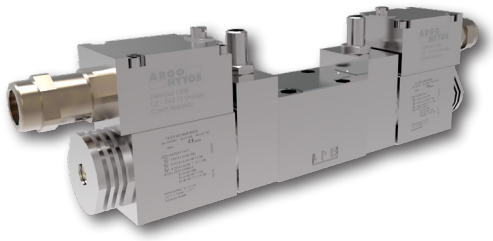
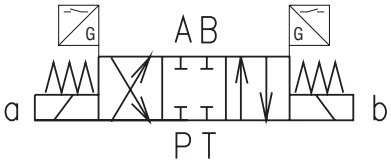
RPEX3-06*S6

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





Technical Features

- Solenoid coil in acc. with directive ATEX 2014/34/EU for explosion-hazard zones
- Explosion protection for gas
- Valve and solenoid design prevents a surface temperature capable of igniting
- Encapsulation enclosure solenoid version
- Direct acting, directional control valve with subplate mounting surface acc. to ISO 4401, DIN 24340 (CETOP 03) standards
- Inductive spool position contactless sensor
- High transmitted hydraulic power up to 350 bar with optimized design to minimize the flow pressure drop
- Five chambers housing design with reduced hydraulic power dependence on fluid viscosity
- Wide range of interchangeable spools and 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

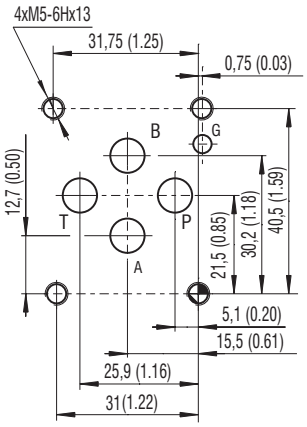
ATEX/IECEx Classification

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

Certificate number	EPS14ATEX1744 X	IECEx EPS14.0064 X
AC solenoid	Ex II 2G Ex mb IIB T4, T5, T6 Gb	Ex mb IIB T4, T5, T6 Gb
DC solenoid	Ex II 2G Ex e mb IIB T4, T5, T6 Gb	Ex e mb IIB T4, T5, T6 Gb
Certificate number	PTB 01 ATEX 2207 X	IECEx PTB14.0013 X
Proximity sensor	Ex II 2G Ex ia IIC T6 Gb	Ex ia IIC T6/T4 Gb

Complete valve assembly	Ex II 2G Ex h IIB T4...T6

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 port 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 and 1 sensor	kg (lbs)	3.02 (6.66)	
Weight – valve with 2 solenoids and 2 sensors	kg (lbs)	4.47 (9.85)	
Technical Data - Explosion proof Solenoid			
Voltage type		AC 50/60 HZ	DC
Available voltages	V	110, 230	12, 24, 48, 110
Available nominal power	W	10,18	
Supply voltage tolerance	%	AC: ±10	DC: ±10
Duty cycle		(100 % ED)	
Enclosure type of the Solenoid to EN 60529		IP65	
Ambient temperature range			
Temperature class / Nominal power – T4-10 W / 18 W	°C (°F)	-25 ... +70/60 (-13 ... +158/140)	
Temperature class / Nominal power – T5-10 W	°C (°F)	-25 ... +55 (-13 ... +131)	
Temperature class / Nominal power – T6-10 W	°C (°F)	-25 ... +45 (-13 ... +113)	

	Data Sheet	Type
General information	GI_0060	products and operating conditions
Mounting surface	SMT_0019	Size 06
Subplates	DP*_0002	
Spare parts	SP_8010	

Ordering Code

RPEX3-06 [ ] [ ] / [ ] [ ] [ ] [ ] **S6**-[ ]

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

Valve size

Number of valve 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**

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

Cable length
No designation (only for DC) without cable
3 (AC and DC version) 3 m Solenoid, 2 m Sensor
8 (AC and DC version) 8 m Solenoid, 10 m Sensor

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

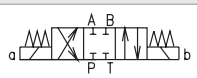
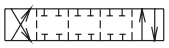
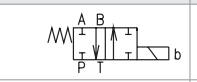
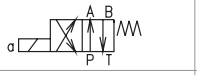
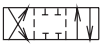
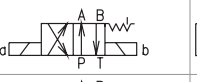
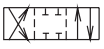
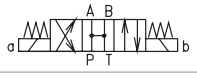
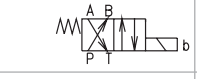
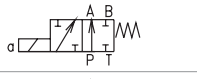
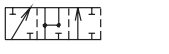
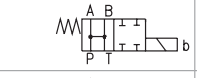
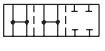
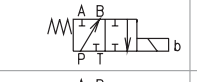
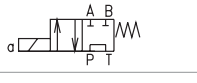
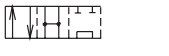
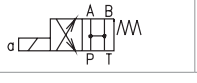
S6 **Spool position monitoring**
210 bar (3050 PSI) at port T

B **Surface treatment**
520 h salt spray test (ISO 9227)

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

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.

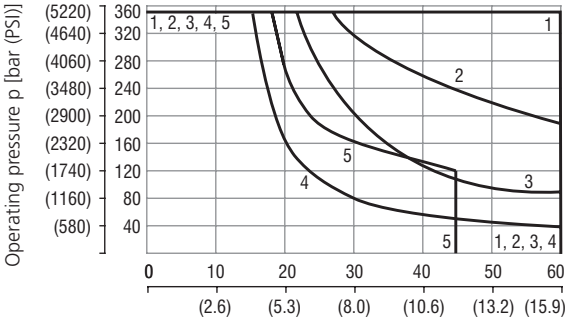
Spool Symbols

Type	Symbol	Interposition	Type	Symbol	Interposition	Type	Symbol	Interposition
Z11			Y11			B71		
C11			R30			J15		
H11			X30			N11		
2A51			2H11			V41		
2C51			2H51			3M21		

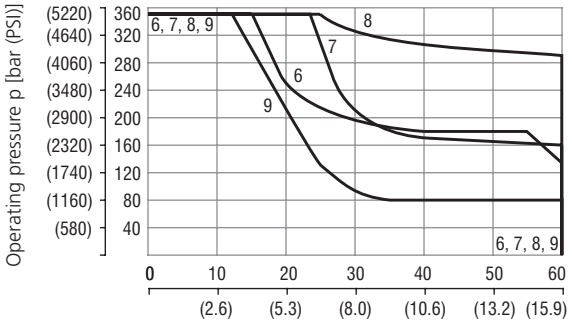
Characteristics measured at ν = 32 mm²/s (156 SUS)

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

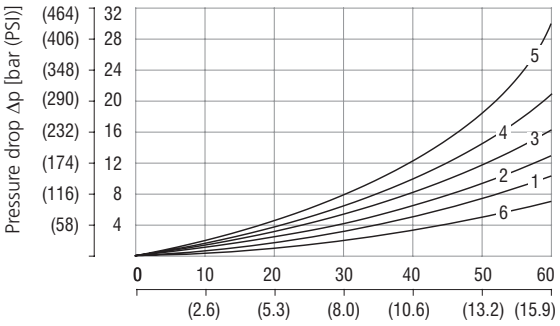


6	2H11, 2H51
7	2C51
8	3M21
9	2A51

Operating limits in other than shown directions consult with our technical department. *Spool J15 available only with solenoid B4 (18 W).

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

Pressure drop related to flow rate

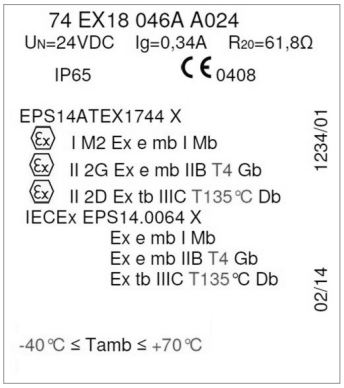


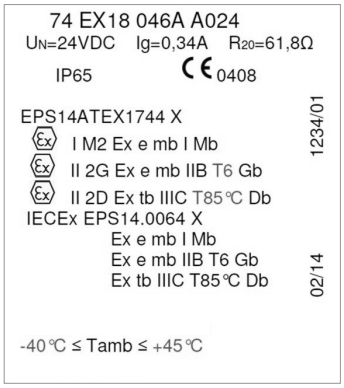
	P→A	P→B	A→T	B→T	P→T		P→A	P→B	A→T	B→T	P→T
Z11, J15*	1	1	2	2		Y11	1	1	1	1	
C11	4	4	4	5	2	R30	1	1	2	2	
H11	1	1	1	2	2	X30	1	1	2	2	
B71	1			1		2C51	1			2	3
2A51	1	1				2H11	1	1	1	2	2
2H51		1	2			3M21	1	6	1	1	

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

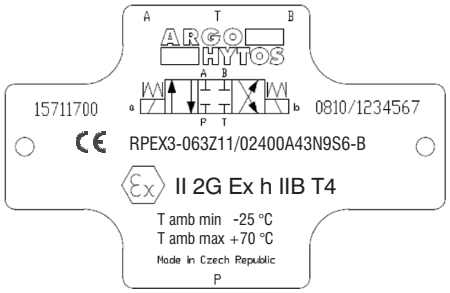
Samples of Marking

Marking of Solenoid





Marking of Complete Assembly



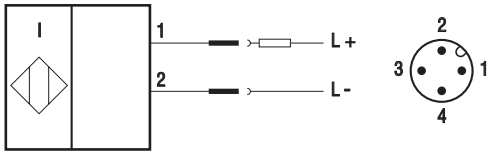
Group II

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.
Ex e mb	Type of protection: e - increased safety, mb - encapsulated
IIB	Equipment suitable for substances (gas) of group IIB
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

Spool Position Sensor

S6 - Circuit diagram of the sensor

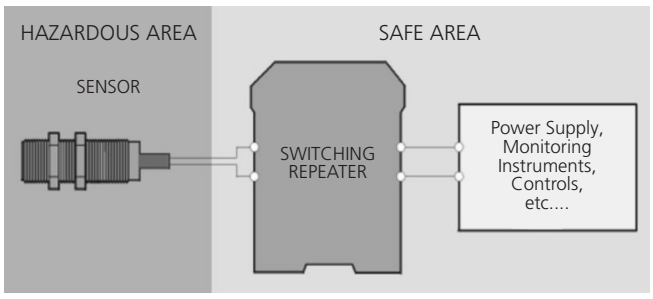
NAMUR



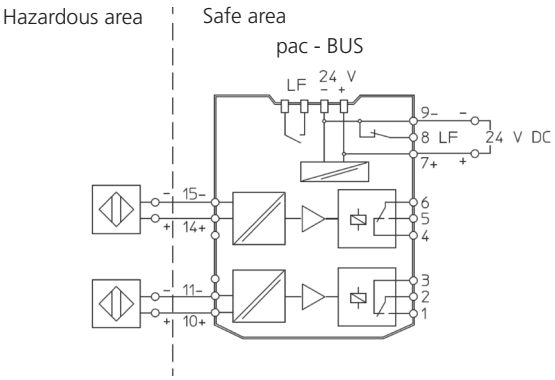
Technical Data of the Sensor			
Power supply voltage range	V DC	7,7 ... 9	
Current	mA	≥ 4 (level 1)	≤ 1 (level 2)

Sensor has to be electrically fed by means of a safety barrier (Switching Repeater) for intrinsically safe circuits.
For details see Operating manual of the sensor - BALLUFF document number 897278.

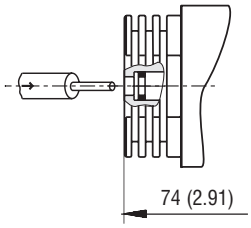
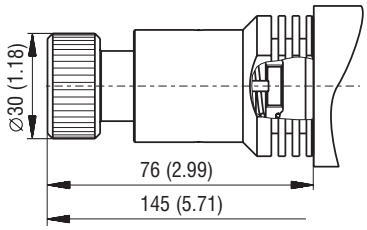
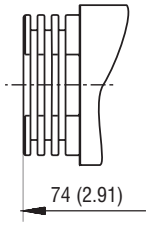
The Sensor on the side "a" responds to switching the coil "a".
The Sensor on the side "b" responds to switching the coil "b".



Example of 2 channels Switching Repeater

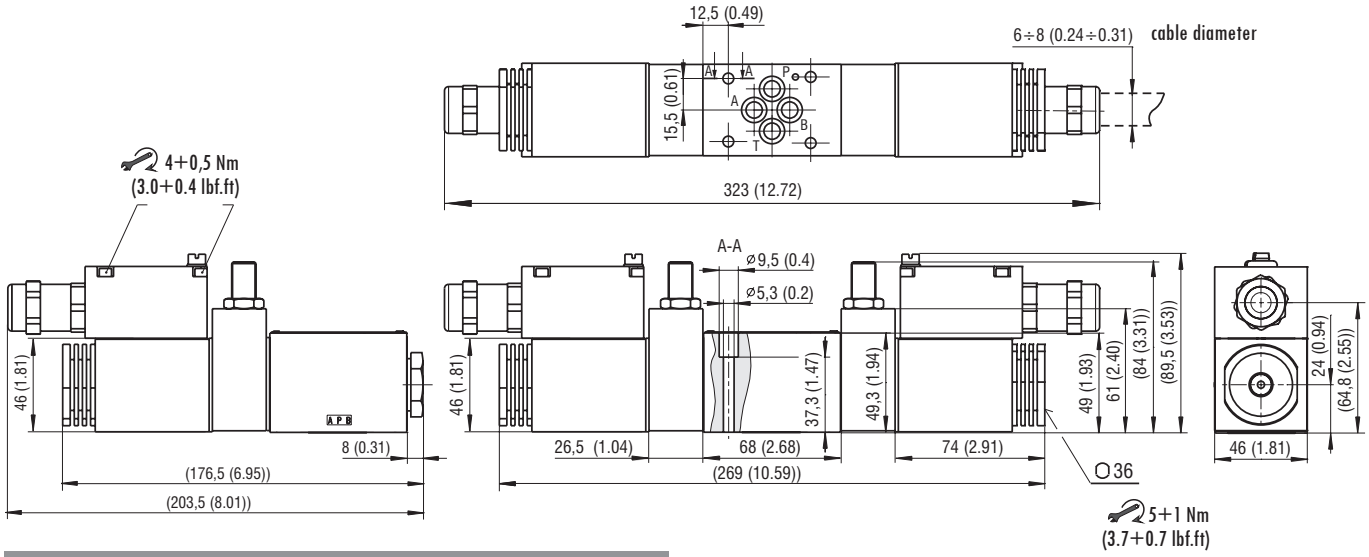


Manual Override in millimeters (inches)

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

In the case of solenoid malfunction or power failure, the spool of the valve can be shifted by manual override.
For other manual overrides consult our technical department.

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 type, an appropriate cable shoe M3 - 0.75 mm^2 (with an ambient operating temperature of at least +105 °C or +221 °F) is to be used.
- 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.