

MACconnect™



92 Series

92 Series MAConnect™ with Sub D



- MAXIMUM OF 20 SOLENOIDS CAN BE POWERED BY A SINGLE MULTI-PIN CONNECTOR.
- UP TO 40 SOLENOIDS CAN BE POWERED BY MEANS OF A SECOND MULTI-PIN CONNECTOR STATION.
- LEFT OR RIGHT END CONNECTOR ADAPTERS AVAILABLE.
- MAXIMUM ALLOWABLE COIL AMPERAGE IS 250 MILLIAMPS.
- STANDARD AC AND DC VOLTAGE OPTIONS AVAILABLE UP TO 240 VOLTS.
- CURRENT CONNECTION TYPES AVAILABLE ARE: 9, 15, AND 25 PIN SUB-D CONNECTORS.
10, 16, 20, AND 26 PIN RIBBON TYPE CONNECTORS.
24 PIN AMP CPC CONNECTOR.
- WASH-DOWN SUB-D CONNECTORS AVAILABLE (9, 15 AND 25 PIN) - DESIGNED TO MEET NEMA4 AND IP65 RATINGS.
- GROUNDING OF THE STATIONS AND ADAPTER IS STANDARD FOR 30 VOLT COILS AND ABOVE, OPTIONAL FOR 30 VOLTS AND LOWER.
- DIELECTRIC STRENGTH TO GROUND IN EXCESS OF 2000 VOLTS.

92 Series MAConnect™ with SM32



- Maximum of 16 solenoids possible (24VDC with a maximum of 6.0 watts per solenoid).
- Maximum of 4 inputs available with PNP or NPN capability.
- 16 inputs available with a tethered input module.
- All outputs are protected by self resetting fuses. This protects the electronics in the event of a short and enables the node to remain active.
- Left or right end SM32 adapters available.
- Flexability to support remotely located stacks.
- Designed to meet NEMA 4 and IP65 ratings - washdown (except Allen Bradley Remote I/O).
- Multiple protocols available (DeviceNet, Allen Bradley Remote I/O, Profibus)

92 Series MAConnect™ with SM16



- Maximum of 16 solenoids possible (24VDC with a maximum of 6.0 watts per solenoid).
- Left or right end SM16 adapters available.
- Flexibility to support remotely located stacks.
- Designed to meet NEMA 4 and IP65 ratings - washdown.
- Available with common through ports (i.e. inlet, exhaust and ext. pilot ports).
- DeviceNet compatible.

92 Series MACConnect™ with Tethered Inputs



- 16 inputs.
- Field convertible for either positive or negative logic.
- Inputs are divided into four groups of four. Each group is field convertible for either PNP or NPN.
- Washdown model available - designed to meet NEMA 4 and IP65 ratings.

92 Series MAConnect™ Remote Manifolds



- Easy hookup.
- Remote stacks are compatible with Sub D and ribbon style connectors, SM32 and SM16 serial modules.
- Primary and remote stacks can operate 20 solenoids in any configuration with Sub D connectors.
- Primary and remote stacks can operate 16 solenoids in any configuration with SM32 or SM16 serial modules.

Specifications

92 Series Valve

Fluids:

Compressed Air or Inert Gases

Lubrication:

Not required. If used, select a medium aniline point lubricant (between 180°F and 210°F)

Safe Operating Temperature Range:

0°F to 120°F (-18°C to 50° C)

Pressure Range:

20 to 120 PSI (Internal Pilot)

Vacuum to 120 PSI (External Pilot)

35 to 120 PSI (3 Position, Internal/External Pilot)

Electrical:

AC 120/60 Inrush current 7.6 Volt-amps (.063 amps)
Holding Current 4.8 Volt-amps (.04 amps)

Maximum Coil Amperage - 250mA

Maximum Voltage - 240VAC

Dielectric Strength in Excess of 2000 Volts.

Recommended Mating Sub D Cable Specifications

3 Amp Current Rating per Conductor

300 Volt RMS, 105°C Insulation

Amp CPC Connector Specifications

Receptacle: (Mounted in MAConnect™ adapter block)

- Series 1 Amp CPC Connector
- Shell size 23
- 24 Male pins (1.57mm diameter)
- Five key configuration

Recommended Plug”

- Amp part number 206837-1
- 5 key configuration
- Recommended receptacle contacts are size 16 type III+ (Accepts pin dia. 1.57mm)

Additional information can be obtained from Amp Catalog 82021

Specifications

SM16 Manifold

Outputs:

Number: 16 Channels / Solenoids on manifold
Voltage Current: 24 VDC at .225 per channel (6.0 Watts max.)

Inputs: Not available at this time

Protocols:

DeviceNet

Current Consumption:

Outputs - 4 A Max.
Electronics - 200mA

Voltage Ranges:

Operating with single supply: 24VDC
Operating separate supply for valves : 24VDC

Safe Operating Temperature Range:

0-50° C (32-120°F)
10-90% RH (Non-condensing)

Operating Atmosphere:

No corrosive gases

Enclosure:

Designed to meet NEMA 4 and IP65

Specifications

SM32 Manifold

Outputs:

Number: 16 Channels / Solenoids on manifold
Voltage Current: 24 VDC at .225 per channel (6.0 Watts max.)

Inputs:

Number: 4
Type: 24 VDC NPN or PNP Logic

Protocols:

DeviceNet
Allen Bradley Remote I/O*

Current Consumption:

Outputs - 4 A Max.
Electronics and Inputs - 75mA

Voltage Ranges:

Operating with single supply: 24VDC
Operating separate supply for valves : 24VDC

Safe Operating Temperature Range:

0-50° C (32-120°F)
10-90% RH (Non-condensing)

Enclosure:

Designed to meet NEMA 4 and IP65

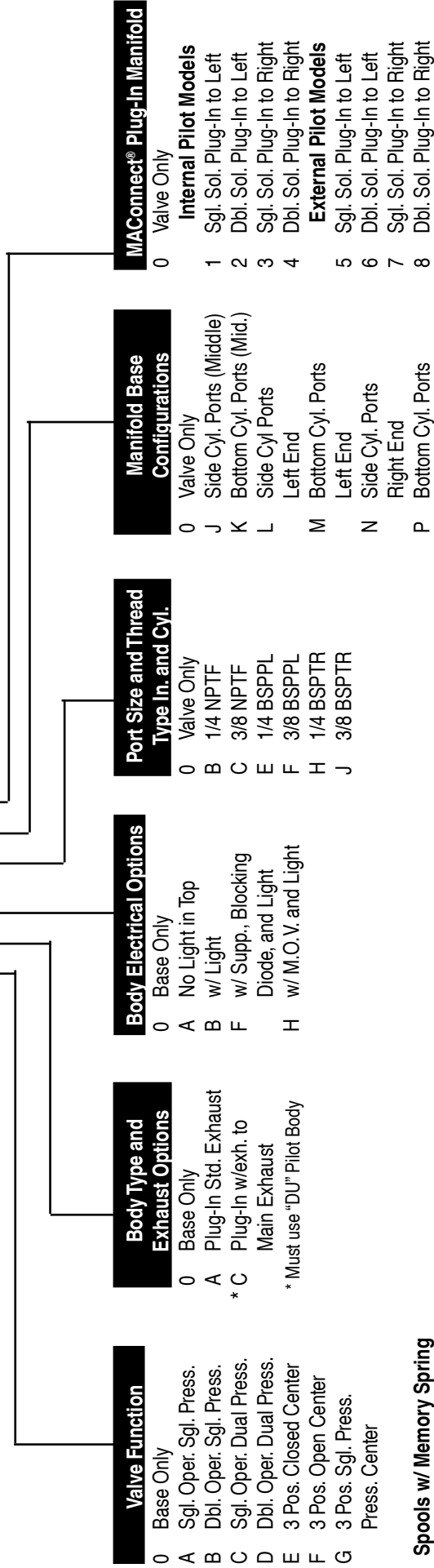
*This product incorporates technology which is licensed by Allen-Bradley Company, Inc. Allen-Bradley has not technically approved, nor does it warrant or support this product. All warranty and support for this product and its application is provided solely by MAC Valves, Inc.

How to Order

92 Series MACConnect™

92 B - X X X - X X X - XX - D XX P - X XX

Pilot Valve Options (see below)



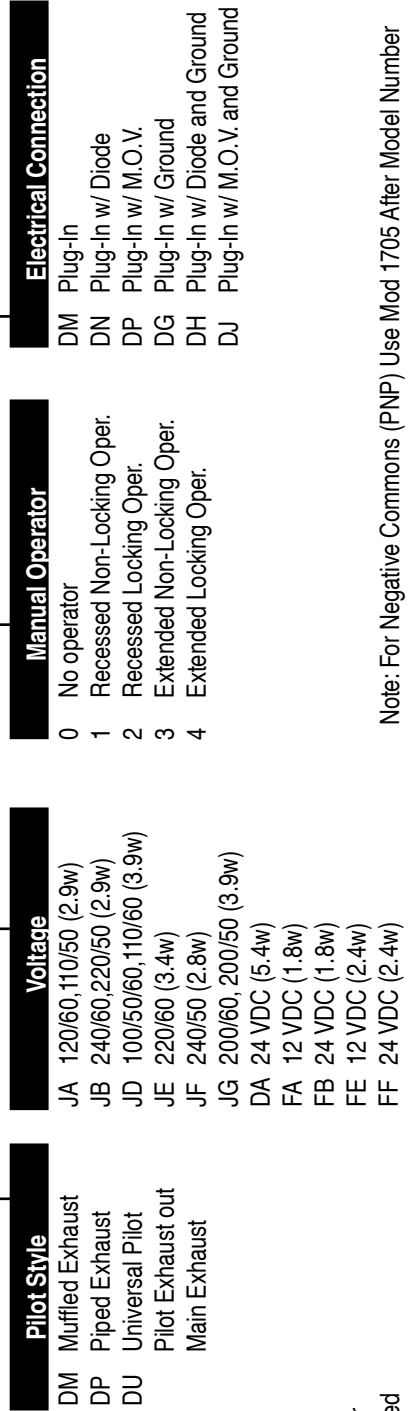
Spools w/ Memory Spring

- L Sgl. Oper. Sgl. Press.
- N Sgl. Oper. Dual Press.

Pilot Valve Options

XX - D XX P - X XX

Note: Left and Right Determined by facing the "A" Solenoid



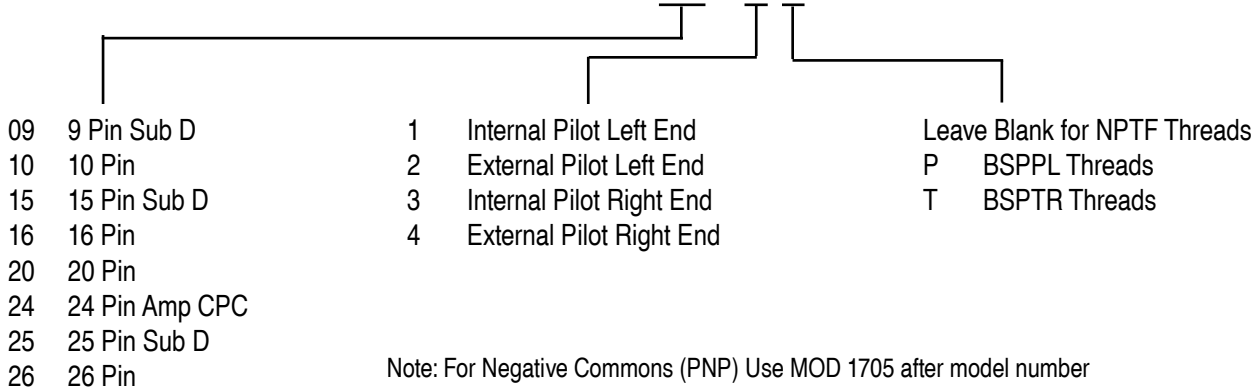
Note: For Solenoids 30 volts or above, a ground wire is required

Note: For Negative Commons (PNP) Use Mod 1705 After Model Number

How to Order Adapters / Input Module

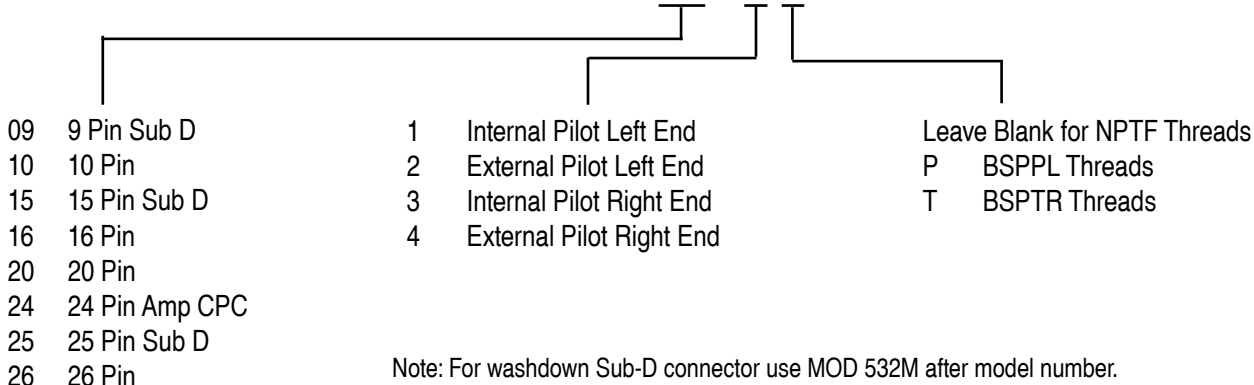
MACConnect™ Adapter Assembly (Positive Commons - NPN)

M-92010 - XX - X X



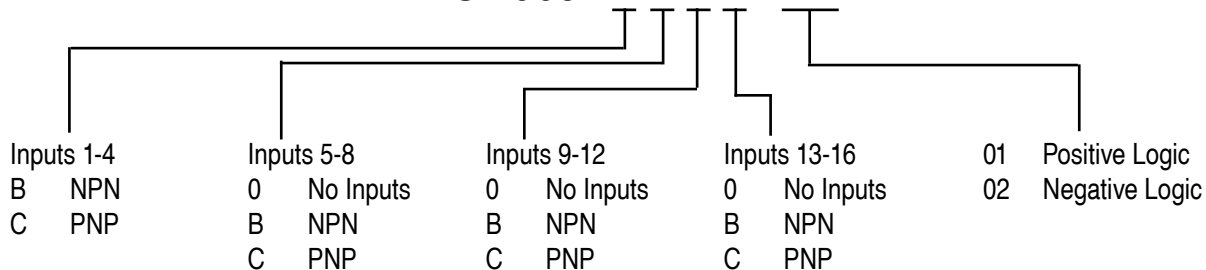
MACConnect™ Adapter Assembly (Required For Connecting To A Remote Stack)

M-92011 - XX - X X

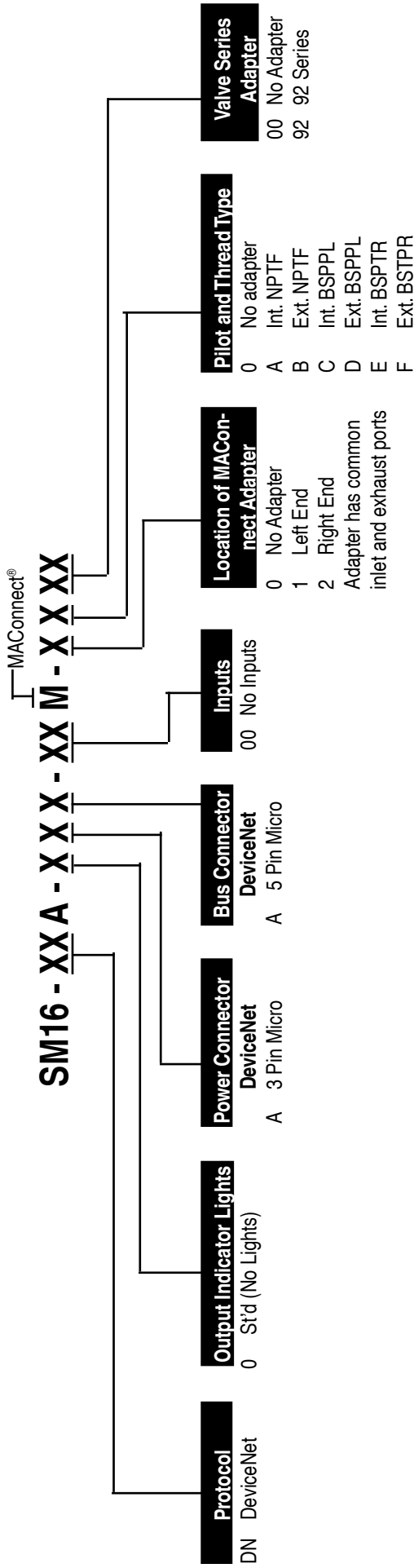


Remote Tethered Input Module (For use with SM32 only)

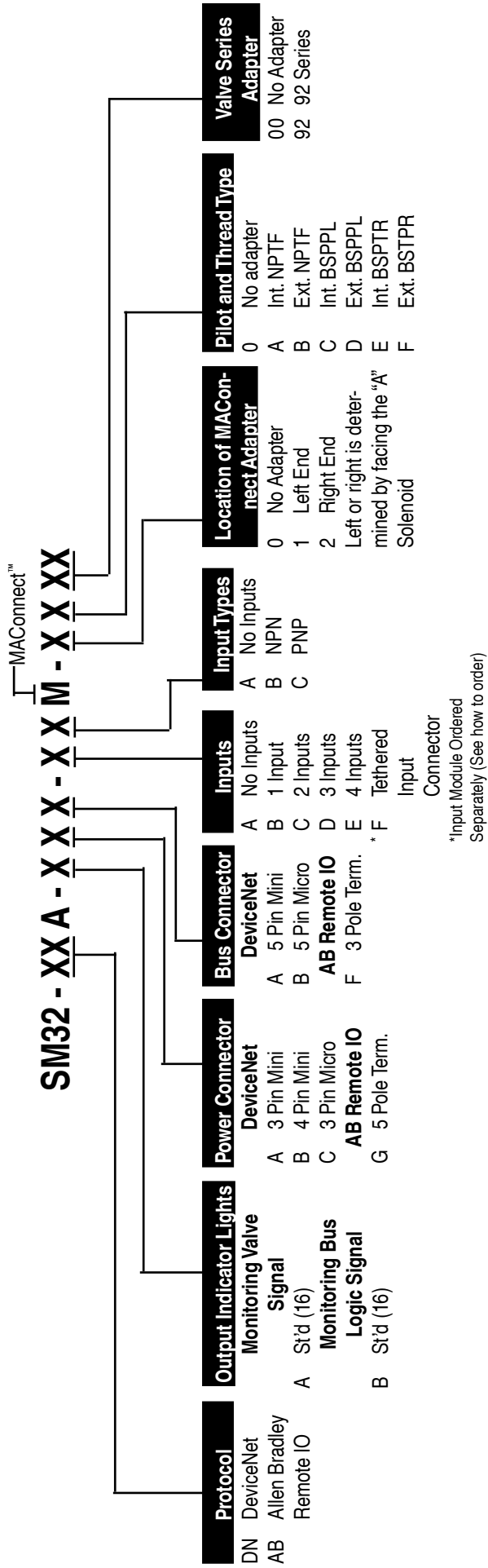
N-SM005 - X X X X - XX



How to Order SM16 for MACConnect™ Serial Manifold



How to Order SM32 for MACConnect™ Serial Manifold



*Input Module Ordered Separately (See how to order)

Examples for Ordering MAConnect™ Assemblies

Valve Descriptions are Configured Left to Right



<u>Qty</u>	<u>Description</u>
1	92B-BAB-BL4-DM-DDAP-1DM
2	92B-BAB-BJ4-DM-DDAP-1DM
2	92B-AAB-BJ3-DM-DDAP-1DM
1	M-92010-25-3



<u>Qty</u>	<u>Description</u>
1	92B-BAB-BL4-DM-DDAP-1DM
2	92B-BAB-BJ4-DM-DDAP-1DM
2	92B-AAB-BJ3-DM-DDAP-1DM
1	SM16-DNA-0AA-00M-2A92

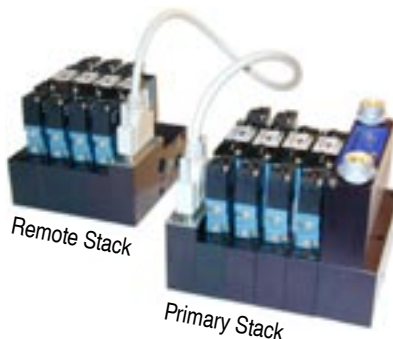


<u>Qty</u>	<u>Description</u>
1	92B-BAB-BL4-DM-DDAP-1DM
2	92B-BAB-BJ4-DM-DDAP-1DM
2	92B-AAB-BJ3-DM-DDAP-1DM
1	SM32-DNA-BAB-AAM-2A92



<u>Qty</u>	<u>Description</u>
1	92B-BAB-BL4-DM-DDAP-1DM
2	92B-BAB-BJ4-DM-DDAP-1DM
2	92B-AAB-BJ3-DM-DDAP-1DM
1	SM32-DNA-BAB-FAM-2A92

Input Module
 N-SM005-BBCC-01
 Inputs 1-8 (NPN)
 Inputs 9-16 (PNP)
 Positive Logic



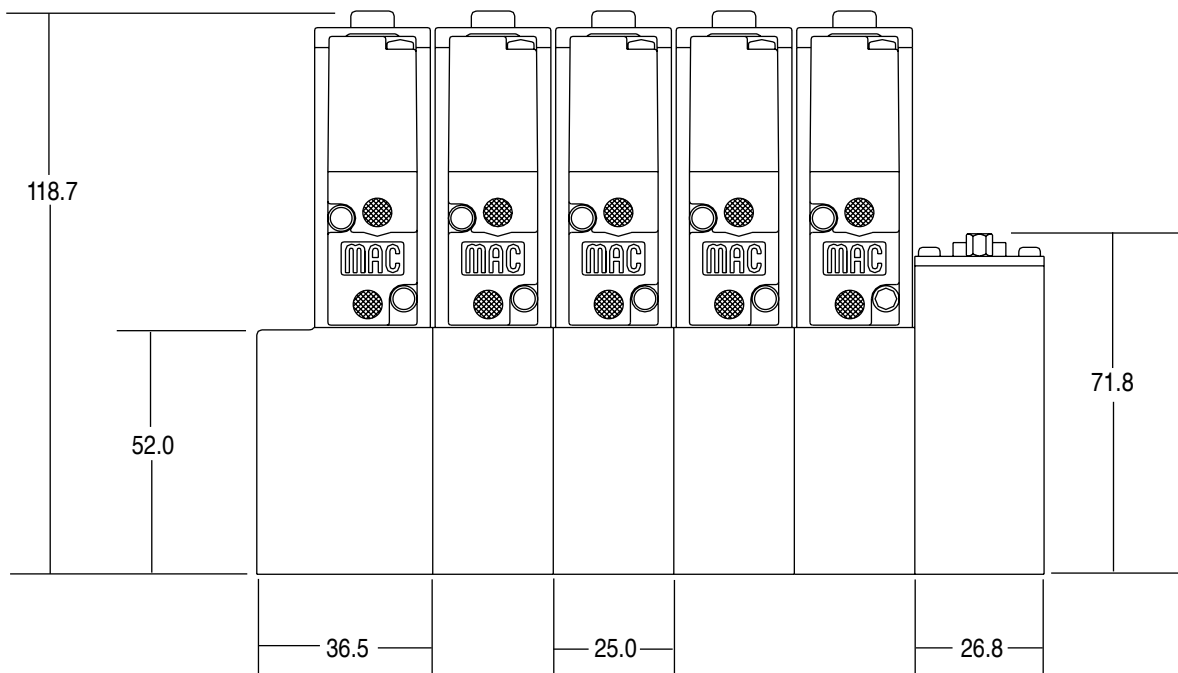
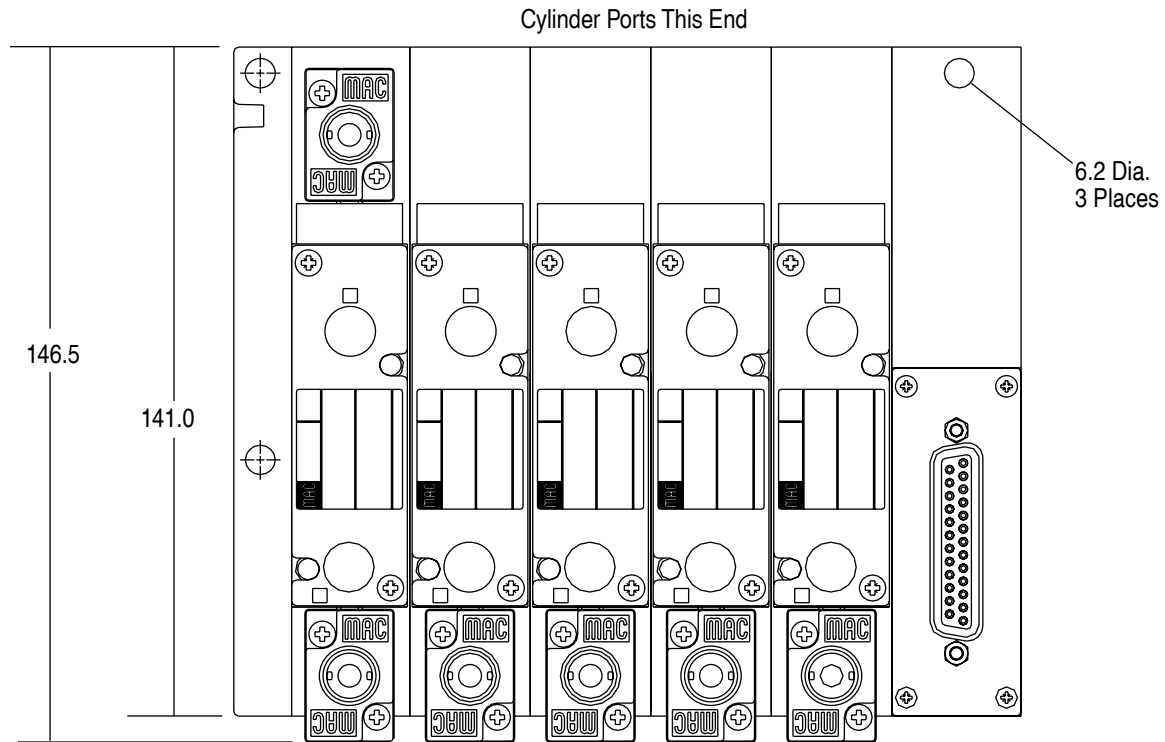
Primary Stack

<u>Qty</u>	<u>Description</u>
1	M-92011-25-1
2	92B-BAB-BJ4-DM-DDAP-1DM
2	92B-AAB-BJ3-DM-DDAP-1DM
1	SM32-DNA-BAB-AAM-2A92

Remote Stack

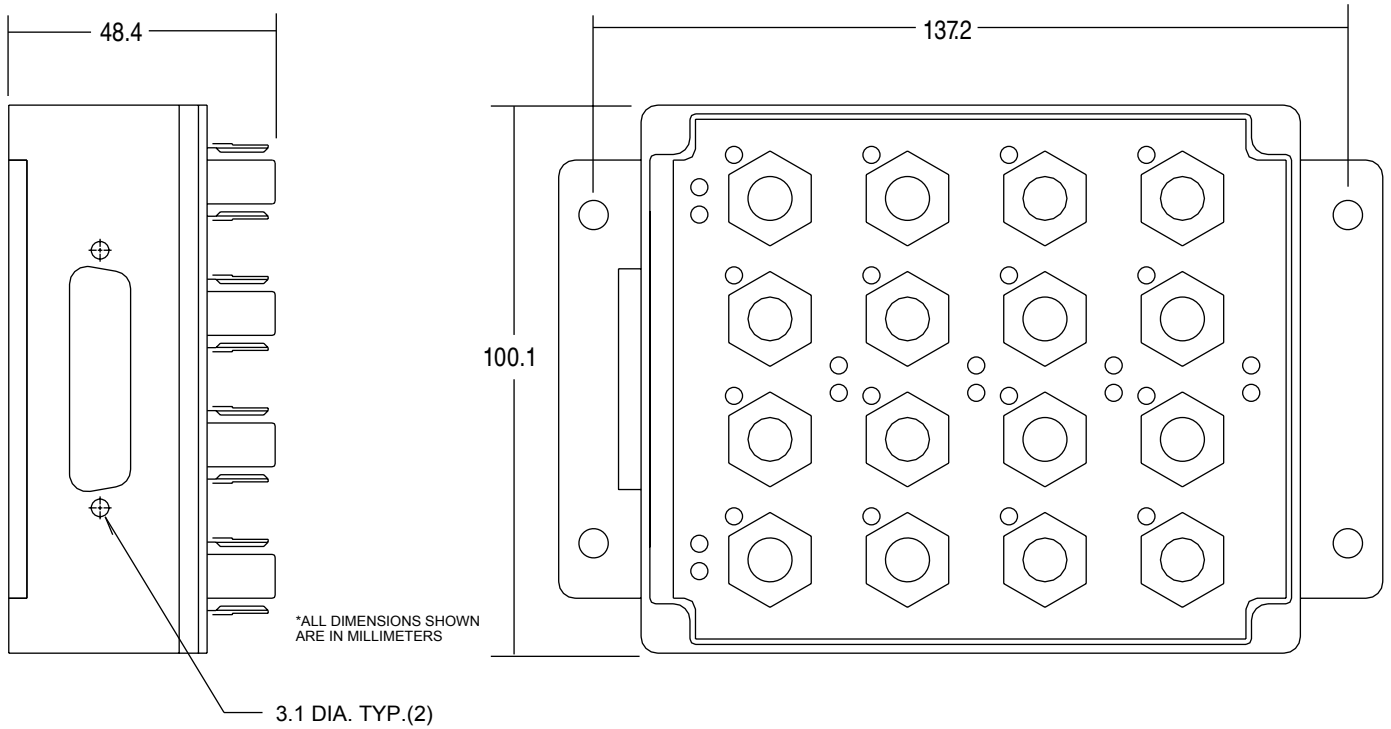
<u>Qty</u>	<u>Description</u>
1	92B-BAB-BL4-DM-DDAP-1DM
2	92B-BAB-BJ4-DM-DDAP-1DM
1	92B-AAB-BJ3-DM-DDAP-1DM
1	M-92010-25-3

92 Series MACconnect™ With Multi-Pin Connector On Right End



Note: All Dimensions Shown Are In Millimeters

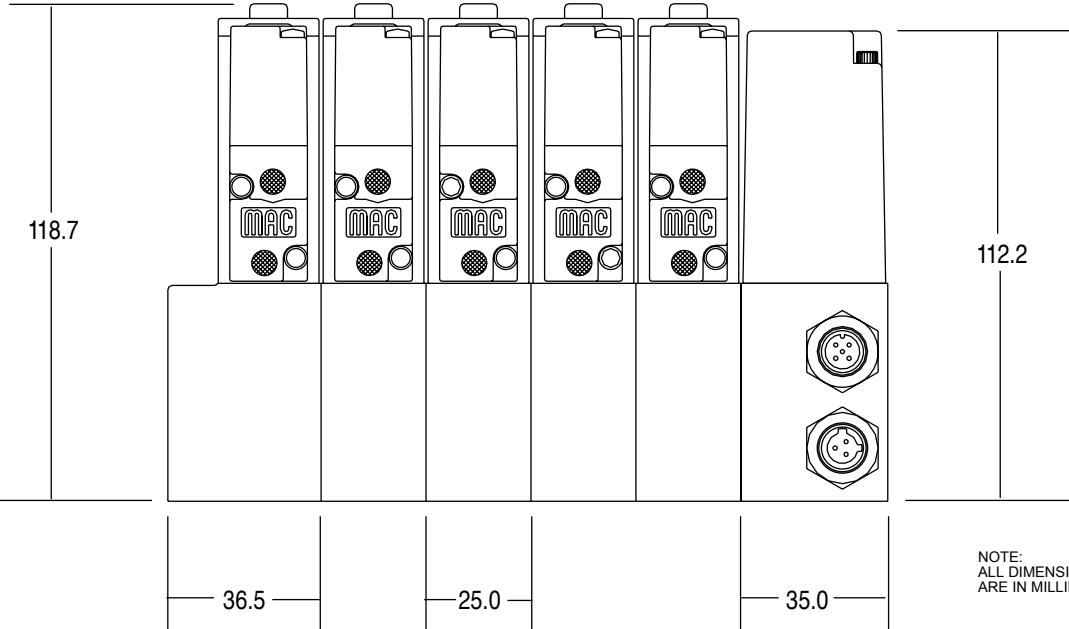
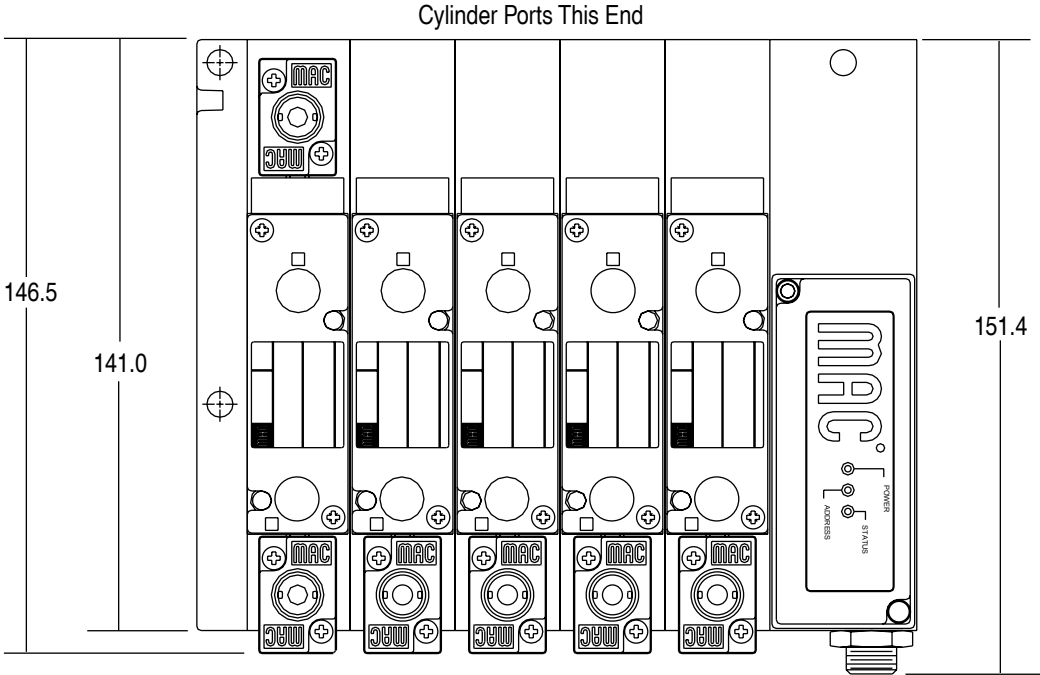
SM32 Tethered Input Module



SPECIFICATIONS

NUMBER OF INPUTS:	4,8,12,16
CONFIGURATION:	EACH BANK OF FOUR INPUTS CONFIGURABLE FOR NPN OR PNP INPUT TYPES COMPLETE UNIT CONFIGURABLE FOR POSITIVE OR NEGATIVE LOGIC
ELECTRICAL:	24 VDC TYPE INPUTS ACCEPTED
PROTECTION:	DESIGNED TO MEET NEMA 4 AND IP 65
WEIGHT:	APPROXIMATELY 500 GRAMS
ENVIRONMENT:	0-50 C 10-90% RH (NON-CONDENSING)
CONNECTOR:	25 PIN SUB-D TETHER BETWEEN SM32 ADAPTER BLOCK AND INPUT MODULE 4 PIN SINGLE KEY MICRO STYLE FOR INPUTS, ONE CHANNEL PER CONNECTOR

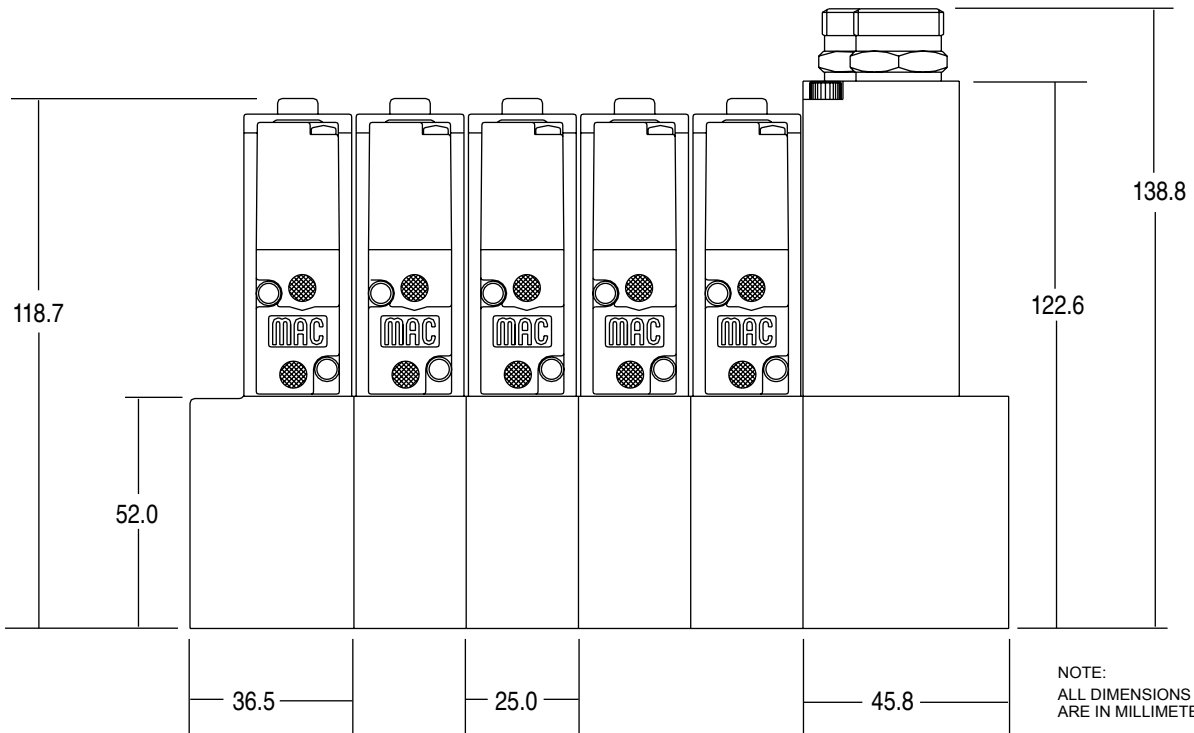
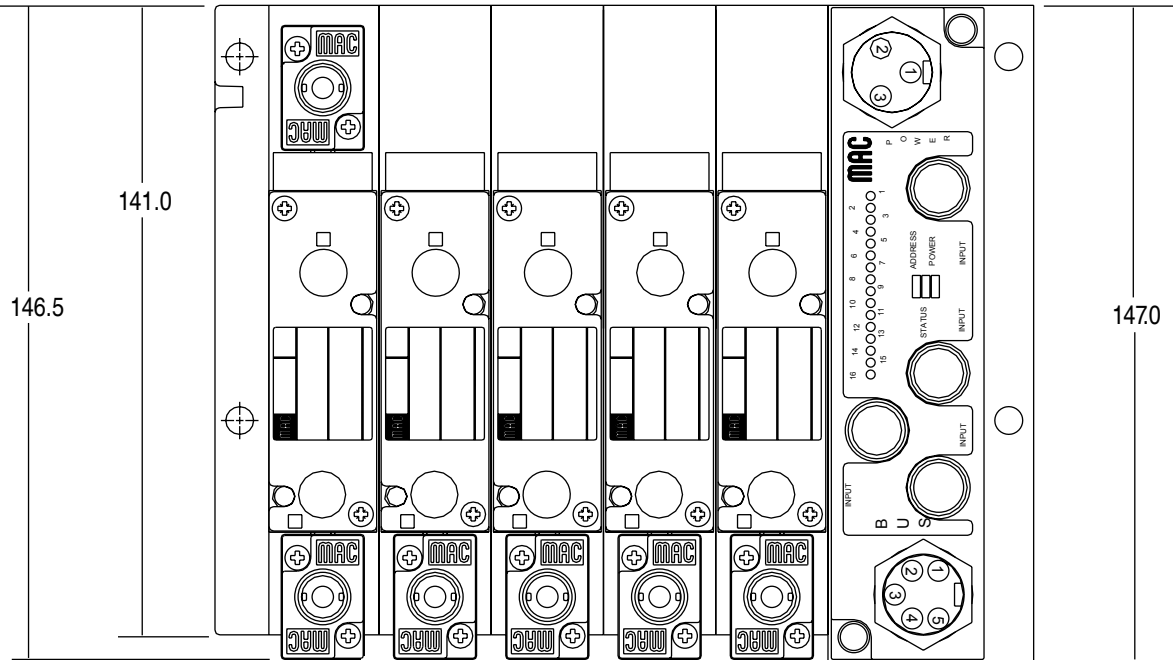
92 Series MAConnect™ With SM16 On Right End



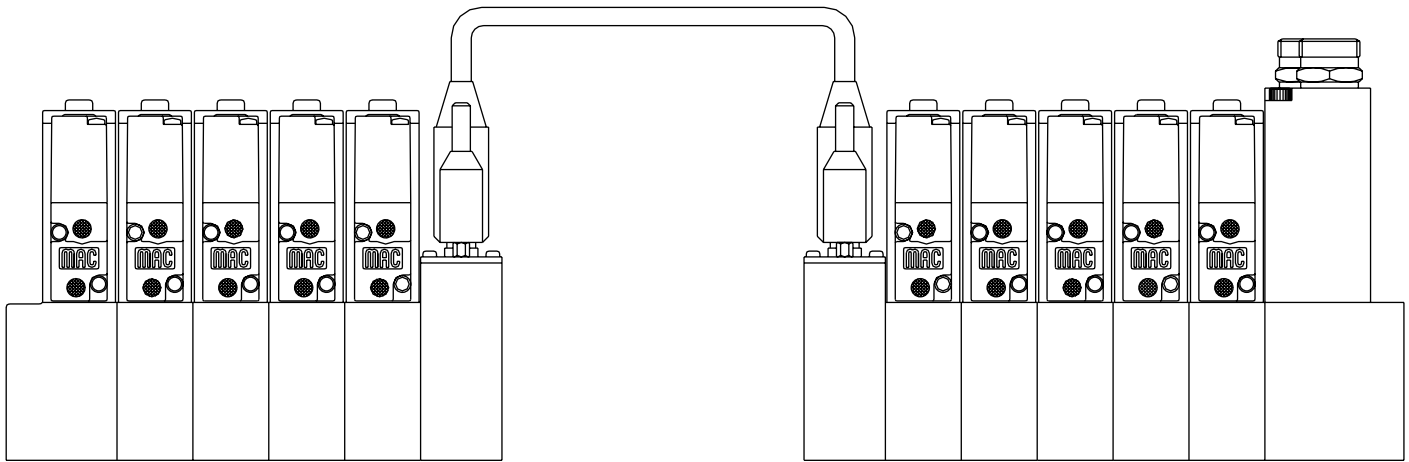
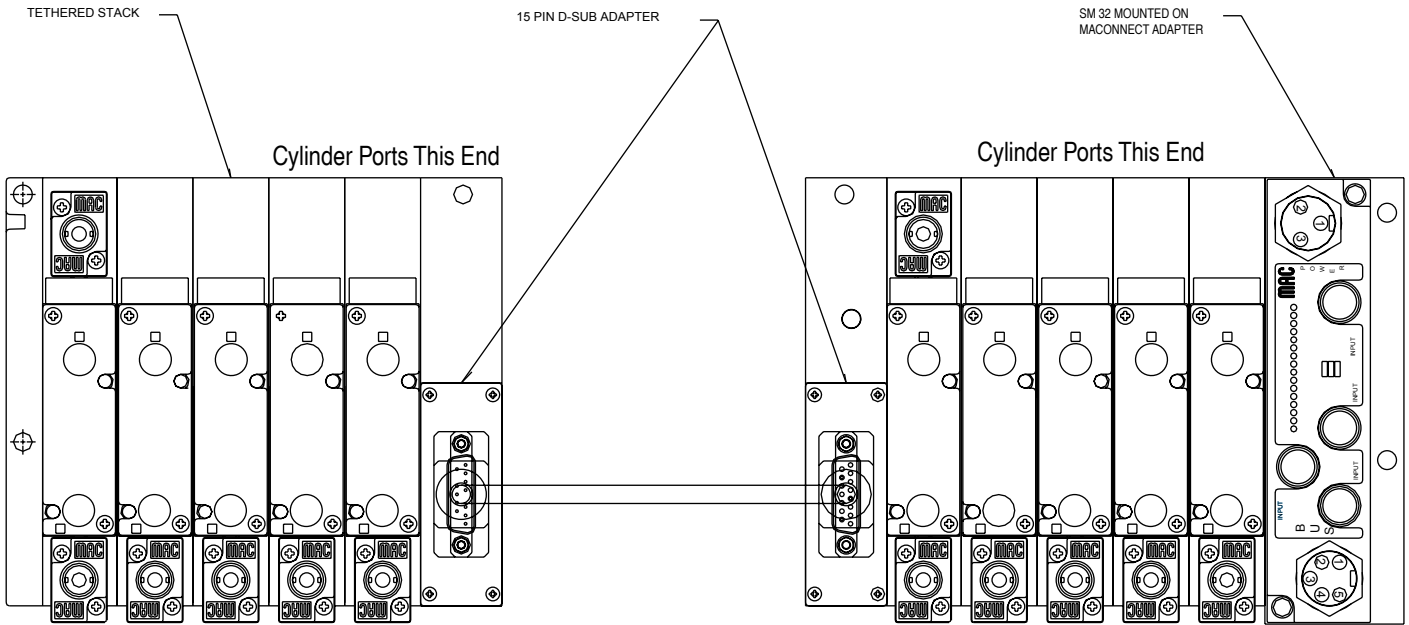
NOTE:
ALL DIMENSIONS SHOWN
ARE IN MILLIMETERS

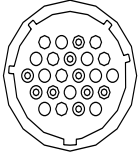
92 Series MAConnect™ With SM32 On Right End

Cylinder Ports This End



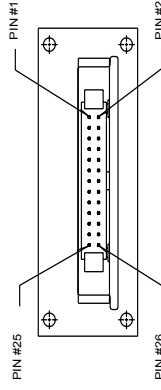
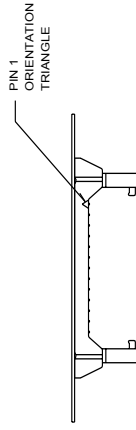
92 Series MAConnect™ Tethered To A 92 Series MAConnect™ Stack





PIN #	Solenoid #
1	1
2	2
~	~
20	+ COMMON
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON

24 PIN AMP CPC

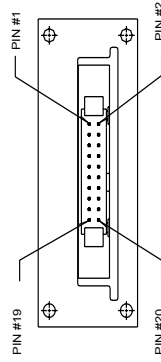
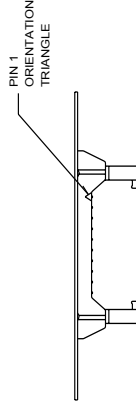


PIN #	Solenoid #
1	1
2	2
~	~
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON
25	+ COMMON
26	+ COMMON

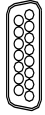


PIN #	Solenoid #
1	1
2	2
~	~
8	+ COMMON
9	+ COMMON

9 PIN SUB-D

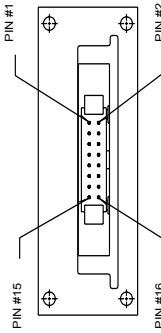
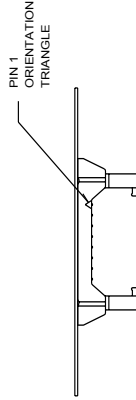


PIN #	Solenoid #
1	1
2	2
~	~
16	+ COMMON
17	+ COMMON
18	+ COMMON
19	+ COMMON
20	+ COMMON

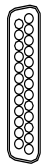


PIN #	Solenoid #
1	1
2	2
~	~
13	+ COMMON
14	+ COMMON
15	+ COMMON

15 PIN SUB-D

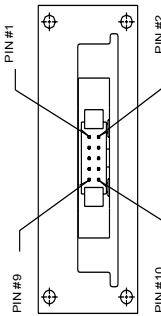
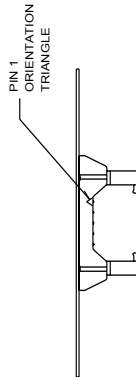


PIN #	Solenoid #
1	1
2	2
~	~
13	+ COMMON
14	+ COMMON
15	+ COMMON
16	+ COMMON



PIN #	Solenoid #
1	1
2	2
~	~
20	+ COMMON
21	+ COMMON
22	+ COMMON
23	+ COMMON
24	+ COMMON
25	+ COMMON

25 PIN SUB-D



PIN #	Solenoid #
1	1
2	2
~	~
8	+ COMMON
9	+ COMMON
10	+ COMMON



**MAC Valves, Inc.
Wixom, Michigan, U.S.A.**



**MAC Valves Europe
Liege, Belgium**



**MAC Valves Pacific
Auckland, New Zealand**



**MAC Valves, Inc.
Dundee, Michigan, U.S.A.**

Installation and Service Precautions:

- A. Do not install or service MAC valves without first making sure both 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 and 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 the 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 and 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 and operation sheet, or factory for recommended lubricants.