

## TECHNICAL SPECIFICATIONS

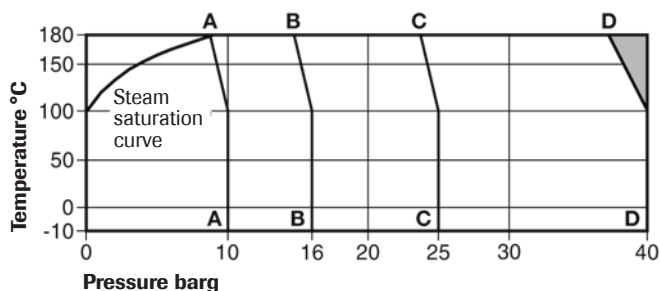
- Media: water, oil, air, aggressive media, steam<sup>①</sup>
- Media temperature: -10°C ÷ +180°C
- Viscosity: max. 600 cSt (80° E)
- Pilot media: dry and filtered air (mesh 25 µm)
- Actuator diameter: 63 or 90
- Body material: cast AISI 316L (CF3M), see page 37
- Bonnet material: cast AISI 316L (CF3M), see page 37
- Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
- Seal material: PTFE
- Flow characteristic: linear or equal percentage
- Positioner enclosure: anodized aluminium (black)
- Set point signal: 0 ÷ 10V; 4 ÷ 20mA
- Electrical supply: 24V DC
- Maximum power consumption: 6W (0,24A)
- Function: NC (Direct) / NO (Reverse)
- Set-up point: self-adjusting valve
- Fail Safe Position: 'closed' or 'maintained'
- Electrical connections: M23 connector, 12 poles
- Protection class: IP65
- Hysteresis: < 1% FS
- Repeatability: < 0,5% FS
- Minimum set-point: < 2% FS

## BENEFITS

- Actuator housing rotation 360°
- Connector rotation 360° (90° steps)

## OPTIONS

- Seal material in PEEK
- Body and shaped plug with hardening treatment
- Body connection options: threaded, flanged, butt weld and clamp



- A – A PN10
- B – B PN16 - ANSI 150
- C – C PN25
- D – D PN40

**■ The product must not be used in this region or beyond the body design conditions (PN) quoted in the selection chart as damage to the internals will occur !**



**TYPE: ZP-**

flow always under seat 2 → 1

DN	flow rate Kvs EQUI% TRIM 1:25	flow rate Kvs LINEAR TRIM 1:25	working pressure <sup>①</sup> max.	flow direction	pilot pressure min.	pilot pressure max.	actuator Ø	PN <sup>②</sup>
[mm]	[m³/h]	[m³/h]	[barg]	[2 → 1]	[barg]	[barg]	[mm]	–
15	4.5	4.9	16	only under seat	4.5	8	63	40
20	8.7	8.7	16					40
25	12.7	14.4	14	only under seat	4.5	8	90	40
32	20.4	22.8	12					25
40	29.7	34.2	8					25
50	36.3	39	6					16

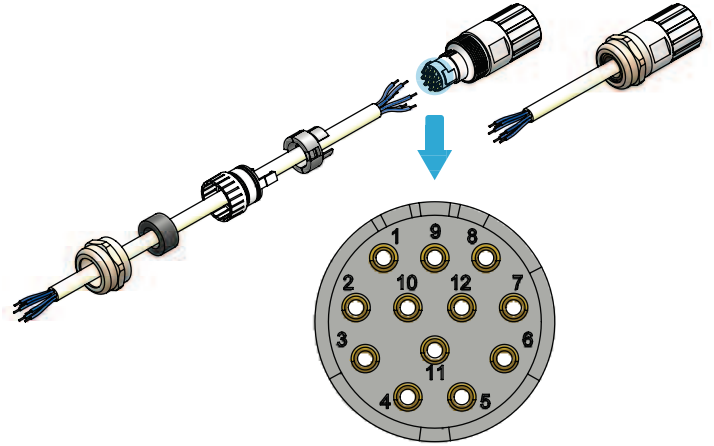
## NOTES

- ① Steam max. working pressure 10 bar (9 barg)
- ② PN10 for all sizes for clamp

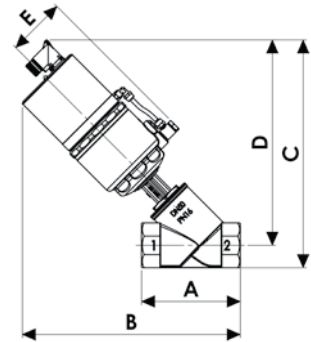
## CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER, DN15 ÷ DN50 - STAINLESS STEEL

### ELECTRICAL CONNECTION PIN CONNECTOR

PIN No	Function
1	+ 24VDC (supply power)
2	0-10V (+) set-point
3	4-20mA (+) set-point
4	0 (common set-point)
5	Alarm signal: 0V the valve works properly / +24V valve on alarm
6	Test point
7	Auto set-up/remote reset
8	0 (supply power)
9	Earth
10	PRE-SET CONFIGURATION
11	NC
12	PRE-SET CONFIGURATION



GAS - NPT - WELDED ENDS	DIMENSIONS & WEIGHTS		DN15	DN20	DN25	DN32	DN40	DN50	
	actuator	[mm]	Ø 63		Ø 90				
	A	[mm]	64	75	90	110	120	150	
	B	[mm]	294	301	316	329	334	352	
	C	[mm]	282.5	290	305	317	325	340	
	D	[mm]	269	274	285	292.5	297.5	306.5	
	E	[mm]	75	75	88	88	88	88	
	weight	[kg]	2.4	2.5	3.3	3.7	3.9	4.6	



FLANGED EN1092-1	DIMENSIONS & WEIGHTS		DN15	DN20	DN25	DN32	DN40	DN50	
	actuator	[mm]	Ø 63		Ø 90				
	A	[mm]	130	150	160	180	200	230	
	B	[mm]	323	330	344	359	361	384	
	C	[mm]	339.5	349.5	364.5	386	394	412.5	
	D	[mm]	292	297	307	316	319	330	
	E	[mm]	75	75	88	88	88	88	
	weight	[kg]	3.8	4.2	5.7	7.3	8.2	10.4	

FLANGED ANSI B16.5	DIMENSIONS & WEIGHTS		DN15	DN20	DN25	DN32	DN40	DN50	
	actuator	[mm]	Ø 63		Ø 90				
	A	[mm]	139.7	152.4	165.1	184.2	203.2	228.6	
	B	[mm]	321	327	343	357	361	384	
	C	[mm]	336.5	346	361	375	382.5	406	
	D	[mm]	292	297	307	316	319	330	
	E	[mm]	75	75	88	88	88	88	
	weight	[kg]	3.8	4.2	5.7	7.3	8.2	10.4	

CLAMP ISO 2852	DIMENSIONS & WEIGHTS		DN15	DN20	DN25	DN32	DN40	DN50	
	actuator	[mm]	Ø 63		Ø 90				
	A	[mm]	102	114	140	159	159	190	
	B	[mm]	313	320.5	341	353.5	353.5	372	
	C	[mm]	286	291	310	318	329.5	340	
	D	[mm]	269	274	285	292.5	297.5	306.5	
	E	[mm]	75	75	88	88	88	88	
	weight	[kg]	2.5	2.7	3.7	4.1	4.5	5.3	

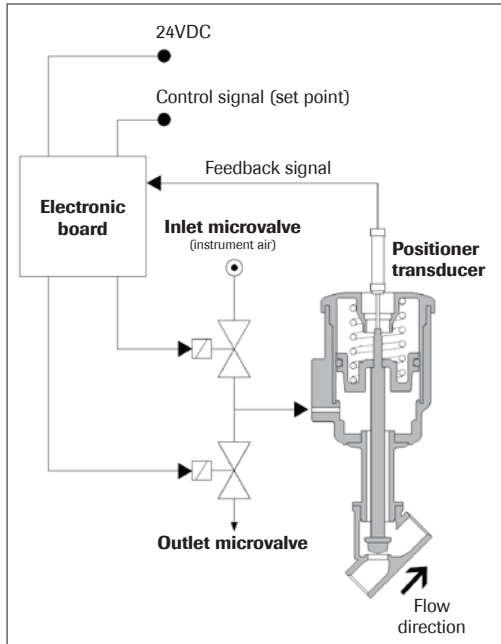
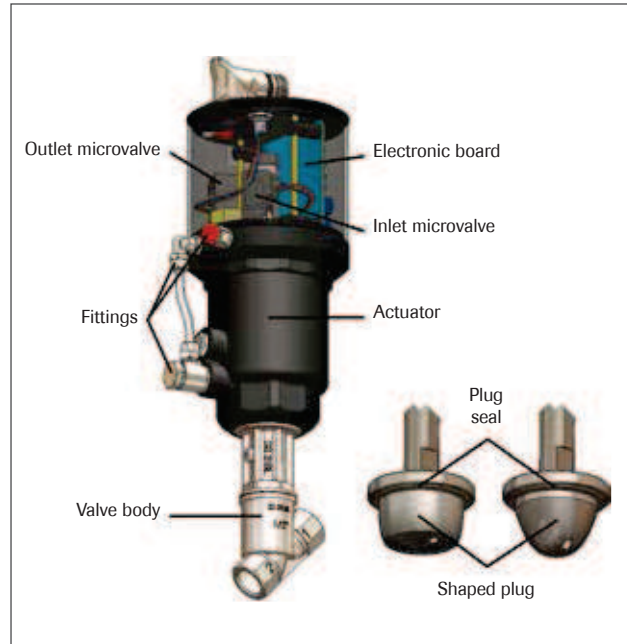
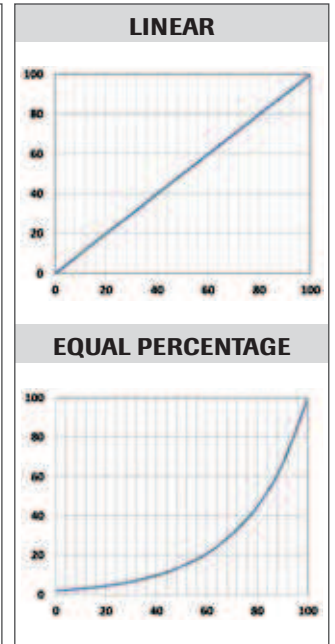
CLAMP ASME BPE	DIMENSIONS & WEIGHTS		DN15	DN20	DN25	DN32	DN40	DN50	
	actuator	[mm]	Ø 63		Ø 90				
	A	[mm]	102	114	140	/	159	190	
	B	[mm]	313	320.5	341	/	353.5	372	
	C	[mm]	282.5	290	310	/	325	340	
	D	[mm]	269	274	285	/	297.5	306.5	
	E	[mm]	75	75	88	/	88	88	
	weight	[kg]	2.5	2.7	3.7	/	4.5	5.3	

/ = not available

## CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER, DN15 ÷ DN50 - STAINLESS STEEL

### OPERATING PRINCIPLES AND DESCRIPTION

M&M control piston actuated valves are operated by a compact pneumatic integrated positioner working in a closed loop. PICTURE **A** shows the operating layout: the set-point signal (coming from the control panel of the plant) is compared with the internal signal (feed-back) of the position sensor. When the two values don't match, the electronic system inside the valve operates two microvalves (which open or close the pilot air feeding) to change the stroke until both signals match. The proportionality between the stroke of the valve and the instantaneous flow is guaranteed by the special plug design: linear plug and equal percentage plug (PICTURE **C**) the graphs show an ideal curve, which cannot be reproduced exactly but varies according to the DN of the valve and the specific installation parameters. When fully closed the valve is leakage tight thanks to the soft seal, as in M&M standard on/off piston actuated valves (see PICTURE **B**).

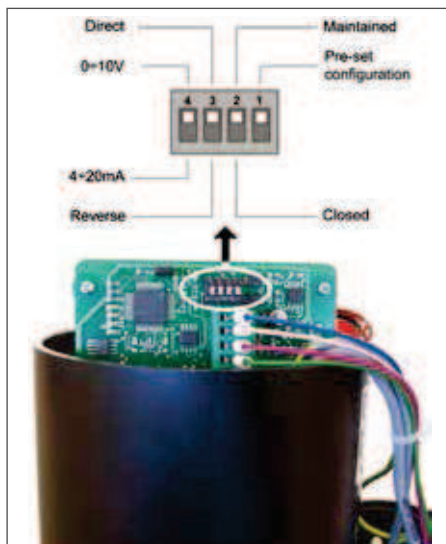

**PICTURE A**

**PICTURE B**

**PICTURE C**

The pneumatic positioner is electronic and not programmable. It accepts the most common set-point signals (4 ÷ 20 mA; 0 ÷ 10 V). All calibration operations are automatically implemented by pushing a LED button on top of the control box (integrated self-starter).

The pneumatic positioner can be fitted both to M&M Ø 63 and Ø 90 pneumatic actuators (this version must be expressly requested upon order).

#### Fluid direction always under seat!

Control Piston Actuated Valves with integrated positioner are set up, adjusted and tested by the manufacturer according to Customer's specifications and requests. The relevant parameters are set up by 4 DIP-switches (see PICTURE **D**).



- Contact No. 1 - Pre-set configuration -**
- Contact No. 2 - Fail Safe Position -**
- Contact No. 3 - Function Set-up -**
- Contact No. 4 - Set Point -**

Function set-up (contact No. 3)	Set Point	Valve status
Direct (NC)	0V or 4mA	Closed
	10V or 20mA	Open 100%
Reverse (NO)	0V or 4mA	Open 100%
	10V or 20mA	Closed

**PICTURE D**