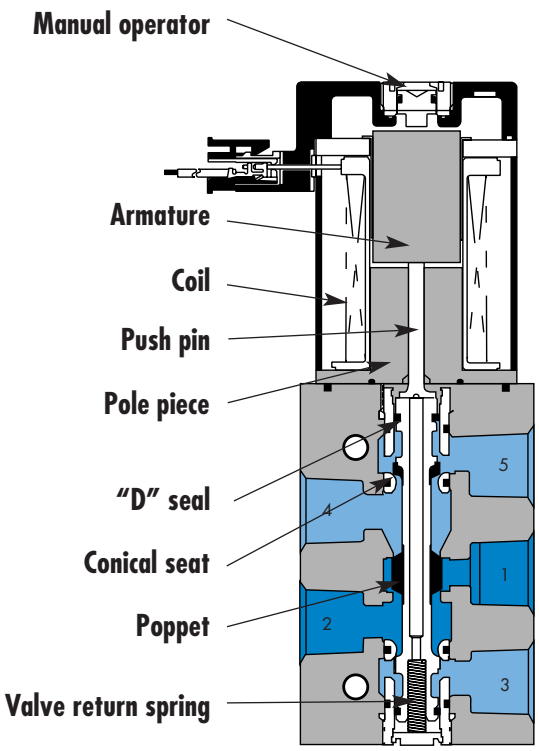
Individual mounting

Inline	Sub-base non "plug-in"

Manifold mounting

Stacking	Manifold base "plug-in"



SERIES FEATURES

- Short stroke solenoid produces high energization shifting force.
- High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
- Built-in wear compensation - valve stroke is shorter than solenoid stroke.
- Four (4) bonded balanced poppets on a one-piece valve stem.
- End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
- Exhaust seals are not under inlet pressure thus reducing friction.
- Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

Consult "Precautions" page 327 before use, installation or service of MAC Valves..

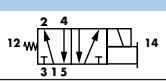
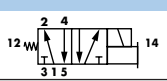
Series 47

Function	Port size	Flow (Max)	Individual Mounting	Series
5/2	**1/8" - 1/4"**	**0.5 C_v**	Inline	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
1/8" NPTF	47A-AA0-H *XXX-XXX*	47A-BA0-H *XXX-XXX*
1/4" NPTF	47A-AB0-H *XXX-XXX*	47A-BB0-H *XXX-XXX*

SOLENOID OPERATOR ➤ H *XXX-XXX**

XX	Voltage
DA	24 VDC (5.2W)
DB	24 VDC (2.4W)
DC	24 VDC (1.8W)
DD	24 VDC (1.0W)
AA	120 VAC (6.7W)

X	Lead Wire length
A	18"
B	24"
C	36"

X	Manual operator
1	Non-locking recessed
2	Locking recessed

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Other options available, see page 315.
Note: AC voltage requires connector with rectifier.

OPTIONS

Namur Mount Option (w/o flow controls)

47A-C**X**O-H*XXX-XXX*

A 1/8" NPTF
B 1/4" NPTF

33
34
36
32
37
38
52
67
69
44
46
42
47
48P
48
400
92
93
ISO 01
ISO 02
ISO 1
ISO 2
ISO 3

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

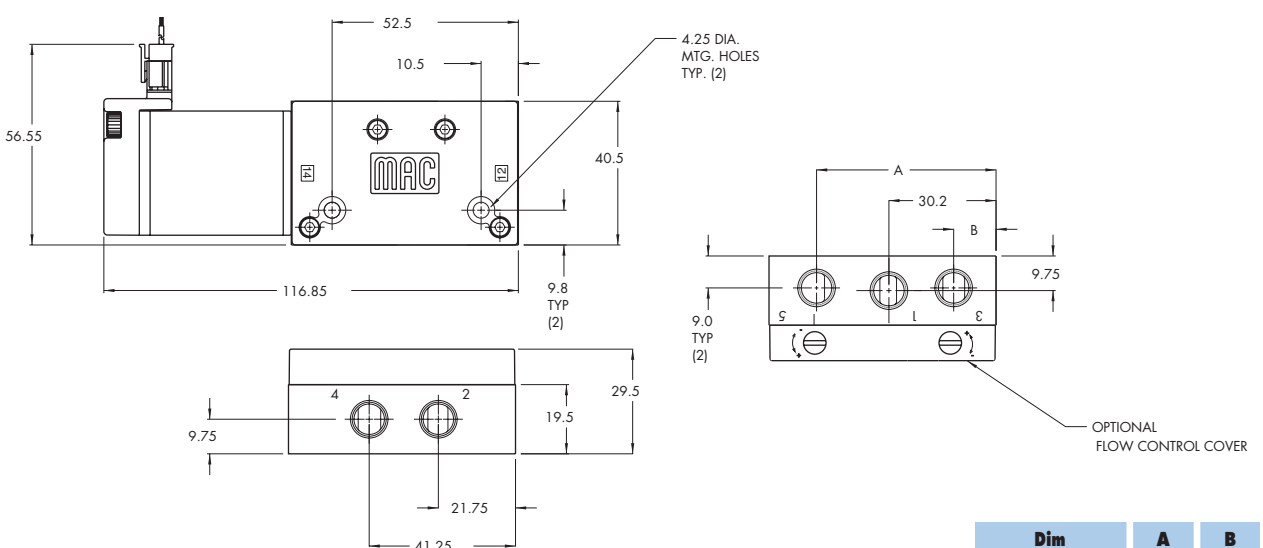
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	5.2W : (0.50 C_v) – 2.4W : (0.35 C_v) – 1.0W : (0.30 C_v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2W – 2.4W – 1.0W
Response times : (with 5.2 W coil)	Energize : 17.4 ms De-energize : 3.8 ms

Options : • BSPP threads

Spare parts : • Flow control assembly : N-47004

DIMENSIONS

Dimensions shown are metric (mm)



Dim	A	B
1/8"	50.6	11.95
1/4"	49.2	11.2

Consult "Precautions" page 327 before use, installation or service of MAC Valves..

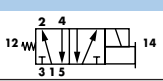
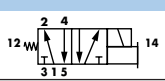
Series 47

Function	Port size	Flow (Max)	Individual Mounting	Series
5/2	**1/8" - 1/4"**	**0.5 C_v**	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
Valve less base	47A-L10-H ***XXX-XXX***	47A-L10-H ***XXX-XXX***
1/8" NPTF	47A-LAA-H ***XXX-XXX***	47A-LAB-H ***XXX-XXX***
1/4" NPTF	47A-LBA-H ***XXX-XXX***	47A-LBB-H ***XXX-XXX***

SOLENOID OPERATOR ➤ H ***XXX-XXX****

XX	Voltage
DA	24 VDC (5.2W)
DB	24 VDC (2.4W)
DC	24 VDC (1.8W)
DD	24 VDC (1.0W)
AA	120 VAC (6.7W)

X	Lead Wire length
A	18"
B	24"
C	36"

X	Manual operator
1	Non-locking recessed
2	Locking recessed

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Other options available, see page 315.
Note: AC voltage requires connector with rectifier.

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

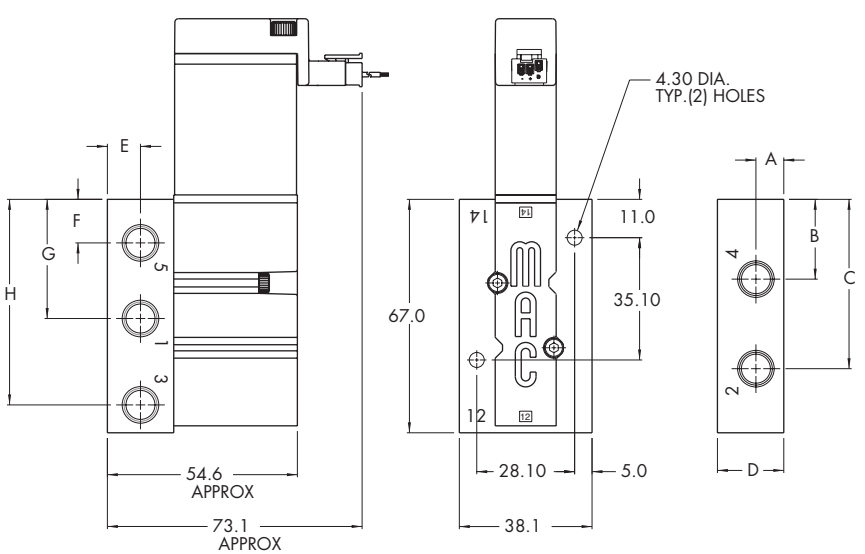
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	5.2W : (0.50 C_v) – 2.4W : (0.35 C_v) – 1.0W : (0.30 C_v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2W – 2.4W – 1.0W
Response times :	Energize : 17.4 ms
(with 5.2 W coil)	De-energize : 3.8 ms

Options : • BSPP threads

Spare parts : • Pressure seal body to base: 16628 • Mounting screw (x2): 35043
• Flow control assembly (x2): N-04001

DIMENSIONS

Dimensions shown are metric (mm)



DIM.	A	B	C	D	E	F	G	H
1/8"	8.0	22.9	48.6	19.05	9.5	12.5	34.2	59.0
1/4"	9.5	24.0	48.8	23.0	12.5	12.8	34.2	57.2

Consult "Precautions" page 327 before use, installation or service of MAC Valves..

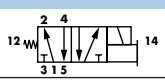
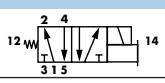
Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow (Max)	Manifold Mounting	Series
5/2	**1/8" - 1/4"**	**0.5 C_v**	Stacking	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

HOW TO ORDER

Port size	Without flow controls	With flow controls
		
1/8" NPTF	47A-SA0-H ***XXX-XXX***	47A-TA0-H ***XXX-XXX***
1/4" NPTF	47A-SB0-H ***XXX-XXX***	47A-TB0-H ***XXX-XXX***

SOLENOID OPERATOR ➤ H ***XXX-XXX****

XX	Voltage
DA	24 VDC (5.2W)
DB	24 VDC (2.4W)
DC	24 VDC (1.8W)
DD	24 VDC (1.0W)
AA	120 VAC (6.7W)

X	Lead Wire length
A	18"
B	24"
C	36"

X	Manual operator
1	Non-locking recessed
2	Locking recessed

XX	Electrical connection
MA	Plug-in wire assembly
MC	Plug-in wire assembly with light
BA	Flying leads
BC	Flying leads with light
MT	Plug-in wire assembly with rectifier & light

* Other options available, see page 315.
Note: AC voltage requires connector with rectifier.

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

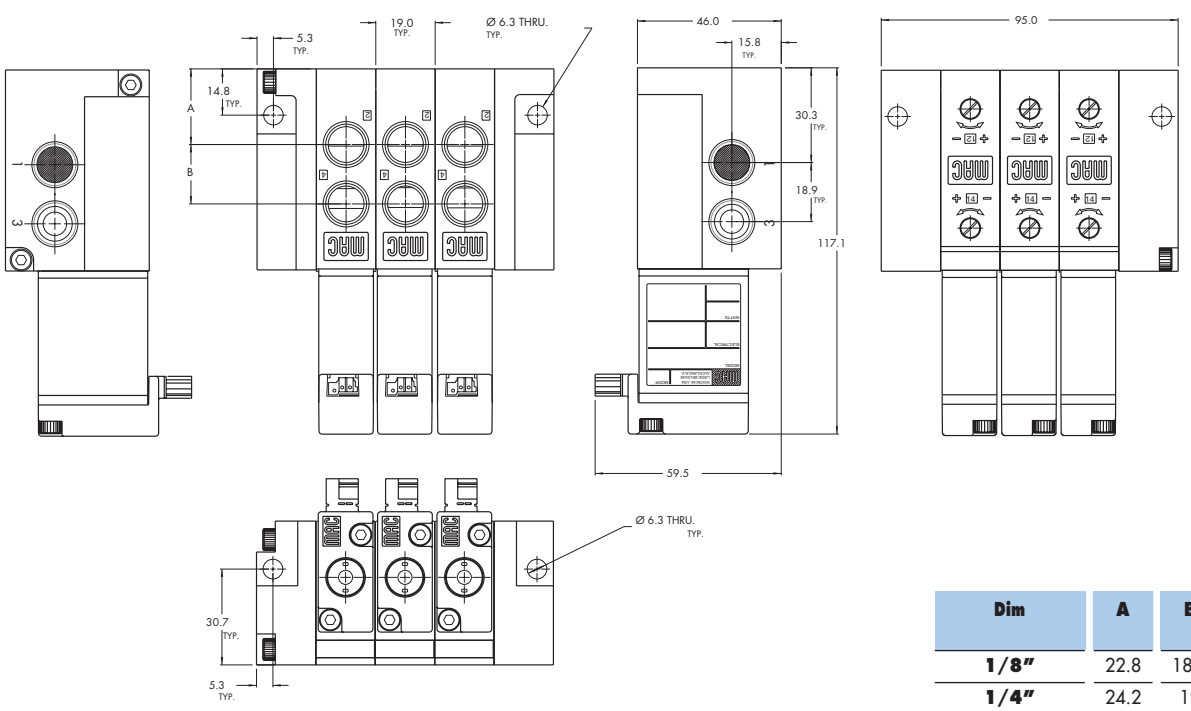
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	5.2W : (0.50 C_v) – 2.4W : (0.35 C_v) – 1.0W : (0.30 C_v)
Coil :	Class A wires (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2W – 2.4W – 1.0W
Response times : (with 5.2 W coil)	Energize : 17.4 ms De-energize : 3.8 ms

Options : • BSPP threads

Spare parts : • Inlet isolator: 28451 • Exhaust isolator: N-47009 • Tie Rod (x2): 79057

DIMENSIONS

Dimensions shown are metric (mm)



Dim	A	B
1/8"	22.8	18.4
1/4"	24.2	19

Consult "Precautions" page 327 before use, installation or service of MAC Valves..

Series 47

Function	Port size	Flow (Max)	Manifold Mounting	Series
5/2	**1/8" - 1/4"**	**0.5 C_v**	Manifold base "plug-in"	

OPERATIONAL BENEFITS

1. Short stroke solenoid produces high energization shifting force.
2. High force return spring due to high force solenoid maximizes both energization and de-energization shifting forces.
3. Built-in wear compensation – valve stroke is shorter than solenoid stroke.
4. Four bonded balanced poppets on a one-piece valve stem.
5. End poppets seal first on conical seats and cushion inlet poppet, eliminating cutting.
6. Exhaust seals are not under inlet pressure thus reducing friction.
7. Integral non-rising flow controls available on inline models.
8. Short stroking balanced poppet allows for direct solenoid operation with high shifting forces, minimized friction, fast response and high flow in a small package.

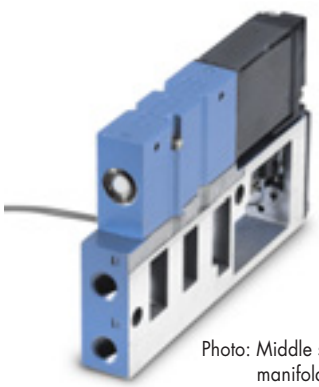


Photo: Middle station manifold base

HOW TO ORDER

Port size	Model number
	
Valve less base	47A-L10-H *xx*P-*xxx*
1/8" NPTF	47A-LAJ-H *xx*P-*xxx*
1/4" NPTF	47A-LBJ-H *xx*P-*xxx*

SOLENOID OPERATOR ➤ H *XX* P-*XXX**

XX	Voltage
DA	24 VDC (5.2W)
DB	24 VDC (2.4W)
DC	24 VDC (1.8W)
DD	24 VDC (1.0W)
AA	120 VAC (6.7W)

X	Manual operator
1	Non-locking recessed
2	Locking recessed

XX	Electrical connection
FA	Base plug-in
FB	Base plug-in w/ ground
FC	Base plug-in w/ LED light
FD	Base plug-in w/ LED light w/ ground
FT	Base plug-in w/ rectifier and light

* Other options available, see page 315.
Note : AC voltage requires connector with rectifier.

OPTIONS

47A-*xx***J**-*xxx*P-*xxx*

- **J** Manifold base, side cylinders (middle station)
- **K** Manifold base, bottom cylinders (middle station)
- **L** Right end manifold base, side cylinders
- **M** Right end manifold base, bottom cylinders
- **N** Left end manifold base, side cylinders
- **P** Left end manifold base, bottom cylinders

Note: Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds.

Series 47

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

TECHNICAL DATA

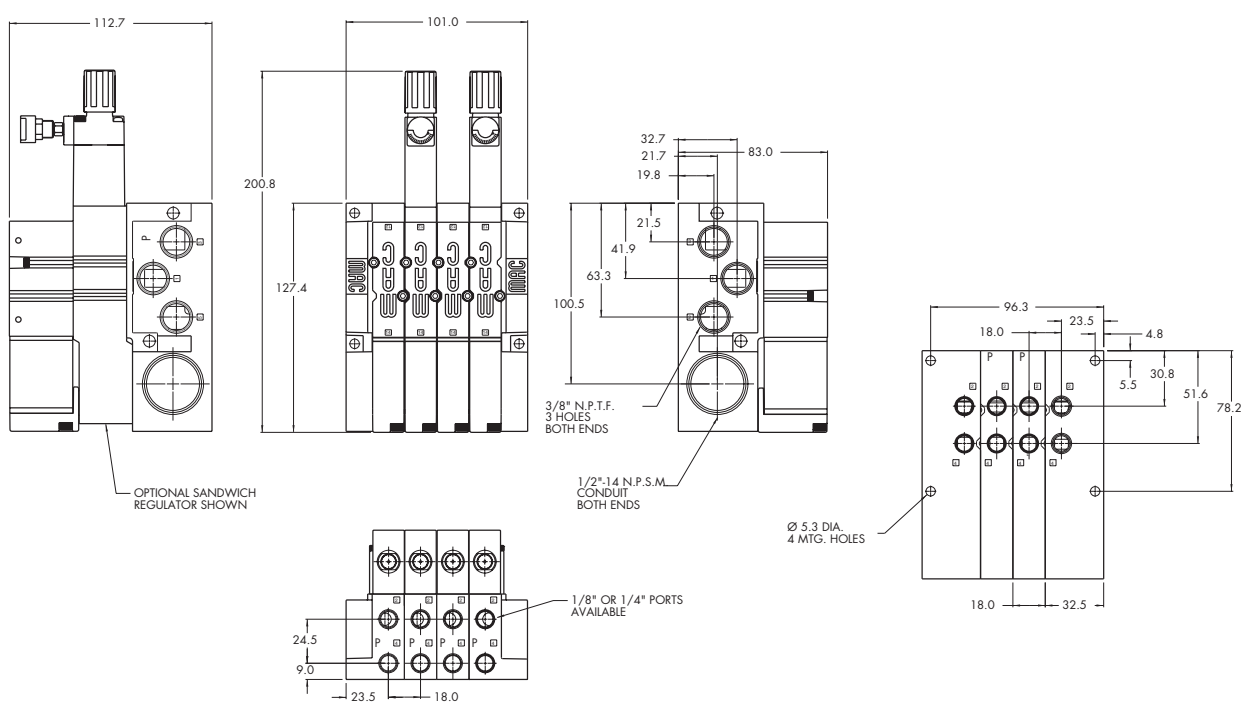
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow (at 6 bar, ΔP=1bar) :	5.2W : (0.50 C_V) – 2.4W : (0.35 C_V) – 1.0W : (0.30 C_V)
Coil :	Class A continuous duty, #22 AWG x 12 base leads
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2W – 2.4W – 1.0W
Response times :	Energize : 17.4 ms
(with 5,2 W coil)	De-energize : 3.8 ms

Options : • BSPP threads • Sandwich flow control: FC47A-AA • Sandwich regulator: see"Regulator" section

Spare parts : • Inlet/exhaust isolator: 28447 • Valve cover plate: M-47001

DIMENSIONS

Dimensions shown are metric (mm)



OPTIONS

Codification table for voltages / Manual operators / Electrical connections

VALVE CODE ➤ $H\ \underset{1}{\underline{XX}}\ \underset{2}{\underline{X}}\text{-}\underset{3}{\underline{X}}\ \underset{4}{\underline{XX}}$

OPTIONS AVAILABLE FOR
- Solenoid valves 37 & 47 Series

Consult "Precautions" page 327 before use, installation or service of MAC Valves..

MAC®

OPTIONS

1. VOLTAGE

H-XX X-X XX	VOLTAGE
AA	120/50, 120/60 (6.7 W) (use connector with rectifier)
AB	220/50, 220/60 (5.6 W) (use connector with rectifier)
AC	240/50, 240/60 (5.8 W) (use connector with rectifier)
AD	24/50, 24/60 (7.8 W) (use connector with rectifier)
DA	24 VDC (5.2 W)
DB	24 VDC (2.4 W)
DC	24 VDC (1.8 W)
DD	24 VDC (1.0 W)
DF	12 VDC (5.2 W)
DG	12 VDC (2.4 W)
DH	12 VDC (1.8 W)
DJ	12 VDC (1.0 W)
DL	120 VDC (6.3 W)

2. WIRE LENGTH

H-XX X-X XX	WIRE LENGTH
0	No lead wire (use with "MJ, MM & K Type connectors)
A	18"
B	24"
C	36"
D	48"
E	72"
F	96"
G	120"
H	144"

3. MANUAL OPERATOR

H-XX X-X XX	MANUAL OPERATOR
0	No operator
1	Non-locking recessed
2	Locking recessed
3	Non-locking extended
4	Locking extended

4. ELECTRICAL CONNECTION

H-XX X-X XX	ELECTRICAL CONNECTION
BA	Flying leads
BB	BA with ground wire
BC	BA with light
BD	BA with light & ground wire
BE	BA with suppression diode
BF	BA with suppression diode & ground wire
BG	BA with suppression diode plus light
BH	BA with suppression diode plus light & ground wire
*BN	BA with suppression diode plus blocking diode
*BP	BA with suppression diode plus blocking diode & ground wire
*BR	BA with suppression diode plus blocking diode & light
*BS	BBA with suppression diode plus blocking diode & light & ground wire
BK	BA with full wave rectifier
BL	BA with full wave rectifier & ground wire
BT	BA with full wave rectifier plus light
BU	BA with full wave rectifier plus light & ground wire

H-XX X-X XX	PLUG-IN CONNECTOR
FA	Base plug-in
FB	FA with ground wire
FC	FA with light
FD	FA with light & ground wire
FE	FA with suppression diode
FF	FA with suppression diode & ground wire
FG	FA with suppression diode & light
FH	FA with suppression diode plus light & ground wire
FK	FA with full wave rectifier
FL	FA with full wave rectifier & ground wire
*FN	FA with suppression diode plus blocking diode
*FP	FA with suppression diode plus blocking diode & ground wire
*FR	FA with suppression diode plus blocking diode plus light
*FS	FA with suppression diode plus blocking diode & light & ground wire
FT	FA with full wave rectifier plus light
FU	FA with full wave rectifier plus light & ground wire
MA	Solenoid plug-in wire assembly
MB	MA with ground wire
MC	MA with light
MD	MA with light & ground wire
ME	MA with suppression diode
MF	MA with suppression diode & ground wire
MG	MA with suppression diode plus light
MH	MA with suppression diode plus light & ground wire
MK	MA with full wave rectifier
ML	MA with full wave rectifier & ground wire
*MN	MA with suppression diode plus blocking diode
*MP	MA with suppression diode plus blocking diode & ground wire
*MR	MA with suppression diode plus blocking diode & light
*MS	MA with suppression diode plus blocking diode & light & ground wire
MT	MA with full wave rectifier plus light
MU	MA with full wave rectifier plus light & ground wire
MJ	Plug-in housing without wire assembly ('MA' option without wire assembly)
MM	Plug-in housing without wire assembly ('MB' option without wire assembly)
KA	Mini square connector
KB	KA with suppression diode
KC	KA with M.O.V.
KD	KA with light
KE	KA with light & suppression diode
KF	KA with light & M.O.V.
KJ	Mini square connector – male only
KK	KJ with suppression diode
KL	KJ with M.O.V.
KM	KA with full wave rectifier
KN	KA with full wave rectifier & M.O.V.
KP	KA with full wave rectifier & light
KR	KA with full wave rectifier plus light & M.O.V.
KS	KJ with full wave rectifier

* Blocking diode is located in the lead wire

Consult "Precautions" page 327 before use, installation or service of MAC Valves..