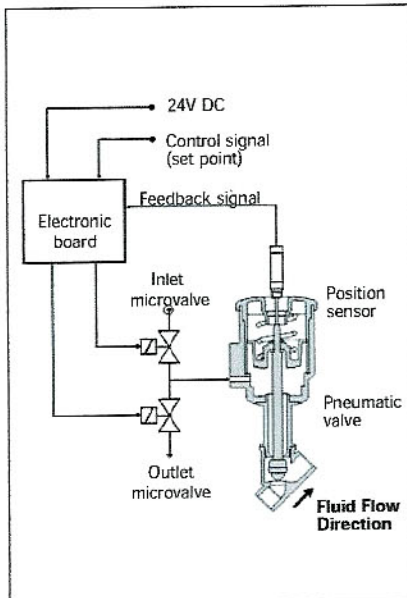


CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER

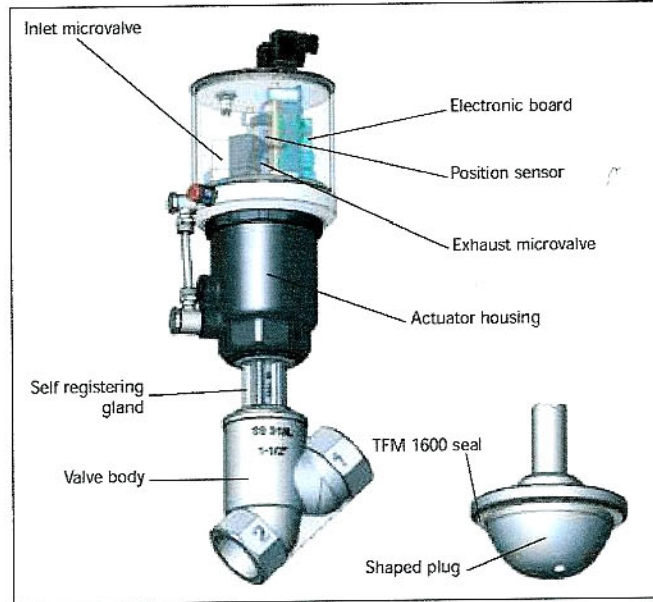
OPERATING PRINCIPLES AND DESCRIPTION

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 (feedback) 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.

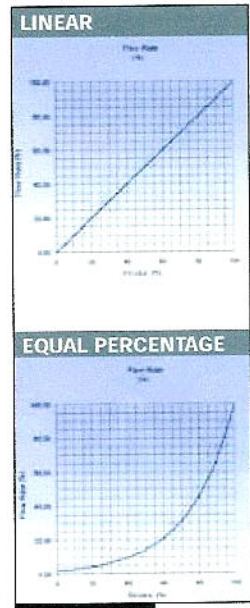
The proportionality between the stroke of the valve and the instantaneous flow is guaranteed by the special plug design: linear plug and equal percentage plug (PICTURE B1; the graphs show an ideal curve, which cannot be reproduced exactly but it varies according to the DN of the valve and the specific 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

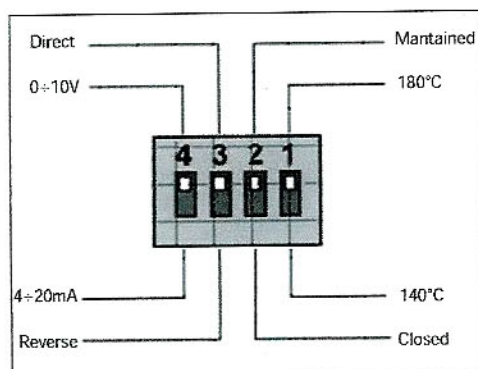
The pneumatic positioner is electronic and not programmable. It accepts the most common set-point signals (4 - 20 mA; 0 - 10 V). All calibration operations have been implemented in a sole easy automatic operation by pushing a LED lit button on top of the control box (integrated self-starter).

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!

The Control Piston Actuated Valves are supplied already set, calibrated and tested by the manufacturer (ex factory) according to specifications and requirements set forth in the customer's official purchase order and **SELECTION CHART** (at page 30).

The relevant parameters must be pre-set ex factory by means of 4 deep-switches (see PICTURE C).



PICTURE C

Contact n° 1 - Process temperature -

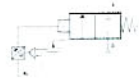
Contact n° 2 - Fail safe position -

Contact n° 3 - Function set-up

Contact n° 4 - Set point -

Function set-up (Contact n° 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

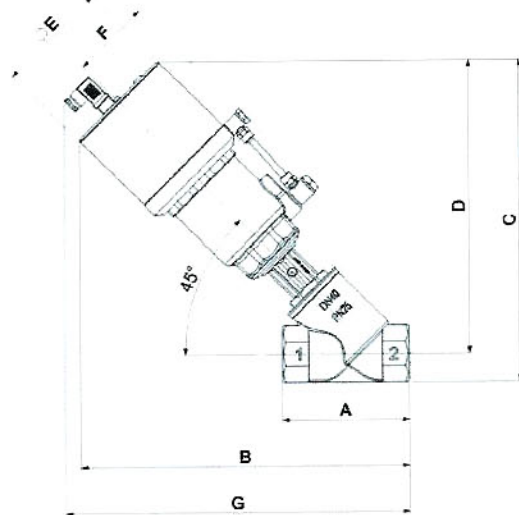
CONTROL PISTON ACTUATED VALVE WITH INTEGRATED POSITIONER DN15 UP TO DN50; STAINLESS STEEL



TYPE: PROPORTIONAL NC

TECHNICAL SPECIFICATIONS

- Media: water, oil, aggressive media and steam
- Media temperature: $-10^{\circ}\text{C} \div +140^{\circ}\text{C}$ (2,6 barg for steam)
- High temperature version up to 180°C available
- Low friction stem seal (not available for HT version)
- Ambient temperature: $-10^{\circ}\text{C} \div +60^{\circ}\text{C}$
- Set point signal: $0 \div 10\text{V}$; $4 \div 20\text{mA}$
- Electrical supply: 24V dc
- Flow characteristics: linear or equal percentage
- Protection class: IP65
- Integrated self-starter (self-adjusted valve)
- Pilot media: dry and filtered air mesh (25 μm)
- Body material: cast AISI 316L (see page 36)
- Bonnet material: cast AISI 316L (see page 36)
- Actuator size: $\varnothing 63 - 90$
- Actuator body material: Polyamide PA6 (reinforced fiberglass 30%)
- Seal material: PTFE
- Positioner enclosure: aluminium
- Fail safe position: closed, maintained
- Function: NO / NC
- Electrical connections: DIN EN 175301-803 form A
- 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/EC Directive Category I

OPTIONS

- Bronze body and brass bonnet available
- Connection options: screwed, flanged, butt and socket welding, sanitary clamp
- Seal material: PEEK
- Body and shaped plug with hardening treatment

DIMENSIONS & WEIGHTS

connection	act. \varnothing	A	B	C	D	E	F	G	weight
(ISO 228 G)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg)
1/2"	63	65	273	267	253	107	75	288	-
3/4"		75	279	274	258			294	-
1"		90	293	287	267			308	-
1 1/4"		110	306	299	275			321	-
1 1/2"		120	311	307	280			326	-
2"		150	329	322	288			344	-
1"	90	90	295	288	268	107	86	310	-
1 1/4"		110	308	300	275			323	-
1 1/2"		120	313	308	280			328	-
2"		150	332	324	290			347	-


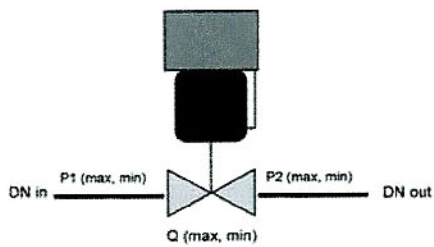
SELECTION TABLE

connection	DN \varnothing	act. \varnothing	pilot pressure		working pressure	flow direction
			min(bar)	max(bar)		
(ISO 228 G)	(mm)	(mm)			max(bar)	
1/2"	DN15	63	3	8	16	ONLY 2 1
3/4"	DN20				16	
1"	DN25				11	
1 1/4"	DN32				6	
1 1/2"	DN40				4	
2"	DN50				2.5	
1"	DN25	90	3.3	8	14	
1 1/4"	DN32				12	
1 1/2"	DN40				8	
2"	DN50				6	

M&M International reserves the right to modify or change the contents or technical specifications without prior warning.

SELECTION CHART FOR MODULATING PISTON VALVE

PLEASE COPY THIS PAGE AND FAX IT TO US DULY COMPLETED AT NO. +39 035 531763 TO ALLOW US TO PROCESS YOUR ORDER.

GENERAL	NOMINAL DIAMETER (DN)										
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	15	20	25	32	40	50					
	ACTUATOR SIZE					BODY MATERIAL					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Stainless steel	Bronze						
	63	90									
CONNECTION Valve with bronze body is available only with Gas and Npt connections											
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Gas	Npt	B-w ISO65 ANSI B36.10	B-w ISO 4200	B-w DIN 11850	S-w ISO65 ANSI B36.10	Clamp ISO 2852	Clamp ASME BPE	Flange EN 1092	Flange ANSI		
PNEUMATIC POSITIONER											
PLUG			PROCESS TEMPERATURE			FAIL SAFE POSITION					
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Std	Linear	Equi %	140°C	180°C	Closed	Maintained					
FUNCTION			SET-POINT								
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	0-10V	4-20mA						
NC	NO										
OTHER INFORMATION											
FLUID					DN (PIPING)		Q				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>			
Water	Saturated steam	Superheated steam	Gas	IN	OUT	Min m ³ /h	Max m ³ /h (kg/h for steam)			
P1					P2						
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>						
Min (bar)	Max (bar)	Min (bar)	Max (bar)								
											

Note: Highlighted versions are the standard ones. For special versions please get in touch with M&M to check availability.