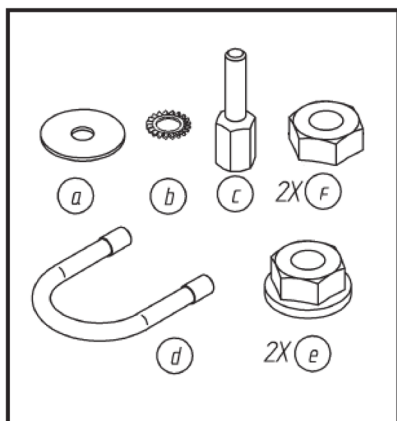


Valve Actuators with Emergency Fail-safe Function

INSTALLATION



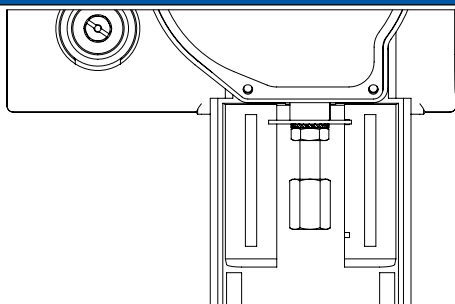
Hot media hazard. Before removing actuator from valve or opening the valve, ensure that the valve control medium is isolated and remove the pressure. Work should only be carried out by a competent engineer.



Note: do not use the actuator disassembled from the valve.

MVH56EA

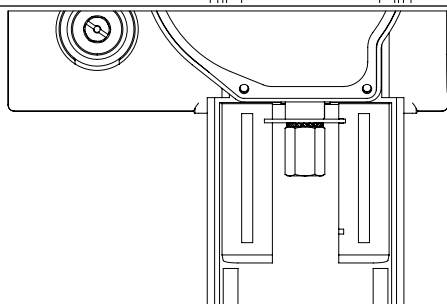
1



For valve with 16 and 25mm stroke

- Rise the valve stem;
- Lock the stem extension c on the rack completely retracted placing the indicator disk a, the jagged washer b and the nut f positioned half of the extension itself.

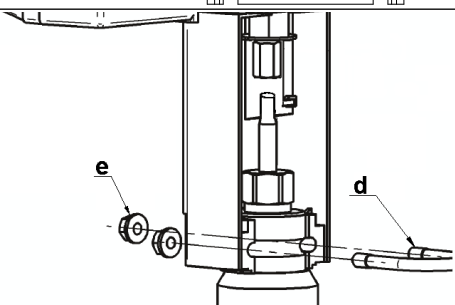
1a



For valves with 45mm stroke

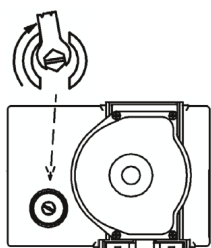
- Rise the valve stem;
- Lock the stem extension c on the rack completely retracted placing the indicator disk a and the jagged washer b.

2



Assemble the actuator to the valve by U-bolt (d) and the two nuts (e) without locking the nuts.

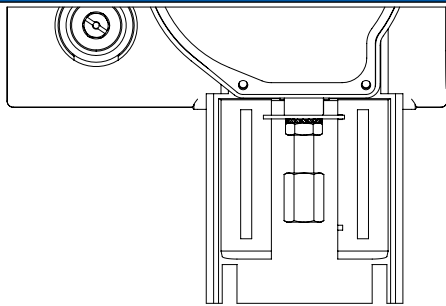
3



- Raise the valve stem.
- Remove the cover and rotate the pivot clockwise so that the rack comes out for assembling it with the valve stem; the pivot can be locked by a spanner as shown in the picture.
- Rotate the actuator to screw the extension on the valve stem, so lock it tightening the nut on the stem.
- Tighten the two nuts on the U-bolt to lock the actuator.
- Remove the key from the pivot and mount the small cap.

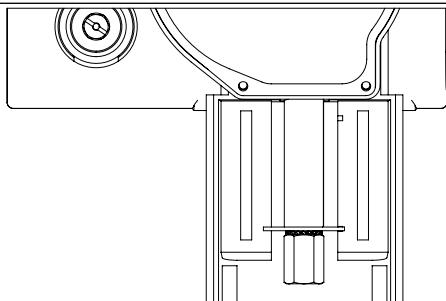
The performances stated in this sheet can be modified without any prior notice.

1

**For valve with 16 and 25mm stroke**

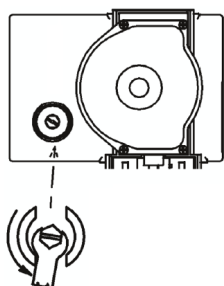
Lower the valve stem. Lock the stem extension **c** on the rack completely extended placing the indicator disk **a**, the jagged washer **b** and the nut **f** positioned half of the extension itself.

1a

**For valves with 45mm stroke**

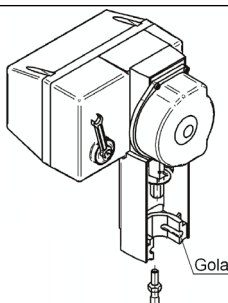
Lower the valve stem. Lock the stem extension **c** on the rack completely extended placing the indicator disk **a** and the jagged washer **b**.

2



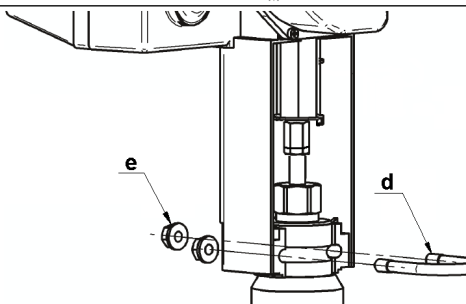
- Remove the cover
- Rotate the pivot 1/2 turn counter-clockwise and lock it by a spanner as shown in the picture.

3

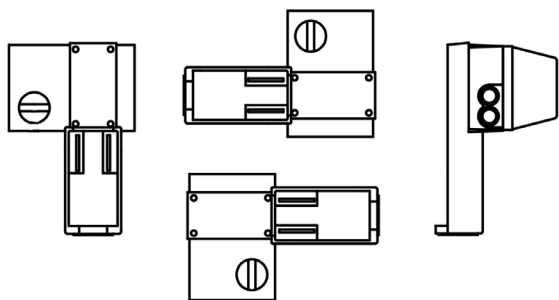
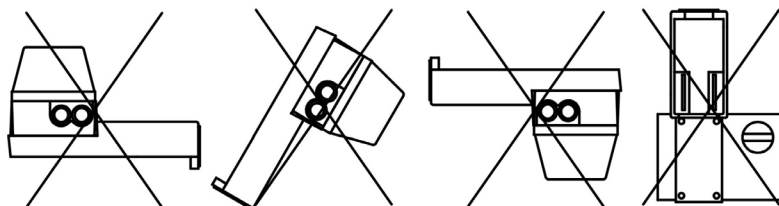


Screw the extension on the valve stem until the groove on the actuator base coincides with the one on the valve, then lock the extension tightening the nut on the stem. In case the two bases do still not coincide, rotate the pivot until it happens.

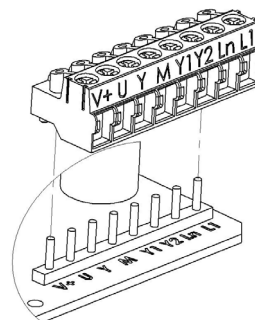
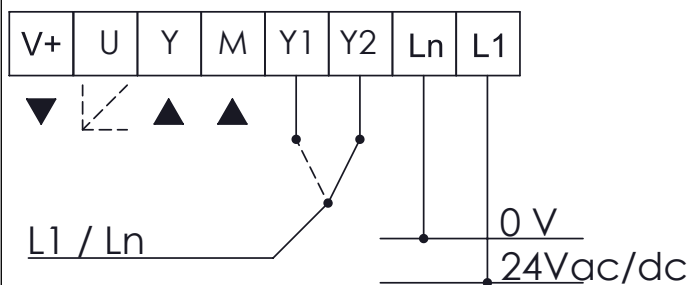
4



Assemble the actuator to the valve by U-bolt **(d)** and locking the two nuts **(e)**.

MOUNTING POSITIONS**YES****NO**

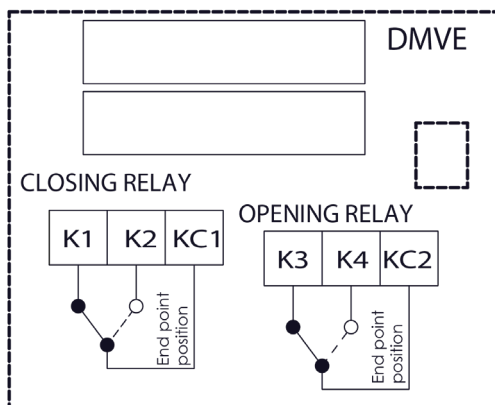
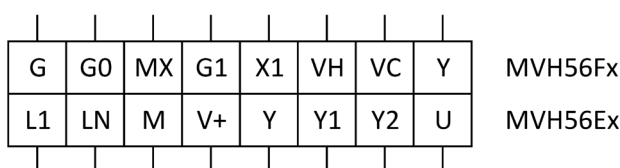
Terminal Block



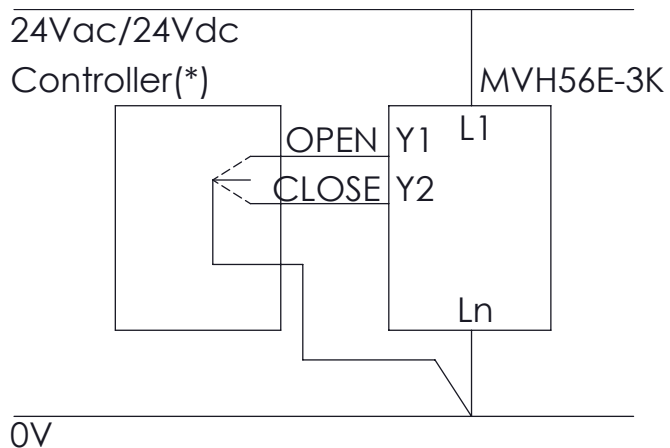
Note: To avoid damages to electronic components caused by the PCB bending, do not press too much while fixing the terminal block.

Label	Description	Function	Min Wire Size (# AWG)	Max. Wire Length
L1	24 V AC/DC	Power Supply	1.5mm ² (AWG16)	75 m
Ln	0 V			
Y	0..10 V DC	Modulating Control Input	0.5mm ² (AWG20)	200 m
M	0 V (Common)			
Y1	Open	Floating Control Input	0.5mm ² (AWG20)	200 m
Y2	Close			
V+	16Vdc	Voltage Output (max 25mA)	0.5mm ² (AWG20)	200 m
M	0 V (Common)			
U	2÷10 V DC	Feedback Output Signal	0.5mm ² (AWG20)	200 m
M	0 V (Common)			

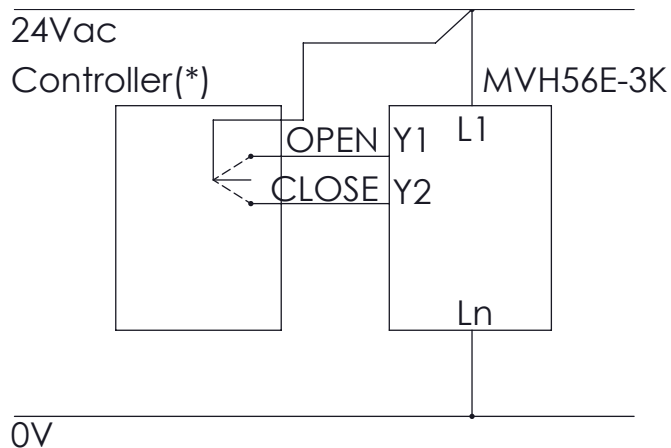
Terminals correspondence with respect to other iSMA CONTROLLI actuators models.



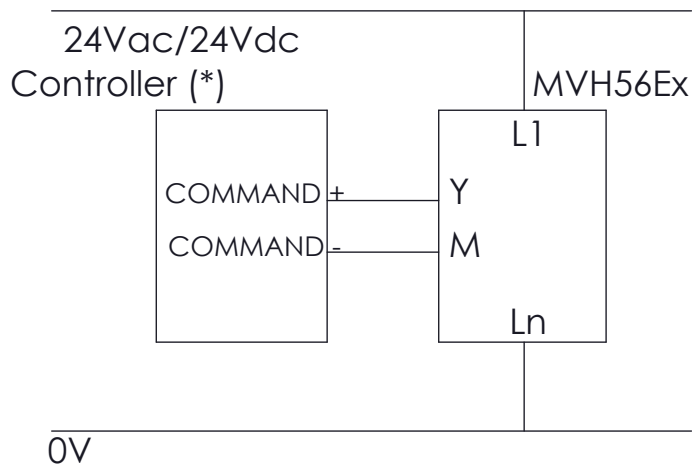
3-point Floating Control (Sink Connection)



3-point Floating Control (Source Connection)



Modulating Control (0-10 Vcc)



N.B. Signals M and Ln are internally connected.

(*) MVH56Ex contain a half-wave rectifier power supply. They must not be powered with transformers that are used to power other devices using not isolated full-wave rectifier power supply.

DIP SWITCHES SETTINGS

Set the DIP switches according to the tables here below. In order to be sure that any modification has been accepted by the actuator, power down and power up it again or act on the manual operation handle to be sure that settings will be recognized.

DIR		REV
MOD		INC
---		SEQ
0 - 10		2 - 10
0 - 5, 2 - 6		5 - 10, 6 - 10
---		4 - 20 mA
AUTO		MAN

OFF ON

Factory settings

DIAGNOSTIC - ALARM FUNCTIONS (VIA LED)							
N°	LED behaviour	Error	Actuator Use	Actuator Behaviour		Typical Troubleshooting 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 5 times (unexpected stall) trying to remove the possible obstacle. After 5 tries an alarm is signalled (RED LED ON) 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. Alarm is signalled (RED LED ON) and the actuator moves to the initial position and then it does not respond to the control signal	Valve with a stroke length lower than 5mm	Remove power and power up again
2	RED ON	Stroke longer than 50mm	Calibration/ first installation	The actuator exits the 50 mm stroke range and it moves toward the new stroke limit signalling an anomaly (RED LED ON). The actuator does not calibrate the stroke	The actuator pushes/pulls 2 times against endpoint during calibration. Alarm is signalled (RED LED ON) and the actuator moves to the initial position and then it does not respond to the control signal	Valve with a stroke length longer than 50mm	Remove power and power up again
3	RED Quick Blinking + GREEN ON	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; During these 10s RED LED is ON	The actuator tries 5 times against the new stall condition. At the end of the attempts the fault will be signalled (RED LED ON). 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 + GREEN ON	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; During these 10s RED LED is ON	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 damaged	Inverted control signal
5	RED slow Blinking	Low Power Voltage	Normal operation	The actuator is still working but performance cannot be guaranteed	The actuator is still working but performance cannot be guaranteed	1. Wrong transformer size 2. Unstable power	Correct Voltage Power
6	RED slow Blinking	High Power Voltage	Normal operation	The actuator is still working but performance cannot be guaranteed	The actuator is still working but performance cannot be guaranteed	1. Wrong transformer size 2. Unstable power	Correct Voltage Power

STANDARD LEDs

Electronic Control Board

N°	LEDs behaviour	ACTUATOR STATUS
1	GREEN ON	The actuator arrived at the extreme point of the stroke
2	GREEN BLINKING	The actuator is moving or arrived at the intermediate point of the stroke
3	RED GREEN BLINKING ALTERNATING	Calibration or initialization phase
4	RED GREEN ON	Manual control enabled, the actuator ignores the control signal. ATTENTION! The electronic board is electrically supplied
5	RED GREEN BLINKING SIMULTANEOUS	The actuator is in emergency return phase