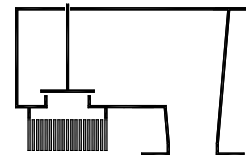# KITO Armaturen GmbH

Type sheet
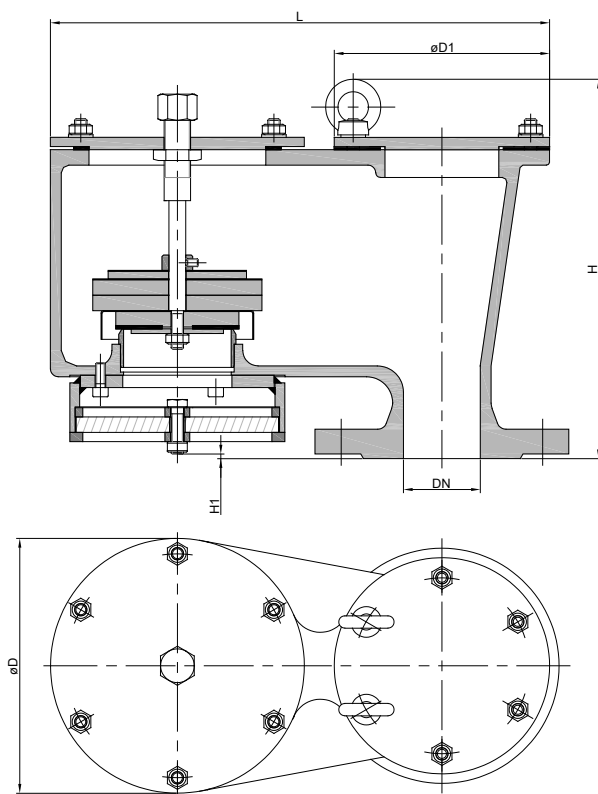### Deflagration proof vacuum relief valve
KITO® VS/KG-IIB3-…

Application

As explosions proof end-of-line armatures, for venting apertures on tank installations for ventilation and to prevent inadmissible vacuum. Usually mounted on top of a tank. Approved for flammable liquids of explosion group IIB3 with a maximum experimental safe gap (MESG) $\geq$ 0.65 mm and an maximum operating temperature of 60 °C.

Dimensions (mm) and settings (mbar)

DN DIN	DN ASME	D	D1	H	H1	L	setting	kg
50 PN 16	2"	165	140	246	3	325	2 – 60	18
80 PN 16	3"	200	180	313		390		25
100 PN 16	4"	250	210	359		505		38
150 PN 16	6"	350	315	444		713		82
200 PN 10	8"	420	365	521	12	808		117
250 PN 10	10"	460	440	589		925		146
300 PN 10	12"	460	440	589		925		150

Indicated weights are understood without weight load and refer to the standard design

Example for order

KITO® VS/KG-IIB3-50
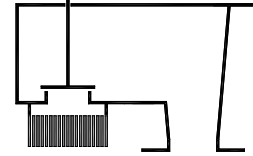*(design with flange connection DN 50 PN 16)*

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

KITO Armaturen GmbH

Type sheet
Deflagration proof vacuum relief valve
KITO® VS/KG-IIB3-…

Design

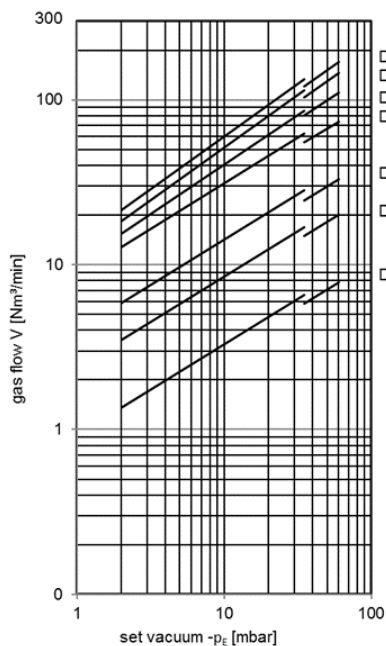|	standard	optionally
housing	cast steel 1.0619	stainless cast steel mat. no. 1.4408, aluminum (DN 100/4"–300/12")
cover	steel	stainless steel mat. no. 1.4301, aluminum (DN 100/4"–300/12")
gasket	PTFE	
valve seat	stainless steel mat. no. 1.4571	
KITO®-flame arrester element	interchangeable	
KITO®-casing / KITO®-grid	stainless steel mat. no. 1.4571 / 1.4310	stainless steel mat. no. 1.4571 / 1.4571
flange connection	EN 1092-1 type B1	ASME B16.5 Class 150 RF

Design valve pallet

design	pressure range I 2 - < 3,5 mbar	pressure range II ≥ 3,5 - 14 mbar	pressure range III > 14 - 35 mbar	pressure range IV > 35 - 60 mbar
pallet	aluminum	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
valve spindle	aluminum / stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571	stainless steel 1.4571
valve sealing	FEP & HD3822	FEP & HD3822	PTFE	PTFE

Performance curves

The flow capacity V refers to a density of air with ρ = 1.29 kg/m³ at a temperature of 273 K and a pressure of 1.013 mbar. The flow capacity for gases with different densities can be calculated sufficiently accurate by the following approximation equation

$$\dot{V}_{20\%} = \dot{V}_b \cdot \sqrt{\frac{\rho_b}{1.29}} \ \text{ or } \ \dot{V}_b = \dot{V}_{20\%} \cdot \sqrt{\frac{1.29}{\rho_b}}$$

The indicated flow rates will be reached by an accumulation of 20 % above valve's setting (see DIN 4119).

$$\dot{V}_{10\%} = \dot{V}_b \cdot \sqrt{\frac{\rho_b}{1.29}} \ \text{ or } \ \dot{V}_b = \dot{V}_{10\%} \cdot \sqrt{\frac{1.29}{\rho_b}}$$

The volume flow at reduced lift will be reached by an accumulation of 10 % above valve's setting (see DIN 4119).