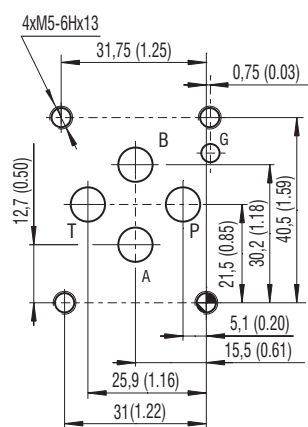

**Technical Features**

- › 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 IIC T4, T5, T6 Gb	Ex mb IIC T4, T5, T6 Gb
DC solenoid	Ex II 2G Ex e mb IIC T4, T5, T6 Gb	Ex e mb IIC 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 IIC T4...T6	

**ISO 4401-03-02-0-05**

 Ports P, A, B, T - max.  $\varnothing$ 7.5 mm (0.29 in)

**Technical Data**

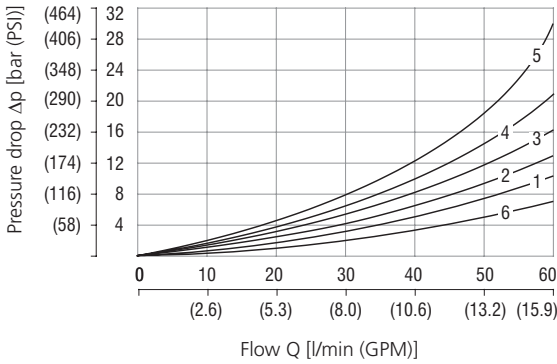
Valve size		06 (D03)	
Max. flow	l/min (GPM)	60 (15.9)	
Max. operating pressure at ports P, A, B	bar (PSI)	350 (5080)	
Max. operating pressure at port T	bar (PSI)	210 (3050)	
Pressure drop	bar (PSI)	see $\Delta p$ -Q characteristics	
Fluid temperature range (NBR)	°C (°F)	-30 ... +70 (-22 ... +158)	
Max. switching frequency	1/h	15 000	
Switching time ON at $v=32$ mm <sup>2</sup> /s (156 SUS)	ms	AC: 30 ... 40	DC: 30 ... 50
Switching time OFF at $v=32$ mm <sup>2</sup> /s (156 SUS)	ms	AC: 30 ... 70	DC: 10 ... 50
Weight	valve with 1 solenoid and 1 sensor	3.02 (6.66)	
	valve with 2 solenoids and 2 sensors	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: $\pm$ 10	DC: $\pm$ 10
Duty cycle		(100 % ED)	
Enclosure type of the Solenoid to EN 60529		IP 68	
Ambient temperature range			
Temperature class / Nominal power	T4-10 W / 18 W	°C (°F)	-25 ... +70/60 (-13 ... +158/140)
	T5-10 W		-25 ... +55 (-13 ... +131)
	T6-10 W		-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	



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

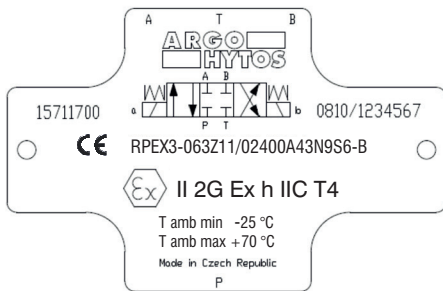
**Pressure drop related to flow rate**



	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**

74 EX 18 046A A024  
 $U_N=24V \text{ DC}$   $I_g=0,34A$   $R_{20}=61,8\Omega$   
 IP 66/68 **CE** 0408  
 EPS14ATEX1744 X  
 I M2 Ex e mb I Mb  
 II 2G Ex e mb IIC T4 Gb  
 II 2D Ex tb IIC T135 °C Db  
 IECEx EPS14.0064 X  
 Ex e mb I Mb  
 Ex e mb IIC T4 Gb  
 Ex tb IIC T135 °C Db  
 -40 °C ≤ Tamb ≤ +70 °C

74 EX 18 046A A024  
 $U_N=24V \text{ DC}$   $I_g=0,34A$   $R_{20}=61,8\Omega$   
 IP 66/68 **CE** 0408  
 EPS14ATEX1744 X  
 I M2 Ex e mb I Mb  
 II 2G Ex e mb IIC T6 Gb  
 II 2D Ex tb IIC T85 °C Db  
 IECEx EPS14.0064 X  
 Ex e mb I Mb  
 Ex e mb IIC T6 Gb  
 Ex tb IIC T85 °C Db  
 -40 °C ≤ Tamb ≤ +45 °C

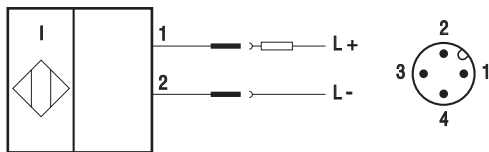
**Group II**

- 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
- IIC** Equipment suitable for substances (gas) of all group
- 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**

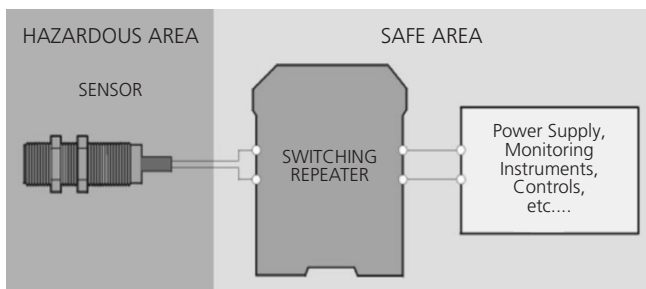
NAMUR



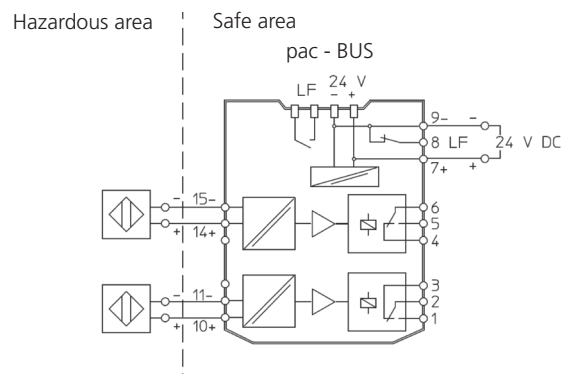
Technical Data of the Sensor		
Power supply voltage range	V DC	7,7 ... 9
Current	mA	≥ 4 (level 1)    ≤ 1 (level 2)

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**

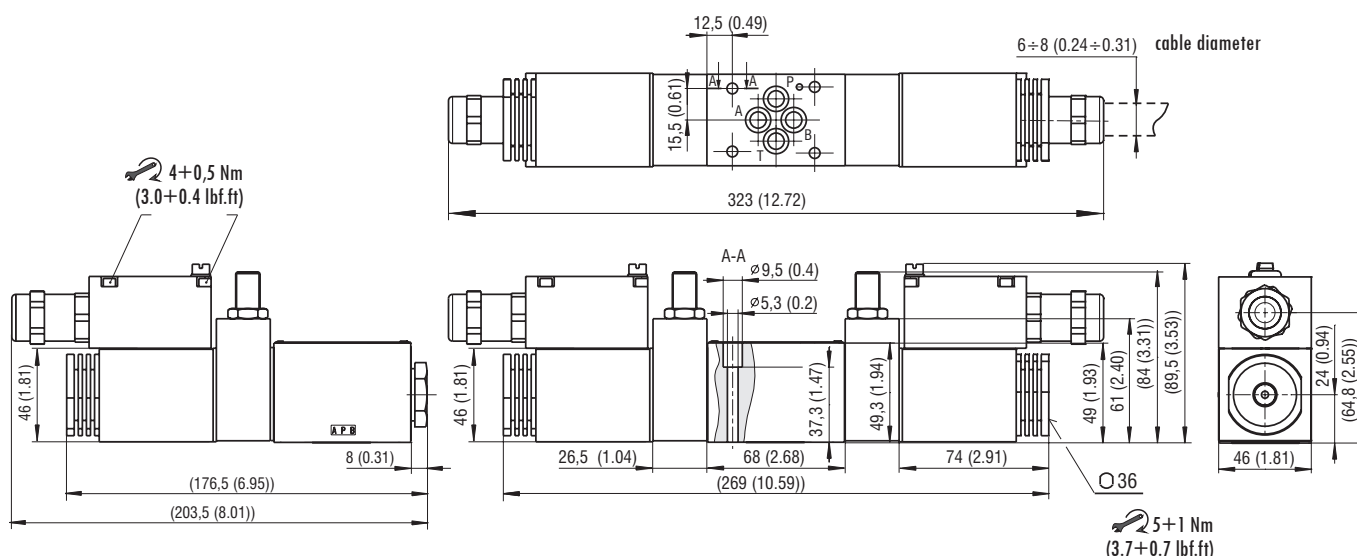


## Manual Override in millimeters (inches)

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 adjacent 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<sup>2</sup> (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:  $I_n \leq 3I_G$ , 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.

