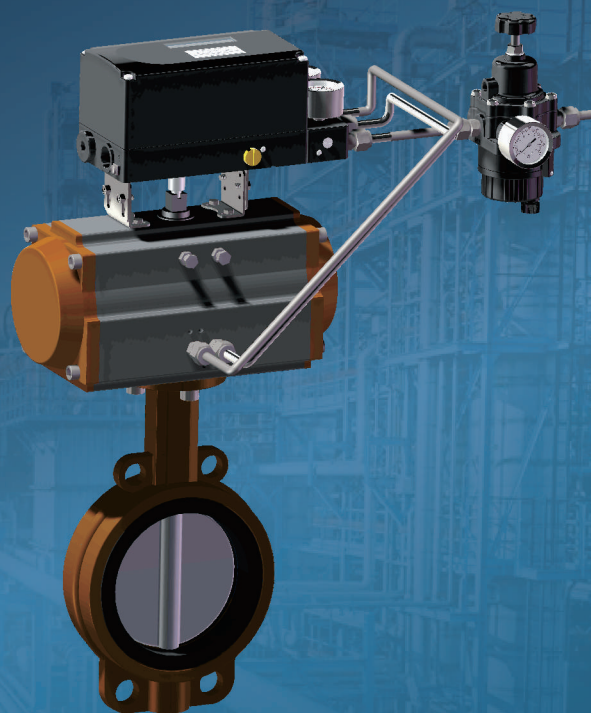# MORC®

MORC CONTROLS LTD.

Valve Accessories Manufacturer

- Smart Positioner
- Electro-Pneumatic Positioner
- Solenoid Valve
- Air Filter Regulator
- Limit Switch Box
- Pneumatic Actuator
- Electric Actuator

MORC®

2020.02

TÜV SÜD ISO 9001   CE   Ex NEPSI   Ex   SIL3

MORC® MORC CONTROLS LTD.

Contents

Introduction

MORC Controls Ltd is a leading manufacturer of valve accessories in Canada. It is mainly engaged in the research and development of valve accessories such as valve positioners, solenoid valves, limit switches and actuators.

Shenzhen MORC Controls Co., Ltd, is the operation center and production base in China. The company has gained ISO9001 quality management system and ISO14001 environmental management system certification. The products have obtained CE, ATEX, NEPSI, SIL3 as well as other quality and safety certificates.

Our product range involves in valve positioner, solenoid valve, limit switch, air filter regulator and so on, which are widely used in petrochemical, natural gas, power, metallurgy, paper-making, foodstuff, pharmaceutical, water treatment industries. We are also capable of providing complete set of control valve and on-off valve solution as we have a very close relationship with valve manufacturer.

With the rapid development of industrialization, automation and intelligence in the world, MORC will adhere to the development philosophy of "quality first, technology first, continuous improvement, customer satisfaction", provide customers with better products and services, and build MORC into world's leading valve accessories brand.

Qualification & Certification

MORC® MORC CONTROLS LTD.
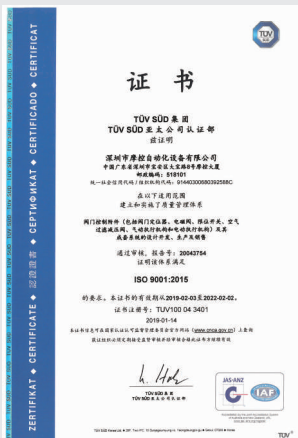
History

2019.01	Obtained ISO9001:2015 Quality Management System Cerfiticate
2018.12	Obtained ISO14001:2015 Environmental Management System Certificate
2017.08	Opening of the design and testing laboratory
2017.06	Certified SIL3 for Solenoid Valves & Limit Switch Box
2016.07	Obtained the National and Shenzhen high-tech enterprise qualification certificate
2016.07	Special funding provided by Shenzhen future industry development
2015.12	Obtained ISO 9001:2008 quality management system certification
2015.09	Moved to a newer and bigger MORC building
2014.07	Obtained air filter regulator and solenoid valve invention patent and software patent
2014.04	Obtained CE certificaton for all range of products
2012.06	Obtained Shenzhen innovative small and medium-sized company certification
2010.05	Implemented ERP management system
2008.10	Established Shenzhen Morc Controls Co., Ltd

Company Qualification

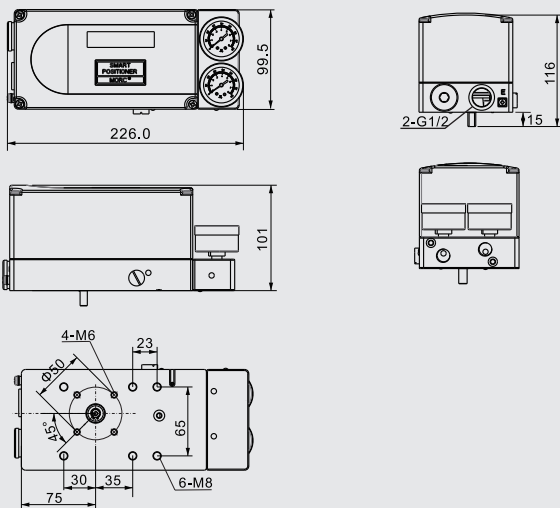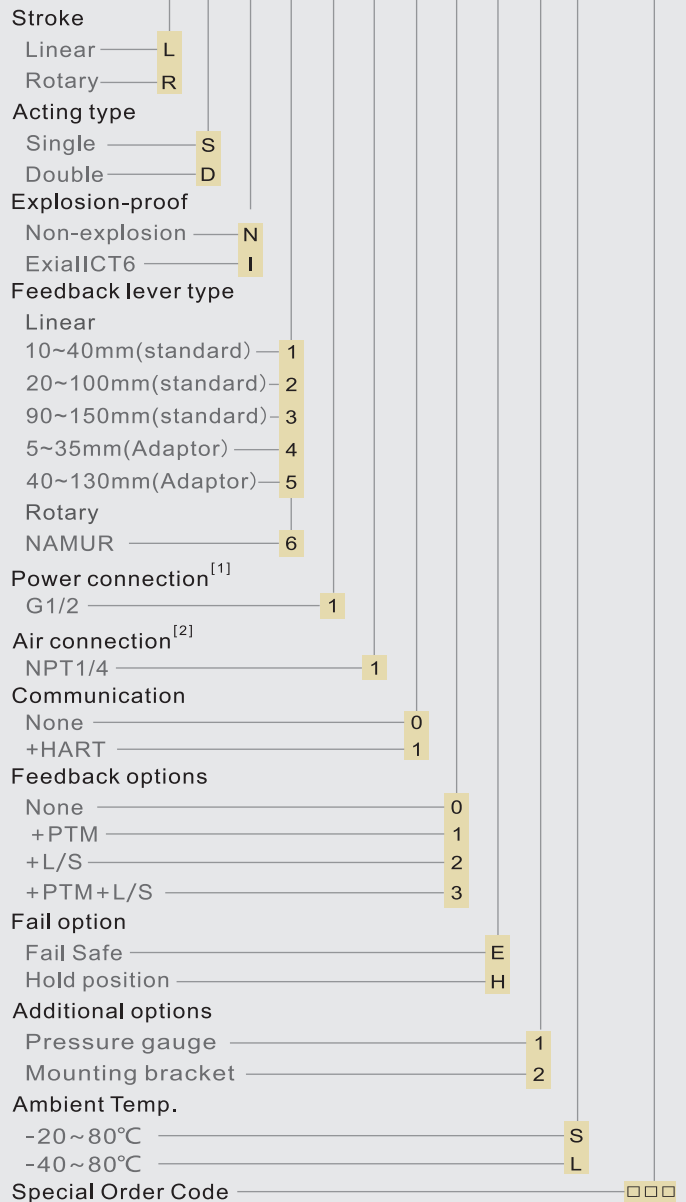| Product Name	Model No.	Certificate	Certification number or certification level
Smart Positioner	MSP-25	CE	Anbotek: AT011410545E
		ATEX	II2G ExiaIICT6 Gb ; II2D ExiaD IIIC T100℃/85℃ Db ; IP66
		CNEX	Ex ia IICT6 Ga
		SIL3	SWISS:086-03-026-00509/IEC61508 Parts1-7:2010
	MSP-32	CE	Anbotek: AT011410545E
		ATEX	II2G ExdIICT6 Gb ; II2D Extb IIIC T100℃/85℃ Db ; IP66
		NEPSI	ExdIICT6 Gb ; Ex tD A20 IP66 T85℃
		SIL3	SWISS:086-03-026-00509/IEC61508 Parts1-7:2010
Electro-Pneumatic Positioner	MEP-10	CE	Anbotek: AT011410545E
		ATEX	II2G ExdmbIICT6 IP66
		NEPSI	ExiaIICT6 Ga IP66
		SIL3	SWISS:086-03-026-00509/IEC61508 Parts1-7:2010
Solenoid Valve	MC50-XXN/M	CE	Anbotek: AT011410546E
		SIL3	SWISS:086-03-026-00507/IEC61508 Parts1-7:2010
	MC50-XXA	CE	Anbotek: AT011410546E
		ATEX	II2G ExiaIICT 5/T6 Gb ; II2D Exia IIIC T100℃/85℃ Db IP6X
		SIL3	SWISS:086-03-026-00507/IEC61508 Parts1-7:2010
	MC50-XXD	CE	Anbotek: AT011410546E
		ATEX	II2G Exd IIC T6 Gb ; II2D Extb IIIC T85℃ Db ;IP66
		NEPSI	ExdIICT6 Gb ; Ex tD A20 IP66 T85℃
		SIL3	SWISS:086-03-026-00507/IEC61508 Parts1-7:2010
Limit Switch Box	MLS100	CE	Anbotek: AT011410550E
		SIL3	SWISS:086-03-026-00511/IEC61508 Parts1-7:2010
	MLS300	CE	Anbotek: AT011410550E
		ATEX	II2G Exd IIC T6 Gb ; II2D Extb IIIC T85℃ Db ;IP67
		NEPSI	ExdIICT6 Gb
		SIL3	SWISS:086-03-026-00511/IEC61508 Parts1-7:2010
	MLS500	CE	Anbotek: AT011410550E
		ATEX	II2G Exd IIC T6 Gb ; II2D Extb IIIC T85℃ Db ;IP67
		NEPSI	ExdIICT6 Gb
		SIL3	SWISS:086-03-026-00511/IEC61508 Parts1-7:2010
	MLS800	CE	Anbotek: AT011410550E
		ATEX	II2G Exd IIC T6 Gb ; II2D Extb IIIC T85℃ Db ;IP67
		NEPSI	ExdIICT6 Gb
		SIL3	SWISS:086-03-026-00511/IEC61508 Parts1-7:2010
Pneumatic Actuator	MAP	CE	Anbotek: AT011410548E
		ATEX	Ex II 2 GD
		SIL3	SWISS:086-03-026-00510/IEC61508 Parts1-7:2010
Electric Actuator	MAQ	NEPSI	ExdIIBT4 Gb
		ATEX	II2G Exd IIBT4 Gb; IP68
Air Filter Regulator	MC-22	CE	Anbotek: AT011410549E
		SIL3	SWISS:086-03-026-00508/IEC61508 Parts1-7:2010

MSP-25 series implement advanced piezo sensor technology for superior performance and reliability. It can be easily setup and configured by local buttons.

- Use piezoelectric valve electric / pneumatic conversion structure.
- Suitable for hazardous area by intrinsically safe electronics.
- Easy to install and auto-calibration.
- LCD display and on board button operation.
- Fail safe function under loss of power, loss of air supply and loss of control signal.

Model No.	MSP-25
Input signal	4~20mA DC
Supply pressure	0.14~0.7MPa(20~105psi)
Stroke / Linear	10~150mm(standard);5~130mm(adaptor)
Stroke / Rotary	0~90°
Impedance	450Ω(without HART) , 500Ω(with HART)
Air connection	NPT1/4
Gauge connection	NPT1/8
Power connection	G1/2
Repeatability	±0.5%F.S.
Ambient temp. / Normal temp	-20~80℃
Ambient temp. / Low temp	-40~80℃
Linearity	±0.5%F.S.
Hysteresis	±0.5%F.S.
Sensitivity	±0.5%F.S.
Flow rate	Fully open : 130L/min(@6.0bar)
Air consumption	Stable condition : <0.0006Nm^3/h
Output characteristics	Linear (default); Quick open; Equal percentage ; User defined
Shell material	Aluminum
Ingress protection	IP66
Explosion-proof	ExiaⅡCT6
Weight	2.3kg

99.5
226.0
116
2-G1/2 15
101
4-M6 23
Ø50
45°
65
30 35
75
6-M8

MSP-25	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	-	12.
	R	S	I	1	1	0	0	0	E	12	L	-	SZ

Stroke
  Linear ———— L
  Rotary ———— R
Acting type
  Single ———— S
  Double ———— D
Explosion-proof
  Non-explosion ——— N
  ExiaⅡCT6 ——— I
Feedback lever type
  Linear
    10~40mm(standard) ——— 1
    20~100mm(standard) — 2
    90~150mm(standard) — 3
    5~35mm(Adaptor) ——— 4
    40~130mm(Adaptor) — 5
  Rotary
    NAMUR ——— 6
Power connection[1]
  G1/2 ——— 1
Air connection[2]
  NPT1/4 ——— 1
Communication
  None ——— 0
  +HART ——— 1
Feedback options
  None ——— 0
  +PTM ——— 1
  +L/S ——— 2
  +PTM+L/S ——— 3
Fail option
  Fail Safe ——— E
  Hold position ——— H
Additional options
  Pressure gauge ——— 1
  Mounting bracket ——— 2
Ambient Temp.
  -20~80℃ ——— S
  -40~80℃ ——— L
Special Order Code ——— □□□

[1] : The default power connection is G1/2, please consult MORC for other interfaces.
[2] : The default air connection is NPT1/4, please consult MORC for other interfaces.
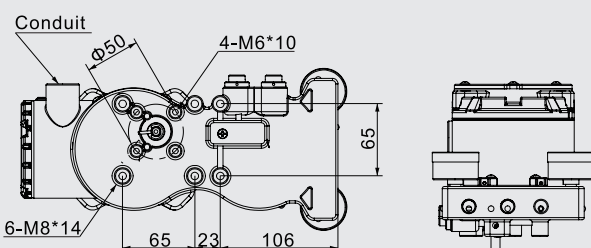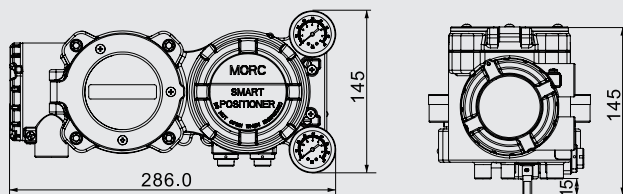
PTM: positioner transmitting module; L/S: limit switch.

MSP-32 Series Smart Positioner

CE ⟨Ex⟩ 🅰 SWISS SIL3

MSP-32 series implement advanced piezo sensor technology for superior performance and reliability. It can be easily setup and configured by local buttons.

- Use piezoelectric valve electric / pneumatic conversion structure.
- Suitable for hazardous area by explosion-poof.
- Easy to install and auto-calibration.
- LCD display and on board button operation.
- Fail safe function under loss of power, loss of air supply and loss of control signal.

Model No.	MSP-32	
Input signal	4~20mA DC	
Supply pressure	0.14~0.7MPa(20~105psi)	
Stroke	Linear	10~150mm(standard);5~130mm(Adaptor)
	Rotary	0~90°
Impedance	450Ω(without HART) , 500Ω(with HART)	
Air connection	NPT1/4	
Gauge connection	NPT1/8	
Power connection	NPT1/2,M20*1.5	
Repeatability	±0.5%F.S.	
Ambient temp.	Normal temp.	-20~80℃
	Low temp.	-40~80℃
Linearity	±0.5%F.S.	
Hysteresis	±0.5%F.S.	
Sensitivity	±0.5%F.S.	
Flow rate	Fully open : 130L/min(@6.0bar)	
Air consumption	Stable condition : <0.0006Nm^3/h	
Output characteristics	Linear (default); Quick open; Equal percentage ; User defined	
Shell material	Aluminum	
Ingress protection	IP66	
Explosion-proof	ExdⅡCT6	
Weight	4.0kg	

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	-	12.
MSP-32	R	S	C	1	1	0	0	0	E	12	L	-	SZ

Stroke
- Linear ——— L
- Rotary ——— R

Acting type
- Single ——— S
- Double ——— D

Explosion-proof
- ExdⅡCT6 ——— C

Feedback lever type
- Linear
  - 10~40mm(standard) — 1
  - 20~100mm(standard)— 2
  - 90~150mm(standard)— 3
  - 5~35mm(Adaptor) —— 4
  - 40~130mm(Adaptor)— 5
- Rotary
  - NAMUR ——————— 6

Power connection[1]
- NPT1/2 ——————— 1
- M20*1.5 —————— 2

Air connection[2]
- NPT1/4 ——————— 1

Communication
- None ——————— 0
- +HART ——————— 1

Feedback options
- None ——————— 0
- +PTM ——————— 1
- +L/S ——————— 2
- +PTM+L/S ————— 3

Fail option
- Fail Safe ——————— E
- Hold position ———— H

Additional options
- None ——————— 0
- Mounting bracket —— 2

Ambient Temp.
- -20~80℃ ——————— S
- -40~80℃ ——————— L

Special Order Code ——————— □□□

[1] : The default power connection is G1/2, please consult MORC for other interfaces.

[2] : The default air connection is NPT1/4, please consult MORC for other interfaces.

PTM: positioner transmitting module; L/S: limit switch.

145

286.0

145

15

Conduit
Φ50
4-M6*10
65
6-M8*14
65 23 106

MEP-10L electro-pneumatic positioner delivers fast and accurate positioner used and general purpose. Long life service assured by robust and simple design, delivering maximum reliability in all environments while maintaining precise, accurate positioning of the control element.

- Use mechanical nozzle baffle structure
- High vibration resistance - no resonance between 5 to 200 Hz.
- Direct and reverse acting, single and double acting are interchangeable.
- Robust, simple and low maintenance design.
- 1/2 Split-range control can be achieved by changing the stroke spring.

Model No.	MEP-10L
Input signal	4~20mA DC
Supply pressure	0.14~0.7MPa
Pressure output	0~0.7MPa
Stroke	10~150mm
Impedance	250Ω±15Ω
Air connection	NPT1/4,G1/4
Gauge connection	NPT1/8
Power connection	G1/2, NPT1/2, M20*1.5
Repeatability	±0.5%F.S.
Ambient temp. Normal temp.	-20~60℃
Ambient temp. High temp.	-20~120℃
Ambient temp. Low temp.	-40~60℃
Linearity	±1.0%F.S.(Single)；±2.0%F.S.(Double)
Hysteresis	±1.0%F.S.
Sensitivity	±0.5%F.S.
Flow rate	80L/min(@1.4bar)
Air consumption	2.5L/min(@1.4bar)
Output characteristics	Linear (default)
Shell material	Aluminum
Ingress protection	IP66
Explosion-proof	ExiaⅡCT6/ExdmbⅡCT6
Weight	2.7kg

MEP-10L	1. S	2. N	3. 1	4. 3	5. 2	6. S	7. 1	-	8. SZ

Acting type
- Single — S
- Double — D

Explosion-proof
- Non-explosion — N
- ExiaⅡCT6 — I
- ExdmbⅡCT6 — M

Feedback lever type
- 10~40mm — 1
- 30~70mm — 2
- 50~100mm — 3
- 100~150mm — 4

Power connection
- G1/2 — 1
- NPT1/2 — 2
- M20*1.5 — 3

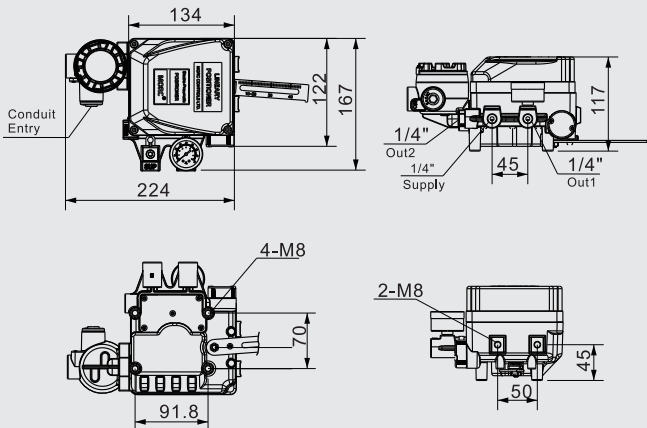Air connection
- NPT1/4 — 1
- G1/4 — 2

Ambient temperature[1]
- -20~60℃ — S
- -20~120℃ — H
- -40~60℃ — L

Feedback Options
- None — 0
- +PTM — 1

Special Order Code

[1]: H Only available for Non-explosion and no feedback.

134, 122, 167, 224, Conduit Entry, 1/4" Out2, 1/4" Supply, 45, 1/4" Out1, 117, 4-M8, 70, 91.8, 2-M8, 50, 45

MEP-10R Series Electro-pneumatic Positioner

CE Ex Ex NEPSI SWISS SIL3

MEP-10R electro-pneumatic positioner delivers fast and accurate positioner used and general purpose. Long life service assured by robust and simple design, delivering maximum reliability in all environments while maintaining precise, accurate positioning of the control element.

- Use mechanical nozzle baffle structure
- High vibration resistance - no resonance between 5 to 200 Hz.
- Direct and reverse acting, single and double acting are interchangeable.
- Robust, simple and low maintenance design.
- 1/2 Split-range control can be achieved by changing the stroke spring.

Model No.	MEP-10R
Input signal	4~20mA DC
Supply pressure	0.14~0.7MPa
Pressure output	0~0.7MPa
Stroke	0~90°
Impedance	250Ω±15Ω
Air connection	NPT1/4, G1/4
Gauge connection	NPT1/8
Power connection	G1/2, NPT1/2, M20*1.5
Repeatability	±0.5%F.S.
Ambient temp. Normal temp.	-20~60℃
Ambient temp. High temp.	-20~120℃
Ambient temp. Low temp.	-40~60℃
Linearity	±1.0%F.S.(Single)；±2.0%F.S.(Double)
Hysteresis	±1.0%F.S.
Sensitivity	±0.5%F.S.
Flow rate	80L/min(@1.4bar)
Air consumption	2.5L/min(@1.4bar)
Output characteristics	Linear (default)
Shell material	Aluminum
Ingress protection	IP66
Explosion-proof	ExiaIICT6/ExdmbIICT6
Weight	2.8kg

	1.	2.	3.	4.	5.	6.	7.	8.	-	9.
MEP-10R	S	N	1	3	2	S	0	1	-	SZ

Acting type
Singel — S
Double — D

Explosion-proof
Non-explosion — N
ExiaIICT6 — I
ExdmbIICT6 — M

Feedback lever type
M6*34L — 1
M8*34L — 2
M6*63L — 3
M8*63L — 4
NAMUR — 5

Power connection
G1/2 — 1
NPT1/2 — 2
M20*1.5 — 3

Air connection
NPT1/4 — 1
G1/4 — 2

Ambient temperature[1]
-20~60℃ — S
-20~120℃ — H
-40~60℃ — L

Indicator[2]
Standard — 0
Dome Cover — 1

Feedback Options
None — 0
+PTM (inside Non-explosion) — 1
+PTM (outside explosion-proof) — 2
+L/S (inside Non-explosion) — 3
+L/S (outside explosion-proof) — 4
+PTM+L/S (inside Non-explosion) — 5
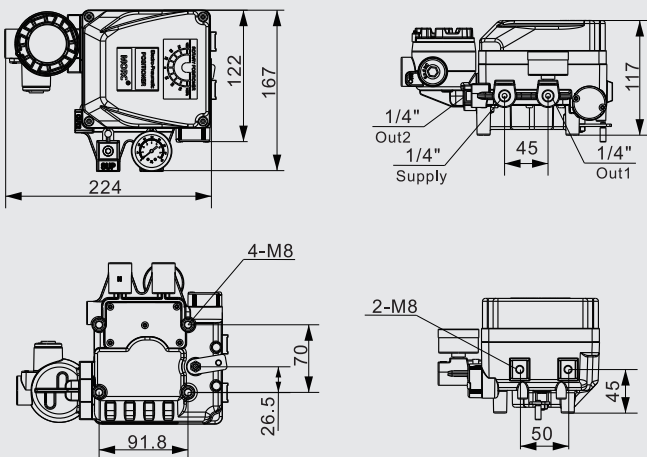+PTM+L/S (outside explosion-proof) — 6

Special Order Code — □□□

[1]: H only available for Non-explosion and no feedback.
[2]: Dome Cover only available for outside of L/S.

PTM: positioner transmitting module; L/S: limit switch.

122
167
224

1/4" Out2
1/4" Supply
45
1/4" Out1
117

4-M8
70
26.5
91.8

2-M8
45
50

CE swiss SIL3

- Pilot-operated type;
- Convertible from 3-way(3/2) to 5-way(5/2). For 3-way, normally closed type is default option.
- Adopt Namur mounting standard, directly mounted to actuator, or by tubing.
- Sliding spool valve with good seal and fast response.
- Low starting pressure, long lifespan.
- Manual override.
- Body material aluminum or SS316L.

3/2NC   5/2 Single coil   5/2Double coil
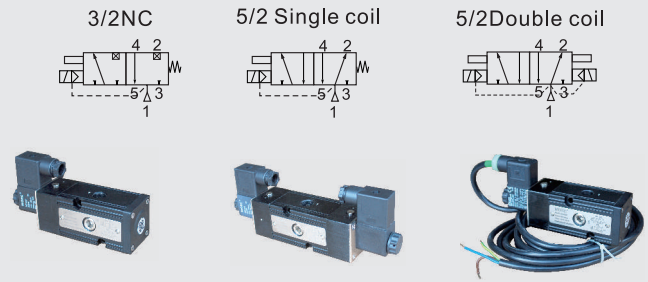
Model No.	MC50-XXN	MC50-XXM
Voltage	12/24/48V DC；110/220/240VAC	
Acting type	Single coil, Double coil	
Power Consumption	220VAC: 5.5VA; 24VDC: 3W	
Insulation class	F class	
Working medium	Clean air (after 40 um filtration)	
Air pressure	0.15~0.8MPa	
Port connection	G1/4，NPT1/4	
Power connection	DIN connector	Flying leads
Ambient Temp. Normal temp.	-20~70℃	
Ambient Temp. High temp.	-20~120℃	
Explosion-proof	Non-explosion	Ex mb II T4
Ingress protection	IP65	
Installation	32*24Namur or Tubing	
Section area / Cv	25mm²/1.4	
Body material	Aluminum or SS316L	
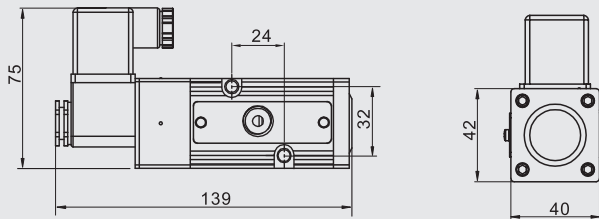
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	1	2	N	1	0	0	1	G	0	S	-	SZ

Acting type
Single coil — 1
Double coil — 2

Control voltage [1]
220VAC — 1
24VDC — 2
110VAC — 3
12VDC — 4
240VAC — 5
48VDC — 6

Coil Type [1]
Non-explosion — N
ExmbIIT4 — M

Body material
Aluminum — 1
SS316L — 2

Body type
General type — 0

Installation
General type — 0

Port connection
1/4" — 1

Port Standard
G1/4 — G
NPT1/4 — N

Power connection [2]
Standard type (DIN type) — 0
Flying leads — 4

Ambient temperature
-20~70℃ — S
-20~120℃ — H

Special Order Code

[1] : Non-explosion-proof coil default without indicator, if you need to wear led coil please indicate.

[2] : Non-explosion only optional standard type, Pouring seals explosion only optional flying leads.

75
24
32
42
139
40

MC50 Series Explosion-proof 1/4"

CE Ex Ex NEPSI SIL3

- Pilot-operated type;
- Convertible from 3-way(3/2) to 4-way(5/2). For 3-way, normally closed type is default option.
- Adopt Namur mounting standard, directly mounted to actuator, or by tubing.
- Sliding spool valve with good seal and fast response.
- Low starting pressure, long lifespan.
- Manual override.
- Body material aluminum or SS316L.

3/2NC   5/2 Single coil   5/2 Double coil

Model No.	MC50-XXD
Voltage	24V DC；220VAC
Acting type	Single coil, Double coil
Power Consumption	220VAC: 5.0VA; 24VDC: 3.5W
Insulation class	F class
Working medium	Clean air (after 40 um filtration)
Air pressure	0.15~0.8MPa
Port connection	G1/4，NPT1/4
Power connection	NPT1/2, M20*1.5, G1/2
Ambient Temp. Normal temp.	-20~70℃
Ambient Temp. Low temp.	-40~70℃
Explosion-proof	ExdⅡCT6；Ex tD A20 T85℃
Ingress protection	Ip66
Installation	32*24Namur or Tubing
Section area / Cv	25mm²/1.4
Body material	Aluminum or SS316L

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	1	2	D	1	0	0	1	G	1	S	-	SZ

Acting type
  Single coil ── 1
  Double coil ── 2

Control voltage[1]
  220VAC ──────── 1
  24VDC ───────── 2

Coil Type
  ExdⅡCT6 ───────── D

Body material
  Aluminum ───────── 1
  SS316L ─────────── 2

Body type
  General type ──────────── 0

Installation
  General type ──────────── 0

Port connection
  1/4" ───────────────────── 1

Port Standard
  G1/4 ───────────────────── G
  NPT1/4 ──────────────────── N

Power connection
  NPT1/2 ───────────────────── 1
  G1/2 ─────────────────────── 2
  M20*1.5 ───────────────────── 3

Ambient temperature
  -20~70℃ ─────────────────────── S
  -40~70℃ ─────────────────────── L

Special Order Code ───────────────────── □□□

[1]: Please consult MORC for additional voltage specifications.

Φ46

113   24   32
126   103   42

113   24   32
165   103   42

Φ46

- Pilot-operated type;
- Convertible from 3-way(3/2) to 4-way(5/2). For 3-way, normally closed type is default option.
- Adopt Namur mounting standard, directly mounted to actuator, or by tubing.
- Sliding spool valve with good seal and fast response.
- Low starting pressure, long lifespan.
- Manual override.
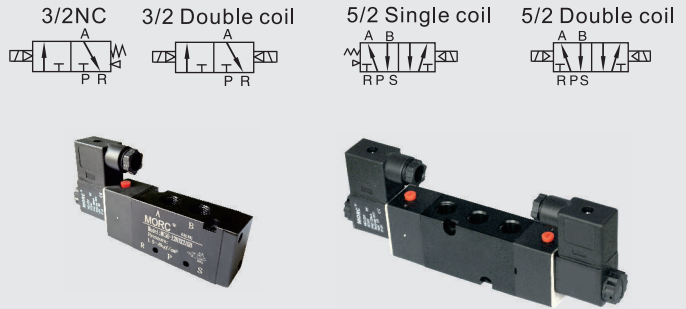- Body material aluminum or SS316L.

3/2NC   5/2 Single coil

Model No.	MC50-XXA
Voltage	24V DC
Acting type	Single coil, Double coil
Power Consumption	1.0W
Insulation class	F class
Working medium	Clean air (after 40 um filtration)
Air pressure	0.15~0.8MPa
Port connection	G1/4，NPT1/4
Power connection	NPT1/2, M20*1.5, G1/2
Ambient Temp.	-20~70℃
Explosion-proof	ExiaIICT6
Ingress protection	IP66
Installation	32*24Namur or Tubing
Section area / Cv	25mm²/1.4
Body material	Aluminum or SS316L
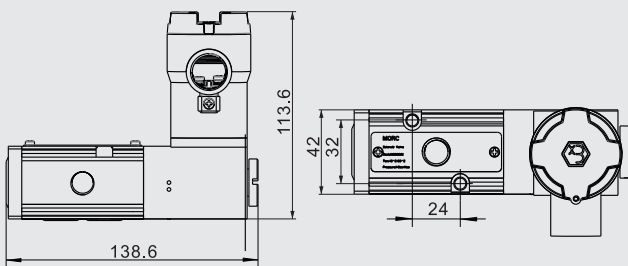
	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	1	2	A	1	0	0	1	G	1	S	-	SZ

Acting type
  Single coil — 1
Control voltage
  24VDC — 2
Coil Type
  ExiaIICT6 — A
Body material
  Aluminum — 1
  SS316L — 2
Body type
  General type — 0
Installation
  General type — 0
Port connection
  1/4" — 1
Port Standard
  G1/4 — G
  NPT1/4 — N
Power connection
  NPT1/2 — 1
  G1/2 — 2
  M20*1.5 — 3
Ambient temperature
  -20~70℃ — S
Special Order Code

113.6
42
32
24
138.6

- ■ Pilot-operated, normally closed type is default option.
- ■ Sliding spool valve with good seal and fast response.
- ■ Low starting pressure, long lifespan.
- ■ Manual override.
- ■ Direct mount to pneumatic actuator or tubing connection.

3/2NC   3/2 Double coil   5/2 Single coil   5/2 Double coil

Port Size	1/8"	1/4"	3/8"	1/2"
Voltage	12/24/48VDC；110/220/240VAC			
Acting type	Single coil, Double coil			
Power Consumption	220VAC: 5.5VA; 24VDC: 3W			
Insulation class	F class			
Working medium	Clean air (after 40 um filtration)			
Air pressure	0.15~0.8MPa			
Port connection	DIN connector			
Ambient Temp. Normal temp.	-20~70℃			
Ambient Temp. High temp.	-20~120℃			
Ingress protection	IP65			
Installation	32*24Namur or Tubing			
Section area / Cv	14mm²/0.78	25mm²/1.4	30mm²/1.68	50mm²/2.79
Body material	Aluminum			

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	1	2	N	1	1	1	1	G	0	S	-	SZ

Acting type
Single coil —1
Double coil—2

Control voltage[1]
220VAC ——1
24VDC ——2
110VAC ——3
12VDC ——4
240VAC ——5
48VDC ——6

Coil Type[2]
Non-explosion ——N

Body material
Aluminum ——1

Body type
3/2 ——1
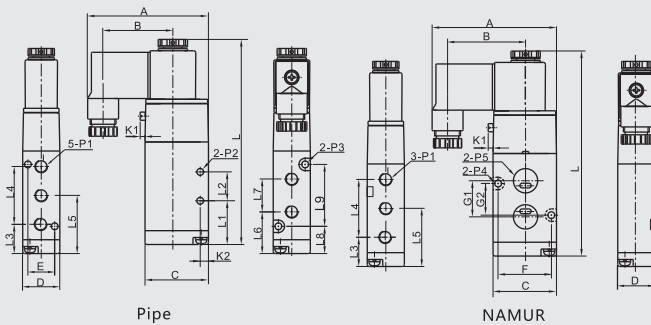5/2 ——2

Installation
NAMUR ——1
Tubing ——2

Inlet/outlet - Exhaust port connection
1/4"-1/4" ——1
1/2"-1/2" ——2
1/8"-1/8" ——3
3/8"-3/8" ——4
1/4"-1/8" ——5
3/8"-1/4" ——6
1/2"-3/8" ——7

Port Standard
G ——G
NPT ——N

Power connection
Standard type (DIN type) ——0

Ambient temperature
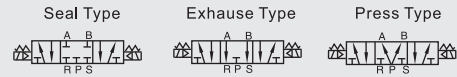-20~70℃ ——S
-20~120℃ ——H

Special Order Code ——□□□

[1]: Please consult MORC for additional voltage specifications.

[2]：Non-explosion-proof coil default without indicator, If you need to LED indicators please indicate.

Pipe

NAMUR

Dimension   Unit : mm

Item / Port	A	B	C	D	E	F	L	L1	L2	L3	L4	L5
1/8"	66.5	40	35	22	17	29	116.5	21.5	20	13.5	36	31.5
1/4"	69	40	35	27	20	32	134.5	28	24	17.5	45	40
3/8"	69	40	40	27	20	32	134.5	28	24	17.5	45	40
1/2"	74	-	50	34	27	45	168	43	28	25.5	63	57

Item / Port	L6	L7	L8	L9	G1	G2	K1	K2	P1	P2/P3	P4	P5
1/8"	22.5	16	12.5	36	23	20	3	8	G1/8	Φ3.2	Φ3.2	Φ18/1.4
1/4"	29	22	15	50	-	24	2.4	6.5	G1/4	Φ4.3	Φ4.3	Φ20/1.4
3/8"	29	22	15	50	-	24	2.4	6.5	G3/8	Φ4.3	Φ5.5	Φ20/1.4
1/2"	39	36	21	72	-	40	2.5	13.5	G1/2	Φ4.3	Φ5.5	-

Note: This table lists only the consistent form factor of the in/out/exhaust port size, please contact MORC for other model sizes□

MC50 Series Non-explosion 5/3 Type 1/8″~1/2″

CE SWISS SIL3

- Pilot-operated, normally closed type is default option.
- Sliding spool valve with good seal and fast response.
- Low starting pressure, long lifespan.
- Manual override.
- Direct mount to pneumatic actuator or tubing connection.

Seal Type   Exhause Type   Press Type

Port Size	1/8"	1/4"	3/8"	1/2"
Voltage	12/24/48VDC；110/220/240VAC			
Acting type	Single coil, Double coil			
Power Consumption	220VAC: 5.5VA; 24VDC: 3W			
Insulation class	F class			
Working medium	Clean air (after 40 um filtration)			
Air pressure	0.15~0.8MPa			
Port connection	DIN connector			
Ambient Temp.	Normal temp.	-20~70℃		
	High temp.	-20~120℃		
Ingress protection	IP65			
Installation	32*24Namur or Tubing			
Section area / Cv	14mm²/0.78	25mm²/1.4	30mm²/1.68	50mm²/2.79
Body material	Aluminum			

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	2	2	N	1	3C	1	1	G	0	S	-	SZ

Acting type
Double coil — 2

Control voltage[1]
220VAC — 1
24VDC — 2
110VAC — 3
12VDC — 4
240VAC — 5
48VDC — 6

Coil Type[2]
Non-explosion — N

Body material
Aluminum — 1

Body Type
5/3(Seal) — 3C
5/3(Press) — 3P
5/3(Exhause) — 3E

Installation
NAMUR — 1
Tubing — 2

Inlet/outlet - Exhaust port connection
1/4"-1/4" — 1
1/2"-1/2" — 2
1/8"-1/8" — 3
3/8"-3/8" — 4
1/4"-1/8" — 5
3/8"-1/4" — 6
1/2"-3/8" — 7

Port Standard
G — G
NPT — N

Power connection
Standard type (DIN type) — 0

Ambient temperature
-20~70℃ — S
-20~120℃ — H

Special Order Code — □□□

Pipe   NAMUR
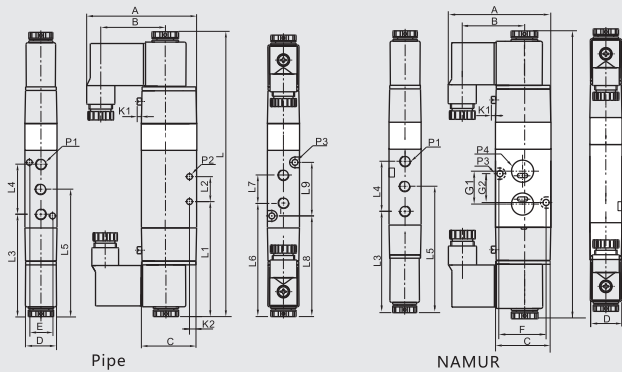
Dimension
Unit : mm

Port \ Item	A	B	C	D	E	F	L	L1	L2	L3	L4	L5
1/8"	66.5	40	35	22	17	29	169.8	75	20	57	36	85
1/4"	69	40	35	27	20	32	188.8	82.4	24	71.9	45	94.4
3/8"	69	40	40	27	20	32	188.8	82.4	24	71.9	45	94.4
1/2"	74	-	50	34	27	45	222	97	28	79.5	63	111

Port \ Item	L6	L7	L8	L9	G1	G2	K1	K2	P1	P2/P3	P4	P5
1/8"	76	16	66	36	23	20	3	8	G1/8	Φ3.2	Φ3.2	Φ18/1.4
1/4"	83.4	22	69.4	50	-	24	2.4	6.5	G1/4	Φ4.3	Φ4.3	Φ20/1.4
3/8"	83.4	24	69.4	50	-	24	2.4	6.5	G3/8	Φ4.3	Φ5.5	Φ20/1.4
1/2"	93	36	75	72	-	40	2.5	13.5	G1/2	Φ4.3	Φ5.5	-

Note: This table lists only the consistent form factor of the in/out/exhaust port size, please contact MORC for other model sizes.

[1]: Please consult MORC for additional voltage specifications.

[2]: Non-explosion-proof coil default without indicator, If you need to LED indicators please indicate.
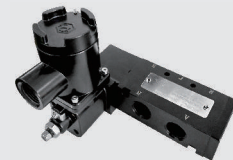
CE Ex Ex NEPSI SIL3

- Pilot-operated, normally closed type is default option.
- Sliding spool valve with good seal and fast response.
- Low starting pressure, long lifespan.
- Manual override.
- Direct mount to pneumatic actuator or tubing connection.

3/2NC   3/2 Double coil   5/2 Single coil   5/2 Double coil
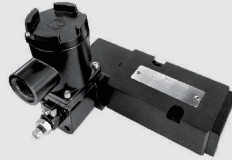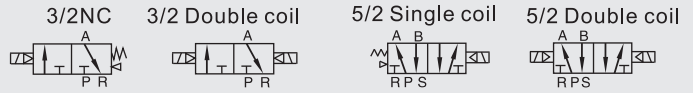
NAMUR   Pipe

Model No.	MC50-XXD
Voltage	24V DC；220VAC
Acting type	Single coil, Double coil
Power Consumption	220VAC: 5.0VA; 24VDC: 3.5W
Insulation class	F class
Working medium	Clean air (after 40 um filtration)
Air pressure	0.15~0.8MPa
Port connection	G1/2
Power connection	NPT1/2, M20*1.5, G1/2
Ambient Temp. Normal temp.	-20~70℃
Ambient Temp. Low temp.	-40~70℃
Explosion-proof	ExdⅡCT6；Ex tD A20 T85℃
Ingress protection	IP66
Installation	45*40Namur or Tubing
Section area / Cv	50mm²/2.79
Body material	Aluminum

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	-	11.
MC50-	1	2	D	1	0	0	1	G	1	S	-	SZ

Acting type
Single coil — 1
Double coil — 2

Control voltage[1]
220VAC — 1
24VDC — 2

Coil Type
ExdⅡCT6 — D

Body material
Aluminum — 1

Body type
3/2 — 1
5/2 — 2

Installation
NAMUR — 1
Tubing — 2

Port connection
1/2" — 2

Port Standard
G1/2 — G
NPT1/2 — N

Power connection
NPT1/2 — 1
G1/2 — 2
M20*1.5 — 3

Ambient temperature
-20~70℃ — S
-40~70℃ — L

Special Order Code — □□□

[1]: Please consult MORC for additional voltage specifications.

2-Φ6.5 40 130 45 152 38 115

2-Φ4.3 72 27 148 126 28 2-Φ5.5 115 38
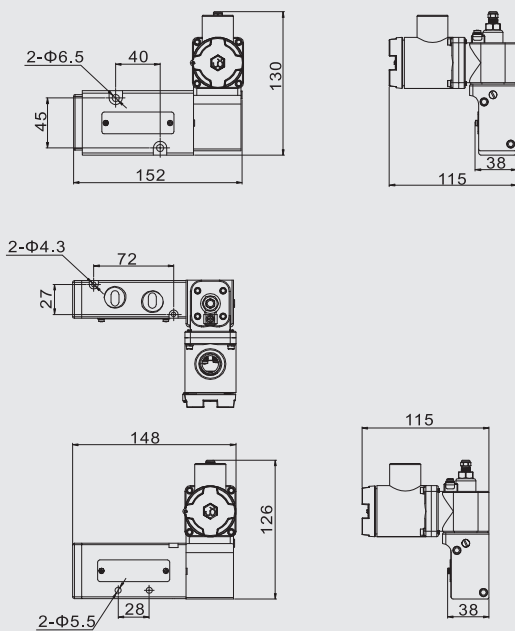
MC-22 series air filter regulator ables to accurately control pressure, as well as filter solid particles above 5 microns, and liquids from compressed air. Provide clean air source for air receiving equipment.

■ Die-cast aluminum body material with a polyester coating, which gives a long life and protects against corrosion. SS316L material is optional, suitable for severe corrosive environment.
■ Quick response, stable pressure output even when inlet pressure and flow fluctuate.
■ Filter solid particles with a minimum diameter of 5 microns and self-cleaning function.
■ Designed with 3 air outlets, installation direction can be easily adjusted.
■ Manual or auto drain function is available.
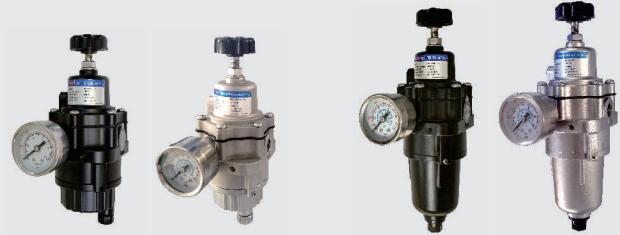
Manual drain   **Auto drain**

Model No.	MC-22
Max.input pressure	1.5MPa
Output pressure	0~1.0MPa[1]
Working medium	Compressed air
Ambient temp.	-20~70℃ ; -20~120℃ ; -40~70℃
Min. filtering size	5μm
Air connection	NPT1/4 ; G1/4
Body material	Die-cast Aluminum ; SS316L
Weight — Aluminum	Manual drain: 0.6kg; Auto drain: 0.65kg;
Weight — SS316	Manual drain: 1.95kg

[1]: The pressure gauge range is 0~1.0 MPa, for other specifications please consult MORC .
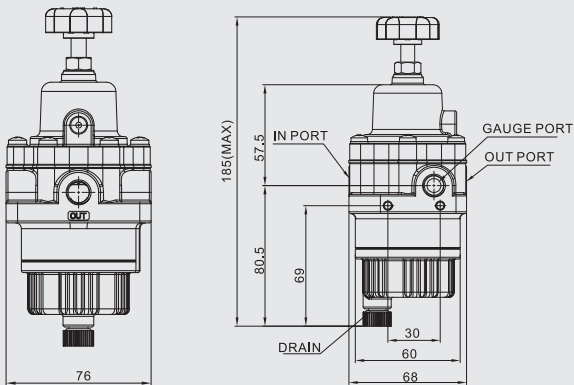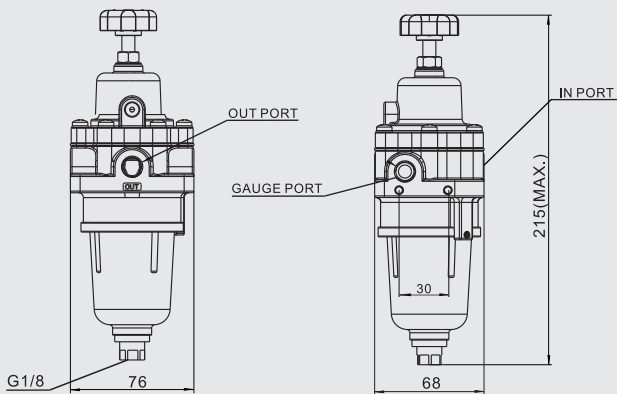
MC-22	1.	2.	3.	4.	5.	6.	7.	-	8.
	N	1	0	S	0	1	0	-	SZ

Port Standard[2]
NPT —————— N

Port connection
1/4" —————— 1
1/2" —————— 2

Body material
Die-cast Aluminum —————— 0
SS316L —————— 1

Ambient temperature
-20~70℃ —————— S
-20~120℃ —————— H
-40~70℃ —————— L

Copper option
Copper —————— 0
Non-copper —————— 1

Gauge
None —————— 0
Normal type —————— 1
Stainless steel —————— 2

Drain option
Manual drain —————— 0
Auto drain —————— 1

Special Order Code ——————————— □□□

[2]: The default screw standard is NPT, please consult MORC for other standards.

IN PORT
GAUGE PORT
OUT PORT
185(MAX)
57.5
80.5
69
DRAIN
30
60
68
76

Manual drain

OUT PORT
GAUGE PORT
IN PORT
215(MAX.)
30
G1/8   76
68

Auto drain

MLS100 series limit switch box have a proven track record for accurate and reliable signaling in linear and rotary applications. Providing both visual and remote electrical position indications, these cost-effective, compact unit unparalleled performance with ease of installation and calibration.

■ Lightweight, dome shaped visual indicator with contrast color design.
■ Rotary position indicator with NAMUR standard.
■ Anti-detachment bolt, it will never missed during disassembly..
■ Two cable entries for easy installation.
■ IP67 and UV resistance, suitable for outdoor use.

Model No.	MLS100
Body material	Die-cast Aluminum
Outer coating	Polyester coating
Power connection	M20∗1.5, NPT1/2, or G1/2
Ingress protection	IP67
Stroke	90°
Switch type	Mechanical switch or proximity switch
Mechanical switch rating	16A 125VAC/250VAC, 0.6A 125VDC, 10A 30VDC
Proximity switch rating	Intrinsically safe：8VDC，NC Non-explosion proof：10~30VDC, ≤150mA
Reed proximity switch rating	24V 0.3A
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃

	-	1.	2.	3.	4.	-	5.
MLS100	-	M0	1	0	S	-	SZ

Switch type

Mechanical switch
2-SPDT ——————————— M0

Proximity switch[1]
2-Intrinsically safe ——————— P0
2-Non-explosion(2wire)— P1
2-Non-explosion (3wire)— P2

Reed proximity switch
2-SPDT——————————— P3
2-SPST——————————— P4

Power connection
2-G1/2 ————————— 0
2-NPT1/2 ———————— 1
2-M20*1.5 ——————— 2

Option
None———————————— 0

Ambient temperature[2]
-20~80℃ ——————— S
-20~120℃ —————— H
-40~70℃ —————— L
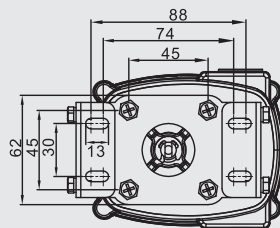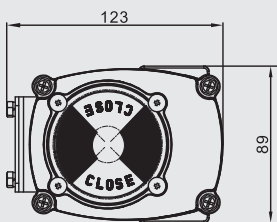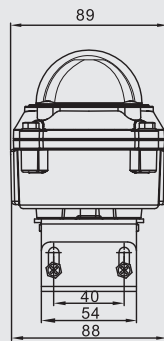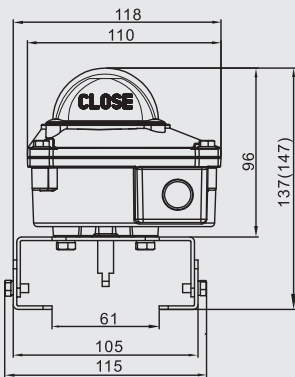
Special order code ——————————— □□□

Dimensions:
118
110
CLOSE
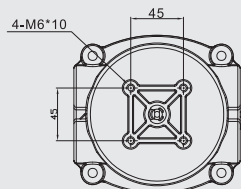96
137(147)
61
105
115

89
40
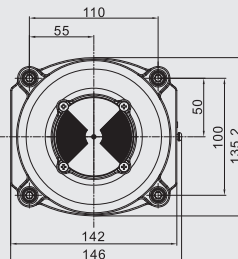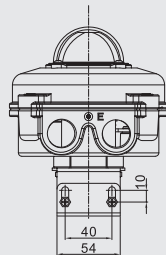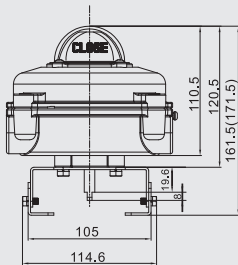54
88

123
89

88
74
45
62 45 30 13

Note 1: By default, two wires intrinsically safe proximity switch(P0) at normally closed status; two wires non-explosion proof proximity switch (P1) at normally open status; three wires non-explosion proof proximity switch (P3) requires customer to select normally open or normally close.

MLS300 Series Limit Switch Box

MLS300 series limit switch box have a proven track record for accurate and reliable signaling in linear and rotary applications. Providing both visual and remote electrical position indications, these cost-effective, compact unit unparalleled performance with ease of installation and calibration. Rugged, corrosion-resistant enclosures have multiple switch options and meet IP67 standards. Intrinsically safe and explosion proof designs ensure safe reliable operation in hazardous environment.

- Simple design and clear indicator display with contrast color design.
- Rotary position indicator with NAMUR standard.
- Anti-detachment bolt, it will never missed during disassembly.
- Two cable entries for easy installation.
- Ability to add a 4~20 mA transmitter to provide feedback.
- Explosion proof housing or intrinsically safe electronics suitable for hazardous environment.

Model No.	MLS300
Body material	Die-cast Aluminum
Outer coating	Polyester coating
Power connection	M20*1.5、 NPT1/2, NPT3/4,G3/4 or G1/2
Explosion-proof	ExdⅡCT6
Ingress protection	IP67
Stroke	90°
Switch type	Mechanical switch or proximity switch
Mechanical switch rating	16A 125VAC/250VAC， 0.6A 125VDC，10A 30VDC
Proximity switch rating	Intrinsically safe：8VDC，NC Non-explosion proof：10~30VDC，≤150mA
Reed proximity switch rating	24V 0.3A
Position transmitter	4~20mADC
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃

MLS300	-	1.	2.	3.	4.	-	5.
MLS300	-	M0	1	0	S	-	SZ

Switch type

Mechanical switch
- 2-SPDT — M0
- 3-SPDT — M1
- 4-SPDT — M2
- 2-DPDT — M3

Proximity switch[1]
- 2-Intrinsically safe — P0
- 2-Non-explosion(2wire) — P1
- 2-Non-explosion(3wire) — P2

Reed proximity switch
- 2-SPDT — P3
- 2-SPST — P4

Power connection
- 2-G1/2 — 0
- 2-NPT1/2 — 1
- 2-M20*1.5 — 2
- 2-G3/4 — 4
- 2-NPT3/4 — 5

Option
- None — 0
- Position transmitter module — 1

Ambient temperature[2]
- -20~70℃ — S
- -40~80℃ — L
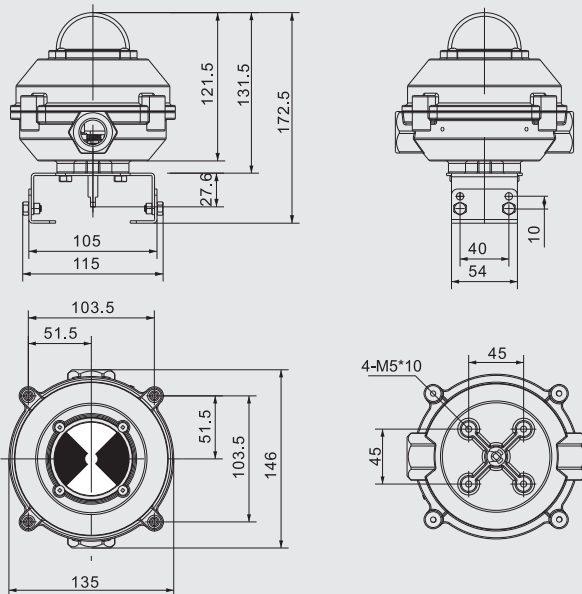
Special order code — □□□

Note 1: By default, two wires intrinsically safe proximity switch(P0) at normally closed status; two wires non-explosion proof proximity switch (P1) at normally open status; three wires non-explosion proof proximity switch (P3) requires customer to select normally open or normally close.
Note 2: Only mechanical switch (M0) can be used in high ambient temperature. Only intrinsically safe proximity switch (P0) can be used in high ambient temperature.

MLS500 Series Limit Switch Box

CE Ex Ex NEPSI SIL3

MLS500 series limit switch box have a proven track record for accurate and reliable signaling in linear and rotary applications. Providing both visual and remote electrical position indications, these cost-effective, compact unit unparalleled performance with easeof installation and calibration. Rugged, corrosion-resistant enclosures have multiple switch options and meet IP67 standards. Intrinsically safe and explosion proof designs ensure safe reliable operation in hazardous environment.

- Simple design and clear indicator display with contrast color design.
- Rotary position indicator with NAMUR standard.
- Robust stainless steel 316 body for harsh environment.
- Two cable entries for easy installation.
- Ability to add a 4~20 mA transmitter to provide feedback.
- Explosion proof housing or intrinsically safe electronics suitable for hazardous environment.

Model No.	MLS500
Body material	SS 316L
Outer coating	Polyester coating
Power connection	NPT3/4, or NPT1/2
Explosion-proof	ExdⅡCT6
Ingress protection	IP67
Stroke	90°
Switch type	Mechanical switch or proximity switch
Mechanical switch rating	16A 125VAC/250VAC， 0.6A 125VDC，10A 30VDC
Proximity switch rating	Intrinsically safe：8VDC，NC Non-explosion proof：10~30VDC，≤150mA
Reed proximity switch rating	24V 0.3A
Position transmitter	4~20mADC
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃

	-	1.	2.	3.	4.	-	5.
MLS500	-	M0	1	0	S	-	SZ

Switch type

Mechanical switch
- 2-SPDT —————— M0
- 3-SPDT —————— M1
- 4-SPDT —————— M2
- 2-DPDT —————— M3

Proximity switch[1]
- 2-Intrinsically safe ——— P0
- 2-Non-explosion(2wire) — P1
- 2-Non-explosion(3wire) — P2

Reed proximity switch
- 2-SPDT —————— P3
- 2-SPST —————— P4

Power connection
- 2-NPT1/2 —————— 1
- 2-NPT3/4 —————— 5

Option
- None —————————— 0
- Position transmitter module ——— 1

Ambient temperature[2]
- -20~70℃ —————— S
- -20~120℃ ————— H
- -40~80℃ —————— L

Special order code ————— □□□

Note 1: By default, two wires intrinsically safe proximity switch(P0) at normally closed status; two wires non-explosion proof proximity switch (P1) at normally open status; three wires non-explosion proof proximity switch (P3) requires customer to select normally open or normally close.
Note 2: Only mechanical switch (M0) can be used in high ambient temperature. Only intrinsically safe proximity switch (P0) can be used in high ambient temperature.

MLS800 Series Limit Switch Box

CE ⟨Ex⟩ 🛡 SIL3

MLS800 series limit switch box have a proven track record for accurate and reliable signaling in linear and rotary applications. Providing both visual and remote electrical position indications, these cost-effective, compact unit unparalleled performance with ease of installation and calibration. Rugged, corrosion-resistant enclosures have multiple switch options and meet IP67 standards. Intrinsically safe and explosion proof designs ensure safe reliable operation in hazardous environment.

- Simple design and clear indicator display with contrast color design.
- Used for linear valve with NAMUR standard.
- SS316L or Die-cast aluminum material body option.
- Two cable entries for easy installation.
- Ability to add a 4~20 mA transmitter to provide feedback.
- Explosion proof housing or intrinsically safe electronics suitable for hazardous environment.

MLS800N   **MLS800C**   **MLS800S**

Model No.	MLS800
Body material	Die-cast Aluminum or SS316L
Outer coating	Polyester coating
Power connection	M20*1.5、NPT1/2, NPT3/4,G3/4 or G1/2
Explosion-proof	Non-explosion or ExdⅡCT6
Ingress protection	IP67
Stroke	10~100mm
Switch type	Mechanical switch or proximity switch
Mechanical switch rating	16A 125VAC/250VAC， 0.6A 125VDC，10A 30VDC
Proximity switch rating	Intrinsically safe：8VDC，NC Non-explosion proof：10~30VDC，≤150mA
Reed proximity switch rating	24V 0.3A
Position transmitter	4~20mADC
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃

	1.	-	2.	3.	4.	5.	-	6.
MLS800	N	-	M0	1	0	S	-	SZ

Body material

Non-explosion —— N
(Aluminum)
Explosion-proof —— C
(Aluminum)
Explosion-proof —— S
(SS316L)

Switch type

Mechanical switch
2-SPDT ———————— M0
3-SPDT ———————— M1
4-SPDT ———————— M2
2-DPDT ———————— M3

Proximity switch[1]
2-Intrinsically safe ———— P0
2-Non-explosion(2wire) P1
2-Non-explosion(3wire) P2

Reed proximity switch
2-SPDT ———— P3
2-SPST ———— P4

Power connection

2-G1/2(Only 800N/C) ———— 0
2-NPT1/2 ———— 1
2-M20*1.5(Only 800N/C) ———— 2
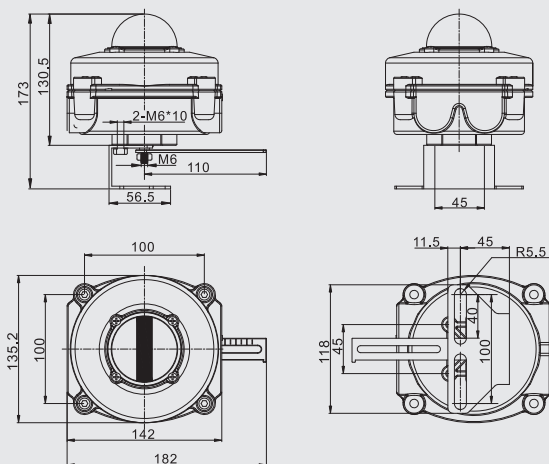2-G3/4(Only 800C) ———— 4
2-NPT3/4(Only 800C/S) ———— 5

Option

None ———— 0
Position transmitter module ———— 1

Ambient temperature[2]

-20~70℃ ———— S
-20~120℃ ———— H
-40~80℃ ———— L

Special order code ———— □□□

Note 1: By default, two wires intrinsically safe proximity switch (P0) at normally closed status; two wires non-explosion proof .
Note 2: Position transmitter module not available to non-explosion proof type.
Note 3: Only mechanical switch (M0) can be used in high ambient temperature. Only intrinsically safe proximity switch (P0) can be used in high ambient temperature.
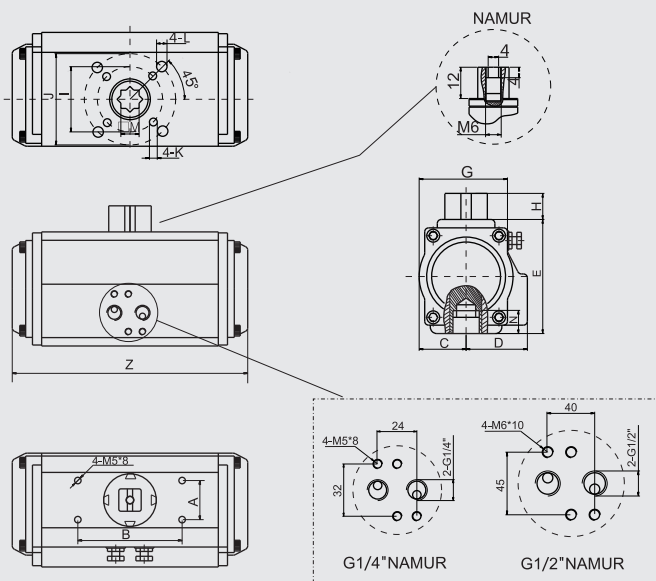
MLS800C

MAP series combined strength and compactness of design to have both single and double acting pneumatic actuators. The rack and pinion actuator is available for rotation of 90 degree, suitable for both on-off and modulation applications. Direct mounting installaion minimize misalignment and contamination between valve and actuator.

- Multifunctional position indicator with Namur-standard mounting slot for easy installation of various accessories such as valve positioner, limit switch, etc.
- The high-precision integrated gear output shaft is made of nickel-plated alloy steel and meets ISO5211, DIN3337, Namur standard.
- The actuator body surface is treated with hard oxidation, and the end cap is coated with polyester. Metal powder spraying, PTFE coating or nickel plating are optional.
- Adjusting screws limit the travel of actuator to specific degrees of rotation in both and closed directions

Model No.	MAP
Body material	Aluminum alloy
Air connection	G1/4 or G1/2
Working medium	Dry or lubricated compressed air or non-corrosive gas, the impurity particles in the medium are less than 30 microns.
Air pressure	0.3~0.8MPa
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃
Stroke angle	90° ±5°
Output torque	See the MAP series for details

	1.	2.	3.	4.	5.	6.	-	7.
MAP	83	S	K10	0	S	FC	-	SZ

Body Size

32mm	32
40mm	40
52mm	52
63mm	63
75mm	75
83mm	83
92mm	92
105mm	105
125mm	125
140mm	140
160mm	160
190mm	190
210mm	210
240mm	240
270mm	270
300mm	300
350mm	350
400mm	400

Acting type

Single	S
Double	D

Spring quantity (Single acting only)

5 springs	K5
...	...
16 springs	K16

Stroke angle[1]

90°	0
Defined angle (state number in bracket)	T
Three position (state number in bracket)	3P

Ambient temperature

-20~70℃	S
-20~120℃	H
-40~70℃	L

Fail position (Single acting only)

Fail close	FC
Fail open	FO

Special order code □□□

Note: the details of dimension see MAP series.

G1/4"NAMUR   G1/2"NAMUR

NAMUR

[1]: Defined angle example: MAP92DT(120)SFC
Three position example: MAP92D3P(180)SFC

MAPF/B Series Pneumatic Actuator

CE 〈Ex〉 SIL3

MAPF / B series pneumatic actuator is widely used for control valve with high torque requirement. It is a fork-piston type structure, adopts the latest technology design, beautiful appearance and compact structure. It is suitable for the control of rotary valves, such as butterfly valves, ball valves and dampers.

- It adopts a fork transmission mechanism to convert linear motion into rotary motion. It is suitable for the control of 90° rotating of medium and large size valves. Double cylinders works in the same time to produce large output torque and smooth operation.
- Switch position can be adjusted in both directions, adjustment range ± 5 °.
- The top connection adopts Namur standard, which can be easily installed with limit switch, valve positioner and other accessories, and can clearly indicate the valve position.
- The bottom flange adopts the ISO5211 standard size, and two sets of mounting holes are reserved for easy installation with valve.
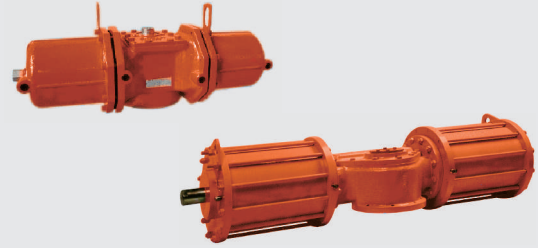
Model No.	MAPF/B
Body material	Aluminum alloy
Air connection	Rc1/4、Rc3/8 or G1/2
Working medium	Dry or lubricated compressed air or non-corrosive gas, the impurity particles in the medium are less than 30 microns.
Air pressure	0.3~0.7MPa
Ambient temp.	-20~70℃, 20~120℃, or -40~80℃
Stroke angle	90° ±5°
Output torque	See the MAPF/B series for details

	1.	2.	3.	4.	5.	6.	-	7.
MAPF/B	83	S	G	0	0	FC	-	SZ

Model No.

MAPF
130 ——— 130
170 ——— 170
200 ——— 200
250 ——— 250
280 ——— 280
320 ——— 320

MAPB
355 ——— 355
400 ——— 400
490 ——— 490
600 ——— 600
700 ——— 700
800 ——— 800

Acting type[1]

Single(MAPF) ——— S
Single(MAPB) ——— S1
Single(MAPB) ——— S2
Double ——— D

Special parameter[2]

-20~70℃ ——— S
0~120℃ ——— H
-40~70℃ ——— L
Stainless steel fastener ——— N
Quick action on-off ——— F
High frequency on-off ——— Q

Accessory[3]

None ——— 0
With handwheel ——— G
Worm gearbox ——— H

special function

Standard ——— 0
Two-stage mechanical control ——— 2P
PST online range calibration ——— PST
Opening limit stopper ——— P
Offshore platform ——— OF
natural gas supply ——— AS
With mechanical locking function ——— JS
With hydraulic locking function ——— YS
Others ——— SO

Fail position (Single acting only)

Fail close ——— FC
Fail open ——— FO

Special order code ——— □□□

[1]: S1 working pressure 3 - 7 bar; S2 working pressure 4 - 7 bar
[2]: High frequency on-ff means 600,0000 times(Double only)
[3]: MAPF130D uses handwheel, MAPF130S-320S uses handwheel on side, the rest uses gearbox.
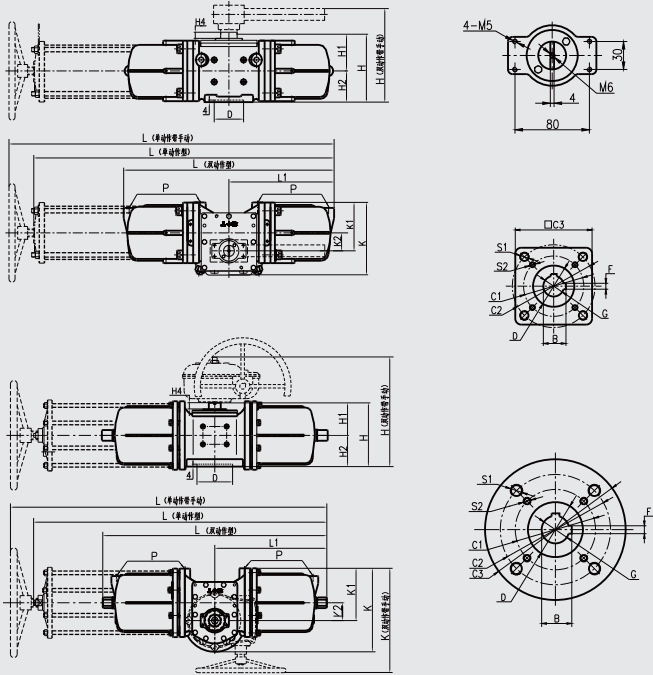
Note: the details of dimension see MAPF/B series .

MAQ Series Rotary Electric Actuator

MAQ series electric actuators have the advantages of high performance, high protection, small size, high integration, long service life and stable performance. They are suitable to control the 90 ° rotating ball valves, butterfly valves, damper baffles and other equipments.

- The aluminum alloy case is treated with hard anodizing and polyester powder with IP67 ingress protection.
- Fully enclosed squirrel cage induction motor with high starting torque.
- Built-in handwheel, convenient for on-site operation.
- Double-turbine rod mechanism and two-stage reduction gearbox can prevent the valve from being inaccurate due to instantaneous overturn, prevent reverse and ensure accurate and reliable valve position.
- Built-in limit switch and torque protection function.
- Two limit bolts used on actuator on-off position to prevent the shaft in the actuator from disengaging.

Model No.	MAQ
Ingress protection	IP67, NAMUR4&6
Operating voltage	110V/220VAC±10% 1PH 50/60Hz; 380/400/440VAC 3PH 50/60Hz
Operating mode (on-off)	S2: 10~30分 / S4: 20~50%
Operating mode (modulating)	S4 : 30%~50%,300~1200times/h
Motor	Fully enclosed squirrel cage induction motor, class F
Limit switch	4×SPDT, 250VAC 10A
Torque switch	2×SPDT, 250VAC 10A (not available to MAQ10)
Moto protection	Over-heat switch, on at 150+/-5, off at 97+/-15
Stroke	90 ± 5°
Position indication	Continuous indicator
Handwheel	Included
Self-locking function	Included
Mechanical limit	On and off stopper included (adjustable)
Anti-condensation heater	5W(110/220VAC)
Power connection	2×PF3/4
Ambient temp.	-25~ 50℃; optional -40 - 80℃
Ambient humidity	10~100%, No condensate
Anti-vibration performance	XYZ 10g 0.2~34Hz, 30min
Body material	Aluminum alloy case, treated with hard anodizing and polyester powder

	1.	-	2.	3.	4.	5.	-	6.	-	7.
MAQ	016	-	S	1	N	1	-	1	-	SZ

Rated torque
- 100Nm — 010
- 160Nm — 016
- 240Nm — 024
- 350Nm — 035
- 500Nm — 050
- 800Nm — 080
- 1100Nm — 110
- 1500Nm — 150
- 2000Nm — 200
- 3000Nm — 300
- 6000Nm — 600
- 9000Nm — 900

Operating voltage
- 220/230VAC 1PH — S
- 380/400VAC 3PH — T
- 110/120VAC 1PH — S1
- 440VAC 3PH — T1
- 24VDC — D

Ingress protection
- IP67 — 1
- IP68 — 2

Explosion-proof class
- None — N
- ExdIIBT4 — D

Ambient temperature
- -20~70℃ — 0
- -40~80℃ — 1

Option
- None — 0
- +4 - 20mA control module (PCU) — 1
- +Local control unit (LCU) — 2
- +4 - 20mA position feedback module (CT) — 3
- +LCU+PCU — 4
- +LCU+CT — 5
- +Smart control module (LCD) — 6
- +LCD+PCU — 7
- +LCD+CT — 8
- +Default to Backup(BP) — 9
- +potentiometer sensor(PK) — A
- +Fieldbus Foundation bus — B
- +HART Communication — C
- +Modbus — D
- +Profibus — E

Special order code — □□□

MTS Series Multi-turn Electric Actuator

MTS series delivering positioning accuracy for control and modulating functions. proven safety with explosion-proof certification, torque overload protection. Superior process monitoring and information shown on local LCD display. The torque ranges are between 28 Nm and 3000Nm, when combined with a gearbox, the maximum torque is multiplied.

■ Non-intrusive flameproof design, adjustment without parameter opening, parameter setting and fault diagnosis.

■ With multiple protections such as torque protection, valve position limit protection, instantaneous reverse protection, power phase .

■ Optional for linear, quick-open, etc.

■ Polyester powder coated die-cast aluminum cover for exceptional corrosion, wear impact and UV resistance.

Model No.	MTS
Ingress protection	IP67 or IP68
Operating voltage	220VAC 50/60 Hz 1PH; 380VAC 50/60Hz 3PH
Operating mode	On-off : S2:10~30min; S4: 20~50%, max. 600times/h modulate: S4 : 30~50% , max.1200times/h
Motor	Fully enclosed squirrel cage induction motor, class F
Limit switch	2×SPDT，250VAC 10A
Torque switch	Electronic control
Position indication	LCD
Flange standard	ISO5211
Self-locking function	Included
Handwheel	Included
Power connection	2-1"+1 1/2NPT or 2-M25+1*M40
Ambient temp.	-20~70℃
Ambient humidity	10~100%，No condensate
Body material	Aluminum alloy case, treated with hard anodizing and polyester powder

	1.	-	2.	3.	4.	5.	6.	-	7.	-	8.
MTS	30	-	S	1	N	1	1	-	1	-	SZ

Rated torque[1]

380VAC
- 34Nm — 30
- 81Nm — 80
- 140Nm — 140
- 203Nm — 200
- 300Nm — 300
- 400Nm — 400
- 610Nm — 600
- 1020Nm — 1000
- 1490Nm — 1500
- 2030Nm — 2000
- 3000Nm — 3000

220VAC
- 28Nm — 080
- 81Nm — 200
- 142Nm — 400
- 232Nm — 600

Motor speed
- 18rpm — 18
- 24rpm — 24
- 36rpm — 36
- 48rpm — 48
- 72rpm — 72
- 96rpm — 96

Operating voltage
- 220VAC 1PH — S
- 380VAC 3PH — T
- Smart 220VAC 1PH — MS
- Smart380VAC 3PH — MT

Ingress protection
- IP67 — 1
- IP68 — 2

Explosion-proof class
- None — N
- ExdIIBT4 — D
- ExdIICT4 — C

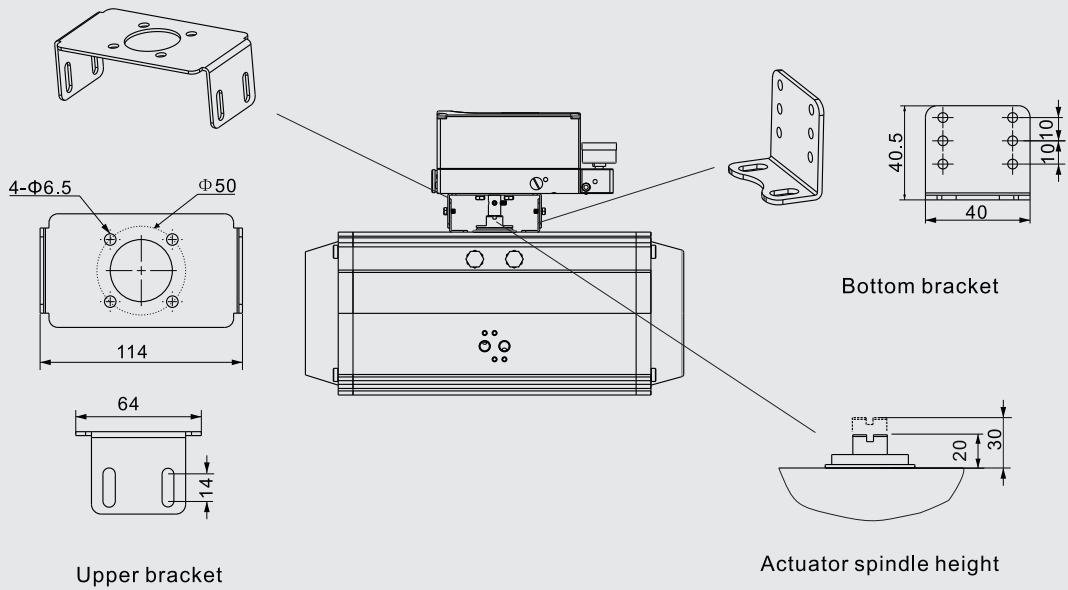Ambient temperature
- -20~70℃ — S
- -40~80℃ — L

Control Type
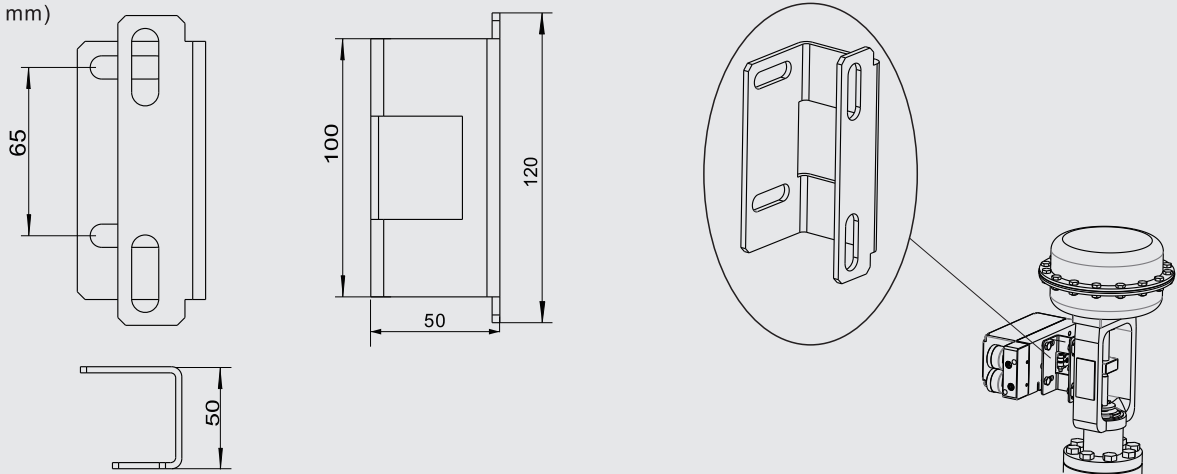- on/off — 0
- modulating — 1

Special order code — □□□

[1]: Rated torque is based on 18 rpm motor speed, please contact MORC for other motor speed.
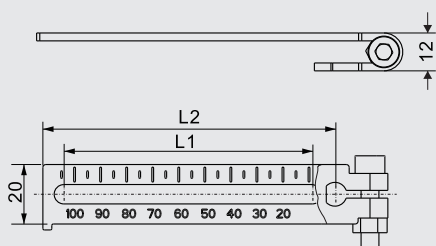
MORC® MORC CONTROLS LTD.

MTSL Series Linear Type Electric Actuator

MTSL series linear type electric actuators are thrust-type straight-stroke actuators derived from MTS series multi-turn actuators.

- Polyester powder coated die-cast aluminum cover for exceptional corrosion, wear impact and UV resistance.
- With multiple protections such as torque protection, valve position limit protection, instantaneous reverse protection, power phase .
- Optional for linear, quick-open, etc.
- Optional for multiple industrial control buses.

Model No.	MTSL
Ingress protection	IP67 or IP68
Operating voltage	220VAC 50/60 Hz 1PH; 380VAC 50/60Hz 3PH
Operating mode	On-off : S2:10~30min; S4: 20~50%, max. 600times/h modulate: S4 : 30~50% , max.1200times/h
Motor	Fully enclosed induction squirrel cage motor, class F
Limit switch	2×SPDT, 250VAC 10A
Torque switch	Electronic control
Position indication	LCD
Flange standard	ISO5211
Self-locking function	Included
Handwheel	Included
Power connection	2-1"+1 1/2NPT or 2-M25+1*M40
Ambient temp.	-20~70℃
Ambient humidity	10~100%, No condensate
Body material	Aluminum alloy case, treated with hard anodizing and polyester powder

	1.	-	2.	3.	4.	5.	6.	-	7.	-	8.
MTSL	30	-	S	1	N	1	1	-	1	-	SZ

Rated Force[1]
380VAC
9~18KN — 30
18~33KN — 50
31~47KN — 100
58~78KN — 200
220VAC
6~13KN — 30
10~22KN — 50
15~32KN — 100
30~51KN — 200

Motor speed
18rpm — 18
24rpm — 24
36rpm — 36
48rpm — 48
72rpm — 72

Operating voltage
220VAC 1PH — S
380VAC 3PH — T
Smart 220VAC 1PH — MS
Smart 380VAC 3PH — MT

Ingress protection
IP67 — 1
IP68 — 2

Explosion-proof class
None — N
ExdIIBT4 — D
ExdIICT4 — C

Ambient temperature
-20~70℃ — S
-40~80℃ — L

Control Type
on/off — 0
modulating — 1

Special order code — □□□

Note 1: Rated torque is based on 18 rpm motor speed, please contact MORC for other motor speed.
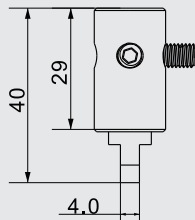
Valve Positioner Accessories GA Drawing

MSP-25/32 Bracket

**Rotary (Unit: mm)**

4-Φ6.5   Φ50

114

64

14

Upper bracket

Bottom bracket

40.5

40

10 10

20

30

Actuator spindle height

Linear (Unit: mm)

65

100

120

50

50

MSP-25/32 Levers

Linear(Standard)

12

L2
L1

20

100 90 80 70 60 50 40 30 20

Unit: mm

Model No.	Stroke	L1	L2
1(Standard)	10~40	40	56
2(Standard)	20~100	80	98
3(Standard)	90~150	85	165

Valve Positioner Accessories GA drawing

MSP-25/32 Bracket

Linear(Adaptor)

Model No.	Stroke	L1	L2
4(Adaptor)	5~35	25	35
5(Adaptor)	40~130	68	92
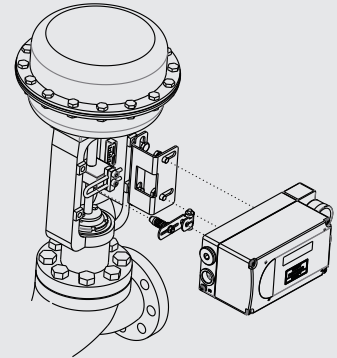
Unit: mm

Rotary(Unit: mm)
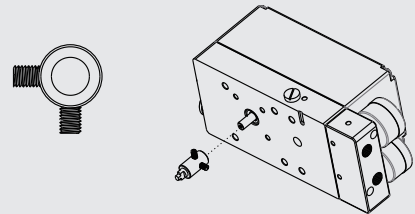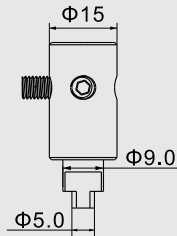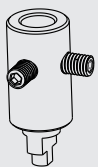
Pressure Gauge Module(MSP-25 only)

(Unit: mm)
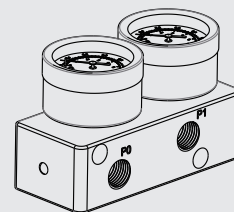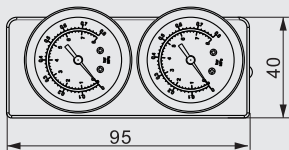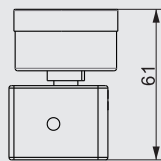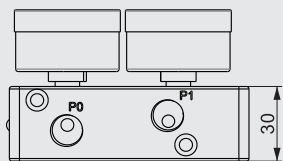
Single Acting

(Unit: mm)
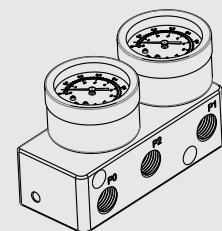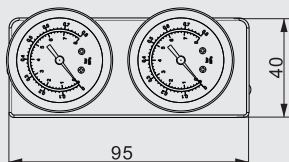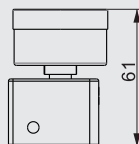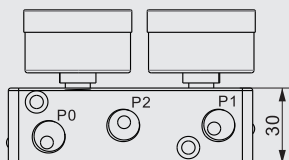
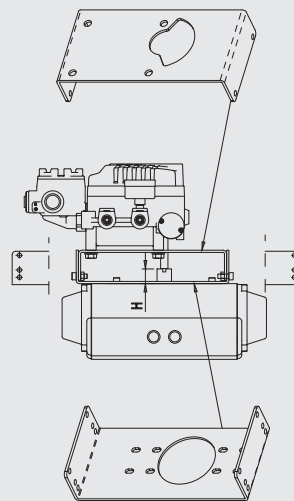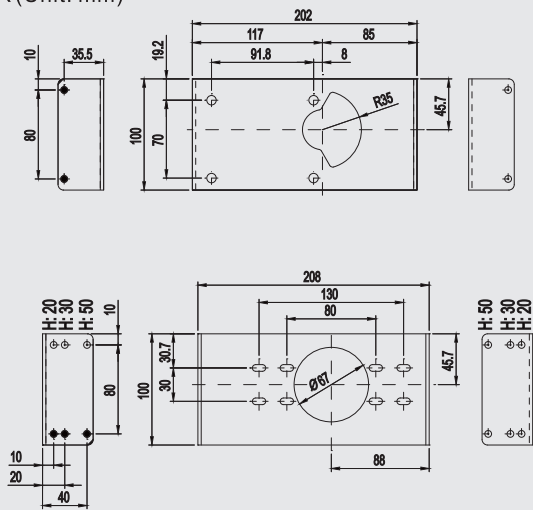
Double Acting

MEP-10 Bracket

MEP-10R (Unit: mm)

MEP-10 Feedback Level

Linear

Type 1, 2, 3

Type 4
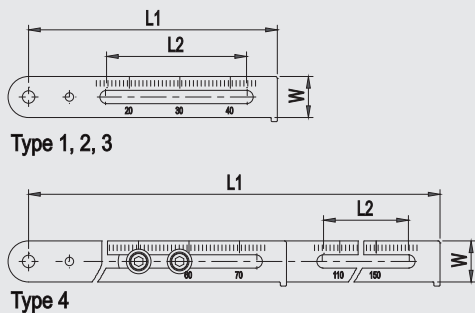
Model No.	Stroke	L1	L2	W
1	10~40	121.2	68.2	20
2	30~70	195	120	
3	60~100	277	122	
4	110~150	400		

UNIT: mm

Rotary(Standard)
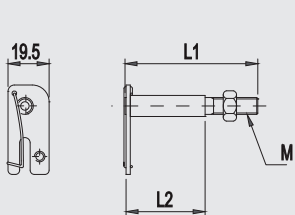
Model No.	L1	L2	M
1	34	9	M6
2	63	37	
3	34	9	M8
4	63	37	

UNIT: mm

Rotary(NAMUR)

BOTTOM LINE
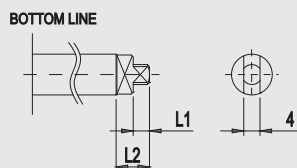
Model No.	L1	L2
MEP-10R	7	11

UNIT: mm

Service

MORC offers safety, reliability and performance products to our customers. We offer comprehensive services to meet customer demand, which includes pre-sale, after-sale technical support service and field service as well as providing complete valve assembly service.

MORC series cover from assisting on product selection to all stages of the life cycle of our product. It includes simple troubleshooting as well as comprehensive service for entire projects. Our products are designed to perform reliably in many industrial environments. We strive to provide the services our customers need to ensure the plants running smoothly without any disruption. Upgrading and replacement of existing product can be a cost-effective alternative to premier brand product. We assist our customers in modernizing existing installations and replacing the old/obsolete products to minimize cost for customers.

Control Valve Complete Service

MORC has partnered with number of leading valve manufacturer to provide complete valve assembly and calibration service. According to customer requirement, such as valve parts selection, assembly and commissioning of pneumatic control valve, pneumatic on-off valve or electric control valve.

- **Pneumatic regulating valve or proportional control valve**
  Pneumatic control valve or proportional control valve is composed of pneumatic valve ,valve positioner, air filter regulator and other accessories to achieve control of valve opening degree.

- **Pneumatic on-off valve**
  Pneumatic on-off valve is composed of pneumatic valve , pneumatic actuator, solenoid valve, limit switch, air filter regulator and other accessories to achieve fully open and fully close of valve.

- **Electric control valve**
  Electric control valve is a complete set of control valve composed of electric actuator and valve. According to different valve types, such as 90 ° rotary valve, multi-turn valve and linear valve, it can be equipped with rotary electric actuator, multi-turn electric actuator or linear electric actuators for switching or adjustment functions.

Custom labels
We make custom labels for customers who buy in large quantities.

Nameplates
Within in house tag design and CNC engraving machines, we can engrave custom nameplates any information specified by customer.
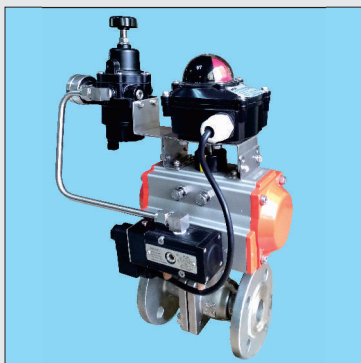
Product Support Service

With more and more MORC products being used in various industries, product support service is vital to ensure the correct selection and implementation of products. If users have any questions, they can contact MORC or their supplier for consultation. Alternatively log onto the MORC company website for downloading supporting documents.

www.morc.com.cn
www.morc-control.com

MORC Website by wechat

Pre-sale Service

- Control scheme and product selection.
- Technical consulting.
- Product introduction and technical maintenance training.

After-sale Service

- Installation, calibration and commissioning guidance, technical consultation.
- Phone call or video call remote assistance to solve the problem.
- Repair service, allowing users to send the faulty product to MORC for inspection and repair.
- Replacement parts and upgrade services. Under certain circumstances, MORC can provide spare parts/products to users for direct replacement, users then return faulty parts/products to MORC for repair and upgrade.
- Provide maintenance plan and spare parts plan.

On-site Service to help your operation runs smoothly

- On-site installation, calibration and commissioning training.
- Fault diagnostic and repair.
- Software and hardware upgrade services.

Production Service

- Spare parts and OEM solution.
- Inventory plan.
- Production schedule adjustment to meet customer needs
- Product quality inspection and function test.

On-sale Service.

- Priority support and fast response.
- Identify or replace for alternative solution.
- Provide maintenance advice.

Engineering Service

- Delivers value-added solutions that improve operational performance and increase profitability for its customers.
- Perform system audits to identify operational issues and recommended solutions.
- Engage remotely or on-site to support project planning and design.

Education and Training Service

MORC offers a wide range of education and training programs to help customer and user deepen their understanding of critical equipment and processes. User can submit their requirements and training content to company. MORC can design and deliver tailored training programs on site or in the office.

MORC Quality Assurance

■ Quality is our foundation to long-term existence and success of our company. The quality of our products is the key to achieving customer satisfaction. By listening feedbacks from our customers, we are able to always learn and improve our service and product. Our full suit test equipments, and our product life cycle management ensure material quality for our suppliers, our products meet demand from industrial harsh environment.

■ Quality also means all staff at MORC consider themselves responsible for the quality of our products and service. The continuous improvement process we are convinced that only satisfied customers will do business with us again.

■ All MORC products come with warranty period of 18 months after arrival of goods 12 months after installation of product, whichever comes first.

MORC Social Responsibility

■ The health and safety of MORC staffs is very important, we provide a safe working environment as well as a happy place to be. We also consider it important to contribute and engage positively in local communities and society.

■ MORC is fully committed to reducing its impact on environment by preventing pollution, reducing the consumption of energy, water and waster and recycling.
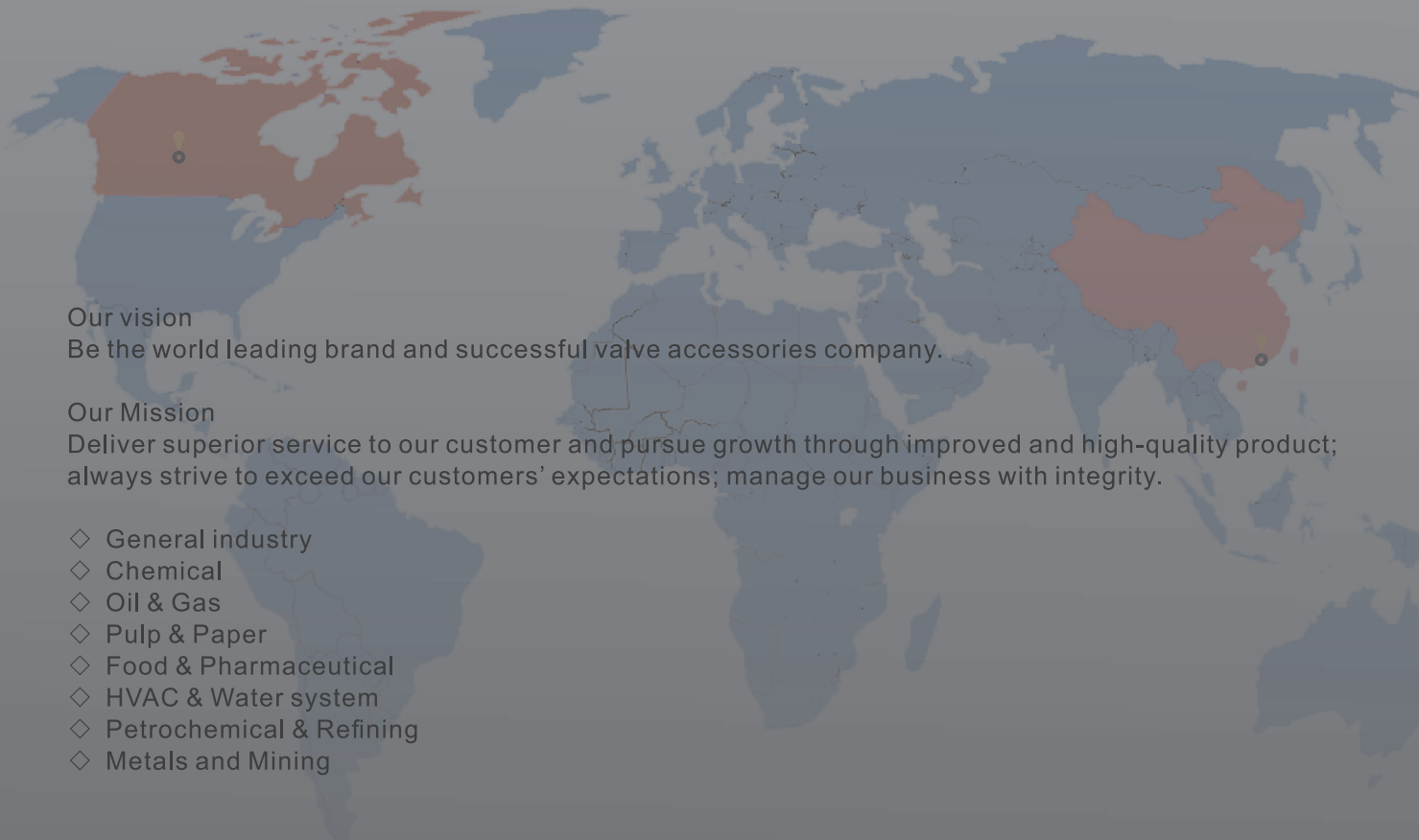
MORC®

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Our vision
Be the world leading brand and successful valve accessories company.

Our Mission
Deliver superior service to our customer and pursue growth through improved and high-quality product; always strive to exceed our customers' expectations; manage our business with integrity.

◇ General industry
◇ Chemical
◇ Oil & Gas
◇ Pulp & Paper
◇ Food & Pharmaceutical
◇ HVAC & Water system
◇ Petrochemical & Refining
◇ Metals and Mining