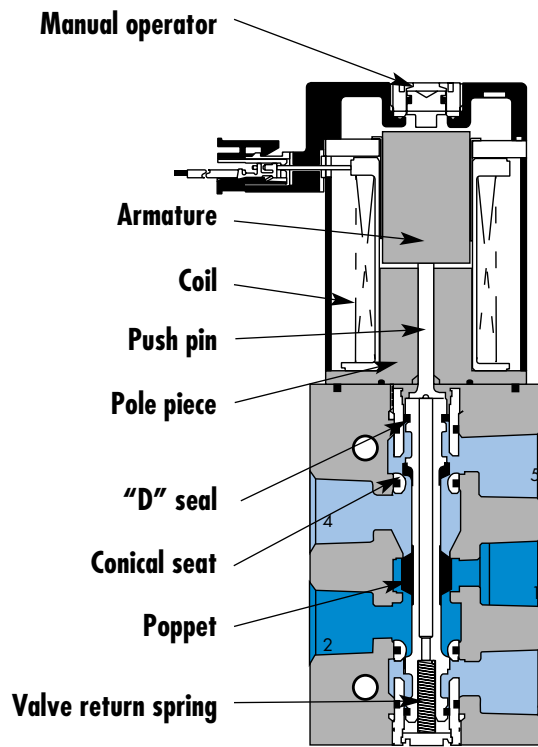


Circuit bar mounting

non plug-in cyl. ports in valve with opt. F. C.	non plug-in cyl. ports in base with opt. F. C.	add-on style non plug-in cyl. ports in valve with opt. F. C.	add-on style non plug-in cyl. ports in base with opt. F. C.	non plug-in cyl. ports in valve with opt. Pr. Reg.	non plug-in cyl. ports in base	non plug-in cyl. ports in base with Pr. Reg.	add-on style non plug-in cyl. ports in base
add-on style non plug-in cyl. ports in base with Pr. Reg.	plug-in	plug-in with Pr. Reg.	add-on style plug-in	add-on style plug-in with Pr. Reg.	plug-in add-a-unit stations	plug-in add-a-unit stations with Pr. Reg.	



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.

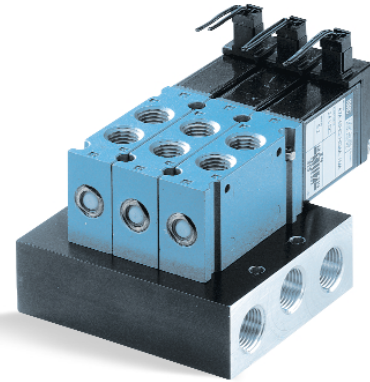


Direct solenoid and solenoid pilot operated valves

Function	Port size (Inlet & Exhaust)	Flow (Max)	Circuit bar mounting	Profile
5/2	3/8"	500 NL/min	non plug-in cyl. ports in valve with opt. F. C.	29 mm

OPERATIONAL BENEFITS

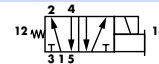
1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Valve port size	Valve less base
1/8" BSPP	47A-MJ0-Hxxx-xxx
1/4" BSPP	47A-MK0-Hxxx-xxx



SOLENOID OPERATOR >

H **XX** X- X **XX**'

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size COMMON INLET & EXHAUST	Without flow controls (20 mm)	With flow controls (20 mm)
3/8" BSPP	EBM47A-01CAL-xx	EBM47A-01DAL-xx

Number of stations (03=3 stations)

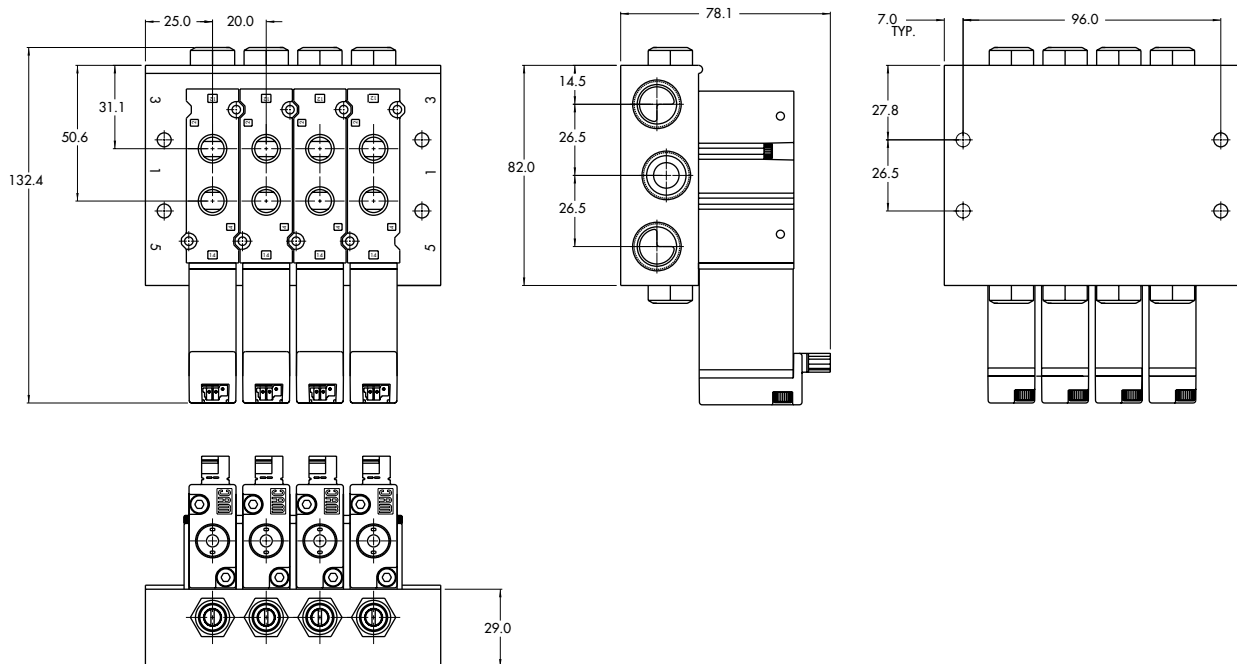
Note : clic for valves mounted on base at the factory (add - 9 to the model number).

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47002.
• Flow control kit (x2) : N-37001.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

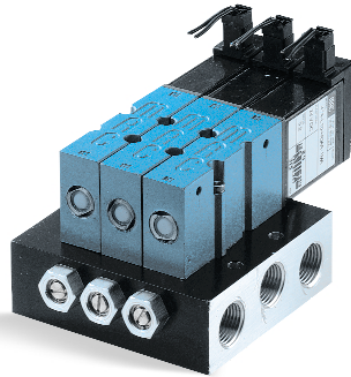
DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	non plug-in cyl. ports in base with opt. F. C.	29 mm

OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H **XX X- X XX'**

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size	Bottom cylinder ports (18 mm)	Bottom cylinder ports with flow controls (18 mm)
1/8" BSPP	EBM47A-00AAC-xx	EBM47A-00BAC-xx
1/4" BSPP	EBM47A-00AAD-xx	EBM47A-00BAD-xx
6 mm tube receptacle	EBM47A-00AAH-xx	EBM47A-00BAH-xx

Number of stations (03=3 stations)

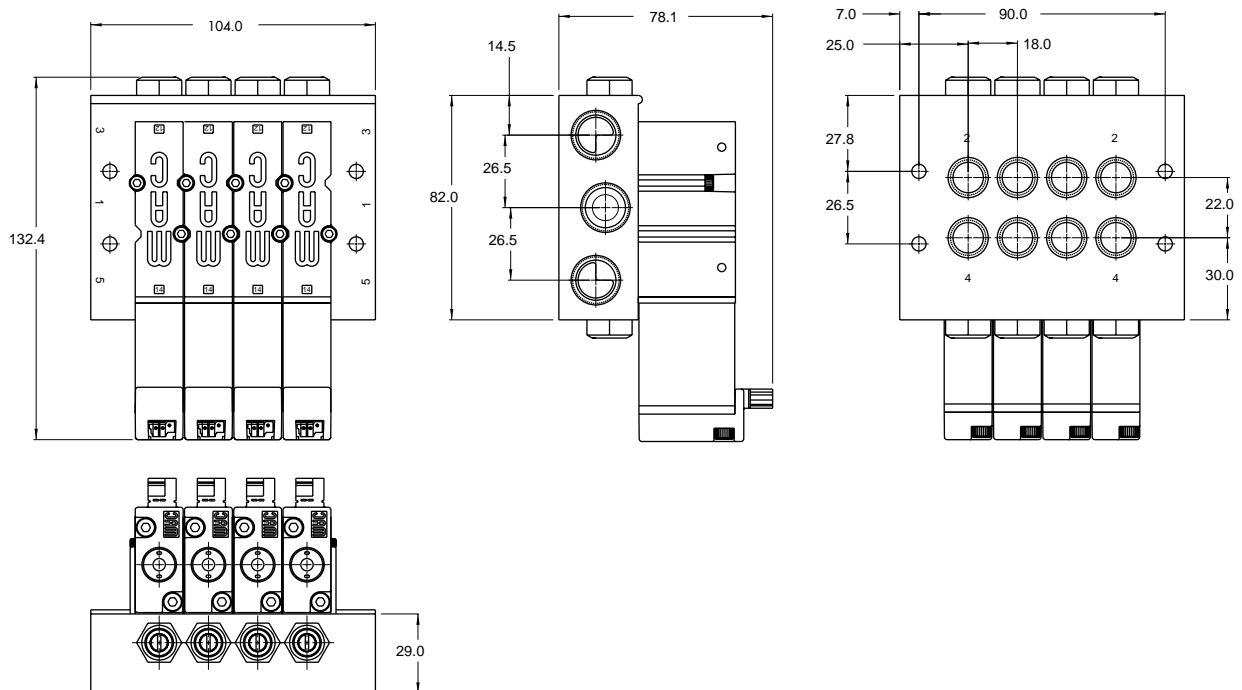
Note : clic for valves mounted on base at the factory (add - 9 to the model number).

**T E C H N I C A L
D A T A**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note :
 - Valve and coil are not interchangeable.
- Spare parts :
 - Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
 - Flow control kit (x2) : N-37001.
- Options :
 - Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

D I M E N S I O N S





Direct solenoid and solenoid pilot operated valves

Function	Port size (Inlet & Exhaust)	Flow (Max)	Circuit bar mounting	Profile
5/2	3/8"	500 NL/min	add-on style non plug-in cyl. ports in valve with opt. F. C.	35 mm

OPERATIONAL BENEFITS

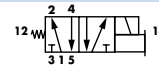
1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Valve port size	Valve
1/8" BSPP	47A-MJ0-Hxxx-xxx
1/4" BSPP	47A-MK0-Hxxx-xxx



SOLENOID OPERATOR >

H **XX X- X XX'**

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size COMMON INLET & EXHAUST	Without flow controls (20 mm)	With flow controls (20 mm)
3/8" BSPP	EBM47A-01GBL-xx	EBM47A-01HBL-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
add-a-unit stations may be added to above bars.
Maximum length for add-a-unit is 4 stations.

OPTIONS

EBM47A-01GBK-xx

- clic replace with "C" for add-a-unit.

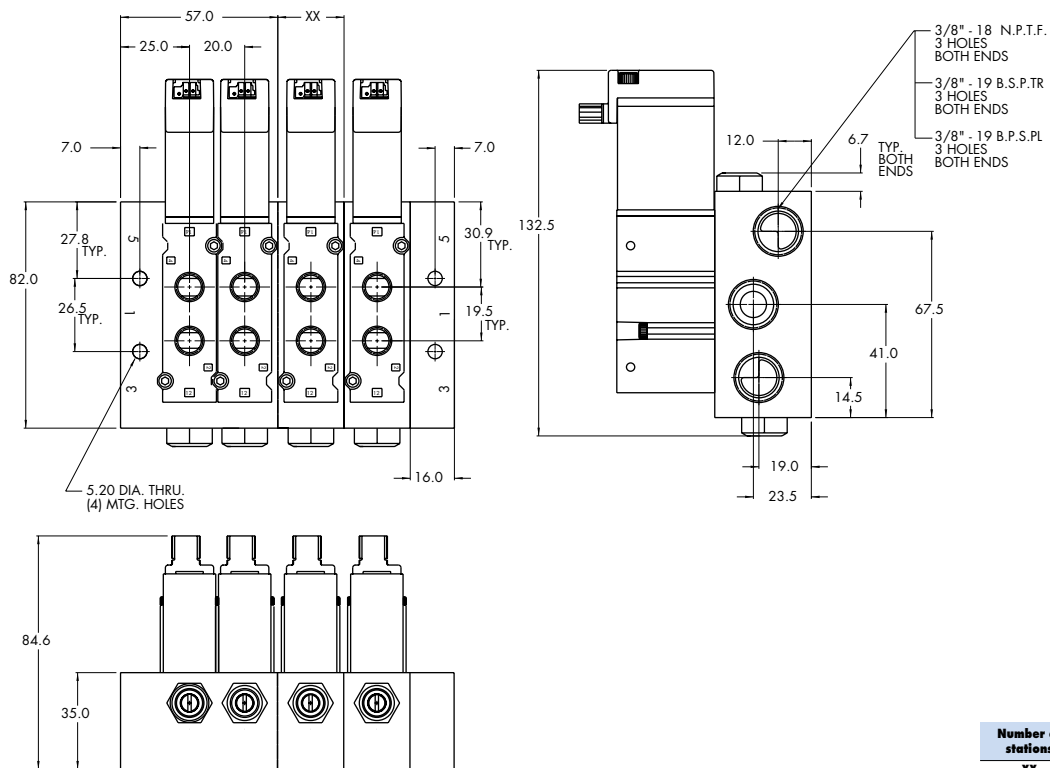
Consult "Precautions" before use, installation or service of MAC Valves.

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47002. • Flow control kit (x2) : N-37001. End plate kit : M-47004-01.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	add-on style non plug-in cyl. parts in base with opt. F. C.	35 mm

OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H XX X- X XX			
XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size	Bottom cylinder ports (18 mm)	Bottom cylinder ports with flow controls (18 mm)
1/8" BSPP	EBM47A-00EBC-xx	EBM47A-00FBC-xx
1/4" BSPP	EBM47A-00EBD-xx	EBM47A-00FBD-xx
6 mm tube receptacle	EBM47A-00EBH-xx	EBM47A-00FBH-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
add-a-unit stations may be added to above bars. Maximum length for add-a-unit is 4 stations.

OPTIONS

EBM47A-00EBA-xx

- clic replace with "C" for add-a-unit.

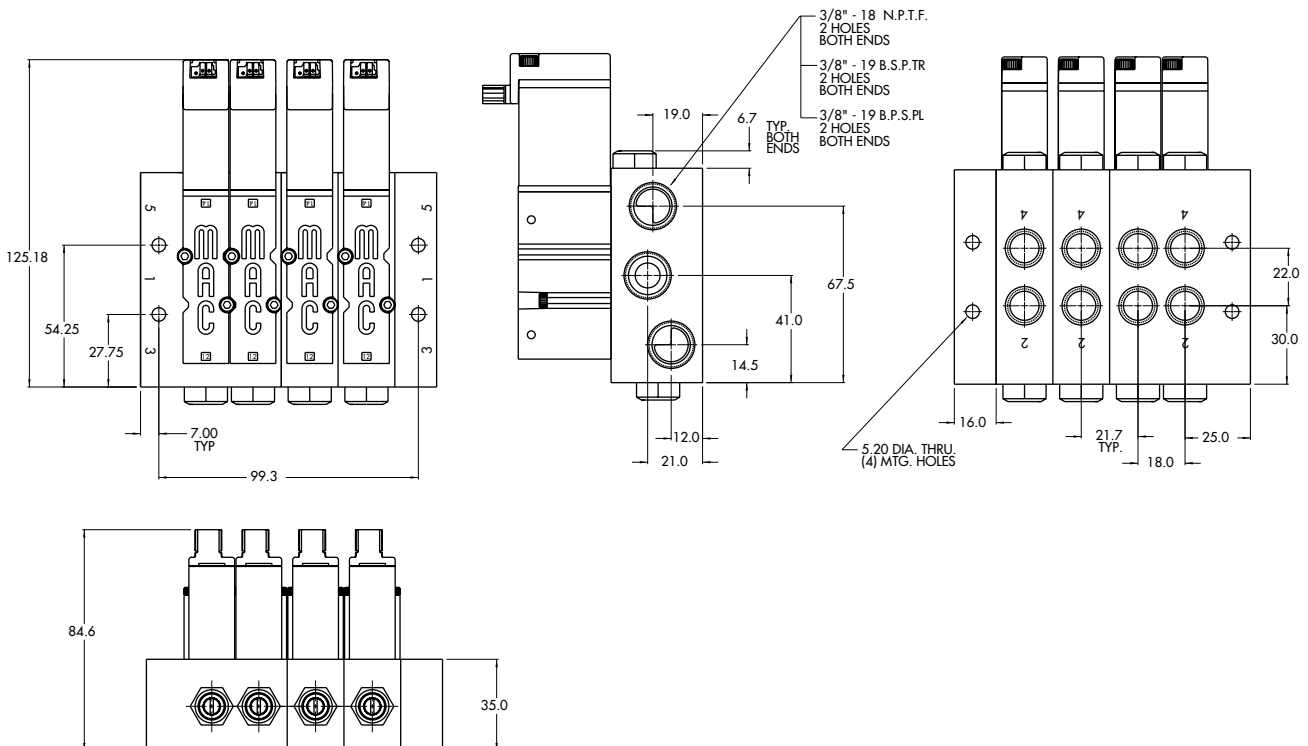
Consult "Precautions" before use, installation or service of MAC Valves.

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
• Flow control kit (x2) : N-37001. End plate kit : M-47004-01.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS



Function	Port size (Inlet & Exhaust)	Flow (Max)	Circuit bar mounting	Profile
5/2	3/8"	500 NL/min	non plug-in cyl. ports in valve with opt. Pr. Reg.	44 mm

OPERATIONAL BENEFITS

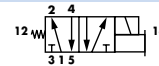
1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Valve port size	Valve
1/8" BSPP	47A-MJ0-Hxxx-xxx
1/4" BSPP	47A-MK0-Hxxx-xxx



SOLENOID OPERATOR >

H **XX X- X XX**'

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR (REGULATOR ORDERED SEPARATELY)**

Port size COMMON INLET & EXHAUST	Without regulator (20 mm)	With regulator (20 mm)
3/8" BSPP	EBM47A-01NAL-xx	EBM47A-01PAL-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).

** Pressure Regulators :

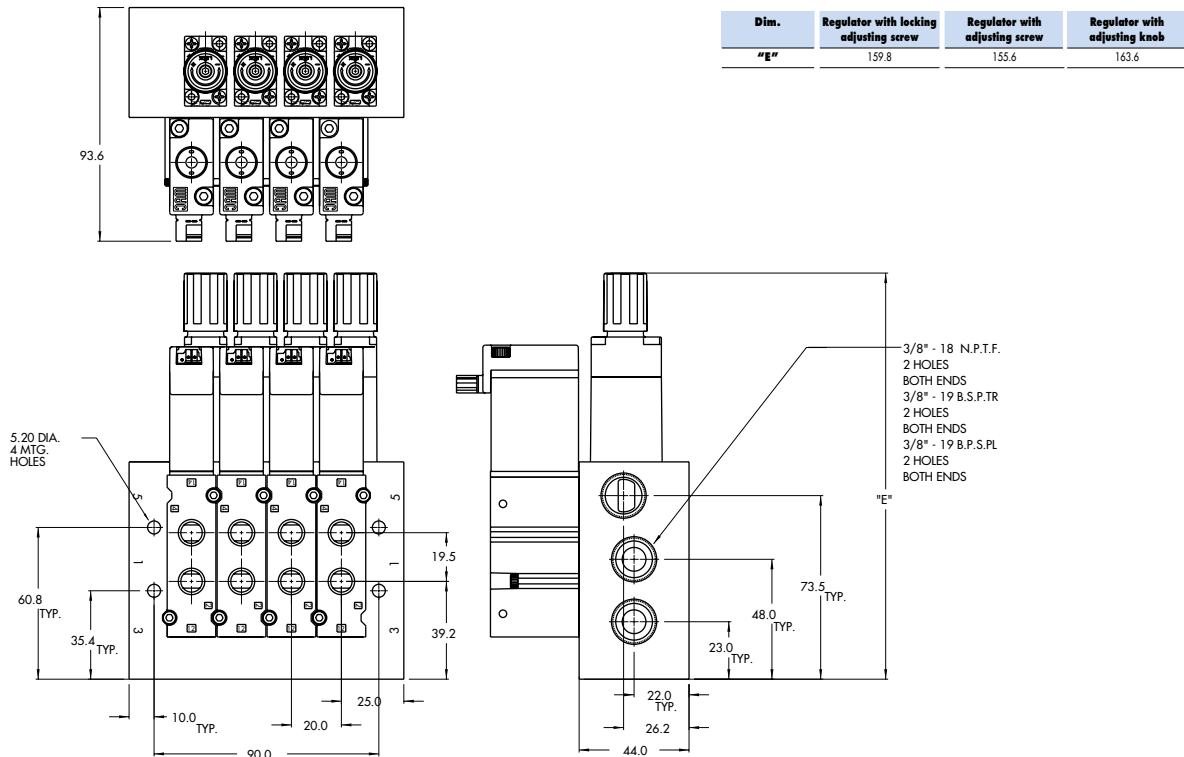
- X=A (0 to 8 BAR)
- X=B (0 to 5.3 BAR)
- X=C (0 to 2 BAR)

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47002.
• Regulator blanking plate : R-47003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS



Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	non plug-in cyl. ports in base	44 mm

OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H **XX X- X XX**'

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports (18 mm)	Bottom cylinder ports (18 mm)
1/8" BSPP	EBM47A-00JAC-xx	EBM47A-00LAC-xx
1/4" BSPP	EBM47A-00JAD-xx	EBM47A-00LAD-xx
6 mm tube receptacle	EBM47A-00JAH-xx	EBM47A-00LAH-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).

**TECHNICAL
DATA**

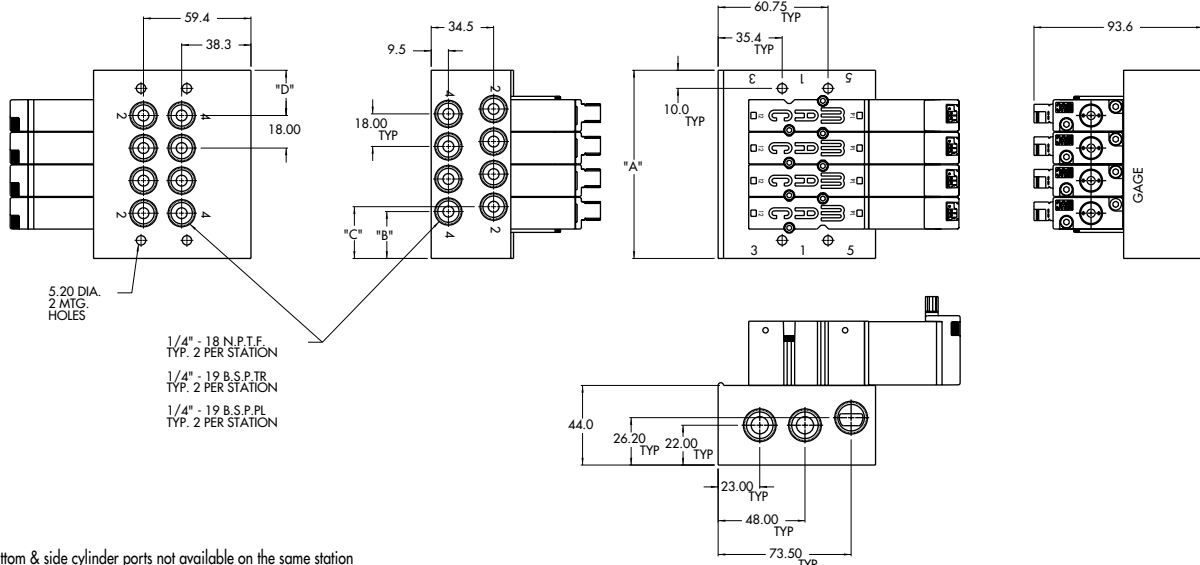
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"A"	-	68.0	86.0	104.0	122.0	140.0	158.0	178.0	194.0	212.0
"B"	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90
"C"	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
"D"	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
1/4" Port	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
M6 Carstick port					N/A					

Dimensions are based on 18 mm centerline spacing



Note: Bottom & side cylinder ports not available on the same station

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

Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	non plug-in cyl. ports in base with Pr. Reg.	44 mm

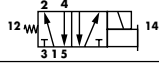
OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H **XX X- X XX'**

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR (REGULATOR ORDERED SEPARATELY)**

Port size	Side cylinder ports (18 mm)	Bottom cylinder ports (18 mm)
1/8" BSPP	EBM47A-00KAC-xx	EBM47A-00MAC-xx
1/4" BSPP	EBM47A-00KAD-xx	EBM47A-00MAD-xx
6 mm tube receptacle	EBM47A-00KAH-xx	EBM47A-00MAH-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).

** Pressure Regulators :

- X=A (0 to 8 BAR)
- X=B (0 to 5.3 BAR)
- X=C (0 to 2 BAR)

**TECHNICAL
DATA**

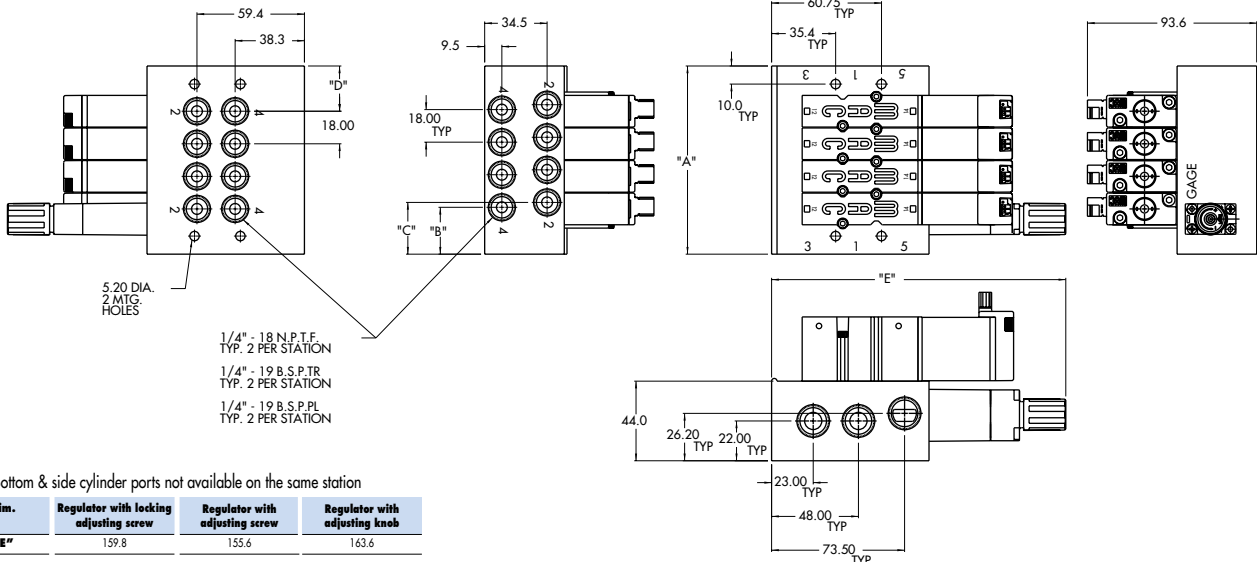
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001. • Regulator blanking plate : R-47003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"A"	-	68.0	86.0	104.0	122.0	140.0	158.0	178.0	194.0	212.0
"B"	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90	25.90
"C"	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60	28.60
"D"	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
1/4" Port	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
M6 Carstick port					N/A					

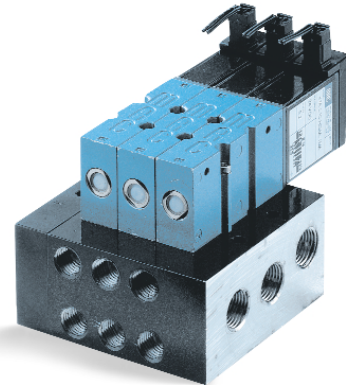
Dimensions are based on 18 mm centerline spacing



Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	add-on style non plug-in cyl. ports in base	44 mm

OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H **XX** X- X **XX**'

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	1 Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR

Port size	Side cylinder ports (18 mm)	Bottom cylinder ports (18 mm)
1/8" BSPP	EBM47A-00JBC-xx	EBM47A-00LBC-xx
1/4" BSPP	EBM47A-00JBD-xx	EBM47A-00LBD-xx
6 mm tube receptacle	EBM47A-00JBH-xx	EBM47A-00LBH-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
add-a-unit stations may be added to above bars. Maximum length for add-a-unit is 4 stations.

OPTIONS

EBM47A-00JBA-xx

- clic replace with "C" for add-a-unit.

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

**TECHNICAL
DATA**

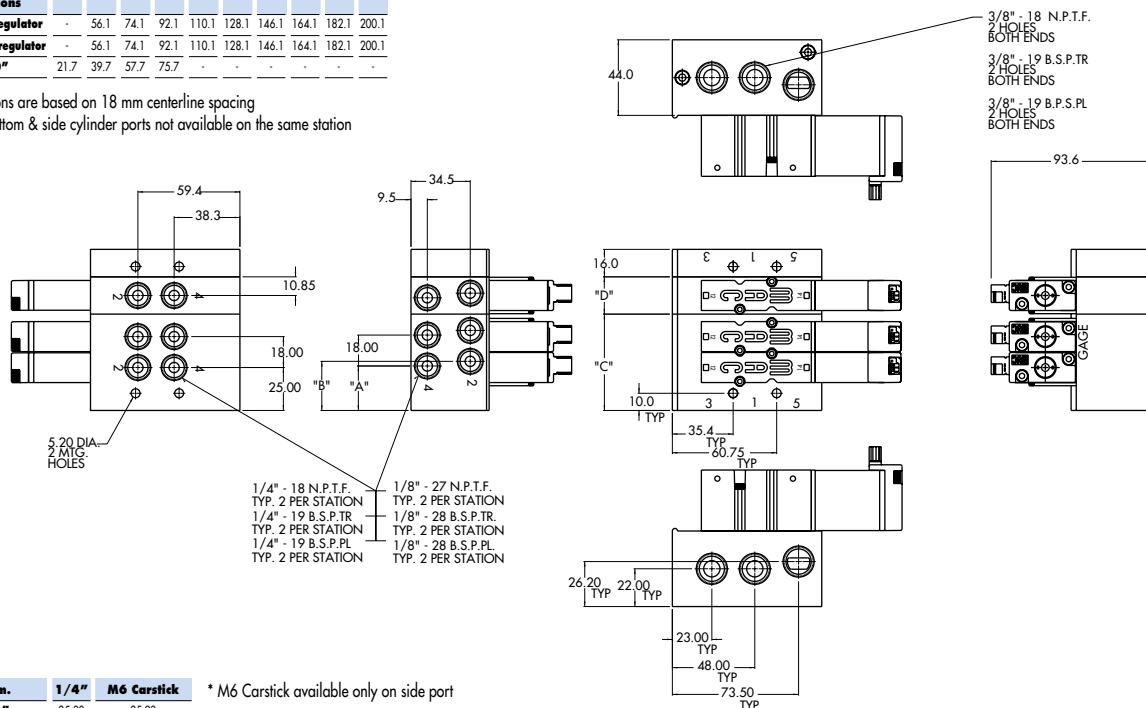
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note :
- Valve and coil are not interchangeable.
- Spare parts :
- Seal between valve and bar : 16629.
 - Mounting screw (x2) : 35043.
 - Valve blanking plate : M-47001.
 - End plate kit : M-47005-01.
- Options :
- Isolation of inlet and/or exhaust. Special bar. Consult factory.
 - NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"C" w/regulator	-	56.1	74.1	92.1	110.1	128.1	146.1	164.1	182.1	200.1
"C" w/o regulator	-	56.1	74.1	92.1	110.1	128.1	146.1	164.1	182.1	200.1
"D"	21.7	39.7	57.7	75.7	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing
 Note: Bottom & side cylinder ports not available on the same station



Dim.	1/4"	M6 Carstick
"A"	25.90	25.90
"B"	28.60	28.60

* M6 Carstick available only on side port

Function	Port size	Flow [Max]	Circuit bar mounting	Profile
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	add-on style non plug-in cyl. ports in base with Pr. Reg.	44 mm

OPERATIONAL BENEFITS

1. Direct solenoid operated valve.
2. Balanced poppet, immune to variations of pressure.
3. Short stroke with high flow.
4. The patented solenoid develops high shifting forces.
5. Powerful return spring.
6. Manual operator standard on all valves.



HOW TO ORDER

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size (see base)	Valve
Valve less base	 47A-LI0-Hxxx-xxx

SOLENOID OPERATOR >

H **XX X- X XX***

XX Voltage	X Wire length	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	A 45 cm	I Non-locking	BA Flying leads
DB 24VDC (2.4 W)	C 90 cm		BC Flying leads with light
DC 24VDC (1.8 W)			MA Plug-in wire assy
DD 24VDC (1.0 W)			MC Plug-in wire assy with light
AA 120VAC (must use with rectified connector)			HA Plug-in connector with rectifier and light

HOW TO ORDER CIRCUIT BAR (REGULATOR ORDERED SEPARATELY)**

Port size	Side cylinder ports (18 mm)	Bottom cylinder ports (18 mm)
1/8" BSPP	EBM47A-00KBC-xx	EBM47A-00MBC-xx
1/4" BSPP	EBM47A-00KBD-xx	EBM47A-00MBD-xx
6 mm tube receptacle	EBM47A-00KBH-xx	EBM47A-00MBH-xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
add-a-unit stations may be added to above bars. Maximum length for add-a-unit is 4 stations.

OPTIONS

EBM47A-00KBA-xx

- clic replace with "C" for add-a-unit.

** Pressure Regulators :



- X=A (0 to 8 BAR)
- X=B (0 to 5.3 BAR)
- X=C (0 to 2 BAR)

**TECHNICAL
DATA**

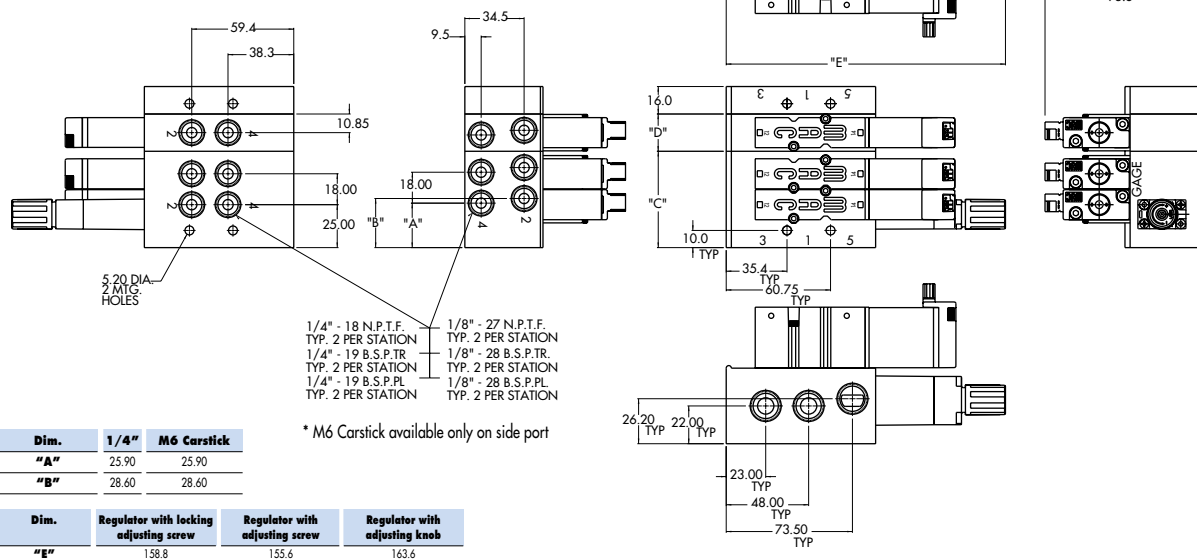
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001. • End plate kit : M-47005-01. • Regulator blanking plate : R-47003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"C" w/regulator	-	56.1	74.1	92.1	110.1	128.1	146.1	164.1	182.1	200.1
"C" w/o regulator	-	56.1	74.1	92.1	110.1	128.1	146.1	164.1	182.1	200.1
"D"	21.7	39.7	57.7	75.7	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing
Note: Bottom & side cylinder ports not available on the same station



Function	Port size	Flow [Max]	Circuit bar mounting
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	plug-in

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.

Reset

HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

Valve less base	Valve
	
	47A-LI0-HxxP-xxx

SOLENOID OPERATOR ►

H **XX** P- **X** **XX**

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	1 Non-locking	FA Plug-in
DB 24VDC (2.4 W)		FC Plug-in with light
DC 24VDC (1.8 W)		FE Plug-in with suppression diode
DD 24VDC (1.0 W)		FG Plug-in with suppression diode with LED light
AA 120VAC (Mod. No. required see below)		

HOW TO ORDER "PLUG-IN" CIRCUIT BAR

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00AAC-A0xx	ECD47A-00BAC-A0xx
1/4" BSPP	18	ECD47A-00AAD-A0xx	ECD47A-00BAD-A0xx
6 mm tube receptacle	18	ECD47A-00AAG-A0xx	ECD47A-00BAG-A0xx
1/8" BSPP	30	ECD47A-01AAC-C0xx	ECD47A-01BAC-C0xx
1/4" BSPP	30	ECD47A-01AAD-C0xx	ECD47A-01BAD-C0xx
6 mm tube receptacle	30	ECD47A-01AAG-C0xx	ECD47A-01BAG-C0xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
for AC voltage use mod. FWR2 after circuit bar model number.
for multi-pin connector (9, 15 or 25).

A0 = without light
AA = with light (120V)
AB = with light (240V)
AD = with light (24V)
C0 = terminal strip
CA = terminal strip with light (120V)
CB = terminal strip with light (240V)
CD = terminal strip with light (24V)

**TECHNICAL
DATA**

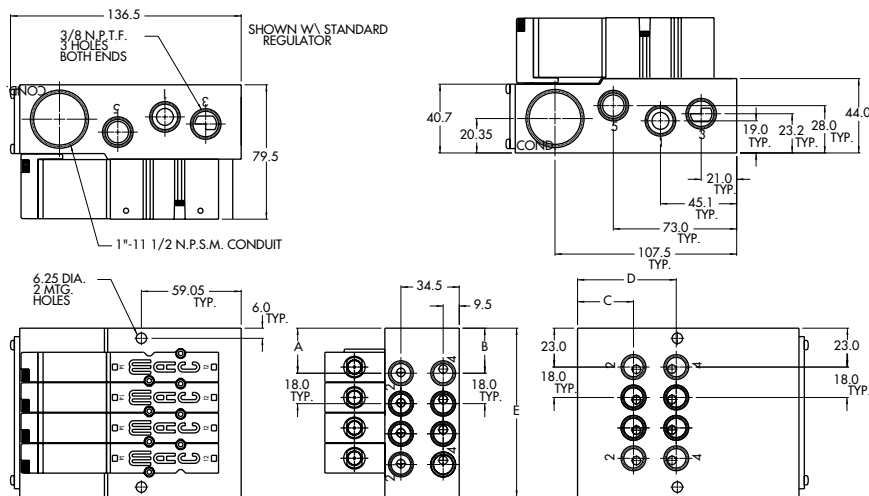
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
• Base wire plug-in protector : 16520.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"E"	46.0	64.0	82.0	100.0	118.0	136.0	154.0	172.0	190.0	208.0

Dimensions are based on 18 mm centerline spacing
Note: Bottom & side cylinder ports not available on the same station



Dim.	1/4"	1/8"	6 mm Legris
"A"	26.65	26.15	25.65
"B"	26.65	24.2	25.65
"C"	33.1	34.8	34.8
"D"	58.4	55.9	55.9

Function	Port size	Flow [Max]	Circuit bar mounting
5/2	1/8" - 1/4"	500 NL/min	plug-in with Pr. Reg.

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.



HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

Valve less base	Valve
	
	47A-LI0-HxxP-xxx

SOLENOID OPERATOR >

H **XX** P- **X** **XX**'

XX	Voltage	X	Manual operator	XX	Electrical connection
DA	24VDC (5.2 W)	1	Non-locking	FA	Plug-in
DB	24VDC (2.4 W)			FC	Plug-in with light
DC	24VDC (1.8 W)			FE	Plug-in with suppression diode
DD	24VDC (1.0 W)			FG	Plug-in with suppression diode with LED light
AA	120VAC (Mod. No. required see below)				

HOW TO ORDER "PLUG-IN" CIRCUIT BAR (REGULATORS ORDERED SEPARATELY)**

Port size	Spacing mm	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00CAC-A0xx
1/4" BSPP	18	ECD47A-00CAD-A0xx
1/8" BSPP	30	ECD47A-01CAC-C0xx
1/4" BSPP	30	ECD47A-01CAD-C0xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
for AC voltage use mod. FWR2 after circuit bar model number.
for multi-pin connector (9, 15 or 25).

** Pressure Regulators :

- X=A (0 to 8 BAR)
- X=B (0 to 5.3 BAR)
- X=C (0 to 2 BAR)

- A0 = without light
- AA = with light (120V)
- AB = with light (240V)
- AD = with light (24V)
- C0 = terminal strip
- CA = terminal strip with light (120V)
- CB = terminal strip with light (240V)
- CD = terminal strip with light (24V)

**TECHNICAL
DATA**

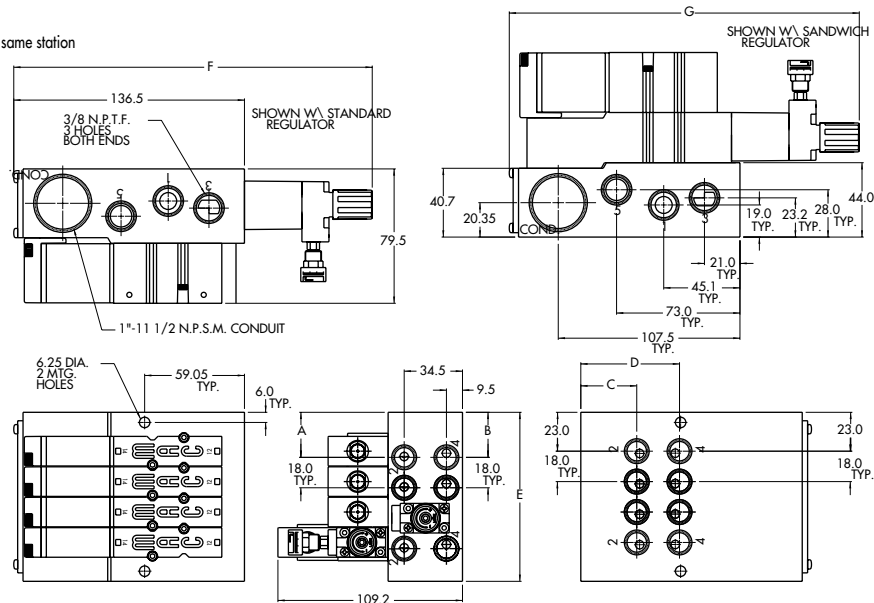
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
• Base wire plug-in protector : 16520. • Regulator blanking plate : R-47003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"E"	46.0	64.0	82.0	100.0	118.0	136.0	154.0	172.0	190.0	208.0

Dimensions are based on 18 mm centerline spacing
Note: Bottom & side cylinder ports not available on the same station



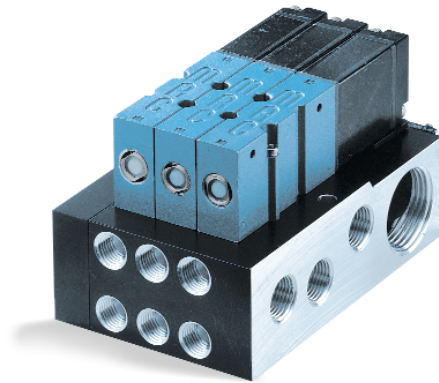
Dim.	1/4"	1/8"	6 mm Legris
"A"	26.65	26.15	25.65
"B"	26.65	24.2	25.65
"C"	33.1	34.8	34.8
"D"	58.4	55.9	55.9

Dim.	Regulator with locking adjusting screw	Regulator with adjusting screw	Regulator with adjusting knob
"F"	209.3	205.1	212.1
"G"	204.3	200.1	207.1

Function	Port size	Flow (Max)	Circuit bar mounting
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	add-on style plug-in

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.



HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

	Valve
Valve less base	 47A-LI0-HxxP-xxx

SOLENOID OPERATOR ►

H **XX** P- **X** **XX**'

XX	Voltage	X	Manual operator	XX	Electrical connection
DA	24VDC (5.2 W)	1	Non-locking	FA	Plug-in
DB	24VDC (2.4 W)			FC	Plug-in with light
DC	24VDC (1.8 W)			FE	Plug-in with suppression diode
DD	24VDC (1.0 W)			FG	Plug-in with suppression diode with LED light
AA	120VAC (Mod. No. required see below)				

HOW TO ORDER "PLUG-IN" CIRCUIT BAR

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00ABC-A0xx	ECD47A-00BBC-A0xx
1/4" BSPP	18	ECD47A-00ABD-A0xx	ECD47A-00BBD-A0xx
6 mm tube receptacle	18	ECD47A-00ABG-A0xx	ECD47A-00BBG-A0xx
1/8" BSPP	30	ECD47A-01ABC-C0xx	ECD47A-01BBC-C0xx
1/4" BSPP	30	ECD47A-01ABD-C0xx	ECD47A-01BBD-C0xx
6 mm tube receptacle	30	ECD47A-01ABG-C0xx	ECD47A-01BBG-C0xx

Number of stations (03=3 stations)

Note : clic for valves mounted on base at the factory (add - 9 to the model number).
for AC voltage use mod. FWR2 after circuit bar model number.
for multi-pin connector (9, 15 or 25).
add-a-units may be added to above bars.

A0 = without light
AA = with light (120V)
AB = with light (240V)
AD = with light (24V)
C0 = terminal strip
CA = terminal strip with light (120V)
CB = terminal strip with light (240V)
CD = terminal strip with light (24V)

**TECHNICAL
DATA**

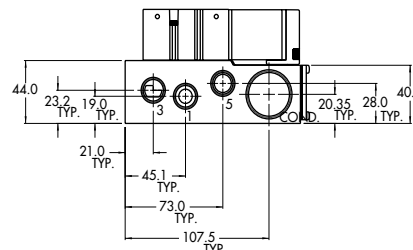
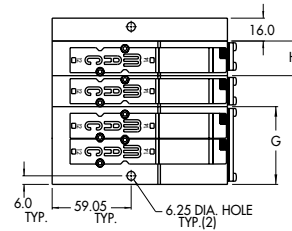
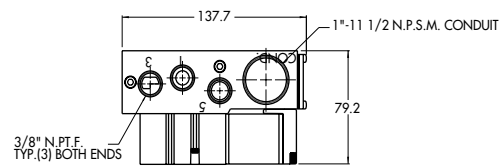
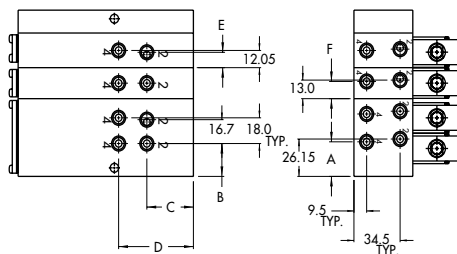
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note :
- Valve and coil are not interchangeable.
- Spare parts :
- Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
 - Base wire plug-in protector : 16520. • Isolator disc between add-a-units : 28438.
- Options :
- Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"G"	-	51.85	69.85	87.85	105.85	123.85	141.85	159.85	177.85	195.85
"H"	21.70	39.70	57.70	75.70	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing
 Note: Bottom & side cylinder ports not available on the same station



Dim.	1/8"	1/4"	6 mm Legris
"A"	24.20	24.20	25.65
"B"	23.00	23.00	23.00
"C"	34.80	33.10	34.80
"D"	55.90	58.40	55.90
"E"	-	-	-
"F"	12.05	12.00	14.00

Function	Port size	Flow [Max]	Circuit bar mounting
5/2	1/8" - 1/4"	500 NL/min	add-on style plug-in with Pr. Reg.

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.

Reset

HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

Valve less base	Valve
	
	47A-LI0-HxxP-xxx

SOLENOID OPERATOR >

H **XX** P- **X** **XX**'

XX Voltage	X Manual operator	XX Electrical connection
DA 24VDC (5.2 W)	1 Non-locking	FA Plug-in
DB 24VDC (2.4 W)		FC Plug-in with light
DC 24VDC (1.8 W)		FE Plug-in with suppression diode
DD 24VDC (1.0 W)		FG Plug-in with suppression diode with LED light
AA 120VAC (Mod. No. required see below)		

HOW TO ORDER "PLUG-IN" CIRCUIT BAR (REGULATORS ORDERED SEPARATELY)**

Port size	Spacing mm	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00CBC-A0xx
1/4" BSPP	18	ECD47A-00CBD-A0xx
1/8" BSPP	30	ECD47A-01CBC-C0xx
1/4" BSPP	30	ECD47A-01CBD-C0xx

Number of stations (03=3 stations)
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 for AC voltage use mod. FWR2 after circuit bar model number.
 for multi-pin connector (9, 15 or 25).
 add-a-units may be added to above bars.

** Pressure Regulators :

X=A (0 to 8 BAR)
 X=B (0 to 5.3 BAR)
 X=C (0 to 2 BAR)

A0 = without light
 AA = with light (120V)
 AB = with light (240V)
 AD = with light (24V)
 C0 = terminal strip
 CA = terminal strip with light (120V)
 CB = terminal strip with light (240V)
 CD = terminal strip with light (24V)

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

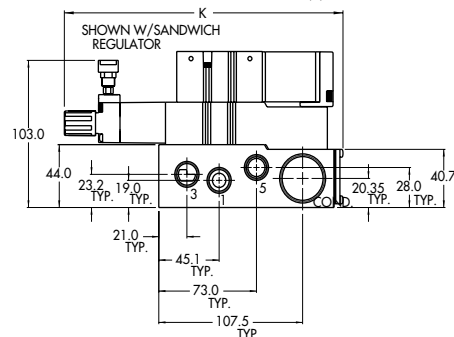
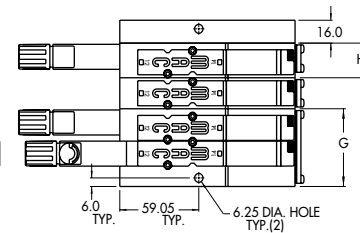
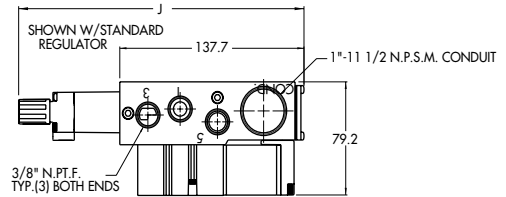
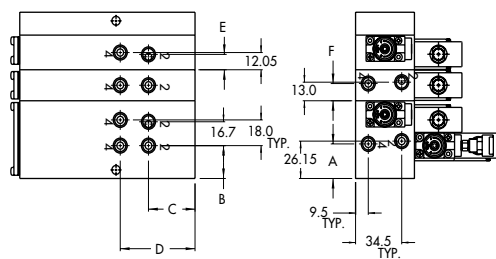
- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
• Base wire plug-in protector : 16520. • Regulator blanking plate : R-47003. • Isolator disc between add-a-units : 28438.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"G" w/regulator	54.40	72.40	90.40	108.40	126.40	144.40	162.40	180.40	199.40	
"G" w/o regulator	51.85	69.85	87.85	105.85	123.85	141.85	159.85	177.85	195.85	
"H" w/regulator	24.25	42.25	60.25	78.25	-	-	-	-	-	-
"H" w/o regulator	21.70	39.70	57.70	75.70	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing

Note: Bottom & side cylinder ports not available on the same station



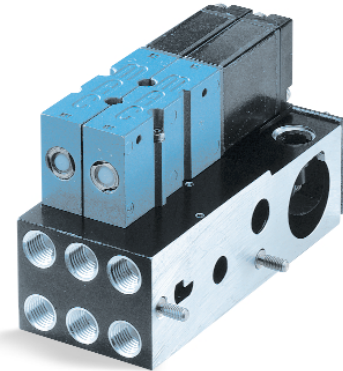
Dim.	1/8"	1/4"	6 mm Legris	1/8" w/regulator	1/4" w/regulator
"A"	24.20	24.20	25.65	-	-
"B"	23.00	23.00	23.00	-	23.00
"C"	34.80	33.10	34.80	34.80	33.10
"D"	55.90	58.40	55.90	55.90	58.40
"E"	-	-	-	10.75	10.85
"F"	12.05	12.00	14.00	-	-

Dim.	Regulator with locking adjusting screw	Regulator with adjusting screw	Regulator with adjusting knob
"J"	209.3	205.1	212.1
"K"	204.3	200.1	207.1

Function	Port size	Flow (Max)	Circuit bar mounting
5/2	1/8" - 1/4" 6 mm tube receptacle	500 NL/min	plug-in add-a-unit stations

OPERATIONAL BENEFITS

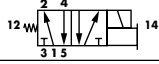
1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.



Reset

HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

	Valve
	
Valve less base	47A-LI0-HxxP-xxx

SOLENOID OPERATOR ►

H **XX** P- **X** **XX**'

XX	Voltage	X	Manual operator	XX	Electrical connection
DA	24VDC (5.2 W)	1	Non-locking	FA	Plug-in
DB	24VDC (2.4 W)			FC	Plug-in with light
DC	24VDC (1.8 W)			FE	Plug-in with suppression diode
DD	24VDC (1.0 W)			FG	Plug-in with suppression diode with LED light
AA	120VAC (Mod. No. required see below)				

HOW TO ORDER "PLUG-IN" CIRCUIT BAR

Port size	Spacing mm	Side cylinder ports	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00ACC-A0 xx	ECD47A-00BCC-A0 xx
1/4" BSPP	18	ECD47A-00ACD-A0 xx	ECD47A-00BCD-A0 xx
6 mm tube receptacle	18	ECD47A-00ACG-A0 xx	ECD47A-00BCG-A0 xx
1/8" BSPP	30	ECD47A-01ACC-C0 xx	ECD47A-01BCC-C0 xx
1/4" BSPP	30	ECD47A-01ACD-C0 xx	ECD47A-01BCD-C0 xx
6 mm tube receptacle	30	ECD47A-01ACG-C0 xx	ECD47A-01BCG-C0 xx

Number of stations (01=1 station). Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD SD03 should be included with add-a-unit model number.
 for AC voltage use mod. FWR2 after circuit bar model number.

A0 = without light
 AA = with light (120V)
 AB = with light (240V)
 AD = with light (24V)
 CO = terminal strip
 CA = terminal strip with light (120V)
 CB = terminal strip with light (240V)
 CD = terminal strip with light (24V)

**TECHNICAL
DATA**

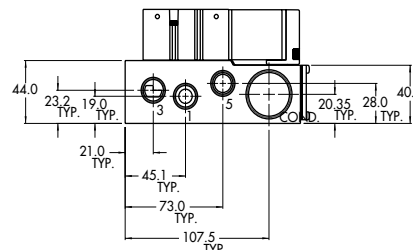
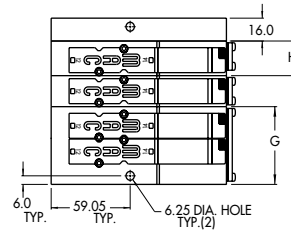
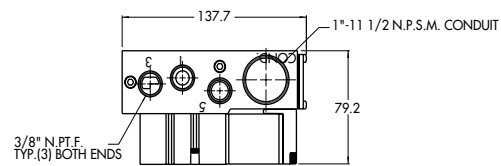
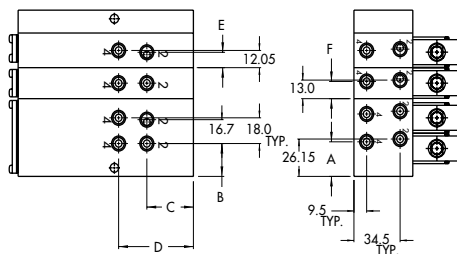
Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001.
• O-ring port seal (x3) : 17015-01 • Tie rod (x2) : 79007-01 (one station length).
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"G"	-	51.85	69.85	87.85	105.85	123.85	141.85	159.85	177.85	195.85
"H"	21.70	39.70	57.70	75.70	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing
Note: Bottom & side cylinder ports not available on the same station



Dim.	1/8"	1/4"	6 mm Legris
"A"	24.20	24.20	25.65
"B"	23.00	23.00	23.00
"C"	34.80	33.10	34.80
"D"	55.90	58.40	55.90
"E"	-	-	-
"F"	12.05	12.00	14.00

Function	Port size	Flow [Max]	Circuit bar mounting
5/2	1/8" - 1/4"	500 NL/min	plug-in add-a-unit stations with Pr. Reg.

OPERATIONAL BENEFITS

1. Balanced poppet, immune to variations of pressure.
2. Short stroke with high flow.
3. The patented solenoid develops high shifting forces.
4. Powerful return spring.
5. Manual operator standard on all valves.
6. Direct solenoid operated.



HOW TO ORDER

HOW TO ORDER VALVE FOR "PLUG-IN" CIRCUIT BAR

	Valve
	
Valve less base	47A-LI0-HxxP-xxx

SOLENOID OPERATOR >

H **XX** P- **X** **XX**'

XX	Voltage	X	Manual operator	XX	Electrical connection
DA	24VDC (5.2 W)	1	Non-locking	FA	Plug-in
DB	24VDC (2.4 W)			FC	Plug-in with light
DC	24VDC (1.8 W)			FE	Plug-in with suppression diode
DD	24VDC (1.0 W)			FG	Plug-in with suppression diode with LED light
AA	120VAC (Mod. No. required see below)				

HOW TO ORDER "PLUG-IN" CIRCUIT BAR (REGULATORS ORDERED SEPARATELY)**

Port size	Spacing mm	Bottom cylinder ports
1/8" BSPP	18	ECD47A-00CCC-A0xx
1/4" BSPP	18	ECD47A-00CCD-A0xx
1/8" BSPP	30	ECD47A-01CCC-C0xx
1/4" BSPP	30	ECD47A-01CCD-C0xx

Number of stations (01=1 station). Maximum length is 4 stations
 Note : clic for valves mounted on base at the factory (add - 9 to the model number).
 when add-a-unit stations are added to bars with a multi-pin connector,
 MOD SD03 should be included with add-a-unit model number.
 for AC voltage use mod. FWR2 after circuit bar model number.

** Pressure Regulators :

- X=A (0 to 8 BAR)
- X=B (0 to 5.3 BAR)
- X=C (0 to 2 BAR)

- A0 = without light
- AA = with light (120V)
- AB = with light (240V)
- AD = with light (24V)
- C0 = terminal strip
- CA = terminal strip with light (120V)
- CB = terminal strip with light (240V)
- CD = terminal strip with light (24V)

**TECHNICAL
DATA**

Fluid :	Compressed air, vacuum, inert gases
Pressure range :	Vacuum to 8 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C and 100°C)
Filtration :	40 µ
Temperature range :	0°F to 120°F (-18°C to 50°C)
Orifice :	4.3 mm
Flow (at 6 bar, ΔP=1bar) :	5.2 W : 500 NL/min, 2.4 W : 300 NL/min, 1.8 W : 250 NL/min, 1.0 W : 250 NL/min
Leak rate :	50 cm ³ /min
Coil :	General purpose class A, continuous duty, encapsulated
Voltage range :	-15% to +10% of nominal voltage
Power :	5.2 W - 2.4 W - 1.8 W - 1.0 W
Response times :	Energize : 14.0 ms
(with 5.2 W coil)	De-energize : 5.0 ms

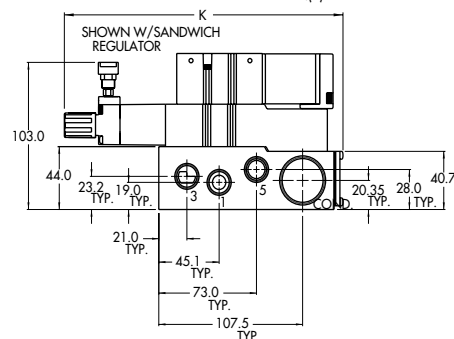
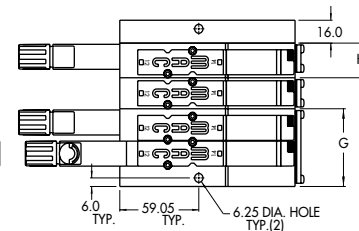
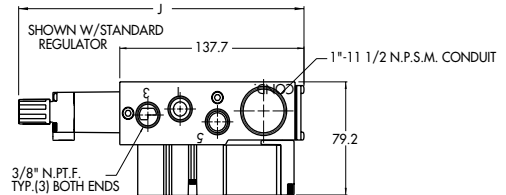
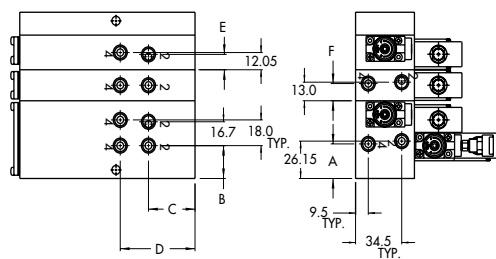
- Note : • Valve and coil are not interchangeable.
- Spare parts : • Seal between valve and bar : 16629. • Mounting screw (x2) : 35043. • Valve blanking plate : M-47001. • O-ring port seal (x3) : 17015-01 • Tie rod (x2) : 79007-01 (one station length). • Regulator blanking plate : R-47003.
- Options : • Isolation of inlet and/or exhaust. Special bar. Consult factory. • NPTF Threads.

DIMENSIONS

Number of stations	1	2	3	4	5	6	7	8	9	10
"G" w/regulator	54.40	72.40	90.40	108.40	126.40	144.40	162.40	180.40	199.40	
"G" w/o regulator	51.85	69.85	87.85	105.85	123.85	141.85	159.85	177.85	195.85	
"H" w/regulator	24.25	42.25	60.25	78.25	-	-	-	-	-	-
"H" w/o regulator	21.70	39.70	57.70	75.70	-	-	-	-	-	-

Dimensions are based on 18 mm centerline spacing

Note: Bottom & side cylinder ports not available on the same station



Dim.	1/8"	1/4"	6 mm Legris	1/8" w/regulator	1/4" w/regulator
"A"	24.20	24.20	25.65	-	-
"B"	23.00	23.00	23.00	-	23.00
"C"	34.80	33.10	34.80	34.80	33.10
"D"	55.90	58.40	55.90	55.90	58.40
"E"	-	-	-	10.75	10.85
"F"	12.05	12.00	14.00	-	-

Dim.	Regulator with locking adjusting screw	Regulator with adjusting screw	Regulator with adjusting knob
"J"	209.3	205.1	212.1
"K"	204.3	200.1	207.1



Section 2 Options



0 p t i o n s

Codification table for voltages / Wire length / Manual operators / Electrical connections

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

OPTIONS AVAILABLE FOR

- Solenoid valves 37 & 47 Series

1. VOLTAGE

- H XX	X - X XX	VOLTAGE
		DC Options
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)
		AC Options (50/60hz)
AA		120 VAC (6.7 W)
AB		220 VAC (5.6 W)
AC		240 VAC (5.8 W)
AD		24 VAC (7.8 W)

Note : AC Voltages only available with "H" & "F" type connectors. MOD FWR2 must be used with the "F" type connectors.

2. WIRE LENGTH

- H XX	X - X XX	WIRE LENGTH
O		No lead wire
A		45 cm
B		60 cm
C		90 cm
D		120 cm
E		180 cm
F		240 cm
G		305 cm
H		366 cm
P		Plug-in (used only with "F" type connector Opts.)

Use "O" with MJ & MM Opts.

3. MANUAL OPERATOR

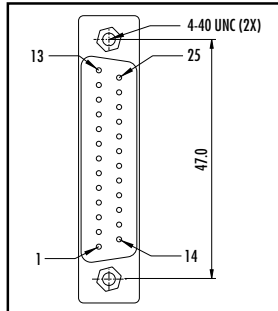
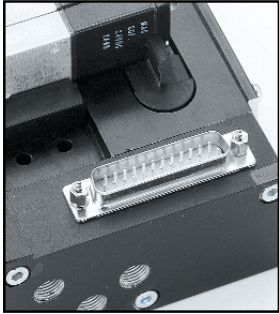
- H XX	X - X XX	MANUAL OPERATOR
0		No operator
1		Non-locking recessed
2		Locking recessed
3		Non-locking extended
4		Locking extended

4. ELECTRICAL CONNECTION

- H XX X - X XX	ELECTRICAL CONNECTION
BA	Flying leads
BB	Flying leads with ground wire
BC	Flying leads with led light
BD	Flying leads with led light & ground wire
BE	Flying leads with suppression diode
BF	Flying leads with suppression diode & ground wire
BG	Flying leads with suppression diode plus led light
BH	Flying leads with suppression diode plus led light & ground wire
*BN	Flying leads with suppression diode plus blocking diode
*BP	Flying leads with suppression diode plus blocking diode & ground wire
*BR	Flying leads with suppression diode plus blocking diode & led light
*BS	Flying leads with suppression diode plus blocking diode & led light & ground wire
FA	Plug-in
FB	Plug-in with ground wire
FC	Plug-in with led light
FD	Plug-in with led light & ground wire
FE	Plug-in with suppression diode
FF	Plug-in with suppression diode & ground wire
FG	Plug-in with suppression diode plus led light
FH	Plug-in with suppression diode plus led light & ground wire
	Note : FA ---- FH options for use with ECD type circuit bars
HA	Circuit board plug-in with full wave rectifier & led light
HB	Circuit board with full wave rectifier & led with ground wire
HC	Same as "HA" without lead wires
HD	Same as "HB" without lead wires
HL	Circuit board plug-in with suppression diode plus blocking diode & led light
HN	Same as "HL" without lead wires
MA	Plug-in wire assembly
MB	Plug-in wire assembly with ground wire
MC	Plug-in wire assembly with led light
MD	Plug-in wire assembly led light & ground wire
ME	Plug-in wire assembly with suppression diode
MF	Plug-in wire assembly with suppression diode & ground wire
*MG	Plug-in wire assembly suppression diode plus led light
*MH	Plug-in wire assembly suppression diode plus led light & ground wire
*MN	Plug-in wire assembly with suppression diode plus blocking diode
*MP	Plug-in wire assembly with suppression diode plus blocking diode & ground wire
MR	Plug-in wire assembly with suppression diode plus blocking diode & led light
MS	Plug-in wire assembly with suppression diode plus blocking diode & led light & ground wire
MJ	Plug-in housing w/o wire assembly ("MA" option without wire assembly)
MM	Plug-in housing w/o wire assembly ("MB" option without wire assembly)

* Blocking diode is in lead wire.

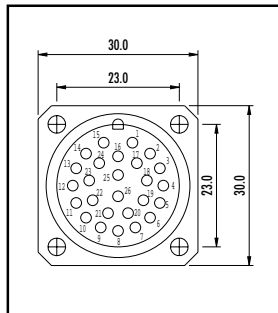
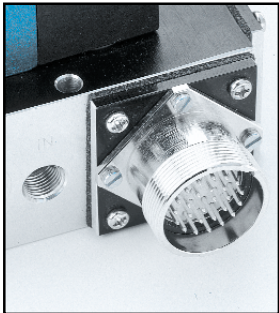
Connector SUB_D 25 (option ZZZY = SUBY ; Y = cable length)



TECHNICAL DATA

- Type «SUB_D»
- Number of contacts : 25
- Solder termination (Dia. 0.6 mm/0.14 mm²/26-22 AWG)
- Operating current 5 A/contact
- Rated voltage 125 V~
- Temp. range -40° to +125°C
- Insulation resistance $\geq 10^{10} \Omega$
- Protection class IP40 (DIN 40050)
- Number of solenoids : 20 max.
- Max. 24 V= / 5.4 W per solenoid
- 5 common wires
- Female plug supplied with circuit bar

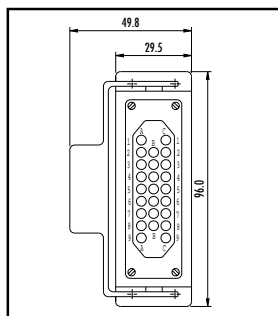
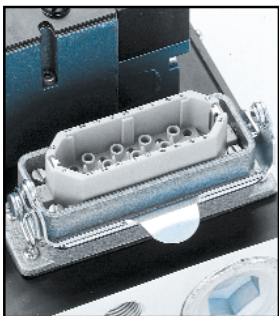
Connector RND (option ZZZY = RNDY ; Y = cable length)



TECHNICAL DATA

- Type «Round connector»
- Number of contacts : 26
- Solder termination (Dia. 1 mm/1 mm²/17 AWG)
- Operating current 7.5 A/contact
- Rated voltage 250 V~
- Insulation resistance $\geq 10^8 \Omega$
- Cable entry PG16
- Temp. range -40° to +125°C
- Protection class IP65 (DIN 40050)
- Number of solenoids : 24 max.
- 1 common and 1 ground
- All voltages
- Female plug supplied with circuit bar

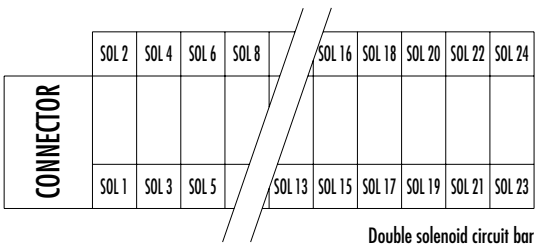
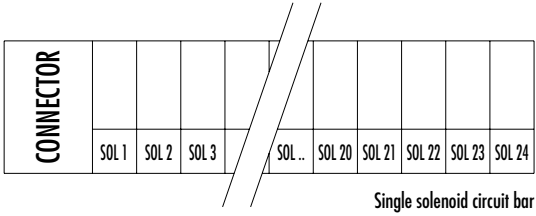
Connector HDT (option ZZZY = HDTY ; Y = cable length)



TECHNICAL DATA

- Type «Heavy duty»
- Number of contacts : 25
- Solder termination (Dia. 1.4 mm/0.75 mm²/18 AWG)
- Operating current 10 A/contact
- Rated voltage 250 V~
- Insulation resistance $\geq 10^{10} \Omega$
- Cable entry PG16
- Temp. range -40° to +125°C
- Protection class IP65 (DIN 40050)
- Number of solenoids : 24 max.
- 1 common and 1 ground
- All voltages
- Female plug supplied with circuit bar

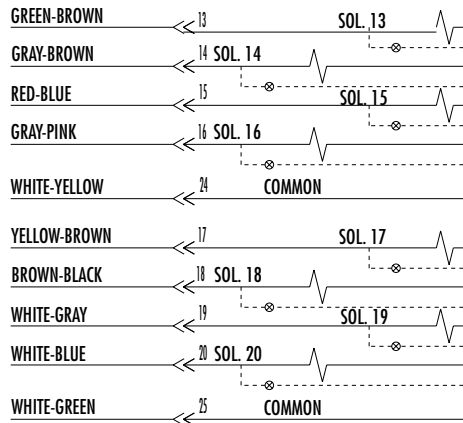
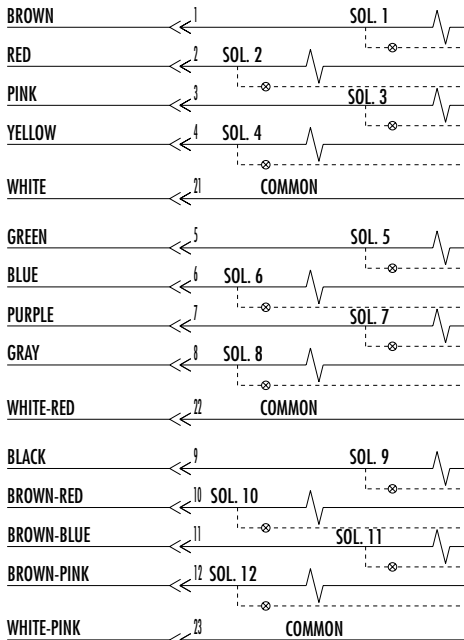
Connector termination details



Connector SUB_025 [option ZZZY = SUBY ; Y = cable length]

TECHNICAL DATA PREWIRED CABLE

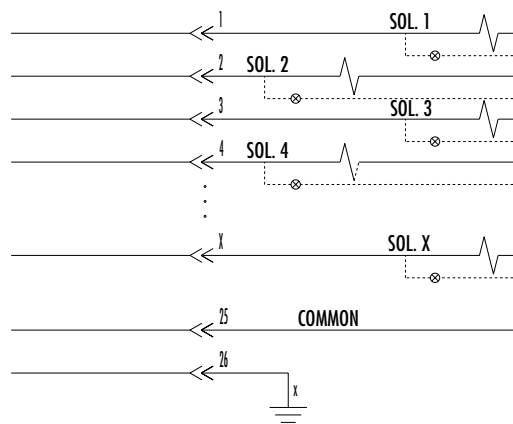
- Type : LIYY -0.14 mm²
- Dia. ca. 9.3 mm
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 250 V~
- PVC core insulation and sheath



Connector RND (option ZZZY = SNDY ; Y = cable length)

TECHNICAL DATA PREWIRED CABLE

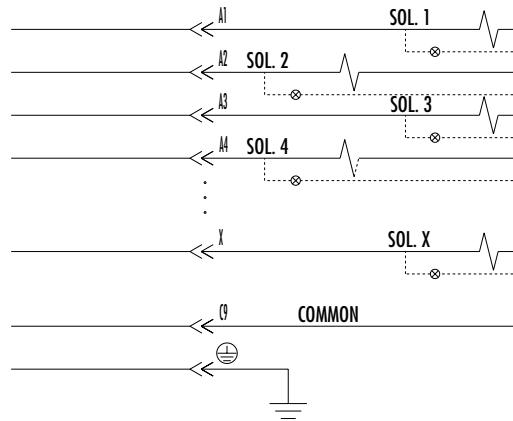
- Type : LIY(C)Y -0.50 mm²
- Dia. ca. 10.8 mm (12 core); 12.9 mm (18 core); 16.0 mm (32 core)
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 500 V~
- PVC core insulation and sheath
- Tinned copper wire braid



Connector HDT (option ZZZY = HDTY ; Y = cable length)

TECHNICAL DATA PREWIRED CABLE

- Type : LIY(C)Y -0.75 mm²
- Dia. ca. 12.0 mm (12 core); 13.5 mm (18 core); 18.0 mm (32 core)
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 500 V~
- PVC core insulation and sheath
- Tinned copper wire braid





PRECAUTIONS CONCERNING THE APPLICATION, INSTALLATION AND SERVICE OF MAC VALVES

The precautions below are important to be read and understood before designing into a system any MAC valve, and before installing or servicing any MAC valve. Improper use, installation or servicing of any MAC valve in some systems could create a hazard to personnel or equipment.

APPLICATION PRECAUTIONS :

INDUSTRIAL USE -

MAC valves are intended for use in industrial pneumatic and/or vacuum systems. They are not intended for consumer use or service. They are general purpose industrial valves with literally thousands of different applications in industrial systems. These products are not inherently dangerous, but they are only a component of an overall system. The system in which they are used must provide adequate safeguards to prevent injury or damage in the event failure occurs, whether it be failure of switches, regulators, cylinders, valves or any other component.

POWER PRESSES -

MAC valves are not designed nor intended to be used to operate and/or control the operation of clutch and/or brake systems on power presses. There are special products on the market for such use.

2-POSITION VALVES -

Some MAC valves are 2-position, 4-way valves. When air is supplied to the inlet port(s) of these valves, there will always be a flow path from the inlet to one of the outlets regardless of which of the two positions the valve is situated. Therefore, if pressurized air retained in the system would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the trapped air.

3- POSITION VALVES-

Some MAC valves are 3-position, 4-way valves. These valves are either double solenoid or double remote air operated.

If either of the two operators is in control, air supplied to the inlet port(s) will pass through the valve to one of the outlets as on 2-position, 4-way valves. However, if neither operator is in control, the valve moves to a center position. Listed below are the various center position functions :

A. CLOSED CENTER-

With this type valve, when in the center position all ports are blocked (inlets and exhausts) meaning the air at both outlet ports is trapped. If trapping the air in both outlet ports would present a hazard in the application or servicing, a separate method in the system must be provided to remove the trapped air or this type valve should not be used.

B. OPEN CENTER-

With this type valve, when in the center position, the inlet port(s) is blocked and the two outlet ports are open to the exhaust port(s) of the valve. If having no air in either outlet port would present a hazard in the application or servicing, this type valve should not be used.

C. PRESSURE CENTER-

With this type valve, when in the center position, the inlet port(s) is connected to both outlet ports of the valve. If having pressurized air to either or both outlet ports would present a hazard in the application or servicing of the valve or system, a separate method in the system must be provided to remove the retained air.

OPERATING SPECIFICATIONS -

MAC valves are to be installed only on applications that meet all operating specifications described in the MAC catalog for the valve.

MANUAL OPERATORS-

Most MAC valves can be ordered with manual operators. Manual operators when depressed, are designed to shift the valve to the same position as would the corresponding solenoid or remote air pilot operator if it were activated. Care must be taken to order a type, if any, that will be safe for the physical location of the manual operator in the system. Accidental activation of a manual operator could create a dangerous situation. If intentional or accidental operation of a valve by a manual operator could create a dangerous situation then the "no operator" option should be used.

REMOTE AIR OPERATED VALVES

Pilot valves supplying signal pressure to remote air operated valves should be 3-way valves with adequate supply and exhaust capacity to provide positive pressurizing and exhausting of the pilot supply line. Pilot lines should be open to exhaust when valves are deenergized.

INSTALLATION AND SERVICE PRECAUTIONS :

- A. Do not install or service MAC valves without first making sure both the air and electrical power to the machine are off and that all air has been completely bled from the system.
- B. MAC valves should only be installed and/or serviced by qualified, knowledgeable personnel who understand how the specific valve is to be pneumatically piped and electrically connected (where applicable). Flow paths through the valve are shown in the catalog and on the valve by use of ANSI or ISO type standard and graphic symbols. Do not install unless these symbols and the valve functions and operations are thoroughly understood.
- C. Before service, maintenance, repair or cleaning, consult local distributor or factory for Parts & Operation Sheet and information on proper cleaning and lubrication agents. Do not subject MAC valves' parts to any foreign substance including lubricants and cleaning agents not specifically recommended by MAC valves, Inc.
- D. MAC valves are never to be stepped on while working on a machine. Damage to the valve, or lines to the valve (either air or electrical lines) or accidental activating of a manual operator on the valve could result in a dangerous condition.

WARNING :

Under no circumstances are Mac valves to be used in any application where failure of the valve to operate as intended could jeopardize the safety of the operator or any other person.

- Do not operate outside of pressure range listed on valve label or outside of designated temperature range.
- Air supply must be clean. Contamination of valve can affect proper operation.
- Before attempting to repair, adjust or clean valve, consult catalog, parts & operation sheet, or factory for proper maintenance procedures, lubrication, and cleaning agents. Never attempt to repair or perform other maintenance with air pressure to valve.
- If airline lubrication is used, consult catalog, parts & operation sheet, or factory for recommended lubricants.

LIMITATION OF GUARANTEE

This Guarantee is limited to the replacement or rebuilding of any valve which should fail to operate properly. Valves, under the MAC Guarantee, must be returned (with or without bases) transportation prepaid and received at our factory within the Guarantee period. They will be returned to the customer at the expense of MAC Valves, Inc., and will carry the same guarantee as provided under the Flat Rate Rebuild Program.

DISCLAIMER OF GUARANTEE

No claims for labor, material, time, damage, or transportation are allowable nor will any valve be replaced or rebuilt under this guarantee which has been damaged by the purchaser not in the normal course of its use and maintenance during the warranty period. The guarantee does not apply to loss or damage caused by fire, theft, riot, explosion, labor dispute, act of God, or other causes beyond the control of MAC Valves, Inc. MAC Valves, Inc. shall in no event be liable for remote, special or consequential damages under the MAC Guarantee, nor under any implied warranties, including the implied warranty of merchantability.

The above Guarantee is our manner of extending the engineering and service resources of the MAC Valves, Inc. organization to assure our customer long, and continued satisfaction.