

ifm electronic



Operating instructions
AS-i CompactLine module

ecomat300[®]

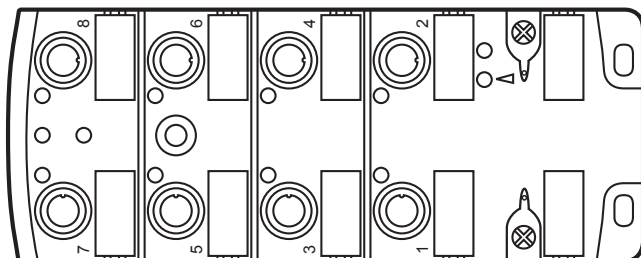
AC2454

AC2455

AC2471

UK

80011082/01 04/2016



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1 Preliminary note

► Instructions

> Reaction, result



Important note

Non-compliance can result in malfunction or interference.



Information

Supplementary note.

2 Safety instructions

UK

- Please read the operating instructions prior to set-up of the device. Ensure that the product is suitable for your application without any restrictions.
- The unit conforms to the relevant regulations and EC directives.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application.
- Installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.

3 Functions and features

- maximum number of modules per master: 62
- The slave can only be operated in conjunction with a version 3.0 master (master profile M4).
- AC2454 und AC2455: Metal parts from stainless steel

4 Installation



- ▶ Disconnect the system from power before installation.



- ▶ For installation choose a flat mounting surface. The entire bottom of the module must lie flat on the mounting surface.

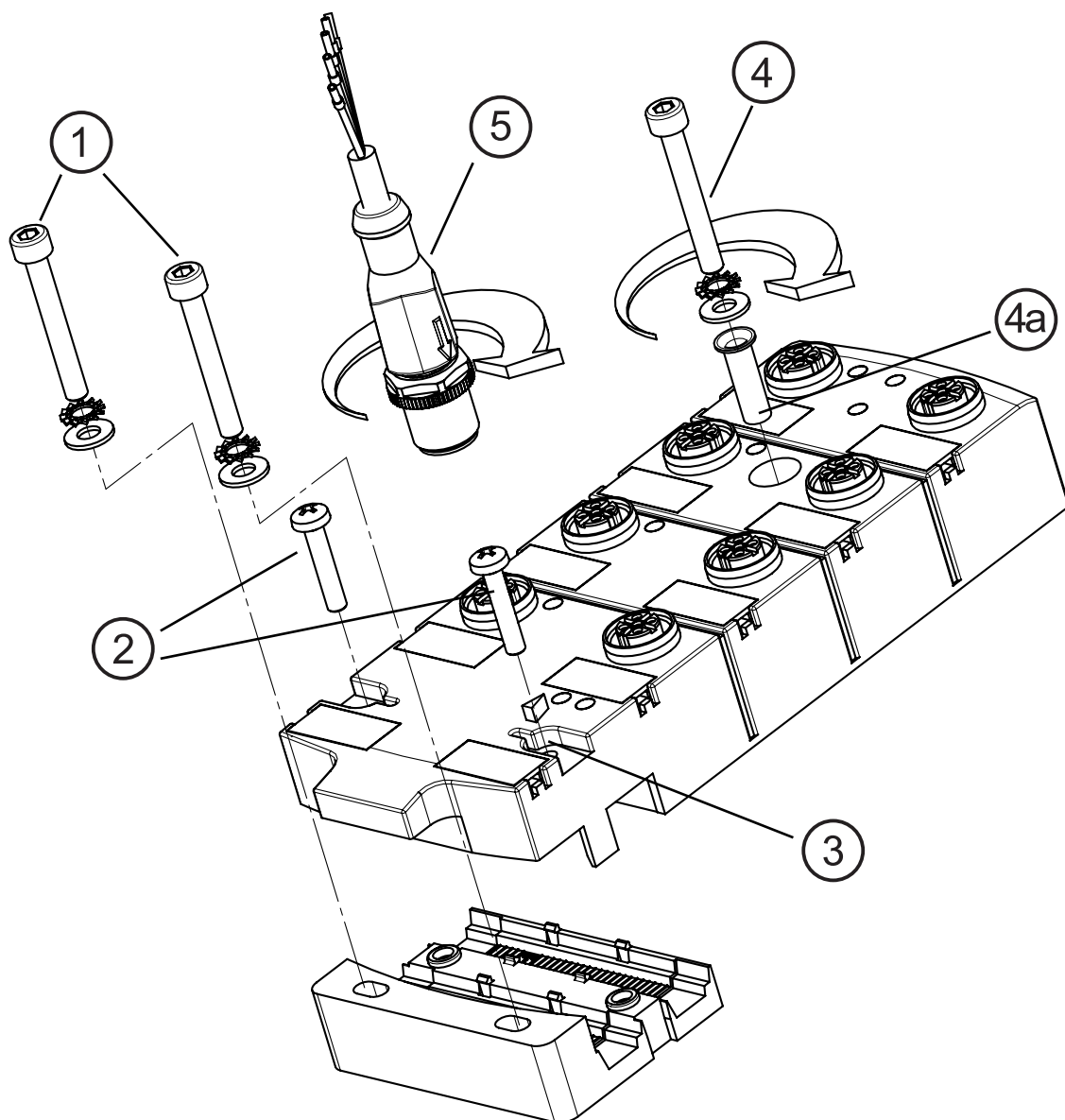
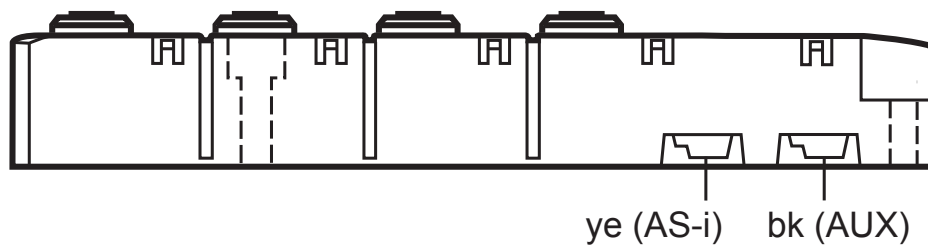
- ▶ Screw the lower part onto the mounting surface using M4 (2) screws, tooth lock washers and flat washers. Tightening torque max. 1.8 Nm (components not supplied with the device).
- ▶ Carefully place the yellow AS-i flat cable into the profile slot.
- ▶ In addition, carefully place the black AS-i flat cable for external voltage supply into the profile slot.
- ▶ Position the upper part and fix it using M3.5 (1) screws. Tightening torque 1.2...1.4 Nm.
- ▶ Fix the module onto the mounting surface using an M4 screw, tooth lock washer and flat washer (4) (fix the mounting hole using a stainless steel sleeve (4a). Tightening torque 2.0...2.4 Nm.
- ▶ Connect the plugs of the sensors (3) to the M12 sockets. Tightening torque max. 1.0 Nm.
- ▶ Cover the unused sockets with protective caps (E73004)*. Tightening torque 0.6...0.8 Nm.
- ▶ The flat cable end seal (E70413)* must be used if the module is at the end of the cable line.

* to be ordered separately



In case of interference coupling to the sensor cables or the black flat cable (24 V DC auxiliary supply) the use of the functional earth springs can improve the EMC. Requirement: An interference-free and low-resistance connection to the machine ground.

- ▶ If necessary, you can ground the module via the earth springs.



Tightening torques

- 1: 1.2...1.4 Nm - connecting screws upper part / lower part
- 2: max. 1.8 Nm - mounting screws (not supplied)
- 3: max. 1.0 Nm - M12 connector
- 4 / 4a: 2.0...2.4 Nm - mounting clamp, stainless steel sleeve (premounted in the unit at the factory), flat washer and tooth lock washer for mounting (only AC2471)



Observe the maximum tightening torque of the connection cable.

5 Electrical connection



The unit must be connected by a qualified electrician.

The national and international regulations for the installation of electrical equipment must be adhered to.



Intended for connection to class 2 (cULus class 2) circuits only.

- ▶ Disconnect power.
- ▶ Connect the unit.

5.1 External protective circuitry for inductive loads

The switch-on and switch-off capacity for triggering solenoids is rated up to 20 W (IEC 60947-5-2, utilisation category DC-13).



Recommendation: For inductive loads use a free wheel diode on the load.
ifm electronic offers valve plugs with integrated free wheel diodes.

6 Addressing

The address is set to 0 at the factory.

6.1 Addressing with the AC1154 addressing unit

The module can be addressed via the addressing cable E70423.

6.2 Infrared addressing

The safe AS-i module also offers the option of infrared addressing with the addressing unit AC1154 and the addressing cable E70211.

- ▶ Switch off the AS-i power supply
- ▶ Disconnect the AS-i master or use the jumper on the ifm AS-i power supply to interrupt communication
- ▶ Switch on the AS-i power supply
- ▶ Connect the infrared addressing cable to the module
- ▶ Select an address and remove the addressing cable
- ▶ Switch off the AS-i power supply

- ▶ Connect the AS-i master again or use the jumper on the ifm AS-i power supply to start communication again
- ▶ Switch on the AS-i power supply

Note: When the AS-i power supply is switched on and off, the module is reset.

7 Pin connection / data bits

AC2454 / AC2471

4 inputs / 4 outputs

AS-i profile S-7.A.7 / extended addressing mode: yes

UK

Data bit	D0		D1		D2	D3	
Input	I1		I2		I-3	I-4	
Socket	I-1/2		I-1/2	I-2	I-3/4	I-3/4	I-4
Pin	4		2	4	4	2	4
Output	O1		O2		O3	O4	
Socket	O-1		O-2		O-3	O-4	
Pin	4		4		4	4	

Inputs Y-circuit	Outputs

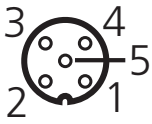
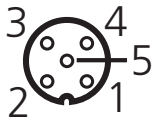
Inputs 1: sensor supply + 2: data input 3: sensor supply + 4: data input 5: functional earth (FE)	Outputs 3: external voltage AUX - 4: switching output 5: functional earth (FE) 1.2: not connected (n.c.)
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AC2455

4 inputs / 4 outputs

AS-i profile S-7.A.7 / extended addressing mode: yes

Data bit	D0	D1	D2	D3
Input	I1	I2	I-3	I-4
Socket	I-1	I-2	I-3	I-4
Pin	4	4	4	4
Output	O1	O2	O3	O4
Socket	O-1	O-2	O-3	O-4
Pin	4	4	4	4

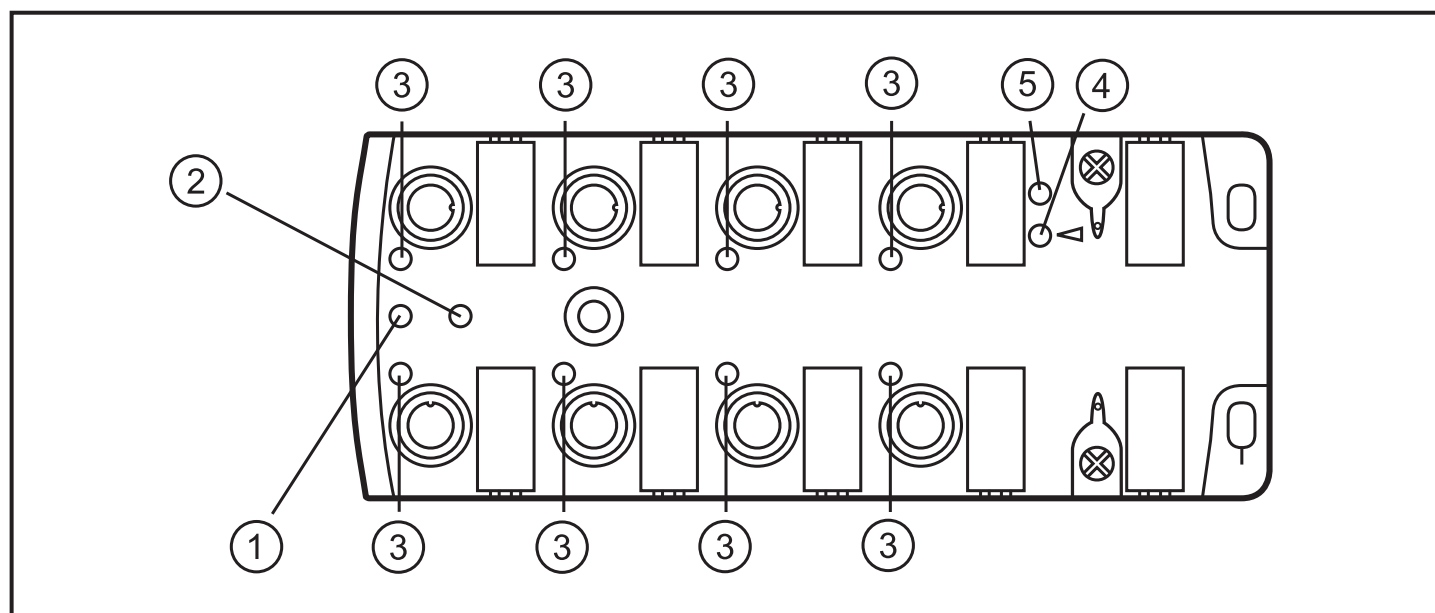
Inputs	Outputs
	
Inputs 1: sensor supply + 2: not connected (n.c.) 3: sensor supply + 4: data input 5: functional earth (FE)	Outputs 3: external voltage AUX - 4: switching output 5: functional earth (FE) 1.2: not connected (n.c.)

If a slave with the extended addressing mode is used in combination with a master of the first generation (version 2.0), the parameter P3 must be 1 and the output bit D3 must be 0*. The output bit D3 and the parameter bit P3 must not be used.

* default setting

► Assign an address between 1A and 31A to the slave.

8 Operating and display elements



- 1: LED AS-i
- 2: LED AUX
- 3: LED I/O
- 4: LED FAULT
- 5: LED IR addressing

LED AS-i green lights:

AS-i voltage supply ok

LED AUX green lights:

AUX voltage supply ok

LED I/O yellow lights:

input / output switched

LED FAULT red lights:

AS-i communication error, slave does not participate in the "normal" exchange of data, e.g. slave address 0

LED FAULT red flashes:

peripheral fault, e.g. sensor supply / output overloaded or shorted, communication active

LED IR addressing:

infrared receiver



Overload and short circuit of the input supply and the outputs are signalled as peripheral fault to the AS-i master (version 2.1 or higher).

9 Maintenance, repair and disposal

The operation of the unit is maintenance-free. Always exchange the upper part and lower part at the same time.

After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

10 Technical data

Technical data and further information at

www.ifm.com → Select your country → data sheet search

11 Scale drawing

