

ifm electronic



Installation instructions
AS-i Controller_e

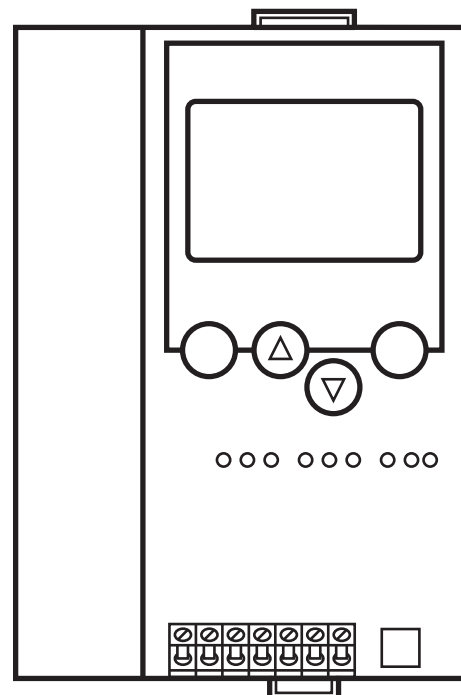
ecomat300[®]

AC1357

AC1358

UK

7390874/00 01/2011



Contents

- 1 Function and features3
 - 1.1 Programming interface RS232C3
 - 1.2 Ethernet programming interface3
- 2 Installation.....3
- 3 Electrical connection.....4
- 4 Operating and indicating elements4
 - 4.1 LED indicators and pin connection5
 - 4.2 Contrast setting6
- 5 Operation6
- 6 Menu overview.....7
 - 6.1 Password.....7
 - 6.2 Menu navigation8

1 Function and features

- The controller_e integrates one or two AS-i masters (AC1357 / AC1358, both in accordance with the AS-i version 3.0), a mini controller and an Ethernet interface.
- It controls the exchange of data to the sensor/actuator level.
- It processes the peripheral data in the integrated processor (signal preprocessing).
- It works as stand-alone controller with exchange of data to the PC (visualisation).
- It communicates with the higher control level (in the Modbus TCP gateway mode).

UK

1.1 Programming interface RS232C

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

1.2 Ethernet programming interface

- 10 Mbps and 100 Mbps
- TCP/IP - Transport Control Protocol/ Internet Protocol
- Modbus TCP
- UDP - User Datagram Protocol
- Support of the CoDeSys programming functions and the global network variables
- RJ45, Twisted-Pair

2 Installation

Fix the controller_e onto a 35 mm DIN rail which has an electrically safe ground connection. 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 inverters.

3 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 connection of the unit.

Supply the controller_e with a 24 V DC voltage (20...30 V PELV), e.g. from the 24 V power supply DN3011 of ifm electronic.

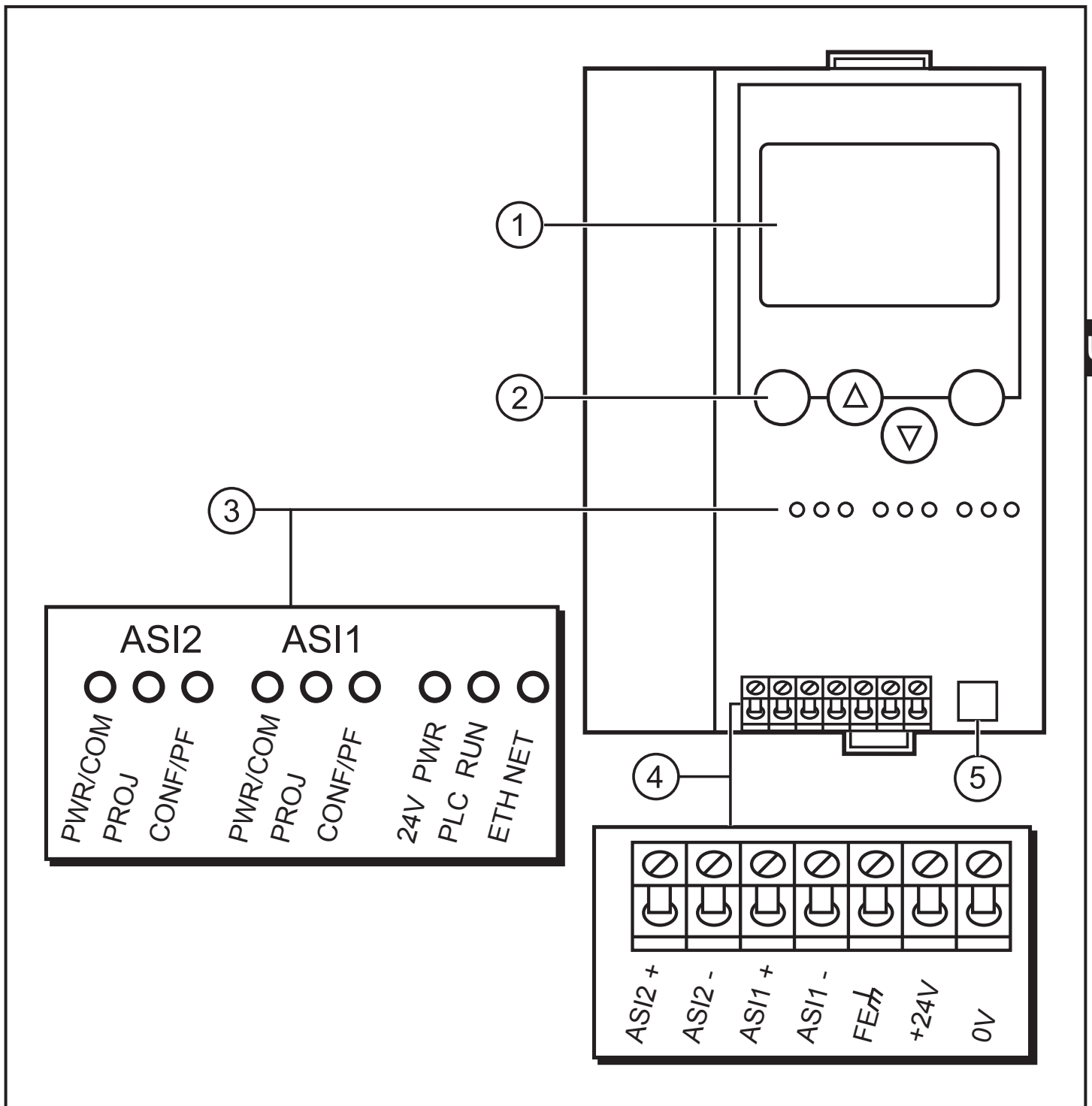
The connection is made to the terminals +24 V and 0 V.

4 Operating and indicating elements

Information concerning the state of the master (AC1357: 1 master / AC1358: 2 masters) and the connected system is given via diagnostic LEDs.

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
LED ETH NET	Exchange of data via the Ethernet interface

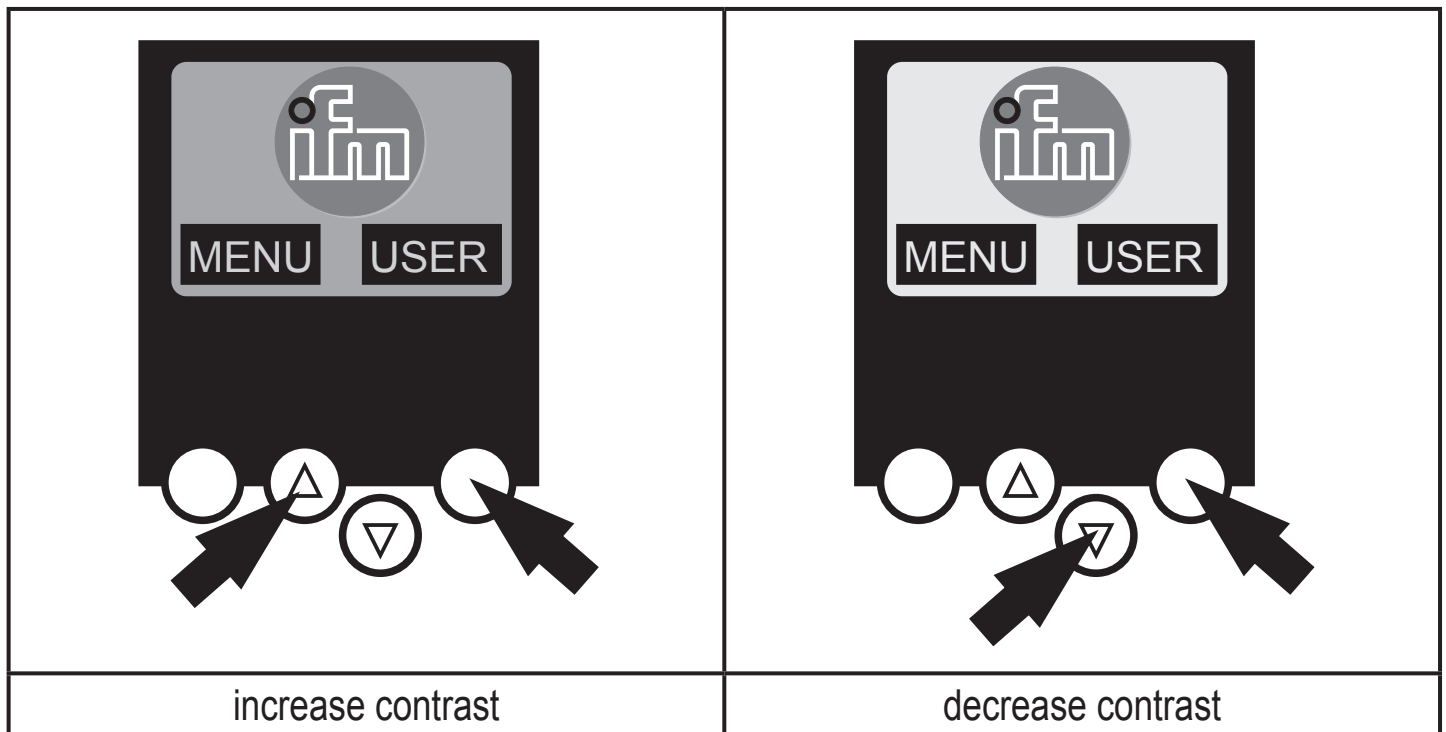
4.1 LED indicators and pin connection



- 1: display
- 2: pushbuttons
- 3: LEDs (ASI2 only for AC1358)
- 4: Ethernet interface
- 5: RS232C interface

4.2 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).



5 Operation

To operate an AS-i system a special AS-i power supply is required (e.g. AC1216). The AS-i power supply supplies the yellow AS-i cable with energy and implements a data decoupling to the voltage regulator of the power supply. Standard switched-mode power supplies would consider the AS-i data signals as interference signals and suppress them..



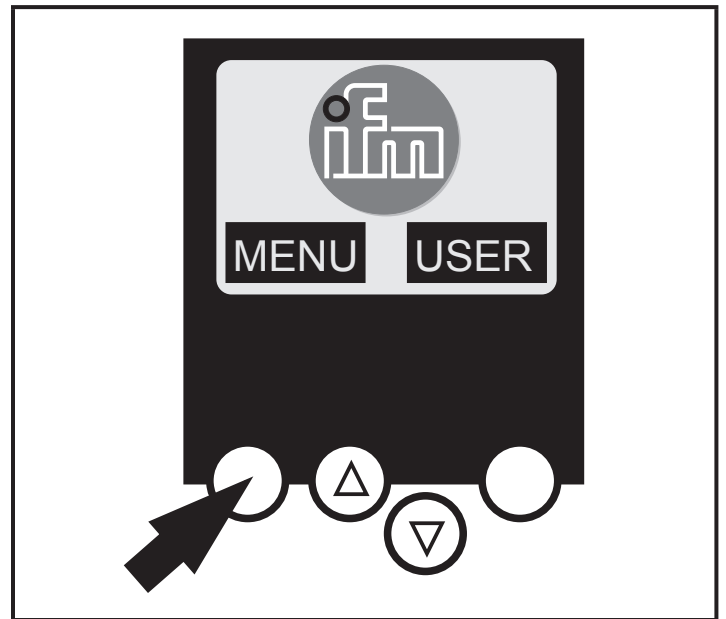
Disconnect the power supply before connecting the controller_e.

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.

6 Menu overview

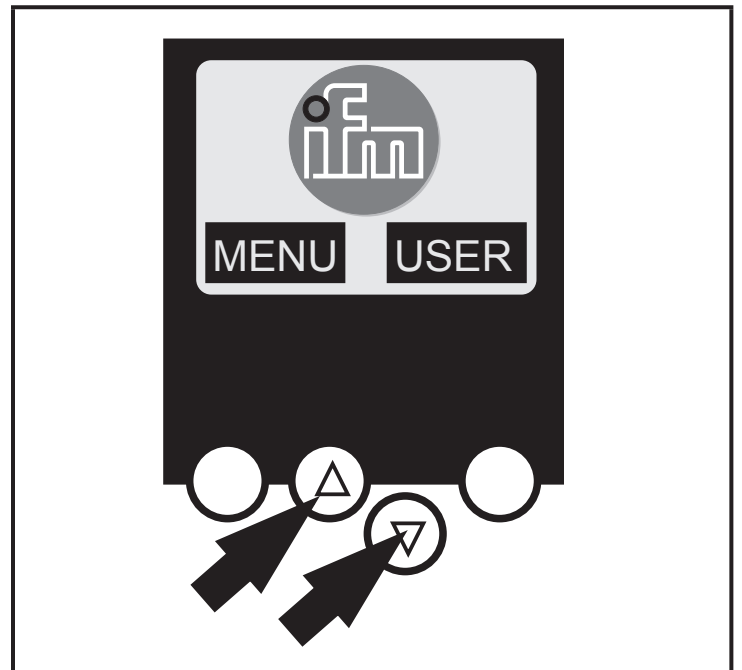
Open the main menu by pressing the left button "MENU" in the start display.



UK

To navigate within a menu point press the button Δ or ▽.

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



6.1 Password

When selecting 'Password' in the 'System Setup' menu, operation can be restricted or released.

When delivered, the device is in the user mode. By entering an invalid password (e.g. 1000) all menu items that allow settings to be changed will be blocked.

By entering the password 'CE01' the user mode is enabled again.

The password is stored non-volatilely by the System Setup / Store System menu item.

6.2 Menu navigation

By pressing the left button in the start display (AS-i error diagnostics) the main menu is opened. The two buttons in the middle allow scrolling through the menu.

- Quick Setup (summary of the menu items for a basic configuration)
 - ▽ 'Teach in' of the current AS-i configuration (Project all)
 - ▽ Settings of the fieldbus interface (option)

- PLC Setup (settings of the optional PLC)
 - ▽ Switch the gateway mode on or off (operation without PLC)
 - ▽ Start and stop the PLC in the controller_e (if used)
 - ▽ plc project name, version, date and author

- Slave Lists (Checking of the addresses of the connected AS-i slaves)
 - ▽ Indication of the list of detected slaves (LDS)
 - ▽ Indication of the list of projected slaves (LPS)
 - ▽ Indication of the list of activated slaves (LAS)
 - ▽ Indication of the list of periphery faults in AS-i slaves (LPF)

- Address Slave (Programming of the addresses of 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 start-up)

○ Diagnostics

(diagnostics of the connected AS-i networks)

- ▽ Counting the AS-i voltage dips since power on of the controller_e
- ▽ Counting the AS-i configuration errors since power on of the controller_e
- ▽ Verify the fault rate of the AS-i messages of the connected AS-i system
- ▽ Indication of the number of connected AS-i slaves and the cycles per second
- ▽ List of the AS-i slaves with faulty messages since power on of the controller_e
- ▽ Reset of the error counter
- ▽ Indication of the maximum system cycle time
- ▽ Reading the diagnostic information of Safety-at-Work monitors

○ Master Setup

(information on the AS-i master system)

- ▽ 'Teach in' of the current AS-i configuration (project all)
- ▽ Changeover to the projection mode: configuration of the AS-i system
- ▽ Changeover to the protected mode: normal operation (master monitors configuration)
- ▽ Enable the automatic AS-i slave addressing in the protected mode
- ▽ Deactivation of the AS-i reset during the change to the protected mode

- Slave Info (Details about the connected AS-i slaves)
 - ▽ Indication of the digital or analogue inputs / outputs of the connected AS-i slaves
 - ▽ Indication of the parameters of the connected AS-i slaves
 - ▽ Indication of the ID and IO codes of the connected AS-i slaves
 - ▽ Indication of the transmission errors to the connected AS-i slaves
- Slave Setup (settings of the connected AS-i slaves)
 - ▽ Forcing the parameters of the connected AS-i slaves
 - ▽ Forcing the digital or analogue inputs / outputs of a connected AS-i slave
- System Setup (Device settings of the controller_e)
 - ▽ Store the current system settings
 - ▽ Setting of the baud rate of the serial programming interface
 - ▽ Setting of the parameters of the Ethernet programming interface (option)
 - ▽ Enter the new password to disable or enable the menu functions
 - ▽ Update the controller_e operating system (special software required!)
 - ▽ Reset to the factory settings of the controller_e
- System info (Device information)
 - ▽ hardware and operating system version numbers of this controller_e
 - ▽ type and version number of the optional fieldbus interface