

NP 320

**Lumberg Automation™  
Actuator Sensor Interface  
(AS-I) Modules with  
Improved Capability**

Belden reaffirms its lead position in industrial automation technology with the introduction of two AS-I modules with improved signal density and encapsulated PUR housing.

**Lumberg Automation AS-I  
Modules More Than Doubles  
the Signal Density over  
Previous Versions**



The new AS-Interface modules from Lumberg Automation™ support the latest AS-Interface profile in accordance with specification V 3.0 and can be connected to up to 1,000 digital inputs /outputs.

Compared to the previous versions, signal density has more than doubled. This means that, depending on the network topology, fewer modules are required than before, which makes a significant contribution towards cost reduction. In addition, the modules feature a fully encapsulated PUR housing that is highly resistant to cooling lubricants from machine tools.

The round or flat cables connect the modules to the AS-Interface network. For this purpose, they feature integrated splitter functionality or piercing contacts. Both versions are slave modules with four digital inputs for two- or three-wire sensors and four digital outputs for standard actuators. Two inputs and two outputs are Y-connected.

Each module contains eight M12 sockets for digital inputs and outputs. The assignment of slave addresses is via the modules M12 bus connection. The use of an addressing unit and a connection cable is required. Both versions fulfill the requirements for degree of protection IP67, and are suitable for use in temperature ranges from -25°C to +80°C. Power supply is designed for 11 to 30 V.

**Benefits at a Glance:**

- High contact density
- Durable PUR housing
- IP 67 protection standard
- Temperature range: -25°C to +80°C
- 11-30 V power supply block
- Easy installation
- Models for round or flat cables

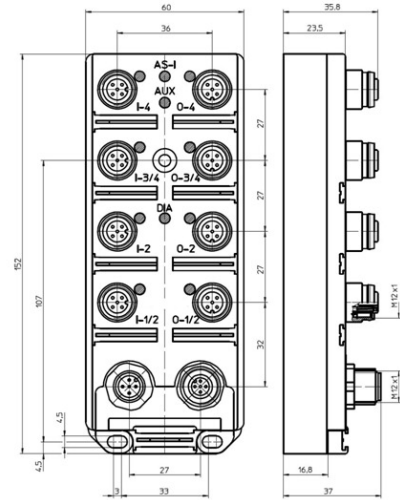

**0910 ASL 146**


## AS-Interface Module with 4-Digital Inputs and 4-Digital Outputs

### 4 IN / 4 OUT

AS-Interface flat cable module with 4 digital inputs for 2-wire- or 3-wire sensors and 4 digital outputs to connect standard actuators, combined FIXCON/M12 socket.

- Version 3.0 -













### Bit Assignment

Bit	-	-	-	-	3	2	1	0
<b>M12 Input</b>								
<b>Byte 0</b>	-	-	-	-	I-4	I-3	I-2	I-1
<b>M12 Output</b>								
<b>Byte 0</b>	-	-	-	-	O-4	O-3	O-2	O-1

### Diagnostic Indication

LED	Indication	Condition
O-1...4	yellow	channel status
U-AS-i	green	AS-Interface power supply active
AUX	green	actuator supply active
DIA	red	communication error
	red flashing	periphery error (sensor/actuator short circuit)

### Pin Assignments

Input 1 M12	Input 2 M12	Input 3 M12	Input 4 M12
 1 = +24 V 2 = IN 2 3 = GND (0 V) 4 = IN 1 5 = earth	 1 = +24 V 2 = n.c. 3 = GND (0 V) 4 = IN 2 5 = earth	 1 = +24 V 2 = IN 4 3 = GND (0 V) 4 = IN 3 5 = earth	 1 = +24 V 2 = n.c. 3 = GND (0 V) 4 = IN 4 5 = earth
Output 1 M12	Output 2 M12	Output 3 M12	Output 4 M12
 1 = n.c. 2 = OUT 2 3 = GND (0 V) 4 = OUT 1 5 = earth	 1 = n.c. 2 = n.c. 3 = GND (0 V) 4 = OUT 2 5 = earth	 1 = n.c. 2 = OUT 4 3 = GND (0 V) 4 = OUT 3 5 = earth	 1 = n.c. 2 = n.c. 3 = GND (0 V) 4 = OUT 4 5 = earth
AS-i/Aux. PWR In (Plug M12)	AS-i/Aux. PWR Out (Socket M12)		
 1 = AS-i (+) 2 = Auxiliary power (-) 3 = AS-i (-) 4 = Auxiliary power (+) 5 = n.c.	 1 = AS-i (+) 2 = Auxiliary power (-) 3 = AS-i (-) 4 = Auxiliary power (+) 5 = n.c.		

The connection to earth for the inputs and outputs is implemented via the earthing contacts at the fastening holes.



## AS-Interface Module with 4-Digital Inputs and 4-Digital Outputs

0910 ASL 146

### Technical Data

#### Environmental

Degree of protection	IP 67
Temperature range	-25°C / +80°C
Weight	300 g
Housing	PUR

#### Bus System

#### AS-Interface V3.0

AS-Interface profile	S 7.A.7
I/O configuration	7 hex
ID code	A hex
ID2 code (extended ID-code)	7 hex
Support A/B addressing	yes

#### Electronics Power Supply

#### AS-Interface

Rated voltage	AS-Interface net
Voltage range	26.5–31.6 V DC
Power consumption	max. 250 mA
Reverse polarity protection	yes
Indication	LED green

#### Input Power Supply

Voltage range (AS-Interface net)	17-30 V
Total current of all sensors	max. 250 mA
Short circuit-proof	yes

#### Inputs

#### Type 2 acc. to IEC 61131-2

Rated input voltage 2	24 V DC
Signal state "1"	$U_s > 11 \text{ V} / I_s > 6 \text{ mA}$
Signal state "0"	$I_s < 2 \text{ mA}$
Input current at 24 V	15 mA
Input circuit	p-switching
Number of digital channels	4
Channel status indicator	LED yellow per channel

#### Output Power Supply

#### AUX

Rated voltage	24 V DC
Voltage range	10–30 V
Potential separation	present
Reverse polarity protection	yes/electronic
Indication	LED green

#### Outputs

#### Type 2 A acc. to IEC 61131-2

Rated output current	2 A per channel
Short circuit-proof	yes
Max. output current	4 A per module
Overload-proof	yes
Number of digital channels	4
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel

#### Diagnostic

Indication	LED red
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#### Included in delivery / accessories

Dust covers M12	2 pieces
Attachable labels	10 pieces

#### Note

The input- and output channels are connected together. That allows a greater connection flexibility (see pin assignment). In case of connection of a two-channel sensor/actuator to input/output socket 1 or 3 a further sensor/actuator must not be plugged to input/output socket 2 or 4 respectively due to the Y wiring of the inputs/outputs.

### Part Number

0910 ASL 146



\* = submitted

The application of these products in harsh environments should always be checked before use. Specifications subject to alteration.

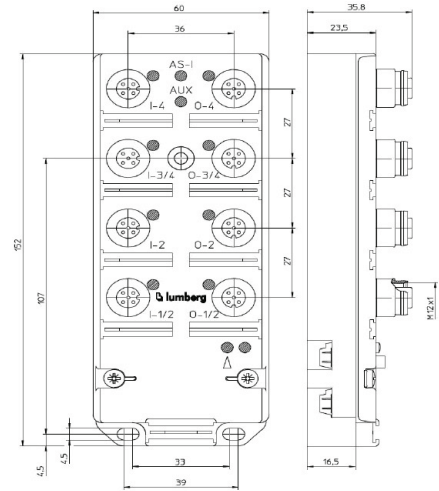

**0910 ASL 438**


## AS-Interface Module with 4-Digital Inputs and 4-Digital Outputs

### 4 IN / 4 OUT

AS-Interface flat cable module with 4 digital inputs for 2-wire or 3-wire sensors and 4 digital outputs to connect standard actuators, combined FIXCON/M12 socket, infrared interface for the addressing.

- Version 3.0 -











### Bit Assignment

Bit	-	-	-	-	3	2	1	0
<b>M12 Input</b>								
Byte 0	-	-	-	-	I-4	I-3/4	I-2	I-1/2
<b>M12 Output</b>								
Byte 0	-	-	-	-	O-4	O-3/4	O-2	O-1/2

### Diagnostic Indication

LED	Indication	Condition
I-1..4/O-1..4	yellow	channel status
U-AS-i	green	AS-Interface power supply active
AUX	green	actuator supply active
FID	red	communication error
	red flashing	periphery error (sensor/actuator short circuit)

### Pin Assignments

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Output 1 M12	Output 2 M12	Output 3 M12	Output 4 M12
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Housing	PUR

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#### AS-Interface V3.0

AS-Interface profile	S 7.A.7
I/O configuration	7 hex
ID code	A hex
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Support A/B addressing	yes

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#### AS-Interface

Rated voltage	AS-Interface net
Voltage range	26.5–31.6 V DC
Power consumption	max. 250 mA
Reverse polarity protection	yes
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Input circuit	p-switching
Number of digital channels	4
Channel status indicator	LED yellow per channel

#### Output Power Supply

#### AUX

Rated voltage	24 V DC
Voltage range	10–30 V
Potential separation	present
Reverse polarity protection	yes/electronic
Indication	LED green

#### Outputs

#### Type 2 A acc. to IEC 61131-2

Rated output current	2 A per channel
Short circuit-proof	yes
Max. output current	4 A per module
Overload-proof	yes
Number of digital channels	4
Channel type N.O.	p-switching
Channel status indicator	LED yellow per channel

#### Diagnostic

Indication	LED red
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#### Included in delivery / accessories

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# **lumbergautomation**

A **BELDEN** BRAND

## **Always the Right Solution**

St. Louis-based Belden Inc designs, manufactures, and markets cable, connectivity and networking products in markets including industrial automation, enterprise, transportation, infrastructure, and consumer electronics. It has approximately 6,600 employees, and provides value for industrial automation, enterprise, education, healthcare, entertainment and broadcast, sound and security, transportation, infrastructure, consumer electronics and other industries. Belden has manufacturing capabilities in North America, Europe and Asia, and a market presence in nearly every region of the world. Belden was founded in 1902, and today is a leader with some of the strongest brands in the signal transmission industry.

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