ifm electronic

CE

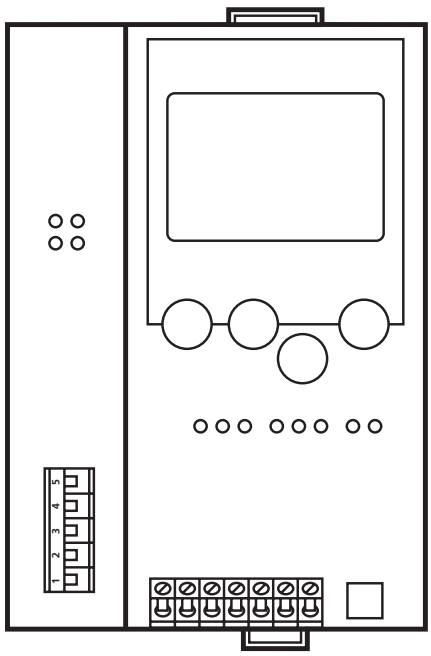
Installation instructions

AS interface

AS-i CONTROLLER$_e$

AC1308/AC1314

UK



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Contents

Function and features

- The controller$_e$ (AC1308/AC1314) integrates one or two AS-i masters (both in accordance with the AS-i version 2.1), a mini controller and a DeviceNet interface
- It controls the exchange of data to the sensor / actuator level
- processes the peripheral data in the integrated processor (signal preprocessing)
- works as stand-alone controller with exchange of data to the PC (visualisation)
- communicates with the higher control level (in the gateway mode)

Programming interface RS232C

- Baud rate 4800 to 115,200 baud
- Max. distance between controllere and host: 20 m
- Potential separation from the controller$_e$ power supply
- Programming cable E70320 for connection to host required

DeviceNet interface

- Baud rate 125 k, 250 k and 500 kbit / s
- Max. distance between controller$_e$ and host: depending on the baud rate
- Potential separation from the controller$_e$ power supply
- Up to 64 controllers connected in parallel
- Pin connection: Pin 1: V-; Pin 2: CAN_L; Pin 3: Shield; Pin 4: CAN_H; Pin 5: V+

Installation

Fix the controller$_e$ onto a 35mm rail. The protection rating of the unit is IP20, therefore it should be mounted in a protected location (e.g. control cabinet).

Ensure a condensation-free environment. Avoid excessive dust, vibration and shock. The air circulation through the vents must not be impeded.

Avoid installation in direct vicinity of frequency converters.

Electrical connection

Disconnect the installation from power. Connect the unit as indicated on the terminals. Never connect the minus potentials to each other or the minus potentials to the FE connection. Ensure an electrically safe ground connection between AS-i controller$_e$ (terminal FE) and ground of the unit.

Supply the DeviceNet controller$_e$ with a 24 V DC voltage (20...30 V DC). Connection is made to the terminals +24 V and 0 V.

The DeviceNet controller$_e$ has the cULus approval when supplied by a certified class 2 source.
Examples of the power supplies available from ifm electronic gmbh:
Power supply DN2112 for applications that require the cULus approval.
Power supply DN2011 for applications that require **no** cULus approval.

Operating and indicating elements

Information concerning the state of the master (AC1308) / master AC1314) and the connected system is given via three diagnostic LEDs on the controller$_e$.

LED PWR/COM lights:	AS-i voltage present, at least one slave was detected
LED PWR/COM flashes:	AS-i voltage present, but no slave was detected correctly
LED PROJ lights:	Projection mode active, the configuration monitoring is deactivated
LED PROJ flashes:	Projection mode active, changeover to protected mode not possible as a slave with the address 0 is connected
LED CONF/PF lights:	Projected and current configuration do not match
LED CONF/PF flashes:	Periphery fault on at least one connected slave

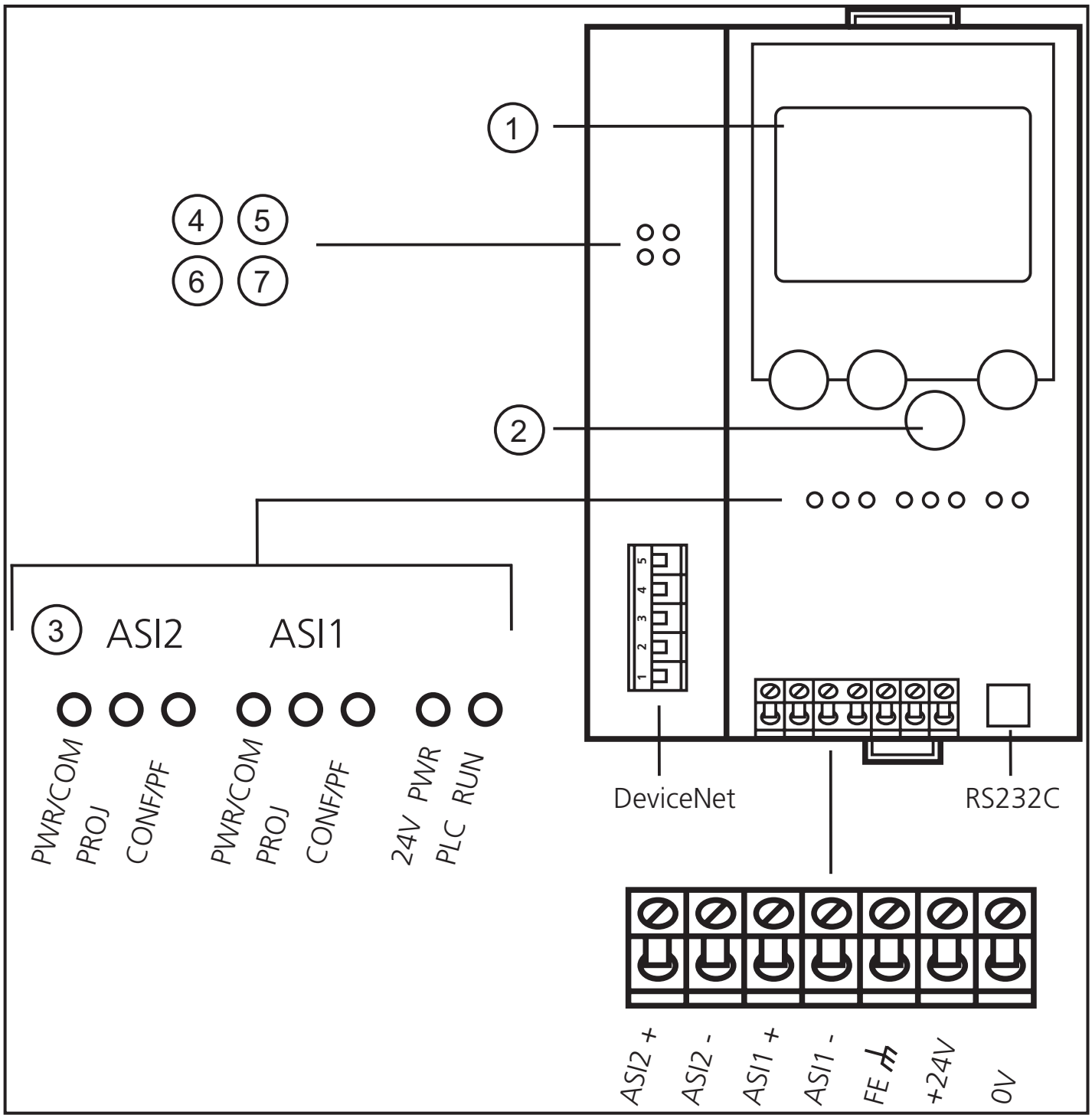
DeviceNet status LEDs (Network Status)

LEDs off:	DeviceNet voltage not ok
LED green lights:	online, connected
LED green flashes:	online, not connected
LED red lights:	BUS OFF
LED red flashes:	timeout error during data transmission

DeviceNet status LEDs (module status)

LEDs off:	no supply voltage
LED green lights:	$controller_e$ online
LED red lights:	unrecoverable system error
LED red flashes:	system error

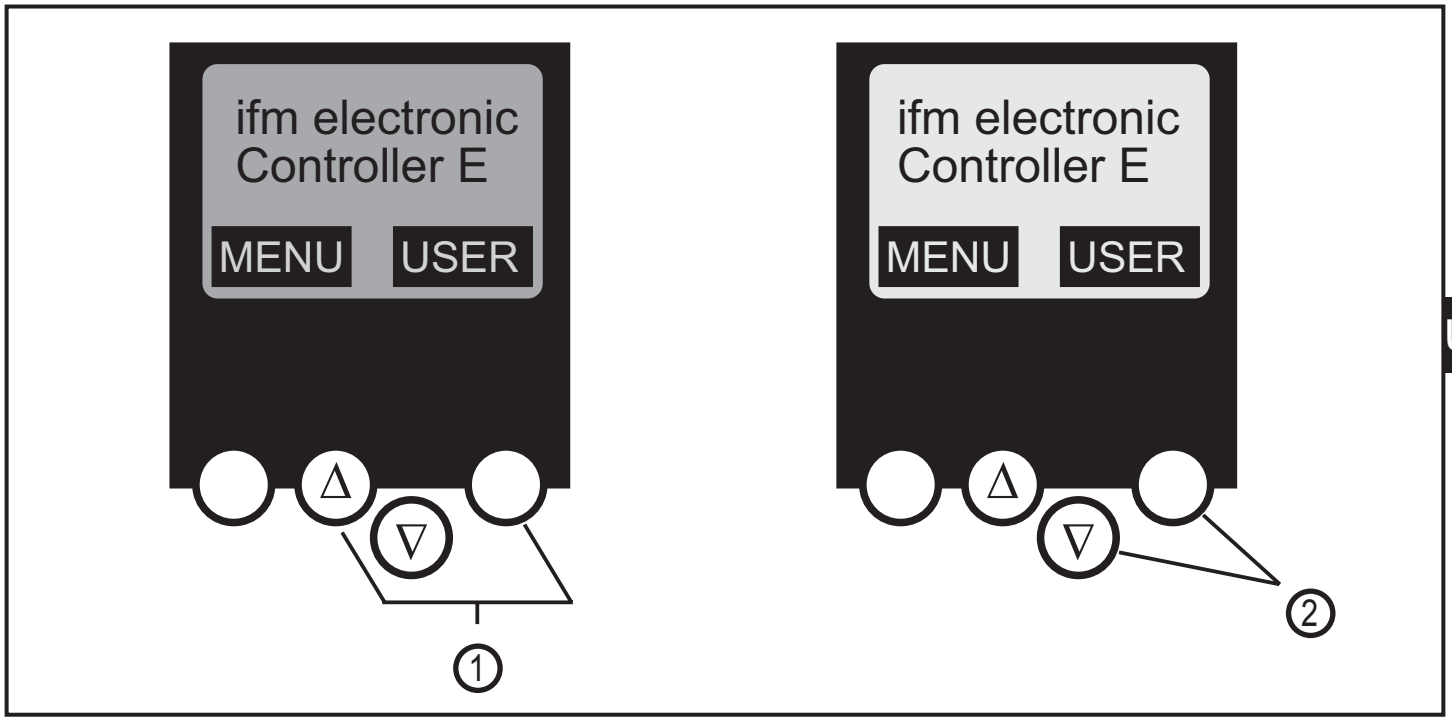
LED indicators and pin connection



1: display
2: pushbuttons
3: only AC 1314
4: LED Network Status
5: LED Modul Status
6: reserved
7: reserved

Contrast setting

The contrast can be directly changed by simultaneously pressing the right button and the Δ-button (too bright) or the ∇-button (too dark).



1: increase contrast

2: decrease contrast

Operation

To operate an AS-i system a special AS-i power supply is required. Connection is made to the terminals AS-i + and AS-i -.

Disconnect the power supply before connecting the controller$_e$.

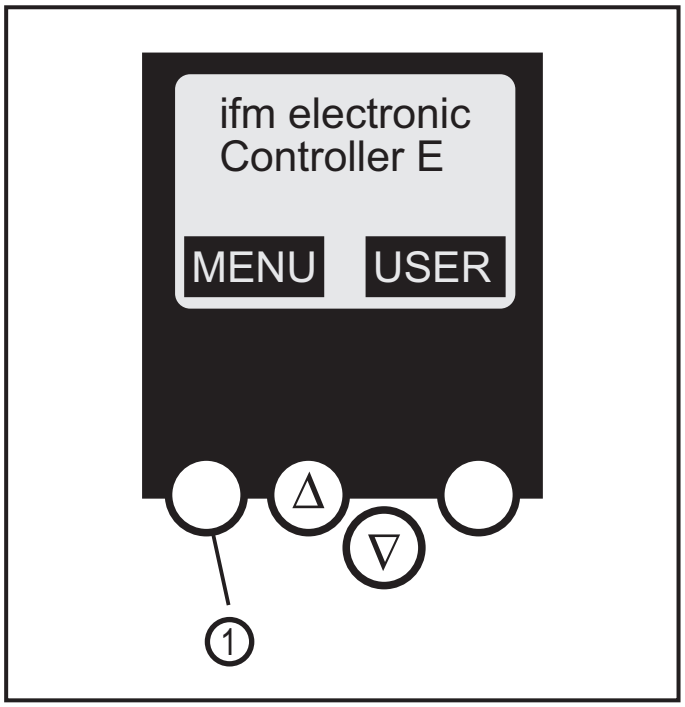
The AS-i system is operated ungrounded. AS-i + and AS-i - are to be symmetrical to the ground potential of the installation. Ensure a low resistance connection of the symmetry point of the AS-i power supply (terminal shield) to the ground of the installation.

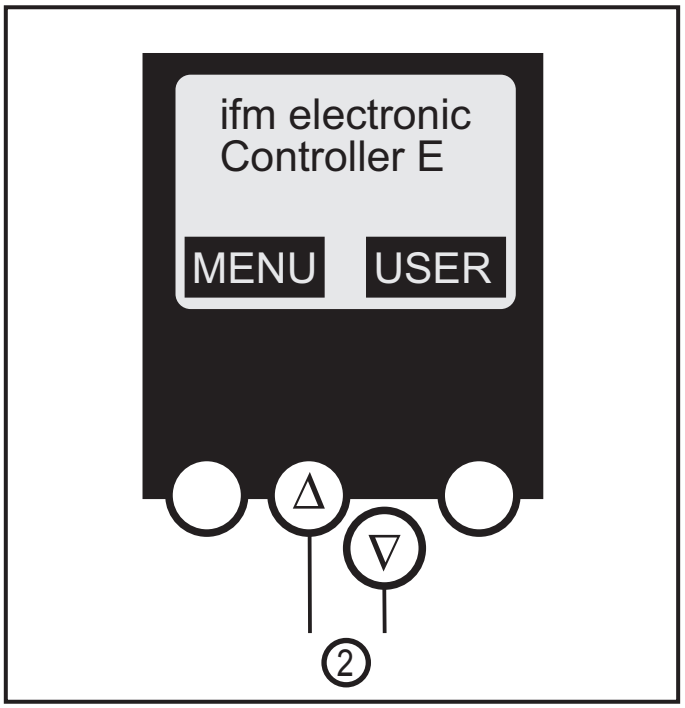
Menu overview

Open the main menu by pressing the left button „MENU“ in the start display.

To navigate within a menu point press the button ∆ or ∇.

Press the buttons simultaneously to switch between the German and English menu.





1: Menu button

2: navigation buttons

Menu navigation

O Slave lists	(Checking of the addresses of the connected AS-i slaves) • List of the detected AS-i slaves (LDS) • List of the projected AS-i slaves (LPS) • List of the activated AS-i slaves (LAS) • List of the AS-i slaves with periphery fault (LPF)
O Address slave	(Programming of the correct addresses in the connected AS-i slaves) • Readdressing of an AS-i slave connected to the controller$_e$ • Automatic addressing of new AS-i slaves to the next free address (easy startup)
O Quick setup	(Summary of the menu points required for a basic configuration) • Reading of the current AS-i configuration (config all) • Setting of the fieldbus connection (optional)
O System setup	(Setting of the controller$_e$ device) • Baud rate of the serial programming interface • IP address of the Ethernet programming interface (optional) • Input of the password to enable changes in the system configuration • Update of the controllere firmware (special programming software required)
O System info	(Device information) • Hardware and firmware version numbers of this controller$_e$ • Serial number of this controller$_e$ • Current / maximum PLC cycle time

O PLC setup	(Using the integrated PLC is optional) • Activation or deactivation of the gateway mode (no PLC used) • Start or stop of the PLC in the controller$_e$ (if used)
O PLC info	(Display of the user program name, author, date)
O Master setup	(AS-i master flags) • Reading of the current AS-i configuration (config all) • Changeover to the projection mode: configuration of the AS-i system • Changeover to the protected mode: standard mode (the master monitors the configuration) • Deactivation of the automatic AS-i slave addressing in the protected mode • Deactivation of the AS-i reset when exiting the projection mode • Display of the config.error counter of the connected AS-i system • Reset of the config.error counter • Display of the percentage fault rate of the connected AS-i system
O Slave setup	(Details about the connected AS-i slaves) • Digital or analogue inputs / outputs of the connected AS-i slaves • Current and projected parameters of the connected AS-i slaves • Current and projected I / O and ID codes of the connected AS-i slaves • Message faults in the communication to the connected AS-i slaves

O Fieldbus data	(optional) • Display of the data cyclically transmitted via the fieldbus
O Fieldbus setup	• Input of the DeviceNet Node Address of controller • Input of the baud rate of the controller • Input of the module length

Modul 1	digital inputs master 1A
Modul 2	digital outputs master 1A
Modul 3	digital inputs master 2A
Modul 4	digital outputs master 2A
Modul 5	digital inputs master 1B
Modul 6	digital outputs master 1B
Modul 7	digital inputs master 2B
Modul 8	digital outputs master 2B
Modul 9	analogue multiplexed input
Modul 10	analogue multiplexed output
Modul 11	command channel
Modul 12	PLC inputs
Modul 13	PLC outputs
Modul 14	analogue input master 1
Modul 15	analogue output master 1
Modul 16	analogue input master 2
Modul 17	analogue output master 2
Modul 18	diagnosis

Scale drawing