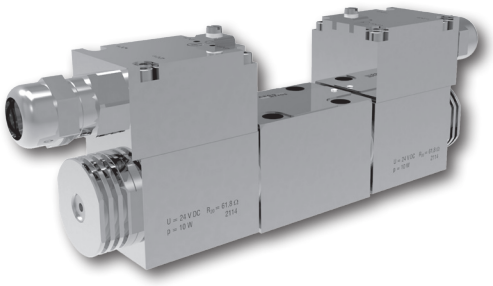
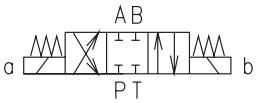
RPEX3-06

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





Technical Features

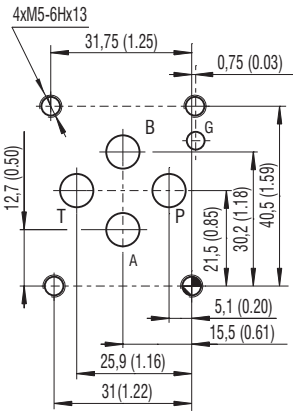
- Valve and solenoid design prevents a surface temperature capable of igniting
- Solenoid coil in acc. with directive 2014/34/EU (ATEX) for explosion-hazard zones
- Explosion protection for gas, dust and mining, Solutions for all zones
- Encapsulation enclosure solenoid version
- Direct acting, directional control valve with subplate mounting surface acc. to ISO 4401, DIN 24340 (CETOP 03) standards
- High transmitted hydraulic power up to 350 bar with optimized design to minimize the flow pressure dropAll ports may be fully pressurised
- Five chambers housing design with reduced hydraulic power dependence on fluid viscosity
- Wide range of manual overrides available
- Coil interchangeability with all Argo-Hytos ATEX/IECEx product line
- In the standard version, the valve is zinc coated for 520 h protection acc. to ISO 9227

ATEX/IECEx Classification

The valves equipped with explosion proof solenoids are available with following certifications and protection modes:

	EPS14ATEX1744 X	IECEx EPS14.0064 X
AC	Ex I M2 Ex mb I Mb	Ex mb I Mb
	Ex II 2G Ex mb IIC T4, T5, T6 Gb	Ex mb IIC T4, T5, T6 Gb
	Ex II 2D Ex mb IIIC T135°C, T100°C, T85°C Db	Ex mb IIIC T135°C, T100°C, T85°C Db
DC	Ex I M2 Ex e mb I Mb	Ex e mb I Mb
	Ex II 2G Ex e mb IIC T4, T5, T6 Gb	Ex e mb IIC T4, T5, T6 Gb
	Ex II 2D Ex tb IIIC T135°C, T100°C, T85°C Db	Ex tb IIIC T135°C, T100°C, T85°C Db

ISO 4401-03-02-0-05



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

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 ports T		bar (PSI)	210 (3050)	
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
Weight	valve with 1 solenoid	kg (lbs)	2.52 (5.56)	
	valve with 2 solenoids		3.97 (8.75)	
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, 18	
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 / 18 W		-30 ... +70/60 (-22 ... +158/140)	
	T5-10 W		-30 ... +55 (-22 ... +131)	
	T6-10 W		-30 ... +45 (-22 ... +113)	
		Data Sheet	Type	
General information		GI_0060	products and operating conditions	
Operating Instructions (for Exproof Valves)		4090		
Mounting surface		SMT_0019	Size 06	
Subplates		Subplates_0002		
Spare parts		SP_8010		

Ordering Code

RPEX3-06 [ ][ ] / [ ][ ][ ][ ][ ] - **B** [ ]

Explosion proof, 4/2 and 4/3, directional control valve, solenoid operated

Valve size

Number of spool positions
two positions **2**
three positions **3**

Spool symbols
see the table „Spool Symbols"

DC voltage
connection box + cable gland
12 V DC / 0.75 A **01200**
24 V DC / 0.39 A **02400**
48 V DC / 0.19 A **04800**
110 V DC / 0.094 A **11000**
AC voltage 50/60 Hz
fix installed cable
110 V AC / 0.112 A **11050**
230 V AC / 0.052 A **23050**

Cable length
No designation (only for DC) without cable
3 (AC and DC version) 3 m
8 (AC and DC version) 8 m

Temperature class - solenoid nominal input power
A4 Class T4 - 10 W
A6 Class T6 (T5) - 10 W
B4 Class T4 - 18 W**

Manual override
No designation standard
N7 detent assembly
N9 without manual override

Seals
No designation NBR

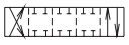
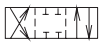
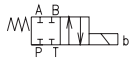
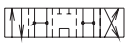
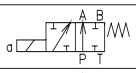
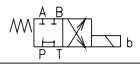
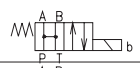
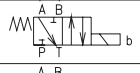
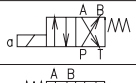
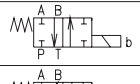
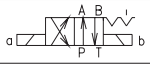
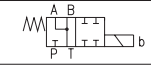
Surface treatment
520 h salt spray test (ISO 9227)

Certifications of valve
No designation ATEX, IECEx
A IECEx for Australia and New Zealand
E EAC for EAEU* States

Coil B4 (18 W) available only in combination with spool **J15

*EAEU= Eurasian Economic Union, certificate according to TR TS 012/2011 valid for the Russian Federation, Belarus, Armenia, Kazakhstan and Kyrgyzstan. • Besides the valve versions shown, which are the most frequently used, other special versions are available. Consult our technical department for their identification, feasibility and operating limits. Mounting bolts M5 x 45 ISO 4762 or studs must be ordered separately. Tightening torque is 8.9+1 Nm (6.56+0.7 lbf.ft).

Spool Symbols

Type	Symbol	Interposition	Type	Symbol	Interposition	Type	Symbol	Interposition
Z11			R30			Z11		
C11			A51			X30		
H11			Y51			C11		
Y11			C51			H11		
M21			H51			N11		
N41			X51			B71		
J15			Y13			V41		

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

Operating limits

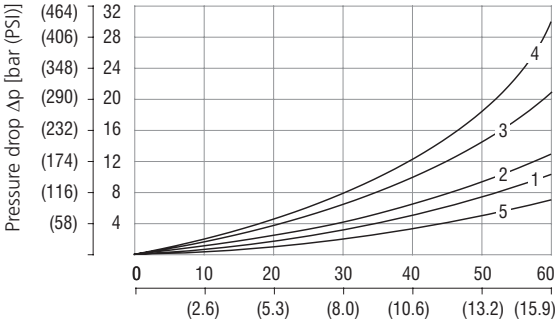
Ambient temperature 70 °C (158 °F), Voltage U_n -10 % (24 V DC), Power P_n 10 W

1	R30, X30, J15*
2	Z11
3	Y11, N11, V41
4	H11, B71
5	C11
6	H11, H51
7	C51
8	M21
9	A51

Operating limits of other than shown versions consult with our technical department. *Spool J15 is available only with Coil B4 (18 W).

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

Pressure drop related to flow rate



	P→A	P→B	A→T	B→T	P→T		P→A	P→B	A→T	B→T	P→T
Z11, J15*	1	1	2	2		Y11	1	1	1	1	
C11	3	3	3	4	2	R30	1	1	2	2	
H11	1	1	1	2	2	X30	1	1	2	2	
B71	1			1		2C51	3			4	2
2A51	1	1				2H11	1	1	1	2	2
2H51		1	2			3M21	1	6	1	1	

*Spool J15 available only with solenoid B4 (18 W)

Samples of Marking

Marking of solenoid

10 W

Schienle Magnettechnik und Elektronik GmbH.
In Oberwiesen 3, D-88682 Salem, www.schienle.de

EX18 046 10W 24 V DC IP66 / IP68

U_N = 24 V DC R_{20} = 61,8 Ω I_G = 0,34 A P_{20} = 9,3 W

EPS 14 ATEX 1 744 X / IECEx EPS 14.0064X
I M2 Ex e mb I Mb
II 2G Ex e mb IIC T4, T5, T6 Gb
II 2D Ex tb IIIC T135°C, T100°C, T85°C Db

T4 (T135°C) -40°C ≤ Tamb ≤ +70°C
T5 (T100°C) -40°C ≤ Tamb ≤ +55°C
T6 (T85 °C) -40°C ≤ Tamb ≤ +45°C
CE 2004

external fuse $I_N \leq 3x\ I_G$

FA2020-0694/008
42140900 09/20

18 W

Schienle Magnettechnik und Elektronik GmbH.
In Oberwiesen 3, D-88682 Salem, www.schienle.de

EX18 046 18W 24 V DC IP66 / IP68

U_N = 24 V DC R_{20} = 32,3 Ω I_G = 0,65 A P_{20} = 17,8 W

EPS 14 ATEX 1 744 X / IECEx EPS 14.0064X
I M2 Ex e mb I Mb
II 2G Ex e mb IIC T4 Gb
II 2D Ex tb IIIC T135°C Db

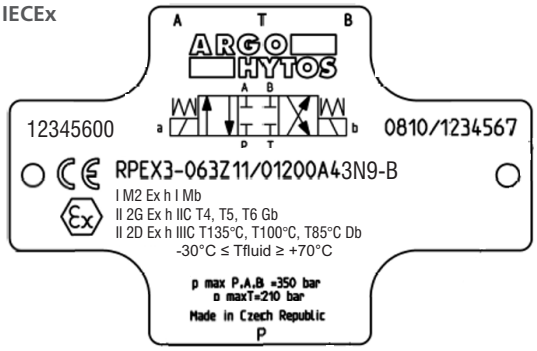
-40°C ≤ Tamb ≤ +60°C
CE 2004

external fuse $I_N \leq 3x\ I_G$

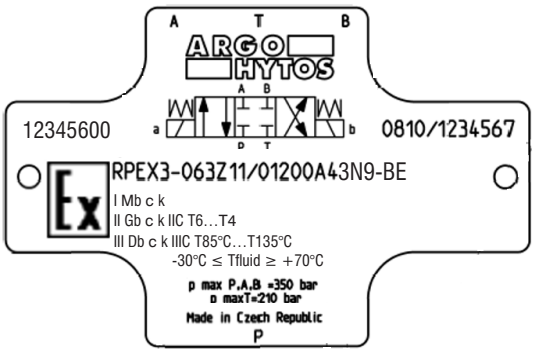
FA2020-0798/008
42140000 12/20

Marking of non-electrical part of valve

ATEX / IECEx



EAC



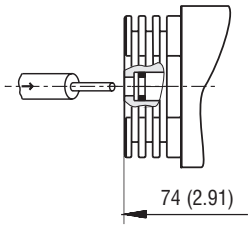
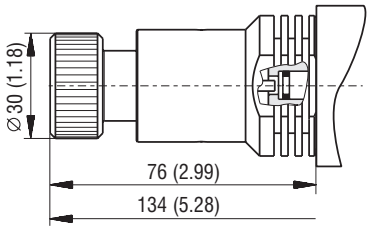
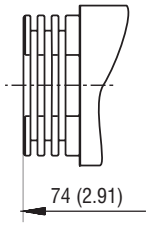
Group I (mining)

Ex	ATEX mark of conformity to the 2014/34/EU directive and to the technical norms.
I	Group I for mines
M2	High protection - equipment category
Ex e mb	Type of protection: e - increased safety, mb - encapsulated
I	Gas group (Methane)
Mb	Equipment protection level - High level protection for explosive atmosphere

Group II

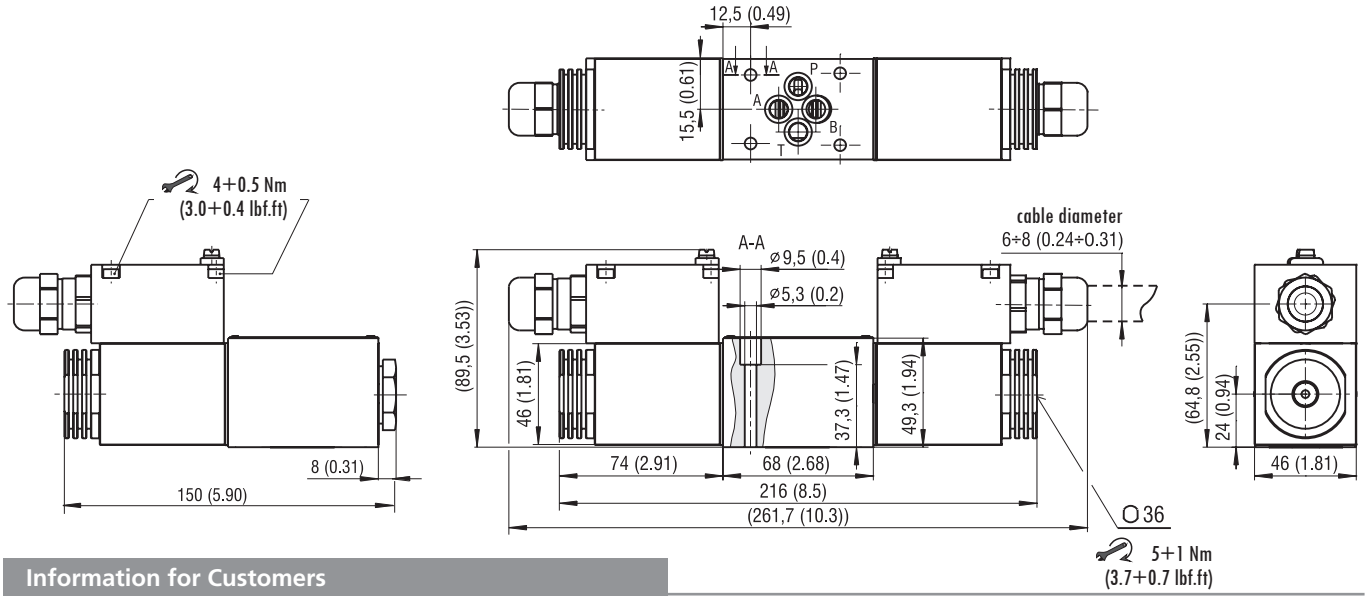
Ex	ATEX mark of conformity to the 2014/34/EU directive and to the technical norms.
II 2G	Solenoid for surface plants with Gas and Vapors environment for zones 1 and 2.
II 2D	Solenoid for surface plants with Dust environment for zones 21 and 22.
Ex e mb	Type of protection: e - increased safety, mb - encapsulated
Ex tb	Type of protection: tb - protection by enclosure
IIC	Equipment suitable for substances (gas) of all group
IIIC	Equipment suitable for all kinds of dust
T6/T4	Temperature class (maximum solenoid surface temperature)
T85/T135	Maximum solenoid surface temperature
Gb	Equipment protection level - High level protection for explosive Gas atmosphere
Db	Equipment protection level - High level protection for explosive Dust atmosphere

Manual Override in millimeters (inches)

No designation - standard	N7 - detent assembly	N9 - without manual override
		

In case of solenoid malfunction or power failure, the spool of the valve can be shifted by manual override as long as the pressure in port T does not exceed 25 bar (363 PSI). For alternative manual overrides contact our technical support.

Dimensions in millimeters (inches)



Information for Customers

Initial installation

- The ambient temperature range shall not overstep the temperatures given in the chapter Technical Data - Explosion proof solenoid (page 1). The maximum temperature of the medium (generally hydraulic fluid) shall not exceed 70 °C (158 °F).
- It is the users duty to ensure free and unhindered heat emission during operation. This means that the solenoid shall neither be covered not stored immediately adjecent to heat sources (e.g. fan heaters) during operation.
- Care is to be given that the solenoid is not subjected to direct sunlight during operation.

Installation notice - installation, mounting, demounting

- Installing the type V DC for temperature class T4 a cable with an ambient operating temperature of at least +105 °C (+221 °F) is to be used. For T5 and T6 a cable with an ambient operating temperature of a least +90 °C (+194 °F) is sufficient. The fastening torque on the cable gland depends of the used cable and is to be determined by installing user.
- When installing the V DC solenoid type, please note the fastening torque of the screws (4 Nm or 2.95 lbf.ft) and of the Connection box (0.4 Nm or 0.30 lbf.ft).
- When installing the V DC solenoid connection box an appropriate wires max. 2.0 mm2 are to be used. When installing the V DC solenoid grounding an appropriate cable shoe M3 - 0.75 mm2 with an ambient operating temperature of at least +125 °C or +257 °F) is to be used.
- The cable shoe fix by grounding screw next to the connection box under the cover of the solenoid.
- The user has to safeguard each solenoid with a fuse: $I_n \leq 3xI_G$, with tigger characteristic "slow blow". (I_G values see Operating Instructions HA 4090 - Table 2). The breaking capacity of the fuse link has to be stronger than the max short circuit current at the users operating area.
- EX-secured components must be used during mounting in case the fuse and/or the interface are within the EX-range.
- In addition, the solenoid may be connected to ground via the purpose-built ground clamp an the connector casing.

Safety notice - please read carefully

- In case the solenoid shows any signs of a defect, malfunctioning or external damage (including corrosion), the device must immediately be taken out of operation.
- Any deposits on the surface of the device shall not obstruct heat emission.
- To maintain legibility of the date plate, the solenoid must not be coated.

Caution

- Always disconnect the solenoid from the power supply before any maintenance or other work on it.
- Always exchange the complete solenoid. Do not try to repair the solenoid.
- In no case shall any changes be made to the solenoid or the connecting cable.
- Demount the solenoid only in secure areas (not in EX-areas). If this is not possible, the solenoid must cool for 10 minutes minimum.