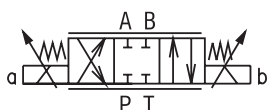
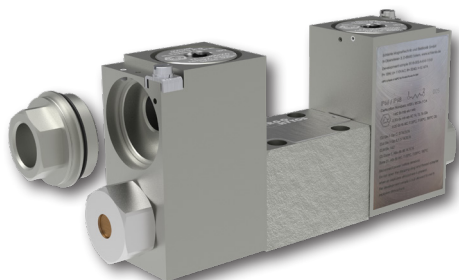


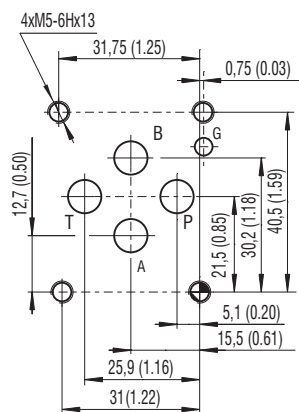
Explosion Proof Proportional Directional Control Valve

PRM2X2-06

Size 06 (D03) • Q_{max} 28 l/min (7.4 GPM) • p_{max} 350 bar (5100 PSI)



ISO 4401-03-02-0-05



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

Technical Features

- Hydraulic, proportional, spool-type, directional control valve with cast iron body and connection according to ISO 4401 and DIN 24340 (CETOP 03)
- Maximum operating pressure 350 bar (P, A, B ports) / 210 bar (T port)
- Solenoid coil certification 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 to temperature class T4 (135 °C) depending on 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

Product Description

Direct-acting, proportional, spool-type, directional control valve operated by solenoid. The valve is designed for continuous control of volumetric flow, proportional to the electrical control signal. In practice, the valve is used to continuously control the speed and direction of the hydraulic cylinder piston rod or hydraulic motor shaft speed. The valve is certified for use in potentially explosive atmospheres of gases, vapors, dusts and flammable particles with a high protection level EPL = b. A suitable electronic control unit (not included) should be used to control the valve, which must meet the required degree of protection or be located outside the explosive atmosphere.

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 T4 Gb	Zones 1, 2	"d" (EN /IEC 60079-1)
Ex II 2D Ex tb IIIC T135°C Db	Zones 21, 22	"t" (EN/IEC 60079-31)



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

PRM2X2-06 [] / [] - [] [] B4 [] [] - B []

Explosion proof Proportional Directional Control Valve		Certifications of valve No designation ATEX, IECEx, UKCA, FM APPROVED
Valve size		Surface treatment 520 h salt spray test (ISO 9227)
Spool symbols see the table "Spool Symbols"		Seals NBR
Nominal flow rate at Δp = 10 bar (145 PSI)	10 20 28	Manual override standard detent assembly
Supply voltage / limit current (I_c)	12 24	Temperature class - solenoid nominal input power Class T4 - 18 W
Threaded adapter with thread M20x1.5 ½ NPT ANSI	M NPT	

- For proportional valves with two solenoids, one solenoid must be de-energized before the other solenoid can be charged.
- Mounting bolts M5x45 DIN 912-10.9 or studs must be ordered separately. Tightening torque is 8.9+1 Nm (6.56+0.7 lbf.ft).

Technical Data

Valve size			06 (D03)
Max. operating pressure at ports P, A, B	bar (PSI)	350 (5080)	
Maximal flow at $\Delta p=10$ bar (145 PSI)	l/min (GPM)	10 (2.6), 20 (5.3), 28 (7.4)	
Max. operating pressure at port T	bar (PSI)	210 (3050)	
Fluid temperature range (NBR)	°C (°F)	-30 ... +70 (-22 ... +158)	
Ambient temperature max.	°C (°F)	-30 ... +60 (-22 ... +140)	
Hysteresis	%	< 6	
Weight	valve with 1 solenoid	kg (lbs)	2.56 (5.64)
	valve with 2 solenoids		4.06 (8.95)
Technical Data - Explosion proof Solenoid			
Available nominal voltages U_N	V DC	12	24
Available nominal input power	W	18	
Supply voltage fluctuations		$U_N \pm 10\%$	
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.			
Limit current	A	1.32	0.64
Rated resistance at 20 °C (68 °F)	Ω	7.6	31.2
	Datasheet	Type	
General information	GI_0060	products and operating conditions	
Operating instructions	15313		
Mounting surface	SMT_0019	Size 06	
Spare parts	SP_8010		

Spool Symbols

Type	Symbol	Type	Symbol
2Z51		2Y51	
2Z11		2Y11	
3Z11		3Y11	

Manual Override measured at millimeters (in)

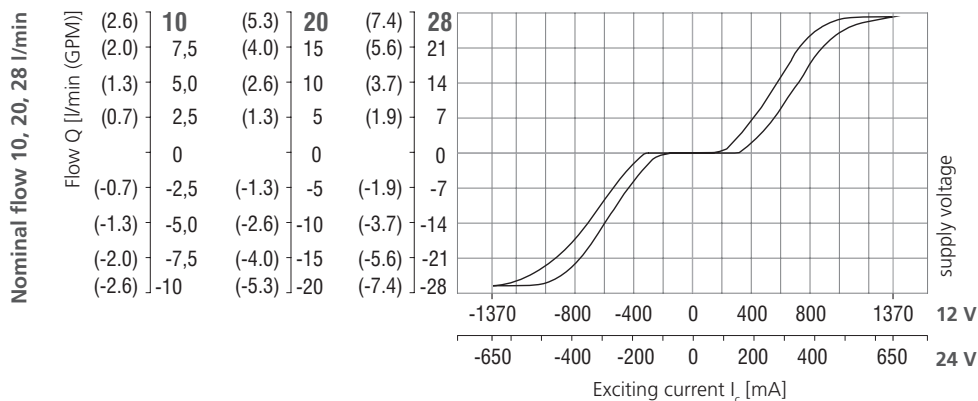
No designation - standard	N7 - detent assembly

In case of solenoid malfunction or power failure, the valve spool can be shifted by manual override under the condition that the pressure in the back line does not exceed 25 bar (363 PSI).

Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

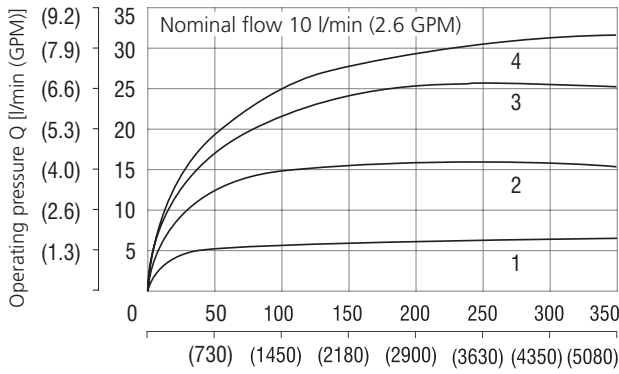
Flow characteristic:

$\Delta p = 10$ bar (145 PSI)
Flow direction:
 $P \rightarrow A / B \rightarrow T$ or $P \rightarrow B / A \rightarrow T$

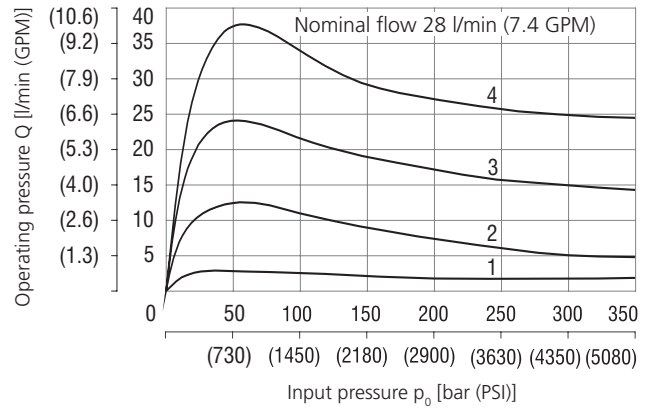
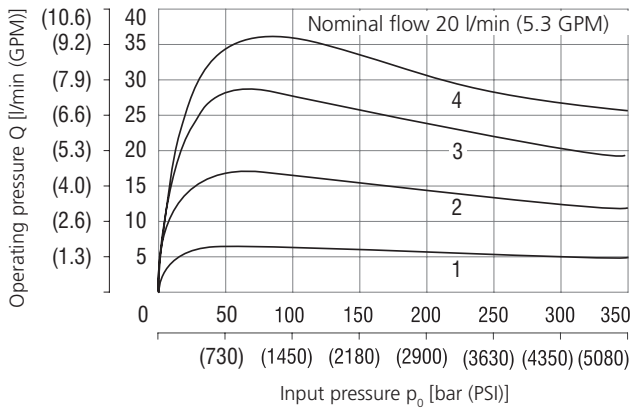


Characteristics measured at $v = 32 \text{ mm}^2/\text{s}$ (156 SUS)

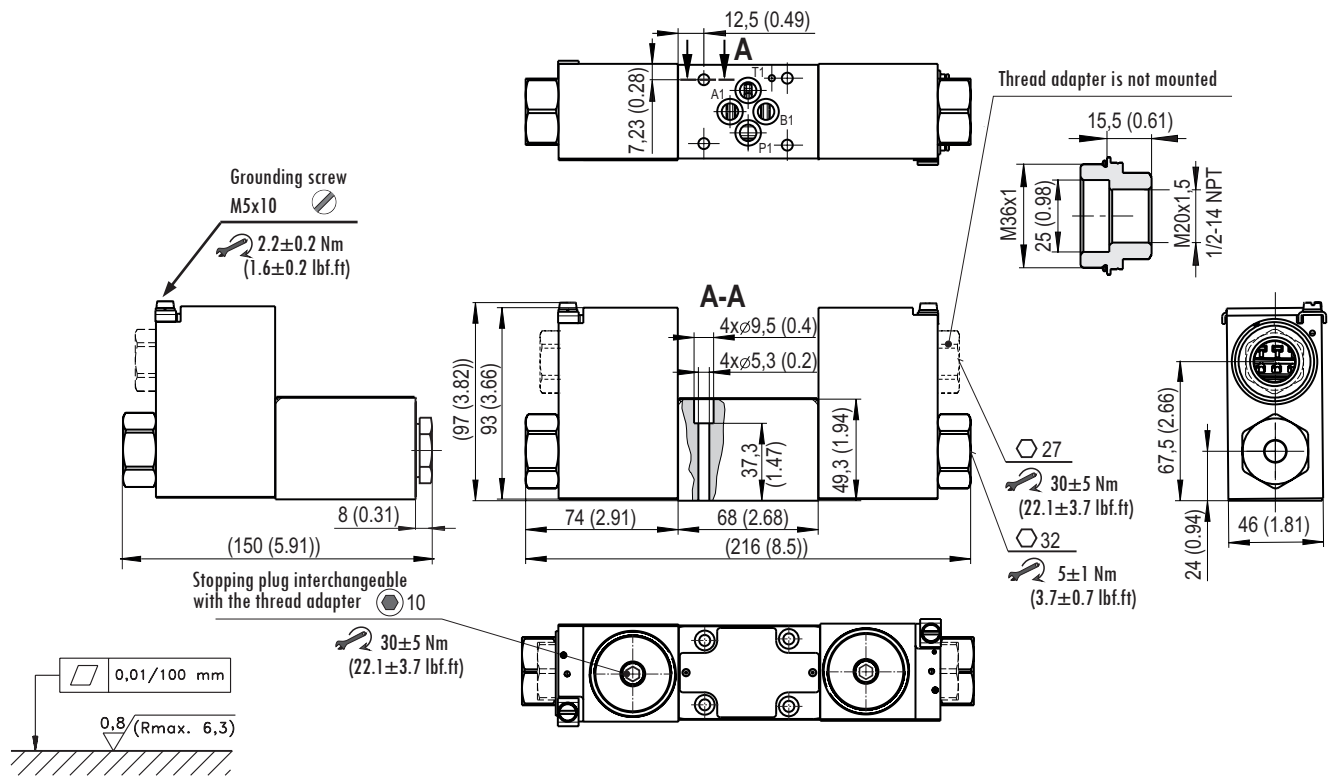
Operating limits:



Solenoid current:	
1	40 %
2	60 %
3	80 %
4	100 %



Dimensions in millimeters (in)



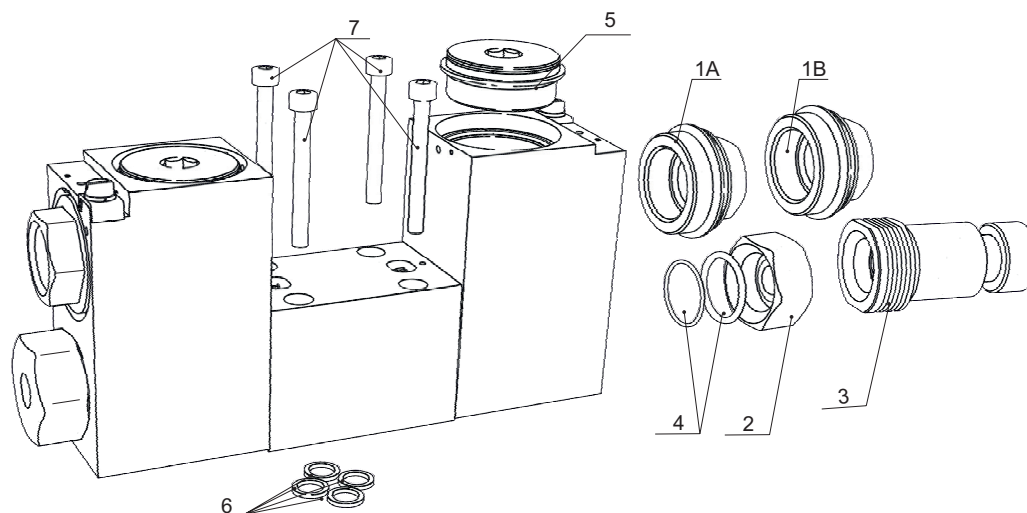
Required surface quality of the counterpart

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 1/2 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	Coil nut	Nut	44915200	
4	Set	Sealing ring actuating system-coil		O-ring 22x1.5 VMQ 50 (silicone)
	Nut sealing	O-ring 21.89x2.62 VMQ 70 (silicone)		
3	Coil nut with manual override N7	Nut	45904200	
4	Set	Sealing ring actuating system-coil		O-ring 22x1.5 VMQ 50 (silicone)
	Nut sealing	O-ring 21.89x2.62 VMQ 70 (silicone)		
5	Stopping plug	Set with the sealing ring 36x2 VQM (silicone)	44923800	
6	Set of seals	4x Square ring 9.25x1.68 NBR	15845200	
7	Set	Valve mounting screws	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	IIA (propane)	Zone 21	IIIA (combustible particles)
	Zone 2	IIB (ethylene) + H2	Zone 22	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 a given coil input (18 W), the maximum temperature of the working fluid 70 °C and the nominal voltage of the coil supply. The 18 W coil valve may only be used in temperature class T4 (135 °C).
- › 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 heats up during operation. There is a risk of skin burns if touched.