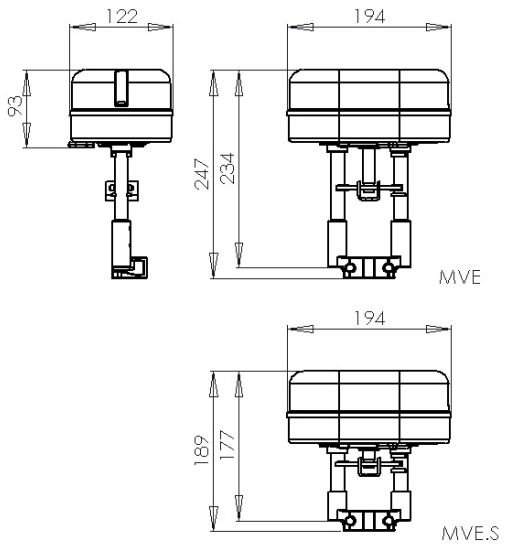
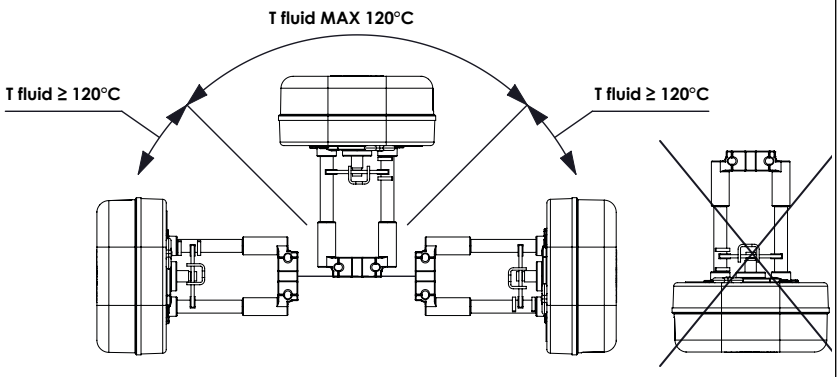
MVE5xx/MVE5xx-65

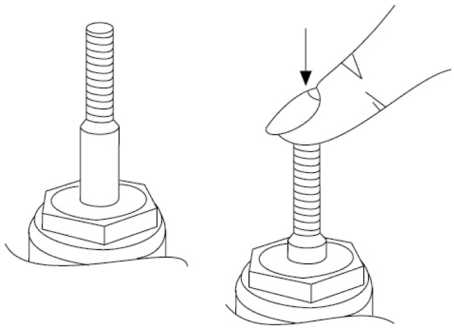
Valve Actuators

INSTALLATION





1



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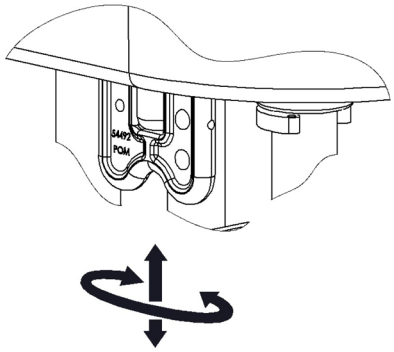

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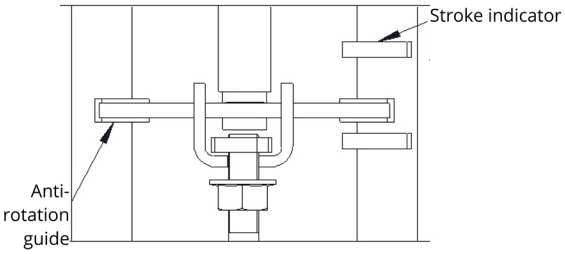

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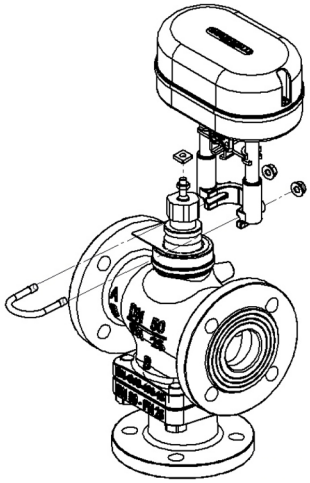
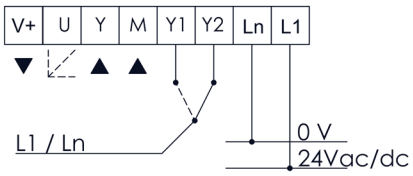


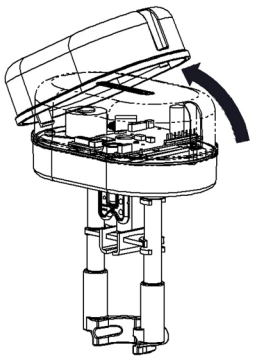
The performances stated in this sheet can be modified without any prior notice.

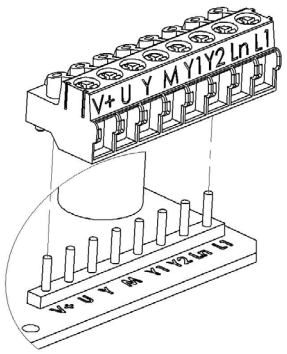
CABLE GLAND

Use cable gland PG13,5 model (not supplied).
IP65 MODEL suitable with PG13,5 cable gland for cables with Ø variable between 6 and 12 mm.

TERMINAL BLOCK





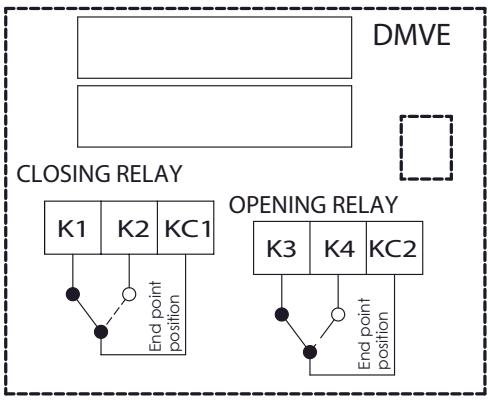


Note: To avoid damages to electronic components caused by the PCB bending, do not press too much while fixing the terminal block.

Label	Description	Function	Cable Type	Max. Wire Length
L1	24 V AC/DC	Power supply	AWG 16 (min. 1 mm² - max 1.5 mm²)	75 m
Ln	0 V			
Y	0-10 V DC	Modulating control input	AWG 20 (min. 0.5 mm² - max 1.5 mm²)	200 m
M	0 V (common)			
Y1	Open	Floating control input	AWG 20 (min. 0.5 mm² - max 1.5 mm²)	200 m
Y2	Close			
V+	16 V DC	Voltage output max 25mA	AWG 20 (min. 0.5 mm² - max 1.5 mm²)	200 m
M	0 V (common)			
U	2-10 V DC	Feedback output signal	AWG 20 (min. 0.5 mm² - max 1.5 mm²)	200 m
M	0 V (common)			

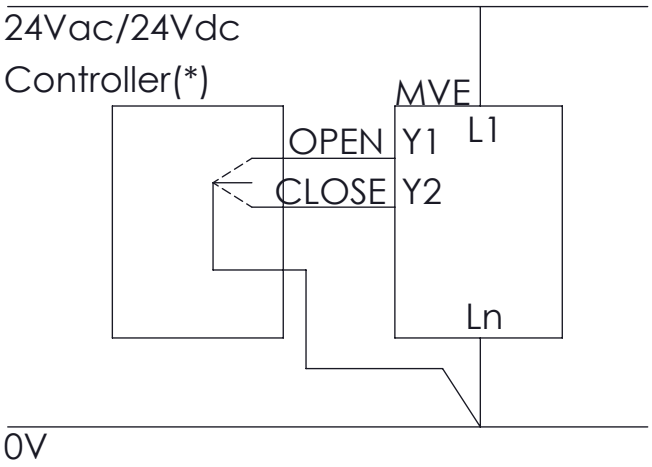
1	2	3	4	5	SH500
L1	L2	M	V+	Y	MVB5-MVL5-MDL5
G	G0	MX	G1	X1	MVF-MVH5-MVL5-F
L1	LN	M	V+	Y	MVE

Terminals correspondence with respect to other iSMA CONTROLLI actuators models.

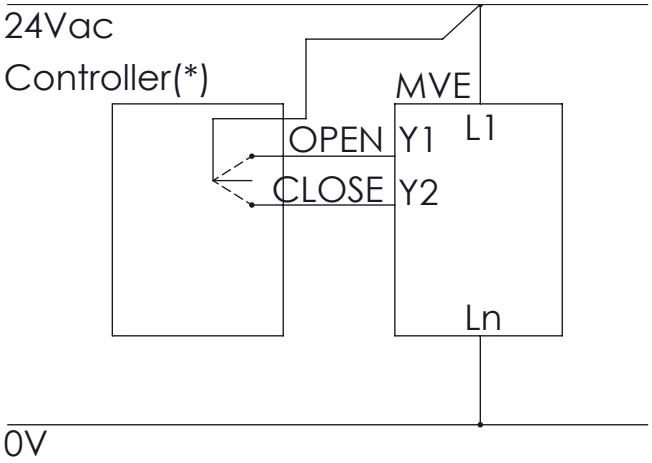


DMVE: Electrical rating: 24V AC/DC, 4A

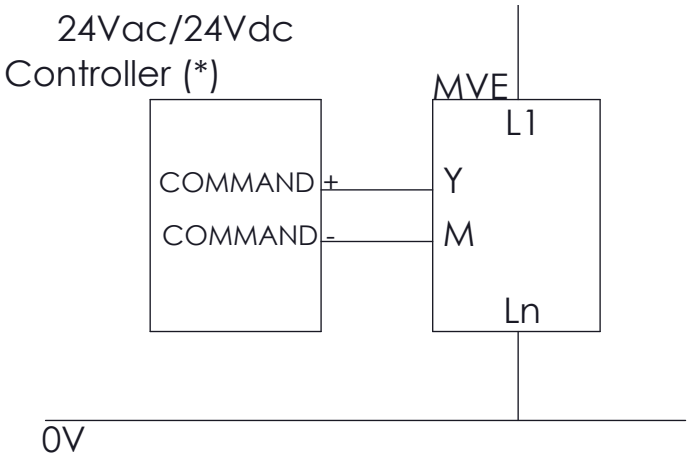
3-point Floating Control (Sink Connection)



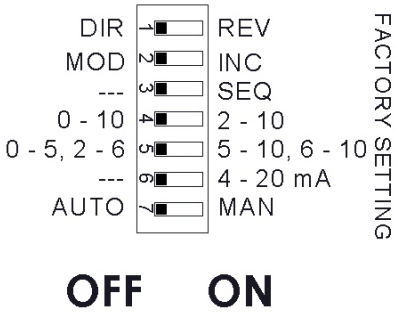
3-point Floating Control (Source Connection)

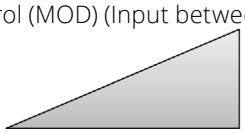
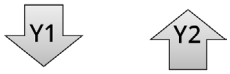


Modulating Control (0-10 V DC)



N.B. Signals M and Ln are internally connected.
(*) MVE contain a single half-wave rectifier power supply. They must not be powered with transformers that are used to power other devices using not isolated double half-wave rectifier power supply.



DIP switch	OFF	ON
1	Direct Action U= feedback  U = 2V U = 10V	Reverse Action U= feedback  U = 10V U = 2V
2	Modulating Control (MOD) (Input between Y [+] and M [-]) 	3 point floating (INC) (Y1 open-extend , Y2 close-retract connected L1 or Ln if powered in Vac; if powered in Vdc connected necessarily to Ln) 
3	-	Selection of sequence mode, control range defined by DIP n. 5
4	Modulating Control 0-10Vdc (DIP n. 2 OFF only)	Modulating Control 2-10Vdc (DIP n. 2 OFF only)
5	Sequence Control 0-5Vdc with DIP n. 4 OFF only Sequence Control 2-6Vdc with DIP n. 4 ON only (DIP n. 3 ON only)	Sequence Control 5-10Vdc with DIP n. 4 OFF only Sequence Control 6-10Vdc with DIP n. 4 ON only (DIP n. 3 ON only)
6	Voltage Input Signal (input between Y [+] and M [-])	Current Input Signal 4-20mA (input between Y [+] and M [-]). In this case DIP n. 4 must be set to ON.
7	Automatic Calibration: the actuator updates the stroke range every time an unexpected mechanical stop is detected for at least 10s	Manual Calibration: the actuator calibration is started moving the DIP from OFF to ON or vice versa. With DIP in ON in case of extra stroke or if an unexpected endpoint is detected, the actuator will never update the stroke

DIAGNOSTIC - ALARM FUNCTIONS

N°	LEDs Behaviour	Error	Actuator Use	Actuator Behaviour		Typical Trouble-shooting Condition	Reset Procedure
				Automatic calibration (DIP N. 7 OFF)	Manual calibration (DIP N. 7 ON)		
1	RED ON	Valve stroke less than 5mm	Calibration/ first installation	The actuator pushes/pulls 2 times (unexpected stall) trying to remove the possible obstacle. After 2 tries an alarm is signalled and the actuator moves to initial position and does not respond to control signal. Stroke value is not updated because out of range	The actuator pushes/ pulls 2 times against endpoint during calibration and the actuator moves to the initial position and then it does not respond to the control signal. The actuator keeps the previous stroke	Valve with a stroke length lower than 5mm	Remove power and power up again

2	RED LED quick blinking + GREEN ON	Stroke longer than 60mm	Calibration/ first instal-lation	The actuator exits the 60mm stroke range and it moves toward the new stroke limit signalling an anomaly. The actuator pushes/pulls 2 times against the new stroke limit, then it goes back to the initial position still signalling the anomaly until it is not within 60mm. The actuator does not calibrate the stroke after 10s (wrong range)	The actuator exits the 60mm stroke range and it moves toward the new stroke limit signalling an anomaly. The actuator pushes/ pulls 2 times against the new stroke limit, then it goes back to the initial position still signalling the anomaly until it is not within 60mm. The actuator does not calibrate the stroke after 10s (wrong range)	Valve with a stroke length longer than 60mm	Remove power and power up again
3	RED Quick Blinking	Unexpected stall within the calibrated stroke range	Normal operation	The actuator tries 5 times against the new stall condition and then after 10s the actuator updates the new stroke length	The actuator tries 5 times against the new stall condition. At the end of the attemp-ts the fault will be signalled. The actuator does not update the new stroke length, but after 60s makes other attempts to verify the stall condition	Valve stuck	Inverted control signal
4	RED Quick Blinking	Stroke longer than expected	Normal operation	The actuator moves toward the new stall condition with a lower speed; after 10s the actuator updates the new stroke value	The actuator moves toward the new stall condition with a lower speed; after 10s the actuator does not update the new stroke value	Stem connection loose or valve da-maged	Inverted control signal
5	RED slow Blinking	Low Power Voltage	Normal operation	The actuator is still wor-king but performance cannot be guaranteed	The actuator is still working but perfor-mance cannot be guaranteed	1. Wrong transfor-mer size 2. Unstable power	Correct Voltage Power
6	RED slow Blinking	High Power Voltage	Normal operation	The actuator is still wor-king but performance cannot be guaranteed	The actuator is still working but perfor-mance cannot be guaranteed	1. Wrong transfor-mer size 2. Unstable power	Correct Voltage Power

STANDARD LEDs BEHAVIOUR		
N°	LED Behaviour	Actuator Status
1	GREEN ON	The actuator arrived at the extreme point of the stroke read
2	GREEN BLINKING	The actuator arrived at the intermediate point of the stroke read
3	RED GREEN BLINKING	The actuator is reading the stroke or it is going to initial position
4	RED GREEN ON	Manual control ON, the actuators ignores the control signal. ATTENTION! The electronic board is electrically supplied