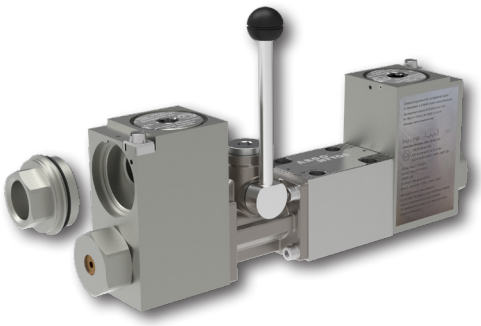
RPER2X3-06

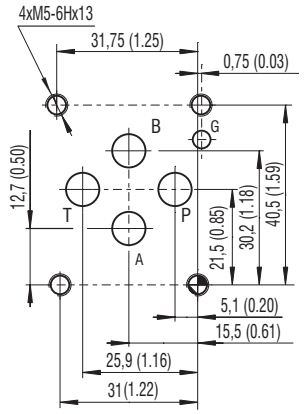
Size 06 (D03) • Q_{max} 60 l/min (16 GPM) • p_{max} 350 bar (5100 PSI)



Technical Features

- Hydraulic, spool-type directional control valve with cast iron body and connection pattern according to ISO 4401 and DIN 24340 (CETOP 03)
- Maximum operating pressure 350 bar (P, A, B ports) / 210 bar (T port)
- Emergency valve control by hand lever up to 100 bar in the T-port
- Certification of solenoid coil ATEX (Directive 2014/34/EU) and IECEx, valid for mines and environments with potentially explosive atmospheres consisting of gases or dust
- Coil certification "FM APPROVED" valid for USA and Canada
- Coil protection by flameproof enclosure "d" / "t" (for dust)
- Robust design resistant to mechanical damage
- Protection against static discharge by grounding the valve surface
- Valves applicable for temperature classes T4 (135 °C), T5 (100 °C) and T6 (85 °C) depending on the coil input power and maximum ambient temperature
- Easily interchangeable direction of power cable entry (axial/radial) into the coil
- Optional coil supply voltage, spool type and type of manual override
- The valve is zinc coated for 520 h corrosion protection in NSS acc. to ISO 9227 and as protection against ignition spark in the event of mechanical impact

ISO 4401-03-02-0-05



Ports P, A, B, T max. ∅ 7.5 mm (0.29 in)

Product Description

Direct-acting, spool-type directional control valve operated by solenoids. The valve is designed to control the direction of movement of the appliance output component (direction of piston feed in the cylinder, direction of rotation of the hydraulic motor shaft) or its stop. The manual lever allows the valve spool to be adjusted up to a pressure of 100 bar in the T-channel. The valve is certified for use in potentially explosive atmospheres of gases, vapors, dust and flammable particles with high protection level EPL = b.

Use of the valve in potentially explosive atmospheres

12 V / 24 V / 48 V / 110 V DC 110 V / 230 V AC 50 / 60 Hz	Zones	Type of protection – flameproof enclosure
Ex I M2 Ex db I Mb	Category Mb	"d" (EN /IEC 60079-1)
Ex II 2G Ex db IIB+H2 T6, T5, T4 Gb	Zones 1, 2	"d" (EN /IEC 60079-1)
Ex II 2D Ex tb IIIC T85°C, T100°C, T135°C Db	Zones 21, 22	"t" (EN/IEC 60079-31)

NEC 500 (USA), Annex J (Canada)	NEC 505, 506 (USA)	CEC Section 18 (Canada)
Class I Division 1 Group B, C, D T6...T4 Class II / III Division 1 Group E, F, G T6...T4	CL I Zone 1, AEx db IIB+H2, T6...T4 Gb	Ex db IIB+H2 T6...T4 Gb
	Zone 21, AEx tb IIIC T85°C...T135°C Db	Ex tb IIIC T85°C...T135°C Db

Ordering Code

RPER2X3-06 ☐ ☐ / ☐ ☐ A6 ☐ ☐ - B ☐

Explosion proof, directional control valve, solenoid operated, with lever override

Valve size

Number of spool positions
two positions 2
three positions 3

Spool symbols
see the table "Spool Symbols"

Rated supply voltage of solenoids
DC voltage (I_N)
12 V DC / 0.75 A 01200
24 V DC / 0.39 A 02400
48 V DC / 0.19 A 04800
110 V DC / 0.086 A 11000
AC voltage 50/60 Hz (I_N)
110 V AC / 0.084 A 11050
230 V AC / 0.046 A 23050

Threaded adapter with thread
M M20x1.5
NPT ½ NPT ANSI

Temperature class - solenoid nominal input power
Class T4, T5, T6 - 10 W

Sealing material
No designation NBR

Hand lever position
A19 standard, lever on side A, upward
B19 standard, lever on side B, upward

Surface treatment
520 h salt spray test (ISO 9227)

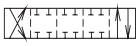
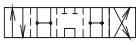
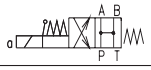
Certifications of valve
No designation ATEX, IECEx UKCA, FM APPROVED

- For directional valves with two solenoids, one solenoid must be de-energized before the other solenoid can be charged.
- The solenoids must be switched off when the valve is operated by hand lever.

Technical Data

Valve size			06 (D03)	
Max. flow		l/min (GPM)	60 (15.9)	
Max. operating pressure at ports P, A, B		bar (PSI)	350 (5080)	
Max. operating pressure at port T		bar (PSI)	100 (1450)	
Pressure drop		bar (PSI)	see Δp-Q characteristics	
Fluid temperature range (NBR)		°C (°F)	-30 ... +70 (-22 ... +158)	
Max. switching frequency		1/h	15 000	
Switching time ON at ν=32 mm²/s (156 SUS)		ms	AC: 30 ... 40	DC: 30 ... 50
Switching time OFF at ν=32 mm²/s (156 SUS)		ms	AC: 30 ... 70	DC: 10 ... 50
Lever characteristics				
Total stroke angle		deg	±20	
Working stroke angle			± 12 ... 20	
Lever override length		mm (in)	102 (4.01)	
Operating force		N (lbf)	40 (29.5)	
Lever device weight		kg (lbs)	0.59 (1.30)	
Weigh including the lever	valve with 1 solenoid		3.15 (6.94)	
	valve with 2 solenoids		4.65 (10.25)	
Technical Data - Explosion proof Solenoid				
Voltage type			AC 50 / 60 Hz	DC
Available nominal voltages U_N		V	110, 230	12, 24, 48, 110
Available nominal input power		W	10	
Supply voltage fluctuations			U_N ± 10 %	
Duty cycle			100 % ED	
Enclosure type of the Solenoid to EN 60529			IP66 / IP68*	
*Test procedure IP68: Pressure 1 m under water, test duration 24 h. The indicated IP protection level is only achieved if the cable is properly mounted.				
Ambient temperature range		°C (°F)		
Temperature class / Nominal input power	T4-10 W		-30 ... +70 (-22 ... +158)	
	T5-10 W		-30 ... +55 (-22 ... +131)	
	T6-10 W		-30 ... +40 (-22 ... +104)	
		Datasheet	Type	
General information		GI_0060	products and operating conditions	
Operating instructions		15312		
Mounting surface		SMT_0019	Size 06	
Subplates		DP*_0002		
Spare parts		SP_8010		

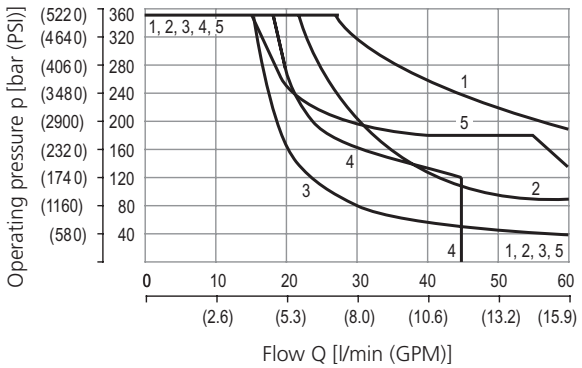
Spool Symbols

Type	Symbol	Interposition	Type	Symbol	Interposition
Z11			R11		
C11			H51		
H11					
Y11					

Characteristics measured at ν = 32 mm²/s (156 SUS)

Operating limits (p-Q)

Ambient temperature 70 °C (158 °F), Voltage U_n -10 % (24 V DC), Power P_n 10 W

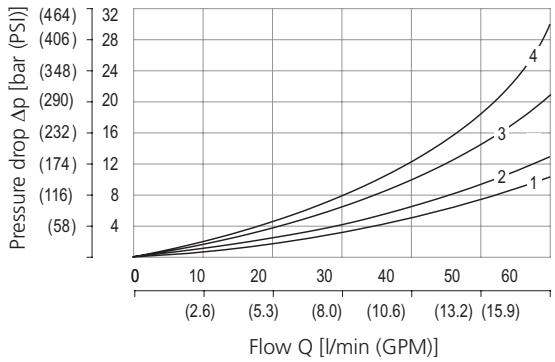


1	Z11
2	Y11
3	H11
4	C11
5	H11, H51

Operating limits of other than shown versions consult with our technical department.

Characteristics measured at ν = 32 mm²/s (156 SUS)

Pressure drop related to flow rate (Δp-Q)

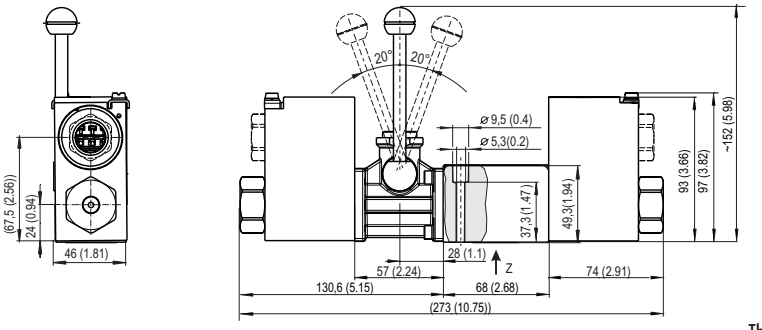


	P→A	P→B	A→T	B→T	P→T
Z11	1	1	2	2	
Y11	1	1	1	1	
C11	3	3	3	4	2
H11	1	1	1	2	2
2H11	1	1	1	2	2
2H51		1	2		

Dimensions in millimeters (in)

The lever operator should never be used when any solenoid is energized.

RPER2X3-063*/A19



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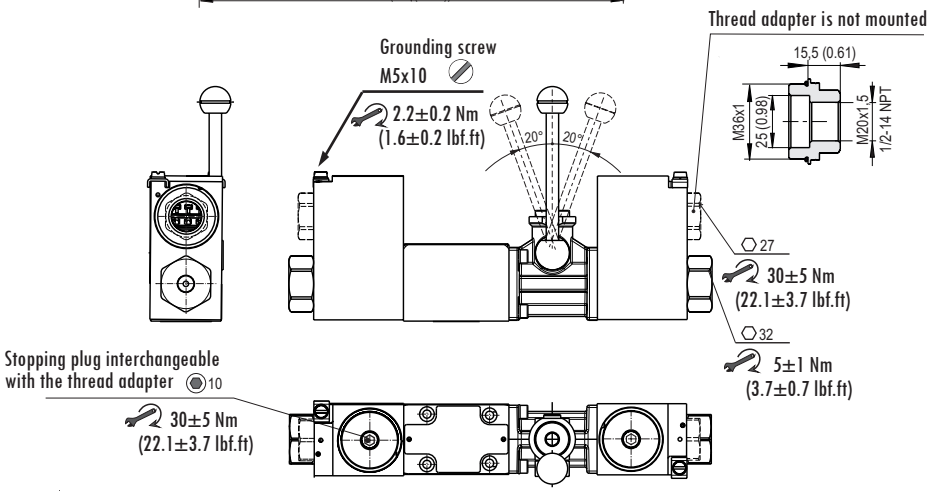

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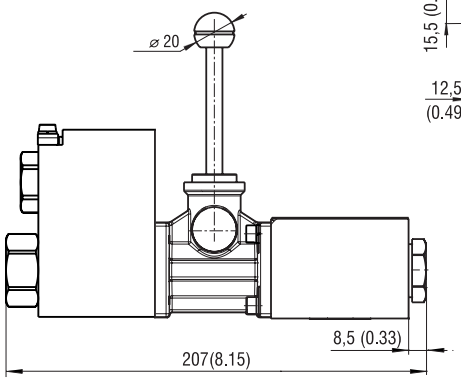
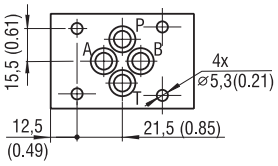
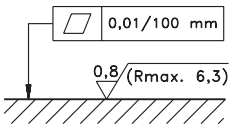




Mounting screws 8.9+1 Nm (7+0.7 lbf.ft)
M5x45 DIN 912-10.9 4



Required surface quality of the counterpart

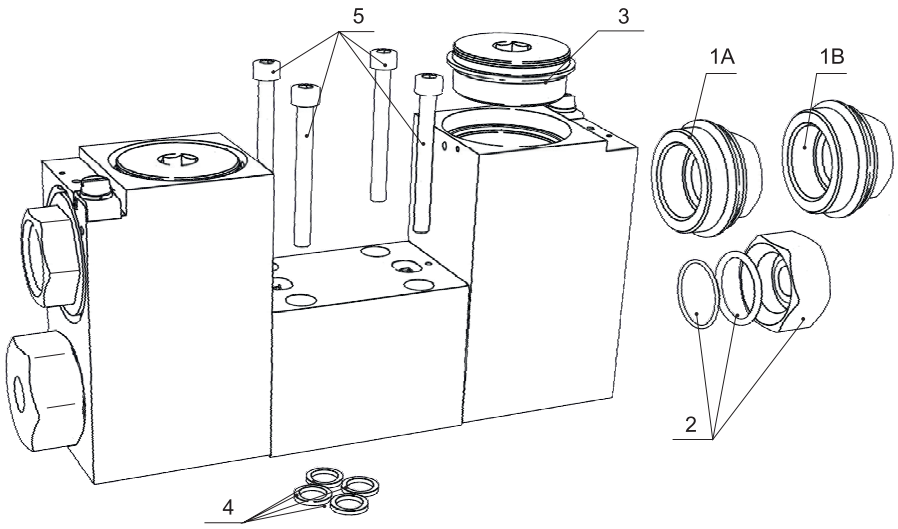
Manual lever and actuating section is shown in the standard supplied position which is the most frequently used. Both elements can be rotated to various positions 90° apart. For other positions of lever and actuating section consult our technical department for their identification.

Ordering

The access to the terminal is covered by a steel plug with a seal, mounted on the upper surface of the coil casing. A second hole in the casing is provided for a thread adapter with an optional M20x1.5 (M key) or ½ NPT ANSI (NPT key) thread. The thread adapter with a seal is included because the design of the coil casing allows the axial input of the power cable to be easily changed to vertical by interchanging the plug and thread adapter.

SPARE PARTS

Position		Component name	Description	Ordering number
1A		Thread adapter with the thread M20x1.5	Set with the sealing ring 36x2 VQM (silicone)	44915100
1B		Thread adapter with the tapered thread ½ NPT ANSI	Set with the sealing ring 36x2 VQM (silicone)	44915000
2	Set	Coil nut	Nut	44915200
		Sealing ring actuating system-coil	O-ring 22x1.5 VMQ 50 (silicone)	
		Nut sealing	O-ring 21.89x2.62 VMQ 70 (silicone)	
3		Stopping plug	Set with the sealing ring 36x2 VQM (silicone)	44923800
4		Set of seals	4x Square ring 9.25x1.68 NBR	15845200
5	Set	Valve mounting screws	4x M5x45 DIN 912 10.9	15845100



Information for customers

› Before installing the product, please read the Product Instructions for Use, which is available in full on the manufacturer's website (www.argo-hytos.com) near the data sheet. Please also pay attention to the chapter describing the target user group, their professional qualifications and medical fitness to install, use and repair the product.

› The product may only be used in the zones indicated, otherwise there is a risk of initiating an explosion

Area of application

Equipment - group I – MINES	**Equipment - group II (IIG) - GAS**		**Equipment - group III (IID) - DUST**	
Category M1 – **NO**	Zone 0 - **NO**		Zone 20 - **NO**	
Category M2 (the device remains switched off)	Zone 1 Zone 2	IIA (propane)	Zone 21 Zone 22	IIIA (combustible particles)
		IIB (ethylene) + H2		IIIB (non-conductive dust)
				IIIC (conductive dust)

Note: The valve may be used in potentially explosive hydrogen atmospheres belonging to Group IIC. However, it cannot be used for other Group IIC gases, e.g. acetylene.

› For use in the temperature class, the maximum ambient temperature (see technical data table) must be observed for the coil input (10 W) the maximum working fluid temperature of 70 °C and the nominal coil supply voltage.

› The user must ensure free heat dissipation from the valve surface. The surface must not be covered, exposed to a heat source or direct sunlight. When mounting the valves in groups, observe the minimum distances specified in the Instructions for Use.

› Use a certified cable and a cable gland with protection "d" to prevent the penetration of hot gases into the surrounding environment when an explosion is initiated in the interior of the flameproof enclosure. The insulation must match the temperature class.

› It is forbidden to install, dismantle or repair the product in an explosive atmosphere. Repairs to the product shall be carried out by the manufacturer, except for repairs permitted by the user under the conditions specified in the Instructions for Use.

› Attention! The surface of the coil and the valve gets hot during operation. There is a risk of skin burns if touched.