

CERTIFICATE SCHEDULE

0038/UK/PER/PRJ11100349250/1

Equipment data:

Product Description:	Safety Valves
Product Type:	781, 782, 775, 240, 270, 570, 610, 613, 614, 630, 650, 670, 673, 674 (details specified below)
Maximum Design Pressure:	details specified below
Capacity:	details specified below

The undermentioned documents have been reviewed for compliance with the Pressure Equipment (Safety) Regulations 2016 (UK SI 2016 No. 1105), as amended and the following Design Standard(s):

EN ISO 4126-1:2013 + A2:2019, BS EN 12516-2 :2014+ A1:2021

Technical File Contents

Title	Document Number	Date
As listed in Design Appraisal Document	BPA2203902/1	28.02.2022
As listed in List of Documents to certificate 0343/ROT/PED/PRJ11100349250/1		01.03.2022

LRQA Reports

Title	Document Number	Date
Design Appraisal Document	BPA2203902/1	28.02.2022
Visit Report	PRJ11100349250 KAT2100489B/1	10.12.2022
Visit Report	PRJ11100349250 KAT2100489B/2	11.02.2022
Visit Report	KAT2400078/1	28.05.2024

Schedule Issue:	2
Date of Schedule Issue:	01 July 2024
LRQA Approved Body:	0038



Vinit Patil on behalf of LRQA Verification Limited

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Valves characteristic and executions:

Figure Figura	Body material Materiał kadłuba	DN	PN	Seal Doszcz.	Kdr			Bonnet Kołpak	Insert Wstawka											
					S / G	With stroke limitation Z ograniczeniem skoku														
						L	S / G													
With an extended seat version / Wykonanie z poszerzonym siedliskiem																				
240	A	EN-GJL-250	15-65	C	PN16	-1	0,4	0,3	N/A	BZ	NO									
	C	EN-GJS-400-18	20-65	E	PN40															
	F	GP240GH																		
	R	GX5CrNi19-10																		
270	F	GP240GH	20-50	E	PN40															
	R	GX5CrNi19-10																		
630	A	EN-GJL-250	20-50	C	PN16	-1	0,801 for p > 3bar; for p ≤ 3bar Chart 1	0,555 / 0,515 ¹	0,800 ²	BZ	NO									
	C	EN-GJS-400-18		E	PN40															
	F	GP240GH																		
	R	GX5CrNi19-10																		
Basic version / Wykonanie podstawowe																				
240	A	EN-GJL-250	15-200	C	PN16	-1,	0,25	0,25	N/A	BZ	NO									
			20-125			-2, -3														
	C	EN-GJS-400-18	20-200	E	PN40	-1,														
			20-125			-2, -3														
	F	GP240GH	20-200			-1,														
			20-125			-2, -3														
	R	GX5CrNi19-10	20-200			-1														
270	F	GP240GH	20-50			E	PN40	-1, -2, -3	0,25	0,25	N/A	BZ	NO							
	R	GX5CrNi19-10						-1												
570	A	EN-GJL-250	20-150	C	PN16	-1	0,50 / 0,46 ³	N/A	BZ	YES										
	F	GP240GH	20-150	E	PN40															
	R	GX5CrNi19-10	20-150																	
610	A	EN-GJL-250	20-150	C	PN16	-1,	0,72 / 0,78 ⁴	N/A	BO	NO										
			20-100			-2, -3				NO										
	C	EN-GJS-400-18	20-150	E	PN40	-1, -2, -3				NO										
			20-150			-1														
	F	GP240GH	20-150			F				PN63	-1	0,78								
			200									0,70 / 0,74 ⁵								
			300-400									0,54 / 0,70 ⁶								
			25-100									0,78								
613	F	GP240GH	20-100			F	PN63	-1	0,78	N/A	BO	YES								
			25-100			G	PN100													
614	F	GP240GH	20-100	F	PN63	-1	0,78	N/A	BO	YES										
			25-100	G	PN100															
630	A	EN-GJL-250	20-150	C	PN16	-1, -2, -3	0,72 / 0,78 ⁴	0,28	0,36	BZ	NO									
			20-100			-4						0,5	N/A							
	C	EN-GJS-400-18	20-150	E	PN40	-1, -2, -3					0,28	0,36	N/A	NO						
	F	GP240GH	20-150			-1														
			20-100			-2, -3														
			20-100			-4														
			20-150			-1, -2, -3														
	R	GX5CrNi19-10	20-150			F									PN63	-1	0,78	0,36	N/A	YES
			200																	
			300-400														0,70 / 0,74 ⁵			
						0,54 / 0,70 ⁶														

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			20-100			-2, -3					NO
			25-100	G	PN100	-1, -2, -3	0,78		0,36		YES
650	F	GP240GH	20-50	E	PN40	-1, -2, -3	0,72 / 0,78 ⁴	0,28	0,36	BZ	NO
	R	GX5CrNi19-10		F	PN63	-1, -2, -3					
	F	GP240GH		G	PN100	-1, -2, -3	0,78	0,28			
	F										
670	F	GP240GH	20-50	F	PN63	-1, -2, -3	0,78	0,28	0,36	BZ	NO
			25-50	G	PN100						
673	F	GP240GH	20-100	F	PN63	-1	0,78	0,28	0,36	BZ	YES
			25-100	G	PN100						
674	F	GP240GH	20-100	F	PN63	-1	0,78	0,28	0,36	BZ	YES
			25-100	G	PN100						
775	B	EN-GJS-400-15	20	C	PN16	-1	0,60 / 0,66 ⁷	0,26	0,30 / 0,33 ⁸	BZ	NO
			25				0,63 / 0,68 ⁹	0,29	0,36		
			32				0,66 / 0,72 ¹⁰	0,36	0,48 / 0,52 ¹¹		
781	H	CuZn39Pb1AIC	10-25	C	PN16	-1, -2, -3	0,19/0,20/0,25 ¹²	0,01	N/A	BZ	NO
			20-25				-1, -2, -3	N/A			
782	V	CuZn40Pb2	10-25	D	PN25	-1	0,65 / 0,57 ¹⁴	N/A	N/A	BZ	NO

References / Odniesienia:

¹ 0,555 for (dla) DN 20-40 / 0,515 for (dla) DN 50

² Permissible value of the coefficient for vapors and gases for two-phase flow capacity calculations / *Dopuszczalna wartość współczynnika dla par i gazów dla obliczeń przepustowości przepływu dwufazowego.*

³ 0,50 for (dla) DN 20-80 / 0,46 for (dla) DN 100-150

⁴ 0,72 for (dla) $p \leq 1,4\text{bar}$ / 0,78 for (dla) $p > 1,4\text{bar}$

⁵ 0,70 for (dla) $p \leq 1,4\text{bar}$ / 0,74 for (dla) $p > 1,4\text{bar}$

⁶ 0,54 for (dla) $p \leq 1,4\text{bar}$ / 0,70 for (dla) $p > 1,4\text{bar}$

⁷ 0,60 for (dla) $p \leq 4,0\text{bar}$ / 0,66 for (dla) $p > 4,0\text{bar}$

⁸ 0,30 for (dla) $p \leq 4,0\text{bar}$ / 0,33 for (dla) $p > 4,0\text{bar}$

⁹ 0,63 for (dla) $p \leq 4,0\text{bar}$ / 0,68 for (dla) $p > 4,0\text{bar}$

¹⁰ 0,66 for (dla) $p \leq 4,0\text{bar}$ / 0,72 for (dla) $p > 4,0\text{bar}$

¹¹ 0,48 for (dla) $p \leq 4,0\text{bar}$ / 0,52 for (dla) $p > 4,0\text{bar}$

¹² 0,19 for (dla) $p < 0,5\text{bar}$ / 0,20 for (dla) $p < 1,5\text{bar}$ / 0,25 for (dla) $p \geq 1,5\text{bar}$

¹³ 0,20 for (dla) DN 20 / 0,23 for (dla) DN 25

¹⁴ 0,65 for (dla) DN 10-20 / 0,57 for (dla) DN 25 - The given Kdr values apply to $\beta < 0,25$. For β values $\geq 0,25$, the discharge coefficient should be read from the chart 2. / *Podane wartości Kdr dotyczą $\beta < 0,25$. Dla wartości $\beta \geq 0,25$ współczynnik wypływu należy odczytać z wykresu 2.*

Legenda / Legend:

BZ Closed construction of the bonnet / *Budowa zamknięta kołpaka*

BO Open construction of the bonnet / *Budowa otwarta kołpaka*

N/A Not applicable / *Nie dotyczy*

In the column: insert / W kolumnie: wstawka

YES Possibility of using an insert between the body and the bonnet. / *Możliwość zastosowania wstawki pomiędzy kadłubem i kołpakiem.*

NO It is not possible to use an insert between the body and the bonnet. / *Brak możliwości zastosowania wstawki pomiędzy kadłubem i kołpakiem.*

Note / Uwaga:

For valves **240, 270, 630A C -4; 630F E -4** and **781** the discharge coefficients Kdr for liquid (L) are given for a design without lift limitation. / *Dla zaworów 240, 270, 630A C -4; 630F E -4 oraz 781 podane są współczynniki wypływu Kdr dla cieczy (L) dla konstrukcji nieposiadającej ograniczenia skoku.*

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Chart 1 / Wykres 1

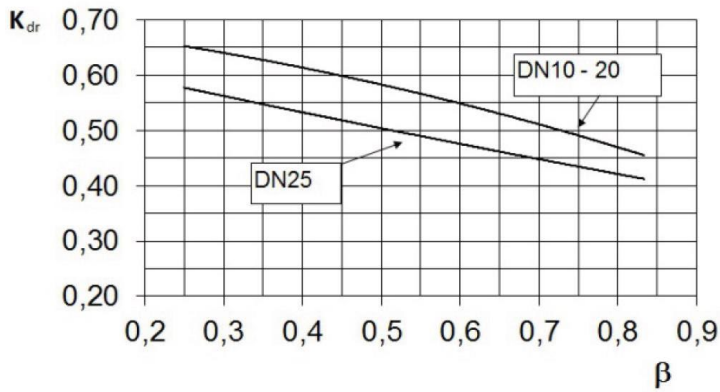


Dependence of the discharge coefficient K_{dr} on the ratio of absolute pressures behind and before the valve. / *Zależność współczynnika wypływu K_{dr} od stosunku ciśnień bezwzględnych za i przed zaworem.*

Applies to safety valves of the series / *Dotyczy zaworów bezpieczeństwa typoszeregu:*

630 DN 20-40, execution / wykonanie: 51-1, 52-1, 55-1, 57-1

Chart 2 / Wykres 2



Dependence of the discharge coefficient K_{dr} on the ratio of absolute pressures behind and before the valve. / *Zależność współczynnika wypływu K_{dr} od stosunku ciśnień bezwzględnych za i przed zaworem.*

Applies to safety valves of the series / *Dotyczy zaworów bezpieczeństwa typoszeregu: 782*

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