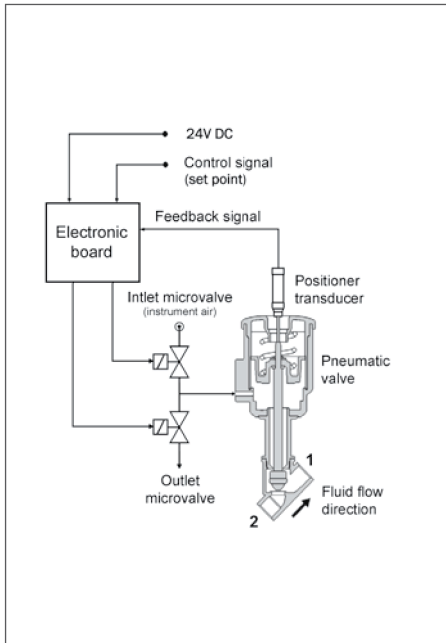


CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER

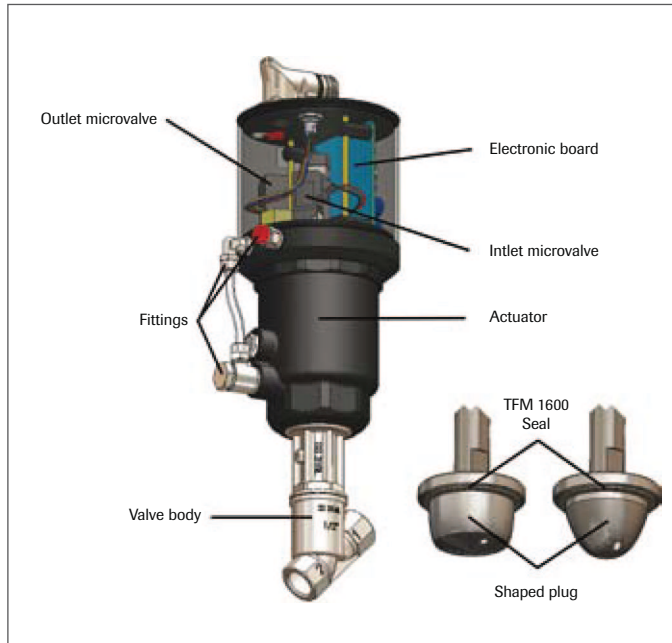
OPERATING PRINCIPLES AND DESCRIPTION

The M&M control piston actuated valve is 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 2 values don't match, the electronic system inside the valve operates no. 2 microvalves (which open or close the pilot air feeding) to change the stroke until both signals match.

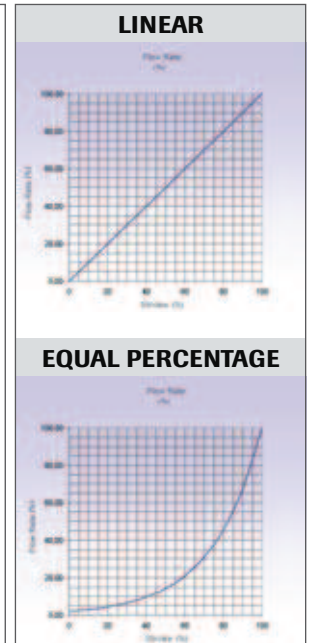
The proportionality between the stroke of the valve and the instantaneous flow is guaranteed by the special plug design: linear plug and equal percentage plug (PICTURE B1; the graphs show an ideal curve, which cannot be reproduced exactly but it varies according to the DN of the valve and the specific installation parameters). When fully closed the valve is leakage tight, thanks to the main seal in TFM 1600 as in M&M standard on/off piston valves (see PICTURE B).



PICTURE A



PICTURE B



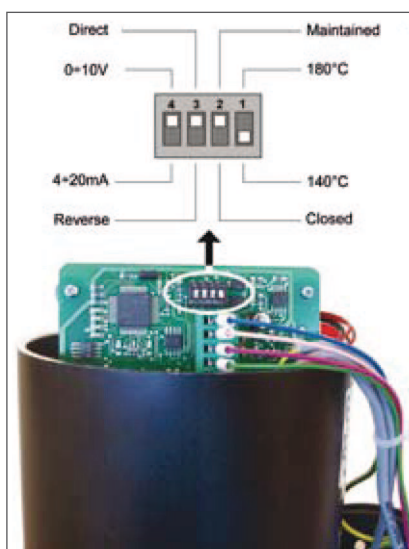
PICTURE B1

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 have been implemented in a sole easy automatic operation by pushing a LED lit button on top of the control box (integrated self-starter).

The pneumatic positioner can be fitted both on M&M Ø 63 and Ø 90 pneumatic actuators (ex factory, it is not a remote accessory to be built on site).

Fluid direction is always under seat!

Control Piston actuated valves with integrated positioner are supplied by the manufacturer adjusted, tested and set up as per Customer's requests upon the purchase order. The relevant parameters must be pre-set ex factory by means of 4 deep-switches (see PICTURE C).



PICTURE C

Contact No. 1 – Process temperature -

Contact No. 2 - Fail safe Position -

Contact No. 3 – Function set-up -

Contact No. 4 - Set point -

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

CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER DN15 UP TO DN50; STAINLESS STEEL

TECHNICAL SPECIFICATIONS

Media: water, oil, aggressive media and steam
Media temperature: -10°C ÷ +140°C (2,6 barg for steam)
High temperature version up to 180°C available
Low friction stem seal (not available for PAV for high temperature version)
Ambient temperature: -10°C ÷ +60°C
Set point signal: 0 ÷ 10V ; 4 ÷ 20mA
Electrical supply: 24V DC
MAX power consumption: 6W (0,24A)
Flow characteristics: linear or equal percentage
Protection class: IP65
Set-up point: self-adjusted valve
Pilot media: dry and filtered air mesh (25 µm)
Body material: cast AISI 316L (see page 37)
Bonnet material: cast AISI 316L (see page 37)
Actuator Ø: 63 - 90
Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
Seal material: PTFE
Positioner enclosure: anodized aluminium (black)
Fail Safe Position: "closed", "maintained"
Function: NO / NC
Electrical connections: M23 connector, 12 poles
Hysteresis: < 1% f.s.
Repeatability: < 0,5% f.s.
Minimum set-point: < 2% f.s.

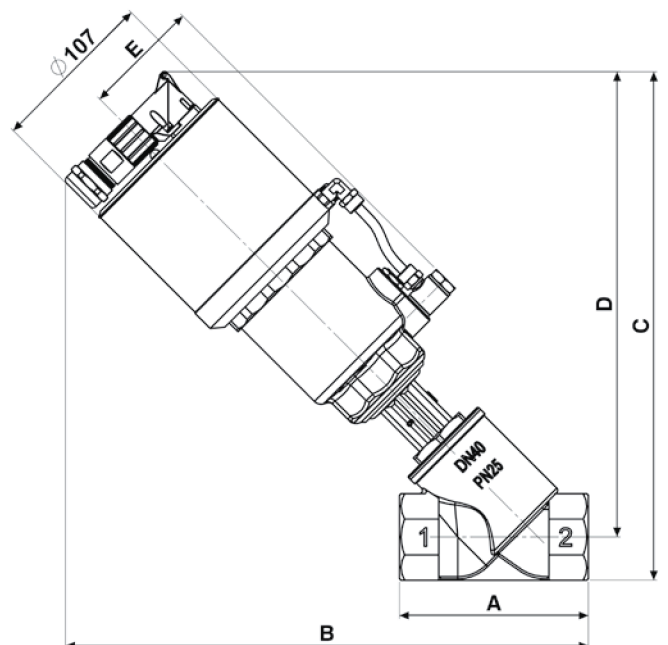
BENEFITS

Actuator housing rotation 360°
Valves DN32-DN50 complying with 97/23 Directive Category I
Connector rotation 360° (step 90°)

OPTIONS

Connection options: screwed, flanged butt welding, socket welding and sanitary clamp
Seal material: PEEK
Body and shaped plug with hardening treatment

TYPE: CONTROL PAV NC



SELECTION TABLE

DN	Max working pressure	Flow direction	Pilot pressure		Actuator Ø
			min	max	
[mm]	[barg]	[2 → 1]	[barg]	[barg]	[mm]
15	16	only under seat	4.5	8	63
20	16				
25	14	only under seat	4.5	8	90
32	12				
40	8				
50	6				

CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER DN15 UP TO DN50; 14 STAINLESS STEEL

DIMENSIONS & WEIGHTS

CONNECTION: GAS, NPT, WELD ENDS						
DN	Actuator Ø	A	B	C	D	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
15	63	65	294	282,5	269	2,4
20		75	301	290	274	2,5
25	90	90	316	305	285	3,3
32		110	329	317	292,5	3,7
40		120	334	325	297,5	3,9
50		150	352	340	306,5	4,6

ALL MODELS	
Actuator Ø	E
[mm]	[mm]
63	75
90	88

CONNECTION: FLANGED EN 1092-1						
DN	Actuator Ø	A	B	C	D	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
15	63	130	323	339,5	292	3,8
20		150	330	349,5	297	4,2
25	90	160	344	364,5	307	5,7
32		180	359	386	316	7,3
40		200	361	394	319	8,2
50		230	384	412,5	330	10,4

CONNECTION: CLAMP ISO 2852						
DN	Actuator Ø	A	B	C	D	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
15	63	102	313	286	269	2,5
20		114	320,5	291	274	2,7
25	90	140	341	310	285	3,7
32		159	353,5	318	292,5	4,1
40		159	353,5	329,5	297,5	4,5
50		190	372	340	306,5	5,3

CONNECTION: FLANGED ANSI B 16.5						
DN	Actuator Ø	A	B	C	D	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
15	63	139,7	321	336,5	292	3,8
20		152,4	327	346,0	297	4,2
25	90	165,1	343	361,0	307	5,7
32		184,2	357	375,0	316	7,3
40		203,2	361	382,5	319	8,2
50		228,6	384	406,0	330	10,4

CONNECTION: CLAMP ASME BPE						
DN	Actuator Ø	A	B	C	D	Weight
[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
15	63	102	313	282,5	269	2,5
20		114	320,5	290	274	2,7
25	90	140	341	310	285	3,7
32		ND	ND	ND	ND	4,1
40		159	353,5	325	297,5	4,5
50		190	372	340	306,5	5,3

EQUI% TRIM 1:25 - FLOW RATE [l/min]

Connection	DN	Actuator Ø	% STROKE											
			5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	Kvs	
-	[mm]	[mm]												
1/2"	15	63	2,1	2,6	4,2	6,4	10	16	24,5	37,5	52	62,5	75	
3/4"	20		3,9	5	9,4	15,5	24,5	37,5	56,2	80,5	102	120	145	
1"	25	90	6,5	8,5	11,5	21,5	32,5	49	76	113	150	181	213	
1 1/4"	32		12,5	16,5	27	42	62	90	135	193	240	291	330	
1 1/2"	40		22	27	44,5	66,5	99	141	211	303	358	429	496	
2"	50		20	30,5	56	87,5	135	203	290	385	467	548	605	

LINEAR TRIM 1:25 - FLOW RATE

Connection	DN	Actuator Ø	% STROKE
			Kvs [l/min]
-	[mm]	[mm]	
1/2"	15	63	81
3/4"	20		145
1"	25	90	240
1 1/4"	32		380
1 1/2"	40		570
2"	50		655