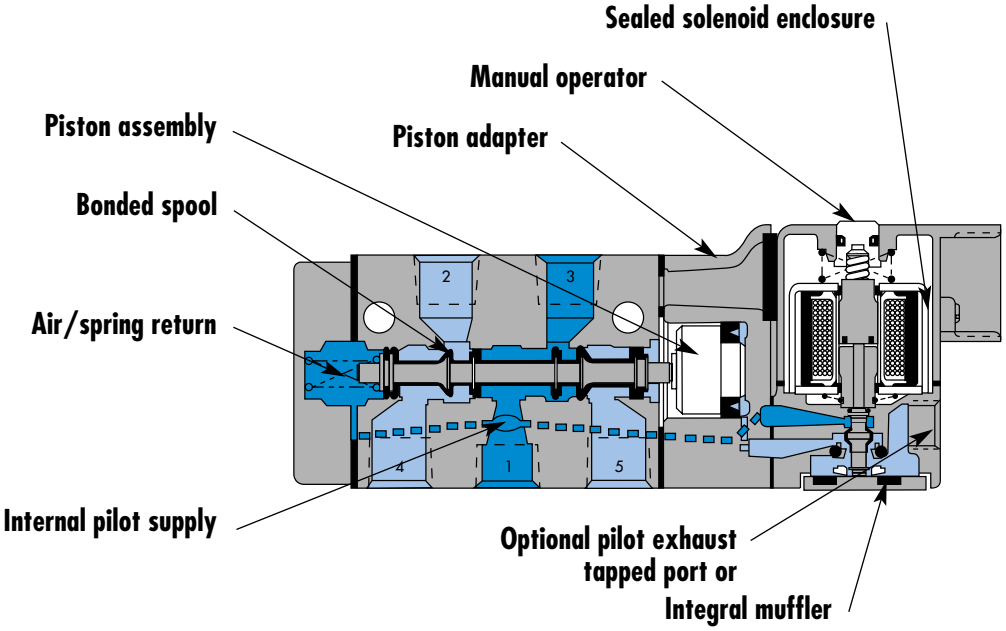
Circuit bar mounting

cylinder ports in valve	with shut-off valve



SERIES FEATURES

- Patented MACSOLENOID® with its non-burn out feature on AC service.
- Air/spring return on single solenoid valves.
- Use for lube or non-lube service.
- Optional low wattage DC solenoids down to 1 watt.
- Various types of manual operators and solenoid enclosures.
- 2 position or 3 position valve configurations.

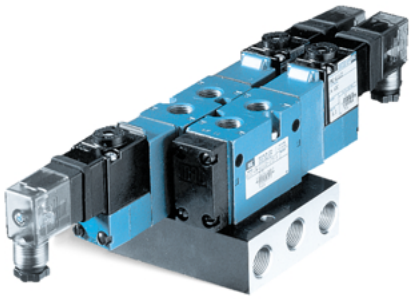
MAC

Series **800**

Function	Port size	Flow (Max)	Circuit bar mounting
5/2 - 5/3	**1/4"**	**1300 NL/min**	cylinder ports in valve

OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. The piston (booster) provides maximum shifting forces.
4. Powerful return force thanks to the combination of mechanical and air springs.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Wiping effect eliminates sticking.
7. Pilot valve with balanced poppet, high flow, short and consistent response times.
8. Long service life.

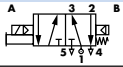
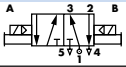
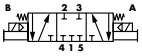
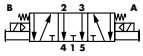
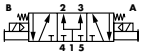


Reset

HOW TO ORDER

xxxx-PM-xxxxx-xxx

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center
					
1/4" BSPP	○ 811C-PM-*XXYZZ*-175	○ 821C-PM-*XXYZZ*-175	○ 825C-PM-*XXYZZ*-575	○ 825C-PM-*XXYZZ*-675	○ 825C-PM-*XXYZZ*-875

SOLENOID OPERATOR ➤ *XX Y ZZ**

Voltage		Manual operator		Electrical connection	
○ *11*	120/60, 110/50	○ *1*	Non-locking	○ *JB*	Rectangular connector
○ *12*	240/60, 220/50	○ *2*	Locking	○ *JD*	Rectangular connector with light
○ *22*	24/50, 24/60	○ *xx*	Other Options	○ *BA*	Flying leads (45 cm)
○ *59*	24VDC (2.5 W)			○ *xx*	Other Options
○ *87*	24VDC (17.1 W)				
○ *61*	24VDC (8.5 W)				
○ *xx*	Other Options				

EBM800A-xxxx-xx

HOW TO ORDER CIRCUIT BAR**

Port size (Spacing 31 mm)	Standard circuit bar	Circuit bar with flow controls (2 per station)
3/8" BSPP	○ EBM800A-001B-*XX*	○ EBM800A-002B-*XX*

Number of stations (03=3 stations) ☐
Other options available. Consult factory.
Note : ☐ clic for valves mounted on base at the factory (add - 9 to the model number).

MAC

Series 800

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

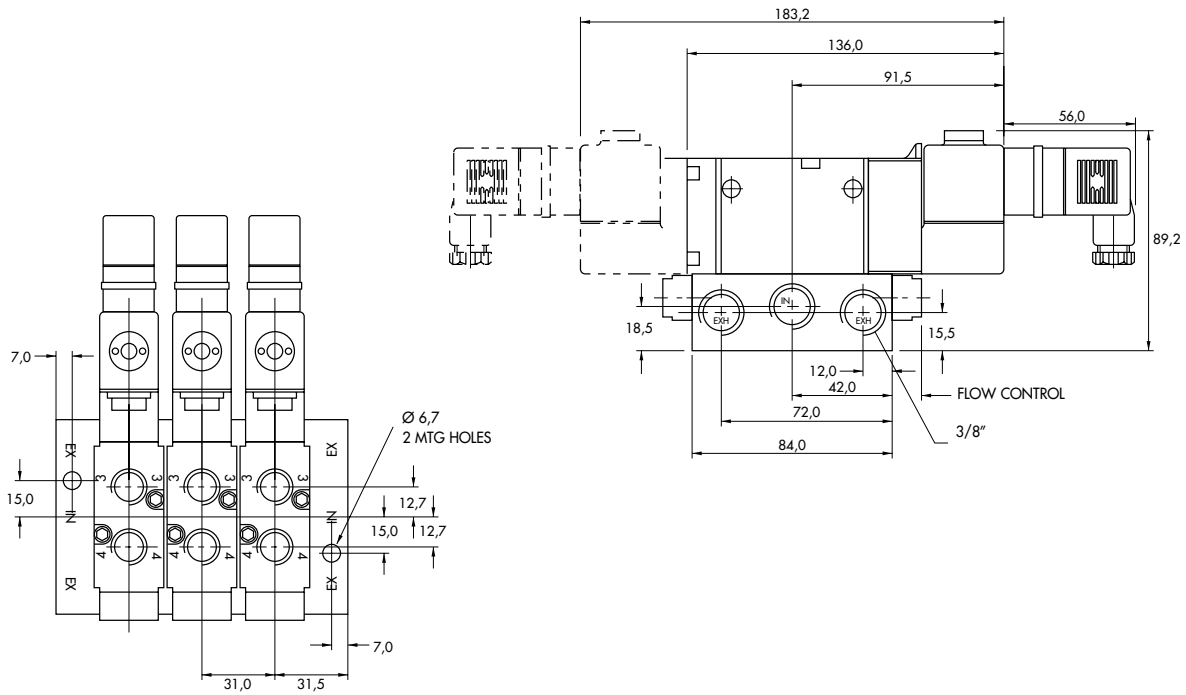
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : single operator and 3 positions : 1.3 - 10 BAR		double operator : 0.7 - 10 BAR
	External pilot : vacuum to 13.3 BAR		
Pilot pressure :	Single operator and 3 positions : 1.3 - 10 BAR		Double operator : 1.3 - 10 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to +50°C)		
Orifice :	7 mm		
Flow (at 6 bar, ΔP=1bar) :	1/4" : 1300 NL/min		
Leak rate :	50 cm^3/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	NEMA 4		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
Response times :	24 V=/8.5 W	Energize : 8 ms	De-energize : 10ms
	60Hz/6 W	Energize : 5-11 ms	De-energize : 9-16 ms

Spare parts : • Pilot valve : PME-XXYZZ. • Mounting screw pilot to main valve : 34364. • Blanking plate : M-08008.
• Mounting screw valve to bar (x2): 35249. • Flow control : N08006.

Options : • NPTF threads. • Isolation of inlet and/or exhaust. • Explosion-proof model.

DIMENSIONS

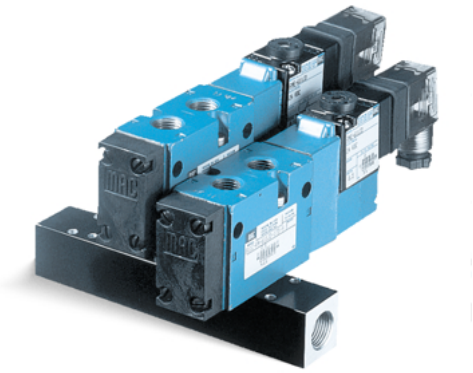


Series **800**

Function	Port size	Flow (Max)	Circuit bar mounting
5/2 - 5/3	**1/4"**	**1300 NL/min**	with shut-off valve

OPERATIONAL BENEFITS

1. Balanced spool, immune to variations of pressure.
2. Short stroke with high flow.
3. The piston (booster) provides maximum shifting forces.
4. Powerful return force thanks to the combination of mechanical and air springs.
5. Bonded spool with minimum friction, shifting in a glass-like finished bore.
6. Wiping effect eliminates sticking.
7. Pilot valve with balanced poppet, high flow, short and consistent response times.
8. Long service life.

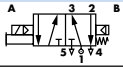
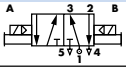
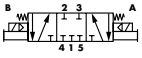
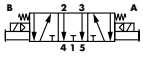
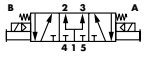


Reset

HOW TO ORDER

xxxx-PM-xxxxx-xxx

HOW TO ORDER VALVE FOR CIRCUIT BAR MOUNTING

Port size	5/2 Single operator	5/2 Double operator	5/3 Closed center	5/3 Open center	5/3 Pressure center
					
1/4" BSPP	○ 811C-PM-**XXYZZ**-175	○ 821C-PM-**XXYZZ**-175	○ 825C-PM-**XXYZZ**-575	○ 825C-PM-**XXYZZ**-675	○ 825C-PM-**XXYZZ**-875

SOLENOID OPERATOR ➤ XX Y ZZ*

Voltage		Manual operator		Electrical connection	
○ 11	120/60, 110/50	○ 1	Non-locking	○ JB	Rectangular connector
○ 12	240/60, 220/50	○ 2	Locking	○ JD	Rectangular connector with light
○ 22	24/50, 24/60	○ xx	Other Options	○ BA	Flying leads (45 cm)
○ 59	24VDC (2.5 W)			○ xx	Other Options
○ 87	24VDC (17.1 W)				
○ 61	24VDC (8.5 W)				
○ xx	Other Options				

EBI800A-xxxx-xx

HOW TO ORDER CIRCUIT BAR**

Port size (Spacing 31 mm)	w/o inlet shut-off valve	w/ inlet shut-off valve
3/8" BSPP	○ EBI800A-001B-**XX**	○ EBI800A-002B-**XX**

Number of stations (03=3 stations) ☐
Other options available. Consult factory.
Note : ☐ clic for valves mounted on base at the factory (add - 9 to the model number).

MAC

Series 800

100% OF PRODUCTION TESTED 100%

WARRANTY 18 MONTHS

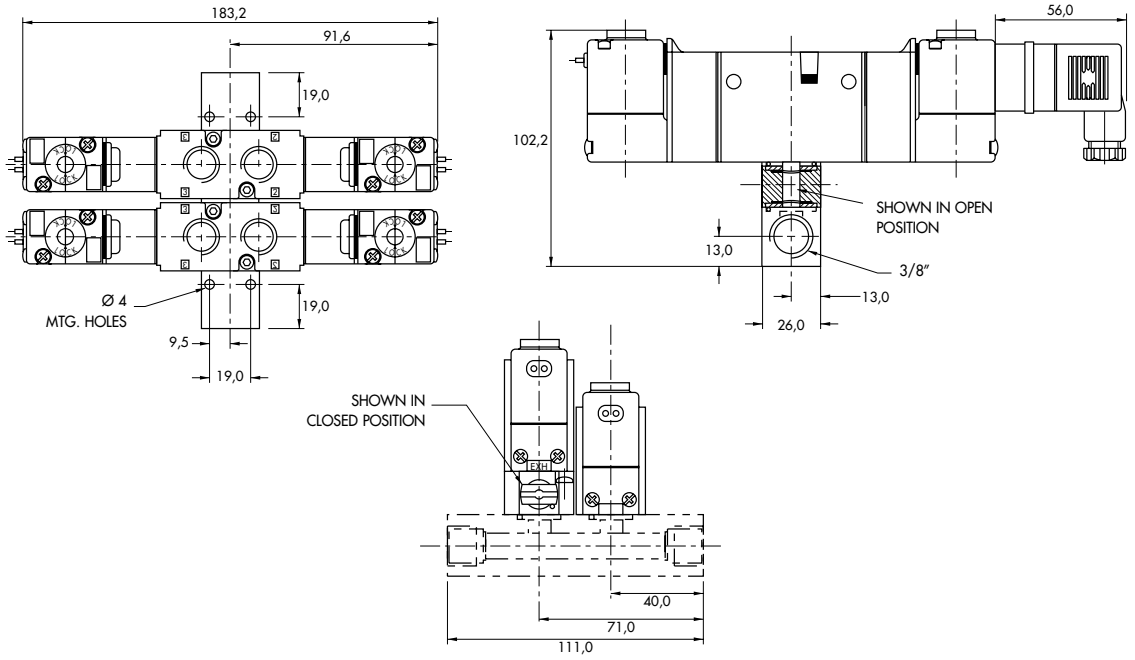
TECHNICAL DATA

Fluid :	Compressed air, vacuum, inert gases		
Pressure range :	Internal pilot : single operator and 3 positions : 1.3 - 10 BAR		double operator : 0.7 - 10 BAR
	External pilot : vacuum to 200 PSI		
Pilot pressure :	Single operator and 3 positions : 1.3 - 10 BAR		Double operator : 1.3 - 10 BAR
Lubrication :	Not required, if used select a medium aniline point lubricant (between 80°C to 100°C)		
Filtration :	40 µ		
Temperature range :	0°F to 120°F (-18°C to +50°C)		
Orifice :	7 mm		
Flow (at 6 bar, ΔP=1bar) :	1/4" : 1300 NL/min		
Leak rate :	50 cm^3/min		
Coil :	General purpose class A, continuous duty, encapsulated		
Voltage range :	-15% to +10% of nominal voltage		
Protection :	NEMA 4		
Power :	~ Inrush : 14.8 VA	Holding : 10.9 VA	
	= 1 to 17.1 W		
Response times :	24 V=/8.5 W	Energize : 8 ms	De-energize : 10ms
	60Hz/6 W	Energize : 5-11 ms	De-energize : 9-16 ms

Spare parts : • Pilot valve : PME-XXYZZ. • Mounting screw pilot to main valve : 34364. • Blanking plate : M-08011.
• Shut-off valve : M-08010. • Mounting screw valve to bar (x2): 35249.

Options : • NPTF threads. • Isolation of inlet and/or exhaust. • Explosion-proof model.

DIMENSIONS



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

Section 2 Options

Codification table for voltages / Manual operator / Electrical connection / Wire length

VALVE CODE ➤ $-\underset{1}{XX}\ \underset{2}{Y}\ \underset{3}{ZZ}\ (-\underset{4}{VV})$

OPTIONS AVAILABLE FOR

- valves type 800 Series

OPTIONS

Back

1. VOLTAGE

- XX Y ZZ	VOLTAGE
11	120/60 - 110/50
12	240/60 - 220/50
13	100/60 - 100/50
15	200/60 - 200 V~/50 Hz
16	10/60
20	6/60
21	12/50 - 12/60
22	24/60 - 24/50
23	32/60 - 32/50
24	48/60 - 42/50
26	380/50, 440/50 -440/60, 480/60-CLSF
29	200/60
34	127/50 - 120/50
35	48/50
36	16/60
B1	24/50
50	24 VDC (6W)
51	24 VDC (4W)
54	12 VDC (4W)
55	12 VDC (6W)
57	12 VDC (2.5W)
59	24 VDC (2.5W)
60	12 VDC (8.5W)
61	24 VDC (8.5W)
64	6 VDC (6W)
65	32 VDC (7W)
66	48 VDC (5.8W)
67	64 VDC (7.5W)
68	120 VDC (6.4W)
75	90 VDC (8.8W)
76	100 VDC (6.9W)
*84	125 VDC (10.9W)
*87	24 VDC (17.1W)
*88	12 VDC (17.4W)
*89	36 VDC (18.8W)
90	28 VDC (8.2W)
*91	6 VDC (10.6W)
92	190 VDC (6.5W)
94	3 VDC (7W)
95	38 VDC (6.4W)
A1	24 VDC (1.0W)
A2	12 VDC (1.0W)
A3	9 VDC (1.0W)

MOD. DD01 : Protection diode (DC)
MOD. MOV1 : Protection varistor (AC)

MOD. DD01 : max. 8,5 W
MOD. MOV1 : max. 8,5 W

* Voltages are CLSF only

2. MANUAL OPERATOR

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

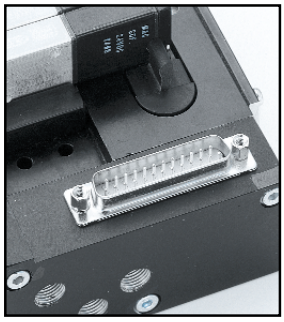
3. ELECTRICAL CONNECTION

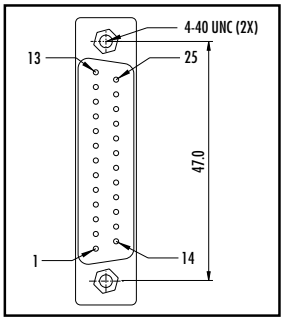
- XX Y ZZ	ELECTRICAL CONNECTION
AA	Wiring box with 1/2" NPS conduit
BA	Flying leads
CA	1/2" NPS conduit
CC	1/2" NPT conduit
FA	Military type 2 PIN
GA	Military type 3 PIN
HA	AA with ground wire
JA	Square connector
JB	Rectangular connector
JC	Square connector with light
JD	Rectangular connector with light
JJ	Square connector, male only
JM	Rectangular connector, male only
NA	CA with ground wire
NC	CC with ground wire
RA	3/8" NPS conduit
CD	20 mm conduit

4. WIRE LENGTH

- XX Y ZZ (-VV)	WIRE LENGTH
AA	45 cm
AB	60 cm
AD	90 cm
AE	120 cm
AF	180 cm
AG	15 cm
AR	30 cm
AU	305 cm
BA	150 cm
BB	366 cm

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

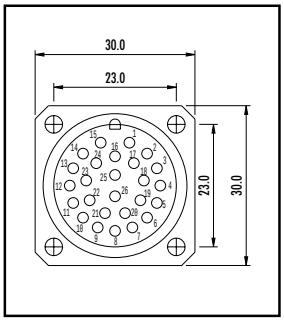




TECHNICAL DATA

- 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 ≥ 10^{10} Ω
- 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

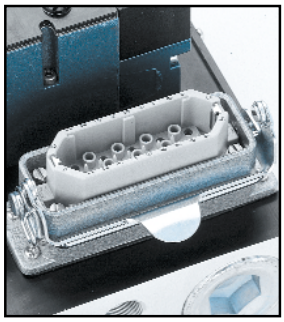
Connector RND (option ZZZY = RNDY ; Y = cable length)

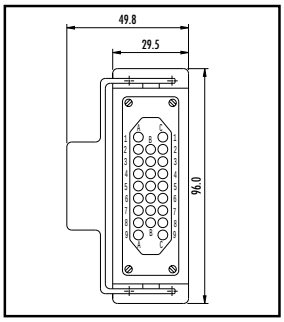


TECHNICAL DATA

- 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 ≥ 10^{8} Ω
- 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)

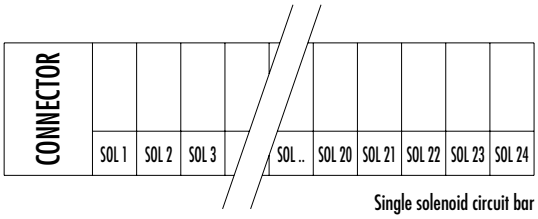




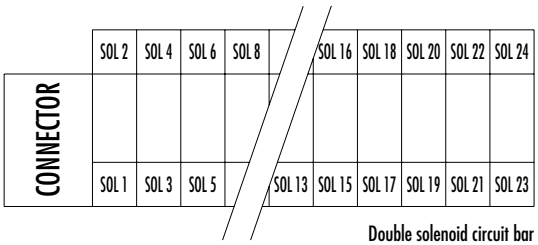
TECHNICAL DATA

- 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 ≥ 10^{10} Ω
- 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



Single solenoid circuit bar

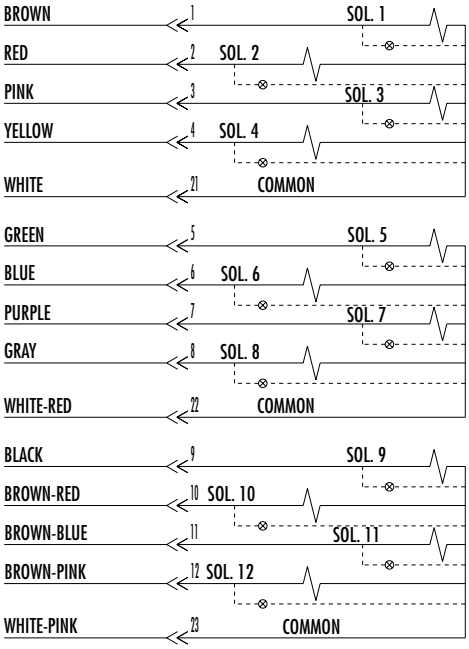


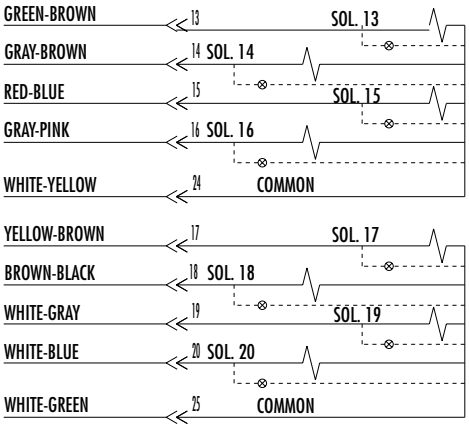
Double solenoid circuit bar

Connector SUB_D25 (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

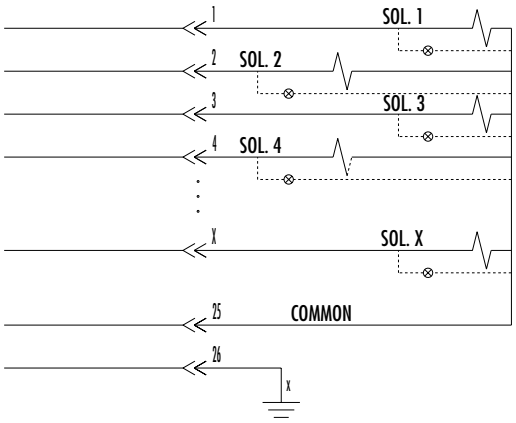




Connector RND [option ZZZY = SNDY ; Y = cable length]

TECHNICAL DATA PREWIRED CABLE

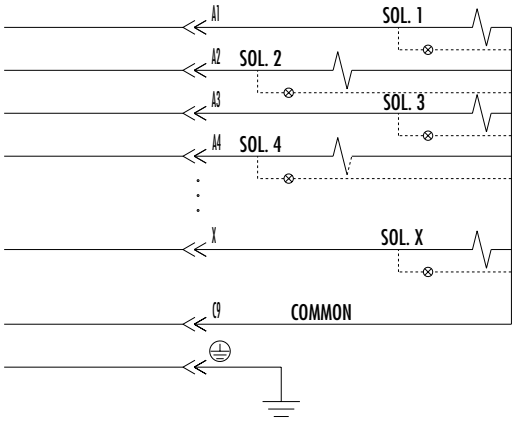
- Type : LIY(C)Y -0.50 mm²
- Dia. ca. 10.8 mm (12 core); 12.9 mm (18 core); 16.0 mm (32 core)
- Insulation resistance : 20 MΩ for 1000 meter
- Temp. range -5° to +80°C
- Rated voltage : 500 V~
- PVC core insulation and sheath
- Tinned copper wire braid



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.