





Conditions for use of this product

(1) Aventics Manifold ("the PRODUCT") shall be used in conditions;

i) Where any problem, fault or failure occurring in the PRODUCT, if any, shall not lead to any major or serious accident.

ii) Where the backup and fail-safe function are systematically or automatically provided outside of the PRODUCT for the case of any problem, fault or failure occurring in the PRODUCT.

(2) The PRODUCT has been designed and manufactured for the purpose of being used in general industries.

Aventics shall have no responsibility or liability including but not limited to any and all responsibility or liability based on contract, warranty, tort, product liability for any injury or death to persons, loss or damage to property caused by the product that are operated or used in application not intended or excluded by instructions, precautions or warnings contained in Aventics. Technical, User, Instruction, Safety manuals or bulletins.

Safety precautions

Before using this product, please read this manual and the relevant manuals carefully and pay attention to safety and product application. The following symbols are used in the manual to identify important safety, installation and application information.

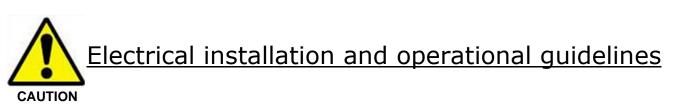


Caution symbol indicates a possible hazard which may cause injury or equipment damage.



Note symbol indicates important information regarding equipment installation and setup.





• To be connected to Class 2 power source only

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- All Aventics. communication nodes should be grounded during the installation process. These grounding guidelines can be found in National Electrical code IEC 60204-1 or EN 60204-1.
- All Aventics 580 Electronics Products to be installed or wired in accordance with Aventics's published instructions and applicable electrical codes.
- MULTIPLE CLASS 2 POWER SOURCES: When interconnects, class 2 sources shall be Listed and rated suitable for parallel interconnection
- Sources shall be Listed and rated suitable for parallel interconnection
- CLASS 2 WIRING: All field wiring shall be suitable for Class 1, Electric Light and Power, or Class 2, 3 wirings are routed separately and secured to maintain separation between 1) Class 2 wiring and all other class wiring, and 2) Limited energy circuit conductors from unlimited energy circuit conductors
- Class 2 Device Wiring Only Do Not Reclassify and Install as Class 1, 3 or Power and Lighting Wiring
- When using molded connector power cables, <u>Do Not</u> rely on wire colors for Pin-Out. <u>Always use pin number references.</u>
- Wire connections shall be rated suitable for the wire size (lead and building wiring) employed
- MULTIPLE CLASS 2 POWER SOURCES: When interconnects, class 2 sources shall be Listed and rated suitable for parallel interconnection
- Sources shall be Listed and rated suitable for parallel interconnection



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<u>1. About IO-Link</u>™

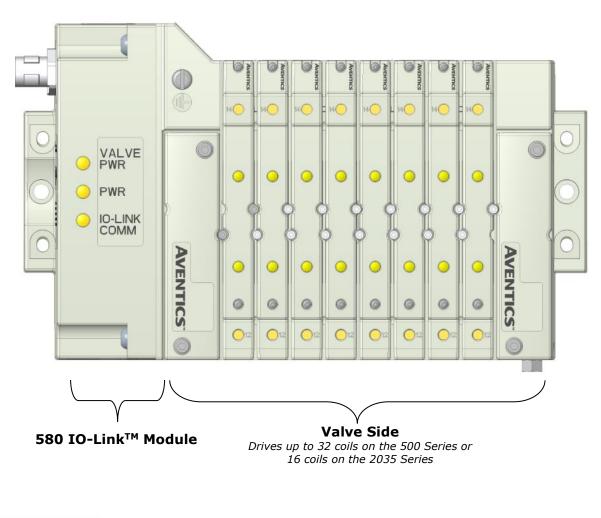
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IO-Link[™] is the first standardized IO technology worldwide (IEC 61131-9) for the communication with sensors and also actuators. The powerful point-to-point communication is based on the long established 3-wire sensor and actuator connection without additional requirements regarding the cable material. IO-Link[™] is not fieldbus but the further development of the existing, tried-and-tested connection technology for sensors and actuators.

2. 580 Introduction

The 580 IO-LINK[™] Node is an electronic valve control interface that enables any I/O link master to control 32 valve coils. The 580 IO-Link[™] module supports Aventics 500 Series valves including, the 501, 502, and 503 and the 2035 Series. The 580 IO-Link[™] Node can address a total of (32) coil outputs, with diagnostic functionality built in for the 500 Series valves and can address a total of (16) coil outputs, with diagnostic functionality built in the 2035 Series. With proper assembly and termination, the 580 IO-Link[™] Node has an IP65 rating.

This manual details specific information for configuring and commissioning the Aventics 580 IO-Link[™] Node. For more information, relating to Aventics 500 Series valve manifold assemblies, please refer to the Aventics 501 & 503 Series Catalogs or the 2035 Series Catalog, both can be found at www.asco.com.

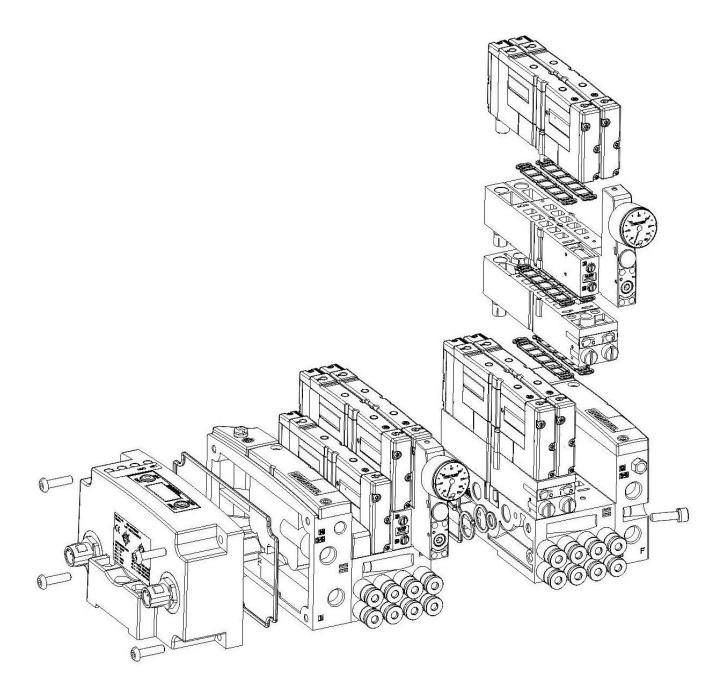






2.1 Pneumatic Valve Manifold – 501 Series shown

The pneumatic valve manifold with internal circuit board technology is modular. The valve solenoid coil connections are automatically made using Z-Board[™] technology (plug together PC boards, which allow internal connections from solenoid coils to output drivers without the use of wires). This allows easy assembly and field changes.

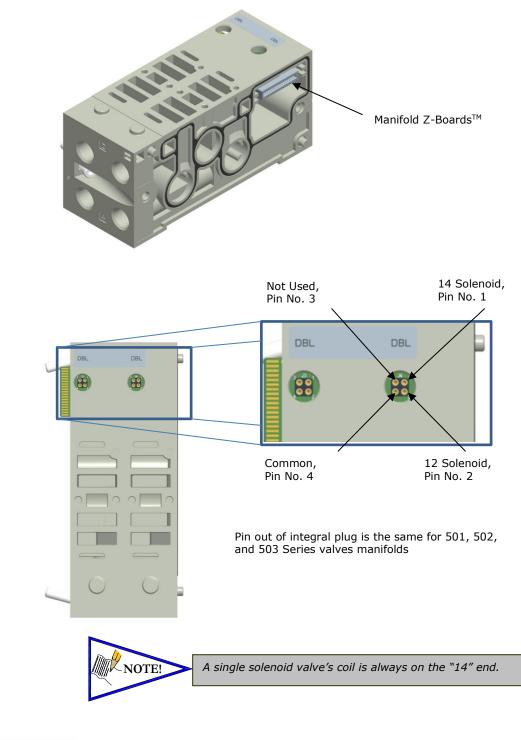




2.2 Manifold Connectors

Solenoid Coil Connections using Z-Board[™] Technology for 501/502/503 valve series

Z-Board[™] plug together technology connects all valve solenoids to the valve coil output drivers, located in the 580 Node. There is a maximum of 32 coil outputs available on the complete manifold assemblies. The 32 available outputs are accessed on the 501 series valves utilizing 4 station manifolds and on the 502 and 503 series utilizing 2 station manifolds.





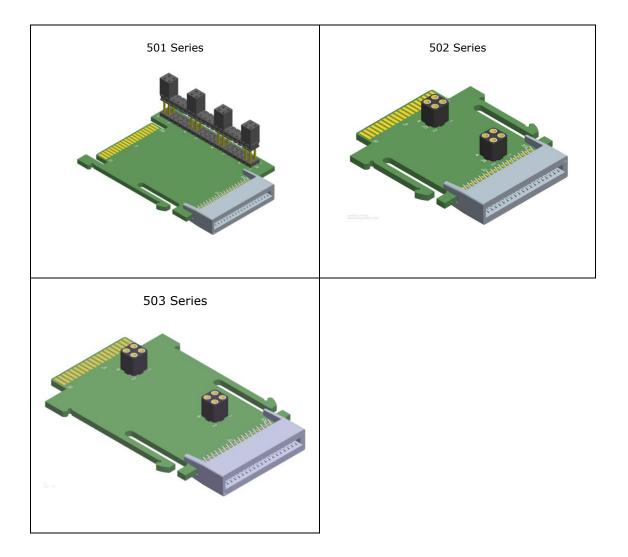
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2.3 Z-Board[™] Connectors

The 501/502/503 valve series utilize 2 different Z-Board[™] designs to achieve the single and double solenoid output functions. This yields the possible 32 single, 16 double, or various combinations of valve coil output capabilities. The 501 Z-Board[™] is minimum (3) station, the 502 and 503 Z-Board[™] is minimum (2) stations.





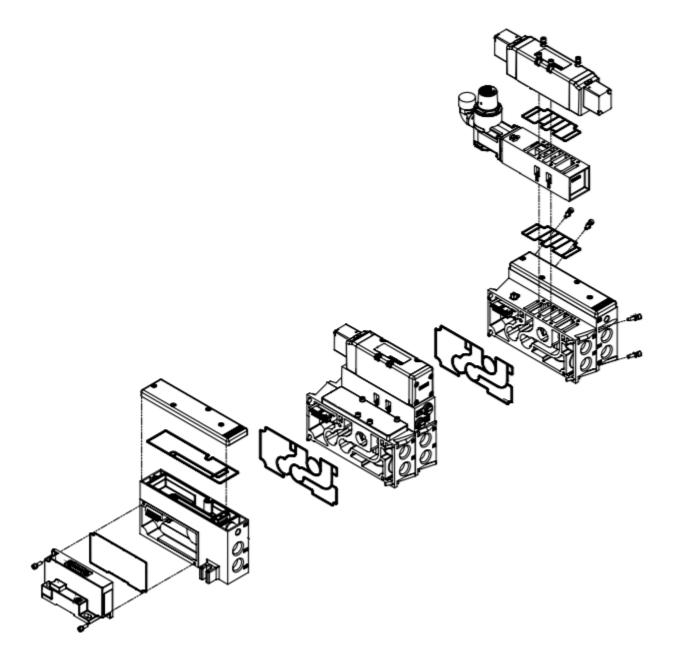
Each series Z-Board[™] can be selected in either SINGLE or DOUBLE output (coil) versions. The SINGLE and DOUBLE output function cannot be mixed on the Z-Boards™





2.4 2035 Series Pneumatic Valve Manifold

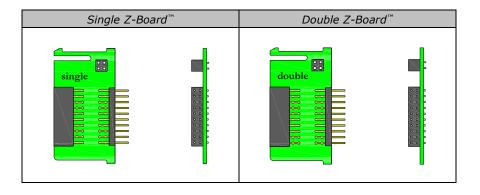
The pneumatic valve manifold with internal circuit board technology is also modular. The valve solenoid coil connections are automatically made using Z-Board[™] technology (plug together PC boards), which allow internal connection from solenoid coils to output drivers without the use of wires). This allows easy assembly and field changes.





2.5 2035 Series Z-Board[™] Connectors

The 2035 valve series utilize 2 different Z-Board[™] designs to achieve the single and double solenoid output functions. This yields the possible 16 single, 8 double, or various combinations of valve coil output capabilities.

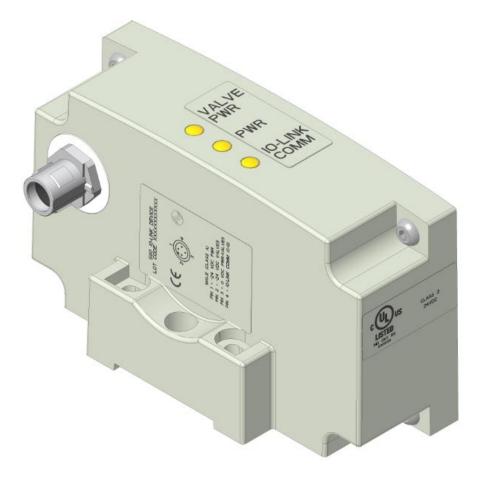




3. IO-Link[™] Communication Module

This module provides Communication to the manifold. It contains communication electronics and internal short circuit protection.

Communication Node	Part Number
580 IO-Link [™] Node (Port Type A) – 500 Series Valves	P580AELM1010A00
580 IO-Link [™] Node w/DIN Rail (Port Type A) – 500 Series Valves	P580AELM1010DRM
580 IO-Link [™] Node (Port Type B) – 500 Series Valves	P580AELM2010A00
580 IO-Link [™] Node w/DIN Rail (Port Type B) – 500 Series Valves	P580AELM2010DRM
580 IO-Link [™] Node (Port Type A) – 2035 Series Valves	P580AELM3010A00
580 IO-Link [™] Node (Port Type B) – 2035 Series Valves	P580AELM4010A00





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580 IO-Link[™] Technical Manual

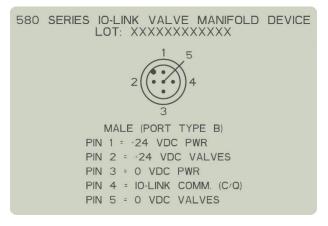
3.1 Connector Pin-Outs

IO-Link[™] devices are available with either Port Type A or Port Type B. The IO-Link[™] slave device needs to match the port type of the IO-Link[™] master device.

The IO-Link[™] (Port Type A) connector is a single keyway 4 pin M12 male connector.

580 SERIES IO-LINK VALVE MANIFOLD DEVICE LOT: XXXXXXXXXXXX
1 5
3
MALE (PORT TYPE A)
PIN 1 = +24 VDC PWR
PIN 2 = +24 VDC VALVES
PIN 3 = 0 VDC PWR/VALVES
PIN 4 = IO-LINK COMM. (C/Q)
PIN 5 = NO CONNECT

The IO-Link[™] (Port Type B) connector is a single keyway 5 pin M12 male connector.





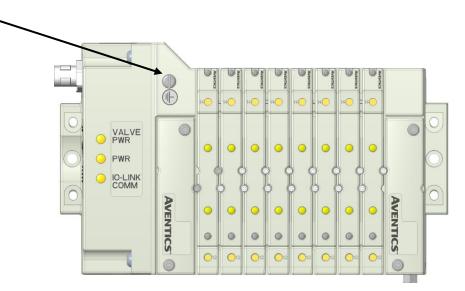


3.2 Chassis Ground

AVENTICS[™]

All Aventics manifolds should be grounded for safety. Grounding guidelines can be found in National Electrical code IEC 60204-1 or EN 60204-1.

CHASSIS GROUND CONNECTION POINT





- When grounding to a machine frame, please ensure that the machine frame itself is already properly grounded.
- Better grounding can be achieved when larger diameter (lower gauge) wire is used.





3.3 Power Consumption

Power and communication Connection – Port Type A

Pin No.	Function	Description
1	+24 VDC (Node)	Voltage used to power node electronics
2	+24 VDC (Valve)	Voltage used to power valves
3	0 VDC Common (Node and Valve)	0 VDC (-V) Voltage used to power node and valves
4	I/O Link Communication	I/O Link Communication

Power and communication Connection – Port Type B

Pin No.	Function	Description				
1	+24 VDC (Node)	/oltage used to power node electronics				
2	+24 VDC (Valve)	Voltage used to power valves				
3	0 VDC (Node)	0 VDC (-V) Voltage used to power node				
4	I/O Link Communication	I/O Link Communication				
5	0 VDC (Valve)	0 VDC (-V) Voltage used to power valves				

Power Rating

The maximum system current capability is <u>4 Amps</u>. Care should be taken not to exceed 4 Amp draw • through the M12 Power connector pins.

Component	Voltage	Tolerance	+24VDC (Valve)		+24VDC (Node)	
F	<u> </u>		Current	Power	Current	Power
Solenoid Valve Coil 501 (Each)	24 VDC	+10%/-15%	0.03 Amps	0.8 Watts	NA	NA
Solenoid Valve Coil 502 (Each)	24 VDC	+10%/-15%	0.04 Amps	1.0 Watts	NA	NA
Solenoid Valve Coil 503 (Each)	24 VDC	+10%/-15%	0.07 Amps	1.7 Watts	NA	NA
Solenoid Valve Coil 2035 (Each)	24 VDC	+10%/-15%	0.10 Amps	2.5 Watts	NA	NA
580 IO-Link [™] Module	24 VDC	+/- 10%	0.017 Amps	0.4 Watts	0.02 Amps	0.5 Watts





3.4 Recommended External Fuses

External fuses should be chosen based upon the physical manifold configuration. Please refer to table below for the external fuse sizing chart.

External Fuse Sizing Chart

Power Consumption - Power Connector Pin for VALVES					
Description		<u>Current</u>			
Number of Solenoid Valve Coils Energized Simultaneously					
X 0.03 A (501 Series)	=	Amps			
X 0.04 A (502 Series)	=	Amps			
X 0.07 A (503 Series)	=	Amps			
X 0.10 A (2035 Series)	=	Amps			
580 IO-Link [™] module power consumption	+	0.017 Amps			
Total:	=	Amps			
Surge Compensation:	Х	1.25			
Suggested External +24 VDC (Valves) Fuse Value:	=	Amps			
Power Consumption – Power Connector Pin for NOD	E				
Description		<u>Current</u>			
580 IO-Link [™] module power consumption	=	0.020 Amps			
Surge Compensation:	х	1.25			
Suggested External Pin +24 VDC (Node) Fuse Value:	=	0.060 Amps			



The Module Power pins supply power to the node electronics. These pins must be powered at all times for the communication node to be functional. See page 12 for reference. Reverse polarity protection is provided.





3.5 **Diagnostics – LED Functions**



LED Name	Color	Status	Description
Valve PWR	Off	OFF	Valve Power Off
Valve PWK	Green	ON	Valve Power On
PWR	Off	OFF	Module Power OFF
PWR	Green	ON	Module Power On
IO-Link™	Off	OFF	No I-O Link Communication Established
Comm.	Green	FLASHING	I-O Link Communication Established



3.6 Diagnostic I/O Data

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In the example below; the I/O link master writes the Aventics 580 manifold diagnostic data into the PLC data table as shown below.

Byte 0: Reserved Byte 1: Module Summary Status Bit 0: Valve power is below 21 Bit 1: Shorted / Over-Current Coil condition present Bit 2: Open Coil condition present Byte 2: Open Coils 0-7 Byte 3: Open Coils 8-15 Byte 4: Open Coils 16-23 Byte 5: Open Coils 24-31 Byte 6: Shorted/Over-current Coils 0-7

- Byte 7: Shorted/Over-current Coils 8-15
- Byte 8: Shorted/Over-current Coils 16-23
- Byte 9: Shorted/Over-current Coils 24-31

Input Table BYTE Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit 0 Allocated and 0 Reserved Reserved Reserved Reserved Reserved Reserved Reserved Reserved Allocated and Allocated and Allocated and Allocated and Allocated and Open Coil Status Shorted Coil Valve Power 1 Reserved Reserved Reserved Reserved Reserved Status Status Open Coil Status, 2 Coil No. 7 Open Coil Status, Coil No. 6 Coil No. 5 Open Coil Status, Coil No. 4 Coil No. 3 Coil No. 2 Coil No. 1 Open Coil Status, Coil No. 0 Open Coil Status, 3 Coil No. 15 Coil No. 14 Coil No. 13 Coil No. 12 Coil No. 11 Coil No. 10 Coil No. 9 Coil No. 8 Open Coil Status, 4 Coil No. 23 Coil No. 22 Coil No. 21 Coil No. 20 Coil No. 19 Coil No. 18 Coil No. 17 Coil No. 16 Open Coil Status, 5 Coil No. 28 Coil No. 31 Coil No. 30 Coil No. 29 Coil No. 27 Coil No. 26 Coil No. 25 Coil No. 24 Shorted Coil 6 Status Coil No. 7 Status, Coil No. 6 Status, Coil No. 5 Status, Coil No. 4 Status, Coil No. 3 Status, Coil No. 2 Status, Coil No. 1 Status, Coil No. 0 Shorted Coil 7 Status, Status, Coil No. 13 Status, Status, Status, Coil No. 10 Status, Coil No. 9 Status, Status, Coil No. 15 Coil No. 12 Coil No. 11 Coil No. 14 Coil No. 8 Shorted Coil 8 Status, Coil No. 23 Status, Coil No. 22 Status, Coil No. 21 Status, Coil No. 20 Status, Coil No. 19 Status, Coil No. 18 Status, Coil No. 17 Status, Coil No. 16 Shorted Coil 9 Status, Status, Status, Status, Status, Status, Status, Status, Coil No. 27 Coil No. 31 Coil No. 30 Coil No. 29 Coil No. 28 Coil No. 26 Coil No. 25 Coil No. 24

*The example Input table above is for 500 Series valves; the 2035 Series will map differently (see section 4.4).

Diagnostic Status Bit Action

Output Type	<i>Output</i> <i>State</i>	Fault Condition	Status Bit
Valve Solenoid Coil Driver	ON OFF	No Fault	0
Valve Solehold Coll Briver		Fault - Short Circuit, Over Temp/Over Current	1
Valve Solenoid Coil Driver		No Fault	0
Valve Solehold Coll Briver	011	Fault - Open Load	1



- Coils cannot be detected as "shorted" unless commanded as energized.
- Coils cannot be detected as "open" if commanded as energized
 - The IO-Link node will send an Events 0x7700 if at least one coil detected as open and 0x7710 if at least one coil detected as shorted



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3.7 Diagnostic Events

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Event driven diagnostic codes are also reported by the Aventics 580 IO-Link[™] module to the IO Link master. The Event driven diagnostics are mapped to the Baluff input table as shown below. The events are queued in three byte blocks from the newest to oldest

■-Balluff:I.Data[47]	16#b0	Hex	SINT	First Event Status
	16#77	Hex	SINT	First Event Code Hi Byte
Healluff:I.Data[49]	16#10	Hex	SINT	First Event Code Low Byte
Halluff:I.Data[50]	16#f0	Hex	SINT	Second Event Status
	16#77	Hex	SINT	Second Event Code Hi Byte
Healluff:I.Data[52]	16#00	Hex	SINT	Second Event Code Low Byte
Healluff:I.Data[53]	16#f0	Hex	SINT	Third Event Status
Healluff:I.Data[54]	16#77	Hex	SINT	Third Event Code Hi Byte
Halluff:I.Data[55]	16#10	Hex	SINT	Third Event Code Low Byte

The following (HEX) diagnostic "Event Status" and "Event Codes" are reported by the Aventics 580 IO-Link[™] module include;

Event StatusF4Event ActiveB4Event Cleared

Event Code

- 51 12 Switched power low or off (below 20.8 Volt threshold) 77 00 Wire break detected (open coil detected) 77 10 Short circuit detected (shorted coil)
- 77 10 Short circuit detected (shorted coil)



3.8 ISDU Object Data

The following service data objects are available from the 580 IO-Link[™] Valve Manifold Driver:

3.8.1 General (IO-Link Predefined) Device Parameters

	1
Vendor Name (READ ONLY) Index 0x0010 (16d), Subindex 0x00	READ: Returns string "ASCO Numatics Inc"
Vendor Text (READ ONLY) Index 0x0011 (17d), Subindex 0x00	READ: Returns string "www.asco.com"
Product Name (READ ONLY) Index 0x0012 (18d), Subindex 0x00	READ: Returns string "IO-Link Valve Manifold Driver"
Product ID (READ ONLY) Index 0x0013 (19d), Subindex 0x00	READ: Returns string "518571" for 4-pin version 518571 Returns string "520225" for 5-Pin version 520225
Product Text (READ ONLY) Index 0x0014 (20d), Subindex 0x00	READ: Returns string "32 Channels / Sinking Outputs"
Serial Number (READ ONLY) Index 0x0015 (21d), Subindex 0x00	READ: Returns string which contains the Serial Number of the device
Hardware Revision ID (READ ONLY) Index 0x0016 (22d), Subindex 0x00	READ: Returns string which contains Hardware Revision description
Firmware Revision ID (READ ONLY) Index 0x0017 (23d), Subindex 0x00	READ: Returns string which contains Firmware Revision description along with build time
Application Specific Tag (READ/WRITE)	READ: Returns user-defined string up to 32 characters
Index 0x0018 (24d), Subindex 0x00	WRITE: Rewrites application specific tag with user-defined data. Argument data must be 32 bytes or less in length.
Error Count (READ ONLY) Index 0x0020 (32d), Subindex 0x00	READ: Returns 16-bit error counter in Big Endian format.





3.8.2 Product-specific ISDU

	READ	SubIndex 0xFF (255d) Returns 8 bytes of Fault State configuration.
	READ	Subindex 0x00 - 0x1F (0d32d) Returns 1 byte of Fault State configuration for a particular channel; the subindex is the number of the channel. The state of output stage on Fault Condition is encoded in the two least significant bits.
Fault State Configuration	WRITE	Subindex 0xFF (255d) Update Fault State Configuration for all the channels (Argument data MUST be 8 bytes in length.)
(Read/Write) Index 0x0060 (96d)	WRITE	Subindex 0x00 - 0x1F (0d32d) Update Fault State Configuration for partcular channel; the subindex is the number of the channel. (Argument data MUST be 1 byte in length.)
		The fault condition state of each output stage is encoded by two bits. 00 De-energize corresponding output (OFF). 01 Energize the corresponding output (ON). 10 Keep the last state 11 Reserved

Below is the data mapping for the fault state configuration data:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0:	OUT_03_b1	OUT_03_b0	OUT_02_b1	OUT_02_b0	OUT_01_b1	OUT_01_b0	OUT_00_b1	OUT_00_b0
Byte 1:	OUT_03_b1	OUT_03_b0	OUT_06_b1	OUT_06_b0	OUT_05_b1	OUT_05_b0	OUT_04_b1	OUT_04_b0
Byte 2:	OUT_11_b1	OUT_11_b0	OUT_10_b1	OUT_10_b0	OUT_09_b1	OUT_09_b0	OUT_08_b1	OUT_08_b0
Byte 3:	OUT_15_b1	OUT_15_b0	OUT_14_b1	OUT_14_b0	OUT_13_b1	OUT_13_b0	OUT_12_b1	OUT_12_b0
Byte 4:	OUT_19_b1	OUT_19_b0	OUT_18_b1	OUT_18_b0	OUT_17_b1	OUT_17_b0	OUT_16_b1	OUT_16_b0
Byte 5:	OUT_23_b1	OUT_23_b0	OUT_22_b1	OUT_22_b0	OUT_21_b1	OUT_21_b0	OUT_20_b1	OUT_20_b0
Byte 6:	OUT_27_b1	OUT_27_b0	OUT_26_b1	OUT_26_b0	OUT_25_b1	OUT_25_b0	OUT_24_b1	OUT_24_b0
Byte 7:	OUT_31_b1	OUT_31_b0	OUT_30_b1	OUT_30_b0	OUT_29_b1	OUT_29_b0	OUT_28_b1	OUT_28_b0



	READ: Returns 2 bytes of Auxiliary Configuration data					
	WRITE: Update Auxiliary Configuration data					
	The following parameters are available:					
	SL: Shorted Loads (1-bit) 1 - Include Shorted Loads Status data (4-bytes) in PD_IN 0 - Do not include Shorted Loads status data					
	OL: Open Loads (1-bit) 1 - Include Open Loads Status data (4-bytes) in PD_IN 0 - Do not include Open Loads status data					
Auxiliary Configuration Index 0x0061 (97dec)	XS: Extended Status (1-bit) 1 - Include Extended Status data (2-bytes) in PD_IN 0 - Do not include Extended Status data					
	Note : if values SL, OL and XS are all set to zero, PD_IN will not be sent.					
	ST0 - ST2: Manifold self-test (3-bit)					
	000 Do not self-test (normal operation) 001 Energize and de-energize all outputs individually in sequence 010 Energize all outputs in Gray code sequence 011 Energize all outputs in sequence in groups of two					
	100 Toggle all outputs on/off at once 101 Reserved 110 Reserved 111 Reserved					

Below is the data mapping for the Auxiliary configuration data:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0:	(Reserved)	ST2	ST1	ST0	(Reserved)	XS	OL	SL
Byte 1:	(Reserved)							

Format of data PD_IN:

Bytes 0 - 1: Extended status data

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Bit 0: Valve power voltage below threshold

Bit 1: At least one shorted output detected

Bit 2: At least one open output detected

Bits 3 - 15: Reserved

Bytes 2 - 5: Open loads status data (see "Channels with Open Loads")

Bytes 6 - 9: Shorted loads status data (see "Channels with Shorted Loads")





Channel Cycle Counters	READ	Returns 32-bit big-endian cycle counter for the particular channel. The subindex is the number of the channel. Transition from channel OFF to channel ON is considered one cycle.
Index 0x0062 (98d), Subindex 0x00 - 0x1F (0d - 31d)	WRITE	Writing the four octets [0x52,0x45,0x53,0x21] (Literally: "RES!") will reset the corresponding Channel Cycle Counter. The subindex is the number of the channel.
Cycle Counters update increment	READ	Returns 16-bit number (big endian) of cycles counted between successive logging of Cycle Counters to the non-volatile memory. Serves as a maximum number of cycles which could be not accounted for in case of power loss or hardware fault.
Index 0x0063 (99d), Subindex 0x00 (0d)	WRITE	Re-assigns the Cycle Counters update increment value. Default value is 256. Note: A greater value leads to less frequent logging of statistics and a longer expected life of the embedded EEPROM.
Uptime Counter	READ	Returns 32-bit (big endian) number of uptime seconds for the Device.
Index 0x0064 (100d), Subindex 0x00	WRITE	Writing the value [0x52,0x45,0x53,0x21] (literally - "RES!") will reset the uptime counter.
Uptime Counter update increment Index 0x0065 (101d), Subindex 0x00	READ	Returns a 16-bit (big endian) maximum number of seconds between updates of Uptime Counter to the non-volatile memory and represents the maximum number of seconds which could be lost between data logging events. Note: The Uptime Counter is also updated with each channel Cycle Counter update.
	WRITE	Re-assigns the Uptime Counter update increment. Minimum practical value considered 3600 seconds or one hour (default).
Connected Channels Index 0x0068 (104d) Subindex 0x00	READ	Returns a 4-byte bitmap of Channels which were <i>not</i> detected as open on the Device <i>startup</i> . Each "0" represents a channel which has been detected as having no load. Open Channels are <i>excluded from diagnostics data and are not controlled</i> <i>during runtime.</i>
	WRITE	Allows for override of the Connected Channels configuration.

Below is the data mapping for the connected channels data:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0:	OUT_07_OK	OUT_06_OK	OUT_05_OK	OUT_04_OK	OUT_03_OK	OUT_02_OK	OUT_01_OK	OUT_00_OK
Byte 1:	OUT_15_OK	OUT_14_OK	OUT_13_OK	OUT_12_OK	OUT_11_OK	OUT_10_OK	OUT_09_OK	OUT_08_OK
Byte 2:	OUT_23_OK	OUT_22_OK	OUT_21_OK	OUT_20_OK	OUT_19_OK	OUT_18_OK	OUT_17_OK	OUT_16_OK
Byte 3:	OUT_31_OK	OUT_30_OK	OUT_29_OK	OUT_28_OK	OUT_27_OK	OUT_26_OK	OUT_25_OK	OUT_24_OK





Channels with Open Loads	Read only: Returns a 4-byte bitmap of Channels which are detected as OPEN during runtime. Each "1" represents a channel which has been
	detected as one having a missing load while it was OFF.

Below is the data mapping for the channels with open loads data:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0:	CH_07_OPEN	CH_06_OPEN	CH_05_OPEN	CH_04_OPEN	CH_03_OPEN	CH_02_OPEN	CH_01_OPEN	CH_00_OPEN
Byte 1:	CH_15_OPEN	CH_14_OPEN	CH_13_OPEN	CH_12_OPEN	CH_11_OPEN	CH_10_OPEN	CH_09_OPEN	CH_08_OPEN
Byte 2:	CH_23_OPEN	CH_22_OPEN	CH_21_OPEN	CH_20_OPEN	CH_19_OPEN	CH_18_OPEN	CH_17_OPEN	CH_16_OPEN
Byte 3:	CH_31_OPEN	CH_30_OPEN	CH_29_OPEN	CH_28_OPEN	CH_27_OPEN	CH_26_OPEN	CH_25_OPEN	CH_24_OPEN

Channels with Shorted Loads

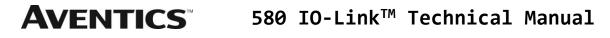
Below is the data mapping for the channels with shorted loads data:

	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
Byte 0:	CH_07_SHRT	CH_06_SHRT	CH_05_SHRT	CH_04_SHRT	CH_03_SHRT	CH_02_SHRT	CH_01_SHRT	CH_00_SHRT
Byte 1:	CH_15_SHRT	CH_14_SHRT	CH_13_SHRT	CH_12_SHRT	CH_11_SHRT	CH_10_SHRT	CH_09_SHRT	CH_08_SHRT
Byte 2:	CH_23_SHRT	CH_22_SHRT	CH_21_SHRT	CH_20_SHRT	CH_19_SHRT	CH_18_SHRT	CH_17_SHRT	CH_16_SHRT
Byte 3:	CH_31_SHRT	CH_30_SHRT	CH_29_SHRT	CH_28_SHRT	CH_27_SHRT	CH_26_SHRT	CH_25_SHRT	CH_24_SHRT

3.8.3 Event Data

Secondary PSU voltage fault Event Code 0x5112	Sent with APPEARS attribute when Secondary (actuator) power supply voltage drops below approx. 20.8 volt. Sent with DISAPPEARS attribute when aforementioned condition ends.
Wire Break of a subordinate device Event Code 0x7700	Sent with APPEARS attribute when any channel is detected as Open Circuited during runtime. Sent with DISAPPEARS attribute when aforementioned condition ends.
Short Circuit Detected Event Code 0x7710	Sent with APPEARS attribute when any channel is detected as Short Circuited during runtime. Sent with DISAPPEARS attribute when aforementioned condition ends.

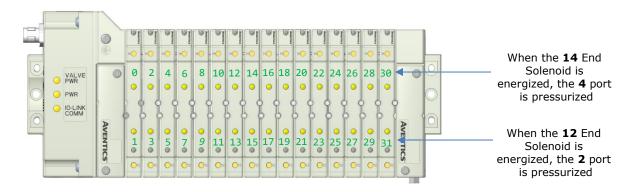




4. I/O Mapping Examples

The following examples describe IO mapping for 500 series and 2035 valve manifolds.

500 Series



4.1 Coil Output Mapping – 500 Series

	Output Table										
BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0			
0	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 7	No. 6	No. 5	No. 4	No. 3	No. 2	No. 1	No. 0			
1	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 15	No. 14	No. 13	No. 12	No. 11	No. 10	No. 9	No. 8			
2	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 23	No. 22	No. 21	No. 20	No. 19	No. 18	No. 17	No. 16			
3	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 31	No. 30	No. 29	No. 28	No. 27	No. 26	No. 25	No. 24			

4.2 Coil Status Mapping – 500 Series

	Input Table										
BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0			
0	Allocated and	Allocated and	Allocated and	Allocated and	Allocated and	Allocated and	Allocated and	Allocated and			
0	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved			
1	Allocated and	Allocated and	Allocated and	Allocated and	Allocated and	Open Coil Status	Shorted Coil	Valve Power			
1	Reserved	Reserved	Reserved	Reserved	Reserved		Status	Status			
2	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,			
2	Coil No. 7	Coil No. 6	Coil No. 5	Coil No. 4	Coil No. 3	Coil No. 2	Coil No. 1	Coil No. 0			
3	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,			
5	Coil No. 15	Coil No. 14	Coil No. 13	Coil No. 12	Coil No. 11	Coil No. 10	Coil No. 9	Coil No. 8			
4	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,			
4	Coil No. 23	Coil No. 22	Coil No. 21	Coil No. 20	Coil No. 19	Coil No. 18	Coil No. 17	Coil No. 16			
5	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,			
5	Coil No. 31	Coil No. 30	Coil No. 29	Coil No. 28	Coil No. 27	Coil No. 26	Coil No. 25	Coil No. 24			
6	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil			
0	Status Coil No. 7	Status, Coil No. 6	Status, Coil No. 5	Status, Coil No. 4	Status, Coil No. 3	Status, Coil No. 2	Status, Coil No. 1	Status, Coil No. 0			
	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil			
7	Status,	Status,	Status,	Status,	Status,	Status,	Status,	Status,			
	Coil No. 15	Coil No. 14	Coil No. 13	Coil No. 12	Coil No. 11	Coil No. 10	Coil No. 9	Coil No. 8			
	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil			
8	Status,	Status,	Status,	Status,	Status,	Status,	Status,	Status,			
	Coil No. 23	Coil No. 22	Coil No. 21	Coil No. 20	Coil No. 19	Coil No. 18	Coil No. 17	Coil No. 16			
	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil			
9	Status,	Status,	Status,	Status,	Status,	Status,	Status,	Status,			
	Coil No. 31	Coil No. 30	Coil No. 29	Coil No. 28	Coil No. 27	Coil No. 26	Coil No. 25	Coil No. 24			



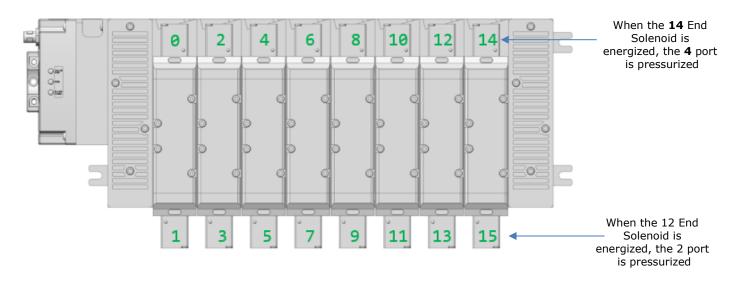
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2035 Series



4.3 Coil Output Mapping – 2035 Series

	Output Table										
BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0			
0	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 7	No. 6	No. 5	No. 4	No. 3	No. 2	No. 1	No. 0			
1	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil	Valve Coil			
	No. 15	No. 14	No. 13	No. 12	No. 11	No. 10	No. 9	No. 8			

4.4 Coil Status Mapping – 2035 Series

	Input Table											
BYTE	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0				
0	Allocated and	Allocated and	Allocated and	Allocated and								
	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved	Reserved				
1	Allocated and Reserved	Open Coil Status	Shorted Coil Status	Valve Power Status								
2	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,								
	Coil No. 7	Coil No. 6	Coil No. 5	Coil No. 4	Coil No. 3	Coil No. 2	Coil No. 1	Coil No. 0				
3	Open Coil Status,	Open Coil Status,	Open Coil Status,	Open Coil Status,								
	Coil No. 15	Coil No. 14	Coil No. 13	Coil No. 12	Coil No. 11	Coil No. 10	Coil No. 9	Coil No. 8				
4	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil								
	Status Coil No. 7	Status, Coil No. 6	Status, Coil No. 5	Status, Coil No. 4	Status, Coil No. 3	Status, Coil No. 2	Status, Coil No. 1	Status, Coil No. 0				
5	Shorted Coil	Shorted Coil	Shorted Coil	Shorted Coil								
	Status,	Status,	Status,	Status,	Status,	Status,	Status,	Status,				
	Coil No. 15	Coil No. 14	Coil No. 13	Coil No. 12	Coil No. 11	Coil No. 10	Coil No. 9	Coil No. 8				



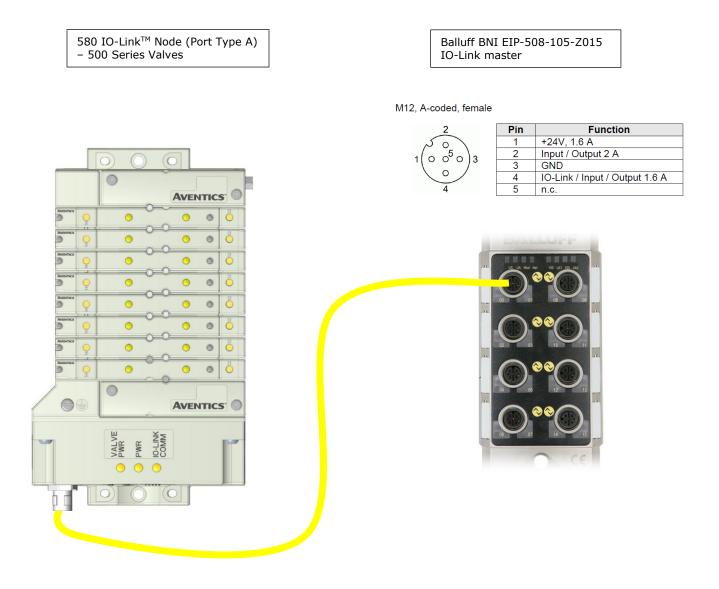
AVENTICS 580 IO-Link[™] Technical Manual

5. Configuration Example - Balluff Master

Example configuration with Balluff BNI EIP-508-105-Z015 IO-Link[™] master and RSLogix 5000.

5.1 Connect the Aventics 580 IO-Link[™] manifold

Connect the Aventics 580 IO-Link[™] Module to one of the 8 Balluff module IO-Link[™] ports. In this example; port 1 is connected using a 4 pin I/O cable.



Pin 2 (Output) provides Valve Power to the Aventics 580 IO-Link manifold. Pin 4 (I/O Link) Provides I/O Link communication to the Aventics 580 IO-Link manifold.



NOTE!

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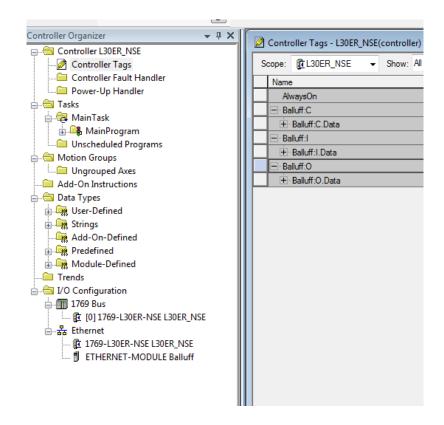
5.2 Controller Tags (RSLogix 5000)

AVENTICS

The following configuration example assumes the Balluff BNI EIP-508-105-Z015 IO-Link[™] master has been configured using the Generic Ethernet Module as shown.

New Module							X
Type: Vendor: Parent: Name:	ETHERNET-MODULE Gener Allen-Bradley EN2TR Balluff_IO_Link_Master_BK4		t Module Connection Para	meters Assembly			
Description:		*		Instance: 100	Size: 392	· (01.55	
			Input:	100	332	(8-bit)	
		Ŧ	Output:	101	262	膏 (8-bit)	
Comm Format	: Data - SINT	-	Configuration:	102	194	膏 (8-bit)	
Address / H	łost Name		Configuration			(0 Dil)	
IP Addre	ess: 192 . 168 . 1 .	40	Status Input:			-	
🔘 Host Na	me:		Status Output:				
🔽 Open Mode	ule Properties		ОК	Can	cel	Help	

Once the Balluff IO-Link^M master module is configured in RSLogix 5000; open the modules' associated controller tags. In this example the module name is "Balluff".





5.3 Configure Port for IO-Link[™]

In the example below; the Balluff master uses the Balluff:C Data table to configure the function of each port based on the following table.

Byte	Slot	Module part	Description
01	1	Module	General configuration for the whole module
225	2	IO-Link port 0	Configuration for the IO-Link port 0
2649	3	IO-Link port 1	Configuration for the IO-Link port 1
5073	4	IO-Link port 2	Configuration for the IO-Link port 2
7497	5	IO-Link port 3	Configuration for the IO-Link port 3
98121	6	IO-Link port 4	Configuration for the IO-Link port 4
122145	7	IO-Link port 5	Configuration for the IO-Link port 5
146169	8	IO-Link port 6	Configuration for the IO-Link port 6
170193	9	IO-Link port 7	Configuration for the IO-Link port 7

yte				В	lit	Description			
By	7	6	5	4	3	2	1	0	•
0	P	3	Р	2			0	Port function 0x00: Standard I/O	
1	P	7	P	6	F	25	5 P4		0x01: IO-Link

Set Bit 0 of Byte 0 to configure Port 0 for IO-Link[™] communication

Scope: Lags	▼ Enter Name	Fite
Name IB	Value 🗲	*
AlwaysOn	0	
Balluff:C	{}	=
Balluff:C.Data	{}	
Balluff:C.Data[0]	16#01	-
Balluff:C.Data[0].0	1	

Balluff:C.Data[0].0



5.4 Enable valve power

AVENTICS

In the example below; the Balluff master uses the Balluff:O Data table to turn on the output of Pin 2 to supply valve power to the Aventics 580 IO-Link[™] module.

Byte	Module part	Description
05	Standard I/O ports	Process data outputs on standard Inputs
637	IO-Link port 0	Process data outputs on IO-Link port 0
3869	IO-Link port 1	Process data outputs on IO-Link port 1
70101	IO-Link port 2	Process data outputs on IO-Link port 2
102133	IO-Link port 3	Process data outputs on IO-Link port 3
134165	IO-Link port 4	Process data outputs on IO-Link port 4
166197	IO-Link port 5	Process data outputs on IO-Link port 5
198229	IO-Link port 6	Process data outputs on IO-Link port 6
230261	IO-Link port 7	Process data outputs on IO-Link port 7

Byte				В	Description				
Dyte	7	6	5	4	3	2	1	0	Description
0	O32	O34	022	024	012	014	002	004	Output data O04 → Output on port 0 pin 4 To use this function on a IO-
1	072	074	O62	064	052	054	042	044	Link port the port must be configured as an output (see 0- Module configuration)

Set Bit 1 of Byte 0 to turn on Output 2 which supplies 24v valve power to the Aventics 580 manifold connected to port 1.

EnableNumaticsValveower ЭE

Balluff:O.Data[0].1 $\langle \rangle$



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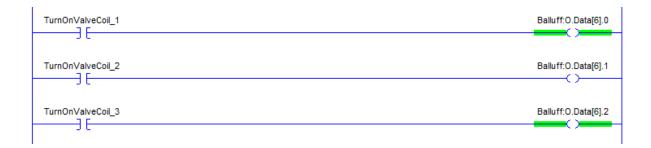
5.5 Control valve coil outputs

AVENTICS[™]

In the example below; the Balluff master uses the Balluff:O Data table to control the Aventics valve coils over IO-Link[™]. The 32 Valve coils are mapped from Byte 6 thru Byte 9.

Byte				В	Description				
Dyte	7	6	5	4	3	2	1	0	Description
637			-						IO-Link port 0 output data
	The d	ata of th	ne other	· IO-Link	(ports h	as the	same st	ructure	and follows here

Set Bit 0, 1 & 2 of Byte 6 to turn on the valve coils 1, 2 & 3 on the Aventics 580 manifold connected to port 1. This is accomplished using IO-Link[™] communication.



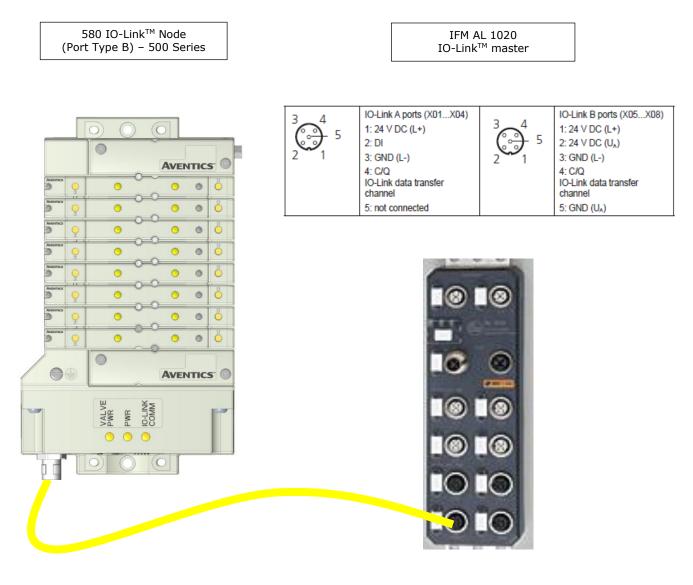


6. Configuration Example - IFM Master

Example configuration with IFM AL 1020 IO-Link[™] master and RSLogix 5000.

6.1 Connect the Aventics 580 IO-Link[™] manifold

Connect the Aventics 580 IO-Link[™] Module to one of the IFM module IO-Link[™] ports. In this example; port #7 is connected using a 5 pin I/O cable.





Pin 2 (Output) provides Valve Power to the Aventics 580 IO-Link[™] manifold. Pin 3 provides 0v valve power common. Pin 4 (I/O Link) Provides I/O Link communication



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6.2 Controller tags (RSLogix 5000)

AVENTICS

The following configuration example assumes the IFM AL 1020 IO-Link[™] master has been configured using the Generic Ethernet Module as shown.

Module Properties: LocalENB (ETHERNET-MO	DULE 1.1)
General Connection Module Info Type: ETHERNET-MODULE Generic Ethe Vendor: Allen-Bradley Parent: LocalENB Name: JFM_IOLink Description:	ernet Module Connection Parameters Assembly Instance: Size: Input: 103 260 + (8-bit)
Comm Format: Data - SINT Address / Host Name IP Address: 192 . 168 . 0 . 10 Host Name:	Output: 102 260 (8-bit) Configuration: 106 214 (8-bit) Status Input:
Status: Offline OK	Cancel Apply Help

Once the IFM IO-LinkTM master module is configured in RSLogix 5000; open the modules' associated controller tags. In this example, the module name is "IFM_IOLink".

Controller L30ER_NSE	Name ==
🖶 🔂 Tasks	AlwaysOn
🖨 MainTask	FIFM_IOLINK:C
🖨 🕞 MainProgram	FIFM_IOLINK:C.Data
Parameters and Local Tags	
Main	
Unscheduled Programs Motion Groups	FIFM_IOLINK:C.Data[2]
Ungrouped Axes	+ IFM_IOLINK:C.Data[3]
Add-On Instructions	+ IFM_IOLINK:C.Data[4]
Add-On Instructions Data Types	+ IFM_IOLINK:C.Data[4]
User-Defined	+ IFM IOLINK:C.Data[6]
Strings	+ IFM IOLINK:C.Data[7]
	+ IFM_IOLINKC.Data[7]
🕀 🚂 Predefined	+ IFM_IOLINKC.Data[8]
🖶 🛄 Module-Defined	
Trends	IFM_IOLINK:C.Data[10]
Tr. Logical Model	
□	
1769-L30ER-NSE L30ER_NSE	
늘	
🔁 1769-L30ER-NSE L30ER_NSE	IFM_IOLINK:C.Data[16]
ETHERNET-MODULE IFM_IOLINK	EIFM_IOLINK:C.Data[17]
	+ IFM_IOLINK:C.Data[22]
	IFM_IOLINK:C.Data[23]



6.3 Configure port for IO-Link[™]

AVENTICS[™]

In the example below; the IFM master uses the IFM_IOLink:C Data table to configure the function of each port. The sixth byte of each ports 26 byte parameter group is used to control the port mode. Setting the sixth byte to a value of 4 enables the port for IO-Link[™] functionality

Byte	Data type	Function
0	UINT8	= reserved
1	UINT8	= reserved
2	UINT8	Fail-safe mode
3	UINT8	Fail-safe pattern DO pin 4
4	UINT8	= reserved
5	UINT8	= reserved
6	UINT8	Port mode port 1
78	UINT16	Vendor ID port 1
912	UINT32	Device ID port 1
13	UINT8	Data storage port 1
14	UINT8	IO-Link fail- safe mode port 1
15	UINT8	Enable direct parameter port 1
1631	Array of 16 x UINT8	Direct parameter page 2 port 1
32213		26 parameter bytes per port

Assembly instance 106

For example, to configure Port 7 for IO-Link[™] communication. Set Byte 162 of the parameter table defined by assembly instance 106 to the value 4. For more information refer to the IFM IO master documentation.







6.4 Control valve coil outputs

Assembly Instance 102

Byte	Function	Description
03	Control Byte	IO-Link [™] master control bytes
435	IO-Link [™] port 1 OUT	32 byte IO-Link [™] output process data
3667	IO-Link [™] port 2 OUT	32 byte IO-Link [™] output process data
6899	IO-Link [™] port 3 OUT	32 byte IO-Link [™] output process data
100131	IO-Link [™] port 4 OUT	32 byte IO-Link [™] output process data
132163	IO-Link [™] port 5 OUT	32 byte IO-Link [™] output process data
164195	IO-Link [™] port 6 OUT	32 byte IO-Link [™] output process data
196227	IO-Link [™] port 7 OUT	32 byte IO-Link [™] output process data
228259	IO-Link [™] port 8 OUT	32 byte IO-Link [™] output process data

Set Bit 0 of Byte 196 in IFM_IOLINK DATA(196).0 to turn on Aventics 580 manifold valve coil #1.

Byte 0 of Chan 7 IFM_IOLINK:O.Data[196].0 $\langle \rangle$

	1	Decimal	SINT	Byte 0 of Chan 7		
-IFM_IOLINK:O.Data[196].0	1	Decimal	BOOL	Byte 0 of Chan 7		
-IFM_IOLINK:O.Data[196].1	0	Decimal	BOOL	Byte 0 of Chan 7		



AVENTICS[™]

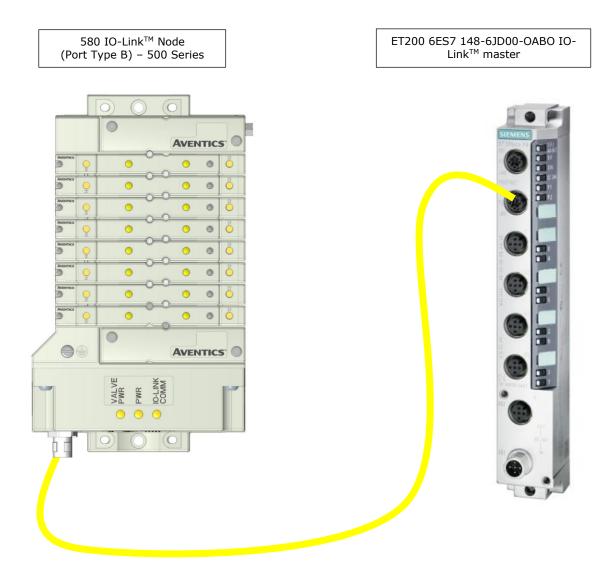
7. Configuration Example - Siemens Master

Example configuration for Siemens ET200 6ES7 148-6JD00-OABO IO-Link[™] master and TIA Portal V13 (SP1 Update 9) The Aventics 580 IODD file is required to complete the configuration. Download the IODD file at;

http://www.asco.com/en-us/Pages/fieldbus-technical-document-search.aspx

7.1 Connect the Aventics 580 IO-Link[™] manifold

Connect the Aventics 580 IO-Link[™] Module to the Siemens ET200 IO Link Master. In this example; port #1 is connected to a Type B IO link port using a 5 pin I/O cable.





7.2 Create the PLC hardware configuration for the Siemens ET200 IO Link master.

From the PLC hardware configuration select the Siemens ET200 IO link Master Module and connect it to the PLC Profinet port

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Open the ET200 Module and select IO-Link[™] 32I/32O +PQI for the port that is connected to Aventics 580 manifold. Modify the input and output address ranges as necessary.

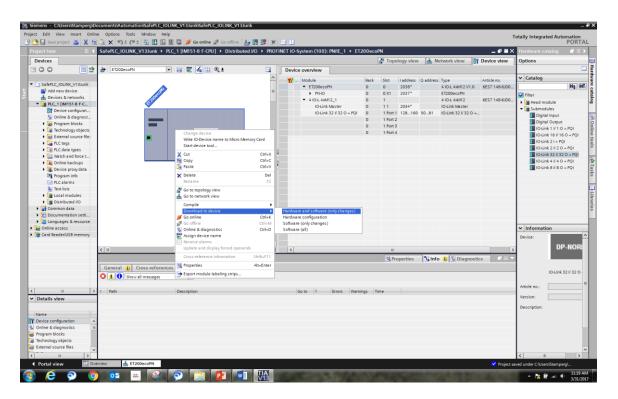
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Select Port 1 (in this example) and right click. Select "Start device tool".

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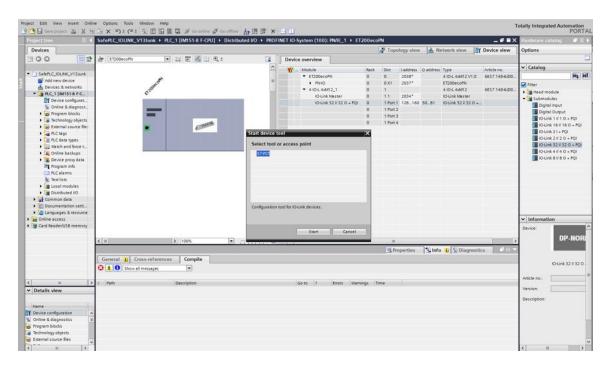
Save and download the configuration to the Siemens controller.







Select "S7PCT" to run the S7 Configuration Tool.





7.3 Install the Aventics 580 IO-Link[™] IODD file.

The IODD file for the Aventics 580 I-O link manifold can be found at; Under the options tab select import IODD file

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Once the IODD file is installed; select the Aventics 580 IO-Link[™] Module from the IO-Link[™] V1.1 folder

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In this example the Type B (5 pin connection) was selected.

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Change the "Type Compatible" and "Backup Procedure" attributes as shown

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Select "Load" to download the configuration to the Siemens I-O Link master

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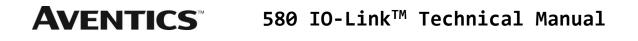


The module configuration is complete. The Aventics 580 valve outputs can be tested with PLC logic using the configured output addresses.

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Pulse1 ***********************************	
→ Technology objects	
▶ G External source file:	
▶ 🔄 PLC data types 👻 Network 5:	
in Watch and force t	
Comment Comment	
• • Device proxy data *M0.1 %Q50.2	
Program info "Pulse1" "Taq_6"	
V PLC alarms	=
E Text lists	
[m] Local modules	
Distributed I/O	
Common data Network 6:	~



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8. Configuration Example - Rockwell Master

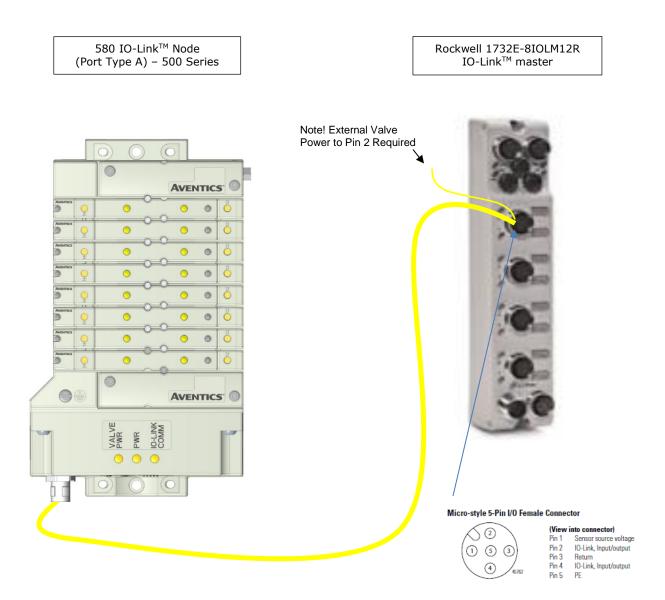
Example configuration for Rockwell 1732E-8IOLM12R IO-Link[™] master and Rockwell Studio 5000 (v30)

8.1 Connect the Aventics 580 IO-Link[™] manifold

Connect the Aventics 580 IO-Link[™] Module to the Rockwell IO Link Master. In this example; Channel 0 is connected to a Type A IO link port using a 4 pin I/O cable.

NOTE!

It is necessary to supply the 580 Valve Power (pin 2) externally since the Rockwell IO Link port's digital output (pin 2) is limited to 150ma max.





TD580IOLTM1-9EN 5/23 Subject to change without notice

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8.2 Create the PLC hardware configuration for the Rockwell 1732E-8IOLM12R IO Link[™] master

Select the IO Link[™] Master's Module Properties select the IO-Link Tab.

Module Properties	es: Local (1732E-8IOLM12R 1.001)	
General Connection	on Module Info Internet Protocol Port Configuration Network Fault/Program Action Configuration IO-Link	
Type: Vendor: Parent: Name:	1732E-8IOLM 12R 8 Channel IO-Link Master Allen-Bradley Local ArmorBlockMaster I D Address:	
Description:	Host Name:	
Module Definit Series: Revision: Electronic Keyli Connection:	nition A Change I.001 Change Module Channel 0 Channel 0 IO-Link Channel 4 IO-Link Channel 4 IO-Link Channel 5 IO-Link Channel 2 IO-Link Channel 6 IO-Link Channel 3 IO-Link Channel 7 IO-Link	
Status: Offline	OK Cancel	Apply Help



Module Properties: Local (1732E-8)	IOLM12R 1.001)					
General Connection Module Info	Internet Protoco	I Port Co	nfiguration Netwo	ork Fault/Program Act	tion Configuration IO-Link	1	
- 1732E-8IOL12MR/A							
Ch 0 - IO-Link Generic Device	Channel	Mode	Vendor	Device	Application Specific Name	Electronic Keying	Process Data Input
Ch 1 - Digital Out	0	10-Link		Generic Device		Disabled	
😧 Ch 3 - IO-Link	1	Digital					
Ch 4 - IO-Link O Ch 5 - IO-Link	2	10-Link					
Ch 6 - 10-Link	3	10-Link					
🗞 Ch 7 - 10-Link	4	10-Link					
	5	10-Link					
	6	IO-Link					
	7	10-Link					
							Change
DANGER, Parameter							
changes by external sources are shown only after Refresh.							
External changes could be overwritten without notice.							Refresh
Status: Offline						ОК	Cancel Apply Help

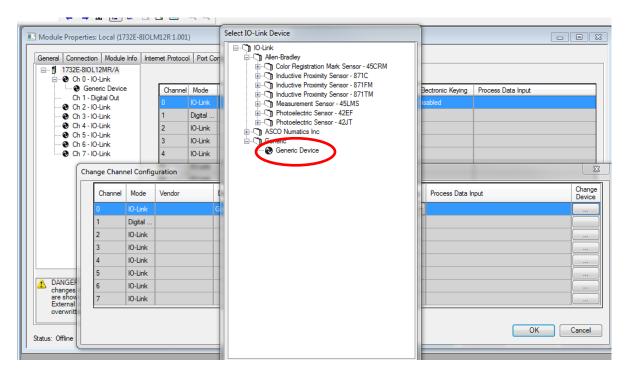




Select Change Device button for Channel 0

1		ion Module	into inte	met Protoco	Port G	onfiguration Netw	ork F	auit/Program Ad	ction Configi	uration IO-Link				
<u> </u>	1/32E-8IC	L12MR/A												
T		eneric Device		Channel	Mode	Vendor	Dev	ice	Application	n Specific Name	Ele	ectronic Keying	Process Data Input	
-	Ch 1 -	Digital Out		0	10-Link		Gene	eric Device			Dis	abled		
	-⊗ Ch 2 - -⊗ Ch 3 -			1	Digital									
	🛛 Ch 4 -	10-Link		2	10-Link		-							
	 Ch 5 - Ch 6 - 			3	10-Link									
	 Ch 8 - Ch 7 - 			4	10-Link						-			
		0	10-Link			Generic Device				Disabled	-			
		Channel	Mode	Vendor		Device		Application Sp	Conc Name	Electronic Keyi	-	Process Data Ir	iput	Device
		1	Digital											
		2	IO-Link											
		3	10-Link											
		4	10-Link											
	_	5	10-Link											
	NGEF	6	10-Link											
	angeo	7	10-Link											
cha are	e show ternal										_			

Select Generic Device





Select Electronic Keying to Disabled, Set Input and Output Length to 4 Bytes each. Save and download the configuration to the Rockwell controller.

eneral Conne	ction Module	Info Inter	met Protoco	Port Co	onfigurati	on Network Fault/Pro	gram Action	Configuration	IO-Link			
	IOL12MR/A											
	- IO-Link				-	1					1	
	Generic Device - Digital Out	•	Channel		Vendo			oplication Specific		Electronic Keying	Process Data Input	
	- IO-Link		0	10-Link		Generic Devi	се			Disabled		
	- IO-Link		1	Digital								
	- IO-Link - IO-Link		2	10-Link								
	- IO-Link		3	IO-Link								
	- IO-Link		4	IO-Link								
C		_	-	-	-		_		_			
C	hange Chanr	el Config	uration				_		_			
	Channel	Mode	Vendor		Device	Edit Generic Device P	roperties			Data I	anut.	Chan
	Charmer		Venuor		-					Datan	nput	Devi
	0	10-Link			Generic		_					
	1	Digital				Channel:	0					
	2	10-Link				Electronic Keying:	Disabled	•				
	3	IO-Link				Vendor ID:						
	4	IO-Link										
	5	10-Link				Device ID:						
	6	IO-Link				Input Length:	4	bytes				
DANGER	7	IO-Link				Output Length:	4	bytes				
changes are show		10 Blik										
changes	1							OK				

The Armor Block Master's controller tags now identify four bytes of output data to control up to 32 coils on the 580 IO link manifold connected to Channel 0

-AmorBlockMaster:O.Ch0Data		SINT[4]
+-AmorBlockMaster:O.Ch0Data[0]		SINT
+ AmorBlockMaster:O.Ch0Data[1]		SINT
+ AmorBlockMaster:O.Ch0Data[2]		SINT
-AmorBlockMaster:O.Ch0Data[3]		SINT



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9. Appendix

9.1 System Specifications

Electrical		
Supply Voltage	Valves (501, 502, 503): 24 VDC + 10%, -15% Node: 24 VDC ± 10%	
Current	Total current on the Power Connector ("Valves" and "Node" Pins) must not exceed 4 Amps.	
Reverse Polarity	Reverse polarity is protection is provided on both Node and Valve power.	
Recommended External Fuse	External fuses should be chosen depending upon manifold configuration. Please refer to power consumption chart on page 3-15 for additional fuse sizing information.	
Spike Suppression	Output spike suppression is internally provided for valve outputs.	
Valve Solenoid Coil Output Drivers	Maximum 0.5 Amps per output. All output points are short circuit protected and have internal spike suppression.	
Operating Temperature for Electronic Components	-10 to 115°F (-23 to 46°C)	

9.2 Troubleshooting Communication Node

Symptom	Possible Cause	Solution
The wrong valve solenoid coils are being energized.	Z-Board [™] type mismatch. Single Z-Board [™] present where double Z-Board [™] expected or vice versa.	Check that correct Z-Board [™] types are installed.
Valve outputs do not energize.	Output power not present or connected improperly on Power connector.	Check for 24VDC on the +24 VDC (Valves) pin of the M12 Power connector of the 580 Node.

9.3 Technical Support

For technical support, contact your local Aventics distributor. If further information is required, please call Aventics. Technical Support Department at (248) 596-3300.

Issues relating to network setup, PLC programming, sequencing, software related functions, etc. should be handled with the appropriate product vendor.

Information on device files, technical manuals, local distributors, and other Aventics, Inc. products and support issues can be found on the Aventics website at <u>www.emerson.com</u>

