Operating instructions
ClassicLine module

AC5218

Contents

1 Preliminary note

- An instruction is indicated by "▶":
  Example: ▶ Mount the unit as shown.

- A reaction to the action is indicated by ">":
  Example: > Yellow LED on.

> **!** Important note
> Non-compliance can result in malfunction or interference.

> **ℹ** Information
> Supplementary note.

Safety instructions

- 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.

2 Functions and features

The slave receives data via the AS-Interface and converts them into analogue output signals. The AS-i module operates as a slave with bidirectional data transfer in the AS-i network.

The data transfer from the host to the slave is asynchronous according to the AS-i profile S-7.3.5. and the AS-i specification 3.0, downward compatible.

- Maximum number of modules per master: 31

- Current output 4...20 mA

There is an electrical separation between AS-i and AUX and betweeen AS-i and the analogue outputs.

The actuator supply on pins 1 and 3 (+24 V, 0 V) can be used to supply the actuators; a 3-wire connection is possible via external link.

A maximum of 2 A can be taken from the actuator supply.
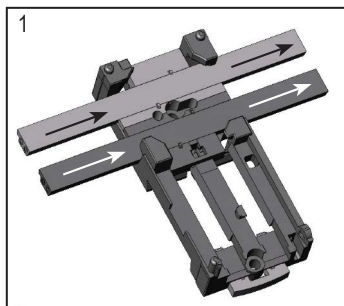
3 Operating and display elements
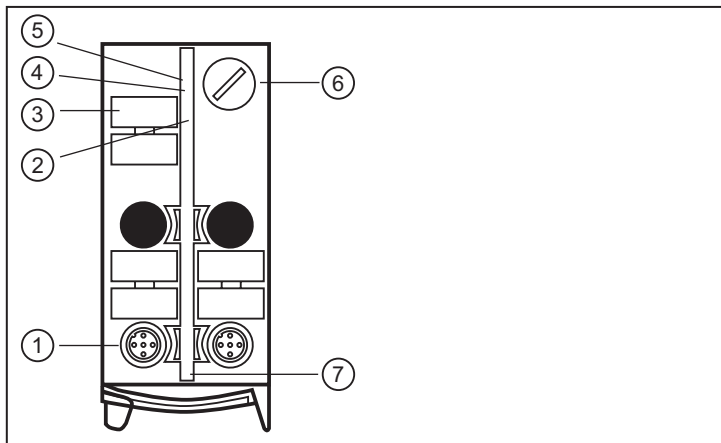
1: 2 M12 sockets
2: LEDs channels 1 and 2
3: Labels
4: LED FAULT
5: LED PWR
6: Addressing interface
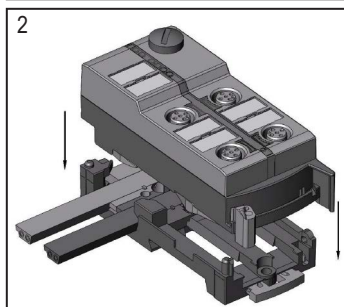7: LED AUX

4 Installation

⚠️ ▶ Disconnect the system from power before installation.

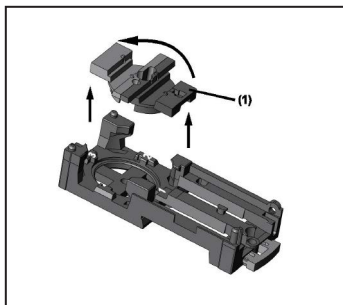**Alignment of the flat cable on delivery**

Carefully place the yellow and optionally the black AS-i flat cable into the profile slot.
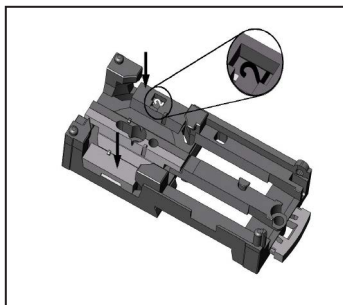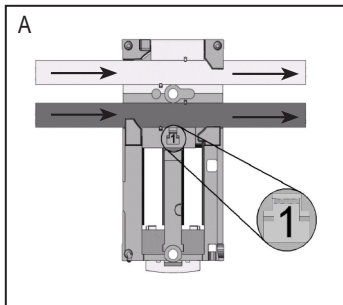
Mount the upper part.

Lock the unit.

With the supplied lower part the flat cable can be aligned in three directions.

For the requested direction place the flat cable guide (1) accordingly.

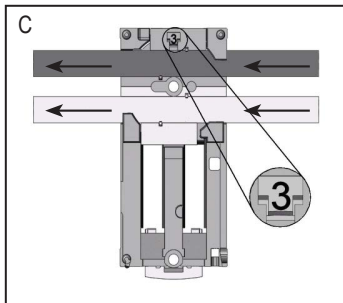**Settings at the lower part**

Select the position 1, 2 or 3 depending on the required flat cable alignment (→)

A = factory setting
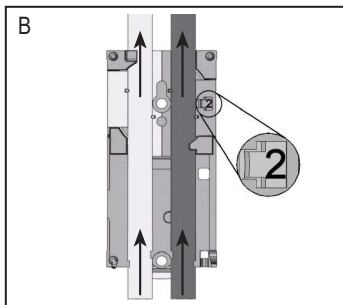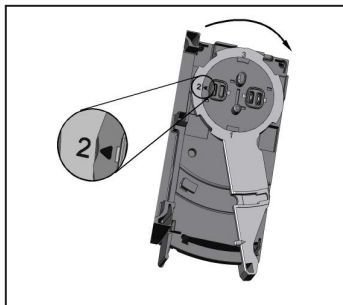
Settings at the upper part

Then set the selected position at the upper part. To do so, turn the triangle to the corresponding number (figures D1 and D2).
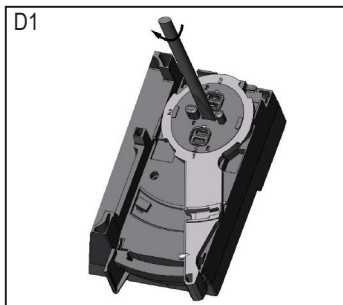
Use a tool, e.g. a screwdriver (figure D1) or the yellow / black flat cable guide (figure D2).

Open the unit

Open the unit using a tool as shown (e.g. screwdriver).

Take care in laying the AS-i flat cable, the flat cable should be laid straight for about 15 cm.

5 Addressing

▶ Assign a free address between 1 and 31.

The address is set to 0 at the factory.

5.1 Addressing with the AC1154 addressing unit

When mounted and wired the module can be addressed with the addressing cable (E70213) via the integrated addressing interface.
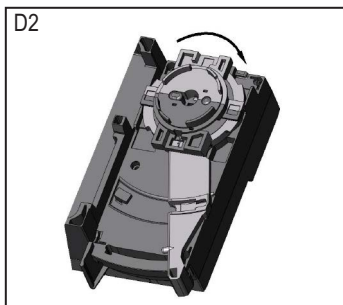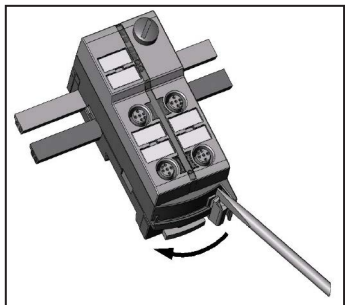
6 Electrical connection

Connect the plugs of the actuators to the M12 sockets.

To guarantee protection rating IP 67

▶ 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.

> [!] The signal cable length for external devices (sensors, actuators) is to be limited to max. 10 m.
> The signal cables must not leave the building.

6.1 Wiring of the analogue output

M12 socket	Pin
actuator supply +24 V	1
analogue output AO +	2
actuator supply 0 V	3
analogue output AO -	4
functional earth	5

6.2 Current output

The current output is implemented as passive current controller which is effective between pins 2 and 4. The current controller is electrically separated from AS-i and does not have its own supply. Therefore an appropriate PELV voltage source has to be looped in the circuit of the current output and the actuator.
If there is no PELV voltage source, the actuator supply on pins 1 and 3 can be used for the supply.

In all the following wiring diagrams the indicated pin connection refers to the analogue module. The current output (socket AO) ensures connection of 2, 3 and 4-wire actuators.
There are the following possible connections.

Wiring of a 2-wire actuator without its own supply

• Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

or

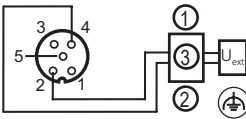| • Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

Connection of a 2-wire actuator with its own (grounded) supply

• Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

Wiring diagram of a 3-wire actuator without its own supply, actuator load connected to U-

• Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

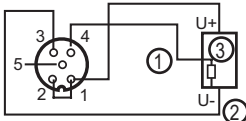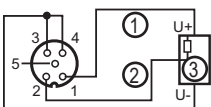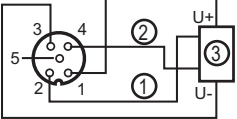Wiring diagram of a 3-wire actuator without its own supply, actuator load connected to U+.

• Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

Wiring of a 4-wire actuator without its own supply

• Pin 1: actuator supply +24 V • Pin 2: analogue output AO + • Pin 3: actuator supply 0 V • Pin 4: analogue output AO - • Pin 5: functional earth	
	1: analogue + 2: analogue - 3: actuator

7 Parameter setting of the analogue channels

Parameter bit / designation	Description	Comments
P0 watchdog analogue output	P0 = 1*: output Watchdog active P0 = 0: output Watchdog inactive	performance of the analogue output when the AS-i communication is aborted 1: analogue output switches on the no load value (< 3.9 mA) 0: analogue output retains the current value
P1 channel 1	P1 = 1*: channel 1 active P1 = 0: channel 1 inactive	1: peripheral fault indication channel 1 active, channel 1 in normal operation 0: peripheral fault indication channel 1 not active, channel 1 of high impedance
P2 channel 2	P2 = 1*: channel 2 active P2 = 0: channel 2 inactive	1: peripheral fault indication channel 2 active, channel 2 in normal operation 0: peripheral fault indication channel 2 not active, channel 2 of high impedance
P3	P3 = 1*: normal operation P3 = 0: reserved	for normal operation P3 must be 1
* default setting		

8 Measuring and output range of the module

For the measuring range and its significance please refer to the following tables.

> ℹ The accuracy is only achieved in the nominal range (4...20 mA), it is not guaranteed in the extended nominal range.

Analogue output 4...20 mA

Range [mA]	Units dec.	Units hex.	LED channel 1/2	Peripheral fault	Meaning
3.5...3.9*	< 3900	< 0F3C	flashing	on (P1, P2)	below nominal range
3.9...4	3900...3999	0F3C...0F9F	flashing	off	extended range
4...20	4000...20000	0FA0...4E20	on	off	nominal range
20...22	20001...22000	4E21...55F0	flashing	off	extended range
22*	> 22000	> 55F0	flashing	on (P1, P2)	above nominal range

* Below nominal range (output value < 3900 dec.) the current output is reset to the no load value (3.5...3.9 mA). Above nominal range (output value > 22000 dec.) the current output is limited to 22 mA.

9 Operation

ℹ️ Avoid build-up of dirt and dust on the upper and lower parts so that the locking mechanism is not affected.

Check whether the unit operates correctly. Display by LEDs:

Channel LED yellow on:	analogue signal in the nominal range (normal operation)
Channel LED yellow flashing:	analogue signal outside the nominal range or no actuator connected
Channel LED yellow off:	channel deactivated, parameter bit P1 or P2 = 0
LED green PWR on:	AS-i voltage is applied
LED red FAULT on:	AS-i communication error
LED red FAULT flashes:	peripheral fault*
LED green AUX on:	external 24 V voltage is applied

* A peripheral fault is displayed:

- if the set value of one or of both channels is above or below the nominal range and the respective channel is activated via the parameters (P1, P2).
- if nothing is connected to one channel (activated via the parameters (P1, P2)) (wire break).
- if the current set at one channel cannot flow in the actuator (e.g. because of too low supply voltage or too high a load) (difference between preset and actual value).

10 Technical data

Technical data and further information at

www.ifm.com