

ASCO™ Mini-Solenoid Valves

intrinsically safe, II 1 G Ex ia IIB or IIC T6 to T4 Ga, II 1 D Ex ia IIIC T85°C to T135° Da
ISO 15218 (CNOMO, size 15) interface, direct operated, pad mounting body, connector size 15

3/2
Series
302

Features and Benefits

- Mini-low consumption valves (0.25 W/0.5 W) for use in potentially explosive atmospheres according to ATEX-Directive 2014/34/EU
EC type examination certificate no.: **INERIS 03 ATEX 0249X**
IECEX Certificate of Conformity no.: **IECEX INE 10.0002X**
- Compliance with the Essential Health and Safety Requirements has been assured by compliance with the International and European Standards IEC and EN: 60079-0 and 60079-11
- The valve's Ex ia protection allows it to be installed in explosive atmospheres up to zone 0 or 20. It can be used in the chemical, oil and pharmaceutical industries, or in processing and packaging plants for flammable products (paints, solvents)
- Compact, monobloc pilot valve with spade plug. Connection according to DIN 43650, form C, 9.4 mm pin spacing
- Version with integrated display and electrical protection. LED visible from 3 sides



General

Differential pressure	0 - 8 bar [1 bar = 100 kPa]
Pneumatic base	ISO 15218 (CNOMO E06.36.120N, size 15)
Connection	Subbase
Response time	20 ms

Fluids (*)	Temperature range (TS)	Seal materials (*)
air or inert gas filtered (50 µm), without condensate, dew point: -20°C	0°C to + 40°C (0.25 W)	NBR (nitrile)
	- 10°C to + 40°C (0.5 W)	FPM (fluoroelastomer)

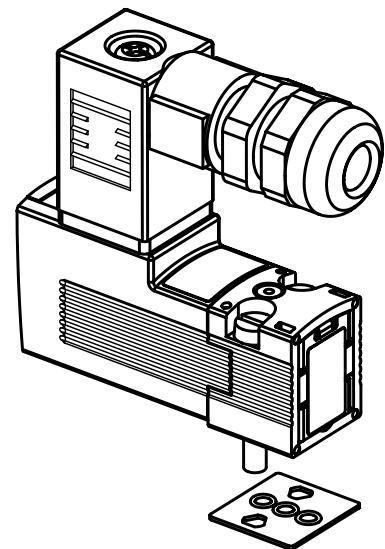
Materials of components in contact with fluid

(*) Ensure that compatibility of materials in contact with fluids is verified.

Body	PARA
Internal parts	POM, PET, stainless steel and brass
Seals	NBR, FPM
Pneumatic interface seal	TPE

Other components

Coil	Thermoplastic PET
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PNEUMATIC CNOMO interface

Safety code

- II 1 G Ex ia IIB or IIC T6 to T4 Ga
- II 1 D Ex ia IIIC T 85°C to T135°C Da

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Electrical characteristics

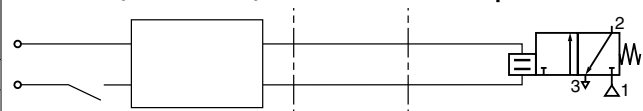
Coil insulation class	F
Connector	Spade plug (cable Ø 4-6 mm)
Connector specification	DIN 43650, 9.4 mm, form C
Electrical safety	IEC 335
Electrical enclosure protection	Moulded IP65 (EN 60529)
Standard voltages	DC (=) : 12V - 24V ⁽²⁾ (0.25 W = 24 V only)

voltage (U _n) (max. ripple 10%)	power ratings (P _n) ^(*)	typical functional ratings					ambient temperature range (TS)	type ⁽¹⁾
		I _(ON) min. with LED	U _(ON) min.	U _(MAX) recommended	U _(OFF) turn off	I _(OFF) turn off		
(V)	(W)	(mA)	(V)	(V)	(V)	(mA)	(°C) ⁽¹⁾	
LP1 "24V"	0.25	20	12.2	28	3.3	7	0 to +40/50/60	01
LP1 "12V"		33	11.9	23	3.3	10	-10 to +40/50/60	
LP1 "24V"		25	16.4	28	5.7	7		

(*) Nominal power ratings of standard versions (with LED indicator and electrical protection)

PN (W)	Safety parameters				
	U _i (V)	I _i (mA)	P _i (W)	C _i (µF)	L _i (µH)
0.25/0.5	Interface type 1 (version 12 V or 24 V) - group IIC				
	28	120	1.6	0	0
	Interface type 2 (version 12 V or 24 V) - group IIC				
	26	150	1.6	0	0
	Interface type 3 (version 12 V or 24 V) - group IIC				
	20	300	1.6	0	0
Interface type 4 (version 12 V or 24 V) - group IIB & IIIC					
28	299	1.6	0	0	
Interface type 5 (version 12 V) - group IIC & IIIC					
17	220	(3.74)	0	0	

Example of use with a Zener barrier installed in a non-hazardous zone: safe area (RS interface) cable explosive area



Temperature classification table DC (=)

P _i (Watt)	maximum ambient °C ⁽²⁾								
	surface temperature								
	T6 (85°C)		T5 (100°C)		T4 (135°C)		T3 (135°C)		
	12V	24V	12V	24V	12V	24V	12V	24V	
Insulation class F (155°C) 100% E.D. ⁽³⁾									
1.6	38 (40)	33 (40)	50 (60)	48 (60)	80 (80)	80 (80)	-	-	single solenoid valve
1.6	-	-	44 (55)	40 (45)	79 (80)	75 (80)	-	-	solenoid valve mounted in series
3.74	-	-	-	-	50 (55)	-	80 (80)	-	single solenoid valve
3.74	-	-	-	-	45 (40)	-	80 (80)	-	solenoid valve mounted in series

Note: values within parenthesis are related to dust atmospheres

(1) Refer to the dimensional drawings.

(2) **Minimum ambient temperature: 0°C (0.25 W) / -10°C (0.5W)**

(3) Coil designed for permanent duty within maximum ambient temperature limits. The solenoid valve must be connected to a special certified electrical supply unit installed in a non-dangerous zone. List of safety barrier manufacturers on the following page.

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Specifications

orifice size	flow				operating pressure differential (bar)		power coil (W)	basic catalogue number
	at 6.3 bar l/min (ANR)		coefficient Kv		min.	max. (PS)		with impulse / maintained manual operator
	1→2	2→3	1→2	2→3			(=)	
(mm)	1→2	2→3	1→2	2→3				
3/2 NC - normally closed (With LED and protection)								
0.6	4	11	0.04	0.16	0	8	0.25	30215311IAD
	11	20	0.21	0.44	0	8	0.5	30215106IAD

When ordering, please specify in addition to the basic catalogue number:

- voltage:

0.25 W: 24 V DC

0.5 W: 12 V DC or 24 V DC

Examples: with connector DIN 43650, 9.4 mm: 30215311IAD 24V DC

with connector DIN 43650, 9.4 mm: 30215106IAD 12V DC

with connector DIN 43650, 9.4 mm: 30215106IAD 24V DC

Options

- Solenoid valves without LED and electrical protection (0.5 W only)

Installation

- The solenoid valves can be mounted in any position without affecting operation
- Solenoid valve supplied with mounting screws and mounting pad seal(s)
- Electrical connection between solenoid valve and barrier/interface with cable type A or B according to EN 50039
- Installation on single subbase (3 x M5), brass body, catalogue number 30300001
- Versions with spade-plug connector type ISO 15217/DIN 43650 form C with 8 mm spacing or M12 connection: contact us
- Installation/maintenance instructions are included with each valve

See the list for compatible interfaces and barriers.

This list is for reference only and the user must take into account the cables and the actual supply voltages for the barriers.

The operating conditions are calculated as follows:

0.5 W: 12 V or 24 V with LED

$$I_i \text{ (mA)} = \frac{[V_S - 1.2 - 0.003 (R_b + R_l)] \times 1000}{(R_C + R_l + R_b)} + 3$$

0.25 W: 24 V with LED

$$I_i \text{ (mA)} = \frac{[V_S - 1.2 - 0.002 (R_b + R_l)] \times 1000}{(R_C + R_l + R_b)} + 2$$

0.5 W or 0.25 W : 12 V or 24 V without LED

$$I_i \text{ (mA)} = \frac{[V_S - 1.2] \times 1000}{(R_C + R_l + R_b)}$$

This value and the maximum barrier/interface current (if it is non-linear) must be greater than 33 mA (12 V with LED), 25 mA (24 V with LED, 0.5 W), 20 mA (24 V with LED, 0.25 W), 30mA (12V without LED), 22 mA (24V without LED).

I_i (mA) Min. supply current of the product

R_b (Ω) Max. barrier resistance

T_a (°C) Max. ambient temperature

R_l (Ω) Max. resistance of connecting cables

V_S (V) Min. no-load voltage of barrier/interface

R_C (Ω) Max. coil resistance:

$$12 \text{ V with LED} = \frac{288 (T_a + 234 + 10)}{254} / 24 \text{ V with LED} = \frac{563 (T_a + 234 + 10)}{254}$$

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Compatibles barriers

The 12 V DC and 24 V DC solenoid valves are compatible with the barriers listed in the tables.

Located in safe areas, these barriers allow to feed the intrinsically safe solenoid valves located in explosive areas.

Supplier	Modules	Interface 1		Interface 2		Interface 3		Interface 4 (IIB)	
		302 ia IIC 12V LED	302 ia IIC 24V LED	302 ia IIC 12V LED	302 ia IIC 24V LED	302 ia IIC 12V LED	302 ia IIC 24V LED	302 ia IIC 12V LED	302 ia IIC 24V LED
ABB	DO910S	X	X					X	X
Bartec	07-7331-2105/1000	X						X	
	07-7331-2301/1100			X				X	
CEAG	SB-3722							X	
	SB-2420							X	X
	SB-3729							X	X
	SB-3728	X	X					X	X
	SB-0728	X						X	
EMERSON	DELTA V		X						X
GEORGIN	CAPI 2351 E		X		X				X
G.M. International	D1040Q - 2			X				X	
	D1042Q - 2							X	X
	D1043Q - 2	X		X				X	
MTL	815-DO-04	X	X					X	X
	MTL 3021	X						X	
	MTL 3022							X	X
	MTL 5021			X	X			X	X
	8215-DO-IS	X		X				X	
	MTLx521			X				X	
	MTL4521L	X		X				X	
	MTL5522							X	
	4021S	X		X				X	
	MTL 722			X				X	
	MTL 728	X	X					X	X
	MTL 728P	X	X					X	X
	MTL 779	X	X					X	X
Pepperl + Fuchs	KFD2-SD-Ex1.17					X		X	
	KFD2-SD-Ex1.36							X	X
	KFD2-SD-Ex1.48	X		X				X	
	KFD2-SD-Ex1.48.90A	X		X				X	
	KFD2-SL-Ex1.48	X		X				X	
	KFD2-SL-Ex1.48.90A	X						X	
	KFD2-SL2-Ex1	X	X					X	X
	KFD2-SL2-Ex1.B	X	X					X	X
	KFD2-SL2-Ex1.LK	X	X					X	X
	KFD2-SL2-Ex2	X	X					X	X
	KFD2-SL2-Ex2.B	X	X					X	X
	KFD2-VD-Ex1.1560	X		X		X		X	
	KFD2-VD-Ex1.1835	X	X	X	X			X	X
	KFD0-SD2-Ex1.1045	X		X				X	
	KFD0-SD2-Ex1.1065					X		X	
	LB-2103	X						X	
	LB-2105	X		X				X	
	LB-2112	X	X					X	X
	LB-2112	X	X					X	X
	FB-2203	X						X	
	FB-2203	X						X	
	FB-2205	X		X				X	
	FB-2212	X	X					X	X
FB 6210	X						X		
HIC2871	X	X	X	X			X	X	
Z728	X	X					X	X	
Z728.H	X	X					X	X	
Z728.CL	X	X					X	X	
Stahl	9475/12-04-11			X		X		X	
	9475/12-04-21	X	X					X	X
	9475/12-04-31	X						X	
	9175/10-16-11s	X						X	
	9001/01-199-150-101			X		X		X	
	9001/01-280-085-101	X	X					X	X
	9001/01-280-100-101	X	X					X	X
9001/01-280-110-101	X	X					X	X	
Turck	MK72-S01-Ex	X		X		X		X	
	MK72-S09-Ex0/24VDC	X		X				X	
	MK72-S10-Ex0/24VDC					X		X	
	MC72-41Ex-T/24VDC	X		X		X		X	
	MC72-42Ex-T/24VDC		X		X				X
	MC72-44Ex-T	X		X		X		X	
Siemens	MC72-43Ex-T		X		X				X
	IM72-22EX/L	X	X					X	X
	ET200IS double	X	X					X	X
	6ES7132-7FD00-OAB0					X		X	
	6ES7132-7RD10-OAB0					X		X	
WAGO	6ES7132-7RD20-OAB0			X		X		X	
	6ES7132-7RD20-OAB0					X		X	
	750-535	X	X					X	X

In accordance with the zone classification and the national legislation of each country, apply the certification procedures for the connection of IS-rated products with associated equipment.

All information subject to change without notice. All responsibility for the use of products from other suppliers and the possible modifications of their characteristics is disclaimed.

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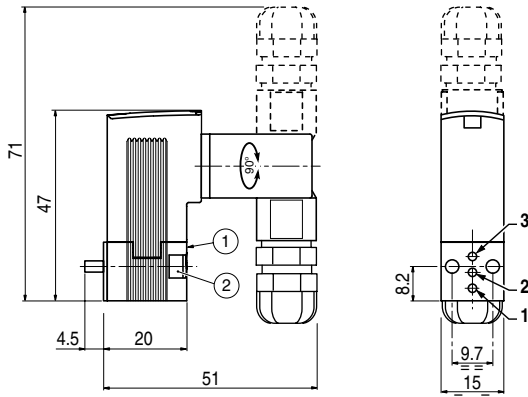
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Dimensions: mm (inches), Weight (kg)

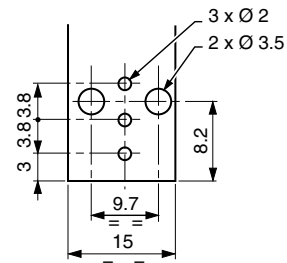


TYPE 01:

IEC 335 / DIN 43650
 EN/IEC 60079-11/26
 II 1 G Ex ia IIC T6 to T4 Ga
 II 1 D Ex ia IIIC T85°C to T135°C Da



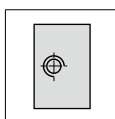
Pneumatic base: ISO 15218
 (CNOMO E06.36.120N, size 15)



Type	Weight ⁽¹⁾
01	0.052

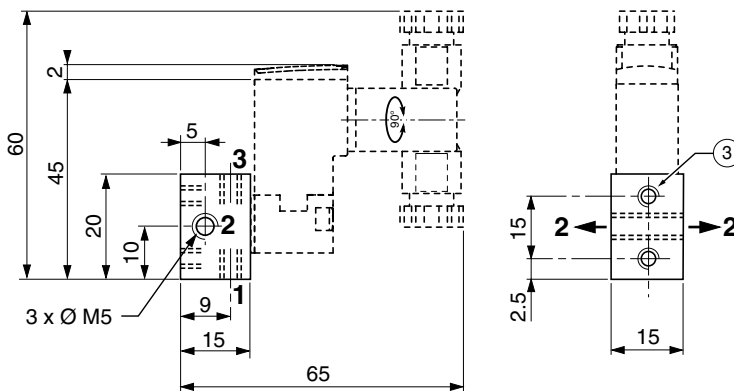
- ① Manual operator location
- ② Mounting: 2 M3 x 20 screws

(1) Including connector.



Single subbase

Brass



Orifice (2) can be connected on the left or on the right of the subbase.

Material	Catalog number	Weight ⁽²⁾
brass	30300001	0.034

- ③ Mounting: 2 holes M3, depth 4.5

(2) subbase alone

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