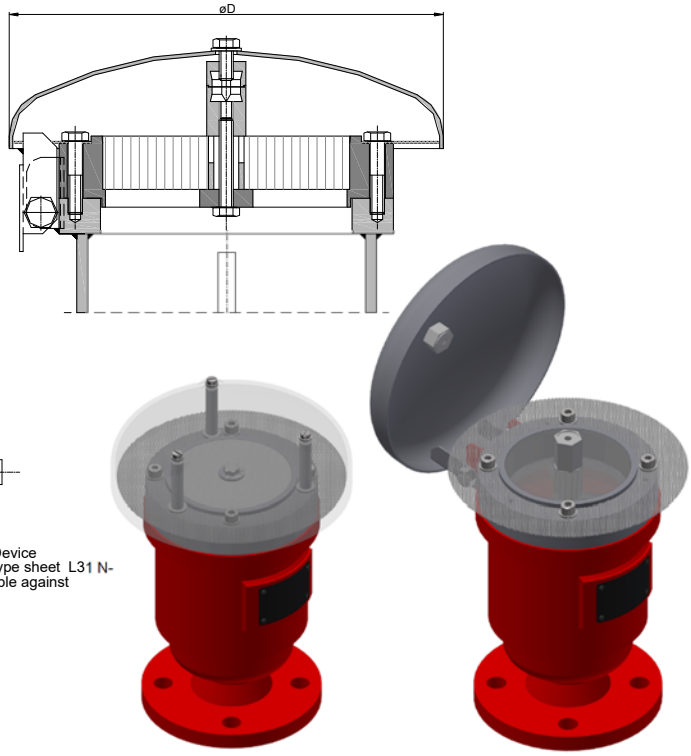
Deflagration and endurance-proof pressure relief valve for flammable media of explosion group IIA with a maximum experimental safe gap (MESG) > 0.9 mm for a maximum operational temperature of 60 °C. It can also be used as deflagration- and endurance-proof end of line device with specific operating conditions for methanol, ethanol (IIB1) and 2-propanol on underground and insulated tank systems. The minimum volume flows during outflow must be observed. Can also be used as a device against atmospheric deflagration of gas-air and vapor-air mixtures of explosion group IIB1 with a maximum experimental safe gap (MESG) ≥ 0.85 mm. Usually mounted on the top of the tank in conjunction with a vacuum relief valve (see KITO® VS/KS-IIB3-… (type sheet D 11 N)). On demand the valve can be equipped with an explosion-proof condensate drain device.

Dimensions (mm)

KITO® DS/KS-BEH-...-IIB1-…-A



KITO® DS/KS-BEH-...-IIB1-...-K



DN DIN	DN ASME	used KITO®-flame arrester element	D	H DIN	H ASME	~ kg
25 PN 40	1“	KITO® BEH-4-IIB1-…	220	305	320	10
50 PN 16	2“			315	335	14
80 PN 16	3“	KITO® BEH-5-IIB1-…	245	372	390	19
100 PN 16	4“			370	395	20

Indicated weights are understood without weight load and refer to the standard design
Attention !!! Dimension H for design with a weather hood from stainless steel 1.4571 ca. 10-15 mm lower

Example for order

KITO® DS/KS-BEH-4-IIB1-25-A
(design with KITO®-flame arrester element BEH-4-IIB1-…, weather hood from PMMA and flange connection DN 25 PN 40)

Type examination certificate to EN ISO 16852 and CE-marking in accordance to ATEX-Directive 2014/34/EU

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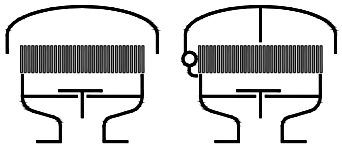


Design

	standard	optionally
housing	steel	stainless steel mat. no. 1.4571
valve seat, valve spindle	stainless steel mat. no. 1.4571	
load weight	stainless steel mat. no. 1.4571	PE
valve sealing	NBR	Viton, PTFE, EPDM, metal sealing
	≥ 100 mbar only PTFE or metal sealing	
KITO®-flame arrester element	completely interchangeable	
KITO®-casing / KITO®-grid	stainless steel mat. no. 1.4308 / 1.4310	stainless steel mat. no. 1.4408 / 1.4571
weather hood **KITO® DS/KS-BEH-…-IIB1-…-A**	PMMA	
weather hood **KITO® DS/KS-BEH-…-IIB1-…-K**	stainless steel mat. no. 1.4571, hood can fold automatically as a result of folding mechanism and fusing element	
protective screen	PA6	
flange connection	EN 1092-1 type B1	ASME B16.5 Class 150 RF

Settings (mbar)

DN		setting		
DIN	**ASME**	**min. - max.** *(load weight from PE)*	**min. - max.**	**min. - max.** *(with housing extension)*
25 PN 40	1“	-	15 - 200	-
50 PN 16	2“	5 - 7.4	7.5 - 100	> 100 - 200
80 PN 16	3“	3 - 7.9	8 - 105	> 105 - 200
100 PN 16	4“	3 - 7.9	8 - 95	> 95 - 200

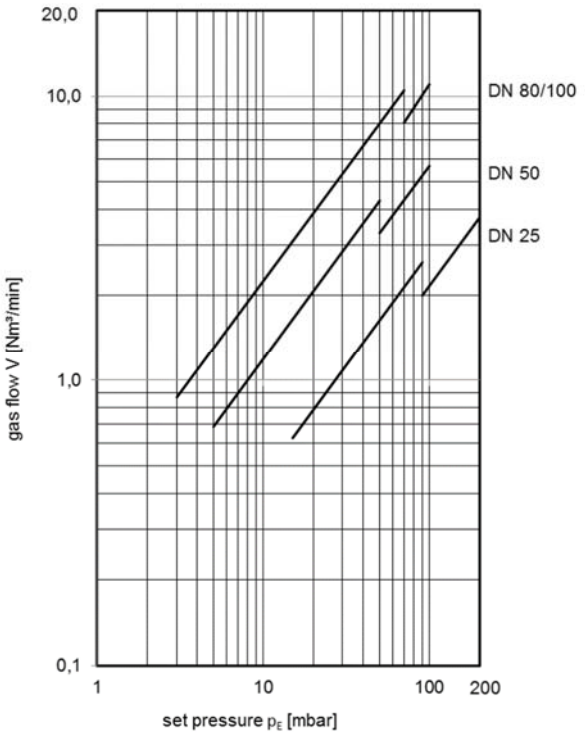
Higher settings on request!

Performance curves

Flow capacity V based on air of a density ρ = 1.29 kg/m³ at T = 273 K and atmospheric pressure p = 1.013 mbar. For other gases the flow can be approximately calculated by

$$\dot{V}_{40\%} = \dot{V}_b \cdot \sqrt{\frac{\rho_b}{1.29}} \qquad or \qquad \dot{V}_b = \dot{V}_{40\%} \cdot \sqrt{\frac{1.29}{\rho_b}}$$

The indicated flow rates will be reached by an accumulation of 40% above valve’s setting (see DIN 4119). If the allowable overpressure is less 40%, please consult der factory for the corrected volume flow.



Minimum volume flows Vc during outflow (m³/h⁻¹)

substance	**KITO® BEH-4-IIB1-…**	**KITO® BEH-5-IIB1-…**
Methanol	5,0 V_c ≙ 33,00 m³/h⁻¹	5,0 V_c ≙ 47,40 m³/h⁻¹
Ethanol	4,0 V_c ≙ 26,40 m³/h⁻¹	4,0 V_c ≙ 37,92 m³/h⁻¹
2-Propanol	4,0 V_c ≙ 26,40 m³/h⁻¹	4,0 V_c ≙ 37,92 m³/h⁻¹

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