



NUOVA GENERAL INSTRUMENTS

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

Typ. : F25

Fluido : ARIA

Fluid : AIR

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

<b>PS</b>	Pressione di taratura bar <i>Setting pressure bar</i>	<u>0,5</u>
<b>T</b>	Temperatura °C <i>Temperature °C</i>	<u>0</u>
<b>A</b>	Area orificio mm <sup>2</sup> <i>Orifice area mm<sup>2</sup></i>	<u>490,6</u>
<b>Kdr</b>	Coefficiente di efflusso <i>Coefficient of discharge</i>	<u>0,86</u>
<b>Po</b>	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>1,55</u>
<b>C</b>	Funzione dell'esponente isentropico <i>Function of the isentropic exponent</i>	<u>2,7</u>
<b>To</b>	Temperatura del fluido in °K ( °C + 273 ) <i>Fluid temperature °K ( °C + 273 )</i>	<u>273</u>
<b>M</b>	Massa molecolare del fluido in kg/kmoli <i>Fluid molecular mass in kg/kmol</i>	<u>28,97</u>
<b>Z</b>	Fattore di comprimibilità del fluido <i>Compressibility factor</i>	<u>1</u>
<b>ϕ</b>	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 :*

$$\begin{aligned} Q_m &= \underline{575,19} \text{ kg/h} \\ \text{kg/h} / \phi &= \underline{444,92} \text{ m}^3/\text{h} \\ \text{m}^3/\text{h} / 0,06 &= \underline{7415,35} \text{ l/min} \\ \text{l/min} \times 60 &= \underline{444921,14} \text{ l/h} \\ \text{l/min} / 60 &= \underline{123,59} \text{ l/s} \end{aligned}$$



NUOVA GENERAL INSTRUMENTS

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

Typ. : F25

Fluido : AZOTO-N2

Fluid : N2

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

<b>PS</b>	Pressione di taratura bar <i>Setting pressure bar</i>	<u>0,5</u>
<b>T</b>	Temperatura °C <i>Temperature °C</i>	<u>0</u>
<b>A</b>	Area orificio mm <sup>2</sup> <i>Orifice area mm<sup>2</sup></i>	<u>490,6</u>
<b>Kdr</b>	Coefficiente di efflusso <i>Coefficient of discharge</i>	<u>0,86</u>
<b>Po</b>	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>1,55</u>
<b>C</b>	Funzione dell'esponente isentropico <i>Function of the isentropic exponent</i>	<u>2,7</u>
<b>To</b>	Temperatura del fluido in °K ( °C + 273 ) <i>Fluid temperature °K ( °C + 273 )</i>	<u>273</u>
<b>M</b>	Massa molecolare del fluido in kg/kmoli <i>Fluid molecular mass in kg/kmol</i>	<u>28,01</u>
<b>Z</b>	Fattore di comprimibilità del fluido <i>Compressibility factor</i>	<u>1</u>
<b>ϕ</b>	Massa volumica del fluido alla temperatura di calcolo in kg/mc <i>Fluid volumic mass at the calculation temperature in kg/mc</i>	<u>1,2505</u>

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

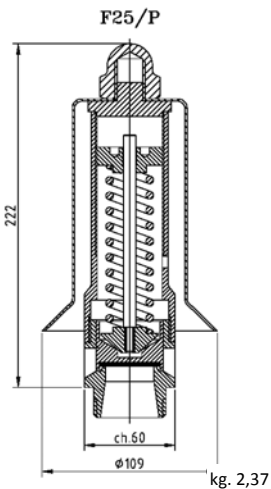
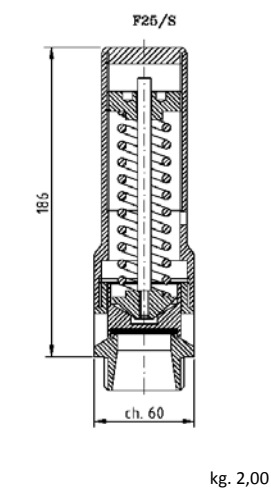
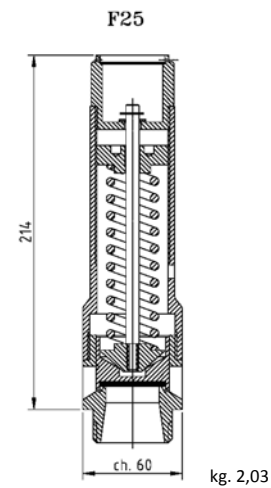
$$\begin{aligned} Q_m &= \underline{565,58} \text{ kg/h} \\ \text{kg/h} / \phi &= \underline{452,29} \text{ m}^3/\text{h} \\ \text{m}^3/\text{h} / 0,06 &= \underline{7538,1} \text{ l/min} \\ \text{l/min} \times 60 &= \underline{452285,84} \text{ l/h} \\ \text{l/min} / 60 &= \underline{125,63} \text{ l/s} \end{aligned}$$

Tipo : Type :	<b>F25</b>		do: 25 mm
<b>Omologazione</b> <i>Homologation</i>	<b>PN</b>	<b>Coefficiente efflusso ridotto</b> <i>Low flow coefficient</i>	<b>Campo di taratura</b> <i>Setting range</i>
E.D. 2014/68/EU - IV Cat.(PED)	40	0,86	0,3 - 30,0 bar
EAC	40	0,86	0,3 - 30,0 bar
ATEX Ex h II 2 Gb (1)	40	0,86	0,3 - 30,0 bar
ATEX Ex h II 2 Db	/	/	/
ASME VIII Div.1	40	0,712	1,0 - 30,0 bar
Canadian Reg. CRN	40	0,712	1,0 - 30,0 bar

### CONFIGURAZIONE - CONFIGURATION

<b>Materiale</b> <i>Material</i>	<b>Ottone</b> <i>Brass</i>	<b>Mista Ottone-Acciaio inox</b> <i>Mixed Brass-Stainless steel</i>	<b>Acciaio inox</b> <i>Stainless steel</i>
<b>Modelli</b> <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 protezione <i>With Protection</i>	Con protezione <i>With Protection</i>	Con protezione <i>With Protection</i>
	/	/	/
	/	/	/
	/	/	/
	/	/	/
<b>Sedi di Tenuta</b> <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
<b>Connessione Entrata</b> <i>Inlet Connection</i>	G.1"1/4 - 1"1/2 ISO228 R.1"1/4 - 1"1/2 EN10226 1"1/4 - 1"1/2 NPT DN32-40 PN16-40 1"1/4 - 1"1/2 150-300 lb / / / /	G.1"1/4 - 1"1/2 ISO228 R.1"1/4 - 1"1/2 EN10226 1"1/4 - 1"1/2 NPT 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN32-40 PN16-40 1"1/4 - 1"1/2 150-300 lb / / / /	G.1"1/4 - 1"1/2 ISO228 R.1"1/4 - 1"1/2 EN10226 1"1/4 - 1"1/2 NPT 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN32-40 PN16-40 1"1/4 - 1"1/2 150-300 lb / / / /
<b>Connessione Uscita</b> <i>Outlet Connection</i>	/	/	/
	/	/	/
	/	/	/
	/	/	/
	/	/	/
	/	/	/

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 protezione / No Model With P**