

## EU TYPE EXAMINATION CERTIFICATE - PRODUCTION TYPE

This is to certify that LRQA Nederland B.V., an Notified Body under the terms of the Pressure Equipment Directive 2014/68/EU, did (in accordance with Module B of the Directive) undertake a design examination on the stated pressure equipment to ensure conformity with the requirements of the Directive which apply. The pressure equipment identified below was shown to comply.

This certificate is issued to:

|                             |   |
|-----------------------------|---|
| <b>APPLICANT:</b>           | <b>ZETKAMA Sp. z o.o.</b><br>ul. 3 Maja 12, 57-410 Ścinawka Średnia<br>Poland                     |
| <b>PRODUCT DESCRIPTION:</b> | Safety Valves   |
| <b>PRODUCT TYPE:</b>        | 781, 782, 775, 240, 270, 570, 610, 613, 614, 630, 650,<br>670, 673, 674 (details specified below) |
| <b>DESIGN STANDARD:</b>     | EN ISO 4126-1:2013 + A2:2019, BS EN 12516-2:2014+ A1:2021   |

The attached Schedule details the content of the Technical Documentation and Specified Standards and shall form a part of this certificate.

**"This Certificate is not valid for pressure equipment, the design, ratings or operational parameters of which have been varied from the specimen tested. The manufacturer shall notify LRQA Nederland B.V. of any modification or changes to the equipment to maintain a valid certificate."**

"This certificate is valid for ten years from the date of issue."

|                      |                               |
|----------------------|-------------------------------|
| Certificate No.:     | 0343/ROT/PED/PRJ11100349250/1 |
| Original Approval:   | 01 March 2022                 |
| Current Certificate: | 01 July 2024                  |
| Certificate Expiry:  | 28 February 2032              |
| Notified Body No.    | 0343                          |



Vinit Patil on behalf of LRQA Nederland B.V.

## CERTIFICATE SCHEDULE

### 0343/ROT/PED/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 Directive 2014/68/EU 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<br>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 | 10.12.2021 |
| 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  
 Notified Body No.: 0343



Vinit Patil on behalf of LRQA Nederland B.V.

**Valves characteristic and executions:**

| Figure<br><i>Figura</i>  | Body material<br><i>Materiał kadłuba</i> | DN            | PN                       | Seal<br><i>Doszcz.</i> | Kdr   |  |   | Bonnet<br><i>Kolpak</i>    | Insert<br><i>Wstawka</i> |     |      |            |
|--|--|---------------|--------------------------|------------------------|-------|--|---|----------------------------|--------------------------|-----|------|------------|
|  |  |               |                          |                        | S / G | With stroke limitation<br><i>Z ograniczeniem skoku</i> |   |                            |                          |     |      |            |
|  |  |               |                          |                        |       | L  | S / G   |                            |                          |     |      |            |
| <b>With an extended seat version / Wykonanie z poszerzonym siedliskiem</b> |  |               |                          |                        |       |  |   |                            |                          |     |      |            |
| 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  | -1   | 0,801 for<br>p > 3bar;<br>for p ≤ 3bar<br>Chart 1 | 0,555 / 0,515 <sup>1</sup> | 0,800 <sup>2</sup>       | BZ  | NO   |            |
|  | R  | GX5CrNi19-10  |                          |                        |       |  |   |                            |                          |     |      |            |
| 630  | A  | EN-GJL-250    | 20-50                    | C                      | PN16  | -1   | 0,801 for<br>p > 3bar;<br>for p ≤ 3bar<br>Chart 1 | 0,555 / 0,515 <sup>1</sup> | 0,800 <sup>2</sup>       | BZ  | NO   |            |
|  | C  | EN-GJS-400-18 |                          | E                      | PN40  |  |   |                            |                          |     |      |            |
|  | F  | GP240GH       |                          |                        |       |  |   |                            |                          |     |      |            |
|  | R  | GX5CrNi19-10  |                          |                        |       |  |   |                            |                          |     |      |            |
| <b>Basic version / Wykonanie podstawowe</b>                                |  |               |                          |                        |       |  |   |                            |                          |     |      |            |
| 240  | A  | EN-GJL-250    | 15-200                   | E                      | PN40  | -1,  | 0,25  | 0,25                       | N/A                      | BZ  | NO   |            |
|  |  |               | 20-125                   |                        |       | -2, -3   |   |                            |                          |     |      |            |
|  | C  | EN-GJS-400-18 | 20-200                   |                        |       | -1,  |   |                            |                          |     |      |            |
|  |  |               | 20-125                   |                        |       | -2, -3   |   |                            |                          |     |      |            |
|  | F  | GP240GH       | 20-200                   |                        |       | -1,  |   |                            |                          |     |      |            |
|  |  |               | 20-125                   |                        |       | -2, -3   |   |                            |                          |     |      |            |
| 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 <sup>3</sup>                          | 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 <sup>4</sup>                          | N/A                        | BO                       | YES |      |            |
|  |  |               | 20-100                   |                        |       | -2, -3   |   |                            |                          |     |      |            |
|  | C  | EN-GJS-400-18 | 20-150                   |                        |       | E  |   |                            |                          |     | PN40 | -1, -2, -3 |
|  |  |               | 20-150                   | -1                     |       |  |   |                            |                          |     |      |            |
|  | F  | GP240GH       | 20-150                   | F                      | PN63  |  |   |                            |                          |     |      | -1         |
|  |  |               | 200                      |                        |       |  |   |                            |                          |     |      | 0,78       |
|  |  |               | 300-400                  | G                      | PN100 | 0,70 / 0,74 <sup>5</sup>                               |   |                            |                          |     |      |            |
|  |  | 25-100        | 0,54 / 0,70 <sup>6</sup> |                        |       |  |   |                            |                          |     |      |            |
|  |  | 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 <sup>4</sup>                          | 0,28                       | 0,36                     | BZ  | NO   |            |
|  |  |               | 20-100                   |                        |       | -4   |   |                            |                          |     |      |            |
|  | C  | EN-GJS-400-18 | 20-150                   | E                      | PN40  | -1, -2, -3   |   |                            |                          |     |      |            |
|  |  |               | 20-150                   |                        |       | -1   |   |                            |                          |     |      |            |
|  | F  | GP240GH       | 20-150                   |                        |       | -2, -3   |   |                            |                          |     |      |            |
|  |  |               | 20-100                   |                        |       | -4   |   |                            |                          |     |      |            |
|  |  |               | 20-150                   | F                      | PN63  | -1   |   |                            |                          |     |      |            |
|  |  |               | 200                      |                        |       | 0,78   |   |                            |                          |     |      |            |
|  |  |               | 300-400                  |                        |       | 0,70 / 0,74 <sup>5</sup>                               |   |                            |                          |     |      |            |
|  |  |               | 20-100                   |                        |       | 0,54 / 0,70 <sup>6</sup>                               |   |                            |                          |     |      |            |
|  |  | 25-100        | G                        | PN100                  | 0,78  |  |   |                            |                          |     |      |            |
|  |  | 25-100        | 0,78                     |                        |       |  |   |                            |                          |     |      |            |
|  |  | 25-100        | 0,36                     |                        |       |  |   |                            |                          |     |      |            |
|  |  | 25-100        | 0,36                     |                        |       |  |   |                            |                          |     |      |            |
| 650  | F  | GP240GH       | 20-50                    | E                      | PN40  | -1, -2, -3   | 0,72 / 0,78 <sup>4</sup>                          | 0,28                       | 0,36                     | BZ  | NO   |            |
|  | R  | GX5CrNi19-10  |                          |                        |       | -1, -2, -3   |   |                            |                          |     |      |            |
|  | F  | GP240GH       |                          | F                      | PN63  | -1, -2, -3   |   |                            |                          |     |      |            |
|  | F  | GP240GH       |                          |                        |       | -1, -2, -3   |   |                            |                          |     |      |            |

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|     |   |               |        |   |       |            |                              |      |                           |    |     |
|-----|---|---------------|--------|---|-------|------------|------------------------------|------|---------------------------|----|-----|
| 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 <sup>7</sup>     | 0,26 | 0,30 / 0,33 <sup>8</sup>  | BZ | NO  |
|     |   |               | 25     |   |       |            | 0,63 / 0,68 <sup>9</sup>     | 0,29 | 0,36                      |    |     |
|     |   |               | 32     |   |       |            | 0,66 / 0,72 <sup>10</sup>    | 0,36 | 0,48 / 0,52 <sup>11</sup> |    |     |
| 781 | H | CuZn39Pb1AIC  | 10-25  | C | PN16  | -1, -2, -3 | 0,19/0,20/0,25 <sup>12</sup> | 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 <sup>14</sup>    | N/A  | N/A                       | BZ | NO  |

### References / Odniesienia:

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

<sup>2</sup> 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.*

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

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

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

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

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

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

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

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

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

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

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

<sup>14</sup> 0,65 for (dla) DN 10-20 / 0,57 for (dla) DN 25 - The given Kdr values apply to  $\beta < 0,25$ . For  $\beta$  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*

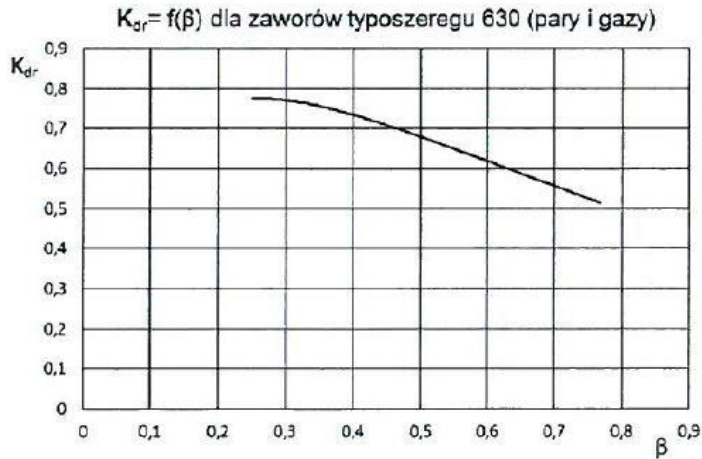
### In the column: insert / W kolumnie: wstawka

- 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:

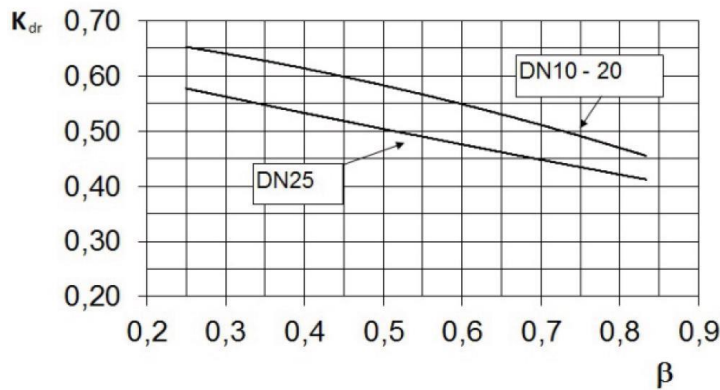
For valves **240, 270, 630A C -4; 630F E -4** and **781** the discharge coefficients Kdr for liquid (L) are given for a design without lift limitation. / *Dla zaworów 240, 270, 630A C -4; 630F E -4 oraz 781 podane są współczynniki wypływu Kdr dla cieczy (L) dla konstrukcji nieposiadającej ograniczenia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

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**

