



NUOVA GENERAL INSTRUMENTS

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

Typ. : G20/S

Fluido : AZOTO-N2

Fluid : N2

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

PS	Pressione di taratura bar <i>Setting pressure bar</i>	<u>8</u>
T	Temperatura °C <i>Temperature °C</i>	<u>0</u>
A	Area orificio mm ² <i>Orifice area mm²</i>	<u>314</u>
Kdr	Coefficiente di efflusso <i>Coefficient of discharge</i>	<u>0,83</u>
Po	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>9,8</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>28,01</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>1,2505</u>

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

$$\begin{aligned} Q_m &= \underline{2208,88} \text{ kg/h} \\ \text{kg/h} / \phi &= \underline{1766,4} \text{ m}^3/\text{h} \\ \text{m}^3/\text{h} / 0,06 &= \underline{29440} \text{ l/min} \\ \text{l/min} \times 60 &= \underline{1766400,24} \text{ l/h} \\ \text{l/min} / 60 &= \underline{490,67} \text{ l/s} \end{aligned}$$



NUOVA GENERAL INSTRUMENTS

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

Typ. : G20/S

Fluido : PENTANO-C5H12

Fluid : C5H12

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

PS	Pressione di taratura bar <i>Setting pressure bar</i>	<u>8</u>
T	Temperatura °C <i>Temperature °C</i>	<u>0</u>
A	Area orificio mm ² <i>Orifice area mm²</i>	<u>314</u>
Kdr	Coefficiente di efflusso <i>Coefficient of discharge</i>	<u>0,83</u>
Po	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>9,8</u>
C	Funzione dell'esponente isentropico <i>Function of the isentropic exponent</i>	<u>2,46</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>72,2</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>3,448</u>

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

$$\begin{aligned} Q_m &= \underline{3231,14} \quad \text{kg/h} \\ \text{kg/h} / \phi &= \underline{937,11} \quad \text{m}^3/\text{h} \\ \text{m}^3/\text{h} / 0,06 &= \underline{15618,44} \quad \text{l/min} \\ \text{l/min} \times 60 &= \underline{937106,48} \quad \text{l/h} \\ \text{l/min} / 60 &= \underline{260,31} \quad \text{l/s} \end{aligned}$$



NUOVA GENERAL INSTRUMENTS

Calcolo portata di scarico valvola di sicurezza
Safety Valve Fluid Delivery Calculation
(ISO 4126)

Typ. : G20/S

Fluido : POLIOLO

Fluid : POLYOL

$$q = \frac{0,9 K1 A 100 \sqrt{(P1-P2) y 1000}}{0,621} \text{ (kg/h)}$$

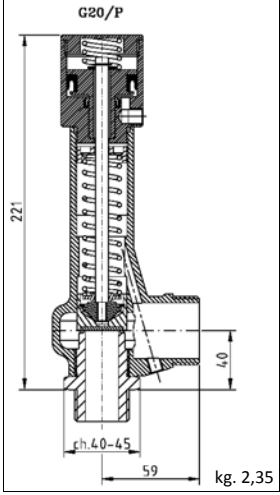
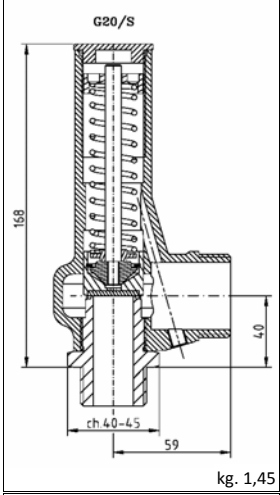
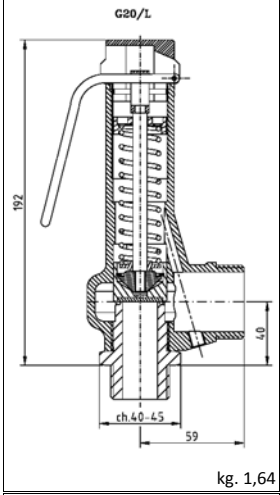
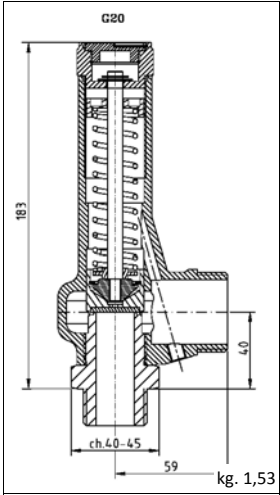
P	Pressione di taratura bar <i>Setting pressure bar</i>	<u>8</u>
A	Area orifizio cmq <i>Orifice area cmq</i>	<u>3,14</u>
K1	Coefficiente di efflusso per liquidi <i>Coefficient of education for liquid</i>	<u>0,38</u>
P1	Pressione in bar assoluti (P+Sovrapressione+1) <i>Absolute flowing pressure (P+Over pressure +1)</i>	<u>9,8</u>
P2	Contropressione in bar <i>Back pressure</i>	<u>1</u>
y	Peso specifico liquido alla temperatura di calcolo kg/dmc <i>Specific weight at design pressure kg/dmc</i>	<u>1,03</u>

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

$$q = \frac{16463,57}{0} \text{ kg/h}$$
$$\frac{0}{0} \text{ m3/h}$$
$$\frac{0}{0} \text{ Lt/min}$$
$$\frac{0}{0} \text{ Lt/h}$$

Tipo : Type :	<h1>G20</h1>	do: 20 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)	60	0,83	0,3 - 60,0 bar
EAC	60	0,83	0,3 - 60,0 bar
ATEX Ex II 2 G c	60	0,83	0,3 - 60,0 bar
ATEX Ex II 2 D c (1)	60	0,83	0,3 - 60,0 bar
ASME VIII Div.1	60	0,629	1,0 - 55,0 bar
Canadian Reg. CRN	60	0,629	1,0 - 55,0 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>With 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"1/4 ISO228 G.1" - 1"1/4 ISO228 F. R.1" - 1"1/4 EN10226 1" - 1"1/4 NPT DN25-32 PN16-40-60 1" - 1"1/4 150-300 lb / / /	G.1" - 1"1/4 ISO228 G.1" - 1"1/4 ISO228 F. R.1" - 1"1/4 EN10226 1" - 1"1/4 NPT 1" - 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN25-32 PN16-40-60 1" - 1"1/4 150-300 lb / /	G.1" - 1"1/4 ISO228 G.1" - 1"1/4 ISO228 F. R.1" - 1"1/4 EN10226 1" - 1"1/4 NPT 1" - 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN25-32 PN16-40-60 1" - 1"1/4 150-300 lb / /
Connessione Uscita <i>Outlet Connection</i>	G.1"1/4 ISO228 DN32-40 PN16-40-60 1"1/4 - 1"1/2 150-300 lb / / / /	G.1"1/4 ISO228 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN32-40 PN16-40-60 1"1/4 - 1"1/2 150-300 lb / /	G.1"1/4 ISO228 1"1/2 Tri Clamp DN25-32-40 DIN405-1185 DN32-40 PN16-40-60 1"1/4 - 1"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