

MAC[®]

VALVES



SERIAL INTERFACE
BUS COMPATIBLE SYSTEMS



SM 32

SM32 SHOWN WITH 92 SERIES



REMOTE STACK

INPUT/OUTPUT MODULES

TETHERED INPUT/OUTPUT MODULES



BENEFITS

1. Ability to interface with the MAConnect™ system
2. Ease of installation
3. Reduction in wiring costs
4. Washdown capability

INPUTS

4 on Serial Module
Up to 16 on Tethered Module
Up to 16 (4 Per Add-A-Unit Module)

OUTPUTS

16 Solenoids Possible
Up to 16 Outputs on Tethered Module
4 Outputs On Add-A-Unit Module

PROTOCOLS

DeviceNet
Remote I/O
InterBus
Profibus
* AS-I

* AS-I has up to 8 input/8 output capability



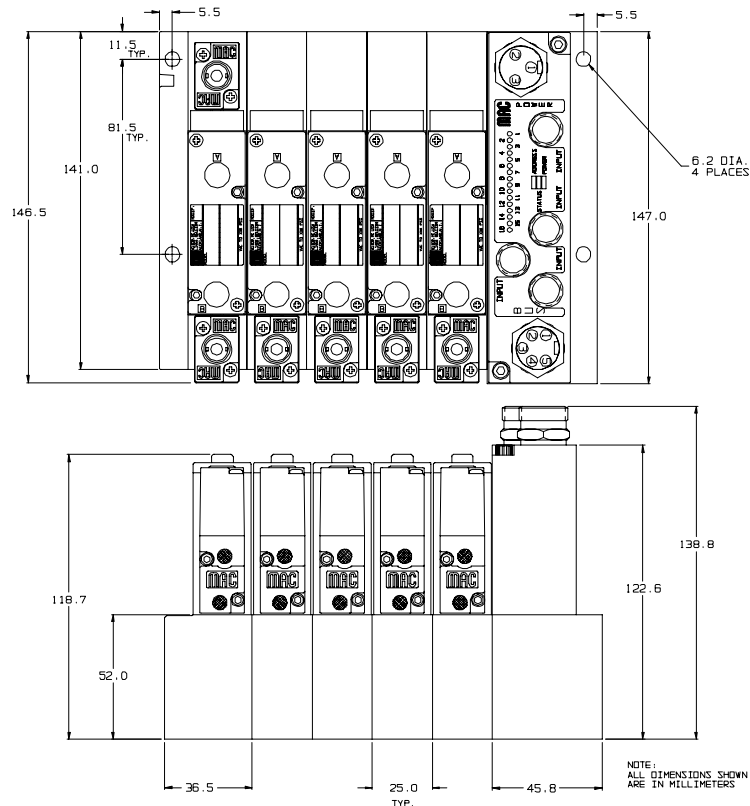
SM 32

TECHNICAL

D A T A

OUTPUTS:	NUMBER:	16 CHANNELS / SOLENOIDS ON MANIFOLD
	VOLTAGE / CURRENT:	24 VDC / .225A PER CHANNEL (5.4 WATTS MAX)
INPUTS:	NUMBER:	16
	TYPE:	24 VDC NPN OR PNP LOGIC
PROTOCOLS:		DEVICENET, ALLEN-BRADLEY REMOTE I/O, PROFIBUS DP, INTERBUS, AS-I
CURRENT CONSUMPTION:		OUTPUTS - 4 A MAX. ELECTRONICS AND INPUTS 75 mA
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY:	24 VDC \pm 10%
	OPERATING SEPARATE SUPPLY FOR VALVES:	24 VDC \pm 10%
OPERATING TEMPERATURE:		0 $^{\circ}$ -50 $^{\circ}$ C (32 $^{\circ}$ -120 $^{\circ}$ F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:		DESIGNED TO MEET NEMA4 WITH VALVES BUILT TO WASHDOWN MOD
WELDING VERSION:		ABILITY TO INTERFACE TO WATER SAVER VALVES ABILITY TO CONTROL A MAC PROPORTIONAL PRESSURE CONTROLLER (PPC)

DIMENSIONS





SM 128

SM128 SHOWN WITH 92 SERIES



BENEFITS

- 1. Ability to interface with the MACConnect™ system
- 2. Multiple SM128 receiver manifolds may be added in the field (up to 4 units)
- 3. Ease of installation
- 4. Reduction in wiring costs
- 5. Washdown capability

INPUTS PER SM128 RECEIVER	OUTPUTS PER SM128 RECEIVER	PROTOCOLS
Up to 16 on Tethered Module Up to 16 (4 Per Add-A-Unit Module)	16 Solenoids Possible Up to 16 Outputs on Tethered Module 4 Outputs On Add-A-Unit Module	DeviceNet Ethernet IP Profibus DP



SM 128

**G A T E W A Y
T E C H N I C A L
D A T A**

OUTPUTS:	NUMBER: 64 OUTPUTS POSSIBLE/16 OUTPUTS PER SM 128 RECEIVER
INPUTS:	NUMBER: 64 INPUTS POSSIBLE/16 INPUTS PER SM 128 RECEIVER
PROTOCOLS:	DEVICENET, ETHERNET IP, PROFIBUS DP
CURRENT CONSUMPTION:	SM128 GATEWAY POWER 300 mA MAX. PLUS 100 mA PER SM128 RECEIVER
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10%
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:	DEVICENET AND PROFIBUS DESIGNED TO MEET NEMA4 (CONSULT FACTORY FOR ETHERNET IP)

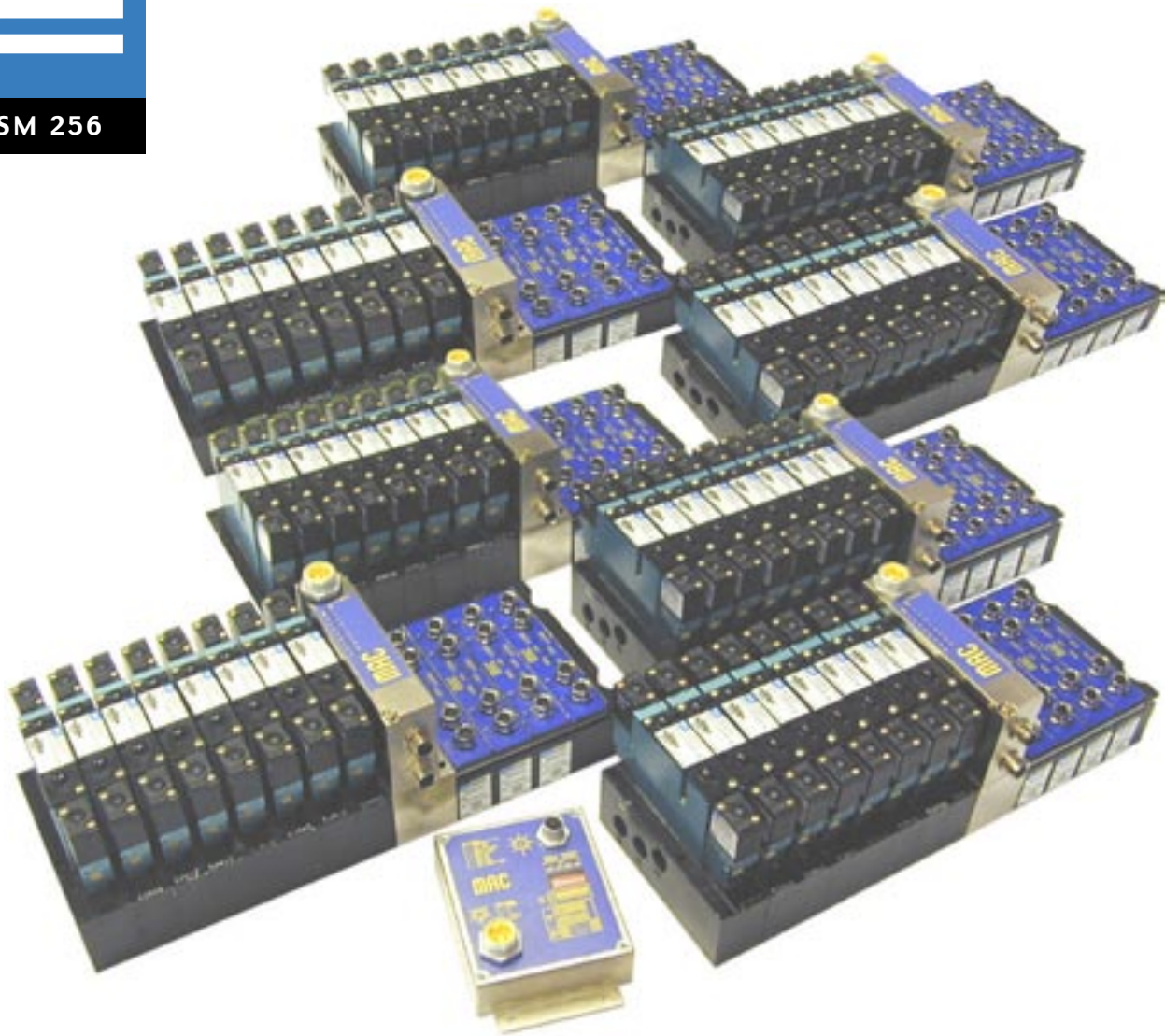
**R E C E I V E R
T E C H N I C A L
D A T A**

OUTPUTS:	NUMBER: 16 CHANNELS / SOLENOIDS ON MANIFOLD VOLTAGE / CURRENT: 24 VDC / .225A PER CHANNEL (5.4 WATTS MAX) 2 BYTES CONSUMED PER RECEIVER
INPUTS:	NUMBER: 16 TYPE: 24 VDC NPN OR PNP 2 BYTES PRODUCED
PROTOCOLS:	OPERATES WITH ANY SM128 GATEWAY
CURRENT CONSUMPTION:	OUTPUTS - 4 A MAX. ELECTRONICS AND INPUTS 400 mA (ALL INPUTS ACTIVE)
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10% OPERATING SEPARATE SUPPLY FOR VALVES: 24 VDC ±10%
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:	DESIGNED TO MEET NEMA4 WITH VALVES BUILT TO WASHDOWN MOD



SM 256

SM256 SHOWN WITH 92 SERIES



BENEFITS

1. Ability to interface with the MACConnect™ system
2. Multiple SM256 receiver manifolds may be added in the field (up to 8 units)
3. Ease of installation
4. Reduction in wiring costs
5. Washdown capability

INPUTS PER SM256 RECEIVER

Up to 16 on Tethered Module
Up to 16 (4 Per Add-A-Unit Module)

OUTPUTS PER SM256 RECEIVER

16 Solenoids Possible
Up to 16 Outputs on Tethered Module
4 Outputs On Add-A-Unit Module

PROTOCOLS

DeviceNet
Ethernet IP
Profibus DP



SM 256

**G A T E W A Y
T E C H N I C A L
D A T A**

OUTPUTS:	NUMBER: 128 OUTPUTS POSSIBLE/16 OUTPUTS PER SM 256 RECEIVER
INPUTS:	NUMBER: 128 INPUTS POSSIBLE/16 INPUTS PER SM 256 RECEIVER
PROTOCOLS:	DEVICENET, ETHERNET IP, PROFIBUS DP
CURRENT CONSUMPTION:	SM256 GATEWAY POWER 300 mA MAX. PLUS 100 mA PER SM256 RECEIVER
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10%
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:	DEVICENET AND PROFIBUS DESIGNED TO MEET NEMA4 (CONSULT FACTORY FOR ETHERNET IP)

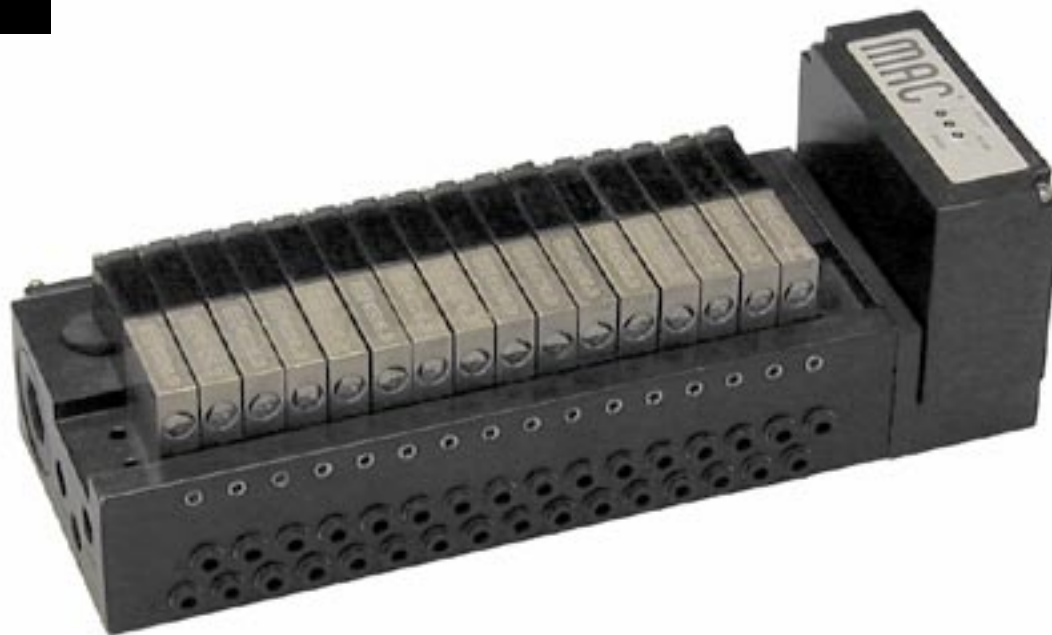
**R E C E I V E R
T E C H N I C A L
D A T A**

OUTPUTS:	NUMBER: 16 CHANNELS / SOLENOIDS ON MANIFOLD VOLTAGE / CURRENT: 24 VDC / .225A PER CHANNEL (5.4 WATTS MAX) 2 BYTES CONSUMED PER RECEIVER
INPUTS:	NUMBER: 16 TYPE: 24 VDC NPN OR PNP 2 BYTES PRODUCED
PROTOCOLS:	OPERATES WITH ANY SM256 GATEWAY
CURRENT CONSUMPTION:	OUTPUTS - 4 A MAX. ELECTRONICS AND INPUTS 400 mA (ALL INPUTS ACTIVE)
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10% OPERATING SEPARATE SUPPLY FOR VALVES: 24 VDC ±10%
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:	DESIGNED TO MEET NEMA4 WITH VALVES BUILT TO WASHDOWN MOD

MAC

SM 16

SM16 SHOWN WITH 44 SERIES



BENEFITS

1. Ability to interface with the MAConnect™ system
2. Ease of installation
3. Reduction in wiring costs
4. Washdown capability for approved valve series.
5. Small envelope size

INPUTS

None

OUTPUTS

16 Solenoids

PROTOCOLS

DeviceNet



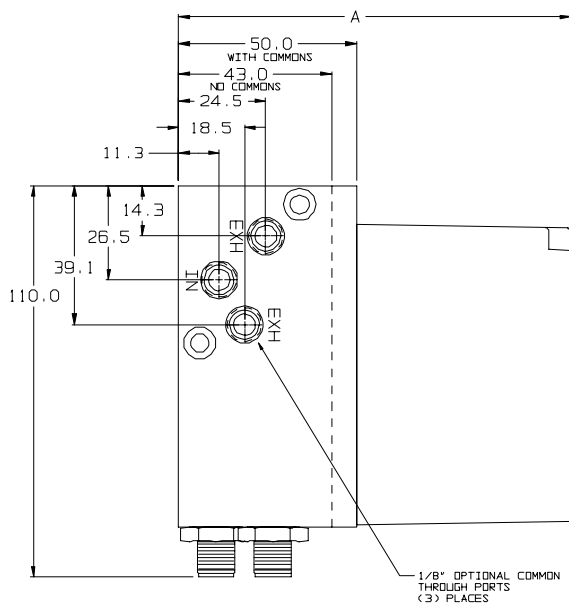
SM 16

TECHNICAL

D A T A

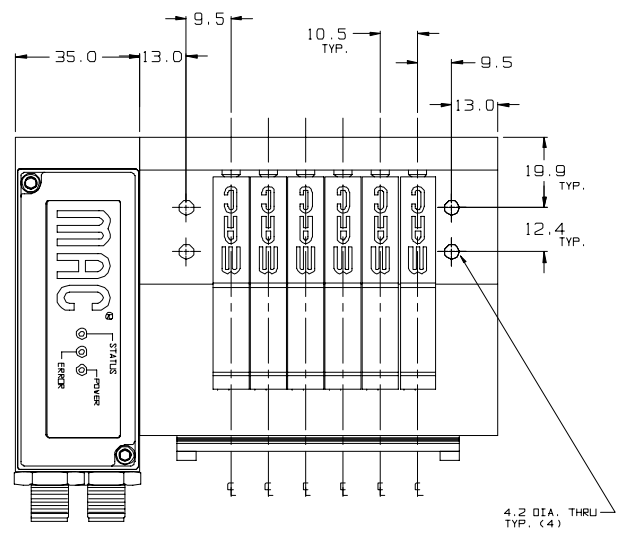
OUTPUTS:	NUMBER:	16 CHANNELS / SOLENOIDS ON MANIFOLD
	VOLTAGE / CURRENT:	24 VDC / .225A PER CHANNEL (5.4 WATTS MAX)
INPUTS:	NUMBER:	NONE
PROTOCOLS:		DEVICENET
CURRENT CONSUMPTION:		OUTPUTS - 4A MAX. ELECTRONICS 75 MA
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY:	24 VDC ±10%
	OPERATING WITH SEPARATE POWER SUPPLY FOR VALVES:	24VDC ±10%
OPERATING TEMPERATURE:		0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:		DESIGNED TO MEET NEMA 4 WITH VALVES BUILT TO WASHDOWN MOD

DIMENSIONS



TYPE OF BLOCK	DIM A
WITH COMMONS	110.2
WITHOUT COMMONS	103.2

NOTE:
ALL DIMENSIONS
SHOWN ARE IN
MILLIMETERS



SIM SHOWN WITH 92 SERIES



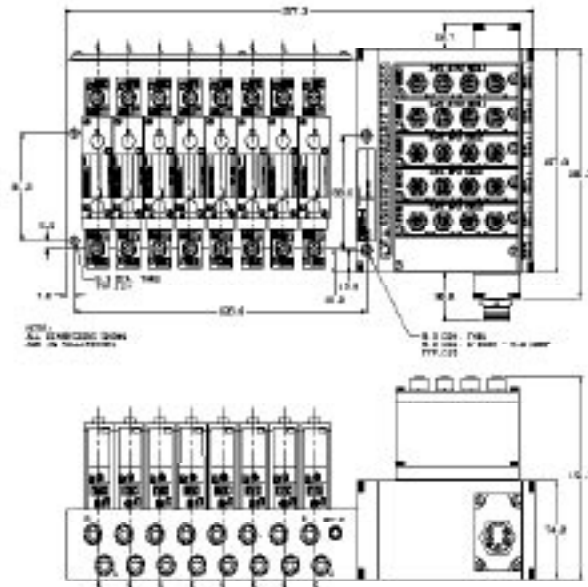
BENEFITS

1. Ability to easily add input/output modules in the field
2. Ease of installation
3. Reduction in wiring costs
4. Washdown capability

INPUTS	OUTPUTS	PROTOCOLS
Up to 32 Input Capacity (8 Inputs per Module)	24 Solenoids on Valve Stack 8 Additional Outputs Possible (4 Outputs per Module)	DeviceNet Remote I/O InterBus Profibus

OUTPUTS:	NUMBER: 24 CHANNELS / SOLENOIDS ON MANIFOLD 4 CHANNELS / SOLENOIDS PER OUTPUT MODULE (2 MODULES MAX.) TOTAL OUTPUTS: 32 CHANNELS / SOLENOIDS VOLTAGE / CURRENT: 24 VDC / .25A PER CHANNEL (6 WATTS MAX)
INPUTS:	NUMBER: 8 CHANNELS PER INPUT MODULE (4 MODULES MAX.) TOTAL INPUTS: 32 CHANNELS MODULES: POSITIVE COMMON NEGATIVE COMMON (BASED ON DIRECTION OF CURRENT) NOTE: MODULES TO BE INSTALLED AS INDICATED ON BASE UNIT
PROTOCOLS:	ALLEN-BRADLEY REMOTE I/O, DEVICENET, PROFIBUS DP, INTERBUS
CURRENT CONSUMPTION:	INTERNAL SERIAL INTERFACE - 300 mA MAX. OUTPUTS - 8A MAX. INPUTS - 3A MAX.
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10% OPERATING WITH INTERNAL SIM ON SEPARATE SUPPLY: 24 VDC ±10%
WEIGHT:	3.60 KG (7.94 LB.) WITH 6 MODULES AND VALVE ADAPTER
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)
ENCLOSURE:	DESIGNED TO MEET NEMA 4 WITH VALVES BUILT TO WASHDOWN MOD

DIMENSIONS



MAC

SLIM

SLIM SHOWN WITH 92 SERIES



BENEFITS

1. Ease of installation
2. Reduction in wiring costs
3. Washdown capability

INPUTS

None

OUTPUTS

Up to 32 Solenoids

PROTOCOLS

DeviceNet
Remote I/O
InterBus
Profibus



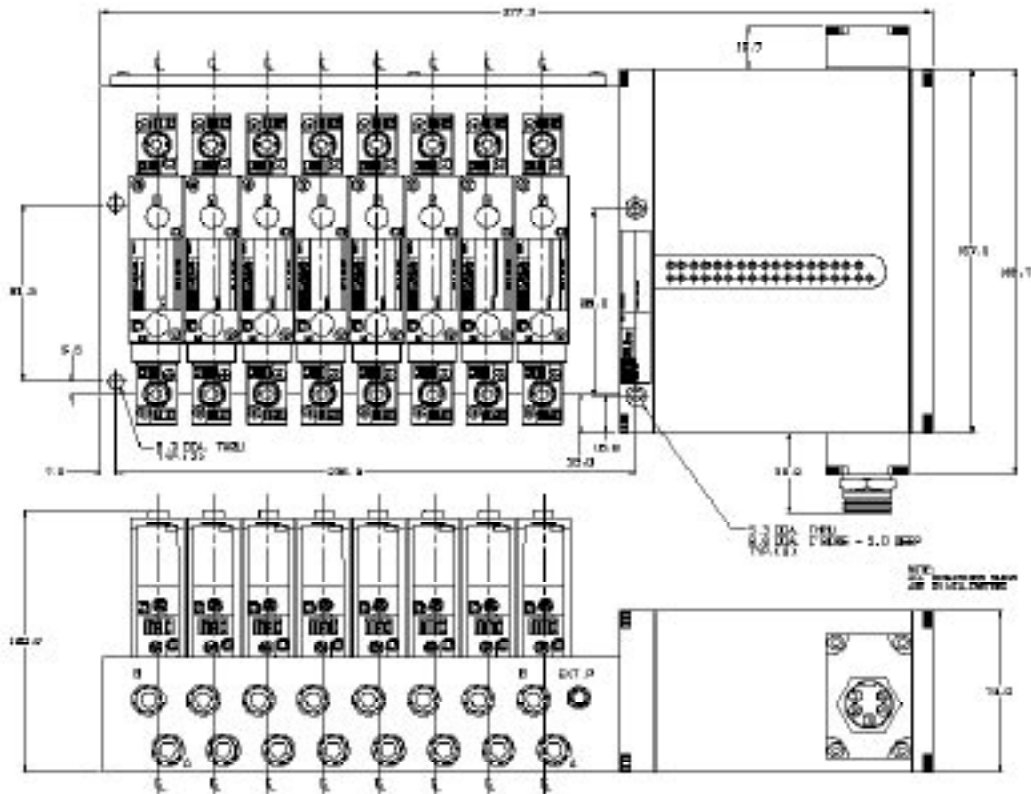
SLIM

TECHNICAL

D A T A

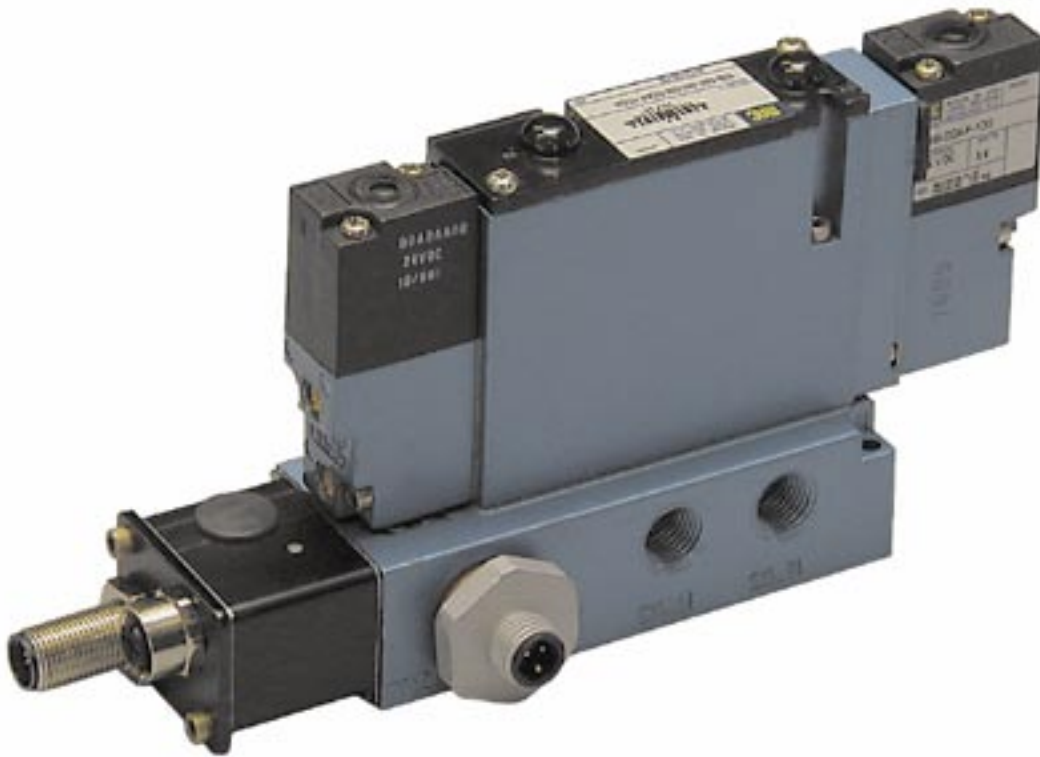
OUTPUTS:	NUMBER:	32 CHANNELS / SOLENOIDS ON MANIFOLD
	VOLTAGE / CURRENT:	24 VDC / .25A PER CHANNEL (6 WATTS MAX)
INPUTS:	NUMBER:	NONE
PROTOCOLS:	ALLEN-BRADLEY REMOTE I/O, DEVICENET, PROFIBUS DP, INTERBUS	
CURRENT CONSUMPTION:	INTERNAL SERIAL INTERFACE - 300 MA MAX. OUTPUTS - 8A MAX.	
SUPPLY VOLTAGE:	OPERATING WITH SINGLE SUPPLY: 24 VDC ±10% OPERATING WITH INTERNAL SLIM ON SEPARATE SUPPLY: 24 VDC ±10%	
WEIGHT:	2.10 Kg (4.62 LB.)	
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING)	
ENCLOSURE:	DESIGNED TO MEET NEMA 4 WITH VALVES BUILT TO WASHDOWN MOD	

DIMENSIONS





ADDRESSABLE VALVE SHOWN WITH 92 SERIES



BENEFITS

1. Ability to add a remote valve to a bus network
2. Ease of installation
3. Reduction in wiring costs
4. Washdown capability

INPUTS

2 Input Optional

OUTPUTS

1 Single or Double Solenoid Valve

PROTOCOL

DeviceNet

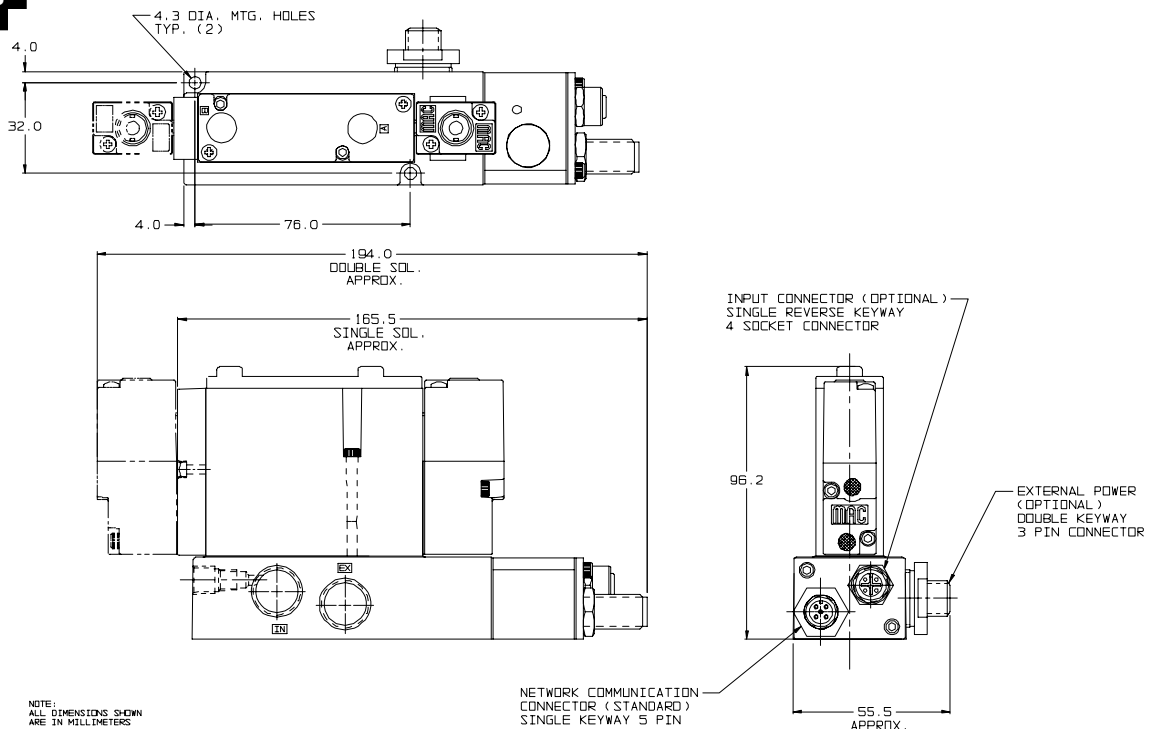


ADDRESSABLE VALVES

TECHNICAL DATA

OUTPUTS:	NUMBER: 2 CHANNELS / SOLENOIDS VOLTAGE / CURRENT: 24 VDC / .225A PER CHANNEL (5.4 WATTS PER CHANNEL)
INPUTS:	NUMBER: 2 (OPTIONAL) TYPE: 24 VDC NPN OR PNP LOGIC
PROTOCOLS:	DEVICENET
CURRENT CONSUMPTION:	OUTPUTS \approx .225A INPUTS \approx .020A ELECTRONICS \approx .030A
SUPPLY VOLTAGE:	OPERATING WITH SINGLE BUS SUPPLY: 24 VDC \pm 10% (WHERE PROTOCOL ALLOWS) OPERATING WITH SEPARATE POWER SUPPLY FOR VALVES AND INPUTS: 24 VDC \pm 10%
OPERATING TEMPERATURE:	0°-50° C (32° -120° F) 10-90% RH (NON-CONDENSING) HIGH TEMPERATURE APPLICATIONS: CONSULT FACTORY
ENCLOSURE:	DESIGNED TO MEET NEMA 4 WITH VALVES BUILT TO WASHDOWN MOD
AVAILABLE VALVES:	35, 37, 45, 47, 82, 92, 93, 100, 800, 900, ISO 1, ISO 2, ISO 3, 6200, 6300, 6500, AND 6600 SERIES VALVES

DIMENSIONS





VALVES

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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.