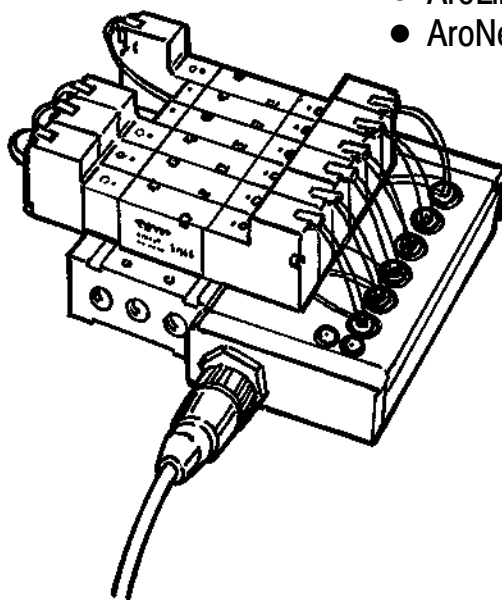# SIERRA

ARO

ARO EasyWire™ System Installation Guide

Flexible Communications for ARO Sierra Valves Using Any Discrete Output PLC.

INCLUDES:
- AroLink Serial Interface Communication
- AroNet DeviceNet Communication

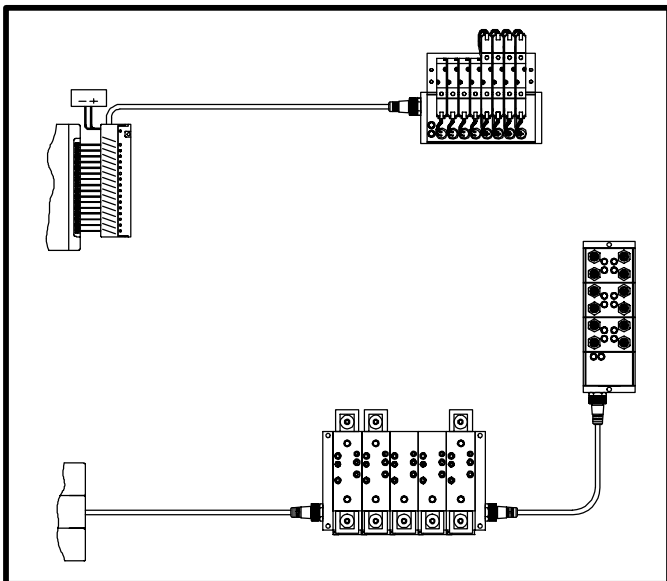## EasyWire AroLink™ Serial Interface Communication

- Controls up to 32 solenoids / inputs per wire.

- Add / remove valves or input modules in minutes.

- Compatible with Omron® Link Terminals. Works with any make Discrete PLC.

- External power available.

- Directly control 32 I/O per wire from Omron CQM1 PCL.
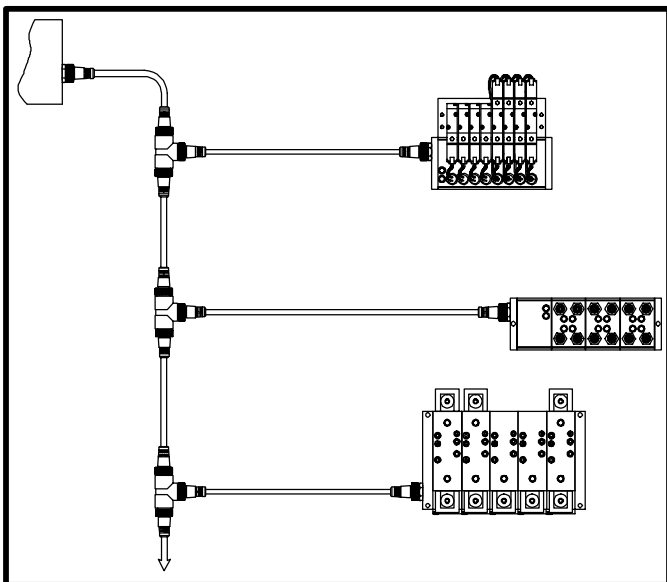
EasyWire AroNet™ Device Net®️ Communication

- Fully Device Net compatible.

- Controls up to 16 solenoids / inputs per node (64 nodes per network).

- Add / remove valves or input modules in minutes.

- External power available.

EasyWire Model Description Chart
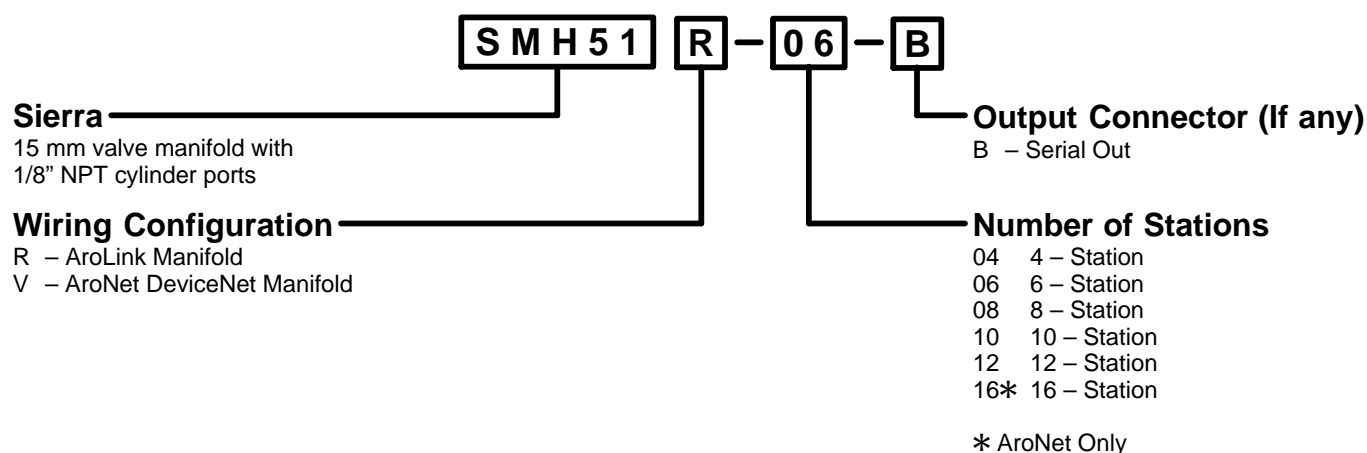
$$\boxed{\text{S M H 5 1}}\ \boxed{\text{R}} - \boxed{\text{0 6}} - \boxed{\text{B}}$$

Sierra
15 mm valve manifold with
1/8" NPT cylinder ports

Wiring Configuration
R – AroLink Manifold
V – AroNet DeviceNet Manifold

Output Connector (If any)
B – Serial Out

Number of Stations
04   4 – Station
06   6 – Station
08   8 – Station
10   10 – Station
12   12 – Station
16∗ 16 – Station

∗ AroNet Only

MODEL   DESCRIPTION

Wiring Kits

Kits include stripped, tinned wires with plug connection and a water tight grommet.
119822 –1   Plug–On Kit for Single Solenoid Valve
          –2   Plug–On Kit for Double Solenoid Valve

Transmitter Terminal (for AroLink System)

119557   Transmitter converts 24 PNP–Compatible, 16 inputs to AroLink signal.

Patch Cables

119779 –1   Male/Female 5–pin patch cable for AroLink – 6 ft.
          –2   Male/Female 5–pin patch cable for AroLink – 12 ft.

Cables

119438 –1   5–Wire serial communication cable with plug on one end and 5 (each) stripped wires on
              other end – 12 ft.
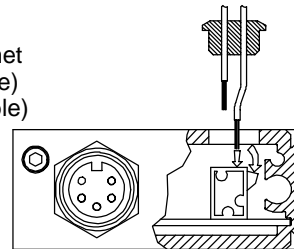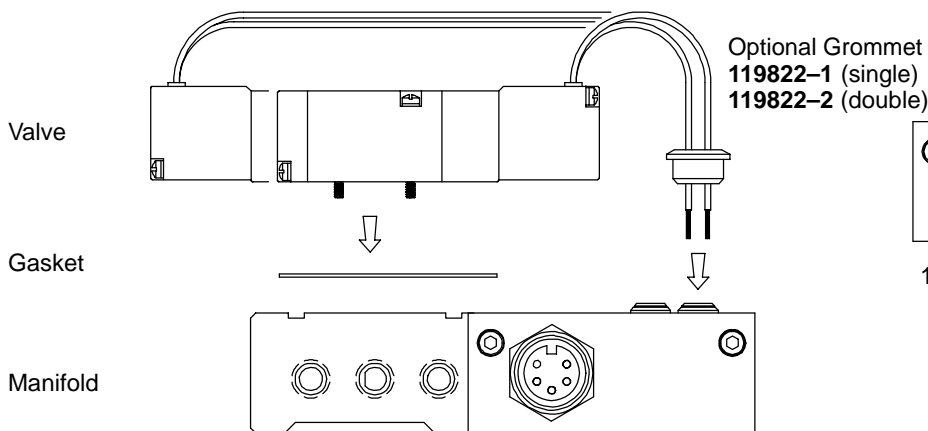   –2   Same as –1, except 30 ft length.

Sierra Valve–to–Manifold Assembly Using Lead Wire Valves

Sierra EasyWire Manifolds come pre–wired and fully assembled from the factory. Mechanically, valves are installed in the same way as standard Sierra valves. Lead wire valves come with two attached wires per coil and must be cut, stripped and inserted into spring terminals in the manifold at the time of valve–to–manifold assembly. A grommet may be used to seal the wireway against moisture.
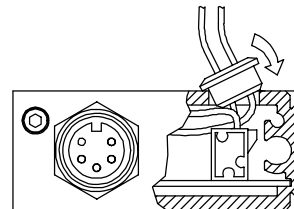
"A" Solenoid
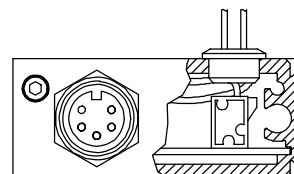(double solenoid
valves only)

"B" Solenoid

Wire Connection:
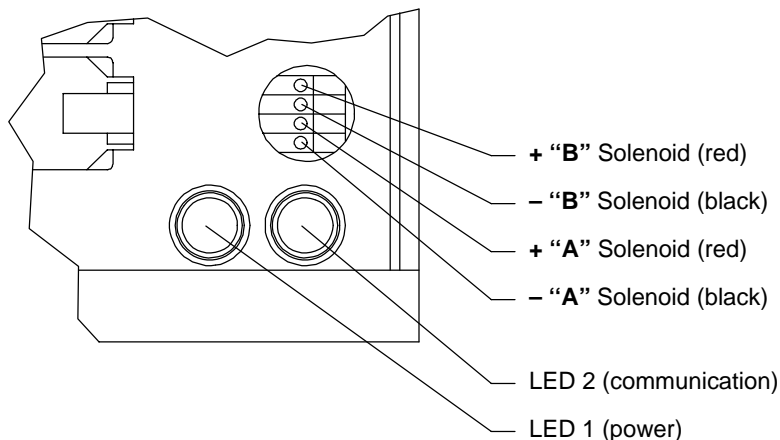(wires should be cut to length and
stripped a minimum of .35" (9 mm)

Valve

Optional Grommet
119822–1 (single)
119822–2 (double)

Gasket

Manifold

1. Push down orange levers on spring terminals in manifold and insert wires. When levers are re-leased, wires are connected.

+ **"B"** Solenoid (red)

– **"B"** Solenoid (black)

+ **"A"** Solenoid (red)

– **"A"** Solenoid (black)

LED 2 (communication)

LED 1 (power)

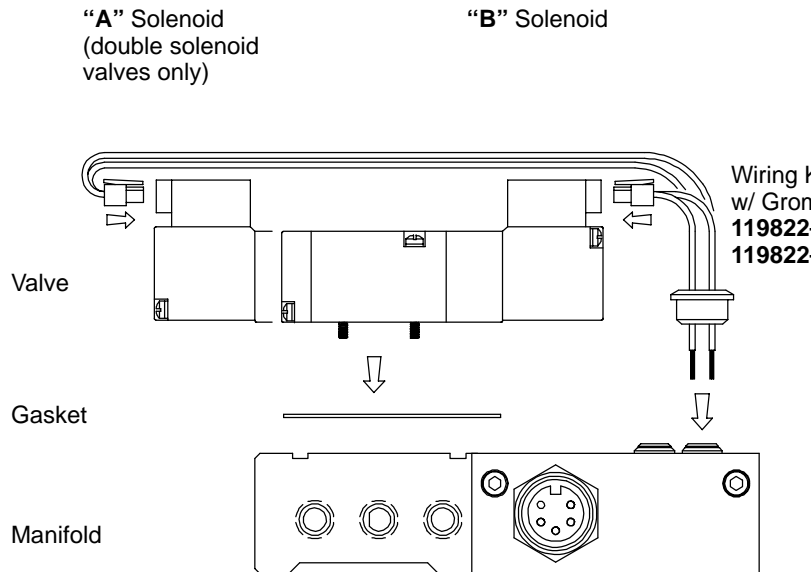2. Push excess wire down into wireway and position grommet (if used).

3. Press grommet down. Compression on grommet will seal the wireway.

Sierra Valve–to–Manifold Assembly Using Plug On Valves

Sierra EasyWire Manifolds come pre–wired and fully assembled from the factory. Mechanically, valves are installed in the same way as standard Sierra valves. Lead wire valves come with no wires. A wiring kit containing one (single solenoid) or two (double solenoid) wire assemblies and grommet must be ordered separately and are inserted into spring terminals in the manifold at the time of valve–to–manifold assembly. The grommet may be used to seal the wireway against moisture.

"A" Solenoid
(double solenoid
valves only)

"B" Solenoid

Wire Connection:

Valve

Gasket

Manifold

Wiring Kit
w/ Grommet
119822–1 (single)
119822–2 (double)

+ **"B"** Solenoid (red)

– **"B"** Solenoid (black)

+ **"A"** Solenoid (red)

– **"A"** Solenoid (black)

LED 2 (communication)

LED 1 (power)

1. Push down orange levers on spring terminals in manifold and insert wires. When levers are released, wires are connected.

2. Push excess wire down into wireway and position grommet (if used).

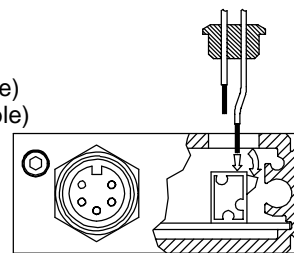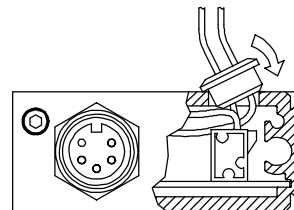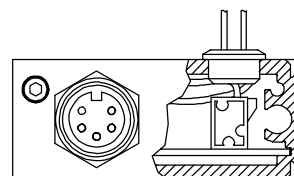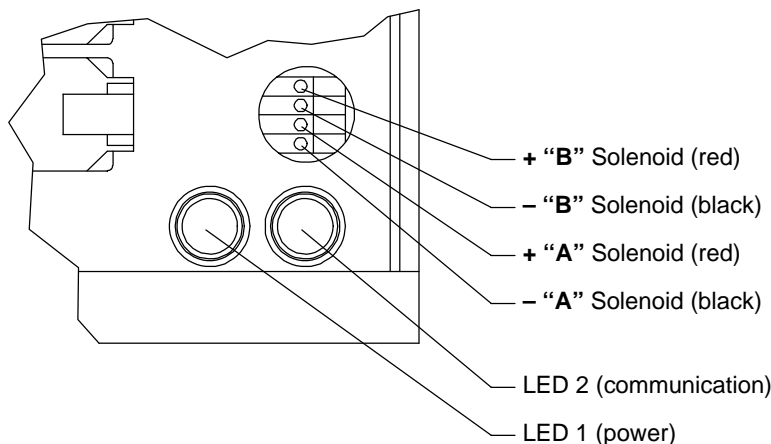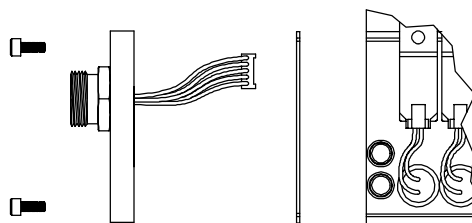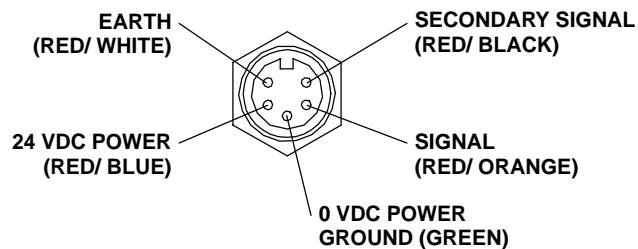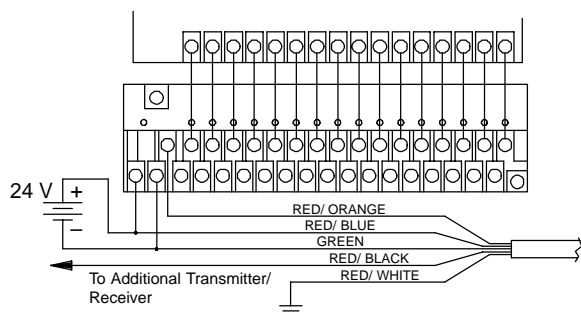3. Press grommet down. Compression on grommet will seal the wireway.
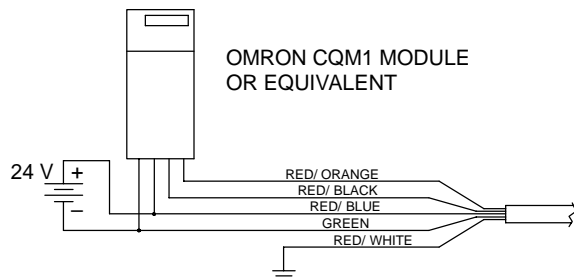
Sierra Manifold Installation

SERIAL IN CONNECTOR

EARTH
(RED/ WHITE)

SECONDARY SIGNAL
(RED/ BLACK)

24 VDC POWER
(RED/ BLUE)

SIGNAL
(RED/ ORANGE)

0 VDC POWER
GROUND (GREEN)

To access jumpers and DIP switches, remove connector endplate (left side).

LINK TERMINAL W/ POWER AT PLC

24 V

RED/ ORANGE
RED/ BLUE
GREEN
RED/ BLACK
RED/ WHITE

To Additional Transmitter/
Receiver

To either Link Terminal or
direct to Omron PLC.

Primary Device

PLC MODULE W/ POWER AT PLC

OMRON CQM1 MODULE
OR EQUIVALENT

24 V
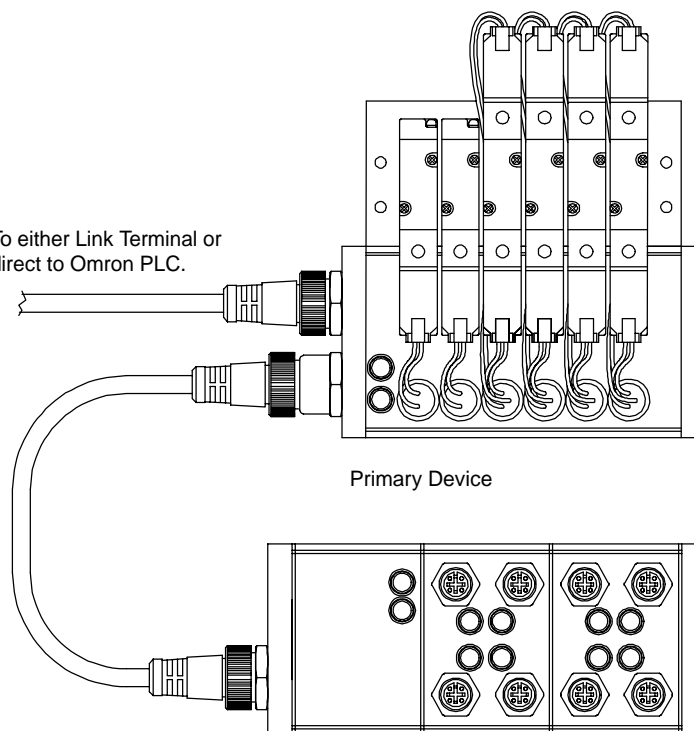
RED/ ORANGE
RED/ BLACK
RED/ BLUE
GREEN
RED/ WHITE

Secondary Device (may be
Interceptor, valve stack, etc.)
Communications on Red/
Black wire.

ARO EasyWire System Technical Data

EasyWire General

	Standard Watt Coil
Power (VDC)	24
Current per Coil (mA)	65 (73 mA w/ light)
Max. Solenoids ON at any time (per system of 16 coils)	16
Max. Temperature	122° F (50° C)
Max. Pressure (p.s.i.g.)	115 (7.9 bar)

EasyWire Systems

	AroLink System	AroNet System
Power (VDC)	24	24
Signal Voltage/Current	20 V to 24 V @ 6 mA	–
Max. Distance: Power at PLC	50 ft (15 m)	Refer to DeviceNet
External Power	330 ft (101 m)	Specifications
Dual Power	1640 ft (500 m)	
Max. Scan Time (mS)	19 (high speed 3 mS available)	–
PLC to be used	sourcing discrete output PLC (24 V)	–

AroNet DeviceNet Configuration

| DIP Switch Configurations:	SW1	SW2	Baud Rate
	OPEN	OPEN	125k
	CLOSED	OPEN	250k
	OPEN	CLOSED	500k
Reset MAC ID to 63 @ Power On	CLOSED	CLOSED	Default Setting

LED Designations	LED 1 (Module Status)	LED 2 (Network Status)
Solid Green	AroNet Receiving Power	AroNet Properly Allocated
Flashing Green	AroNet Running thru startup procedures	AroNet senses network, but is unable to communicate. Possible Node Allocation Collision.
Red (any form)	Not Applicable	Fault Mode. AroNet is unable to sense network. Possible failure to allocate a node on network.

| Communication Type:	Polled Device (Group 2 only slave)
Bit Mapping Reservations:	16 Bit output word, additional enable bit dependent upon DeviceNet scanner/PLC interfacing.

Sierra Solenoid Numbering

4, 6 and 8 Stations
Manifold configured for all double solenoid valves. If single solenoid valves are installed, some outputs will not be used.

00 02 04 06

01 03 05 07

04 06 08 10

01 03 05 07 09 11
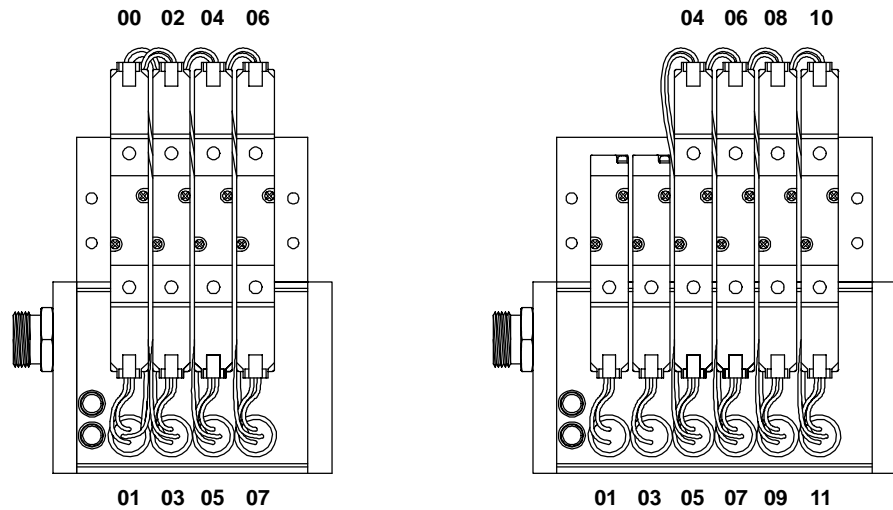
12 Stations
Manifold configured for four double solenoid valves and eight singles. If single solenoid valves are installed in the first four stations, some outputs will not be used.

00 02 04 06

01 03 05 07 08 09 10 11 12 13 14 15
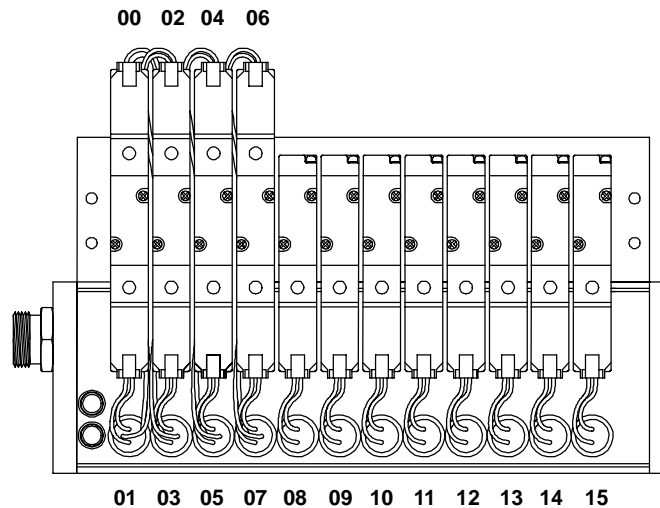
16 Stations
Manifold configured for sixteen single solenoid valves.

00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15