

AS-Interface I/O Module

Construction

The AS-Interface I/O module 4160 is designed as a compact, robust field module. It is composed of an electronic module (top) and a coupler module (base). Connectors (standard M12 circular connectors) for sensors / actuators can be found on the electronic module. The coupler module serves to accommodate the AS-Interface flat cable and to assemble the module. The type 4160 modules have binary inputs / outputs. The status of the inputs/outputs and the power supply are signalled by the LEDs located on the front.

Features

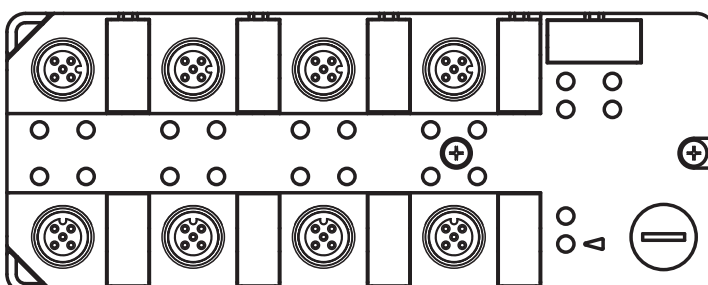
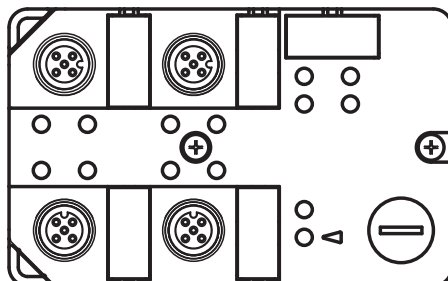
- Simple connection of sensors / actuators by means of an M12 circular connector
- Standard socket assignment acc. to EN 50044
- For wall mounting
- Lockable cable ducts

Advantages

- Direct connection of conventional binary sensors / actuators
- Integrated diagnostic LED to display the switch condition
- Addressing via AS-Interface, addressing socket or IR addressing interface



Top view - 4/8-fold module



Technical data

General information

Ambient temperature	-25 to +70° C	
Protection class to EN 60529	IP 67	
Weight	4-fold module	170g
	8-fold module	260g
Housing material	PBT	
Displays		
Operation	green LED (ASI)	
AS-i communication error, periphery error	red LED (FID)	
Sensor short circuit	red LED (FI)	(only input modules)
Actuator short circuit	red LED (FO)	(only output modules)
External supply voltage	green LED (AUX)	
Status input / output	yellow LED (1x per input / output)	
Directives		
Interference emission	EN 50295	
Interference resistance	EN 61000-6-2	

* Only if all slave connections are properly screwed in.

Electrical data - Output module

Operating voltage	26.5 ... 31.6V	acc. to AS-Interface specification
Current consumption from AS-i without sensor supply	< 30 mA	
Admissible current per module	2000 mA	
Outputs galvanically decoupled	yes	
Short-circuit proof	yes	
Watchdog integrated	yes	
External additional supply		
Type of feed	via coupler module	
Input voltage	acc. to PELV 24 V +/-20%	
Outputs		
Type of output	Transistor output PNP	
Admissible current per output	500 mA	
Electrical connection - electronic module		
Electrical connection - electronic module	M12 circular connector; socket	
Electrical connection - coupler module		
Cable type	AS-Interface flat cable	
Number of cables	1x yellow AS-Interface flat cable	
	1x black AS-Interface flat cable (additional supply)	
Wire cross section	1.5 mm ²	
Connection	self piercing / screws	
AS-Interface profile		
AS-Interface specification	3.0; 62 bus slaves	
AS-Interface profile	7.A.7*	

* Can only be used in combination with an AS-Interface Master 3.0 from profile M4, e.g. GEMÜ 4112 A4...!

Electrical data - input module, input / output module

Operating voltage	26.5 ... 31.6V	acc. to AS-Interface specification
Current consumption from AS-i without sensor supply	< 30 mA	
Admissible current per module	2000 mA	
Short-circuit proof	yes	
Outputs galvanically coupled	yes	
Watchdog integrated	yes	
External additional supply / sensor supply (only for supply voltage C1)		
Type of feed	via coupler module	
Input voltage	acc. to PELV 24V +/-20%	

Technical data

Electrical data - input module, input / output module

Inputs

Type of input	PNP	
Total admissible current for all inputs	160 mA	Number of inputs / outputs 0400, 0404
	800 mA	Number of inputs / outputs 0800

Outputs

Type of output	Transistor output PNP
Admissible current per output	500 mA

Electrical connection - coupler module

Cable type	AS-Interface flat cable	
Number of cables	Without additional supply (supply voltage 00)	1x yellow AS-Interface flat cable
	With additional supply (supply voltage C1)	1x yellow AS-Interface flat cable 1x black AS-Interface flat cable (24V DC)
Wire cross section	1.5 mm ²	
Connection	self piercing / screws	

AS-Interface profile

AS-Interface specification	3.0; 62 bus slaves	
AS-Interface profile	0.A.E	Number of inputs / outputs 0400
	7.A.7	Number of inputs / outputs 0404*
	7.A.8	Number of inputs / outputs 0800*

* Can only be used in combination with an AS-Interface Master 3.0 from profile M4, e.g. GEMÜ 4112 A4...!

Output / input assignment GEMÜ 4160

4 inputs- Code 0400

Connection	Type	Data bit
Socket DI 1; Pin 4	Input PNP	DI0
Socket DI 2; Pin 4	Input PNP	DI1
Socket DI 3; Pin 4	Input PNP	DI2
Socket DI 4; Pin 4	Input PNP	DI3

4 outputs - Code 0004

Socket DO 1; Pin 4	Output PNP	DO0
Socket DO 2; Pin 4	Output PNP	DO1
Socket DO 3; Pin 4	Output PNP	DO2
Socket DO 4; Pin 4	Output PNP	DO3

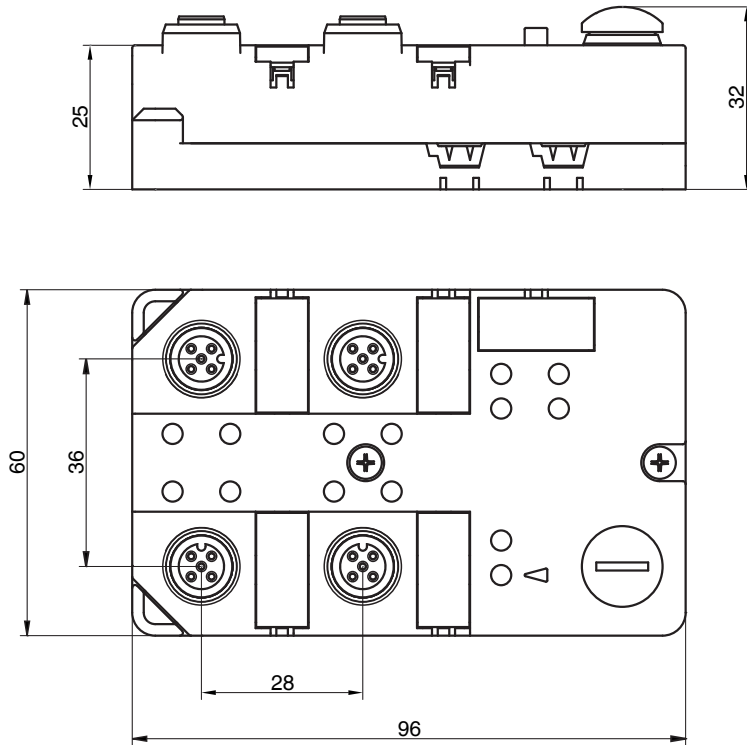
4 inputs / 4 outputs - Code 0404

Socket DO 1; Pin 4	Output PNP	DO0
Socket DO 2; Pin 4	Output PNP	DO1
Socket DO 3; Pin 4	Output PNP	DO2
Socket DO 4; Pin 4	Output PNP	DO3
Socket DI 1; Pin 4	Input PNP	DI0
Socket DI 2; Pin 4	Input PNP	DI1
Socket DI 3; Pin 4	Input PNP	DI2
Socket DI 4; Pin 4	Input PNP	DI3

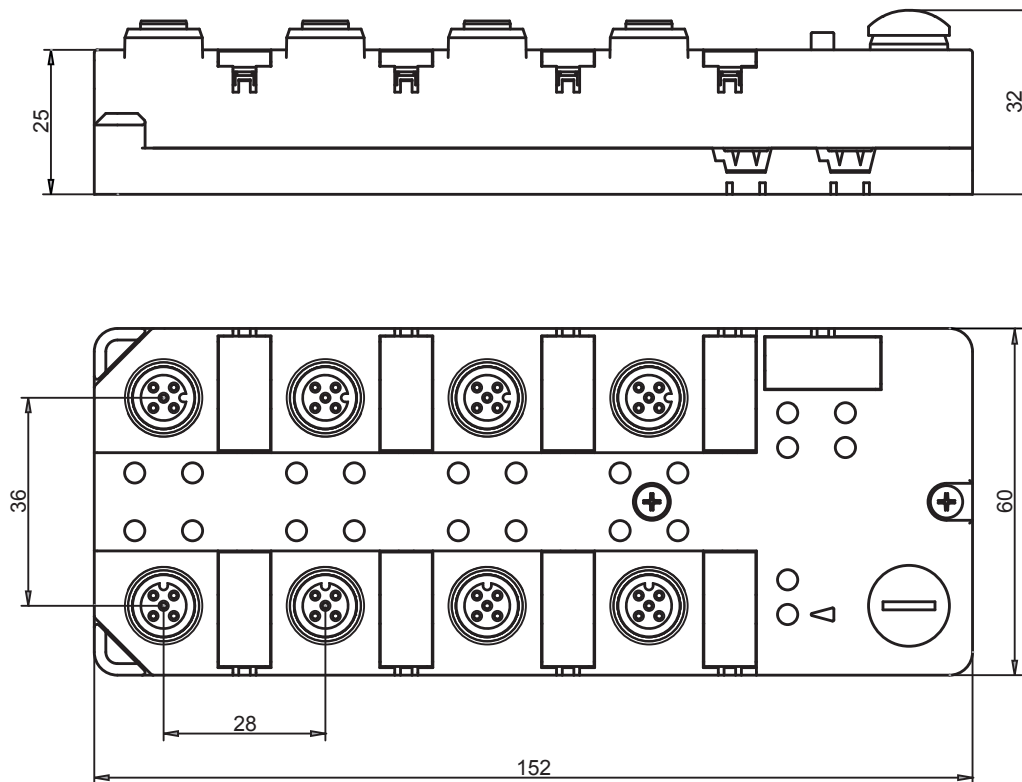
8 inputs - Code 0800

Socket DI 1; Pin 4	Input PNP	DI8
Socket DI 2; Pin 4	Input PNP	DI9
Socket DI 3; Pin 4	Input PNP	DI10
Socket DI 4; Pin 4	Input PNP	DI11
Socket DI 5; Pin 4	Input PNP	DI12
Socket DI 6; Pin 4	Input PNP	DI13
Socket DI 7; Pin 4	Input PNP	DI14
Socket DI 8; Pin 4	Input PNP	DI15

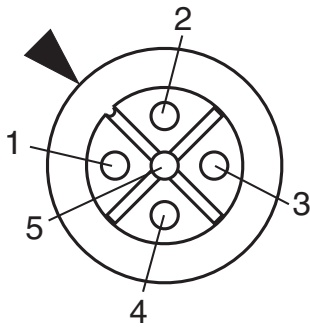
Dimensions - 4-fold module [mm]



Dimensions - 8-fold module [mm]

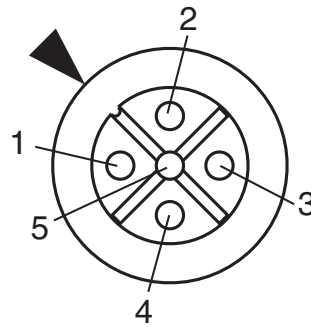


Electrical connection - Outputs



Pin 1: n.c.
 Pin 2: n.c.
 Pin 3: Signal output -
 Pin 4: Signal output +
 Pin 5: PE

Electrical connection - Inputs



Pin 1: 24V DC, output
 Pin 2: n.c.
 Pin 3: 0V, GND
 Pin 4: Signal input +
 Pin 5: PE

Order data

Field bus	Code
AS-Interface	A

Accessory	Code
Accessory	Z

Number of inputs/outputs	Code
4 inputs	0400
4 outputs	0004
4 inputs / 4 outputs	0404
8 inputs	0800

Housing material	Code
Plastic housing for wall mounting	02

Inputs	Code
None (only Number of inputs / outputs Code 0004)	00
24V DC inputs (not Number of inputs / outputs Code 0004)	C1

Outputs	Code
None (only Number of inputs / outputs Code 0400, 0800)	00
24V DC outputs (not Number of inputs / outputs Code 0404, 0004)	C1

Supply voltage	Code
Without additional supply (only Number of inputs / outputs Code 0400)	00
24V DC additional supply (not Number of inputs / outputs Code 0400)	C1

Order example	4160	A	Z	0400	02	C1	00	C1
Type	4160							
Field bus (code)		A						
Accessory (code)			Z					
Number of inputs/outputs (code)				0400				
Body material (code)					02			
Inputs (code)						C1		
Outputs (code)							00	
Supply voltage (code)								C1

other AS-Interface products



GEMÜ 4112
AS-Interface controller



GEMÜ 4130
AS-Interface
power supply unit



GEMÜ 4162
AS-Interface I/O Module
Analogue inputs /outputs



GEMÜ 4170
AS-Interface cable



GEMÜ 4150
AS-Interface
Extension Plug

AS-Interface hand addressing device	Order no. 4160000Z 01
Addressing cable with infrared adapter	Order no. 4160000Z 02
Addressing cable with jack plug	Order no. 4160000Z 03
Caps M12 (VPE 10 pcs.)	Order no. 4160000Z 04

For further accessories and other products, please see our Product Range catalogue and Price List.
Contact GEMÜ.



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AND CONTROL SYSTEMS

