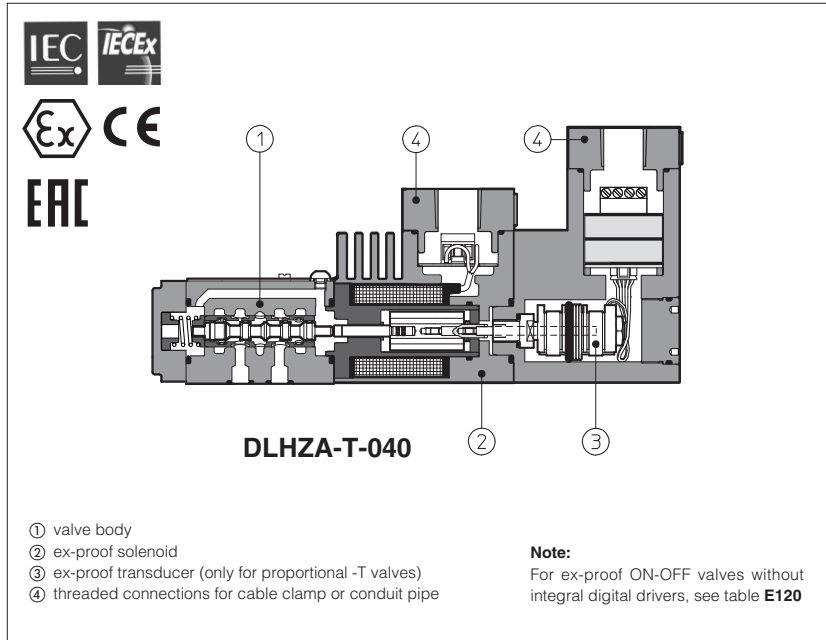


Ex-proof proportional valves

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 IIIC T135°C/T200°C Db
- IECEx worldwide recognized certification
Ex d IIC T4/T3 Gb
Ex tb IIIC T135°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

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

SOLENOID TYPE		PROPORTIONAL	
		without transducer	with transducer
Solenoid code	Multicertification for Group II	OZA-A	OZA-T
	Multicertification for Group I (mining)	OZAM-A	OZAM-T
Voltage code	VDC ±10%	12 DC, 24 DC	12 DC
	VAC 50/60 Hz ±10%		
Power consumption		35W	
Coil insulation		Class H	
Protection degree		IP 66/67 According to IEC 144 when correctly coupled with the relevant cable gland PA*, see section 26	
Duty factor		100%	
Mechanical construction		Flame proof housing classified Ex d, according to EN 60079-0: 2006, EN 60079-1: 2007	
Cable entrance and electrical wiring		Internal terminal board for cable connection. Threaded connection for cable entrance, vertical (standard) or horizontal (option /O). See section 26 for cable gland	
Method of protection		Ex d	
Temperature class (only for Group II)		T4 (with and without transducer)	T3 (with and without transducer)
Surface temperature	Multicertification for Group II	≤ 135 °C	≤ 200 °C
	Multicertification for Group I (mining)	150 °C	
Ambient temperature	Multicertification for Group II	-40 ÷ +40 °C (1)	-40 ÷ +70 °C (1)
	Multicertification for Group I (mining)	-20 ÷ +60	

(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

2 MAIN CHARACTERISTICS, SEALS AND HYDRAULIC FLUID - for other fluids not included in above table, consult our technical office

Assembly position / location	Any position for all valves		
Subplate surface finishing	Roughness index Ra 0,4 - flatness ratio 0,01/100 (ISO 1101)		
Seals, recommended fluid temperature	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 (β10 ≥75 recommended)		
Hydraulic fluid	Suitable seals type	Classification	Ref. Standard
Mineral oils	NBR, FKM, HNBR	HL, HLP, HLPD, HVLP, HVLPD	DIN 51524
Flame resistant without water	FKM	HFDD, HFDR	ISO 12922
Flame resistant with water	NBR, HNBR	HFC	

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

- 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
- II C** = Equipment of group IIC suitable for substances (gas) of group IIC
- T4/T3** = Solenoid temperature class (maximum surface temperature)
- Gb** = Equipment protection level, high level protection for explosive Gas atmospheres
- CE** = Mark of conformity to the applicable European directives
- II 2 D** = Solenoid for surface plants with dust environment, category 2, suitable for zone 21 and zone 22
- Ex d** = Explosion-proof equipment
- III C** = Suitable for conductive dust (applicable also IIIB and/or IIIA)
- IP66/67** = Protection degree
- T135°C/T200°C** = Maximum surface temperature (Dust)
- Db** = Equipment protection level, high level protection for explosive Dust atmospheres
- Ex** = Mark of conformity to the 94/9/CE directive and to the technical norms

3.2 GROUP II, IECEx marking

- Ex d** = Explosion-proof equipment
- IIC** = Equipment of group IIC suitable for substances (gas) of group IIC
- T4/T3** = Solenoid temperature classes (Gas)
- Gb** = Equipment protection level, high level protection for explosive Gas atmospheres
- Ex tb** = Equipment protection by enclosure "tb"
- IIIC** = 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
- IP66/67** = Protection degree

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
- II C** = Equipment of group IIC suitable for substances (gas) of group IIC
- T4/T3** = Solenoid temperature class (maximum surface temperature)
- Ex** = Mark of conformity to the 94/9/CE directive and to the technical norms

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)

- Ex** = ATEX identification for explosive atmospheres equipments
- I** = Group I for mines and surface plants
- M2** = High protection (equipment category)
- Ex d** = Explosion-proof equipment
- I** = Gas group (Methane)
- Mb** = Equipment protection level, high level protection for explosive atmospheres
- IP66/67** = Protection degree

3.5 GROUP I, IECEx (mining)

- I** = Group I for mines and surface plants
- M2** = High protection (equipment category)
- Ex d** = Explosion-proof equipment
- I** = Gas group (Methane)
- Mb** = Equipment protection level, high level protection for explosive atmospheres
- IP66/67** = Protection degree

EXAMPLE OF NAMEPLATE MARKING

Atex notified body and certificate number	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;">MODEL N°</td> <td style="width: 30%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 20%; border: none; text-align: center;">atos[®]</td> <td style="width: 30%; border: none; text-align: right;"></td> </tr> <tr> <td style="border: none;">SERIAL N°</td> <td style="border: none;"><input style="width: 90%;" type="text"/></td> <td style="border: none; font-size: 8px;">Atos spa - Via alla Piana, 57 21018 Sesto Calende (Vai) Italy</td> <td style="border: none;"></td> </tr> </table>	MODEL N°	<input style="width: 90%;" type="text"/>	atos [®]		SERIAL N°	<input style="width: 90%;" type="text"/>	Atos spa - Via alla Piana, 57 21018 Sesto Calende (Vai) Italy					
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SERIAL N°	<input style="width: 90%;" type="text"/>	Atos spa - Via alla Piana, 57 21018 Sesto Calende (Vai) Italy											
Marking according to ATEX Directive	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">CE</td> <td style="padding: 2px;">0722 CESI 02 ATEX 014X</td> </tr> </table>	CE	0722 CESI 02 ATEX 014X										
CE	0722 CESI 02 ATEX 014X												
IECEx notified body and certificate number	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Ex</td> <td style="padding: 2px;">II 2G Ex d IIC T6/T4 Gb</td> </tr> </table>	Ex	II 2G Ex d IIC T6/T4 Gb										
Ex	II 2G Ex d IIC T6/T4 Gb												
Marking according to IECEx Directive	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">IECEx</td> <td style="padding: 2px;">CES 10.0010X</td> </tr> <tr> <td style="width: 20px; text-align: center;">Ex d</td> <td style="padding: 2px;">IIC T6/T4 Gb</td> </tr> <tr> <td style="width: 20px; text-align: center;">Ex tb</td> <td style="padding: 2px;">IIIC T85°C / T135°C Db</td> </tr> </table>	IECEx	CES 10.0010X	Ex d	IIC T6/T4 Gb	Ex tb	IIIC T85°C / T135°C Db						
IECEx	CES 10.0010X												
Ex d	IIC T6/T4 Gb												
Ex tb	IIIC T85°C / T135°C Db												
Russian notified body and certificate number	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">TP TC</td> <td style="width: 20px; text-align: center;">N° TC</td> <td style="width: 20px; text-align: center;">RU</td> <td style="width: 20px; text-align: center;">C-IT.</td> <td style="width: 20px; text-align: center;">Г Б 08.</td> <td style="width: 20px; text-align: center;">В. 00881</td> </tr> <tr> <td style="width: 20px; text-align: center;">012/2011</td> <td style="width: 20px; text-align: center;">Серия</td> <td style="width: 20px; text-align: center;">RU</td> <td style="width: 20px; text-align: center;">N°</td> <td style="width: 20px; text-align: center;">0239862</td> <td style="width: 20px; text-align: center;"></td> </tr> </table>	TP TC	N° TC	RU	C-IT.	Г Б 08.	В. 00881	012/2011	Серия	RU	N°	0239862	
TP TC	N° TC	RU	C-IT.	Г Б 08.	В. 00881								
012/2011	Серия	RU	N°	0239862									
Marking according to ATEX Directive	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">ERL</td> <td style="width: 20px; text-align: center;">Ex</td> <td style="padding: 2px;">II 2G Exd IIC T6/T4</td> </tr> </table>	ERL	Ex	II 2G Exd IIC T6/T4									
ERL	Ex	II 2G Exd IIC T6/T4											
Supply	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 5%; border: none;">W</td> <td style="width: 20%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 5%; border: none;">V</td> <td style="width: 50%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 15%; border: none;">Hz</td> </tr> </table>	<input style="width: 90%;" type="text"/>	W	<input style="width: 90%;" type="text"/>	V	<input style="width: 90%;" type="text"/>	Hz						
<input style="width: 90%;" type="text"/>	W	<input style="width: 90%;" type="text"/>	V	<input style="width: 90%;" type="text"/>	Hz								
Tamb.	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 5%; border: none;">÷</td> <td style="width: 20%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 5%; border: none;">+</td> <td style="width: 50%; border: none;"><input style="width: 90%;" type="text"/></td> <td style="width: 15%; border: none;">IP66/67</td> </tr> </table>	<input style="width: 90%;" type="text"/>	÷	<input style="width: 90%;" type="text"/>	+	<input style="width: 90%;" type="text"/>	IP66/67						
<input style="width: 90%;" type="text"/>	÷	<input style="width: 90%;" type="text"/>	+	<input style="width: 90%;" type="text"/>	IP66/67								
For the correct selection of connecting cable temperatures see safety instructions	<table style="width: 100%; border: none;"> <tr> <td style="width: 20%; border: none;"></td> <td style="width: 80%; border: none; text-align: center;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">For the correct selection of connecting cable temperatures see safety instructions</td> </tr> </table> </td> </tr> </table>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">For the correct selection of connecting cable temperatures see safety instructions</td> </tr> </table>	For the correct selection of connecting cable temperatures see safety instructions									
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For the correct selection of connecting cable temperatures see safety instructions													



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

<p>DHZA / * - T - 0 7 1 - L</p> <p>DHZA = size 06 DKZA = size 10</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>A = without integral position transducer T = with integral position transducer</p> <p>Valve size (ISO 4401) DHZA DKZA 0= size 06 1= size 10</p> <p>Configuration, see section 5 5 = external plus central position, spring centered 7 = 3 position, spring centered</p> <p>Spool overlapping in central position, see section 5 1 = P, A, B, T positive overlapping 3 = P positive overlapping; A, B, T, negative</p> <p>Spool type L = linear; S = progressive; D = as S, but with P-A = Q, P-B = Q/2</p>	<p>5 - GK / * / * ** / *</p> <p>Seals material, see section 2: - = NBR PE = FKM BT = HNBR</p> <p>Series number</p> <p>Omit for standard coil 12 Vdc: 24 = with 24 Vdc coils (only A version)</p> <p>Options: B = solenoid at side of port A (and position transducer for -T version) C = position transducer with current feedback 4÷20 mA (only for -T version) MV = vertical hand lever (only for DHZA) (1) O = horizontal cable entrance (only for -A, not for group I) WP = prolonged manual override protected by metallic cap (only for -A) Y = external drain (only for DHZA - DKZA)</p> <p>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)</p>	<p>Spool size: see section 5</p>
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(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

Valve model	DHZA-A DHZA-T				DKZA-A DKZA-T	
Spool overlapping	1, 3	1, 3	1, 3	1, 3	1, 3	1, 3
Spool type and size (1)	L14	L1	S2	S3, L3, D3	S5, L5, D5	S3, L3, D3 S5, L5, D5
Pressure limits [bar]	ports P, A, B = 350; T = 160 (250 with external drain /Y)					
Δp max P-T [bar]	70			50		40
Max flow [l/min]						
at Δp = 10 bar (P-T)	1	4,5	8	17	28	45 60
at Δp = 30 bar (P-T)	2	8	14	30	50	80 105
max permissible flow	3	12	21	45	60	90 120
Response time (2) [ms]	< 30 (A) < 15 (T)		< 40 (A) < 20 (T)			
Hysteresis [%]	≤ 5% (A) ≤ 0,2% (T)		≤ 5% (A) ≤ 0,2% (T)			
Repeatability	± 1% (A) ± 0,1% (T)		± 1% (A) ± 0,1% (T)			

(1) Additional spools and configurations for -T execution, see table F172.

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

6 MODEL CODE OF PROPORTIONAL DIRECTIONAL VALVES

<p style="text-align: center; font-weight: bold; font-size: 1.2em;">DPZA</p> <p>DPZA = spool type - piloted</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>A = without integral position transducer T = with integral position transducer</p> <p>Valve size (ISO 4401) 1 = size 10 2 = size 16 4 = size 25 6 = size 32</p> <p>Configuration, see section 7 5 = external plus central position, spring centered 7 = 3 position, spring centered</p> <p>Spool overlapping in central position, see section 7 1 = P, A, B, T positive overlapping 3 = P positive overlapping; A, B, T, negative</p> <p>Spool type L = linear; S = progressive; D = as S, but with P-A = Q, P-B = Q/2</p>	<p style="text-align: center; font-weight: bold; font-size: 1.2em;">5 - GK / * / * ** / *</p> <p>Seals material, see section 2: - = NBR PE = FKM BT = HNBR</p> <p>Series number</p> <p>Omit for standard coil 12 VDC: 24 = with 24 Vdc coils (only A version)</p> <p>Options: B = solenoid at side of port A (and position transducer for -T version) C = position transducer with current feedback 4±20 mA (only for -T version) D = internal drain E = external pilot G = pressure reducing valve for piloting O = horizontal cable entrance (only for -A, not for group I) WP = prolonged manual override protected by metallic cap (only for -A)</p> <p>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)</p> <p>Spool size: see section 7</p>
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7 HYDRAULIC CHARACTERISTICS OF DPZA (based on mineral oil ISO VG 46 at 50 °C)

Hydraulic symbols

*71

*73

*51

*53

*51/B

*53/B

Valve model	DPZA-1			DPZA-2			DPZA-4			DPZA-6				
Spool type and size	L5	S5	D5	S3	D3	L5	S5	D5	L5	S5	D5	L5	S5	D5
Pressure limits [bar]	Ports P, A, B, X = 350; T = 250; Y = 0													
Max flow [l/min]	100	100	100:60	160	160:98	250	225	225:160	360	360	360:220	500	500	500:300
at Δp = 10 bar	160	160	160:100	270	270:160	430	390	390:280	620	620	620:380	860	860	860:530
at Δp = 30 bar	180	180	180:110	400	400:245	550	550	550:390	770	770	770:470	1300	1300	1300:800
max permissible flow														
Response time (1) [ms]	< 80			< 100			< 100			< 120				
Hysteresis [%]	≤ 5%			≤ 5%			≤ 5%			≤ 5%				
Repeatability	± 1%			± 1%			± 1%			± 1%				

(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. G035
- Atos driver for proportional valves type **-T** (with transducer): **E-ME-T**, see tab. G140

8 MODEL CODE OF SERVOPROPORTIONAL VALVES

<p>DLHZA / * - T - 0</p> <p>DLHZA = size 06 DLKZA = size 10</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>T = with integral position transducer</p> <p>Valve size (ISO 4401) 0 = size 06 (DLHZA) 1 = size 10 (DLKZA)</p> <p>Configuration, see section 9 40 = zero overlap spring offset with fail safe 60 = zero overlap spring offset</p> <p>Spool type L = linear; T = not linear (1); D = different-linear (1); V = progressive; DT = as D but with non-linear regulation (1);</p>	<p>40 - L</p> <p>7</p> <p>3 - GK / * ** / *</p> <p>Seals material, see section 2: - = NBR PE = FKM BT = HNBR</p> <p>Series number</p> <p>Options: B = solenoid at side of port A C = position transducer with current feedback 4÷20 mA Y = external drain</p> <p>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)</p> <p>Fail safe configuration: 1 = A, B, P, T with positive overlapping 3 = P positive overlapping; A, B, T negative</p> <p>Spool size: see section 9</p>
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(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)

<p>Hydraulic symbols</p>	<p>DLHZA-T*</p> <p>ports P, A, B = 350; T = 210 (250 with external drain /Y)</p>	<p>DLKZA-T*</p> <p>ports P, A, B = 315; T = 210 (250 with external drain /Y)</p>																
Valve model																		
Pressure limits [bar]																		
Spool	L0	L1	V1	L3	V3	L5	T5	L7	T7	V7	D7	DT7	L3	L7	T7	V7	D7	DT7
Max flow (1) [l/min]	2,5	4,5	5	9	13	18		26			26÷13		40		60		100÷50	
at Δp = 30 bar	4	7	8	14	20	28		40			40÷20		60		100		100÷50	
at Δp = 70 bar	10	18	18	32	40	50		70			70÷40		90		160		160÷80	
max permissible flow																		
Leakage [cm³/min] at P = 100 bar (2)	<100	<200	<100	<300	<150	<500	<200	<900	<200	<200	<700	<200	<1000	<1500	<400	<400	<1200	<400
Fail safe connections	P → A				P → B				A → T				B → T					
Leakage [cm³/min] at P = 100 bar (3)	Fail safe 1				Fail safe 2				Fail safe 3				Fail safe 4					
	50				70				70				50					
Flow [l/min] (4)	DLHZA				DLKZA				DLHZA				DLKZA					
	Fail safe 3				Fail safe 3				15÷30				10÷20					
	-				-				40÷60				25÷40					
Response time [ms]															≤ 15			
Hysteresis [%]															≤ 0,1%			
Thermal drift	zero point displacement < 1% at ΔT = 40°C																	



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

QVHZA / * - T - 06 / 12 - GK / * / * ** / *	<p>QVHZA = size 06 QVKZA = size 10</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>A = without position transducer T = with integral position transducer</p> <p>Valve size (ISO 4401) QVHZA: 06 QVKZA: 10</p> <p>Max regulated flow: QVHZA QVKZA 3 = 3,5 l/min; 36 = 36 l/min; 65 = 65 l/min 12 = 12 l/min 45 = 45 l/min; 90 = 90 l/min 18 = 18 l/min;</p>	<p>Series number</p> <p>Omit for standard coil 12 VDC: 24 = with 24 Vdc coils (only A version)</p> <p>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)</p> <p>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)</p>	<p>Seals material, see section 2: - = NBR PE = FKM BT = HNBR</p>
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11 HYDRAULIC CHARACTERISTICS (based on mineral oil ISO VG 46 at 50 °C)

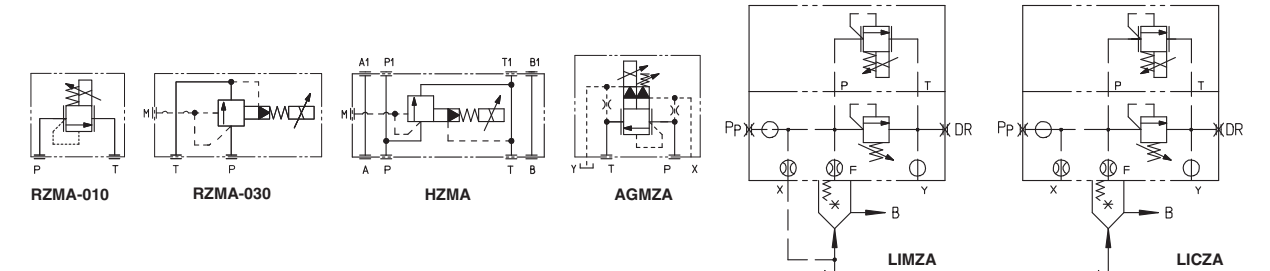
<p>Hydraulic symbols Note: In 3-way versions port P is open In 2-way versions port P must be plugged Port T must always be plugged</p>	 <p>QVHZA-A QVKZA-A</p>	 <p>QVHZA-T QVKZA-T</p>												
Valve model	QVHZA-A				QVHZA-T				QVKZA-A		QVKZA-T			
Valve size	06				06				10		10			
Max pressure ports P, A, B [bar]	210													
Max regulated flow [l/min]	3,5	12	18	36	45	3,5	12	18	35	45	65	90	65	90
Min regulated flow (1) [cm³/min]	15	20	30	50	60	15	20	30	50	60	85	100	85	100
Regulating Δp [bar]	4 - 6		10 - 12		15	4 - 6		10 - 12		15	6 - 8		10 - 12	
Max flow on port A [l/min]	40		35		50	50		60		70		100		

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

RZMA / * - A - 010 / 250 - GK / * / * ** / *	<p>Pressure relief: RZMA = subplate size 06 HZMA = modular size 06 AGMZA = subplate size 10, 20, 32 LIMZA = cartridge (1)</p> <p>Pressure compensator: LICZA = cartridge (1)</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>A = without integral pressure transducer</p> <p>Valve size: see section 13 for size code</p> <p>Max regulated pressure: see section 13</p>	<p>Series number</p> <p>Omit for standard coil 12 VDC: 24 = with 24 VDC coils</p> <p>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)</p> <p>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)</p>	<p>Seals material, see section 2: - = NBR PE = FKM BT = HNBR</p>
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13 HYDRAULIC CHARACTERISTICS

																																				
Valve model	RZMA			HZMA			AGMZA			LIMZA						LICZA																				
Size code	010		030		030		10		20		32		1		2		3		4		5		1		2		3		4		5					
Valve size	06						10		20		32		16		25		32		40		50		63		80		16		25		32		40		50	
Max regulated pressure [bar]													80;		180;		250																			
Max pressure at port P, A, B, X [bar]													315																							
Max pressure at port T, Y [bar]													210																							
Max flow [l/min]	4		40		40		200		400		600		200		400		750		1000		2000		3000		4500		200		400		750		1000		2000	

14 MODEL CODE OF PROPORTIONAL PRESSURE REDUCING VALVES

<p style="text-align: center;">RZGA</p> <p>Pressure reducing: RZGA = subplate size 06 HZGA = modular size 06 KZGA = modular size 10 AGRCZA = subplate size 10, 20 LIRZA = cartridge</p> <p>Optional multicertifications - = omit for Group II M = Group I (mining)</p> <p>A = without integral transducer</p> <p>Valve size: see section 15 for size code</p> <p>Max regulated pressure: see section 15</p>	/	*	-	A	-	010	/	210	-	GK	/	*	/	*	/	**	/	*
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Seals material, see section 2:
 - = NBR
PE = FKM
BT = HNBR

Series number

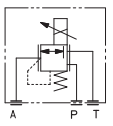
Omit for standard coil 12 Vdc:
24 = with 24 VDC coils (only A version)

Options:
O = horizontal cable entrance (not for group I Atex)
P = with integral mechanical pressure limiter (only for AGRCZA and LIRZA)
R = with check valve (only for AGRCZA)

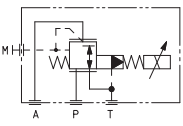
Solenoid threaded connection for cable gland:
GK = GK-1/2" ISO/UNI-6125 (tapered)
NPT = 1/2" NPT ANSI B2.1 (tapered)
M = M20x1,5 UNI-4535 (6H/6g)

Note: for the code of the ISO cartridge to use with LIRZA, see tab. F300 section 2

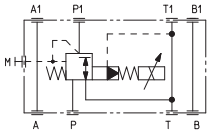
15 HYDRAULIC CHARACTERISTICS



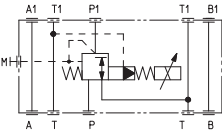
RZGA-A-010



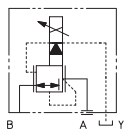
RZGA-A-033



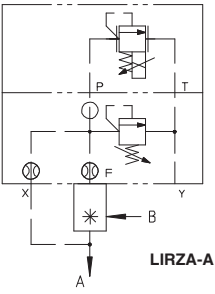
HZGA-A-031



KZGA-A-031



AGRCZA-A



LIRZA-A

Valve model	RZGA		HZGA	KZGA	AGRCZA		LIRZA			
Size code	010	033	031	031	10	20	1	2	3	4
Valve size	06			10	10	20	16	25	32	40
Max regulated pressure [bar]	32; 100; 210				80;	180;	250			
Min regulated pressure [bar]	0,8	1	1	1	1	1	7	7	7	7
Max pressure at port P [bar]	315									
Max pressure at port T [bar]	210									
Max flow [l/min]	12	40	40	100	160	300	160	300	550	800

16 CABLE GLANDS - only for Group II - to be ordered separately - see technical table K600

Wiring specifications

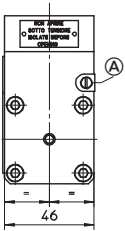
The cable must be suitable for the working temperature as specified in the "safety instructions" delivered with the first supply of the products.

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

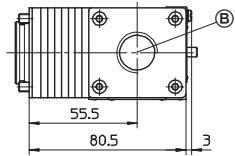
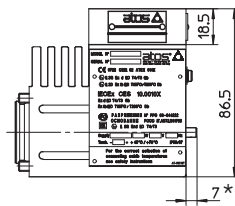
Minimum section of external ground wire = 4 mm².

Minimum section of internal ground wire = the same of supply wire.

OZA-A

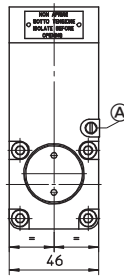


OZA/M-A

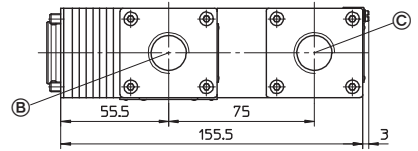
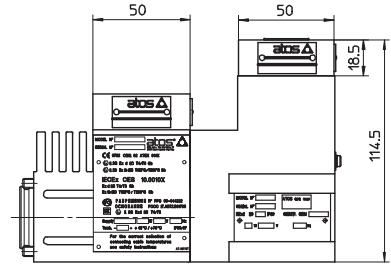


* only for OA and OAM

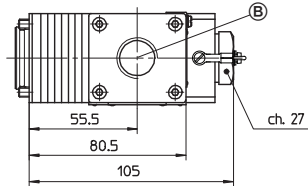
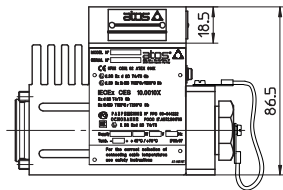
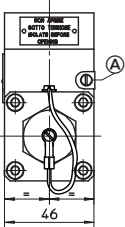
OZA-T



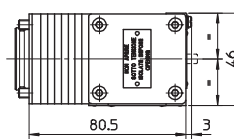
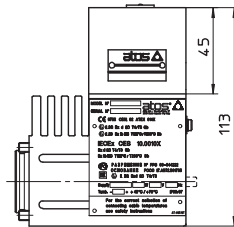
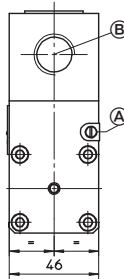
OZA/M-T



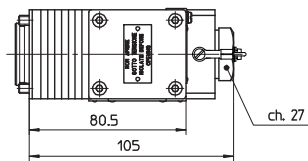
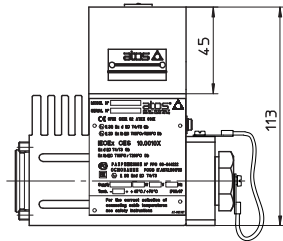
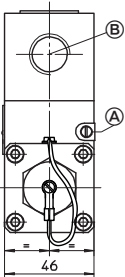
Option /WP



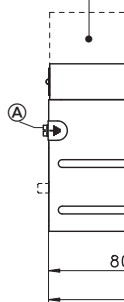
Option /O



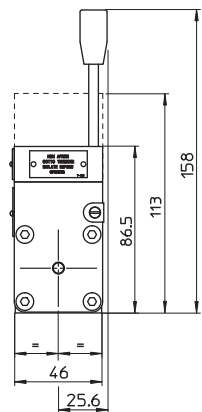
Option /OWP



Option /O



Option /MV



(A) = screw terminal for additional equipotential grounding

(B) = Solenoid wiring

(C) = Position transducer wiring

