Ex-proof proportional valves
multicertification ATEX, IECEx, EAC

Proportional valves equipped with explosion-proof solenoids available with following multicertifications:

Multicertifications for solenoids group II for surface plants with gas, vapours and dust environment:
- ATEX 94/9/EC
  - Ex II 2G Ex d IIC T4/T3 Gb
  - Ex II 2D Ex tb IIC T35°C/T200°C Db
- IECEx worldwide recognized certification
  - Ex d IIC T4/T3 Gb
  - Ex tb IIIC T35°C/T200°C Db
- EAC EurAsian Certification
  - Ex II 2G Exd IIC T4/T3

Multicertifications for solenoids group I for surface, tunnels or mining plants:
- ATEX 94/9/EC: Ex I M2 Ex d I Mb
- IECEx: I M2 Ex d I Mb
- EAC: I M2 Ex d I Mb

The solenoid case is designed to contain the possible explosion which could be caused by the presence of the gas mixture inside the housing, thus avoiding dangerous propagation in the external environment. They are also designed to limit the external temperature according to the certified class to avoid the self-ignition of the explosive mixture present in the environment.

### 1 EXPLOSION PROOF SOLENOIDS: MAIN DATA

<table>
<thead>
<tr>
<th>SOLENOID TYPE</th>
<th>PROPORTIONAL without transducer</th>
<th>PROPORTIONAL with transducer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid code</td>
<td>Multicertification for Group II</td>
<td>OZA-A</td>
</tr>
<tr>
<td></td>
<td>Multicertification for Group I (mining)</td>
<td>OZAM-A</td>
</tr>
<tr>
<td>Voltage code</td>
<td>±10%</td>
<td>12 DC, 24 DC</td>
</tr>
<tr>
<td>Power consumption</td>
<td>35W</td>
<td></td>
</tr>
<tr>
<td>Coil insulation</td>
<td>Class H</td>
<td></td>
</tr>
<tr>
<td>Protection degree</td>
<td>IP 66/67 According to IEC 144 when correctly coupled with the relevant cable gland PA*, see section 26</td>
<td></td>
</tr>
<tr>
<td>Duty factor</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Mechanical construction</td>
<td>Flame proof housing classified Ex d, according to EN 60079-0: 2006, EN 60079-1: 2007</td>
<td></td>
</tr>
<tr>
<td>Cable entrance and electrical wiring</td>
<td>Internal terminal board for cable connection. Threaded connection for cable entrance, vertical (standard) or horizontal (option /O). See section 26 for cable gland</td>
<td></td>
</tr>
<tr>
<td>Method of protection</td>
<td>Ex d</td>
<td></td>
</tr>
<tr>
<td>Temperature class (only for Group II)</td>
<td>T4 (with and without transducer)</td>
<td>T3 (with and without transducer)</td>
</tr>
<tr>
<td>Surface temperature</td>
<td>Multicertification for Group II</td>
<td>±135 °C</td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>Multicertification for Group I (mining)</td>
<td>150 °C</td>
</tr>
<tr>
<td>(1) The Group II solenoids are certified according to ATEX and IECEx for minimum ambient temperature -40°C. In case the complete valve must withstand with minimum ambient temperature of -40°C, select /BT in the model code.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2 MAIN CHARACTERISTICS, SEALS AND HYDRAULIC FLUID

- for other fluids not included in above table, consult our technical office

- NBR seals (standard) = -20°C ÷ +60°C, with HFC hydraulic fluids = -20°C ÷ +50°C
- FKM seals (/PE option) = -20°C ÷ +80°C
- HNBR seals (/BT option) = -40°C ÷ +60°C, with HFC hydraulic fluids = -40°C ÷ +50°C

- Recommended viscosity 15~100 mm²/s - max allowed range 2.8 ÷ 500 mm²/s

- Fluid contamination class ISO 4406 class 21/19/16 NAS 1638 class 10, in line filters of 25 μm (p10 > 75 recommended)

<table>
<thead>
<tr>
<th>Hydraulic fluid</th>
<th>Suitable seals type</th>
<th>Classification</th>
<th>Ref. Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mineral oils</td>
<td>NBR, FKM, HNBR</td>
<td>DIN 51524</td>
<td></td>
</tr>
<tr>
<td>Flame resistant without water</td>
<td>FKM, HFDU, HFDQ</td>
<td>ISO 12922</td>
<td></td>
</tr>
<tr>
<td>Flame resistant with water</td>
<td>NBR, HNBR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3 CERTIFICATIONS

In the following are resumed the valves marking according to ATEX Group I, ATEX and IECEx Group II, EAC certifications.

3.1 GROUP II, ATEX marking

<table>
<thead>
<tr>
<th>Ex</th>
<th>Explosion-proof equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>T4/T3</td>
<td>Solenoid temperature class (maximum surface temperature)</td>
</tr>
<tr>
<td>Gb</td>
<td>Equipment protection level, high level protection for explosive Gas atmospheres</td>
</tr>
<tr>
<td>C</td>
<td>Mark of conformity to the applicable European directives</td>
</tr>
</tbody>
</table>

II 2 G = Solenoid for surface plants with gas and vapors environment, category 2, suitable for zone 1 and zone 2

Ex d = Explosion-proof equipment
T4/T3 = Solenoid temperature class (maximum surface temperature)
Gb = Equipment protection level, high level protection for explosive Gas atmospheres
C = Mark of conformity to the applicable European directives

IECEx marking:

<table>
<thead>
<tr>
<th>Ex</th>
<th>Explosion-proof equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>T4/T3</td>
<td>Solenoid temperature class (maximum surface temperature)</td>
</tr>
<tr>
<td>Gb</td>
<td>Equipment protection level, high level protection for explosive Dust atmospheres</td>
</tr>
<tr>
<td>C</td>
<td>Mark of conformity to the 94/9/CE directive and to the technical norms</td>
</tr>
</tbody>
</table>

II 2 C = Solenoid for surface plants with dust environment, category 2, suitable for zone 21 and zone 22

Ex d = Explosion-proof equipment
T4/T3 = Solenoid temperature class (maximum surface temperature)
Gb = Equipment protection level, high level protection for explosive Dust atmospheres
C = Mark of conformity to the 94/9/CE directive and to the technical norms

3.2 GROUP II, IECEx marking

<table>
<thead>
<tr>
<th>Ex</th>
<th>Explosion-proof equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>T4/T3</td>
<td>Solenoid temperature class (Gas)</td>
</tr>
<tr>
<td>Gb</td>
<td>Equipment protection level, high level protection for explosive Gas atmospheres</td>
</tr>
<tr>
<td>C</td>
<td>Suitable for conductive dust (applicable also IIIB and/or IIIA)</td>
</tr>
<tr>
<td>T135°C/T200°C</td>
<td>Maximum surface temperature (Dust)</td>
</tr>
<tr>
<td>Db</td>
<td>Equipment protection level, high level protection for explosive Dust atmospheres</td>
</tr>
</tbody>
</table>

II 2 D = Solenoid for surface plants with dust environment, category 2, suitable for zone 21 and zone 22

Ex d = Explosion-proof equipment
T4/T3 = Solenoid temperature class (Gas)
Gb = Equipment protection level, high level protection for explosive Gas atmospheres
C = Suitable for conductive dust (applicable also IIIB and/or IIIA)
T135°C/T200°C = Maximum surface temperature (Dust)
Db = Equipment protection level, high level protection for explosive Dust atmospheres

3.3 EAC marking

EAC (EurAsian Certification) acknowledges the whole ATEX Directive 94/9/EC.

This certification is available only for gas environment (not for dust).

II 2 G = Solenoid for surface plants with gas and vapors environment, category 2, suitable for zone 1 and zone 2

Ex d = Explosion-proof equipment
T4/T3 = Solenoid temperature class (Gas)
Gb = Equipment protection level, high level protection for explosive Gas atmospheres

Note:

According to EN60079-0 the valves with ATEX certification can be coated with a non-metallic material (for ex. painted), observing the maximum thickness: Group IIC = 0,2 mm max

3.4 GROUP I, ATEX (mining)

<table>
<thead>
<tr>
<th>Ex</th>
<th>Explosion-proof equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2</td>
<td>High protection (equipment category)</td>
</tr>
<tr>
<td>Gb</td>
<td>Equipment protection level, high level protection for explosive atmospheres</td>
</tr>
</tbody>
</table>

Ex d = Explosion-proof equipment
M2 = High protection (equipment category)
Gb = Equipment protection level, high level protection for explosive atmospheres

3.5 GROUP I, IECEx (mining)

<table>
<thead>
<tr>
<th>Ex</th>
<th>Explosion-proof equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>M2</td>
<td>High protection (equipment category)</td>
</tr>
<tr>
<td>Gb</td>
<td>Equipment protection level, high level protection for explosive atmospheres</td>
</tr>
</tbody>
</table>

I = Group I for mines and surface plants
M2 = High protection (equipment category)
Mb = Equipment protection level, high level protection for explosive atmospheres

EXAMPLE OF NAMEPLATE MARKING

**Example of Nameplate Marking**

- **ATEX**
  - Ex d IC T6/T9 Gb
  - Ex d IC T6/T9 Db
  - Ex d IC T6/T9 Gb

- **IECEx**
  - CES 10.0010X
  - CES 03.05 ATEX 057X

**EXAMPLE OF NAMEPLATE MARKING**

<table>
<thead>
<tr>
<th>Model N</th>
<th>SERIAL N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atos</td>
<td>Atos</td>
</tr>
</tbody>
</table>

**ATEX**

- Ex d IC T6/T9 Gb
- Ex d IC T6/T9 Db

**IECEx**

- CES 10.0010X
- CES 03.05 ATEX 057X

**IECEx** notified body and certificate number

**Marking according to ATEX Directive**

- Ex d IC T6/T9 Gb
- Ex d IC T6/T9 Db

**Marking according to IECEx Directive**

- CES 10.0010X
- CES 03.05 ATEX 057X

**IECEx** notified body and certificate number

**Marking according to ATEX Directive**

- Ex d IC T6/T9 Gb
- Ex d IC T6/T9 Db

**Marking according to IECEx Directive**

- CES 10.0010X
- CES 03.05 ATEX 057X

**Warning**: service work provided on the valve by the end users or not qualified personnel invalidates the certification.
4 MODEL CODE OF PROPORTIONAL DIRECTIONAL VALVES

DHZA = size 06  
DKZA = size 10

Optional multicitifications
- = omit for Group II
M = Group I (mining)

A = without integral position transducer
T = with integral position transducer

Valve size (ISO 4401)
DHZA  DKZA
0 = size 06  1 = size 10

Configuration, see section 5
5 = external plus central position, spring centered
7 = 3 position, spring centered

Spool overlapping in central position, see section 3
1 = P, A, B, T positive overlapping
3 = P positive overlapping; A, B, T, negative

Spool type
L = linear;  S = progressive;  D = as S, but with P-A = Q, P-B = Q/2

(1) Option /MV available only for DHZA configuration 51, 53, 71, spool type S3, S5, D3, D5, L3, L5

5 HYDRAULIC CHARACTERISTICS of DHZA and DKZA (based on mineral oil ISO VG 46 at 50 °C)

Hydraulic symbols

<table>
<thead>
<tr>
<th>Valve model</th>
<th>DHZA-A</th>
<th>DHZA-T</th>
<th>DKZA-A</th>
<th>DKZA-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spool overlapping</td>
<td>1, 3</td>
<td>1, 3</td>
<td>1, 3</td>
<td>1, 3</td>
</tr>
<tr>
<td>Spool type and size (1)</td>
<td>L14</td>
<td>L1</td>
<td>S2</td>
<td>S3, L3, D3</td>
</tr>
<tr>
<td>Pressure limits [bar]</td>
<td>ports P, A, B = 350;</td>
<td>T = 160 (250 with external drain /Y)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ap max [bar]</td>
<td>70</td>
<td>50</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Max flow [l/min]</td>
<td>at Ap = 10 bar (P-T)</td>
<td>1</td>
<td>4.5</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>at Ap = 30 bar (P-T)</td>
<td>2</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>max permissible flow</td>
<td>3</td>
<td>12</td>
<td>21</td>
</tr>
<tr>
<td>Response time (2) [ms]</td>
<td>&lt; 30 (A)</td>
<td>&lt; 15 (T)</td>
<td>&lt; 40 (A)</td>
<td>&lt; 20 (T)</td>
</tr>
<tr>
<td>Hysteresis [%]</td>
<td>≤ 5% (A)</td>
<td>≤ 0.2% (T)</td>
<td>≤ 5% (A)</td>
<td>≤ 0.2% (T)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>± 1% (A)</td>
<td>± 0.1% (T)</td>
<td>± 1% (A)</td>
<td>± 0.1% (T)</td>
</tr>
</tbody>
</table>

(1) Additional spools and configurations for -T execution, see table F172.
(2) Response times at step signal (0%—90%) are measured from 10% to 90% of step value and are strictly referred to the valve regulation.
6 MODEL CODE OF PROPORTIONAL DIRECTIONAL VALVES

DPZA = spool type - piloted

Optional multicertifications
- = omit for Group II
M = Group I (mining)

A = without integral position transducer
T = with integral position transducer

Valve size (ISO 4401)
1 = size 10
2 = size 16
4 = size 25
6 = size 32

Configuration, see section 7
5 = external plus central position, spring centered
7 = 3 position, spring centered

Spool overlapping in central position, see section 7
1 = P, A, B, T positive overlapping
3 = P positive overlapping; A, B, T, negative

Spool type
L = linear; S = progressive; D = as S, but with P-A = Q, P-B = Q/2

7 HYDRAULIC CHARACTERISTICS OF DPZA (based on mineral oil ISO VG 46 at 50 °C)

Hydraulic symbols

<table>
<thead>
<tr>
<th>Valve model</th>
<th>DPZA-1</th>
<th>DPZA-2</th>
<th>DPZA-4</th>
<th>DPZA-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spool type and size</td>
<td>L5</td>
<td>S5</td>
<td>D5</td>
<td>S3</td>
</tr>
<tr>
<td>Pressure limits [bar]</td>
<td>Ports P, A, B, X = 350; T = 250; Y = 0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max flow [l/min] at Δp = 10 bar</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100.60</td>
</tr>
<tr>
<td></td>
<td>160</td>
<td>160</td>
<td>160</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>180</td>
<td>180</td>
<td>180</td>
<td>113</td>
</tr>
<tr>
<td>Max permissible flow</td>
<td>360</td>
<td>360</td>
<td>360</td>
<td>225</td>
</tr>
<tr>
<td>Response time (1) [ms]</td>
<td>&lt; 80</td>
<td>&lt; 100</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Hysteresis [%]</td>
<td>± 5%</td>
<td>± 5%</td>
<td>± 5%</td>
<td></td>
</tr>
<tr>
<td>Repeatability [%]</td>
<td>± 1%</td>
<td>± 1%</td>
<td>± 1%</td>
<td></td>
</tr>
</tbody>
</table>

(1) Response times at step signal (0%→100%) are measured from 10% to 90% of step value and are strictly referred to the valve regulation.

ELECTRONIC DRIVERS TO BE USED WITH EX-PROOF PROPORTIONAL VALVES
- Atos driver for proportional valves type -A (without transducer): E-ME-AC, see tab. G135
- Atos driver for proportional valves type -T (with transducer): E-ME-T, see tab. G140
### 8 MODEL CODE OF SERVOPROPORTIONAL VALVES

**DLHZA** / * - T - 0 40 - L 7 3 - GK / * **

- **DLHZA** = size 06
- **DLKZA** = size 10

Optional multcertifications:
- **-** = omit for Group II
- **M** = Group I (mining)

**T** = with integral position transducer

Valve size (ISO 4401)
- **0** = size 06 (DLHZA)
- **1** = size 10 (DLKZA)

Configuration, see section 9
- **40** = zero overlap spring offset with fail safe
- **60** = zero overlap spring offset

#### Spool Type
- **L** = linear
- **V** = progressive
- **DT** = as D but with non-linear regulation (1)

**Spool size:** see section 9

(1) Spool type D, DT and T are available only for valve with fail safe position DLHZA-*040 and DLKZA-*140

### 9 HYDRAULIC CHARACTERISTICS (based on mineral oil ISO VG 46 at 50°C)

#### Hydraulic symbols
- **M** = linear
- **T** = not linear (1)
- **D** = different-linear (1)
- **V** = progressive
- **DT** = as D but with non-linear regulation (1)

Solenoid threaded connection for cable gland:
- **GK** = GK-1/2" ISO/UNI-6125 (tapered)
- **NPT** = 1/2" NPT ANSI B2.1 (tapered)
- **M** = M20x1,5 UNI-4535 (6H/6g)

Options:
- **B** = solenoid at side of port A
- **C** = position transducer with current feedback 4÷20 mA
- **Y** = external drain

Fail safe configuration:
- **1** = A, B, P, T with positive overlapping
- **3** = P positive overlapping; A, B, T negative

**Spool size:** see section 9

(1) Spool type D, DT and T are available only for valve with fail safe position DLHZA-*040 and DLKZA-*140

#### Notes:
- Above performance data refer to valves coupled with Atos electronic drivers, see table G140.
- The flow regulated by the directional proportional valves is not pressure compensated, thus it is affected by the load variations. To keep constant the regulated flow under different load conditions, modular pressure compensators are available (see tab. D150).

(1) For different Δp, the max flow is in accordance to the diagrams in section 13.2
(2) Referred to spool in neutral position and 50°C oil temperature.
(3) Referred to spool in fail safe position and 50°C oil temperature.
(4) Referred to spool in fail safe position at Δp = 35 bar per edge and 50°C oil temperature.
10 MODEL CODE OF PRESSURE COMPENSATED PROPORTIONAL FLOW CONTROL VALVES

<table>
<thead>
<tr>
<th>Valve Code</th>
<th>Options</th>
<th>Pressure Relief</th>
<th>Compensator</th>
</tr>
</thead>
<tbody>
<tr>
<td>QVHZA</td>
<td>C</td>
<td>- T 06</td>
<td>-</td>
</tr>
<tr>
<td>QVKZA</td>
<td>D</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>O</td>
<td>O</td>
<td>- A 10</td>
<td>-</td>
</tr>
</tbody>
</table>

Options:
C = current feedback signal 4÷20 mA (only for -T version)
D = quick venting (only for -A version)
O = horizontal cable entrance (only for -A version, not for group I)
WP = prolonged manual override protected by metallic cap (only for -A version)

Max regulated flow:
QVHZA | 3 = 3.5 l/min; 36 = 36 l/min; 12 = 12 l/min; 45 = 45 l/min; 18 = 18 l/min;
QVKZA | 65 = 65 l/min; 90 = 90 l/min

11 HYDRAULIC CHARACTERISTICS (based on mineral oil ISO VG 46 at 50 °C)

<table>
<thead>
<tr>
<th>Valve Model</th>
<th>QVHZA-A</th>
<th>QVHZA-T</th>
<th>QVKA-A</th>
<th>QVKA-T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure ports P, A, B [bar]</td>
<td>310</td>
<td>210</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Max regulated flow [l/min]</td>
<td>3,5</td>
<td>12</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Min regulated flow [l/min]</td>
<td>15</td>
<td>20</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>Regulating Δp [bar]</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>Max flow on port A [l/min]</td>
<td>40</td>
<td>35</td>
<td>50</td>
<td>55</td>
</tr>
</tbody>
</table>

Above performance data refer to valves coupled with Atos electronic drivers.
(1) Values are referred to 3-way configuration. In the 2-way configuration, the values of min regulated flow are higher.

12 MODEL CODE OF PROPORTIONAL PRESSURE RELIEF AND COMPENSATOR VALVES

<table>
<thead>
<tr>
<th>Valve Code</th>
<th>Options</th>
<th>Pressure Relief</th>
<th>Compensator</th>
</tr>
</thead>
<tbody>
<tr>
<td>RZMA</td>
<td>E</td>
<td>- A 010</td>
<td>-</td>
</tr>
<tr>
<td>HZMA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AGMZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LIMZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LICZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Options:
E = external pilot (only for AGMZA)
O = horizontal cable entrance (not for group I)
P = with integral mechanical pressure limiter (only for LI*ZA, standard for size 1, 2, 3)
Y = external drain (only for AGMZA)

Max regulated pressure: see section 13

13 HYDRAULIC CHARACTERISTICS

Valve model: see section 13 for size code

Max regulated pressure: see section 13

Series number: see section 13

Seals material: see section 13

Options:
C = current feedback signal 4÷20 mA (only for -T version)
D = quick venting (only for -A version)
O = horizontal cable entrance (only for -A version, not for group I)
WP = prolonged manual override protected by metallic cap (only for -A version)

Solenoid threaded connection for cable gland:
GK = M20x1.5 UNI-4535 (6H/6g)

12 MODEL CODE OF PROPORTIONAL PRESSURE RELIEF AND COMPENSATOR VALVES

<table>
<thead>
<tr>
<th>Valve Code</th>
<th>Options</th>
<th>Pressure Relief</th>
<th>Compensator</th>
</tr>
</thead>
<tbody>
<tr>
<td>RZMA</td>
<td>E</td>
<td>- A 010</td>
<td>-</td>
</tr>
<tr>
<td>HZMA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>AGMZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LIMZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>LICZA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Options:
E = external pilot (only for AGMZA)
O = horizontal cable entrance (not for group I)
P = with integral mechanical pressure limiter (only for LI*ZA, standard for size 1, 2, 3)
Y = external drain (only for AGMZA)

Max regulated pressure: see section 13

Series number: see section 13

Seals material: see section 13

Options:
C = current feedback signal 4÷20 mA (only for -T version)
D = quick venting (only for -A version)
O = horizontal cable entrance (only for -A version, not for group I)
WP = prolonged manual override protected by metallic cap (only for -A version)

Solenoid threaded connection for cable gland:
GK = M20x1.5 UNI-4535 (6H/6g)
### Model Code of Proportional Pressure Reducing Valves

<table>
<thead>
<tr>
<th>RZGA / ** - A - 010 / 210 -</th>
<th>GK / * / * / ** / *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure reducing:</td>
<td></td>
</tr>
<tr>
<td>RZGA = subplate size 06</td>
<td></td>
</tr>
<tr>
<td>HZGA = modular size 06</td>
<td></td>
</tr>
<tr>
<td>KZGA = modular size 10</td>
<td></td>
</tr>
<tr>
<td>AGRCZA = subplate size 10, 20</td>
<td></td>
</tr>
<tr>
<td>LIRZA = cartridge</td>
<td></td>
</tr>
</tbody>
</table>

Optional multicertifications
- = omit for Group II
M = Group I (mining)

A = without integral transducer

Valve size: see section for size code

Max regulated pressure: see section

Note: for the code of the ISO cartridge to use with LIRZA, see tab. F300 section

### Hydraulic Characteristics

#### Valve Model
- **RZGA-A-010**
- **RZGA-A-033**
- **HZGA-A-031**
- **KZGA-A-031**
- **AGRCZA-A**
- **LIRZA-A**

<table>
<thead>
<tr>
<th>Valve model</th>
<th>RZGA</th>
<th>HZGA</th>
<th>KZGA</th>
<th>AGRCZA</th>
<th>LIRZA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size code</td>
<td>010</td>
<td>033</td>
<td>031</td>
<td>010</td>
<td>20</td>
</tr>
<tr>
<td>Valve size</td>
<td>06</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>16</td>
</tr>
<tr>
<td>Max regulated pressure (bar)</td>
<td>32 100 210</td>
<td>100 180 255</td>
<td>100 180 255</td>
<td>100 180 255</td>
<td>100 180 255</td>
</tr>
<tr>
<td>Min regulated pressure (bar)</td>
<td>0.8</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Max pressure at port P (bar)</td>
<td>315</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max pressure at port T (bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>210</td>
</tr>
<tr>
<td>Max flow (l/min)</td>
<td>12</td>
<td>40</td>
<td>40</td>
<td>100</td>
<td>160</td>
</tr>
</tbody>
</table>

### Cables Glands - only for Group II - to be ordered separately - see technical table K600

Wiring specifications
The cable must be suitable for the working temperature as specified in the "safety instructions" delivered with the first supply of the products.

Additional equipotential grounding can be also performed by the user on the external facility provided on the solenoid case.

Minimum section of external ground wire = 4 mm².
Minimum section of internal ground wire = the same of supply wire.
SOLENOIDS DIMENSIONS AND WIRING

Option /WP

Option /O

Option /OWP

Option /MV

A = screw terminal for additional equipotential grounding
B = Solenoid wiring
C = Position transducer wiring

1 = Coil
2 = GND
3 = Coil
1 = Output signal
2 = Supply -15 V
3 = Supply +15 V
4 = GND

* only for OA and OA/M