



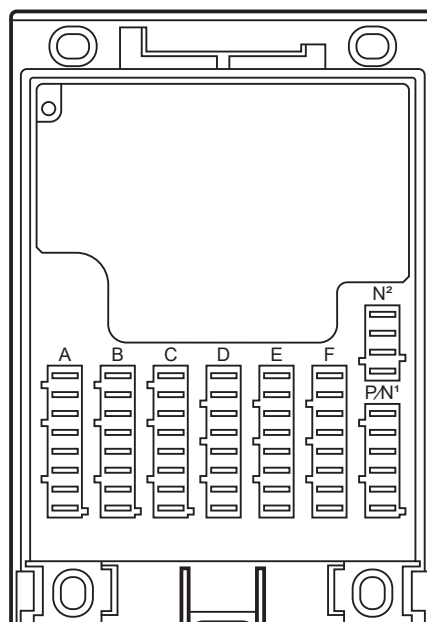
Instructions for set-up

O3M
I/O module

ZZ1102

UK

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1 Preliminary note

Instructions, technical data, approvals, accessories and further information at www.ifm.com.



You will find detailed instructions, technical data, approvals and further information using the QR code on the unit / packaging or at www.ifm.com.

1.1 Symbols used

► Instruction

> Reaction, result

[...] Designation of keys, buttons or indications

→ Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.

1.2 Warnings used



WARNING

Warning of serious personal injury.
Death or serious irreversible injuries may result.



NOTE

Warning of damage to property

1.3 Further documents

- Quick reference guide
- Operating instructions
- Software manual



The documents can be downloaded at: www.ifm.com

2 Safety instructions

- The devices described are subcomponents for integration into a system.
 - The operator is responsible for the safety of the system.
 - The system architect undertakes to perform a risk assessment and to create documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the architect of the system.
 - The system manufacturer is responsible for the proper functioning of the application programs.
- Read this document before setting up the devices and keep it during the entire service life.
- The devices must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Use the devices for their intended purpose (→ „3 Functions and features“).
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the devices or incorrect use by the operator.
- Installation, electrical connection, set-up, programming, configuration, operation and maintenance of the devices must be carried out by personnel qualified and authorised for the respective activity.
- Protect units and cables against damage.
- Because of the requirements for electromagnetic interference emissions, the devices are intended for use in industrial environments. The devices are not suitable for use in domestic areas.



WARNING

If the set is used for operator protection, death or serious irreversible injuries are possible.

The set is an assistance system and only supports the recognition of objects. The operator of the system bears full responsibility for persons within the area monitoring.

► Only use the set for support as an assistance system.

3 Functions and features

The ZZ1102 set digitises all kinds of input signals for the O3M 3D sensor. Moreover, the output signals of the O3M 3D sensor can be processed in an analogue or digital way.

For this purpose, the BasicController included in the set is operated with the supplied CAN/power adapter cable.

4 Items supplied

- 1x CR0403 BasicController, pre-programmed



The BasicController is delivered pre-programmed. If ordered separately, the BasicController is not pre-programmed.

- 1x EC0401 cover with cable seal for BasicController
- 1x E3M171 CAN/power adapter cable to connect the BasicController to the O3M 3D sensor
- 1x EC9206 connection cable with contact housing for BasicController (inputs)
- 2x EC9207 connection cable with contact housing for BasicController (outputs)
- 1 x instructions for set-up

5 Function

The BasicController included in the set is supplied with voltage and connected to the O3M 3D sensor via the CAN/power adapter cable.

The O3M 3D sensor communicates with the BasicController via the CAN bus

The BasicController CR0403 translates the data of the O3M 3D sensor on the inputs and output pins.

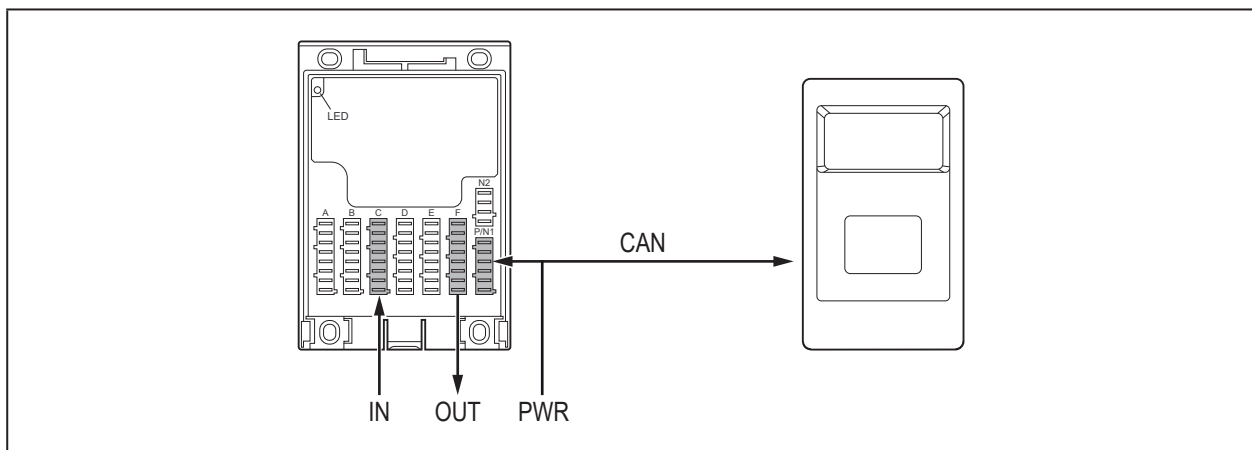


Fig. 1: Overview

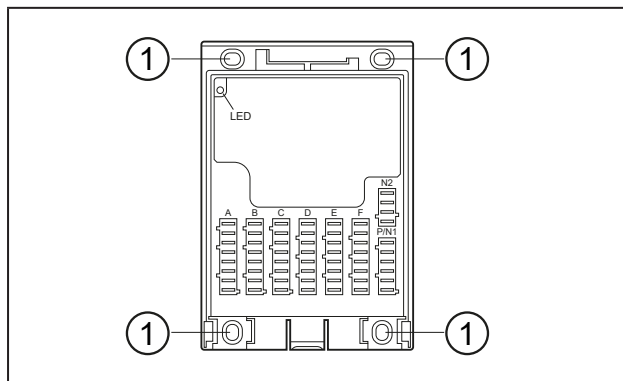
6 Installation

 Detailed instructions for mounting can be found in the mounting instructions of the BasicController CR0403.

NOTE

The BasicController can be damaged at the mounting location 'motor'.

► Mount the BasicController to the mounting location 'bodywork'.



► Mount the BasicController on a suitable surface using the screw-on points (1).

Fig. 3: Installation of the BasicControllers

7 Electrical connection

 The unit must be connected by a qualified electrician.

Device of protection class III (PC III)\Electric supply via PELV circuits only.

Electric supply must correspond to UL 61010-1, chapter 9.4 - Limited Energy:

The overcurrent protection device must switch off a current of 6.6 A in 120 s. For the correct rating of the overcurrent protection device take the technical data of the device and wiring into account.

The separation of external circuits must comply with UL 61010-2-201, Figure 102.

► Disconnect power before connecting the device.

► For cable lengths > 30 m use an additional protection against surge voltages to IEC 61000-4-5.

 The IP rating indicated in the data sheet is only guaranteed if the M12 connectors are firmly screwed.

The devices can be damaged by loosely screwed M12 connectors.

► Firmly screw the M12 connectors to the device.

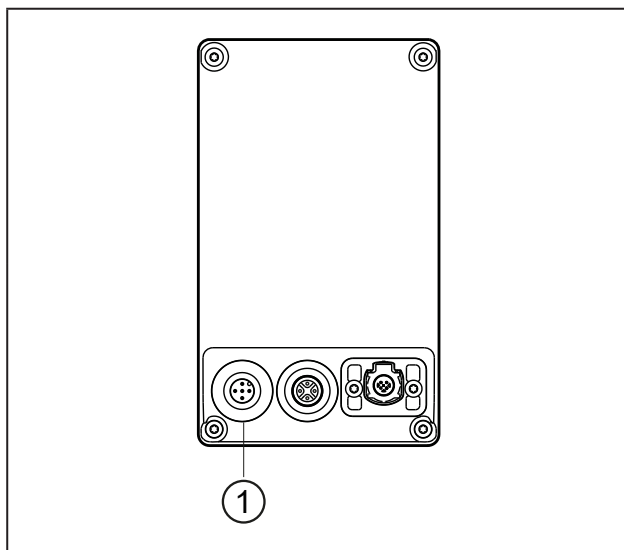
 Cover the unused sockets with protective caps.

Tightening torque 0.8 Nm.

 Detailed instructions on the electrical connection can be found in the instructions of the BasicController CR0403 and the O3M 3D sensor.

 Available accessories: www.ifm.com

7.1 Wiring of the O3M 3D sensor



① Power supply and CAN bus

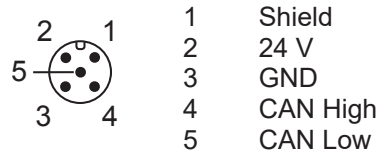


Fig. 4: Wiring of the O3M 3D sensor, back

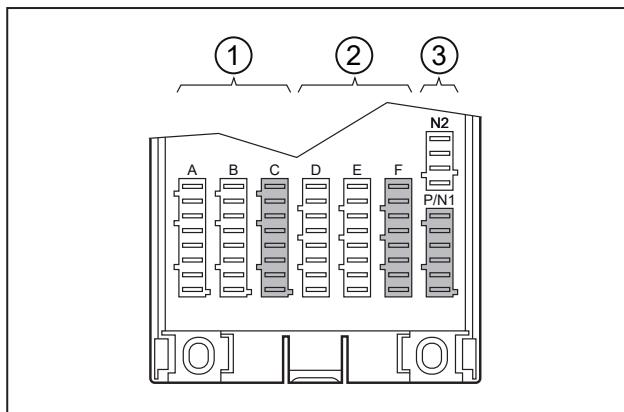
! An example parameter setting for the O3M 3D sensor is available in the download area of the ZZ1102 module at www.ifm.com.

7.2 Wiring of the BasicController

The supply cables, CAN interfaces and input/outputs are connected via 6.3 x 0.8 mm blade male terminals on the front of the BasicController.

i Block C (inputs) and Block F (outputs) are pre-programmed.
 ► Connect the BasicController via these terminal strips (→ 7.2.1).

i The BasicController features an application-specific configuration. The configuration is also used as part of application packages (e.g. O3M Area Surveillance ZZ1103).



① Inputs (A, B, C)
 ② Outputs (D, E, F)
 ③ Supply and CAN interfaces

Fig. 5: Wiring of the BasicController

	Block	CR0403			Pre-programming
① Inputs	A	IN 00	analogue voltage input 0...32000 mV	A/D 12 bits	linked with logic O3M → analogue input 0
		IN 01	analogue current input 0 ... 20 mA	A/D 12 bits	linked with logic O3M → analogue input 1
		IN 02	binary voltage input	minus-switching	linked with logic O3M → digital input 0
		IN 03	binary voltage input	minus-switching	linked with logic O3M → digital input 1
	B	IN 04	binary voltage input	plus-switching	linked with logic O3M → digital input 2
		IN 05	binary voltage input	plus-switching	linked with logic O3M → digital input 3
		IN 06	binary voltage input	plus-switching	linked with logic O3M → digital input 4
		IN 07	binary voltage input	plus-switching	linked with logic O3M → digital input 5
	C	IN 08	used internally		
		IN 09	used internally		
		IN 10	used internally		
		IN 11	binary voltage input		standby when input is set to "1"
② Outputs	D	OUT 00	binary voltage output		linked with logic O3M → digital output 71
		OUT 01	binary voltage output, output inverted		linked with logic O3M → digital output 72
		OUT 02	binary voltage output, output inverted		linked with logic O3M → digital output 73
		OUT 03	binary voltage output, output inverted		linked with logic O3M → digital output 74
	E	OUT 04	binary voltage output, output inverted		linked with logic O3M → digital output 75
		OUT 05	binary voltage output		linked with logic O3M → digital output 76
		OUT 06	binary voltage output		linked with logic O3M → digital output 77
		OUT 07	binary voltage output		linked with logic O3M → digital output 78
	F	OUT 08	analogue output	PWM	linked with logic O3M → analogue output 0
		OUT 09	used internally		
		OUT 10	binary voltage input		blockage warning O3M
		OUT 11	binary voltage input		Op_mode O3M: "1": run "0": not run
③ Power / CAN	P/N1	VBBS, ground, CAN1 H/L			
	N2	VBBS, ground, CAN2 H/L			

Table 1: Wiring BasicController, pre-programmed

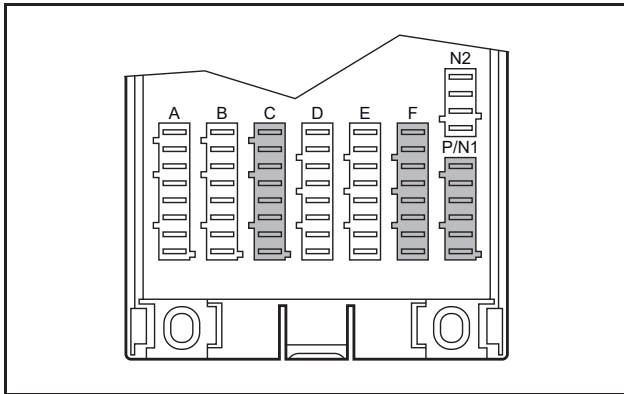
The output of the digital outputs via the CAN bus must be activated using the ifm Vision Assistant software:

- ▶ Start ifm Vision Assistant.
 - ▶ Connect 3D sensor with ifm Vision Assistant.
 - ▶ Click [Application] function: 
 - ▶ Click [Logic] function: 
 - ▶ Scroll to the area [Enable CAN output].
 - ▶ Enable the [Digital 0-37 and Analogue 0-1] switch.
 - ▶ Enable the [Digital 38-99] switch.
 - ▶ Press [Save] button: 
- > The output of the digital outputs via the CAN bus is enabled.



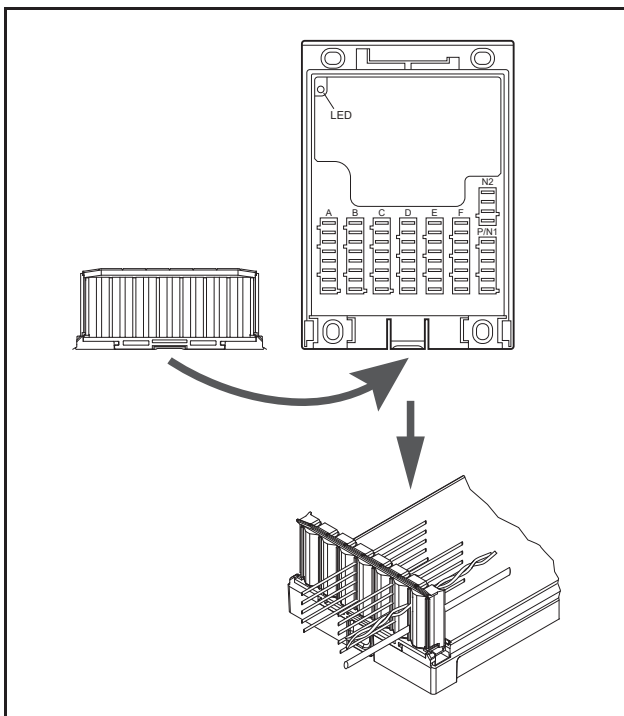
The ifm Vision Assistant is available for download: www.ifm.com

7.2.1 Connect BasicController



Connect cable:

- ▶ Connect CAN/power adapter cable to P/N1.
- ▶ Plug EC9206 connection cable with contact housing onto input strip C.
- ▶ Plug EC9207 connection cable with contact housing into output strip F.
- ▶ If necessary, plug the second EC9207 connection cable onto output strip D or E.

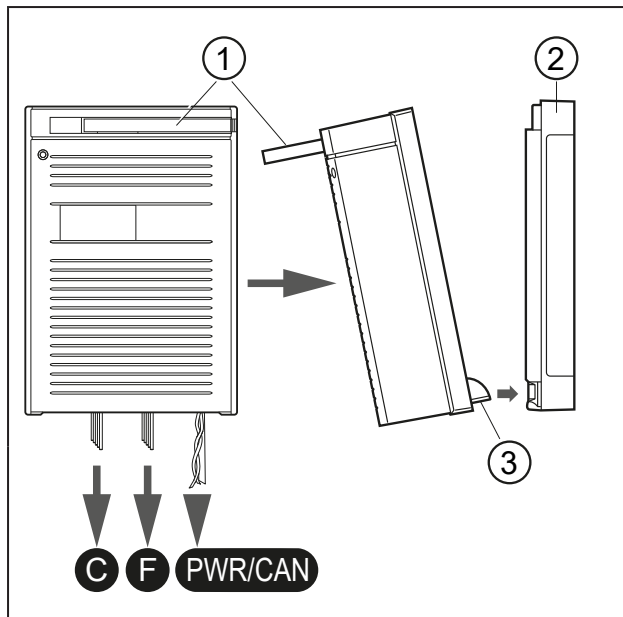


Mount cable seal on BasicController:

- ▶ Insert the cable seal into the fixture until the latch audibly engages.
- ▶ Guide the cable through the cable seal.



Protection rating IP 54 can only be guaranteed if the cover is used together with the cable seal



Mounting the cover:

- ▶ Pull out the locking lever (1) and rotate it towards you.
- ▶ Place the cover diagonally onto the BasicController (2). To do this, insert the two guide brackets (3) into the slots provided in the BasicController.
- ▶ Press the cover on.
- ▶ Move the locking lever (1) back into its initial position.

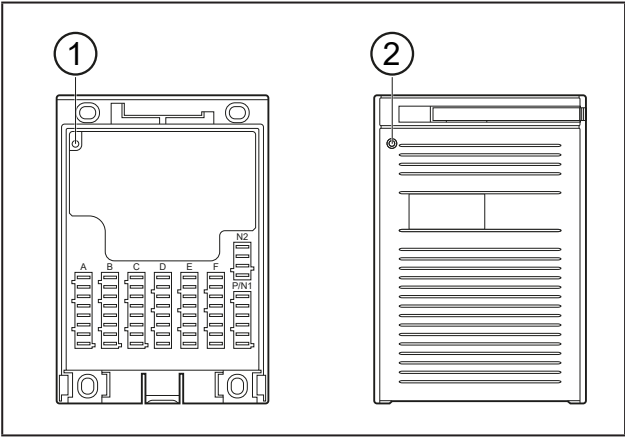
C: Inputs
F: Outputs

- ▶ Connect the M12 connector of the CAN/power adapter cable to the O3M 3D sensor (→ 7.1).
- ▶ Connect the two twisted wires of the CAN/power adapter cable to a power supply: Blue: GND, brown: L+ (24 V).
- ▶ Assign the lines to the inputs and outputs of the BasicController as required. Take pre-programming into account → 7.2, Table 1.

UK

8 Operating and display elements

The status LED of the BasicController indicates the operating states of the system by means of colour and clocking.



1: Status LED of the BasicControllers (green/red)
2: LED lighting in the cover

BasicController / O3M 3D sensor: Initialisation							
250 ms	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms
Device fault (e.g. BUSOFF)							
250 ms	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms	250 ms
System runs normally (standard IO module)							
1500 ms						500 ms	
System runs normally (configured IO module)							
1500 ms						50	450 ms
Device incompatible or not working							
1500 ms						500 ms	
Connection establishment (O3M 3D sensor not accessible)							
150 ms	100	150 ms	100	150 ms	100	150 ms	1100 ms
Calibration active (O3M 3D sensor not accessible)							
150 ms	100	150 ms	100	150 ms	100	150 ms	1100 ms
Standby (O3M 3D sensor not accessible)							
150 ms	1850 ms						
O3M 3D sensor not accessible (N/A, error or timeout)							
150 ms	100	150 ms	100	150 ms	100	150 ms	1100 ms

O3M 3D sensor accessibility restricted							
							
150 ms	100	150 ms	100	150 ms	100	150 ms	1100 ms
 The reasons for the restricted accessibility are partly indicated by the status LED (calibration, connection establishment, etc.).							

Table 2: LED indication of the operating states

9 Set-up

The BasicController is pre-programmed for the application (→ 7.2, Table 1) and can be put into operation directly after installation and electrical connection.

If further input and output signals are required, they can be defined in the logic of the O3M 3D sensor with the help of ifm Vision Assistant.