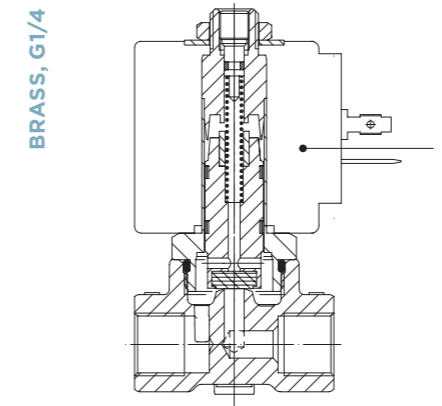
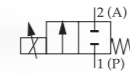


# 21A - 21L - 21AP SERIES

## Solenoid valves, 2-way

Proportional solenoid valves are designed to provide a flowrate output proportional to current change. The valves have elastomeric sealing that ensure tight closure up to the maximum pressure. Minimum operational pressure is not required. Material used and frictionless plunger construction ensure reliability and long life time. The valves can be controlled through the duty cycle of a 24 VDC PWM signal or directly by regulating the current applied to the coil.



Proportional technology ■ Solenoid valves ■ 2-way ■ 21A - 21L - 21AP SERIES

TECHNICAL DATA

PORT CONNECTION	G1/8 ÷ G1/4, PUSH-IN connections	
SEALING MATERIALS	FKM	EPDM
FLUID TEMPERATURE	-10°C +140°C	-10°C +140°C
FLUIDS	air, water, inert gases, mineral oils	air, water, inert gases
VISCOSITY	12 cSt up to orifice 1.5 mm, 37 cSt for orifice 2.0 mm, 53 cSt for orifice 2.5 mm and above	
TUBE Ø - COIL WIDTH - SERIES	ø 13 mm - 30 mm	BDA08, BVA08 (CLASS F), BDV08 (CLASS H)
	ø 13 mm - 36 mm	UDV16 (CLASS H)
	ø 13 mm - 52 mm	GDV14 (CLASS H)
PROTECTION DEGREE	IP65 EN 60529 (DIN 40050) with plug connector	
VOLTAGE REGULATION	24 V DC pulse width modulation (600 ÷ 800 Hz)	
HYSTERESIS	< 5%	
REPEATABILITY	< 3%	
SENSITIVITY	< 2%	

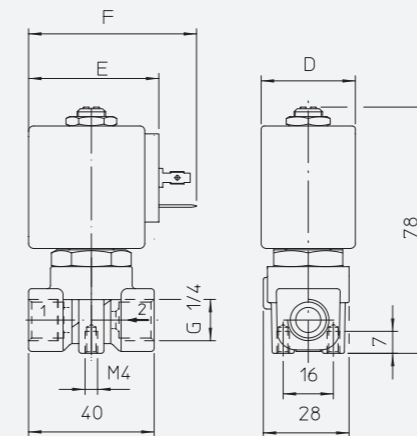
MATERIALS

BODY, ORIFICE	Brass UNI EN 12165 CW617N or stainless steel AISI 316 or PPS
ARMATURE TUBE	Stainless steel AISI 316
FIXED CORE	Stainless steel AISI Series 400
PLUNGER	Stainless steel AISI Series 400
PHASE DISPLACEMENT RING	-
SPRING	Stainless steel AISI Series 300
SEALING	V=FKM, E=EPDM

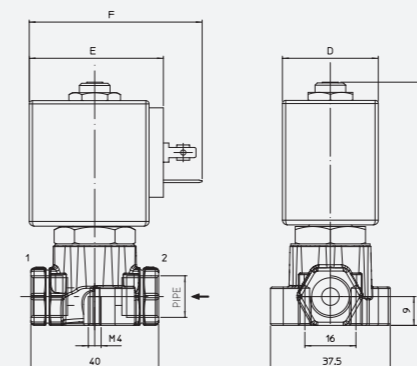
- CE**  
 - 2014/35/EU (LVD)  
 - 2014/30/EU (EMC)  
 - 2014/68/EU (PED) art. 4.3 up to 1", cat. I module A above 1"
- INDUSTRIAL OXYGEN**  
 Special versions suitable for contact with industrial oxygen are available. Please refer to codification options.
- UL** recognized and **VDE, CSA** approved coils are available for this series, please refer to coil section.
- NSF/ANSI 169** certification (Special Food Equipment and Devices) is available for this series. Please find the correspondend symbol in the next pages. Valves with NSF approval are in compliance with CE regulation 1935/2004.

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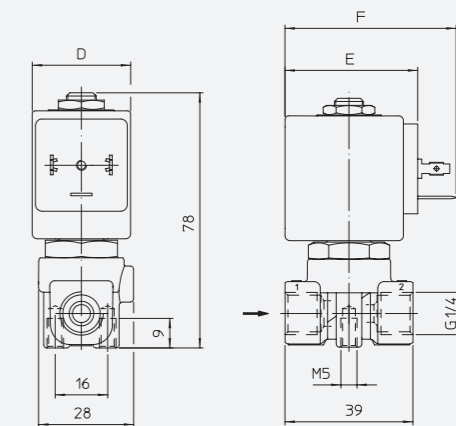
DRAWING 1



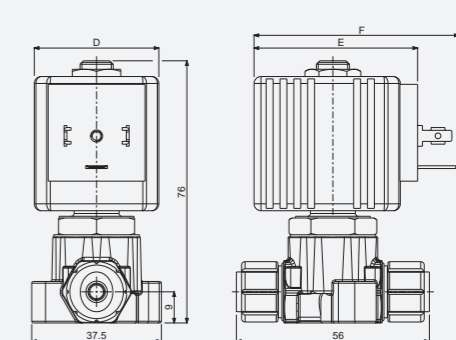
DRAWING 3



DRAWING 2



DRAWING 4



COILS SERIES	DIMENSIONS [mm]		
	D	E	F
B**08	30	42	54
UDV16	36	48	60

- The fluids listed in the "technical data" tables should be considered as a recommendation. Please check the chemical compatibility of the fluids with the materials of the valve at RFQ stage.
- Please check the engineering information for further details on viscosity.
- These solenoid valves are not suitable for stagnating fluids, or for fluids that being subject to evaporation may deposit solid, calcareous or similar residues.
- For control options please refer to +SMART chapter.

- The valves can be maintained in a stable position only if the current circulating in the coil is kept constans. If the valve is controlled through voltage variation, it is necessary to compensate the power decrease due to heating effect by increasing the voltage, so to re-establish the initial current value.

2/2 PROPORTIONAL BRASS AND STAINLESS STEEL BODY

PIPE ISO 228/1	ORIFICE SIZE Ø [mm]	Kv [l/min]	COIL SERIES	PRESSURE [bar]		CODE		DRAWING REFERENCE	
				MIN	MOPD (DC)	BRASS	STAINLESS STEEL		
G1/4	1,0	1,4	B**08	0	4	21A2KCV10-04	-	1	
			UDV16	0	4	21A2KCV10-04	-	1	
		0,45	B**08	0	10	21A2KCV10-10	-	1	
			UDV16	0	10	21A2KCV10-10	-	1	
		1,5	1,4	B**08	0	10	21A2KCV15-10	-	1
				UDV16	0	10	21A2KCV15-10	-	1
	2,0	2	B**08	0	4	21A2KCV20-04	-	1	
			UDV16	0	4	21A2KCV20-04	-	1	
		2	B**08	0	6	21A2KCV20-06	-	1	
			UDV16	0	-	-	-	-	
		2	2	B**08	0	10	21A2KCV20-10	21L2KCV20-10	1 (brass), 2 (StSt)
				UDV16	0	10	21A2KCV20-10	-	1
		2	2	B**08	0	12	21A2KCV20-12	-	1
				UDV16	0	-	-	-	-
		2,5	2,5	B**08	0	8	21A2KCV25-08	-	1
				UDV16	0	8	21A2KCV25-08	-	1
		3,0	4	B**08	0	5	21A2KCV30-05	-	1
				UDV16	0	5	21A2KCV30-05	-	1
	4		B**08	0	6,5	21A2KCV30-6X	21L2KCV30-6X	1 (brass), 2 (StSt)	
			UDV16	0	6,5	21A2KCV30-6X	-	1	
	4,5	6,5	B**08	0	1,5	21A2KCV45-1X	21L2KCV45-1X	1 (brass), 2 (StSt)	
			UDV16	0	1,5	21A2KCV45-1X	21L2KCV45-1X	1 (brass), 2 (StSt)	
		6,4	UDV16	0	2	21A2KCV45-02	-	1	
			GDV14	0	2	21A2KCV45-02	-	1	
6,5		UDV16	0	2,5	21A2KCV45-2X	-	1		
		GDV14	0	2,5	21A2KCV45-2X	21L2KCV45-2X	1 (brass), 2 (StSt)		
5,5	9	UDV16	0	1	21A2KCV55-01	-	1		
		GDV14	0	1	21A2KCV55-01	-	1		

For sealing different from FKM, replace the letter "V" with the ones corresponding to the other materials.  
V= FKM, E=EPDM.

PIPE ISO 228/1	ORIFICE SIZE Ø [mm]	Kv [l/min]	COIL SERIES	PRESSURE [bar]		CODE PPS	DRAWING REFERENCE
				MIN	MOPD (DC)		
G1/8	1,5	1,1	B**08	0	10	21AP1KCV15-10	3
	2,5	2,5	UDV16	0	5	21AP1KC4V25-1FTO <sup>NSF</sup>	3
			B**08	0	5	21AP1KC4V30-1BTO <sup>NSF</sup>	3
	3,0	3,4	UDV16	0	5	21AP1KC4V30-1BTO <sup>NSF</sup>	3
			B**08	0	1	21AP1KC4V30-1CTO <sup>NSF</sup>	3
			UDV16	0	1	21AP1KC4V30-1CTO <sup>NSF</sup>	3
B**08			0	1	21AP1KC4V30-1CTO <sup>NSF</sup>	3	
G1/4	1,5	1,4	B**08	0	8	21AP2KC4V15-1Q	3
			B**08	0	8	21AP2KC4V15-1QTO <sup>NSF</sup>	3
	2	1,8	UDV16	0	10	21AP2KCV20-10	3
			B**08	0	5	21AP2KCV30-05	3
	3,0	3,4	UDV16	0	5	21AP2KCV30-05	3
			UDV16	0	2,6	21AP6KC4V30-1ITO <sup>NSF</sup>	4



- I. NUMBER OF WAYS**  
2 - 2-way
- II. NUMBER OF ELEMENTS**  
1 - 1 element
- III. SERIES**  
A - brass body, Ø13 mm core tube  
AP - PPS body, Ø13 mm core tube  
L - StSt body, Ø13 mm core tube
- IV. CONNECTIONS**  
2 - G1/4  
3 - G1/8  
6 - PUSH IN for OD 6 mm (only for AP series)
- V. CORE TUBE TYPE**  
KC - for 2/2 proportional valves
- VI. PHASE DISP. RING MATERIAL**  
blank - without  
4 - without (for NSF approved valves)
- VII. SEALING MATERIAL**  
V - FKM  
E - EPDM
- VIII. ORIFICE Ø [mm] MULTIPLIED BY 10**
- IX. MAXIMUM PRESSURE**  
12 - 12 bar  
10 - 10 bar  
08 - 8 bar  
6X - 6,5 bar  
05 - 5 bar  
04 - 4 bar  
2X - 2,5 bar  
02 - 2 bar  
1X - 1,5 bar  
01 - 1 bar  
For NSF approved valves  
1Q - 8 bar  
1F - 5 bar  
1B - 5 bar  
1I - 2,6 bar  
1C - 1 bar
- X. NSF CERTIFICATION**  
TO - PPS body

+SMART ONE  
+SMART CUBE

For control options please refer to +SMART chapter.

