DESCRIPTION

Minivalves series “M” are produced in the 2/2 and 3/2 pneumatic functions in both side and bottom ported versions, with push-in fittings on body valve for pipe Ø 4 mm or M5 threaded connections; the version G 1/8 bottom ported is also available. Thanks to the suitable adapter type MCS-SAD, these minivalves support the Ø 22 mm actuators for panel mounting. The same actuators can control 1 or 2 minivalves, thus it’s possible to obtain the 3/2, 5/2, 5/3 open centre and the 5/3 pressure centre pneumatic functions. They are in compliance with ATEX directive, 2GD category, upon request.



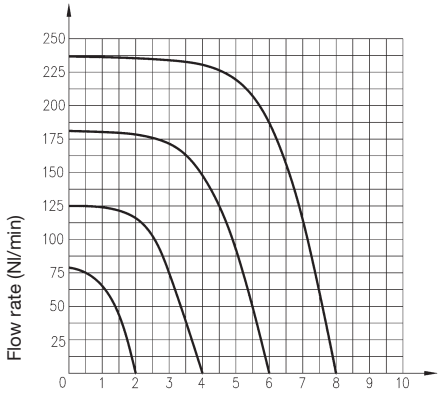
TECHNICAL DATA

Operating pressure	2 ÷10 bar
Working temperature	0 ÷ +60 °C (–20 °C with dry air)
Fluid	Filtered air, without lubrication. If lubricated air is used, lubrication should never be interrupted.
Port size	Push-in fittings for pipe Ø 4 mm - M5 - G 1/8
Nominal diameter	2,5 mm
Controls	
Mechanical	Plunger; roller lever; unidirectional roller lever
Manual	Tapper; actuators for panel mounting

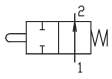
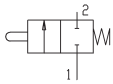
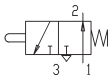
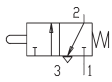
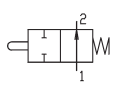
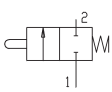
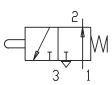
MATERIALS

Body	Anodized aluminium alloy
Bushing and guide	Nickel - plated brass
Springs	Stainless steel
Seals	NBR rubber
Connections	Nickel - plated brass, plastic material
Controls	
Tapper; Swivel	Glass stiffened polyamide
Plunger; Roller	Nickel - plated brass
Lever	Steel

FLOW CHART - M



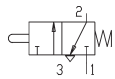
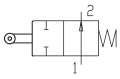
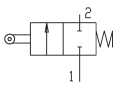
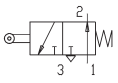
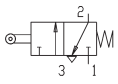
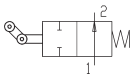
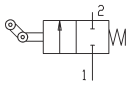
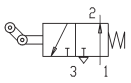
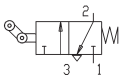
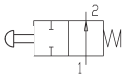
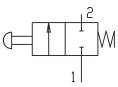
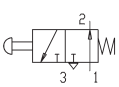
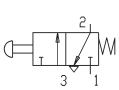
2 AND 3 PORT N.C. - N.O.

Symbol	Function	Controls		Actuation force at 6 bar (N)	Flow rate at 6 bar ΔP = 1 bar (Nl/min)	Weight (g)	Port size	TYPE*
		Pilot	Return					
	2/2 N.O. monostable	Plunger	Mechanical spring	13	83	40	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHAS4 MHAS4/L MHASM5 MHASM5/L MHAS1/8
	2/2 N.C. monostable	Plunger	Mechanical spring	13	83	40	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHCS4 MHCS4/L MHCSM5 MHCSM5/L MHCS1/8
	3/2 N.O. monostable	Plunger	Mechanical spring	13	83	40	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MAS4 MAS4/L MASM5 MASM5/L MAS1/8
	3/2 N.C. monostable	Plunger	Mechanical spring	13	83	40	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MCS4 MCS4/L MCSM5 MCSM5/L MCS1/8
	2/2 N.O. monostable	Plunger for panel mounting	Mechanical spring	13	83	60	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHAP4 MHAP4/L MHAPM5 MHAPM5/L MHAP1/8
	2/2 N.C. monostable	Plunger for panel mounting	Mechanical spring	13	83	60	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHCP4 MHCP4/L MHCPM5 MHCPM5/L MHCP1/8
	3/2 N.O. monostable	Plunger for panel mounting	Mechanical spring	13	83	60	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MAP4 MAP4/L MAPM5 MAPM5/L MAP1/8

***/EX** Consistent with the ATEX directive Ⓔx II 2G Ex h IIC T5 Gb -20°C<Ta<60°C
II 2D Ex h IIIC T100°C Db

E.G.: **MCS4/EX**

2 AND 3 PORT N.C. - N.O.

Symbol	Function	Controls		Actuation force at 6 bar (N)	Flow rate at 6 bar ΔP = 1 bar (Nl/min)	Weight (g)	Port size	TYPE*
		Pilot	Return					
	3/2 N.C. monostable	Plunger for panel mounting	Mechanical spring	13	83	60	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MCP4 MCP4/L MCPM5 MCPM5/L MCP1/8
	2/2 N.O. monostable	Roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHALR4 MHALR4/L MHALRM5 MHALRM5/L MHALR1/8
	2/2 N.C. monostable	Roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHCLR4 MHCLR4/L MHCLRM5 MHCLRM5/L MHCLR1/8
	3/2 N.O. monostable	Roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MALR4 MALR4/L MALRM5 MALRM5/L MALR1/8
	3/2 N.C. monostable	Roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MCLR4 MCLR4/L MCLRM5 MCLRM5/L MCLR1/8
	2/2 N.O. monostable	Unidiretional roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHALRU4 MHALRU4/L MHALRUM5 MHALRUM5/L MHALRU1/8
	2/2 N.C. monostable	Unidiretional roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHCLRU4 MHCLRU4/L MHCLRUM5 MHCLRUM5/L MHCLRU1/8
	3/2 N.O. monostable	Unidiretional roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MALRU4 MALRU4/L MALRUM5 MALRUM5/L MALRU1/8
	3/2 N.C. monostable	Unidiretional roller lever	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MCLRU4 MCLRU4/L MCLRUM5 MCLRUM5/L MCLRU1/8
	2/2 N.O. monostable	Tapper	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHAT4 MHAT4/L MHATM5 MHATM5/L MHAT1/8
	2/2 N.C. monostable	Tapper	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MHCT4 MHCT4/L MHCTM5 MHCTM5/L MHCT1/8
	3/2 N.O. monostable	Tapper	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MAT4 MAT4/L MATM5 MATM5/L MAT1/8
	3/2 N.C. monostable	Tapper	Mechanical spring	7	83	50	Ø4 bottom ported Ø4 side ported M5 bottom threaded M5 side threaded G 1/8 bottom ported	MCT4 MCT4/L MCTM5 MCTM5/L MCT1/8

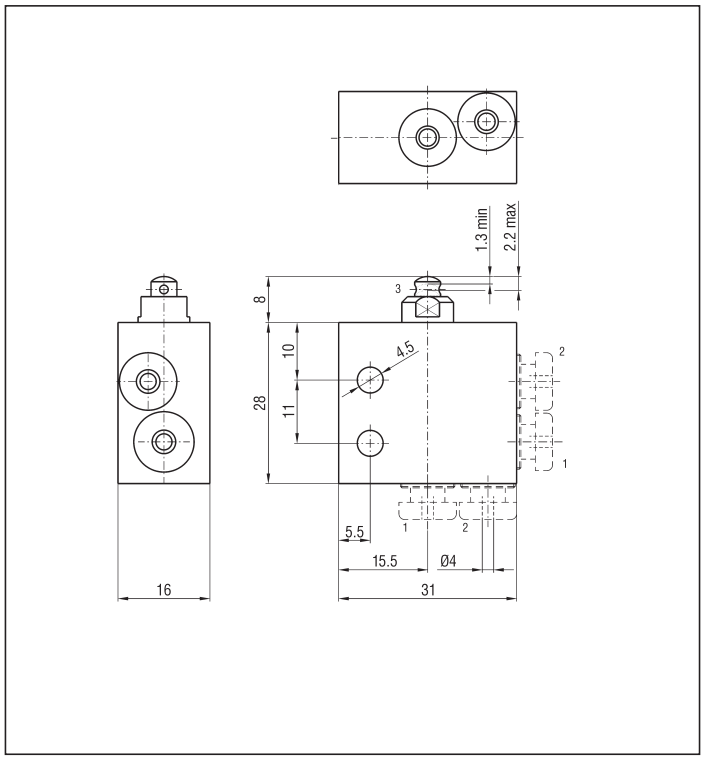
***/EX** Consistent with the ATEX directive Ⓔx II 2G Ex h IIC T5 Gb -20°C<Ta<60°C
II 2D Ex h IIIC T100°C Db

E.G.: **MCLR4/EX**

3

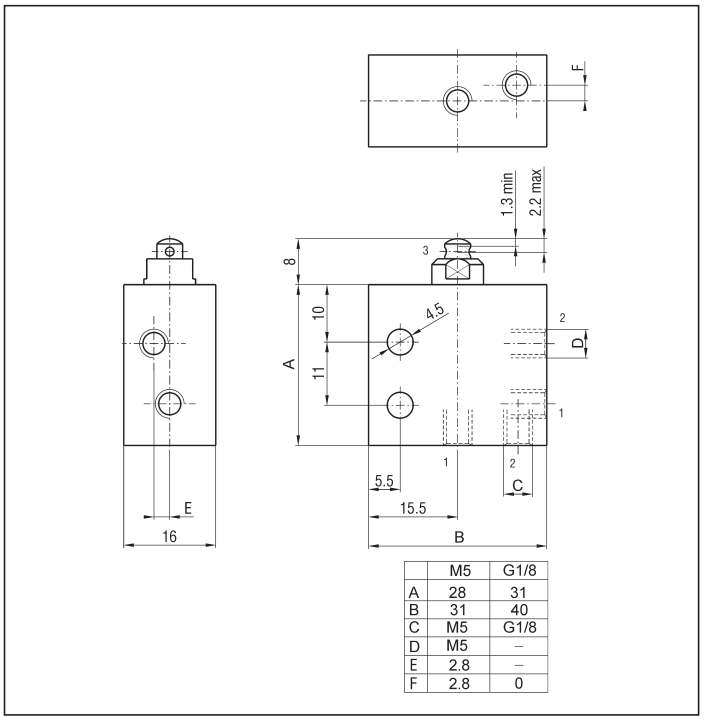
3

PLUNGER - Ø 4 mm SIDE AND BOTTOM PORTED



P.S.: DO NOT EXCEED THE MAXIMUM ACTUATION STROKE

PLUNGER - M5 THREADED CONNECTIONS SIDE AND BOTTOM PORTED - G 1/8 BOTTOM PORTED

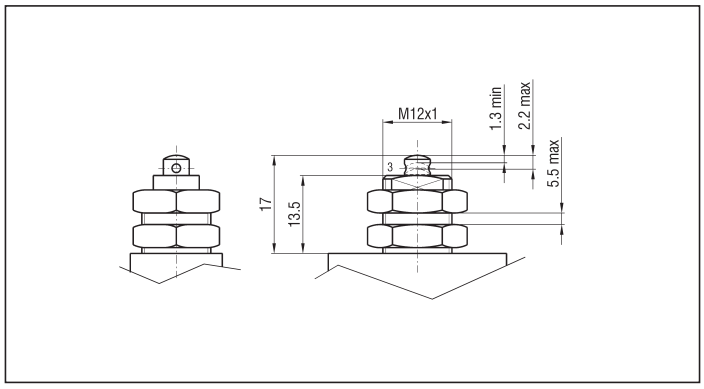


	M5	G1/8
A	28	31
B	31	40
C	M5	G1/8
D	M5	–
E	2.8	–
F	2.8	0

P.S.: DO NOT EXCEED THE MAXIMUM ACTUATION STROKE

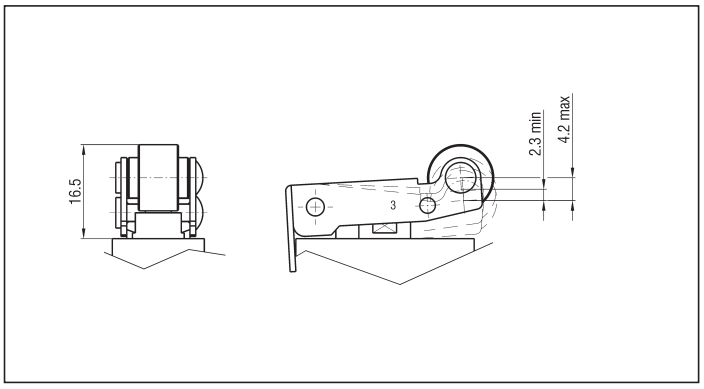
CONTROLS

PLUNGER FOR PANEL MOUNTING

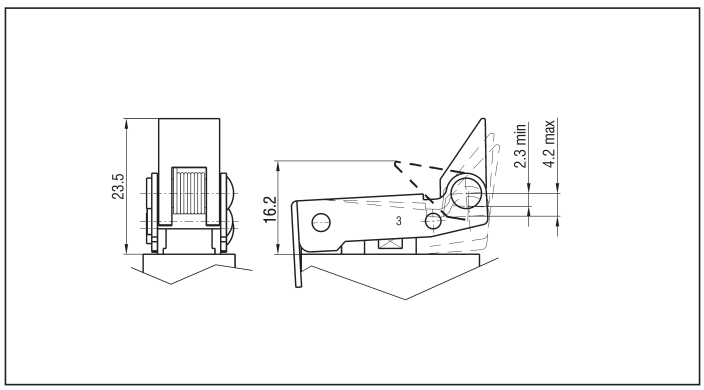


P.S.: DO NOT EXCEED THE MAXIMUM ACTUATION STROKE

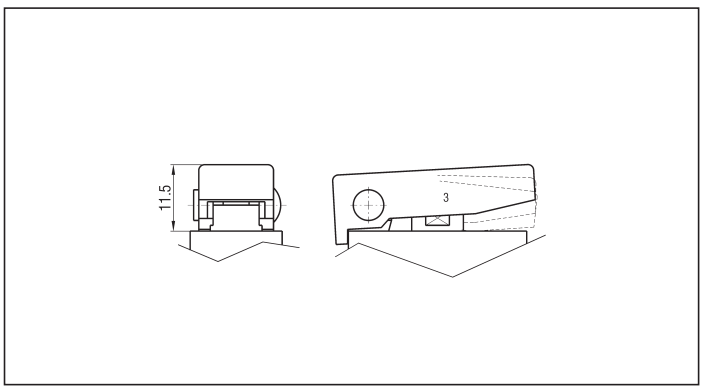
ROLLER LEVER



UNIDIRECTIONAL ROLLER LEVER



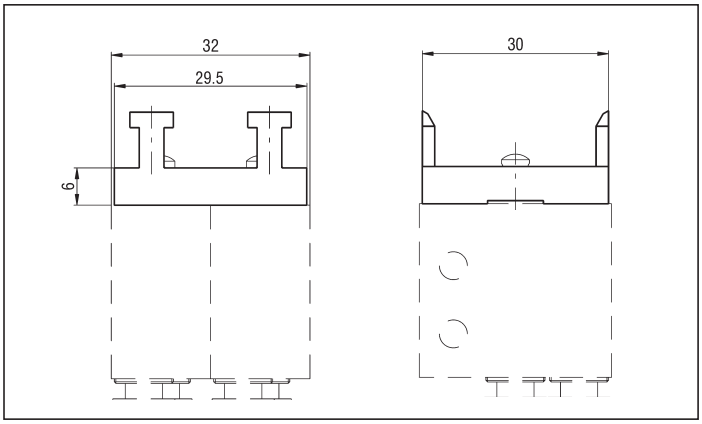
TAPPER



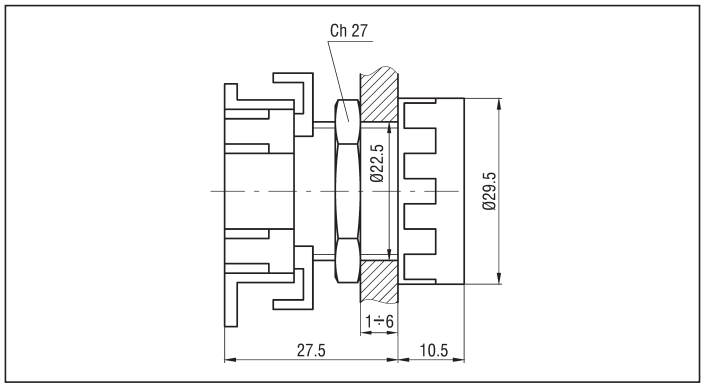
ACTUATORS FOR PANEL MOUNTING

Symbol	Description	Function	TYPE	Symbol	Description	Function	TYPE
	Protected monostable push-button BLACK RED GREEN	0 ← 1	MCS - PMN MCS - PMR MCS - PMV		Black bistable short-lever switch	0 1	MCS - LCB
	Red monostable mushroom	0 ← 1	MCS - FMR		Black monostable short-lever switch, 3 position with return to the centre	1 → 0 ← 2	MCS - LCSM
	Red bistable mushroom (rotate to unlock)	0 1	MCS - FBR		Black short-lever switch, 3 stable positions	1 0 2	MCS - LCSB
	Black monostable short-lever switch	0 ← 1	MCS - LCM		Bistable key (extractable in both the 2 positions)	0 1	MCS - CB2

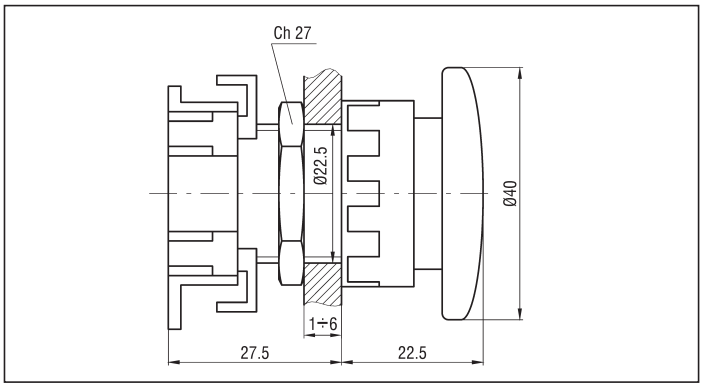
DOUBLE ADAPTER TYPE MCS-SAD FOR ACTUATORS



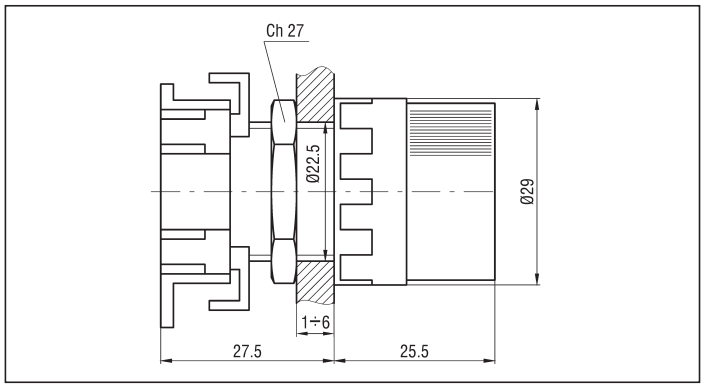
PUSH-BUTTON



MUSHROOM



SHORT - LEVER SWITCH



BISTABLE KEY

