



# 4/2 way solenoid valve for pneumatic applications

- Robust servo-piston valve
- Service-friendly manual override
- Single or block assembly

Type description

• Explosion-proof versions available



Product variants described in the data sheet may differ from the product presentation and description.

#### Can be combined with

**Type 2518** Cable Plug DIN EN 175301-803 - Form A



**Type 1087** Timer Type 5413 is a pilot operated 4/2 way solenoid valve with manual override as standard. A 3/2 way solenoid pilot valve allows control. The valve consists basically of two assembled 3/2 way valves for ports A and B with a counter built-in servo piston with seat seals. Through pilot channels, the servo piston is operated at the input pressure and pushed either apart or towards the valve centre. A minimum pressure difference of 1 bar is required for switching.

Type 5413: available until August 2023

Type 2513 Cable plug acc. to DIN EN 175301 - 803 Form A

# **FluTech** บริษัท ฟลูเทค จำกัด FLU - TECH CO., TD

845/3-4 หมู่ 3 ถ.เทพารักษ์ ต.เทพารักษ์ อ.เมือง จ.สมุทรปราการ 102070



# 1. General Technical Data

Product properties				
Dimensions	Detailed information can be found in chapter "5. Dimensions" on page 7.			
Material				
Body	Polyamide (reinforced) with moulded-in brass threads			
Coil	Polyamide, Epoxy			
Seal	NBR			
Nominal diameter	DN6.0 mm			
Performance data				
Compressed air quality	ISO 8573-1:2010, class 7.4.4 <sup>1.)</sup>			
Flow (Q <sub>Nn</sub> value air)	900 l/min (measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference)			
Nominal operating mode	100 % ED continuously rated			
Switching times <sup>2)</sup>				
Opening	50 ms pressure rise 090 %			
Closing	30 ms pressure drop 10010 %			
Electrical data				
Operating voltage	24 V DC 24/110/230 V, 5060 Hz			
Power consumption	Version with V DC: 2 W Version with V AC: 11 VA (inrush), 6 VA (hold)			
Voltage tolerance	±10%			
Medium data				
Type of medium	Neutral medium, e.g. lubricated or non-lubricated compressed air			
Medium temperature	-10 °C+60 °C			
Medium pressure	110 bar			
Process/Port connection & communicat	ion			
Port connection size	G 1/4			
Electrical connection	Tag connectors according to DIN EN 175 301 - 803 Form A for cable Plug Type 2518 Detailed information can be found in chapter "Cable plug Type 2518, Form A accord- ing to DIN EN 175301 - 803" on page 12.			
Approvals and certificates				
Degree of protection	IP65 with cable plug			
Environment and installation				
Installation position	As required, preferably with solenoid system upright; air exhausted from the relief port with pressed sintered bronze silencer must not be impeded.			
Ambient temperature	55 °C			

1.) To prevent freezing of the expanded compressed air, the pressure dew point must be at least 10 K lower than the temperature of the medium.

2.) Measured at +20 °C, 6 bar pressure at valve inlet and 1 bar pressure difference.



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# 2. Product versions

## 2.1. Standard version



Product properties				
Dimensions	Detailed information can be found in chapter "5.1. Standard ver- sion" on page 7.			
Electrical data				
Operating voltage	24 V DC 24/110/230 V, 5060 Hz			
Power consumption				
Inrush	AC: 11 VA			
Hold (hot coil)	AC: 6/2 VA/W DC: 2 W			
Voltage tolerance	+ 10 %			
Process/Port connection & commu	unication			
Port connection size	G 1/4			
Electrical connection	Tag connectors according to DIN EN 175 301 - 803 Form A for cable plug Type 2518 Detailed information can be found in chapter "Cable plug Type 2518, Form A according to DIN EN 175301 - 803" on page 12.			
Environment and installation				
Installation position	As required, preferably with solenoid system upright; Air exhausted from the relief port with pressed sintered bronze silencer must not be impeded.			
Ambient temperature (max.)	55 °C			

## 2.2. ATEX/IECCEx version

#### Note:

The approval Ex m is achieved by the mounting of an approved push-over coil. The cable connection and the cable are non-detachable and sealed together with the value. The values can be used individually or in blocks.



Product properties				
Dimensions	Detailed information can be found in chapter "5.2. ATEX/IECEx version" on page 8.			
Electrical data				
Operating voltage	24/110/230 V UC			
Voltage tolerance	+10%			
Process/Port connection & communication				
Port connection size	G ¼			
Electrical connection	3 m cable, moulded Junction box (without fuse)			
Approvals and certificates				
Type of protection (ATEX and IECEx)				
With moulded cable	EPS 18 ATEX 1232 X / IECEx EPS 18.0110X II 2G Ex mb IIC (T4/T5/T6) Gb II 2D Ex mb IIIC T (130 °C/95 °C/80 °C) Db EPS 16 ATEX 1046 X / IECEx EPS 16.0021 X			
	II 2G EX eb mb IIC (T4/T5/T6) Gb II 2D EX mb tb IIIC (130 °C/ 95 °C/ 80 °C) Db			
Environment and installation				
Installation position	As required, preferably with actuator upright			
Ambient temperature	Single mounting: -30 °C+60 °C Block mounting: -30 °C+50 °C			



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# 3. Circuit functions

Circuit functions	Description
$\begin{array}{c c} 2(B) & 4(A) \\ \hline \\ 14 & & \\ 1(P) & 3(R) \end{array} 12$	Type: G, solenoid valve 4/2 way servo-controlled normally open

#### 3.1. Circuit function Type: G, solenoid valve



#### Description Position power-off:

Normally both servo pistons are relieved on the operating side. The servo pistons are pushed apart with the pressure applied on the port (P), the upper piston opens the connection from (P) to (B), and the lower piston opens the connection from (A) to (R).

#### Position after switching on the current:

The pilot valve opens the pilot bore and exposes both pistons to pressure and pushes them towards the valve centre. The upper piston released the connection (B) to (R), the lower piston opens the connection (P) to (A).



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# 4. Materials

## 4.1. Material speci ications



No.	Element	Material		
1	Nut	Steel, surface thick-film passivat- ed (brass version) Stainless steel 1.4305 PTFE coated		
2	Coil	Standard: Polyamide, epoxy Ex version: epoxy		
3	Stopper	1.4105		
4	Magnet core	1.4105		
5	Flange	Steel, surface thick-film passivat- ed (brass version) Stainless steel 1.4301 (stainless steel version)		
6	Core seal	FKM		
7	Seal poppet	NBR		
8	Poppet	Plastic		
9	Moulded-in thread	Brass		
10	Seal poppet	NBR		
11	Body	Polyamide (reinforced)		
12	Seal poppet	NBR		
13	Poppet	Plastic		
14	Seal poppet	NBR		



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## 5. Dimensions

## 5.1. Standard version

#### Note:

Dimensions in mm





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## 5.2. ATEX/IECEx version

#### Version with 3 m moulded cable

#### Note:

Dimensions in mm



#### Version with junction box

#### Note:

Dimensions in mm





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# 6. Product installation

#### 6.1. Mounting options

#### Note:

The following figure serves as an example of a block mounting.



## 7. Product accessories

#### 7.1. Cable glands for ATEX/IECEx terminal box

#### Note:

A cable gland in polyamide version is included in the delivery. A nickel-plated brass version can be ordered at a surcharge.

Description	Ex approvals		Dimensions		
	Certification	Identification			
Ex cable gland,	PTB 04 ATEX 1112 X,	II 2 G Ex e IIC Gb,	0	TL	2937 mm
Brass, nickel-plated, 613 mm	IEGEX PTB 13.0027X	II 2 D EX to IIIC DD IP68	SW/E	L	6 mm
				D	20 mm
				SW	24 mm
				Е	27 mm
			_D_		
Ex cable gland,	PTB 13 ATEX 1015 X,	II 2 G Ex e IIC Gb,	đ	TL	3645 mm
Polyamide, 713 mm	IECEx PTB 13.0034X	II 2 D Ex tb IIIC Db IP68	SW/F	L	10 mm
				D	20 mm
				SW	24 mm
				Е	28 mm
			D		



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