
		<b>Shut-off poppet valve,</b> designed to operate with gas detectors <b>2/2 way type ZB</b>		<b>Class</b> <b>A</b> - DN20÷DN65 <b>B</b> - DN80 i DN100 <b>Group 1</b>	
<b>Diameters range DN</b>		threaded connection <b>Rp 3/4 ÷ Rp 2 1/2 (DN20 ÷ DN65)</b>		flanged connection <b>DN50 ÷ DN100</b>	
<b>Media</b>		<b>gas fuels</b> (gases as per PN-EN 437)			

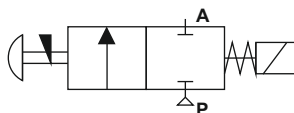
**FEATURES:**

- poppet valve
- simple design
- unidirectional, uniform flow
- triggered elecromagnetically
- available with two types of solenoid triggers:  
WE (12V DC) or EZB-12,6G (230V AC)
- low weight (mass)
- bistable - in lack of voltage condition the valve could stay in one of stable position: **open** or **close**.  
Control voltage is necessary or valve **closing** only.
- opened **only** manually ("memory" function)
- closed with electrical impulse
- has the option for manual closing with botton
- permanent strainer built-in
- adapted for external application
- conforms to **PN-EN 161:2011+A3:2013**
- meets applicabe requirments of Regulation (UE) **2016/426** (GAR) from 9 march 2016 y. and Directives UE: **2014/35/UE** (LVD); **2014/30/UE** (EMC)

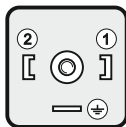
**APPLICATION:**

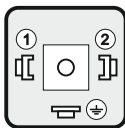
- in **Gas Safety Systems** installed: gas boiler rooms, industrial facilities, public utility buidings, domestic installations (i.e.one family houses and multi-family houses, farmsteads, private use recreational buildings), reducing -measuring stations, biogas plants, etc. itp. - **as an actuator** that surely and effectively cuts off the gas supply to faulty installations when a gas presence is detected in supervised by **System** compartments
- in gas installations supplied in conformance with appropriate regulations from low pressure gas grid
- additionally valve can be used as manual stopcock, however it can not act as gas installation **main stopcock**
- together with gas detection system, valve can perform a function of lock-up for devices that burn gas fuels and are intended for use inside the buildings and utility compartments. Such a lock-up prevents from accumulation of burning gas in mentioned buildings and compartments

**CE**<sub>1015</sub>

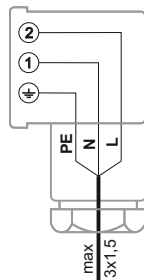
**Schematic symbol**

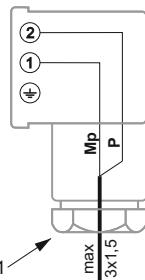
**ELECTRICAL TERMINATION**

**coil connection**

**plug-in socket**

The plug can be fixed in **3 positions** towards the socket (each 90°)

**AC**

**DC**

Conductor wires polarization-**indifferent** (apart from PE);  
**recommended** - as on figure

Connection wire size depends on the distance to control module - see **Service Manual** of applied control module.  
Size and allowable lenght could be also determined assuming as admissible 10% voltage drop on conductor (calculated from rated voltage 12V)

**TECHNICAL DATA**

**Valve**

maximum operating pressure.....  $P_{MAX} = 0,25 \text{ bar}$

safe static pressure .....  $P_s = 5 \text{ bar}$

closing time .....  $< 1 \text{ s}$

ambient and media temperature ...  $-25^{\circ}\text{C} \div 60^{\circ}\text{C}$

pipe threaded connection ..... Rp - internal straight thread compliant with PN-EN 10226

pipe flanged connection ..... keeps compatibility of flange connection dimensions [PN16, 01, B] in acc. with PN-EN 1092-1

mounting direction ..... any

**Solenoid trigger**

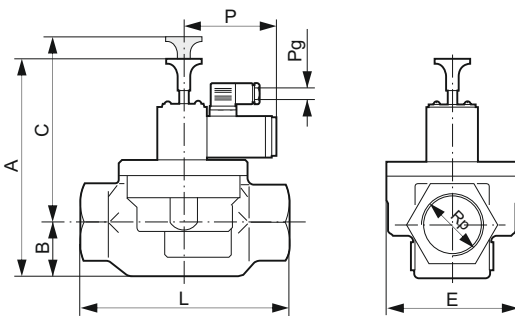
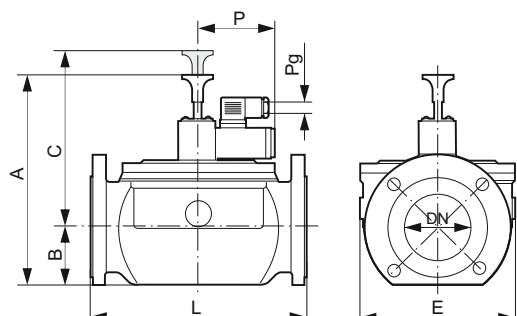
trigger type.....	<b>WE</b>	<b>EZB-12,6G</b>
control voltage.....	12V DC	230V AC
voltage tolerance .....	-15%; +10%	
power consumption.....	26 W	46 VA
coil resistance .....	5,5 $\Omega$	134 $\Omega$
safety class .....	III	I (earthing)
impulse minimum time duration..... (necessary for closing the valve)	0,2s	-0,3s
operation type .....	S1 continuous 100%	
ambient temperature .....	$-30^{\circ}\text{C} \div 60^{\circ}\text{C}$	
electrical connection .....	tri-contact terminal block	
degree of protection (acc. PN-EN 60529)	IP65	
design (integrated) .....	resin-molded coil	

ZB - data sheet

release 02/2019/KK

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## OVERALL DIMENSIONS (mm), WEIGHT (kg)

Type	ZB-20	ZB-25	ZB-32	ZB-40	ZB-50	ZB-65	ZB-50k	ZB-65k	ZB-80k	ZB-100k
	valve class A								valve class B	
	valves with threaded connection (internal straight thread in acc. with PN-EN 10226)						valves with flanged connection [PN16, 01, B] (conforms to PN-EN 1092-1)			
	DN	20	25	32	40	50	65	50	65	80
Rp	3/4	1	1 1/4	1 1/2	2	2 1/2				
A	127	137	155	180	188	218	225	243	307	318
B	22	28	37	48	40	61	78	83	94	103
C <sup>(1)</sup>	112	116	126	143	158	170	157	171	231	239
E	77	79	100	112	142	170	165	185	200	222
L	105	115	144	178	193	240	230	270	310	350
P	92	92	92	92	92	92	92	92	95	95
Pg	11	11	11	11	11	11	11	11	11	11
Weight	1,20	1,35	1,96	2,62	3,18	4,81	4,06	5,82	9,80	11,82
										

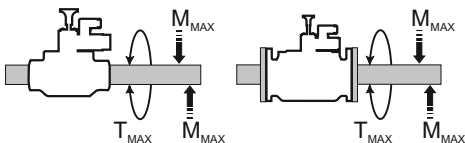
### INSTALLATION - basic assembly requirements:

- valve can be installed:
  - outside the buildings - in the junction box protecting against direct influence of atmospheric factors
 

**Attention! Valve is not waterproof!!!**

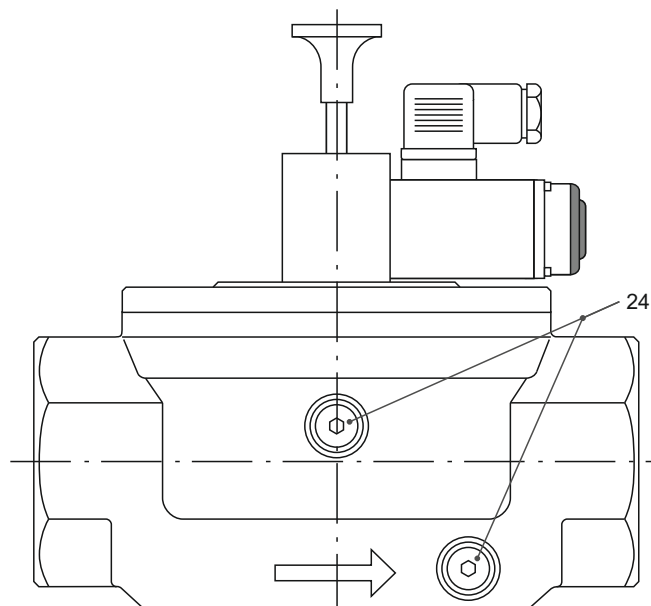
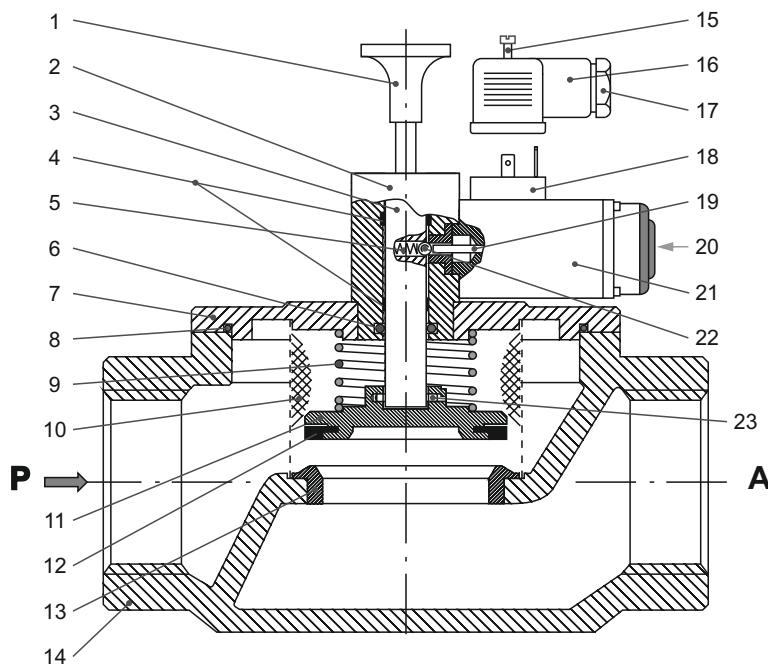
It should be installed in such a box and in such a way that it is completely protected against dripping water during rain and snowfall.
  - inside the buildings
- install downstream the main tap, upstream or downstream the gas meter (according to the gas flow arrow on the valve)
- it is necessary to anticipate and take into account the pressure surplus that may occur at the valve inlet in case of failure to components in the system located upstream the valve
- mounting position - any
- direct contact of the valve with wall, ground, etc. is unacceptable; keep the minimum distance - about 1 cm
- location of the valve should be selected so as to ensure free access needed to its operation (for persons authorized to do so)
- attention should be paid so that after valve installation there is enough space left (**maneuvering area**) for ease coil replacement
- ensure proper rigidity of the installation in the place where the valve is installed (Group 1 valve).
 

This can be achieved by using rigid supports to the bending and torsional stress exerted by the piping system in the installation (eg due to the lack of alignment of the of the pipeline at the inlet and outlet of the valve)
- maximum moments: turning  $T_{MAX}$  and bending  $M_{MAX}$  cannot exceed the values given in TABLE 1
- ensure that valve is mounted rigidly so as to avoid any vibration
- in valves with threaded connections pipe should be screw in that way so that 10 second torque not exceed values of  $T_{MAX}$  given in TABLE 1
- use appropriate thread sealant to ensure tightness of the connections
- tighten the flange screws crosswise **Attention:** maximum torque of **50 Nm (~5 kGm)**
- a strainer which protects from mechanical impurities should be fitted upstream the valve in the gas installation. Maximum dimension of strainer openings should not exceed 0,2 mm
- valve's assembly should be finalized with carrying out an leaktightness test of installation including **ZB** valve using compressed air or inert gas (oxygen use is forbidden) Test pressure cannot exceed  **$P_s = 5 \text{ bar}$**
- during operation valve
  - cannot be exposed to dilatation nor dynamic forces
  - need to have ensured correct operating temperature (ambient and media)
  - should be protected against strong dustiness and water flooding

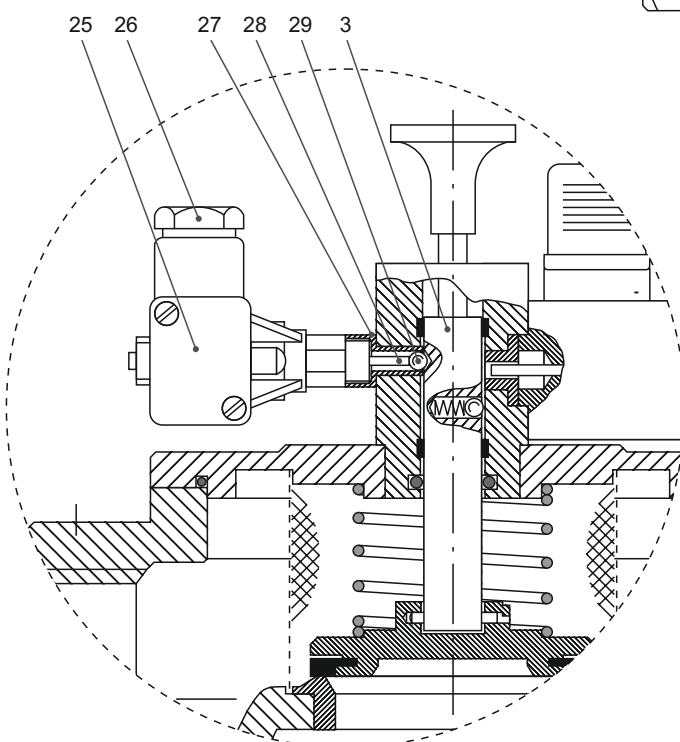
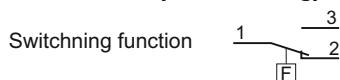
TABLE 1		DN	20	25	32	40	50	65	80	100
		Rp	3/4	1	1 1/4	1 1/2	2	2 1/2		
		$T_{MAX}$ [Nm] $t \leq 10s$	85	125	160	200	250	325	400	400
		$M_{MAX}$ [Nm] $t \leq 10s$	90	160	260	350	520	630	780	950

## CONSTRUCTION

1. valve manual open hand grip
2. pilot sleeve
3. poppet pin
4. slide rings
5. pull spring
6. sealing ring (o-ring)
7. bonnet
8. sealing ring (o-ring)
9. pressing spring
10. filter
11. poppet
12. poppet gasket
13. valve seat
14. valve body
15. fastening screw
16. plug-in socket
17. impedance coil Pg11
18. power supply socket
19. trigger movable core
20. valve manual close button
21. solenoid trigger
22. interlock ball
23. seating stud
24. plug G1/8 lub G1/4
25. limit switch for example K01/1 type from DUNGS
26. impedance coil Pg11
27. oblique bush
28. limit switch push rod
29. pushing ball



### Valve head\* position sensor (valve closing)

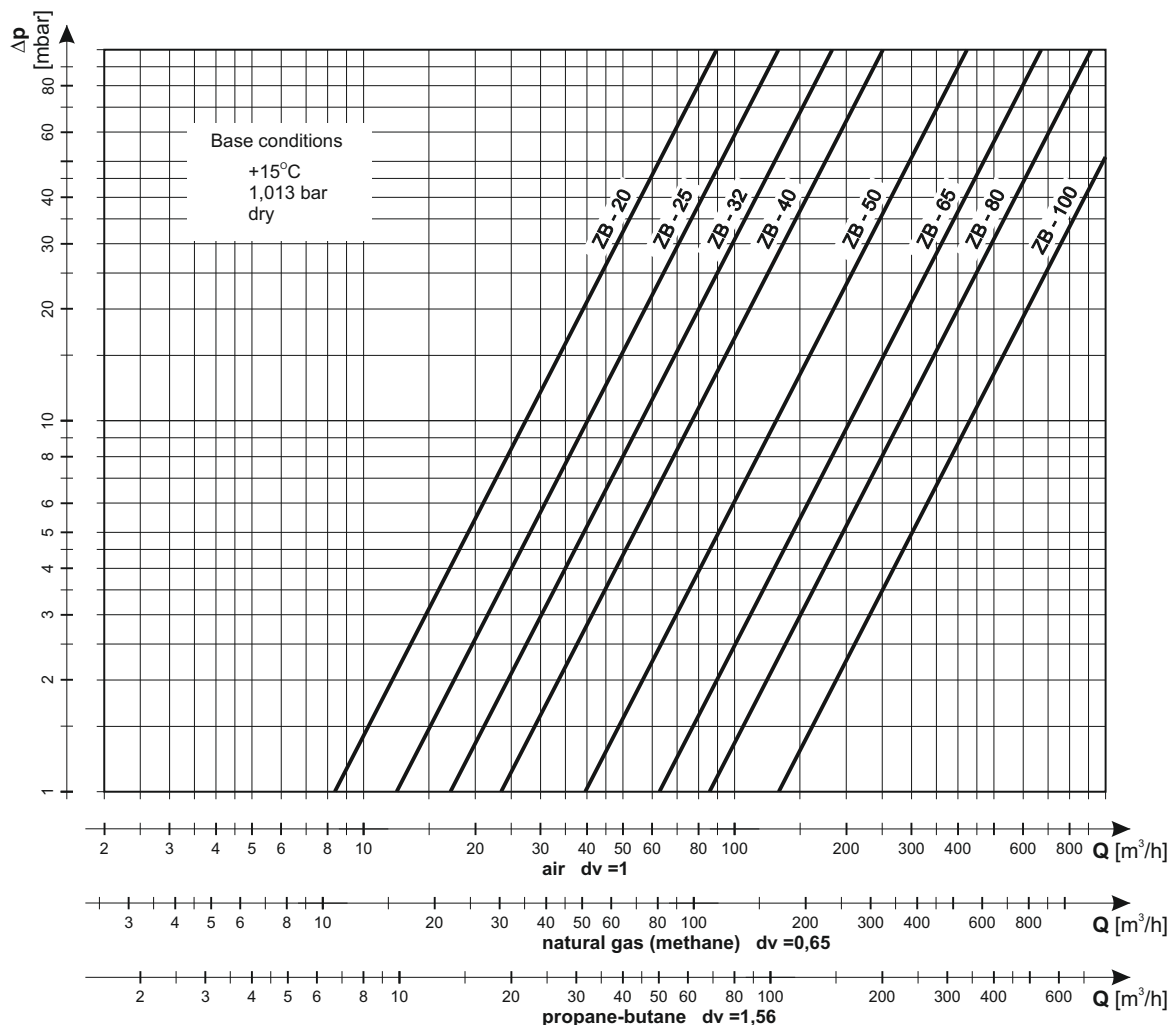


## Constructional materials

valve body	aluminium alloy
poppet pin	stainless steel
pilot sleeve	aluminium alloy
springs	galvanized or stainless steel
poppet body	aluminium alloy
poppet gasket	NBR (nitrile-butadiene rubber)
valve seat	aluminium alloy
sealings	NBR (nitrile-butadiene rubber)
slide rings	PTFE
filter	stainless steel - filter gauze
solenoid coil	copper

(\*) - valve head: movable part of valve which shuts-off gas flow

## FLOW CHARACTERISTIC



### ACCESSORIES - options (available upon request)

- plugs G1/8 or G1/4 (position 24) with gaskets  
**Note that standard version does not have holes for above plugs.**
- counterflanges with connector pipe (for valves with flanged connection)
- stub pipe for inlet and/or outlet pressure measurement (Ø9, G1/8 lub G1/4 together with gaskets)  
- used alternatively with plugs
- gas pressure sensor (at the inlet and/or outlet of a valve)  
Pressure sensors are assembled as marked on figure, position 24
- valve head position sensor (position 25) from **DUNGS** type **K01/1**
- plug with voltage presence indicator
- colour

### ORDERING

Necessary information for ZEG valve order:

- valve type
- control voltage
- possible option and accessories

Example:

ZB-32/12V DC

it means: valve with threaded connection DN32  
control voltage DC 12V  
standard design