

AS-i Remote I/O Module

ART1-ID04C

AS-Interface module, inputs

- For connecting conventional binary sensors to the AS-Interface.
- Short circuit-resistant inputs and short circuit-resistant sensor power supply.
- The sensors can be directly connected.
- Integrated diagnosis LED for displaying switching status.
- Inputs for sensors with PNP output.



Ordering Information

Product Code	Description
ART-ID04C	4 inputs 200 mA IP67 AS-i module

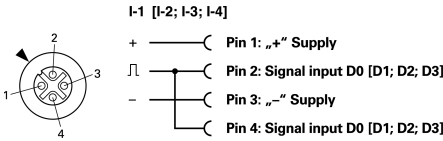
Specifications

AS-Interface profile (I/O.ID-Code)		S-0.0		
AS-Interface approval no.		03601		
Logical assignment	User terminal	Type	Data bit	Function
	1	Input PNP	D0	Switching bit of sensor 1
	2	Input PNP	D1	Switching bit of sensor 2
	3	Input PNP	D2	Switching bit of sensor 3
AS-Interface address	Factory setting	0		
	Programmable by the user	1-31		
Electromechanical interface		EMS		
Operating voltage		26.5 V ... 31.6 V		
Total current consumption		≤ 300 mA		
Voltage supply, sensors	Output voltage U_{out}	18 ... 30 V DC		
	Output current; short circuit-proof I_{out}	(-20 °C ... +50 °C)		≤ 200 mA (see note 1)
		(+50 °C ... +65 °C)		≤ 150 mA (see note 1)
Signal range, sensors	Low signal range	U_{in} : 0 ... 5 V		I_{in} : ≤ 1.5 mA
	High signal range	U_{in} : 10 V ... U_{out}		I_{in} : ≥ 5 mA
Displays	Supply voltage, bus line	Green LED (POWER)		
	User terminals	Yellow LED (Sensor inputs: I-1; I-2; I-3; I-4)		
User terminals IEC 947-5-2		Round connector M12, socket		
EMV limiting values	Interference emissions	To EN 55011; limiting value class B		
	Interference immunity	To IEC 801-2, -3, -4		
Protection class	DIN 40 050	IP 67 (see note 2)		
Degree of soiling	DIN EN 0110	3		
Ambient temperature		-20 °C ... +65 °C		
Storage temperature		-25 °C ... +80 °C		
Humidity		10% ... 90% (non-condensing)		
Housing material		PA 6-GF-FR		
Weight		105 g		

Shock stress	30 g/11 ms
Vibration stress	10 ... 55 Hz; 1.0 mm amplitude

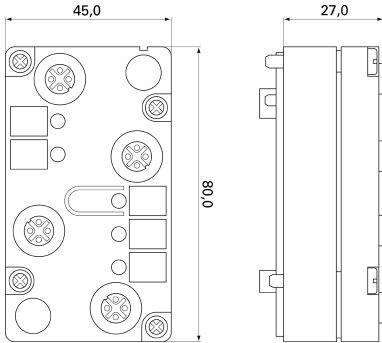
Note: 1. Total current for all 4 sensors of a module.
2. Only if all user terminals are correctly screwed.

ART1-ID04C Pin assignment, user terminal



Dimensions

Note All units are in millimeters unless otherwise indicated.



Accessories

ACN1-SC01 sealing screws



Design	IEC 947-5-2	M12
Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Material	PA 6-GF	
Colour	Black	
Weight	1.2 g	

ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

AS-i Remote I/O Module

ART1-ID04M

AS-Interface module, inputs

- Integrated diagnosis LED for displaying switching status.
- Sensor connection via cage tension spring terminals.
- Four bus powered inputs.
- Reliable connection of the bus line using cable piercing technology.
- IP 67
- Short circuit-resistant inputs.



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Ordering Information

Product Code	Description
ART1-ID04M	4 inputs, 160 mA, IP 67 AS-i module

Note To be used in conjunction with coupler module ACN1-CP03.

Specifications

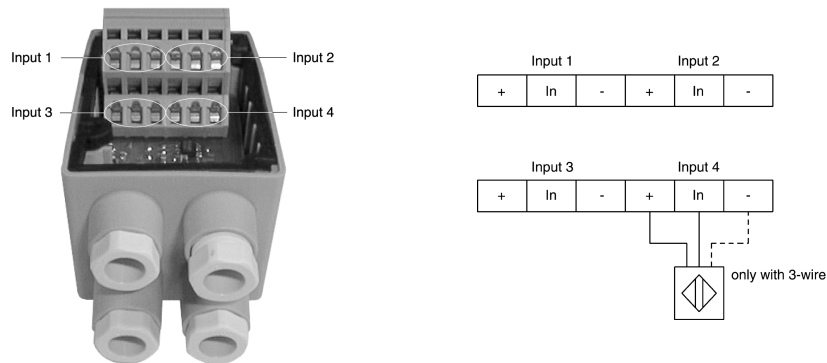
Bus connection		cable piercing technology or terminal compartments
AS-Interface		yellow flat cable or standard round cable
I/O connection		PG7 thread and spring tension terminals
Operating voltage U_B		via AS-Interface, reverse polarity protection
Operating current I_e		≤ 40 mA
Inputs	Type	4 inputs, 2- or 3-wire sensors, DC, sourcing
	OFF I_{In}	≤ 1 mA
	ON I_{In}	≥ 4.5 mA
	U_{In}	20 ... 30 V from AS-Interface
	I_{Inmax}	≤ 160 mA short circuit protection (per module)
Indicators	4, Switch status (I1 ... I4 = 1)	LED yellow
	Power (AS-Interface)/ sensor overload (see note 1)	LED green/LED red
EMC classification		per EN 50081-2, EN 50082-2
Operating temperature t_b		- 25 ... + 55 °C
Storage temperature t_l		- 25 ... + 80 °C
Protection (IEC)		IP 67
Allowable shock and vibration		screw mounted: $b \leq 30$ g, $T \leq 11$ ms snap-on mounted: $b \leq 15$ g, $T \leq 11$ ms screw mounted: $f \leq 55$ Hz, $a \leq 1$ mm snap-on mounted: $f \leq 55$ Hz, $a \leq 0.5$ mm
Weight		180 g

Note: 1. If the sensor current consumption is greater than I_{OUT} , the red LED will illuminate indicating a short circuit and the module is no longer active on AS-Interface.

Programming instructions

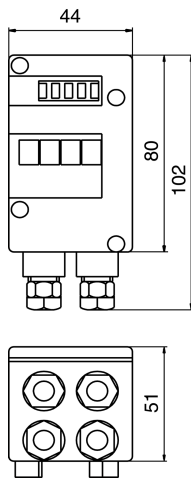
Address	preset to 00, can be changed via the bus master or with a handheld programmer
IO-Code	0
ID-Code	0
Programming instructions Bit Assignment	
Data Bits (outputs via AS-Interface)	
Bit	Function
D0	input I1
D1	input I2
D2	input I3
D3	input I4

Nomenclature



Dimensions

Note All units are in millimeters unless otherwise indicated.



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AS-i Remote I/O Module

ART1-MD04C

AS-Interface module, inputs and outputs

- For the connection of conventional binary sensors and actuators to the AS-Interface.
- Short circuit-proof inputs and short circuit-proof power supply to the sensors.
- The sensors can be directly connected.
- Integrated diagnosis LED for displaying switching status.
- Inputs for sensors with PNP output.
- An integrated watchdog monitor.



Ordering Information

Product Code	Description
ART1-MD04C	2 inputs/2 outputs IP67 AS-i module

Specifications

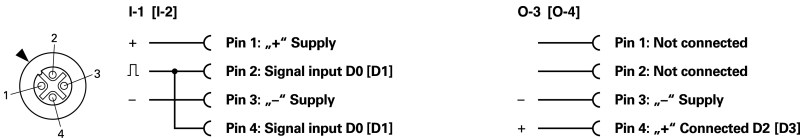
AS-Interface profile (I/O.ID-Code)		S-3.0		
AS-Interface approval no.		10201		
Logical assignment	User terminal	Type	Data bit	Function
	1	Input PNP	D0	Switching bit from sensor 1
	2	Input PNP	D1	Switching bit from sensor 2
	3	Output PNP	D2	Switching bit to actuator 3
	4	Output PNP	D3	Switching bit to actuator 4
AS-Interface address	Factory setting	0		
	Programmable by the user	1-31		
Electromechanical interface (see note 1)		EEMS		
Operating voltage (see note 1)		26.5 V ... 31.6 V		
Total current consumption (AS-Interface)		≤ 200 mA		
Voltage supply, sensors	Output voltage U _{out}	18 ... 30 V DC		
	Output current; short circuit-proof I _{out}	(-20 °C ... +50 °C)		≤ 100 mA (see note 2)
		(+50 °C ... +65 °C)		≤ 85 mA (see note 2)
Signal range sensors	Low signal range	U _{in} : 0 ... 5 V		I _{in} : ≤ 1.5 mA
	High signal range	U _{in} : 10 V ... U _{out}		I _{in} : ≥ 5 mA
External supplementary supply	Type of supply	Via coupler module and EEMS		
	Input voltage	24 V -10%/+15%		
Actuators	Type of output	Semiconductor		
	Output voltage U _{out}	Input voltage - 0.7 V		
	Output current; short circuit-proof I _{out}	1.7 A per output (see note 3)		
	Induction safeguard	Integrated		
	Watchdog function	Integrated		
Displays	Supply voltage, bus line	Green LED (POWER)		
	User terminals	Yellow LED (sensor inputs: I-1; I-2; actuator outputs: O-3; O-4)		
User terminals IEC 947-5-2		Circular connector M12, socket		
EMV limiting values	Interference emission	To EN 55011; limiting value class B		
	Interference immunity	To IEC 801-2, -3, -4		

Protection class	DIN 40 050	IP 67 (see note 4)
Degree of soiling		3
Ambient temperature		-20 °C ... +65 °C
Storage temperature		-25 °C ... +80 °C
Humidity		10% ... 90% (non-condensing)
Housing material		PA 6-GF-FR
Weight		110 g
Shock stress		30 g/11 ms
Vibration stress		10 ... 55 Hz; 1.0 mm amplitude

Note:

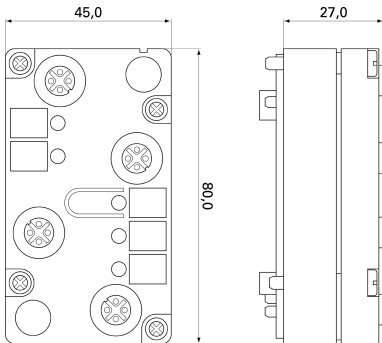
- 1. In accordance with AS-Interface specification.
- 2. Total current for both sensors of a module.
- 3. Total output current of a module 2 A.
- 4. Only if all user terminals are correctly screwed.

ART1-MD04C Pin assignment, user terminal



Dimensions

Note All units are in millimeters unless otherwise indicated.



Accessories

ACN1-SC01 sealing screws



Design	IEC 947-5-2	M12
Protection class	DIN 40 050	IP 67
Ambient temperature		- 20 °C ... + 65 °C
Material		PA 6-GF
Colour		Black
Weight		1.2 g

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AS-i Remote I/O Module

ART1-MD08M

AS-Interface module, inputs and outputs

- Sensor connection via cage tension spring terminals.
- LED indication for inputs and outputs.
- Four bus powered inputs.
- External power supply for outputs.
- Reliable connection of the bus line using cable piercing technology.
- IP 67
- External power LED.
- Inputs short circuit protected.
- Watchdog functionality.



CE



Ordering Information

Product Code	Description
ART1-MD08M	4 inputs, 4 outputs, 160 mA, 2 A, IP 67 AS-i module

Note To be used in conjunction with ACN1-CP04.

Specifications

Bus connection		cable piercing technology or terminal compartments
AS-Interface/ext. auxiliary power		yellow flat cable/black flat cable and/or standard round cable
I/O connection		PG7 thread and spring tension terminals
Operating voltage U_B		via AS-Interface, reverse polarity protection
Operating current I_e		≤ 60 mA
Ext. aux. power U_{AUX}		24 V DC $\pm 15\%$, PELV (see note 1)
Inputs	Type	4 inputs, 2- or 3-wire sensors, DC, sourcing
	OFF I_{In}	≤ 1 mA
	ON I_{In}	≥ 4.5 mA
	U_{In}	20 ... 30 V from AS-Interface
	I_{Inmax}	180 mA per module $t_b \leq 40$ °C 140 mA per module $t_b \leq 60$ °C
Outputs	Type	4, electronic
	U_{OUT}	$U_{AUX} - 0.5$ V
	I_{OUT}	4 A per module, max. 2 A per output
Indicators	Number	8
	(I1 ... I4 = 1, O1 ... O4 = 1)	LED yellow
	Power (AS-Interface)/ sensor overload (see note 2)	LED green/LED red
	1, external aux. power	LED green
Communications monitoring		with P0 = 1, the outputs are switched to their de-energized state when a communication failure occurs
EMC classification		per EN 50081-2, EN 50082-2
Operating temperature t_b		- 25 ... + 55 °C
Storage temperature t_l		- 25 ... + 80 °C
Protection (IEC)		IP 67
Allowable shock and vibration		screw mounted: $b \leq 30$ g, $T \leq 11$ ms snap-on mounted: $b \leq 15$ g, $T \leq 11$ ms screw mounted: $f \leq 55$ Hz, $a \leq 1$ mm snap-on mounted: $f \leq 55$ Hz, $a \leq 0.5$ mm
Weight		350 g

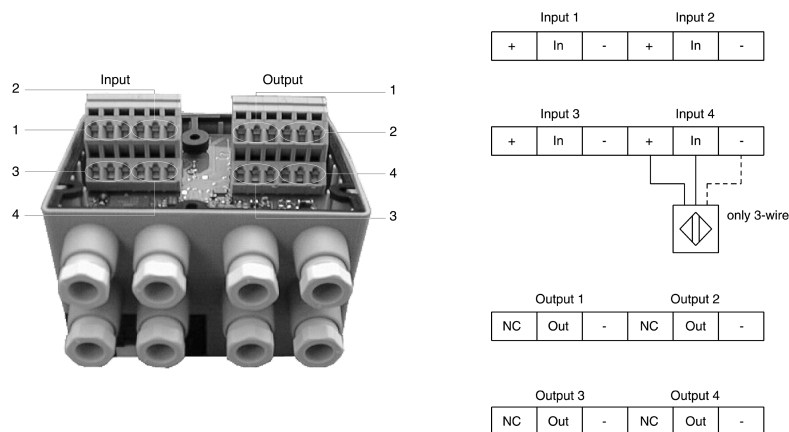
Note: 1. The external power must be a safely isolated voltage supply per PELV.

2. If the sensor current consumption is greater than I_{OUT} , the red LED will illuminate indicating a short circuit and the module is no longer active on AS-Interface.

Programming instructions

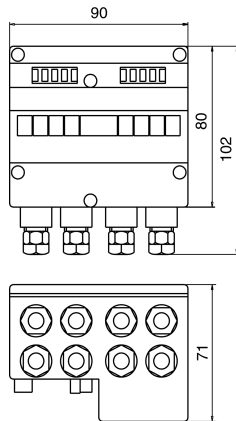
Address	preset to 00, can be changed via the bus master or with a handheld programmer		
IO-Code	7		
ID-Code	F		
Programming instructions Bit Assignment			
Data Bits (inputs/outputs via AS-Interface)		Parameter Bits (programmable via AS-Interface)	
Bit	Function	Bit	Function
D0	input I1/output O1	P0	watchdog
D1	input I2/output O2		P0 = 1, outputs return to their de-energized state when a communications fault exists on the bus
D2	input I3/output O3		P0 = 0, outputs latch in their last state when a communications fault exists on the bus
D3	input I4/output O4	P1	not used
		P2	not used
		P3	not used

Nomenclature



Dimensions

Note All units are in millimeters unless otherwise indicated.



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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

AS-i Remote I/O Module

ART1-OD04C

AS-Interface module, outputs

- For the connection of conventional binary actuators to the AS-Interface.
- The operating energy for actuators may total up to 200 mA from the AS-Interface bus line with a supplementary supply totalling up to 2 A.
- An integrated watchdog monitor de-energizes the outputs in case of communication errors (no master interrogation takes place).



Ordering Information

Product Code	Description
ART1-OD04C	4 outputs IP67 AS-i module

Specifications

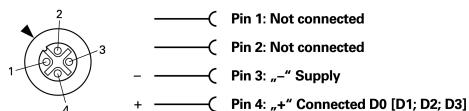
AS-Interface profile (I/O.ID-Code)		S-8.0		
AS-Interface approval no.		03801		
Logical assignment	User terminal	Type	Data bit	Function
	1	Output PNP	D0	Switching bit to actuator 1
	2	Output PNP	D1	Switching bit to actuator 2
	3	Output PNP	D2	Switching bit to actuator 3
	4	Output PNP	D3	Switching bit to actuator 4
AS-Interface address	Factory setting	0		
	Programmable by the user	1-31		
Electromechanical interface (see note 1)		EEMS		
Operating voltage (see note 1)		26.5 V ... 31.6 V		
Total current consumption		≤ 50 mA		
External supplementary supply	Type of supply	Via coupler module and EEMS		
	Input voltage	24 V -10%/+15%		
Actuators	Type of output	Relay (see note 2)		
	Output voltage	U _{out} : 24 V -10%/+15%		
	Output current; short circuit-proof	I _{out} : 1 A per output (see notes 3 and 4)		
Displays	Supply voltage, bus line	Green LED (POWER)		
	User terminals	Yellow LED (Actuator inputs: O-1; O-2; O-3; O-4)		
User terminals IEC 947-5-2		Round connector M12, socket		
EMV limiting values	Interference emission	To EN 55011; limiting value class B		
	Interference immunity	To IEC 801-2, -3, -4		
Protection class	DIN 40 050	IP 67 (see note 5)		
Degree of soiling	DIN EN 0110	3		
Ambient temperature		-20 °C ... +65 °C		
Storage temperature		-25 °C ... +80 °C		
Humidity		10% ... 90% (non-condensing)		
Housing material		PA 6-GF-FR		
Weight		105 g		

Shock stress	30 g/11 ms
Vibration stress	10 ... 55 Hz; 1.0 mm amplitude

- Note:**
1. In accordance with AS-Interface specification.
 2. The switching outputs retain their current status in cases where the bus communication is interrupted and bus supply voltage is available.
 3. Total output current of a module 2 A.
 4. To increase service life, use of an external freewheeling diode is recommended.
 5. Only if all user terminals are correctly screwed.

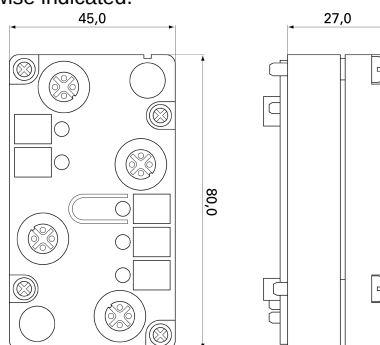
ART1-OD04C Pin assignment, user terminal

O-1 [O-2; O-3; O-4]



Dimensions

Note All units are in millimeters unless otherwise indicated.



Accessories

ACN1-SC01 sealing screws



Design	IEC 947-5-2	M12
Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Material	PA 6-GF	
Colour	Black	
Weight	1.2 g	

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

AS-Interface module, outputs

- Four LEDs for displaying switching status.
- Output connection via cage tension spring terminals.
- Reliable connection of the bus line using cable piercing technology.
- External power supply.
- IP 67
- External power LED.
- Watchdog functionality.



Ordering Information

Product Code	Description
ART1-OD04M	4 outputs, 24 VDC, 2 A, IP 67 AS-i module

Note To be used in conjunction with coupler module ACN1-CP03.

Specifications

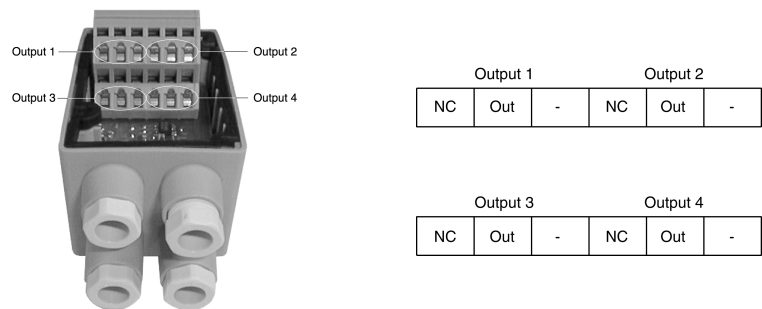
Bus connection		cable piercing technology or terminal compartments
AS-Interface/ext. auxiliary power		yellow flat cable/black flat cable and/or standard round cable
I/O connection		PG7 thread and spring tension terminals
Operating voltage U_B		via AS-Interface, reverse polarity protection
Operating current I_e		≤ 60 mA
Ext. aux. power U_{AUX}		24 V DC $\pm 15\%$, PELV (see note 1)
Outputs	Type	4, electronic
	U_{OUT}	$U_{AUX} - 0.5$ V
	I_{OUT}	2 A per channel, 4 A per module
Indicators	4, Switch status (O1 ... O4 = 1)	LED yellow
	1, Supply voltage	LED power green
EMC classification		per EN 50081-2, EN 50082-2
Operating temperature t_b		- 25 ... + 55 °C
Storage temperature t_i		- 25 ... + 80 °C
Protection (IEC)		IP 67
Allowable shock and vibration		screw mounted: $b \leq 30$ g, $T \leq 11$ ms snap-on mounted: $b \leq 15$ g, $T \leq 11$ ms screw mounted: $f \leq 55$ Hz, $a \leq 1$ mm snap-on mounted: $f \leq 55$ Hz, $a \leq 0.5$ mm
Weight		180 g

Note: 1. The external power must be a safely isolated supply in accordance with PELV.

Programming instructions

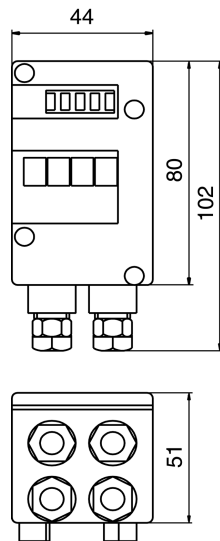
Address	preset to 00, can be changed via the bus master or with a handheld programmer		
IO-Code	8		
ID-Code	F		
Programming instructions Bit Assignment			
Data Bits (input via AS-Interface)		Parameter Bits (programmable via AS-Interface)	
Bit	Function	Bit	Function
D0	output O1	P0	watchdog
D1	output O2		P0 = 1, outputs return to their de-energized state when a communications fault exists on the bus
D2	output O3		P0 = 0, outputs latch in their last state when a communications fault exists on the bus
D3	output O4	P1	not used
		P2	not used
		P3	not used

Nomenclature



Dimensions

Note All units are in millimeters unless otherwise indicated.



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AS-i Coupler Module

ACN1-CP01

AS-Interface coupler module

- Reliable connection of the bus line using penetration technology safeguards an efficient application.
- Polarity reversal protection for simple assembly without special skills or tools.
- The cable entries are sealable, ensuring that full IP protection is maintained also for the end user (no continuation of the bus line).
- For top hat rail or screw mounting.
- Variants in the form of bus line junctions or feed of additional supply via a separate ribbon cable.



Ordering Information

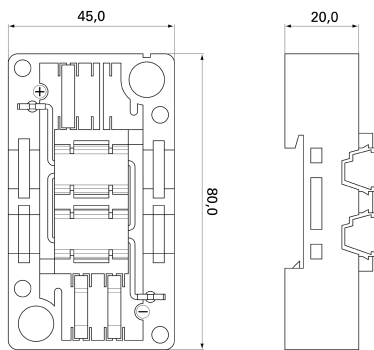
Product Code	Description
ACN1-CP01	Coupler Module IP67 AS-i

Specifications

Electromechanical interface		EMS
Connection	Number of connectable conductors	2
	Conductor type	AS-Interface ribbon cable
	Conductor cross-section	1.5 mm ²
	Connection type	Penetration technology/screws
Operating voltage		≤ 40 V
Operating current		≤ 2 A
AS-Interface supplementary supply		-
Protection class	DIN 40 050	IP 67
Degree of soiling	DIN EN 0110	3
Ambient temperature		- 20 °C ... + 65 °C
Storage temperature		- 25 °C ... + 80 °C
Housing material		PBT-GF-FR
Colour		Black
Weight		65 g
Shock stress	for clip mounting	15 g/11 ms
	for screw mounting	30 g/11 ms
Vibration stress		10 ... 55 Hz; 1.0 mm amplitude

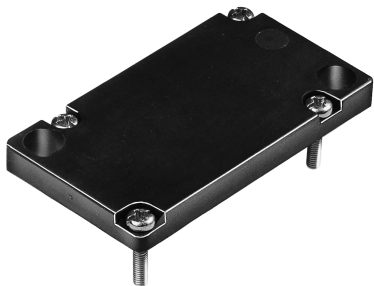
Dimensions

Note All units are in millimeters unless otherwise indicated.



Accessories

ACN1-LD01 lid/cover IP 67 AS-i



Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Colour	Black	
Weight	24 g	

ACN1-SC01 sealing screws



Design	IEC 947-5-2	M12
Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Material	PA 6-GF	
Colour	Black	
Weight	1.2 g	

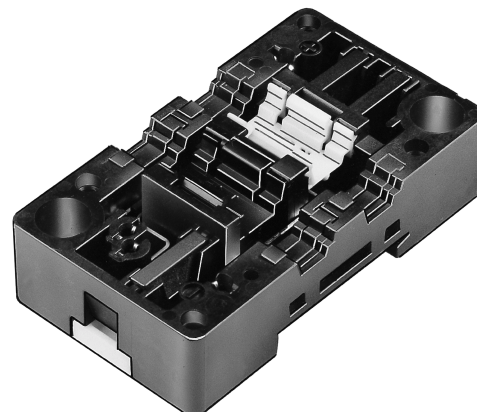
ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.
To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

AS-i Coupler Module

ACN1-CP02

AS-Interface coupler module

- Reliable connection of the bus line using penetration technology safeguards an efficient application.
- Polarity reversal protection for simple assembly without special skills or tools.
- The cable entries are sealable, ensuring that full IP protection is maintained also for the end user (no continuation of the bus line).
- For top hat rail or screw mounting.
- Variants in the form of bus line junctions or feed of additional supply via a separate ribbon cable.



Ordering Information

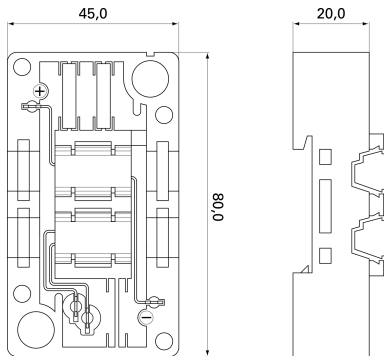
Product Code	Description
ACN1-CP02	Coupler Module IP67 AS-i

Specifications

Electromechanical interface		EEMS
Connection	Number of connectable conductors	1 AS-Interface ribbon cable + 1 supplementary supply ribbon cable
	Conductor type	AS-Interface ribbon cable
	Conductor cross-section	1.5 mm ²
	Connection type	Penetration technology/screws
Operating voltage		≤ 40 V
Operating current		≤ 2 A
AS-Interface supplementary supply		≤ 2 A
Protection class DIN 40 050		IP 67
Degree of soiling DIN EN 0110		3
Ambient temperature		- 20 °C ... + 65 °C
Storage temperature		- 25 °C ... + 80 °C
Housing material		PBT-GF-FR
Colour		Black
Weight		65 g
Shock stress	for clip mounting	15 g/11 ms
	for screw mounting	30 g/11 ms
Vibration stress		10 ... 55 Hz; 1.0 mm amplitude

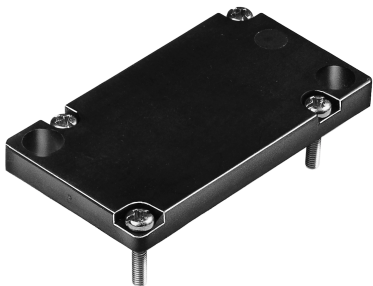
Dimensions

Note All units are in millimeters unless otherwise indicated.



Accessories

ACN1-LD01 lid/cover IP 67 AS-i



Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Colour	Black	
Weight	24 g	

ACN1-SC01 sealing screws



Design	IEC 947-5-2	M12
Protection class	DIN 40 050	IP 67
Ambient temperature	- 20 °C ... + 65 °C	
Material	PA 6-GF	
Colour	Black	
Weight	1.2 g	

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To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

AS-i Power Supply

ASIF-PA201

AS-Interface power supply

- 115/230 V AC
- AS-Interface integrated coil isolation.
- Power "ON" LED.
- Power factor correction.
- This AS-Interface supply powers a fully loaded AS-Interface system with a maximum output current of 2.8 A.



Ordering Information

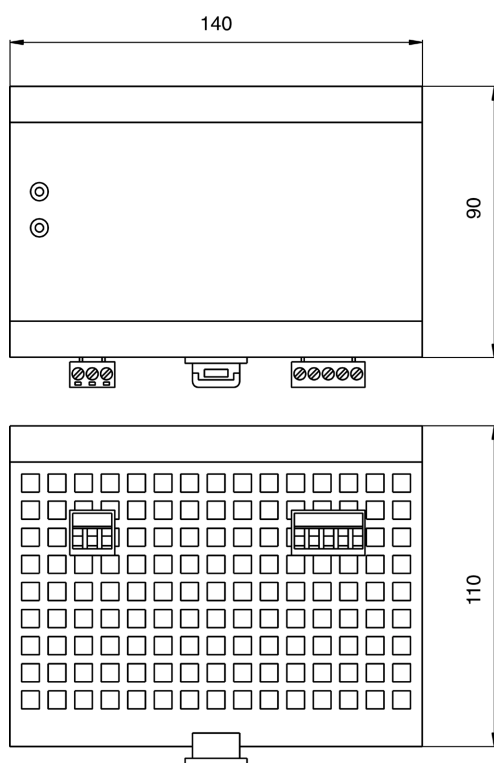
Product Code	Description
ASIF-PA201	AS-i Power Supply IP20, 30 VDC, 2.8 A

Specifications

Input	Operating voltage	115 ... 230 V AC
	Voltage range	98 ... 265 V AC
	Input frequency	47 ... 63 Hz
	Input current	0.4 ... 1.2 A
	Power fact	0.99 at $U_E = 115\text{ V}$ 0.97 at $U_E = 230\text{ V}$
	Signal error	per EN 55022 1994 A1 class A
Output	Output voltage	20.5 ... 31.6 V DC
	Ripple	acc. to AS-i specification
	Output current	2.8 A
Indicators	Power On	LED green
	Overload error	LED red (Output current > 2.9 A)
Current limit		3.5 A
Operating temperature t_b		0 ... + 60 °C
Storage temperature t_i		- 25 ... + 80 °C
Protection (IEC)		IP 20
Electromagnetic Compatibility	Signal error per:	EN 55022 1994/A1: class A VDE 0878 Section 22 05.95 VDE 0878 Section 22 A1/12.1995
	Interference resistance per:	EN 50082-2/1995 ENV 50140/8.93/2.95 ENV 50141/1994 ENV 50142/10.95 VDE 0839 Section 82-2 02.1996 VDE 0847 Section 3 VDE 0843 Section 4/Section 5/Section 6

Dimensions

Note All units are in millimeters unless otherwise indicated.



ALL DIMENSIONS SHOWN ARE IN MILLIMETERS.

To convert millimeters into inches, multiply by 0.03937. To convert grams into ounces, multiply by 0.03527.

In the interest of product improvement, specifications are subject to change without notice.

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