Stride Field I/O Modules

SIMPLE & COMPACT FIELD I/O!

The *Stride* Field I/O family of modules provides a simple and economical means to connect inputs and outputs to a Modbus TCP communications network.

Each module operates as a standalone Modbus TCP server, and can be configured via a built-in web server.

Analog input, output and thermocouple modules have fully isolated or isolated-in-pairs channels for noise-sensitive applications.

FEATURES

- Interfaces remote I/O points to a Modbus TCP network via Ethernet 10/100 Base-T
- Analog current, voltage, resistance & temperature inputs available
- Digital inputs available
- Analog current and voltage outputs available
- Discrete relay and transistor outputs available
- Isolated power sources
- Integrated web server for status and configuration
- Remotely configurable
- Removable screw terminals
- LED status signaling
- Galvanic isolation
- IP20 rated
- –10°C to +40°C UL operating temp. (–10°C to +60°C non-UL)
- UL listed / CE mark
- DIN rail mounting

Stride Field I/O Modules		
Part Number	***Description***	***Price***
SIO-MB04ADS	STRIDE analog input module, 4-channel, current/voltage, 16-bit, isolated, input current signal range(s) of +/- 20 mA, input voltage signal range(s) of +/- 10 VDC, (1) Ethernet (RJ45) port, Modbus TCP server, external 20-30 VDC required.	$229.00
SIO-MB08ADS-1	STRIDE analog input module, 8-channel, current, 16-bit, isolated, input current signal range(s) of +/- 20 mA, (1) Ethernet (RJ45) port, Modbus TCP server, external 14-30 VDC required.	$249.00
SIO-MB08ADS-2	STRIDE analog input module, 8-channel, voltage, 16-bit, isolated, input voltage signal range(s) of +/- 10 VDC, (1) Ethernet (RJ45) port, Modbus TCP server, external 14-30 VDC required.	$249.00
SIO-MB04DAS	STRIDE analog output module, 4-channel, current/voltage, 16-bit, isolated, output current signal range(s) of 0-20 mA, output voltage signal range(s) of 0-10 VDC, (1) Ethernet (RJ45) port, Modbus TCP server, external 18-30 VDC required.	$209.00
SIO-MB04THMS	STRIDE temperature input module, thermocouple, 4-channel, 16-bit resolution, isolated, input thermocouple type(s): J, E, K, R, S, T, B, N, (1) Ethernet (RJ45) port, Modbus TCP server, external 14-30 VDC required.	$219.00
SIO-MB08THMS	STRIDE temperature input module, thermocouple, 8-channel, 16-bit resolution, isolated, input thermocouple type(s): J, E, K, R, S, T, B, N, (1) Ethernet (RJ45) port, Modbus TCP server, external 14-30 VDC required.	$259.00
SIO-MB04RTDS	STRIDE temperature input module, RTD, 4-channel, 16-bit resolution, isolated, input RTD type(s): Pt100, Pt1000, Ni100 and Ni1000, (1) Ethernet (RJ45) port, Modbus TCP server, external 18-30 VDC required.	$249.00
SIO-MB16ND3	STRIDE discrete input module, 16-point, 12-24 VDC, sinking/sourcing, 2 isolated common(s), 8 point(s) per common, (1) Ethernet (RJ45) port, Modbus TCP server, external 10-30 VDC required.	$219.00
SIO-MB12CDR	STRIDE discrete combo module, Input: 8-point, 12-24 VDC, sinking, Output: 4-point, relay, (4) Form C (SPDT) relays, 2A/point, (1) Ethernet (RJ45) port, Modbus TCP server, external 10-30 VDC required.	$199.00
SIO-MB16CDD2	STRIDE discrete combo module, Input: 8-point, 12-24 VDC, sinking, Output: 8-point, 12-24 VDC, sourcing, 500mA per point, 1A per module, (1) Ethernet (RJ45) port, Modbus TCP server, external 10-30 VDC required.	$239.00

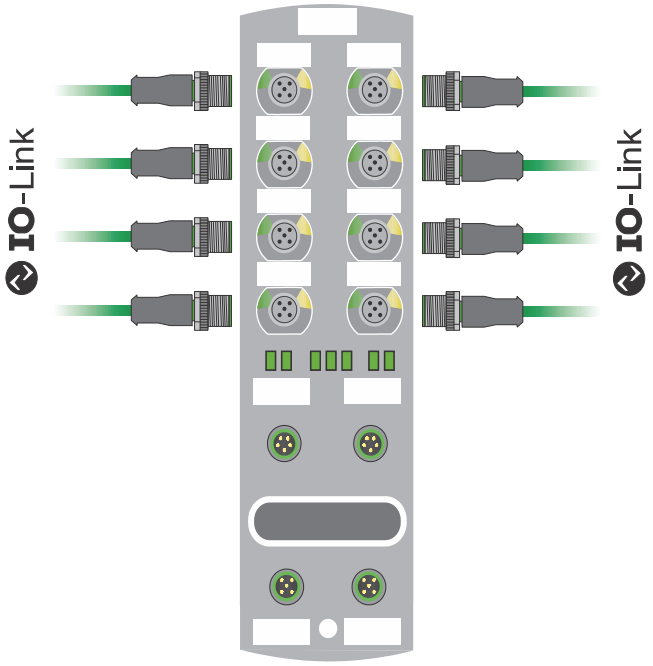
IO-Link Field I/O

IO-Link Overview

IO-Link is a standardized protocol that enables connection of intelligent devices (sensors and actuators) to an automation system.

Communication takes place between an IO-Link master and one or more IO-Link devices. IO-Link is a point-to-point communication system and is not a fieldbus. A master module has one or more ports and one device can be connected to each port.

The IO-Link master module is the interface between the controller and the IO-Link system, using EtherNet/IP.



Features

- No field wiring typically required. IO-Link devices plug into M12 ports.
- Rich sensor data can add diagnostics, history, and engineering units automatically, all delivered over one cable.
- Automatic device configuration can speed and simplify field replacement.
- IO-Link Masters support daisy-chaining for easy installation of many devices.
- Integrates with Productivity PLCs using task library for quick configuration and deployment.

IO-Link Masters		
Part Number	***Description***	***Price***
SIOL-EI8B	STRIDE Basic IO-Link master, (8) IO-Link capable I/O points, up to (16) discrete I/O points, IO-Link v1.1, EtherNet/IP, IO-Link Class A Master and IO-Link Class B Master, 8A, 1A/port max, IP65 and IP67.	$290.00
54631	Murrelektronik Premium IO-Link master, (8) IO-Link capable I/O points, up to (16) discrete I/O points, IO-Link v1.1, MQTT Client, EtherNet/IP, OPC-UA, IO-Link Class A Master and IO-Link Class B Master, 16A, 2A/port max, IP65 and IP67.	$385.00

IO-Link Hubs		
Part Number	***Description***	***Price***
59507	Murrelektronik IO-Link hub, up to (8) discrete I/O points, (8) 3-pin M8 ports, 24 VDC, IO-Link v1.1.2 (compatible with v1.1.3), IO-Link Class A Device, 4A, 0.5A/port, IP68. Requires IO-Link master.	$195.00
59710	Murrelektronik IO-Link hub, up to (16) discrete input points, (8) 5-pin M12 A-coded ports, 24 VDC, IO-Link v1.1.2 (compatible with v1.1.3), IO-Link Class A Device, IP68. Requires IO-Link master.	$180.00
59719	Murrelektronik IO-Link hub, up to (16) discrete I/O points, (8) 5-pin M12 A-coded ports, 24 VDC, IO-Link v1.1.2 (compatible with v1.1.3), IO-Link Class A Device, 4A, 0.5A/port, IP68. Requires IO-Link master.	$215.00

IO-Link Masters

Features

- EtherNet/IP Communication
- IP65 / IP67 rated
- Each port offers one dedicated digital I/O pin plus a second selectable pin for IO-Link, digital input or digital output

SIOL-EI8B

54631

IIoT Functions			
Part Number		**SIOL-EI8B**	**54631**
Web Interface		Yes	
Energy monitoring		Yes, Current and voltage	
Temperature monitoring		Yes	
OPC UA	**For IO-Link**	No	Yes. Complies with Companion Specification Release 1.0 and Murrelektronik IO-Link diagnostic information model
	Transport	No	UA TCP, UA Secure Conversation, UA Binary Encoding
	Minimum release interval	No	100 ms
	Maximum sessions/clients	No	5
JSON		No	Yes, via REST API and MQTT

Bus Data		
Part Number	**SIOL-EI8B**	**54631**
Fieldbus protocol	EtherNet/IP	
Ethernet	10/100 Mbit/s	
Addressing	BOOTP, DHCP, WebUI, Rotary encoder switch	
Connection types	Exclusive Owner, Listen Only, Input Only	
Device Level Ring (DLR)	Beacon-based	
Connector	M12, 4-pin, D-coded	

IO-Link	
IO-Link devices operating voltage	24VDC ⎓
IO-Link devices voltage range	20–30V
Transfer rate	4.8, 38.4 or 230.4 kbit/s
Standardized Master Interface (SMI)	IO-Link V1.1.3
Transfer rate recognition	Automatic

Supply	
Operating voltage US	24VDC ⎓
Voltage range US	18–30V 20.3–30V when using IO-Link
Operating voltage UA	24V
Voltage range UA	18–30V
Sensor current US	≤16A at ≤40°C (see Derating)
Actuator current UA	≤16A at ≤40°C (see Derating)
Current consumption	≤0.18 A at idle
Connector	M12, 5-pin, L-coded
Conductor cross-section	Current per supply ≤12 A: #14 AWG Current per supply >12 A: #12 AWG

Materials		
Part Number	**SIOL-EI8B**	**54631**
Housing material	Plastic	

Assembly Data		
Part Number	**SIOL-EI8B**	**54631**
Weight (net)	470g [16.6 oz]	
Dimensions (L x W x H)	225.4 x 63 x 36 mm [8.874 x 2.5 x 1.4 in]	
Drawing	PDF	PDF

IO-Link

EtherNet/IP

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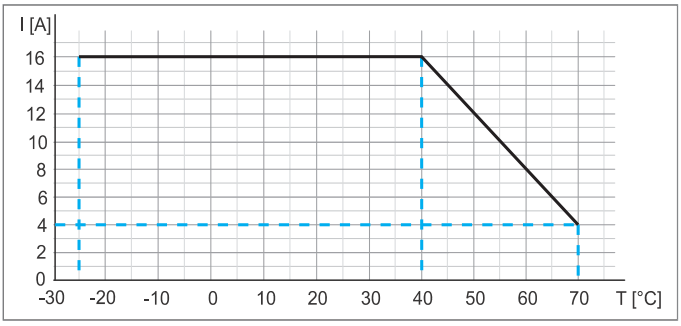
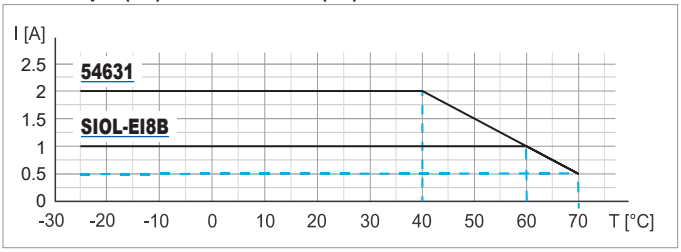
IO-Link Masters

Derating Charts

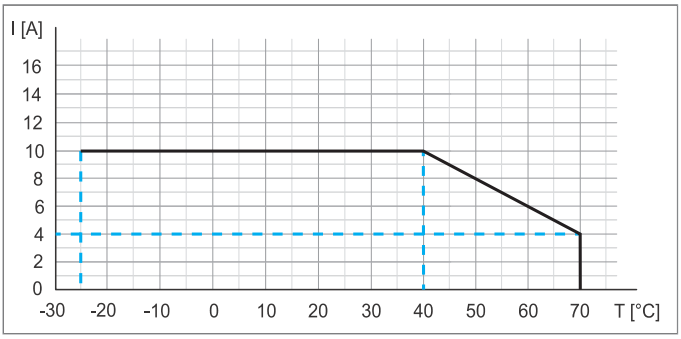
Supply Sensor Current US and Actuator Current UA



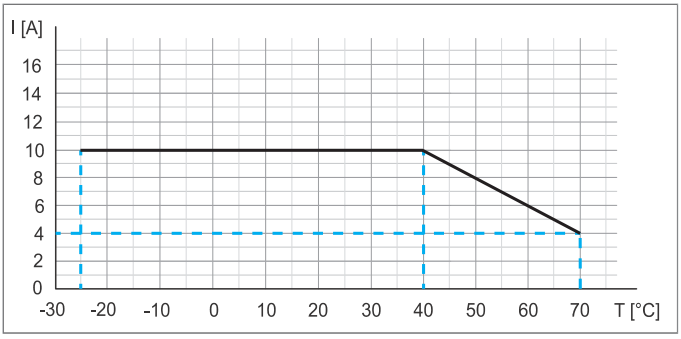
Input (DI) Sensor Supply Current (US) Per Sensor
Output (DO) Actuator Current (UA) Per Sensor



Input (DI) Total Current Sensor Supply



Output (DO) Total Output Current



EMC Immunity	
Electrostatic discharge (ESD)	EN 61000-4-2
Electromagnetic RF fields	EN 61000-4-3
Fast transient burst	EN 61000-4-4
Surge AC	EN 61000-4-5
Conducted RF fields	EN 61000-4-6
Voltage dips	EN 61000-4-11

Input (DI)		
Part Number	*SIOL-EI8B*	*54631*
Sensor power supply (US)	≤1A load Automatic start, per port, at ≤60°C (see Derating)	≤2A load Automatic start, per port, at ≤40°C (see Derating)
Total current sensor supply	≤10A at ≤40°C (see Derating)	
Filter time	0–15 ms + tcycle, adjustable	
Delay time for signal change	2–5 ms	
Input characteristic	EN 61131-2, Type 1 + Type 3	
Short-circuit protection, sensor supply	MOSFET with current measurement	
Connector	M12, 5-pin, A-coded	
Conductor cross-section	#18 AWG	
Conductor length	≤30m [98ft]	
Total current	≤2A per port	≤4A per port

Output (DO)		
Part Number	*SIOL-EI8B*	*54631*
Output current DO (UA)	≤1A per channel at ≤60°C (see Derating)	≤2A per channel at ≤40°C (see Derating)
Total output current	≤10A at ≤40°C (see Derating)	
Frequency	≤50 Hz	
Short-circuit protection actuator	MOSFET with current measurement	
Connector	M12, 5-pin, A-coded	
Conductor cross-section	#18 AWG	
Conductor length	≤30m [98ft]	
Total current	≤2A per port	≤4A per port

Environmental	
Operating temperature	-25°C to +70°C [-13°F to +158°F]
Storage & transport temperature	-25°C to +85°C [-13°F to +185°F]
	Provide acclimatization for commissioning
Relative humidity	≤95%
Installation altitude	≤3000m above sea level

Mechanical	
Vibration test	EN 60068 Part 2-6: 10–58 Hz, Oscillation angle 0.35 mm, 58–150 Hz; 20 g
Shock test	EN 60068 Part 2-27: 50 g, duration 11 ms

Device Protection	
Overvoltage protection	Yes
Overload protection module supply	Yes. To be ensured through load circuit monitoring
Reverse-polarity protection module supply US and UA	Yes
Short-circuit protection sensor supply	Electronically
Short-circuit protection output	Electronically
Protective circuit input	Suppressor diode, internal

Electrical Safety	
Protection degree	EN 60529: IP67
Protection class	III, using a SELV- or PELV- power supply
Pollution degree	2

Electrical Inteference	
Radiated inteference E-field enclosure	EN 55016-2-3

IO-Link Masters

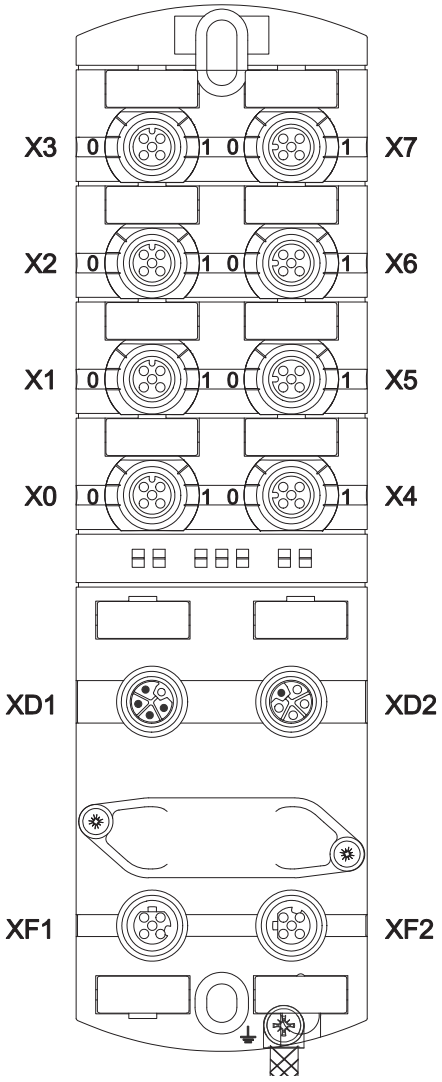
Conformity, Approvals	
Product standard	EN 61131-2, Programmable logic controllers
CE	2014/30/EU, 2011/65/EU
UKCA	Compliant
EMC	2014/30/EU
REACH	No. 1907/2006, SVHC List
WEEE	2012/19/EU, Category 5
cUL	CSA C22.2 NO. 61010-1, 3rd Ed., CSA C22.2 NO. 61010-2-201:18, 2nd Ed. E201820
ULus	UL 61010-1, 3rd Ed., UL 61010-2-201, 2nd Ed. E201820
China RoHS	GB/T 26572, 25 EPUP

Hazardous Substances						
25 Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Component part PCB	X	O	O	O	O	O
Connection Terminal/Screws	X	O	O	O	O	O

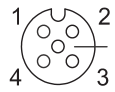
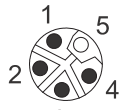
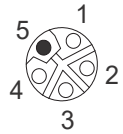
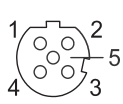
O: Indicates that the content of the harmful substance in all homogeneous materials of the component part is below the limit defined in GB/T 26572.

X: Indicates that the content of the harmful substance in at least one homogeneous material of the component part exceeds the limit defined in GB/T 26572.

Module Port Designations and Pinouts



Port Designations	
X0–X7	Digital inputs and outputs or IO-Link, M12, A-coded LED 0 corresponds to pin 4 LED 1 corresponds to pin 2
XD1	Power supply POWER IN, M12, L-coded, 5-pin
XD2	Power supply POWER OUT, M12, L-coded, 5-pin
XF1	Ethernet port 1, M12, D-coded
XF2	Ethernet port 2, M12, D-coded

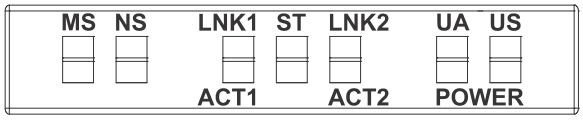
Pin Assignments		
X0–X7	***M12 A-coded female connectors***	
	Pin 1	24VDC ⎓ US
	Pin 2	DI/DO
	Pin 3	0V
	Pin 4	DI/DO/IO-Link
	Pin 5	0V
XD1	***M12, L-coded, Power IN***	
	Pin 1	24VDC ⎓ US (operating voltage)
	Pin 2	0V UA (actuator voltage)
	Pin 3	0V US
	Pin 4	24VDC ⎓ UA
	Pin 5	⏚
XD2	***M12, L-coded, Power OUT***	
	Pin 1	24VDC ⎓ US (operating voltage)
	Pin 2	0V UA (actuator voltage)
	Pin 3	0V US
	Pin 4	24VDC ⎓ UA
	Pin 5	⏚
XF1/XF2	***M12 female connector, D-coded, Ethernet***	
	Pin 1	TD +
	Pin 2	RD +
	Pin 3	TD -
	Pin 4	RD -
	Pin 5	n.c.

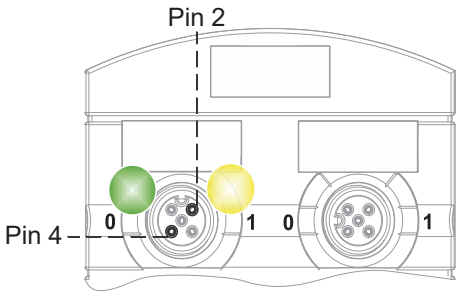
IO-Link Masters

LED Indicators

The IO-Link master modules are equipped with the following separate LED indicators:

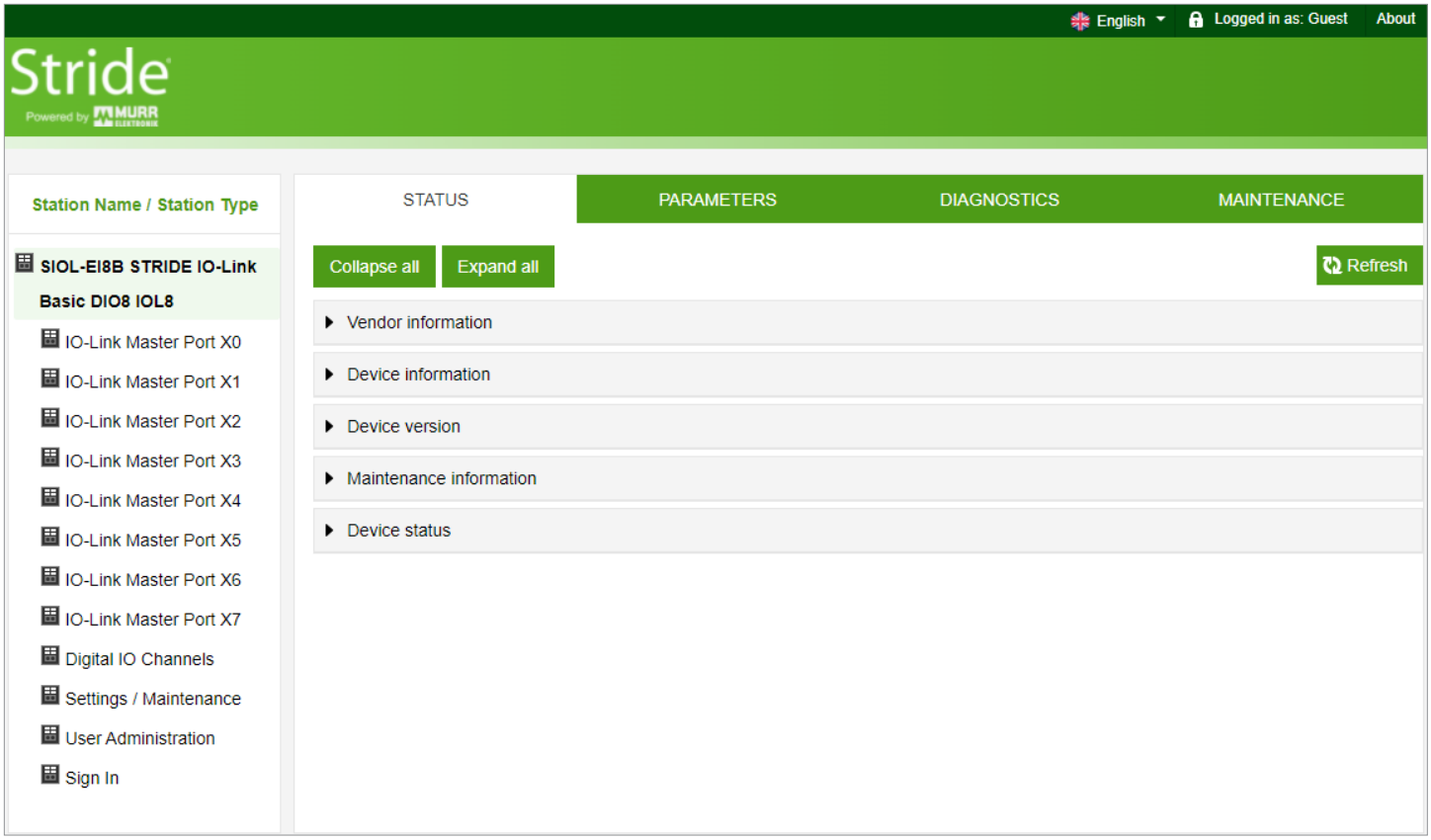
- an individual LED status indicator for each input and output pin
- NS (network status): indicates the state of the fieldbus system
- MS (module status): indicates the state of the module in the PLC configuration
- LNK/ACT (Link/Activity): indicate the state of EtherNet/IP communications at each port
- ST: indicates the state of the overall module
- POWER UA: actuator voltage
- POWER US: operating voltage
- extended indications via blink patterns





Web-based User Interface

The IO-Link master modules have a built-in web server for easy access to device status, configurations, and diagnostics.



IO-Link Hubs

Features

- IO-Link V1.1.2 (compatible with IO-Link 1.1.3)
- 8 I/O ports (8 or 16 inputs/outputs)
- IP68 rating
- M8 & M12 I/O ports
- M12 IO-Link port

59507

59710

59719

IO-Link Hubs			
Part Number	**59507**	**59710**	**59719**
Housing	plastic, 30mm wide	plastic, 50mm wide	
IO-Link	1 x M12 IO-Link Class A	1 x M12 IO-Link Class A	
Digital I/O	8 x M8 I/O ports	8 x M12 I/O ports	
	8 configurable digital inputs/outputs	16 digital inputs	16 configurable digital inputs/outputs

Module Power Supply			
Part Number	**59507**	**59710**	**59719**
Operating voltage US	24VDC		
Operating voltage range US	18–30V		
Total current US	≤4A at ≤50°C (see Derating)		
Current consumption when idling	≤40mA		
Galvanic isolation	No		

IO-Link			
Part Number	**59507**	**59710**	**59719**
Communication speed	COM3		
Transfer rate	230.4 kbit/s		
Bus protocol	IO-Link V1.1.2, compatible with IO-Link 1.1.3		
IO-Link cycle time	≥1 ms		
VendorID	0x012F		
DeviceID	0x0C0005	0x0C000F	0x0C0009
Process data	2 byte (inputs), 2 byte (outputs)	2 byte (inputs), 0 byte (outputs)	2 byte (inputs), 2 byte (outputs)

Sensor Power Supply			
Part Number	**59507**	**59710**	**59719**
Connector (female)	M8	M12	
Operating voltage	24VDC		
Current supply	≤1A per 2 ports (X0+X1, X2+X3, X4+X5, X6+X7)	≤0.5 A per port	

Input (DI)			
Part Number	**59507**	**59710**	**59719**
Connector (female)	M8	M12	
Cable cross section	≤0.75 mm^2		
Cable length	≤30m [98ft]		
Input characteristic	EN 61131-2: Type 1 + Type 3		
Input filter	1 ms		

Output (DO)			
Part Number	**59507**	**59710**	**59719**
Connector (female)	M8	Not Applicable	M12
Cable cross section	≤0.75 mm^2		≤0.75 mm^2
Cable length	≤30m [98ft]		≤30m [98ft]
Output current	≤0.5 A per pin		≤0.5 A per pin
Switching frequency (resistive load)	≤25 Hz		≤25 Hz

IO-Link Hubs

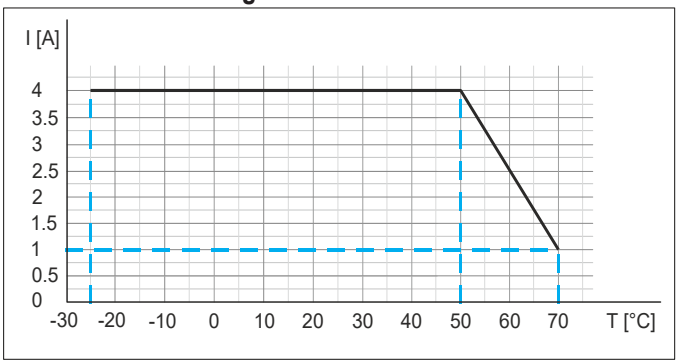
Environmental	
Operating temperature	-25°C to +70°C [-13°F to +158°F]
Storage temperature	-40°C to +85°C [-40°F to +185°F]
Relative humidity	≤95%
Installation altitude	≤3000m above sea level

Mechanical	
Vibration test	EN 60068 Part 2-6: 5–500 Hz, constant amplitude 1mm, acceleration 15 g
Shock test	EN 60068 Part 2-27: 50 g, duration 11 ms

EMC Safety	
Protection degree	IP68
Protection class	III
Pollution degree	2

Assembly data			
Part Number	***59507***	***59710***	***59719***
Weight (net)	129g [4.55 oz]	200g [7.05 oz]	
Dimensions (L x W x H)	126 x 30 x 34.5 mm [4.96 x 1.2 x 1.36 in]	126 x 50 x 34.5 mm [4.96 x 2.0 x 1.36 in]	
Drawing	PDF	PDF	PDF

Total Current Derating Chart



Electrical Inteference	
Radio interference field strength	EN 61000-6-4 Emission: QP: 40 dBµ V/m @ 30–230 MHz QP: 47 dBµ V/m @ 230–1000 MHz

EMC Immunity	
Electrostatic discharge (housing)	EN 61000-4-2: ±4kV @ contact, ±8kV @ air
Electromagnetic high-frequency fields (housing)	EN 61000-4-3 RF field: 10V/m
Rapid transient electric disturbances (burst) DC inputs/outputs	EN 61000-4-4: ±2kV I.O supply, ±1kV data line, ±1kV I/O line
Magnetic field	EN 61000-4-8: 30A/m @ 50 Hz
Conducted interferences, high frequency fields	EN 61000-4-6, asymmetric: 10V

Device Protection	
Overvoltage protection	Yes
Overload protection module supply	Yes. To be ensured through load circuit monitoring
Reverse polarity protection of module supply	Yes
Short-circuit protection, sensor supply	Electronically
Short-circuit protection, output (DO)	Electronically
Protective circuit for input	Suppressor diode, internal

Conformity, Approvals	
Product standard	EN 61131-2, Programmable logic controllers: Compliant
CE	2014/30/EU, 2011/65/EU: Compliant
UKCA	Compliant
EMC	2014/30/EU: Compliant
REACH	No. 1907/2006: SVHC List
WEEE	2012/19/EU: Compliant
ULus	E201820
RoHS	2011/65/EU & 2015/863: Exception 6c&7a
China RoHS	SJ/T 11364-2014, 25 EPUP

Hazardous Substances

Part Name	Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr (VI))	Polybrominated biphenyls (PBB)	Polybrominated diphenyl ethers (PBDE)
Component part PCB	X	O	O	O	O	O
Connection Terminal/Screws	X	O	O	O	O	O

O: Indicates that the content of the harmful substance in all homogeneous materials of the component part is below the limit defined in GB/T 26572.

X: Indicates that the content of the harmful substance in at least one homogeneous material of the component part exceeds the limit defined in GB/T 26572.

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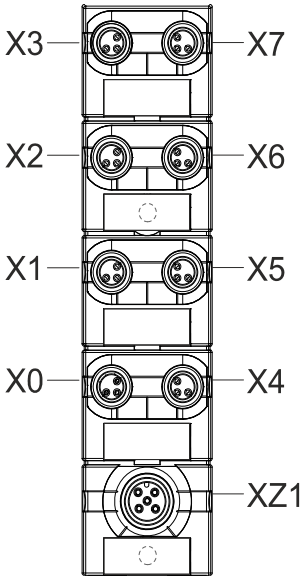
IO-Link

IO-Link Hubs

Module Port Designations and Pinouts



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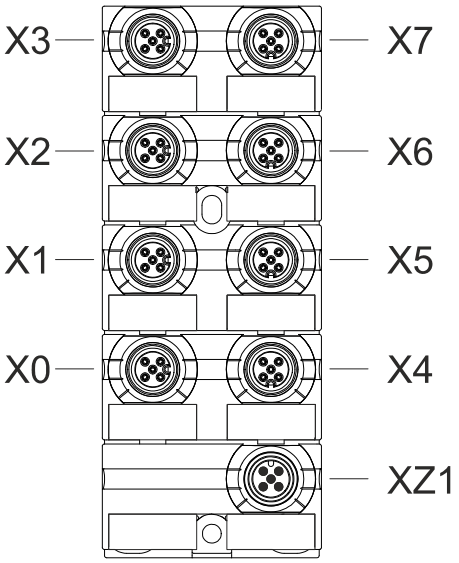
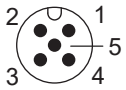
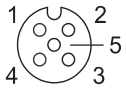


59719 / 59710

Port Designations		
X0–X7	59507 59719	Digital inputs and outputs, US
	59710	Digital inputs, US
XZ1	Module supply, IO-Link Class A	

Pin Assignments		
IO-Link	***XZ1 (M12 A-coded male connectors)***	
	Pin 1	24VDC ⎓ US (L+)
	Pin 2	n.c.
	Pin 3	0V US (L-)
	Pin 4	C/Q IO-Link
	Pin 5	n.c.
59507 DIO	***X0–X7 (M8 A-coded female connectors)***	
	Pin 1	24VDC ⎓ US
	Pin 2	0V US
	Pin 3	DIO US
59719 DIO 59710 DI	***X0–X7 (M12 A-coded female connectors)***	
	Pin 1	24VDC ⎓ US
	Pin 2	59719: DIO US 59710: DI US
	Pin 3	0V US
	Pin 4	59719: DIO US 59710: DI US
	Pin 5	FE

LED Indicators

The IO-Link hub modules are equipped with the following separate LED indicators:

- LED indication for inputs/outputs
- LED indication for IO-Link and US sensor supply

The device has a combined LED for the IO-Link status and the status of the US sensor supply. The IO-Link status is indicated by a green LED chip, and the US status by a red LED chip. This can give rise to a mixture of green and red flashing codes (or orange flashing code in case of overlap).

IO-Link Hubs

IO-Link Object Directory

IO-Link Object Directory (DPP)							
ISDU index	***DPP index***	***Object name***	***Access***	***Length in bytes***	***Meaning / default value***		
Part Number					***59507***	***59719***	***59710***
Identification							
0x0000	0x00	MasterCommand	W	1			
	0x01	MasterCycleTime	R/W	1			
	0x02	MinCycleTime	R	1			
	0x03	M-sequenceCapability	R	1			
	0x04	RevisionID	R/W	1			
	0x05	ProcessDataIn	R	1			
	0x06	ProcessDataOut	R	1			
	0x07	VendorID 1 (MSB)	R	1	0x012F		
	0x08	VendorID 2 (MSB)	R	1			
	0x09	DeviceID 1 (octet 2, MSB)	R/W	1	0x0C		
	0x0A	DeviceID 1 (octet 1, MSB)		1	0x00		
	0x0B	DeviceID 1 (octet 0, LSB)		1	0x05	0x09	0x0F
	0x0C	FunctionID 1 (MSB)	R	1			
	0x0D	FunctionID 2 (LSB)		1			
	0x0E	Reserved	R	1			
	0x0F	SystemCommand	W	1			
0x0002		SystemCommand	R	1			
0x0003		DataStorageIndex	R	variable			
0x000D		ProfileCharacteristic	R	variable			
0x000E		PDInputDescriptor	R	variable			
0x000F		PDOutputDescriptor	R	variable			
0x0010		VendorName	R	64	Murrelektronik GmbH		
0x0011		VendorText	R	64	www.murrelektronik.com.		
0x0012		ProductName	R	64	MVP8-P3 DIO8 8xM8-3 IOLA12 B0	MVP12-P6 DIO16 8xM12A IOLA12 B0	MVP12-P6 DI16 8xM12A IO-LA12 B0
0x0013		ProductID	R	64	59507	59719	59710
0x0014		ProductText	R	64	Digital I/O hub MVP8-P30 - IO-Link Class A DIO8 8xM8-3P Basic Firmware Edition: 2 bytes IN / 1 byte Out	Digital I/O hub, MVP12-P60 - IO-Link Class A DIO16 8xM12A Basic Firmware Edition: 2 bytes IN / 2 byte Out	Digital I/O hub MVP12-P60 - IO-Link Class A DI16 8xM12A Basic Firmware Edition: 2 Byte IN / 0 Byte Out
0x0015		SerialNumber	R	16	Running serial number set during production		
0x0016		HardwareRevision	R	64	e.g. “01.00”		
0x0017		FirmwareRevision	R	64	e.g. “V.1.00.00”		
0x0018		ApplicationSpecificTag	R	16–32	User-specific designation e.g. “System 3 / Port 4”		
0x0019		FunctionTag	R	32			
0x001A		LocationTag	R	32			
Diagnosis							
0x0020		Error Count	R	2			
0x0024		DeviceStatus	R	1	0: Device is operating properly 1: Maintenance Required 2: Out of Specification 3: Functional Check 4: Failure 5–255: Reserved		
0x0025		DetailedDeviceStatus	R	variable	6 x (octet 1: EventQualifier octet 2,3: EventCode)		
0x0028		ProcessDataInput	R	PD length			
0x0029		ProcessDataOutput	R	PD length			
0x0031–0x003F		Reserved for profiles					

IO-Link Hubs

Pin-Based Bitmapping

Input Process Data	
Bit	***Contact/Description***
Byte 0 Inputs (X0–X7)	
0	Pin4_X0
1	Pin4_X1
2	Pin4_X2
3	Pin4_X3
4	Pin4_X4
5	Pin4_X5
6	Pin4_X6
7	Pin4_X7
Byte 1 Inputs (X0–X7)	
0	Pin2_X0
1	Pin2_X1
2	Pin2_X2
3	Pin2_X3
4	Pin2_X4
5	Pin2_X5
6	Pin2_X6
7	Pin2_X7
Byte 2 Diagnostics	
0	Error/Warning at power supply (too low or high)
1	Error/Warning because of temperature rating (threshold can be defined inside object)
2	Error/Warning at Input/Output (short-circuit or overload)
3 4 5 6	DIA at channel X 0 = channel 1 ... 15 = channel 16
7	Global status 0 = no diagnostic 1 = fault detected
Byte 3 Module Identification	
0–7	User defined module identification bits, e. g. for tool change applications; 0 = not used 1–255 = ID value is read out from object

Output Process Data	
Bit	***Contact***
Byte 0 Outputs (X0–X3)	
0	Pin4_X0
1	Pin2_X0
2	Pin4_X1
3	Pin2_X1
4	Pin4_X2
5	Pin2_X2
6	Pin4_X3
7	Pin2_X3
Byte 1 Outputs (X4–X7)	
0	Pin4_X4
1	Pin2_X4
2	Pin4_X5
3	Pin2_X5
4	Pin4_X6
5	Pin2_X6
6	Pin4_X7
7	Pin2_X7

Diagnostic IO-Link Events

NOTE: In addition to the vendor-specific IO-Link events listed here, the standard events of the IO-Link specification also apply.

Vendor-Specific IO-Link Events		
Event Code	***Event Type***	***Description***
0x4000	Error	The device shows a temperature fault - overload.
0x4210	Warning	The device shows a temperature over-run.
0x4220	Warning	The device shows a temperature under-run.
0xFF91	Notification	The device requests a data storage upload from the master.
0x5100	Error	General power supply fault (US) - below shutdown voltage.
0x5110	Warning	Primary sensor supply voltage (US) is over-run.
0x5111	Warning	Primary sensor supply voltage (US) is under-run.
0x1830	Warning	Secondary sensor supply voltage (UA) is over-run.
0x1831	Warning	Secondary sensor supply voltage (UA) is under-run.
0x1832	Error	Secondary power supply fault (UA) - below shutdown voltage.
0x7710	Error	Short-circuit detected on a specific channel.
0x8CA0	Error	DIO pin current overload/ shortcircuit - Port 0 Pin 4.
0x8CA1	Error	DIO pin current overload/ shortcircuit - Port 0 Pin 2.
0x8CA2	Error	DIO pin current overload/ shortcircuit - Port 1 Pin 4.
0x8CA3	Error	DIO pin current overload/ shortcircuit - Port 1 Pin 2.
0x8CA4	Error	DIO pin current overload/ shortcircuit - Port 2 Pin 4.
0x8CA5	Error	DIO pin current overload/ shortcircuit - Port 2 Pin 2.
0x8CA6	Error	DIO pin current overload/ shortcircuit - Port 3 Pin 4.
0x8CA7	Error	DIO pin current overload/ shortcircuit - Port 3 Pin 2.
0x8CA8	Error	DIO pin current overload/ shortcircuit - Port 4 Pin 4.
0x8CA9	Error	DIO pin current overload/ shortcircuit - Port 4 Pin 2.
0x8CAA	Error	DIO pin current overload/ shortcircuit - Port 5 Pin 4.
0x8CAB	Error	DIO pin current overload/ shortcircuit - Port 5 Pin 2.
0x8CAC	Error	DIO pin current overload/ shortcircuit - Port 6 Pin 4.
0x8CAD	Error	DIO pin current overload/ shortcircuit - Port 6 Pin 2.
0x8CAE	Error	DIO pin current overload/ shortcircuit - Port 7 Pin 4.
0x8CAF	Error	DIO pin current overload/ shortcircuit - Port 7 Pin 2.
0x8CD0	Error	Power pin current overload/ shortcircuit - Port 0 Pin 1.
0x8CD1	Error	Power pin current overload/ shortcircuit - Port 1 Pin 1.
0x8CD2	Error	Power pin current overload/ shortcircuit - Port 2 Pin 1.
0x8CD3	Error	Power pin current overload/ shortcircuit - Port 3 Pin 1.
0x8CD4	Error	Power pin current overload/ shortcircuit - Port 4 Pin 1.
0x8CD5	Error	Power pin current overload/ shortcircuit - Port 5 Pin 1.
0x8CD6	Error	Power pin current overload/ shortcircuit - Port 6 Pin 1.
0x8CD7	Error	Power pin current overload/ shortcircuit - Port 7 Pin 1.