

Operating instructions

DPC I easy | Pressure controller



Dear Customer,

We are delighted that you have decided to buy a MECOTEC device. Please read these operating instructions for the **pressure controller DPC I easy** carefully before connecting and configuring it, and operate the device in compliance with the instructions. Operational safety and the function of the device can only be guaranteed if the generally applicable legal safety and accident prevention regulations, plus the safety instructions provided in the operating instructions, are complied with.

We do not accept liability for any damage caused by improper use or incorrect operation. Please ensure that all persons operating the device have read and understood the operating instructions.

Keep these operating instructions in a safe place so that they are accessible at all times when needed.

If you require further information, please don't hesitate to contact us using the following contact details:

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1 Description

The DPC I easy is a fast electronic pressure controller. The regulation setpoint is specified via the communication interface or directly via the controls on the front of the controller. The illuminated display shows pressure value, setpoint and controller mode. A potentiometer is used to set the desired setpoints.

2 For your safety

2.1 Symbol description

2.1.1 Personal protective equipment!



High sound pressure may occur due to escaping pressure media.
Wear hearing protection!



When working with and on the precision pressure controller,
safety goggles must be worn at all times!

2.1.2 Other symbols



Danger!

This symbol indicates an immediate danger due to electrical current. There is a risk of severe or fatal injuries if the safety instructions are not complied with.



Warning!



As hazardous material, this device may not be disposed of in normal household waste. It must be disposed of correctly in compliance with local regulations.



Read the operating instructions **before assembly** and commissioning!

2.2 Safety instructions

Please read these operating instructions carefully before commissioning the pressure controller DPC I easy and ensure that all persons operating the device have read and understood the operating instructions.

The manufacturer has designed this device to ensure safe use as long as it is used in compliance with the method described in these operating instructions. This device may only be used for the purpose indicated in these operating instructions.

The safety instructions ("**Warning, Attention**") are intended to protect the user and the device from injuries and damage. The following chapters provide you with all the information you need for safe handling.

There is a danger of death if the warnings, particularly the safety instructions, are not complied with. Severe physical injuries or damage to property may occur. Any use of the DPC I easy other than the intended use is not permitted. The pressure controller must be handled with care. The technical specifications for the pressure controller listed in these operating instructions must be complied with.

Warning!

Ensure that the device is suitable with regard to the measurement range, implementation and specific measurement conditions before assembly, commissioning and operation.

Ensure that all components used are functional and in good working order before the pressure controller is pressurised. The components used must be suitable for the specified maximum pressure. Screw connections must be checked for tight fit and leaks.

**Pressure**

Do not use any pressure higher than the maximum sensor pressure range.

Do not open the device!

The device may only be opened by qualified personnel. There is a risk of electric shock. If the device is moved from a cold to a warm environment, its function may be impaired due to the **formation of condensation**. In this case, wait for the device temperature to adjust to the room temperature before starting it up again.

If malfunctions cannot be rectified with the aid of these operating instructions, the device must be taken out of operation immediately and secured against unintentional restart. Claims of any kind due to incorrect use are excluded.

Repairs may only be carried out by the manufacturer. Tampering with or modifying the device is not permitted.

3 Specifications

Control range	From 0 bar up to 300 bar	
Control accuracy	< 1.0% FS	
Media	Air, gases, liquids	
Permissible pressure	See type plate on the back of the controller.	
Display	LCD display	
	Warm-up time	> 15 min
Device	Device design	Table-top housing
	Sensors/channels	1
	Dimensions in mm	63 x 380 x 190 mm (H x W x D)
	Weight	1 600 g
Connections	Pressure connections	3 x G 1/8" inside
	Filter element	8µ filter in
		Supply+
		Output und Vent -
Power supply	100 – 240 V; 50/60	
Permitted ambient temperature	Storage temperature	-10 – 70 °C
	Air humidity	5 – 95% rh (relative humidity without condensation)
	Compensated temperature range	0 – 70°C
Communication	Interface	Bus interfaces with special adapter (optional) only from manufacturer

4 Preparation

4.1 Unpacking the device

4.1.1 Visual inspection

A visual inspection for defects and a function test are carried out before each device leaves the factory. Check the device on delivery for transport damage. Ensure that the electrical cables and the pressure lines comply with the installation requirements. Check the pressure hoses for damage and any penetrating dirt or moisture. Immediately notify the shipping agent of any recognisable damage.

4.1.2 Scope of delivery

Check the package contents following delivery of the DP 400 using the following list:

- 1) Pressure controller DPC I easy
- 2) Cold-device cable
- 3) Operating instructions

4.2 Set-up and assembly

4.2.1 Location

The device is available as a table-top or installation module. To ensure maximum stability and accuracy, avoid setting the device up on surfaces affected by motor or machine vibrations.

4.2.2 Environment

The location where the device is set up must meet the following criteria:

- Operating temperature: 15 – 45 °C
- Air humidity: 5 – 95% relative humidity without condensation

Avoid the following influences:

- Direct sunlight or proximity to hot objects
- Unstable installation location
- Mechanical vibrations
- Proximity to sources with strong electromagnetic fields such as high-voltage devices, mobile phones or high-voltage cables
- Soot, steam, dust and corrosive gases
- Potentially explosive environments or flammable atmospheres

4.3 Connections

4.3.1 Pressure connections

The DPC I easy is used for pressure regulation with one channel.



WARNING!

Vent the pressure lines before connection/disconnection. Carefully release the pressure from the lines. Only use devices with the correct nominal pressure. Check all fittings and devices for damage before pressurising the system. Replace any damaged fittings and devices.

Do not use any damaged fittings or devices!



The pressure ports are located on the back of the device.
Connections: G 1/8" inside

4.3.2 Electronic connections

The following connections are located on the back of the device:

- Communication port for internal bus
- IEC socket

5 Commissioning

The device must be tested before use. Obtain an overview and familiarise yourself with the entire procedure before starting a process on a component or the system.



WARNING!

When the DPC I easy is switched off, all valves are closed and no pressure value is displayed. However, there may still be compressed air in the system. To be on the safe side, the connected measuring line should be removed before switching off the device.

6 Operation

6.1 Switching the DPC I easy on/off and charging

Switch the device on/off with the button on the right-hand side of the back. After being switched on, the pressure controller carries out an initialisation process and system check. Once initialisation is complete, the display will be shown.

The device should warm up for at least 15 minutes before any measurements are carried out.

6.2 Displays



The upper part of the display shows the output pressure of the controller in bar.

The bargraph display shows the current control pressure and the maximum control pressure. The maximum control pressure also defines the control range.

Nom: the setpoint

Diff.: difference between the setpoint and the actual value in percent

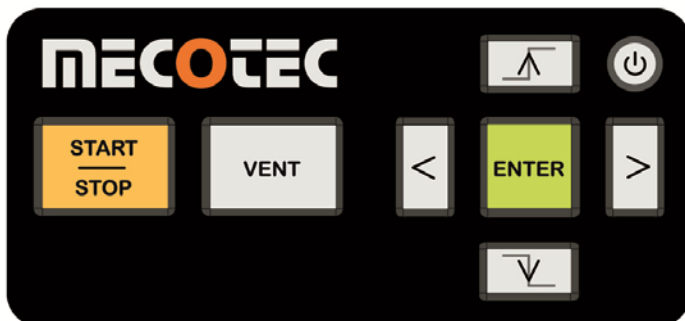
The adjustment parameters can be called up for longer holding of the Enter key.
The bottom right corner of the display shows the control mode.

6.2.1 Control mode

The DPC I easy has three control modes:

1. Specification of the setpoint and start of control via the communication interface
2. Operate the controller in stop mode:
The desired setpoint is set via the potentiometer.
The orange **START/STOP** key starts the control and can be stopped again by pressing the key again.
3. Operate the controller in RUN mode:
If the setpoint is changed via the potentiometer, the controller will immediately compensate for the system deviation.

6.3 Keyboard



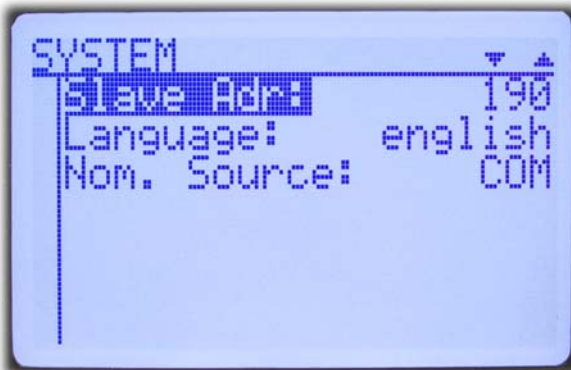
The setpoint is set via the potentiometer. The control is started or stopped with the **START/STOP** key. When the **Vent** button is pressed, the controller is vented via the vent outlet. Arrow keys up/down increase or decrease the pressure by one tick and are used for navigation in the settings menu. Arrow keys right/left are used for navigation in the settings menu. Holding down the **ENTER** key will open the settings menu. Changed parameters are confirmed with the **ENTER** key.

7 Main menu



By pressing the **ENTER** key for approx. 3 seconds, the main menu opens. The arrow keys are used to navigate and change the values. Confirm changes with **ENTER**.

7.1 Device settings



Within **System**, the setpoint source is selected. If **COM** is set, the setpoint is only set via the communication interface. The slave address as well as the language can be selected.

7.2 Control settings

7.2.1 Units

The menu item **Unit** can be used to select between physical units such as **bar**, **mbar**, **inH2O**, **inHg**, **mmH2O**, **mmHg**, **psi**, **Pa**. and others. Changes are saved with **ENTER** on the keyboard.

7.2.2 Number of decimal places

Under the menu item **Number of decimal places**, the resolution of the displayed measured value is set. The resolution refers to the set unit.

7.3 Controller



The control parameters P / I / D can be changed in this window.

Auto Tune: If a controlled system is connected to the DPC I easy, the control parameters P / I / D can be determined automatically.

During execution, the supply pressure must be below or equal to the control range. With the Auto Tune function, the inlet valve is opened until the supply pressure is reached.

Supply Press.:	applied supply pressure
Nom-Max:	maximum control range
Acc. Pulse in μ seconds:	Time with which the valve is accelerated by switching.
Tick Vent:	Time with which the outlet valve is activated per tick. Time cannot be less than Acc. Pulse SB-Pulse.
Tick Press.:	Time with which the inlet valve is activated per tick. Time cannot be less than Acc. Pulse SB-Pulse.
Timeout:	The duration serves as a safety function. If the control setpoint is not reached within the set time, for example due to a leak, the vent valve will remain open or remain open. The display shows the message TIMEOUT.

7.4 Info



The info area displays the maximum and minimum control ranges as well as the current software version.

7.5 Save & Quit

Changes must be saved with Save & Quit.

7.6 Restart

Restart of the controller

8 Servicing

8.1 Maintenance

The device must be maintained in compliance with the manufacturer's instructions, and only by authorised service representatives or by an employee of the manufacturer's service department.

8.2 Technical advice/service

Please contact the manufacturer or supplier if you have any questions about assembly, storage, operation or any special uses of the device.

8.3 Returning the device



WARNING!

The device must be free of hazardous substances such as acids, alkalis, solutions, etc. for shipping.

Use the original packaging or suitable transport packaging to return the device.

To prevent damage:

- Wrap the device in antistatic plastic film.
- Place the device and insulating material in the packaging and uniformly insulate the transport packaging on all sides.
- If possible, add a bag containing desiccant to the packaging.
- Mark the shipment with **Transport of highly sensitive measuring device**.

8.4 Disposal

Incorrect disposal can present a risk to the environment. Please dispose device components and packing materials in compliance with national waste treatment and disposal regulations in an environmentally friendly manner.