



NUOVA GENERAL INSTRUMENTS

Loc. Campasso 29010 Pianello Val Tidone (PC) - Italy

Tel.: +39 0523 994629 - Fax: +39 0523 997219

Calcolo portata di scarico valvola di sicurezza
Safety Valve Fluid Delivery Calculation

Typ. : G40/L

Fluido : ARIA

Fluid : AIR

$$Q_m = P_o C A K_{dr} \sqrt{\frac{M}{T_o Z}} \quad (\text{kg/h})$$

PS	Pressione di taratura bar <i>Setting pressure bar</i>	<u>4</u>
T	Temperatura °C <i>Temperature °C</i>	<u>0</u>
A	Area orifizio mm ² <i>Orifice area mm²</i>	<u>1256</u>
Kdr	Coefficiente di efflusso <i>Coefficient of discharge</i>	<u>0,71</u>
Po	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>5,4</u>
C	Funzione dell'esponente isentropico <i>Function of the isentropic exponent</i>	<u>2,7</u>
To	Temperatura del fluido in °K (°C + 273) <i>Fluid temperature °K (°C + 273)</i>	<u>273</u>
M	Massa molecolare del fluido in kg/kmoli <i>Fluid molecular mass in kg/kmol</i>	<u>28,97</u>
Z	Fattore di comprimibilità del fluido <i>Compressibility factor</i>	<u>1</u>
ϕ	Massa volumica del fluido alla temperatura di calcolo in kg/mc <i>Fluid volumic mass at the calculation temperature in kg/mc</i>	<u>1,2928</u>

Inserendo i valori nella formula si ottiene :
Putting these data in the formula the result is :

$$\begin{aligned} Q_m &= \underline{4235,44} \text{ kg/h} \\ \text{kg/h} / \phi &= \underline{3276,18} \text{ m}^3/\text{h} \\ \text{m}^3/\text{h} / 0,06 &= \underline{54602,92} \text{ l/min} \\ \text{l/min} \times 60 &= \underline{3276175,01} \text{ l/h} \\ \text{l/min} / 60 &= \underline{910,05} \text{ l/s} \end{aligned}$$



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Calcolo portata di scarico valvola di sicurezza
Safety Valve Fluid Delivery Calculation

Typ. : G40/L

Fluido : VAPORE SATURO

Floid : STEAM

$$Q_m = 0,2883 C A K_{dr} \sqrt{\frac{P_o}{v}} \quad (\text{kg/h})$$

PS Pressione di taratura bar 4
Setting pressure bar

A Area orifizio mm² 1256
Orifice area mm²

Kdr Coefficiente di efflusso 0,71
Coefficient of discharge

Po Pressione in bar assoluti (P+Sovrapressione+1) 5,4
Absolute flowing pressure (P+Over pressure +1)

C Funzione dell'esponente isentropico 2,51
Function of the isentropic exponent

v Volume specifico del fluido (m³/kg) 0,3485
Fluid specific volume (m³/kg)

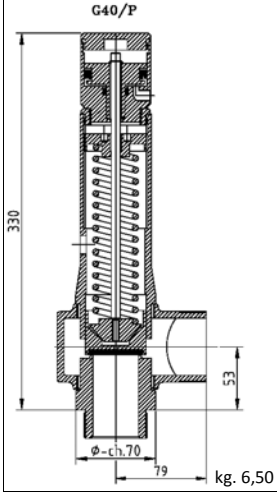
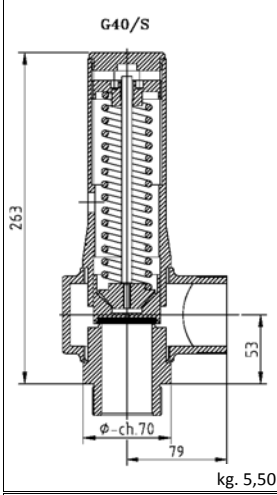
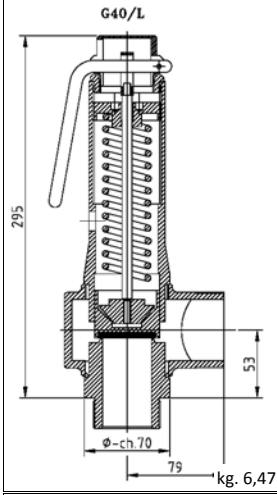
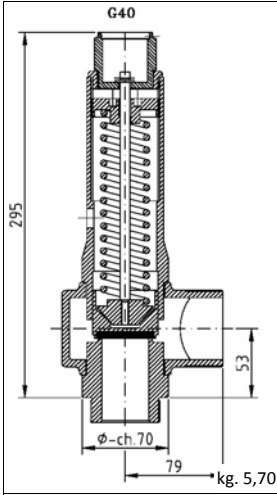
Inserendo i valori nella formula si ottiene :

Putting these data in the formula the result is :

$$q = \underline{2540,16} \text{ kg/h}$$

 **NUOVA GENERAL
INSTRUMENTS S.r.l.**

Tipo : Type :	<h1>G40</h1>		do: 40 mm
Omologazione <i>Homologation</i>	PN	Coefficiente efflusso ridotto <i>Low flow coefficient</i>	Campo di taratura <i>Setting range</i>
E.D. 2014/68/EU - IV Cat.(PED)	40	0,61; >3 bar 0,71	0,3 - 14,0 bar
EAC	40	0,61; >3 bar 0,71	0,3 - 14,0 bar
ATEX Ex h II 2 Gb	40	0,61; >3 bar 0,71	0,3 - 14,0 bar
ATEX Ex h II 2 Db (1)	40	0,61; >3 bar 0,71	0,3 - 14,0 bar
ASME VIII Div.1	40	0,629	1,0 - 14,0 bar
Canadian Reg. CRN	40	0,629	1,0 - 14,0 bar



CONFIGURAZIONE - CONFIGURATION			
Materiale <i>Material</i>	Ottone <i>Brass</i>	Mista Ottone-Acciaio inox <i>Mixed Brass-Stainless steel</i>	Acciaio inox <i>Stainless steel</i>
Modelli <i>Model</i>	Con ghiera <i>With ring nut</i>	Con ghiera <i>With ring nut</i>	Con ghiera <i>With ring nut</i>
	Senza Ghiera <i>Without ring nut</i>	Senza Ghiera <i>Without ring nut</i>	Senza Ghiera <i>Without ring nut</i>
	Con leva <i>With lever</i>	Con leva <i>With lever</i>	Con leva <i>With lever</i>
	/	/	Con apertura pneumatica ⁽²⁾ <i>Nith pneumatic opening</i>
	/	/	Pneumatica con sensore ⁽²⁾ <i>Pneumatic with sensor</i>
Sedi di Tenuta <i>Seal System</i>	N.B.R. (Std) -10 / + 100 °C E.P.D.M. -50 / + 150 °C VITON -20 / +200 °C SILICONE -60 / +200 °C PTFE -196 / +250 °C KALREZ -20 / +250 °C /	N.B.R. (Std) -10 / + 100 °C E.P.D.M. -50 / + 150 °C VITON -20 / +200 °C SILICONE -60 / +200 °C PTFE -196 / +250 °C KALREZ -20 / +250 °C Metal -196 / +250 °C	N.B.R. (Std) -10 / + 100 °C E.P.D.M. -50 / + 150 °C VITON -20 / +200 °C SILICONE -60 / +200 °C PTFE -196 / +250 °C KALREZ -20 / +275 °C Metal -196 / +450 °C
Connessione Entrata <i>Inlet Connection</i>	G.1"1/2 - 2" ISO228 R.1"1/2 - 2" EN10226 1"1/2 - 2" NPT DN50 PN16-40 2" 150-300 lb / / / /	G.1"1/2 - 2" ISO228 R.1"1/2 - 2" EN10226 1"1/2 - 2" NPT 2" Tri Clamp DN40-50 DIN405-11851 DN50 PN16-40 2" 150-300 lb / /	G.1"1/2 - 2" ISO228 R.1"1/2 - 2" EN10226 1"1/2 - 2" NPT 2" Tri Clamp DN40-50 DIN405-11851 DN50 PN16-40 2" 150-300 lb / /
Connessione Uscita <i>Outlet Connection</i>	G.2" ISO228 DN50-65 PN16-40 2" - 2"1/2 150-300 lb / / / /	G.2" ISO228 2" Tri Clamp DN50 DIN405-11851 DN50-65 PN16-40 2" - 2"1/2 150-300 lb / /	G.2" ISO228 2" Tri Clamp DN50 DIN405-11851 DN50-65 PN16-40 2" - 2"1/2 150-300 lb / /

A richiesta possono essere eseguiti collaudi dai più prestigiosi enti quali: INAIL (area ISPESL), TÜV, RINA, Bureau Veritas, ABS e Lloyd Register.
On request tests can be made by the most prestigious societies, such as: INAIL (area ISPESL), TÜV, RINA, Bureau Veritas, ABS and Lloyd Register.

Note: (1) No Modello Con leva / No Model With lever (2) Max 8 bar