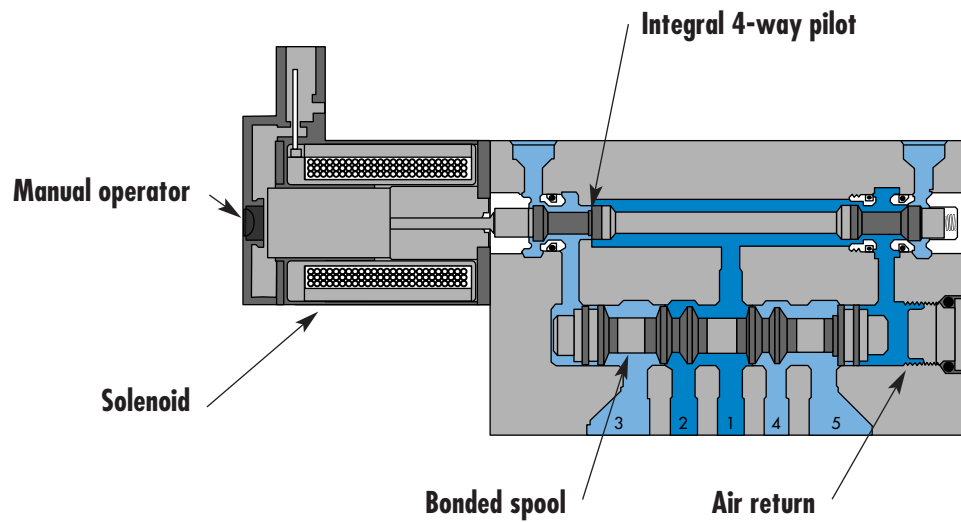


Individual mounting

Sub-base non "plug-in"	Sub-base "plug-in"	Sub-base/manifold base non "plug-in" with latching solenoid	Sub-base/manifold base "plug-in" with latching solenoid
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Manifold mounting

Manifold base non "plug-in"	Manifold base "plug-in"	Sub-base/manifold base non "plug-in" with latching solenoid	Sub-base/manifold base "plug-in" with latching solenoid
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SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot design.
- Single or dual pressure.
- Internal or external pilot.
- Single or double solenoid.
- 2 or 3 position.
- Rectified AC voltage.
- Latching solenoid technology.

Series

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36

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42

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48P

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400

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93

ISO 01

ISO 02

ISO 1

ISO 2

ISO 3



Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Individual mounting	Series
5/2, 5/3	1/8"	1.1 C_v	Sub-base non "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



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- 48P

HOW TO ORDER

SINGLE PRESSURE MODELS (VALVE WITH BASE CODED FOR SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
Valve less base	Internal	48B-AMA-000-Gxxx-xxx	48B-BMA-000-Gxxx-xxx	48B-EMA-000-Gxxx-xxx	48B-FMA-000-Gxxx-xxx
	External	48B-AMD-000-Gxxx-xxx	48B-BMD-000-Gxxx-xxx	48B-EMD-000-Gxxx-xxx	48B-FMD-000-Gxxx-xxx
1/8" NPTF	Internal	48B-AMA-AAL-Gxxx-xxx	48B-BMA-AAL-Gxxx-xxx	48B-EMA-AAL-Gxxx-xxx	48B-FMA-AAL-Gxxx-xxx
	External	48B-AMD-AAM-Gxxx-xxx	48B-BMD-AAM-Gxxx-xxx	48B-EMD-AAM-Gxxx-xxx	48B-FMD-AAM-Gxxx-xxx

DUAL PRESSURE MODELS (VALVE WITH BASE CODED FOR SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
Valve less base	Internal	Supply #3 port	48B-CMB-000-Gxxx-xxx	48B-DMB-000-Gxxx-xxx
		Supply #5 port	48B-CMC-000-Gxxx-xxx	48B-DMC-000-Gxxx-xxx
	External		48B-CMD-000-Gxxx-xxx	48B-DMD-000-Gxxx-xxx
	1/8" NPTF	Internal	Supply #3 port	48B-CMB-AAL-Gxxx-xxx
Supply #5 port			48B-CMC-AAL-Gxxx-xxx	48B-DMC-AAL-Gxxx-xxx
External		48B-CMD-AAM-Gxxx-xxx	48B-DMD-AAM-Gxxx-xxx	

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- 400
- 92
- 93

STANDARD SOLENOID OPERATOR >

G **xxx-xxx***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120 VAC (2.5W)	A 18"	1 Non-locking recessed	BA Flying leads
DC 24 VDC (1.8W)	B 24"	2 Locking recessed	BT Flying leads with light
DD 24 VDC (2.5W)	C 36"		GA MAC JAC solenoid plug-in
DF 24 VDC (4.0W)			KA Plug-in wire Assy.
			KT Plug-in wire Assy. with light
			KD Plug-in wire Assy. with rectifier & light & ground

- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3

* Other options available, see page 311.
 Latching solenoid also available, see page 133.
 Note : AC voltage requires connector with rectifier.
Other options available for the 48 series valves, see page 137.

TECHNICAL DATA

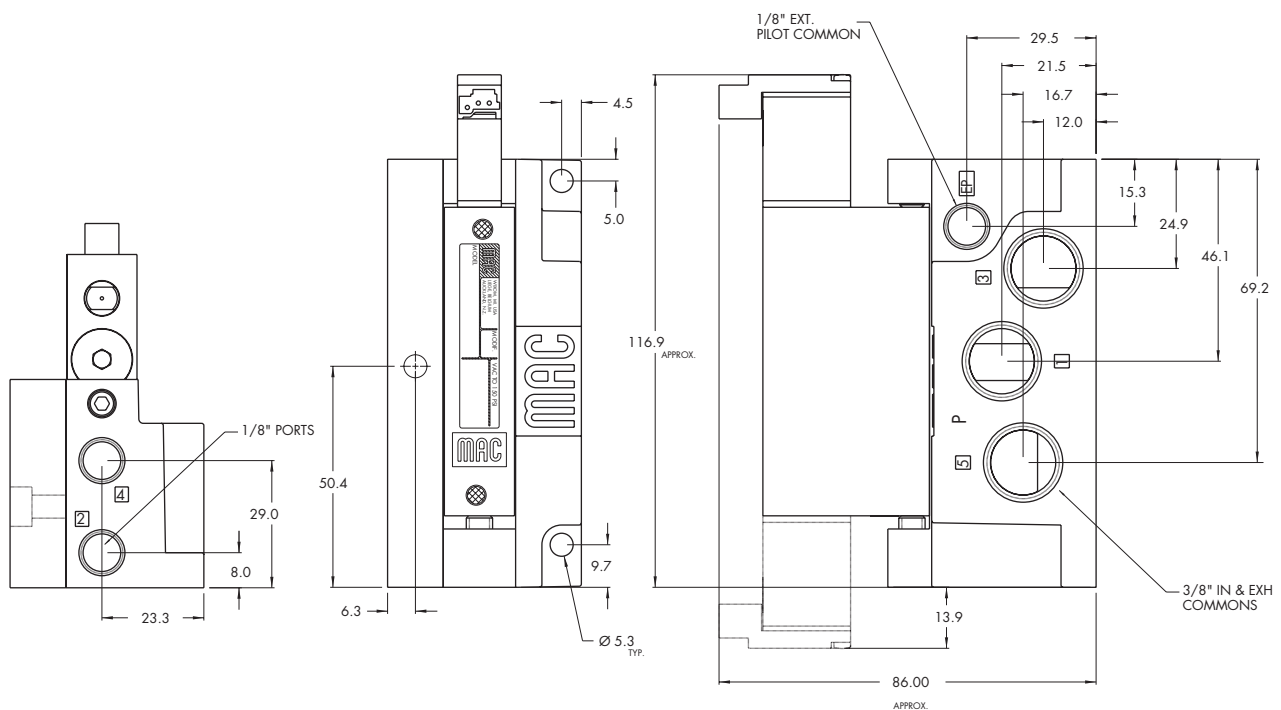
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	2 position : 20 to 120 PSI - 3 position : 35 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports : (1.1 C _v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich Flow controls: FC48B-BB
- Sandwich regulator: see "regulators" section

DIMENSIONS

Dimensions shown are metric (mm)





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Individual mounting	Series
5/2, 5/3	1/8"	1.1 C_v	Sub-base "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



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48P

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS) - VALVE WITH BASE CODED FOR SIDE PORTS

Port size	Pilot air	5/2 Single solenoid	5/3 Double solenoid	5/3 Closed center	5/3 Open center
Valve less base	Internal	48B-AMA-000-GxxP-xxx	48B-BME-000-GxxP-xST	48B-EME-000-GxxP-xST	48B-FME-000-GxxP-xST
	External	48B-AMD-000-GxxP-xxx	48B-BMH-000-GxxP-xST	48B-EMH-000-GxxP-xST	48B-FMH-000-GxxP-xST
1/8" NPTF	Internal	48B-AMA-AAA-GxxP-xxx	48B-BME-AAC-GxxP-xST	48B-EME-AAC-GxxP-xST	48B-FME-AAC-GxxP-xST
	External	48B-AMD-AAB-GxxP-xxx	48B-BMH-AAD-GxxP-xST	48B-EMH-AAD-GxxP-xST	48B-FMH-AAD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS) - VALVE WITH BASE CODED FOR SIDE PORTS

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
Valve less base	Internal	Supply #3 port	48B-CMB-000-GxxP-xxx	48B-DMF-000-GxxP-xST
		Supply #5 port	48B-CMC-000-GxxP-xxx	48B-DMG-000-GxxP-xST
	External	48B-CMD-000-GxxP-xxx	48B-DMH-000-GxxP-xST	48B-HMH-000-GxxP-xST
1/8" NPTF	Internal	Supply #3 port	48B-CMB-AAA-GxxP-xxx	48B-DMF-AAC-GxxP-xST
		Supply #5 port	48B-CMC-AAA-GxxP-xxx	48B-DMG-AAC-GxxP-xST
	External	48B-CMD-AAB-GxxP-xxx	48B-DMH-AAD-GxxP-xST	48B-HMH-AAD-GxxP-xST

48
400
92
93

STANDARD SOLENOID OPERATOR >

G **XX P-XXX***

XX Voltage	X Manual operator	XX Electrical connection
AA 120 VAC (2.5W)	1 Non-locking recessed	Double solenoid & 3 position models
DC 24 VDC (1.8W)	2 Locking recessed	ST Base plug-in
DD 24 VDC (2.5W)		Single solenoid models
DF 24 VDC (4.0W)		SA Base plug-in
		SJ Base plug-in with LED light
		SS Base plug-in with rectifier & light & ground

ISO 01
ISO 02
ISO 1
ISO 2
ISO 3

* Other options available, see page 311.
Latching solenoid also available, see page 135.
Note : AC voltage requires connector with rectifier (For double solenoid consult factory).
Other options available for the 48 series valves, see page 138.

TECHNICAL DATA

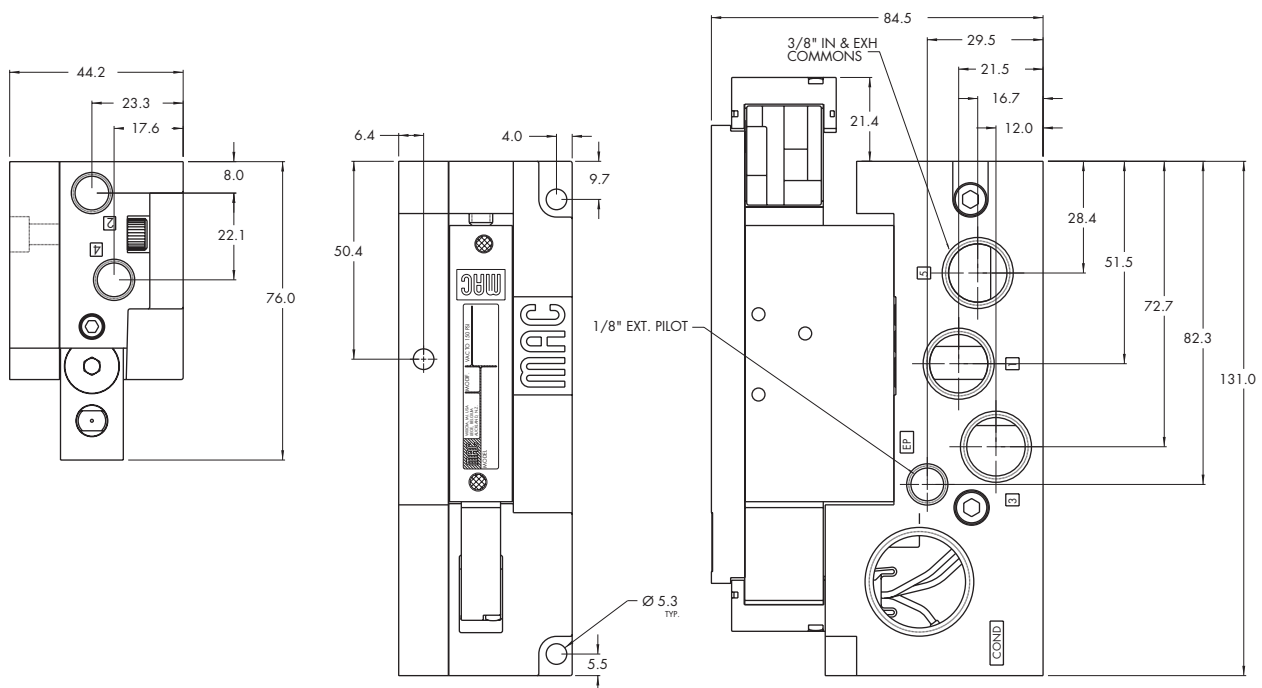
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	2 position : 20 to 120 PSI - 3 position : 35 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports: (1.1 C _v)
Coil :	Class A continuous duty, #22 AWG x 12 base leads
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich Flow controls: FC48B-AB
- Sandwich regulator: see "regulators" section

DIMENSIONS

Dimensions shown are metric (mm)





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Manifold mounting	Series
5/2, 5/3	1/8"	1.1 C_v	Manifold base non "plug-in"	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



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- 48P

HOW TO ORDER

SINGLE PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
Valve less base	Internal	48B-AMA-000-GXXX-XXX	48B-BMA-000-GXXX-XXX	48B-EMA-000-GXXX-XXX	48B-FMA-000-GXXX-XXX
	External	48B-AMD-000-GXXX-XXX	48B-BMD-000-GXXX-XXX	48B-EMD-000-GXXX-XXX	48B-FMD-000-GXXX-XXX
1/8" NPTF	Internal	48B-AMA-AJL-GXXX-XXX	48B-BMA-AJL-GXXX-XXX	48B-EMA-AJL-GXXX-XXX	48B-FMA-AJL-GXXX-XXX
	External	48B-AMD-AJM-GXXX-XXX	48B-BMD-AJM-GXXX-XXX	48B-EMD-AJM-GXXX-XXX	48B-FMD-AJM-GXXX-XXX

DUAL PRESSURE MODELS (MIDDLE STATION MANIFOLDS WITH SIDE PORTS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
Valve less base	Internal	Supply #3 port	48B-CMB-000-GXXX-XXX	48B-DMB-000-GXXX-XXX
		Supply #5 port	48B-CMC-000-GXXX-XXX	48B-DMC-000-GXXX-XXX
	External		48B-CMD-000-GXXX-XXX	48B-DMD-000-GXXX-XXX
	1/8" NPTF	Internal	Supply #3 port	48B-CMB-AJL-GXXX-XXX
Supply #5 port			48B-CMC-AJL-GXXX-XXX	48B-DMC-AJL-GXXX-XXX
External		48B-CMD-AJM-GXXX-XXX	48B-DMD-AJM-GXXX-XXX	

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- 400
- 92
- 93

STANDARD SOLENOID OPERATOR >

G **XXX-XXX***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
AA 120 VAC (2.5W)	A 18"	1 Non-locking recessed	BA Flying leads
DC 24 VDC (1.8W)	B 24"	2 Locking recessed	BT Flying leads with light
DD 24 VDC (2.5W)	C 36"		GA MAC JAC solenoid plug-in
DF 24 VDC (4.0W)			KA Plug-in wire Assy.
			KT Plug-in wire Assy. with light
			KD Plug-in wire Assy. with rectifier & light & ground

* Other options available, see page 311.
 Latching solenoid also available, see page 133.
 Note : - AC voltage requires connector with rectifier.
 - Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").
Other options available for the 48 series valves, see page 137.

- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3

TECHNICAL DATA

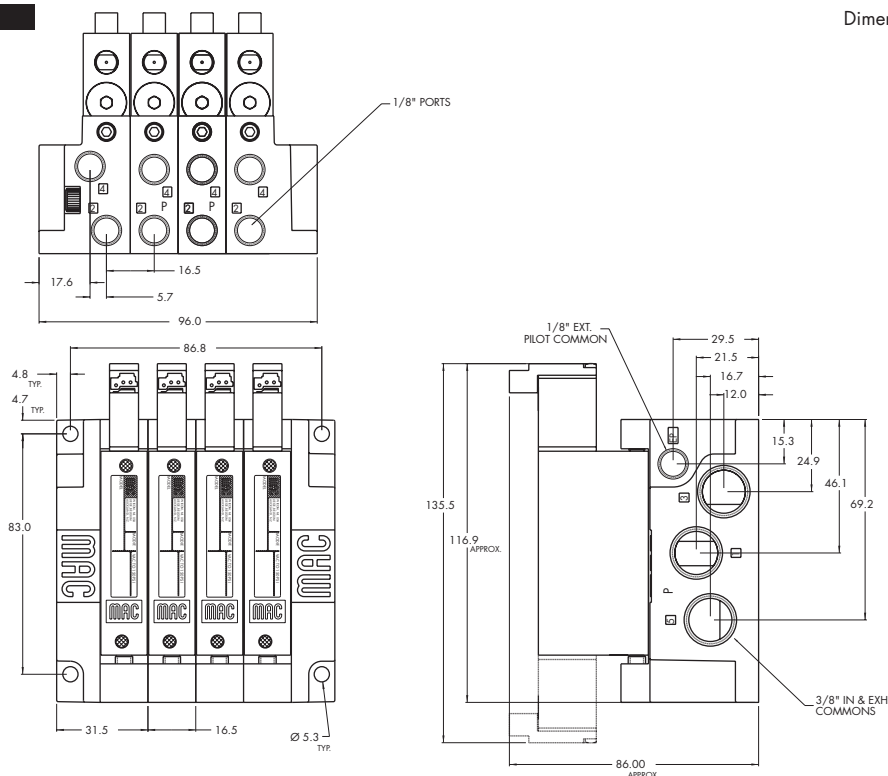
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	2 position : 20 to 120 PSI - 3 position : 35 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports : (1.1 C _v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-BB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

DIMENSIONS

Dimensions shown are metric (mm)



Function	Port size	Flow (Max)	Manifold mounting	Series
5/2, 5/3	1/8"	1.1 C_v	Manifold base "plug-in"	

OPERATIONAL BENEFITS

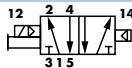
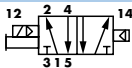
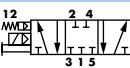
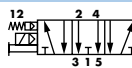
1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



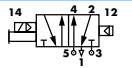
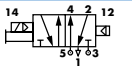
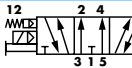
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48P

HOW TO ORDER

SINGLE PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Closed center	5/3 Open center
					
Valve less base	Internal	48B-AMA-000-GxxP-xxx	48B-BME-000-GxxP-xST	48B-EME-000-GxxP-xST	48B-FME-000-GxxP-xST
	External	48B-AMD-000-GxxP-xxx	48B-BMH-000-GxxP-xST	48B-EMH-000-GxxP-xST	48B-FMH-000-GxxP-xST
1/8" NPTF	Internal	48B-AMA-AJA-GxxP-xxx	48B-BME-AJC-GxxP-xST	48B-EME-AJC-GxxP-xST	48B-FME-AJC-GxxP-xST
	External	48B-AMD-AJB-GxxP-xxx	48B-BMH-AJD-GxxP-xST	48B-EMH-AJD-GxxP-xST	48B-FMH-AJD-GxxP-xST

DUAL PRESSURE MODELS (LED STANDARD EXCEPT FOR SINGLE SOLENOIDS)

Port size	Pilot air	5/2 Single solenoid	5/2 Double solenoid	5/3 Pressure center
				
Valve less base	Internal	Supply #3 port	48B-CMB-000-GxxP-xxx	48B-DMF-000-GxxP-xST
		Supply #5 port	48B-CMC-000-GxxP-xxx	48B-DMG-000-GxxP-xST
	External		48B-CMD-000-GxxP-xxx	48B-DMH-000-GxxP-xST
1/8" NPTF	Internal	Supply #3 port	48B-CMB-AJA-GxxP-xxx	48B-DMF-AJC-GxxP-xST
		Supply #5 port	48B-CMC-AJA-GxxP-xxx	48B-DMG-AJC-GxxP-xST
	External		48B-CMD-AJB-GxxP-xxx	48B-DMH-AJD-GxxP-xST

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93

STANDARD SOLENOID OPERATOR >

G **XX P-XXX***

Above numbers are middle station manifolds with side ports

XX Voltage	X Manual operator	XX Electrical connection
AA 120 VAC (2.5W)	1 Non-locking recessed	Double solenoid & 3 position models
DC 24 VDC (1.8W)	2 Locking recessed	ST Base plug-in
DD 24 VDC (2.5W)		Single solenoid models
DF 24 VDC (4.0W)		SA Base plug-in
		SJ Base plug-in with LED light
		SS Base plug-in with rectifier & light & ground

ISO 01
ISO 02
ISO 1
ISO 2
ISO 3

* Other options available, see page 311.
Latching solenoid also available, see page 135.
Note : - AC voltage requires connector with rectifier. (For double solenoid consult factory).
- Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

Other options available for the 48 series valves, see page 138.

TECHNICAL DATA

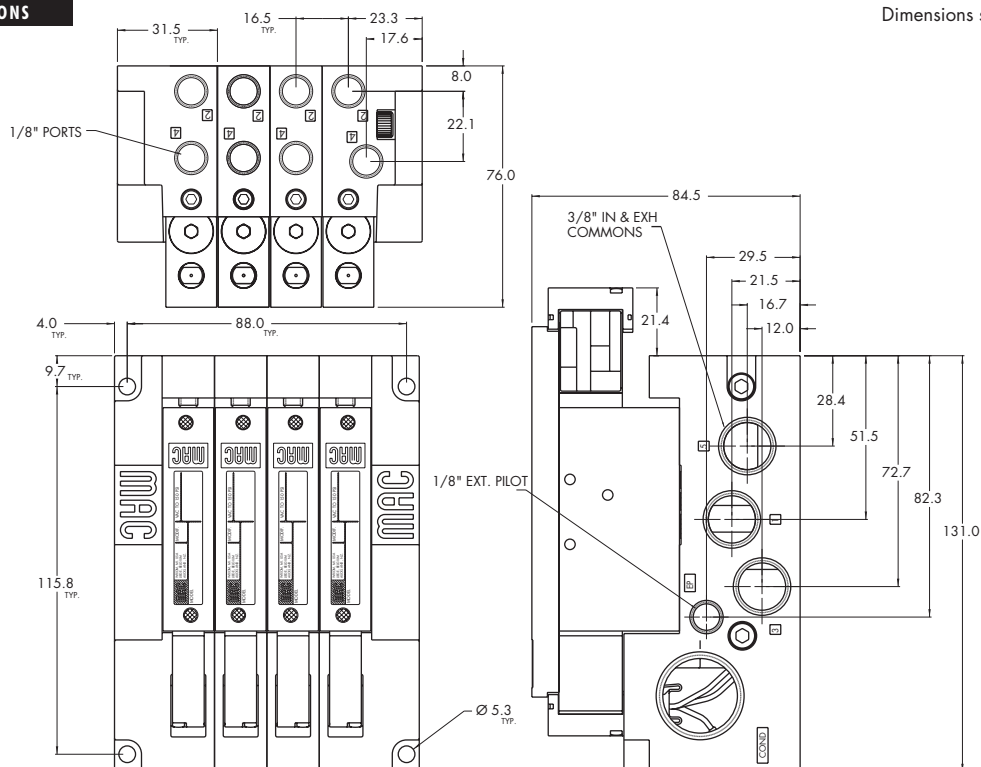
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 2 pos.: 20 to 120 PSI - 3 pos.: 35 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	2 position : 20 to 120 PSI - 3 position : 35 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports : (1.1 C _v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-AB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471
- Plug-in wire protector: 24180

DIMENSIONS

Dimensions shown are metric (mm)





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2	1/8"	1.1 C_v	Sub-base/ manifold base non "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



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- 48P

HOW TO ORDER

SINGLE PRESSURE MODELS (INDIVIDUAL BASE WITH SIDE PORTS)

Port size	Pilot air	5/2 Single pressure	
Valve less base	Internal	48A-AMA-000-Lxxx-xxx	
	External	48A-AMD-000-Lxxx-xxx	
1/8" NPTF	Internal	48A-AMA-AAL-Lxxx-xxx	
	External	48A-AMD-AAM-Lxxx-xxx	

DUAL PRESSURE MODELS (INDIVIDUAL BASE WITH SIDE PORTS)

Port size	Pilot air		5/2 Dual pressure
Valve less base	Internal	Supply #3 port	48A-CMB-000-Lxxx-xxx
		Supply #5 port	48A-CMC-000-Lxxx-xxx
	External		48A-CMD-000-Lxxx-xxx
1/8" NPTF	Internal	Supply #3 port	48A-CMB-AAL-Lxxx-xxx
		Supply #5 port	48A-CMC-AAL-Lxxx-xxx
	External		48A-CMD-AAM-Lxxx-xxx

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LATCHING SOLENOID >

L **XXX-XXX***

XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
DF	24 VDC (4.0W)	A	18"	0	No operator	BA	2 Wire flying leads
HA	24 VDC (1.95W)	B	24"			BJ	4 Wire flying leads
		C	36"			KA	2 Wire Plug-in assembly
						KE	4 Wire Plug-in assembly
						LA	3 Wire Plug-in assembly (Polarity Switching Cover)

- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3

* Other options available, see page 319.

Note : Manifold assemblies consist of (1) left end manifold, (1) right end manifold, and middle station manifolds (options "J" or "K").

Other options available for the 48 series valves, see page 137.

TECHNICAL DATA

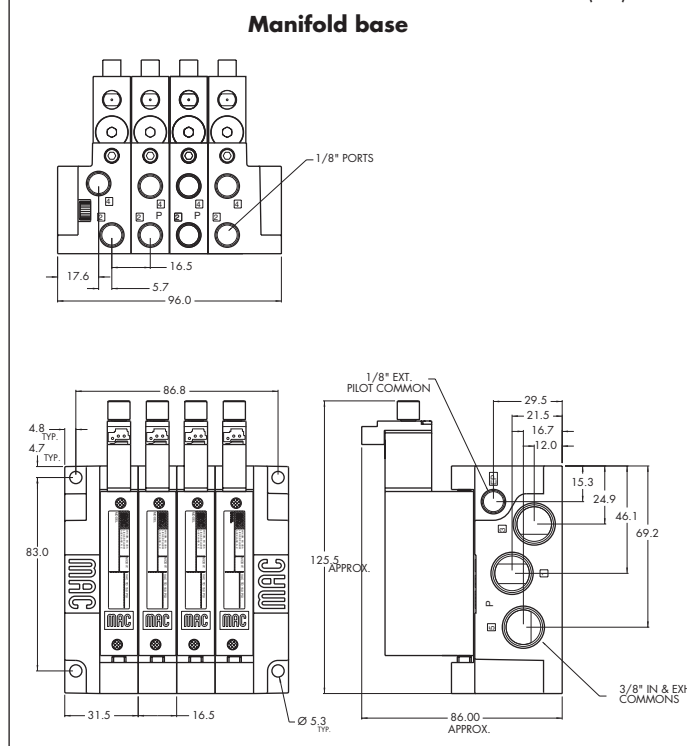
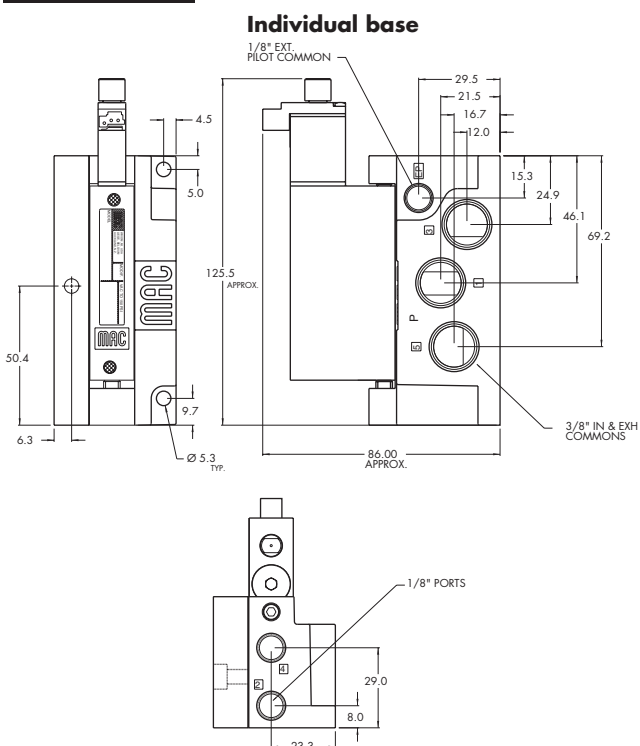
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 20 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	20 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports : (1.1 C _v)
Coil :	Class A wire (#22 AWG x 18), continuous duty
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-BB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471

DIMENSIONS

Dimensions shown are metric (mm)





Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Individual/Manifold mounting	Series
5/2	1/8"	1.1 C_v	Sub-base/ manifold base "plug-in" with latching solenoid	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way integral pilot.
2. 16 mm valve (stacks on 16.5 mm centers).
3. High flow (up to 1.1 C_v).
4. Fast repeatable response times.
5. Maximum shifting forces in both directions.
6. Long life.



- 33
- 34
- 36
- 32
- 37
- 38
- 52
- 67
- 69
- 44
- 46
- 42
- 47
- 48P

HOW TO ORDER

SINGLE PRESSURE MODELS (2-WIRE INDIVIDUAL BASE WITH SIDE PORTS)

Port size	Pilot air	5/2 Single pressure	
Valve less base	Internal	48A-AMA-000-LxxP-xxx	
	External	48A-AMD-000-LxxP-xxx	
1/8" NPTF	Internal	48A-AMA-AAA-LxxP-xxx	
	External	48A-AMD-AAB-LxxP-xxx	

DUAL PRESSURE MODELS (2-WIRE INDIVIDUAL BASE WITH SIDE PORTS)

Port size	Pilot air		5/2 Dual pressure
Valve less base	Internal	Supply #3 port	48A-CMB-000-LxxP-xxx
		Supply #5 port	48A-CMC-000-LxxP-xxx
	External		48A-CMD-000-LxxP-xxx
1/8" NPTF	Internal	Supply #3 port	48A-CMB-AAA-LxxP-xxx
		Supply #5 port	48A-CMC-AAA-LxxP-xxx
	External		48A-CMD-AAB-LxxP-xxx

- 48
- 400
- 92
- 93

LATCHING SOLENOID >

L **XX** P-**XXX***

XX Voltage	X Manual operator	XX Electrical connection**
DF 24 VDC (4.0W)	0 No operator	DA Plug-in
DN 12 VDC (4.0W)		EA Plug-in 3 PIN (Polarity Switching Cover)
HA 24 VDC (1.95W)		
HE 12 VDC (1.95W)		

- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3

* Other options available, see page 319.

** For latching solenoid 2 and 4 wire, use electrical connector DA, DB, DC or DD. For 3 wire latching, use the "EA" connector.

Other options available for the 48 series valves, see page 138.

TECHNICAL DATA

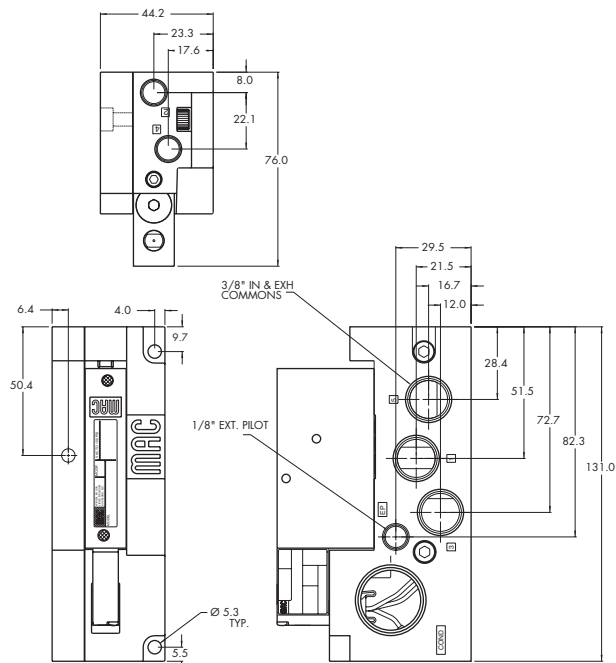
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Internal pilot: 20 to 120 PSI External pilot: vacuum to 120 PSI
Pilot pressure :	20 to 120 PSI
Lubrication :	Not required, if used select a medium aniline point lubricant (between 180°F and 210°F)
Filtration :	40 μ
Temperature range :	0°F to 120°F (-18°C to +50°C)
Flow :	1/8" side ports: (1.0 C _v) – 1/8" bottom ports: (1.1 C _v)
Coil :	Class A continuous duty, #22 AWG x 12 base leads
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W
Response times : (with 4 W coil)	Energize : 6 ms De-energize : 6 ms

Options :

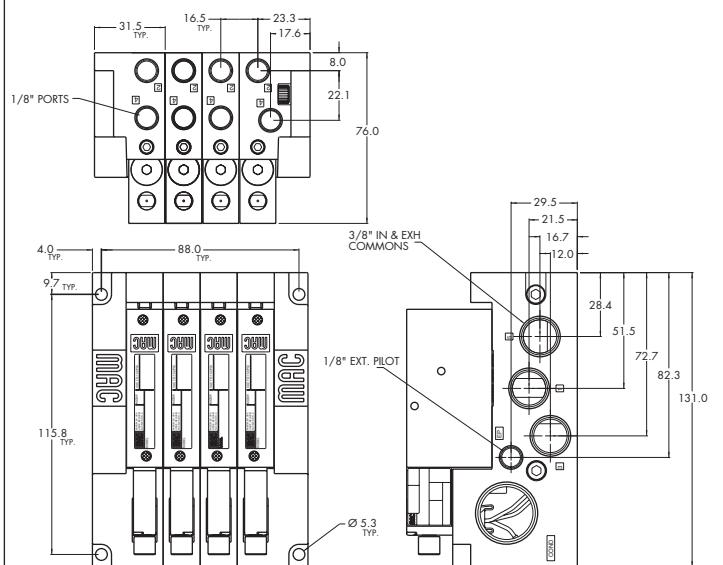
- BSPP threads • 1/4" O.D. pressed in tube receptacles • Sandwich flow controls: FC48B-AB
- Sandwich regulator: see "regulators" section
- Valve blanking plate: M-48004 • Isolator disk for inlet/exhaust: 28471
- Plug-in wire protector : 24180

DIMENSIONS

Individual base



Dimensions shown are metric (mm)
Manifold base



OPTIONS FOR NON PLUG-IN VALVES	33
Base type :	34
Individual base	36
48B-XXX-X A X-Gxxx-xxx	
A Individual base – Side ports	
B Individual base – Bottom ports	
Manifold base	32
48B-XXX-X J X-Gxxx-xxx	
J Manifold base – Side ports	
K Manifold base – Bottom ports	
L Left end manifold base – Side ports	37
M Left end manifold base – Bottom ports	38
N Right end manifold base – Side ports	52
P Right end manifold base – Bottom ports	67
Universal spool	69
48B-R X X-XXX-Gxxx-xxx	
R 2 position single solenoid universal spool	
S 2 position double solenoid universal spool	44
Base only :	46
48B-000-XXX (i.e. 48B-000-AAL) - Individual base	42
48B-000-XXX (i.e. 48B-000-AJL) - Manifold base	47
Pilot style :	48P
48B-X M X-XXX-Gxxx-xxx	
M Pilot exhaust muffled	
P Pilot exhaust piped (# 10-32)	
U Pilot exhaust to main exhaust	48
Base/Manifold configurations for LATCHING SOLENOID VALVES :	400
48A-xxx-x A x-Lxxx-xxx	
A Individual base – Side ports	
B Individual base – Bottom ports	
J Manifold base – Side ports	
K Manifold base – Bottom ports	92
L Left end manifold base – Side ports	
M Left end manifold base – Bottom ports	
N Right end manifold base – Side ports	93
P Right end manifold base – Bottom ports	
	ISO 01
	ISO 02
	ISO 1
	ISO 2
	ISO 3

**OPTIONS FOR
PLUG-IN VALVES**

Base type :

Individual base

48B-XXX-**XAX**-GxxP-xxx

- A** Individual base – Side ports
- B** Individual base – Bottom ports

Manifold base

48B-XXX-**XJX**-GxxP-xxx

- J** Manifold base – Side ports
- K** Manifold base – Bottom ports
- L** Left end manifold base – Side ports
- M** Left end manifold base – Bottom ports
- N** Right end manifold base – Side ports
- P** Right end manifold base – Bottom ports

Universal spool

48B-**RXX**-XXX-GxxP-xxx

- R** 2 position single solenoid universal spool
- S** 2 position double solenoid universal spool

Base only :

48B-000-XXX (i.e. 48B-000-AAA)

- Individual base wired for a single solenoid valve

48B-000-XXX (i.e. 48B-000-AJC)

- Manifold base wired for a double solenoid valve

For LED with diode (2 & 3 position double solenoid valves)

48B-XX**J**-XXX-GxxP-**xST**

- J** Internal pilot single pressure
- K** Internal pilot dual pressure supply from #3 port
- L** Internal pilot dual pressure supply from #5 port
- M** External pilot

Pilot style :

48B-**XXM**-XXX-GxxP-xxx

- M** Pilot exhaust muffled
- P** Pilot exhaust piped (# 10-32)
- U** Pilot exhaust to main exhaust

Base/Manifold configurations for LATCHING SOLENOID VALVES :

48A-xxx-**XAX**-LxxP-xxx

- A** Individual base – Side ports
- B** Individual base – Bottom ports
- J** Manifold base – Side ports
- K** Manifold base – Bottom ports
- L** Left end manifold base – Side ports
- M** Left end manifold base – Bottom ports
- N** Right end manifold base – Side ports
- P** Right end manifold base – Bottom ports

Base/Manifold options for int./ext. pilot for LATCHING SOLENOID VALVES :

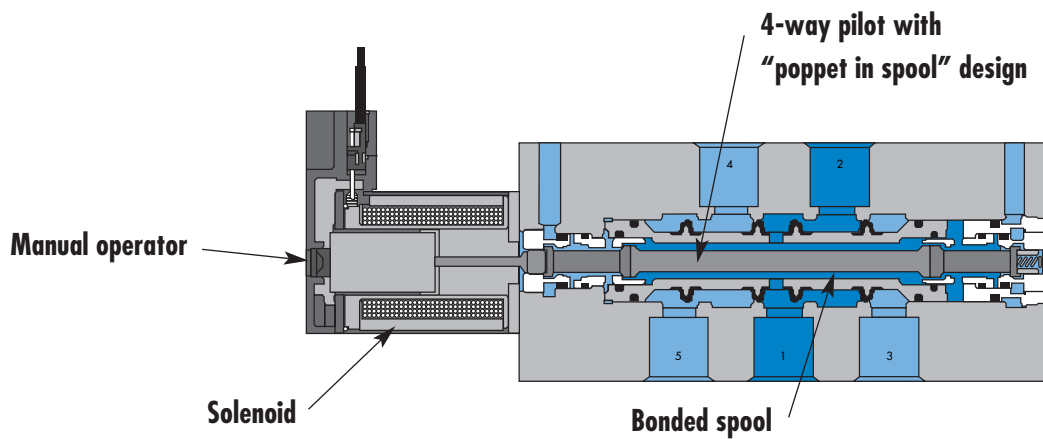
48A-xxx-xx**A**-LxxP-xxx

- A** Plug-in Int. Pilot – 2 Wire Latching
- B** Plug-in Ext. Pilot – 2 Wire Latching
- C** Plug-in Int. Pilot – 3 Wire Latching
- D** Plug-in Ext. Pilot – 3 Wire Latching
- E** Plug-in Int. Pilot – 4 Wire Latching
- F** Plug-in Ext. Pilot – 4 Wire Latching

Individual mounting

Series

Inline



33

34

36

32

37

38

52

67

69

44

46

42

47

48P

48

400

92

SERIES FEATURES

- High force MACSOLENOID®.
- Integral 4-way pilot with poppet inside the spool.
- Large flow in compact package.
- Single or dual pressure.
- Rectified AC voltage.

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ISO 01

ISO 02

ISO 1

ISO 2

ISO 3



Direct solenoid and solenoid pilot operated valves

Function	Port size	Flow [Max]	Individual mounting	Series
5/2	1/8"	1.0 Cv	Inline	

OPERATIONAL BENEFITS

1. 4-way valve with 4-way pilot.
2. Poppet in spool design
3. 16 mm valve (stacks on 16.5 mm centers).
4. High flow (up to 1.0 Cv).
5. Fast repeatable response times.
6. Maximum shifting forces in both directions.
7. Long life.
8. Compact design.



- 33
- 34
- 36
- 32
- 37
- 38
- 52
- 67
- 69
- 44
- 46
- 42
- 47
- 48P**

HOW TO ORDER

Port size	Pilot	5/2 Single operator Single pressure	5/2 Single operator Dual pressure
1/8"	Internal	48PB-AAA-A00-G-XXX-XXX	
	Internal from port 3	-	48PB-CAB-A00-G-XXX-XXX
	Internal from port 5	-	48PB-CAC-A00-G-XXX-XXX

STANDARD SOLENOID OPERATOR >

G **XXX-XXX***

XX	Voltage	X	Wire length	X	Manual operator	XX	Electrical connection
AA	120 VAC (2.5W)	A	18"	1	Non-locking	BA	Flying leads
DC	24 VDC (1.8W)	B	24"	2	Locking	BT	Flying leads with light
DD	24 VDC (2.5W)	C	36"			GA	MAC JAC solenoid plug-in
DF	24 VDC (4.0W)					KA	Plug-in wire assy.
						KT	Plug-in wire assy. with light
						KD	Plug-in wire assy. with rectifier & light & ground

* Other options available, see page 311.
Note : AC voltage requires connector with rectifier.

OPTIONS

48PB-X X X-X00-G-XX-XXX

- A Pilot exhaust muffled
- C Pilot exhaust piped M5
- D Pilot exhaust out main exhaust

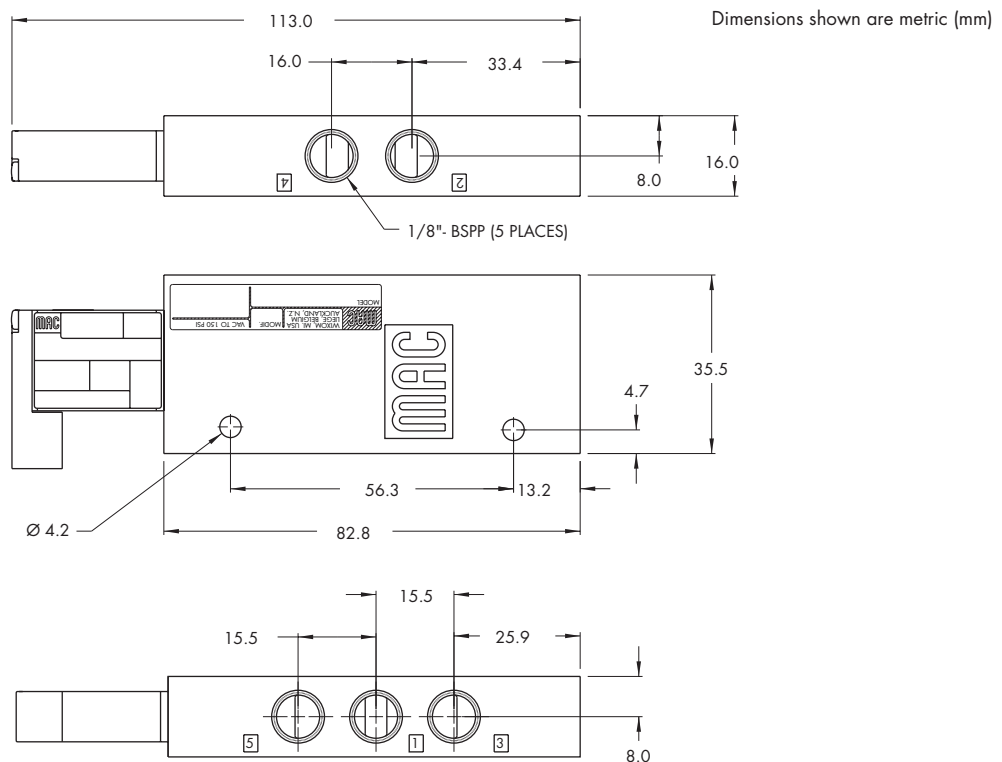
- 48
- 400
- 92
- 93
- ISO 01
- ISO 02
- ISO 1
- ISO 2
- ISO 3

TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	25 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 :	Cv 1,0
Coil :	Class A wire continuous duty, #22 AWG x 18 leads
Voltage range :	-15% to +10% of nominal voltage
Power :	1.0 to 4.0 W

Options : • BSPP threads

DIMENSIONS



Codification table for voltages / Manual operator / Electrical connection

VALVE CODE > **G XX X-X XX**
1 2 3 4

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 34, 38, 42, 44 & 48 Series

1. VOLTAGE

G-XX X-X XX	VOLTAGE	
AA	120 VAC (2.5W)	Requires electrical connector with rectifier
AC	24 VAC (4.0W)	Requires electrical connector with rectifier
DA	24 VDC (1.0W)	
DC	24 VDC (1.8W)	
DD	24 VDC (2.5W)	
DE	24 VDC (3.0W)	
DF	24 VDC (4.0W)	
DG	12 VDC (1.0W)	
DJ	12 VDC (1.8W)	
DK	12 VDC (2.5W)	
DM	12 VDC (3.0W)	
DN	12 VDC (4.0W)	
DR	6 VDC (1.8W)	
DS	6 VDC (3.0W)	
EB	48 VDC (1.8W)	
EC	48 VDC (3.0W)	
ED	120 VDC (2.5W)	
GD	12 VDC (0.5W)	34 series only
GE	24 VDC (0.5W)	34 series only

2. WIRE LENGTH

G-XX X-X XX	WIRE LENGTH	
0	No lead wires	(used only with "KJ" & "KM" connectors)
A	18" coil leads	
B	24" coil leads	
C	36" coil leads	
D	48" coil leads	
E	72" coil leads	
F	96" coil leads	
G	120" coil leads	
H	144" coil leads	
I	18" base leads	
2	24" base leads	
3	36" base leads	
4	48" base leads	
5	72" base leads	
6	96" base leads	
7	120" base leads	

3. MANUAL OPERATOR

G-XX X-X XX	MANUAL OPERATOR	
1	Non-locking recessed	
2	Locking recessed	
3	Non-locking extended	
4	Locking extended	

4. ELECTRICAL CONNECTION

G-XX X-X XX	ELECTRICAL CONNECTION	
BA	Flying leads	
BB	BA with ground wire	
BC	BA with light	
BD	BA with light and ground wire	
BE	BA with suppression diode	
BF	BA with suppression diode and ground wire	
BG	BA with suppression diode and light	
BH	BA with suppression diode, light and ground wire	
BN	BA with suppression diode and blocking diode	
BP	BA with suppression diode, blocking diode and ground wire	
BR	BA with suppression diode, blocking diode and light	
BS	BA with suppression diode, blocking diode, light and ground wire	
GA	MAC JAC Solenoid plug-in	
GB	MAC JAC Solenoid plug-in w/Diode	
GC	MAC JAC Solenoid plug-in w/MOV	
GD	MAC JAC Solenoid plug-in w/LED	
GE	MAC JAC Solenoid plug-in w/Diode & LED	
GF	MAC JAC Solenoid plug-in w/MOV & LED	
GG	MAC JAC Solenoid plug-in w/Rectifier	
GH	MAC JAC Solenoid plug-in w/Rectifier & LED	
KA	Solenoid plug-in wire assembly	
KB	KA with ground	
KC	KA with rectifier and light	
KD	KA with rectifier, light and ground	
KE	KA with suppression diode	
KF	KA with suppression diode and ground	
KJ	Solenoid plug-in housing without wire assembly	
KM	Solenoid plug-in housing with ground pin without wire assembly	
KN	KA with suppression diode and blocking diode	
KP	KA with suppression diode, blocking diode and ground	
KT	KA with light	
KU	KA with light and ground	
KV	KA with suppression diode and light	
KW	KA with suppression diode, light and ground	
KX	KA with suppression diode, blocking diode and light	
KY	KA with suppression diode, blocking diode, light & ground	

ELECTRICAL CONNECTION FOR PLUG-IN VALVES

G-XX X-X XX	PLUG-IN OPTIONS	
SB	Base plug-in with ground	
SC	Base plug-in with suppression and blocking diode	
SD	Base plug-in with suppression and blocking diode and ground	
SE	Base plug-in with MOV	
SF	Base plug-in with MOV and ground	
SG	Base plug-in with rectifier	
SH	Base plug-in with rectifier and ground	
SK	Base plug-in with light and ground	
SL	Base plug-in with suppression and blocking diode and light	
SM	Base plug-in with suppression and blocking diode with light and ground	
SN	Base plug-in with MOV and light	
SP	Base plug-in with MOV and light with ground	
SR	Base plug-in with rectifier and light	



Codification table for voltages / Manual operators / Electrical connections

VALVE CODE > **L XX X-X XX**
1 2 3 4

OPTIONS AVAILABLE FOR

- Solenoid valves 32, 38, 42, 44, 47 & 48 Series

1. VOLTAGE (32, 38, 42, 44, 48 SERIES)		1. VOLTAGE (47 SERIES)	
L-XX X-X XX	VOLTAGE	L-XX X-X XX	VOLTAGE
DF	24VDC (4.0W)	DA	24VDC (5.2W)
DN	12VDC (4.0W)	DF	12VDC (5.2W)
HA	24VDC (1.95W)		
HE	12VDC (1.95W)		

2. WIRE LENGTH (all series)	
L-XX X-X XX	WIRE LENGTH
O	No lead wire
A	18"
B	24"
C	36"
D	48"
E	72"
F	96"
G	120"
H	144"

3. MANUAL OPERATOR (all series)	
L-XX X-X XX	MANUAL OPERATOR
O	No operator

4. ELECTRICAL CONNECTOR (32, 38, 42, 44 & 48 series)	
L-XX X-X XX	NON PLUG-IN
BA	2 wire flying leads
BB	2 wire flying leads with ground wire
BC	2 wire flying leads with light
BD	2 wire flying leads with light & ground wire
BJ	4 wire flying leads
BK	4 wire flying leads with ground
BL	4 wire flying leads with light
BM	4 wire flying leads with light & ground wire
KA	2 wire plug-in assembly
KB	2 wire plug-in assembly with ground wire
KC	2 wire plug-in assembly with light
KD	2 wire plug-in assembly with light and ground wire
KE	4 wire plug-in assembly
KF	4 wire plug-in assembly with ground wire
KG	4 wire plug-in assembly with light
KH	4 wire plug-in assembly and ground wire
LA	3 wire plug-in assembly (polarity switching cover)
L-XX X-X XX	PLUG-IN
*DA	Base plug-in
*DB	Base plug-in with ground pin
*DC	Base plug-in with light
*DD	Base plug-in with light & ground pin
**EA	Base plug-in 3 pin (Polarity switching cover)

4. ELECTRICAL CONNECTOR (47 series)	
L-XX X-X XX	NON PLUG-IN
BA	2 wire flying leads
BB	2 wire flying leads with ground wire
BC	2 wire flying leads with light
BD	2 wire flying leads with light & ground wire
BJ	4 wire flying leads
BK	4 wire flying leads with ground
BL	4 wire flying leads with light
BM	4 wire flying leads with light & ground wire
LA	3 wire plug-in assembly (Polarity switching cover)
MA	2 wire plug-in assembly
MB	2 wire plug-in assembly with ground wire
MC	2 wire plug-in assembly with light
MD	2 wire plug-in assembly with light and ground wire
ME	4 wire plug-in assembly
MF	4 wire plug-in assembly with ground wire
MG	4 wire plug-in assembly with light
MH	4 wire plug-in assembly with light and ground wire
L-XX X-X XX	PLUG-IN
EA	Base plug-in 3 pin (Polarity switching cover)
FA	Base plug-in with ground
FB	Base plug-in with ground & light
FC	Base plug-in 4 wire with ground
FD	Base plug-in 4 wire with light & ground

* Use these options for plug-in base with 2 or 4 wire assemblies

** Use this option for plug-in bases with 3 wire assemblies