



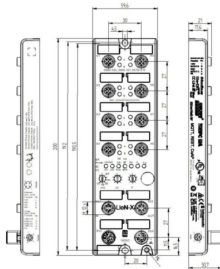
**Product:** [0980 XSL 3900-121-007D-01F](#) 

## LioN-X 16DIO Digital with Multiprotocol

### Product Description

LioN-X IO-Device, Multiprotocol (PROFINET, EtherNet/IP, EtherCAT, Modbus TCP, CC-Link), IoT Protocols (OPC UA, MQTT, CoAP, REST), 16 digital in-/output- channels (universal I/O) (2 A), metal housing IP65, IP67, IP69K, 60mm, 8 x M12 A-coded I/O connection 5-poles, 2 x M12 D-coded Ethernet connection 4-poles, 2 x M12 L-coded power supply

### Technical Drawing



### Technical Specifications

#### Product Description

Brand:	Belden
Product Family:	I/O Systems: Active - Standalone
Product Sub Family:	LioN-X
Item Description:	0980 XSL 3900-121-007D-01F
Part Number:	935705001

#### Product Life Cycle

Device Type:	I/O Device
Protocol:	Multiprotocol
I/O Function:	16DIO
Power Connection (System Supply):	M12 Power, 5-poles, L-coded
I/O Connection:	M12, 5-poles, A-coded
I/O Type:	Digital In-/Output (Universal)

#### General Data

Housing Material:	Metal, zinc die-cast
Housing Plating:	Nickel, matt
Housing Color:	Grey Metallic
Protection Degree / IP Rating**:	IP65, IP67, IP69K
Potted:	Yes
Dimensions (W x H x D):	60 mm x 31 mm x 200 mm
Weight:	480 g
Ambient Temperature (Operation)*:	-40 °C to 70 °C
Ambient Temperature (Storage/Transport):	-40 °C to 70 °C

Permissible Humidity (Operation):	5 % ... 95 % (For UL applications max. 80 %)
Permissible Humidity (Storage/Transport):	5 % ... 95 % (For UL applications max. 80 %)
Air Pressure (Operation):	80 kPa ... 106 kPa (up to 2000 m above sea level)
Air Pressure (Storage/Transport):	80 kPa ... 106 kPa (up to 2000 m above sea level)
Flammability Class:	UL 94 (IEC 61010)
Protection Class:	III, IEC 61140, EN 61140, VDE 0140-1
Pollution Degree:	3 acc. to EN 60664-1, VDE 0110-1
Vibration Resistance:	15 g / 5 -500 Hz
Shock Resistance:	50 g / 11ms
Contact Base Material:	M12, D-coded, CuSn, Gold-plated   M12 Power, L-coded, CuNi, Gold-plated
Contact Bearer Material:	PA / TPU
O-Ring Material:	FKM
Mounting:	2 hole screw mounting. Use standard M4 x 25 / 30 screws with toothed lock washer (as per DIN 125) and self-locking nuts.
Fastening Torque (Fixing Screw):	M4: 1 Nm
Fastening Torque (Ground Connection (FE)):	M4: 1 Nm
Fastening Torque (Bus Connection):	M12: 0.5 Nm
Fastening Torque (Power Connection):	M12: 0.5 Nm
Fastening Torque (I/O Connection):	M12: 0.5 Nm
Included in Delivery:	Attachable Labels: 15x, Sealing Caps: 5x M12
Accessories to Order Separately:	Ethernet cable, mounting adapter, sensor/actuator cable, power cable

PROFINET

Protocol:	PROFINET
Connection:	M12 4-poles, D-coded
Number of Connections:	2
Specification:	V2.3
Conformance Class:	C (CC-C)
Performance Class:	RT (switch supports IRT)
Netload Class:	III
Transmission Rate:	Fast Ethernet (10/100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Update Rate:	min. 1 ms
Addressing:	DCP
Media Redundancy Protocol (MRP):	Supported, MRP client
Shared Device:	Supported
Shared Input:	not supported
Topology Detection:	LLDP, SNMP V3
Easy Device Replacement:	Supported, based on LLDP
Supported Network Protocols (Other):	ARP, HTTP, Ping, SNMP V1, TCP/IP

EtherNet/IP

Protocol (EtherNet/IP):	EtherNet/IP
Connection:	M12, 4-poles, D-coded
Number of Connections:	2
Specification:	CIP V3.2x, EIP Adaption of CIP V1.2x
Transmission Rate:	Fast Ethernet (10/100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Requested Packet Interval (RPI):	min. 1 ms
Addressing:	BootP, DHCP, Rotary Address Switches
Address Switches Range:	0 to 255 dec
Connection Types:	Exclusive Owner, Input Only, Listen Only
CIP Msg Connection Limit:	6
CIP I/O Connection Limit:	3
Device Level Ring (DLR):	Supported, beacon based
Quick Connect (QC):	Supported, ≤ 500 ms
Supported Network Protocols (Other):	ACD, ARP, BootP, DHCP, HTTP, IGMP, Ping, TCP/IP

EtherCAT

Protocol:	EtherCAT
Connection:	M12 4-poles, D-coded
Number of Connections:	2
Specification:	ETG.1000 V1.2
Transmission Rate:	Fast Ethernet (10/100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Update Rate:	min. 250 µs
Addressing:	Auto-increment addressing, fixed position addressing
Mailbox Protocols:	CANopen over EtherCAT (CoE), File access over EtherCAT (FoE), Ethernet over EtherCAT (EoE)
Supported Network Protocols (Other):	Over EoE: HTTP, Ping, TCP/IP

CC-Link IE Field Basic

Protocol:	CC-Link IE Field Basic
Connection:	M12 LAN, 4-poles. D-coded
Number of Connections:	2
Specification:	v2
Transmission Rate:	Fast Ethernet (100 Mbit/s), Full Duplex
Transmission Method:	100 BASE-TX, with auto negotiation and auto crossing
Cycle Time / Update Rate:	min 1ms
Address Switches Range:	0 to 99 dec
Number of stations:	4
Supported Network Protocols:	SNMP, ACD, ARP, HTTP, IGMP, Ping, TCP/IP
Supported IIoT Protocols:	OPC UA, MQTT, CoAP, Syslog, Node Red

Modbus TCP

Protocol:	Modbus TCP
Connection:	M12, 4-poles, D-coded
Number of Connections:	2
Device Type:	Modbus Slave
Specification:	Modbus application protocol V1.1b
Supported Network Protocols:	SNMP V1, HTTP, TFTP, FTP, BootP, DHCP

IIoT Protocols

OPC UA:	Cyclic data read/write, Diagnosis data, Event data
MQTT:	Cyclic data read/write, Diagnosis data, Event data
REST API:	Cyclic data read/write, Diagnosis data, Event data
CoAP:	Cyclic data read/write, Diagnosis data, Event data

Power Supply

Connection Module Supply Voltage:	M12 Power, 5-poles, L-coded
Number of Connections:	2
Current Carrying Capacity of Connector:	max. 16 A
Module Supply Voltage (Nominal):	24 V DC (SELV/PELV)
Module Supply Voltage (Range):	18 V DC to 30 V DC
Current Consumption (typ.):	160 mA (at 24 V DC)
Reverse Polarity Protection:	Yes
Status Indicator (System Supply):	LED green
Diagnostic Indicator:	LED red
Connection Sensor Supply Voltage:	M12 Power, 5-poles, L-coded
Current Carrying Capacity of Connector:	max. 16 A
Sensor Supply Voltage (Nominal):	24 V DC (SELV/PELV)
Sensor Supply Voltage (Range):	18 V DC to 30 V DC
Reverse Polarity Protection:	Yes
Status Indicator (Sensor Supply):	LED green
Diagnostic Indicator:	LED red

Current Carrying Capacity of Connector:	max. 16 A
Actuator Supply Voltage (Nominal):	24 V DC (SELV/PELV)
Actuator Supply Voltage (Range):	18 V DC to 30 V DC
Reverse Polarity Protection:	Yes
Status Indicator (Actuator Supply):	LED green
Diagnostic Indicator:	LED red

Digital Input Channels

Number of Digital Input Channels:	up to 16
Connection:	M12, 5-poles, A-coded
Number of Ports:	8x, X1 to X8
Channel Type:	Type 3 acc. to IEC 61131-2
Input Wiring:	2-, 3-, 4-wire
Nominal Voltage:	24 V DC via US (module power supply)
Nominal Current:	typ. 5 mA
Sensor Current Supply:	max. 4A per port
Sensor Type:	PNP
Input Voltage Range "0" signal:	-3 V DC ...+5 V DC
Input Voltage Range "1" signal:	11 V DC ... 30 V DC
Protective Circuit:	Electronically: Overload protection, short-circuit protection
Status Indicator (Inputs):	LED white or yellow per channel
Diagnostic Indicator:	LED red per port

Digital Output Channels

Number of Digital Output Channels:	up to 16
Connection:	M12, 5-poles, A-coded
Number of Ports:	8x, X1 to X8
Channel Type:	p-switching
Output Wiring:	2-wire
Nominal Voltage:	24 V DC via UL
Output Current per Channel:	max. 2 A
Output Current per Module:	max. 16 A (for UL compliance: max 9A)
Galvanically Isolated:	No
Protective Circuit:	Electronically: Overload protection, short-circuit protection
Overload Behavior:	Auto off and on switching / Manual restart
Status Indicator (Outputs):	LED white or yellow per channel
Diagnostic Idicator:	LED red per channel

Electrical Isolation

US (System Supply Voltage) / FE:	500 V DC
UL / FE:	500 V DC
Bus connection / FE:	2000 V DC

EMC Conformance

EMC Directive:	2014/30/EU
EN 61000-4-2 Electrostatic Discharge (ESD):	Criterion B; 4 kV contact discharge, 8 kV air discharge
EN 61000-4-3 Electromagnetic Field:	Criterion A; Field intensity: 10 V/m
EN 61000-4-4 Fast Transients (Burst):	Criterion B, 2 kV
EN 61000-4-5 Surge Voltage:	Criterion B; DC supply lines: ±0.5 kV/±0.5 kV (symmetrical/asymmetrical); For I/O ports with cables ≤ 30m
EN 61000-4-6 Conducted immunity:	Criterion A; Test voltage 10 V
EN 55032 Radio Interference Properties:	Class A

Safety & Environmental Compliance

CE:	Yes
RoHS Compliant:	Yes
China RoHS-Compliant:	Yes

Approvals

--	--

UL:	cULus Listed, UL 61010-1
CSA:	Yes, via UL
PNO:	Yes
ODVA:	Yes
ETG:	Yes

Notes

Protection Degree / IP Rating Note:	*only if mounted and locked in combination with Hirschmann / Lumberg Automation connector.
System Power Supply Connection Note:	*do not connect / disconnect under voltage!

Variants

Item #	Item Description
935705001	0980 XSL 3900-121-007D-01F

Update and Revision:	Revision Number: 0.25 Revision Date: 07-20-2023
----------------------	---

© 2024 Belden, Inc

All Rights Reserved.

Although Belden makes every reasonable effort to ensure their accuracy at the time of this publication, information and specifications described here in are subject to error or omission and to change without notice, and the listing of such information and specifications does not ensure product availability.

Belden provides the information and specifications herein on an "ASIS" basis, with no representations or warranties, whether express, statutory or implied. In no event will Belden be liable for any damages (including consequential, indirect, incidental, special, punitive, or exemplary damages) whatsoever, even if Belden has been advised of the possibility of such damages, whether in an action under contract, negligence or any other theory, arising out of or in connection with the use, or inability to use, the information or specifications described herein.

All sales of Belden products are subject to Belden's standard terms and conditions of sale.

Belden believes this product to be in compliance with all applicable environmental programs as listed in the data sheet. The information provided is correct to the best of Belden's knowledge, information and belief at the date of its publication. This information is designed only as a general guide for the safe handling, storage, and any other operation of the product itself or the one that it becomes a part of. The Product Disclosure is not to be considered a warranty or quality specification. Regulatory information is for guidance purposes only. Product users are responsible for determining the applicability of legislation and regulations based on their individual usage of the product.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Lumberg Automation:](#)

[0980 XSL 3900-121-007D-01F](#)