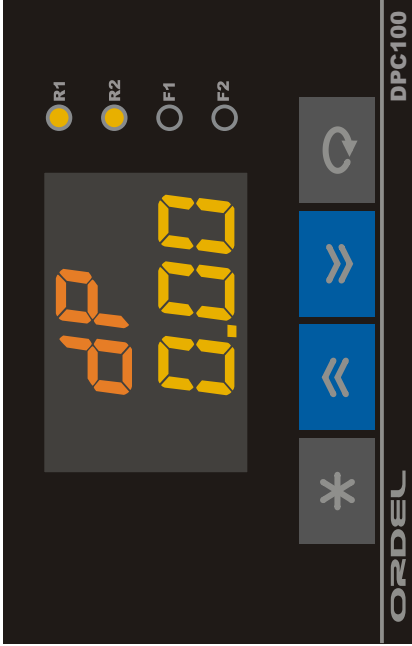


DPC100

Differential Pressure Controller USERS' GUIDE



ORDEL



- Before using the device, please read the warnings below and this guide carefully. The accidents or damages resulting from not following the warnings included in this guide are under user's responsibility.
- Take the necessary precautions in order to prevent accidents and damages that may result in case the device gets faulty.
- There is no fuse or switch that brings the device in power down state, these should be added to the system by the user.
- Sensor and signalling cables should not be routed close to the power cables or inductive load cables.
- Do not power up the device before the connections related with the device are performed in accordance with connection diagram.
- Configuration settings at factory out should be changed according to the user's preferences. The accidents and damages resulting from incorrect configuration settings are under users' responsibility.
- Never disassemble, repair and modify the device. These should be carried out by authorized service.

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DPC100 series devices are designed to measure the differential pressure make control and send analog signal that carries the measured data to another system. Complying international standards, reliability and user friendly usage features are the design principles of these devices. They can be used in many industrial applications.

- 2 Item 4 digit numerical display**
- 2 Item Led Display**
- 1 Item Analog Output (0/4-20mA, 0/2-10V)**
- 2 Item Programmable Semiconductor**
- 2 Different Sensor Options**
- Sensor Error Detection**
- 4 Different Relay Functions**
- 100 ms Sampling and Control Period**

Before using the device, please follow the instructions below according to the information in this guide.

- Cihazı kullanılmaya başlanmadan önce ürün koduna bakarak besleme geriliminin hat basıncının ve analog çıkış modülünün uygun olup olmadığını kontrol ediniz.
- Before using the device, control supply voltage, line pressure and analog output module if they are appropriate or not by the help of product code
- First of all, connect device to power supply and by using the configuration page, configure the device.
- Adjust set and hysteresis values of the relays which are selected as alarm in operator page.
- Power down the device and according to the connection diagram, apply other connections.
- Prepare the system which will be controlled to be run and power up the system and the device.
- Control all functions of the device for normal operating conditions.
- Finally, in order to prevent the unauthorized people to observe the system, make the necessary operation for security by entering the configuration page and return to the Process Screen.

This user guide is prepared by following the instruction order above. How these operations are made are explained in detailed in related sections.

DPC100-1/040/1

Supply Voltage:

1 = 10-32 Vdc

Pressure Range:

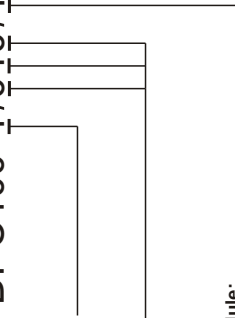
040 = 0 - 4 Bar

100 = 0-10 Bar

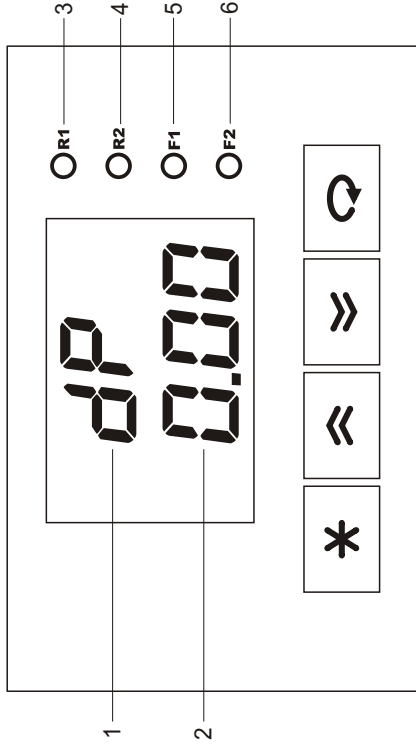
Analog Output Module:

1 = 0/4-20mA Current Output

2 = 0/2-10V Voltage Output



Supply Voltage (PS)	10-32 Vdc		
Power Consumption	4W		
Analog Output (OP) (VSS \geq 15V)	0/4-20mA (RL \leq 500 Ω)	0/2-10V (RL \geq 1M Ω)	
Semi-Conductor Relay- Outputs(RL1,RL2)	250V, 80mA, NO Contact		
Memory	100 year, 100.000 renewals		
Accuracy	+/- %0.8		
Sampling Periode	100ms		
Environment Temperature	Operation : -10...+55C		Storage : -20...+65C
Protection	IP65		
Dimensions	Width : 115mm	Height : 95mm	Depth : 56mm
Weight	330gr		

**PROCESS SCREEN:**

Just after powering up the device, after showing program version for 2 seconds, first display shows the "dP" message and second display shows the differential pressure value or error message. This screen is called **Process-Screen**. In normal operation of the device, this screen is displayed.







1	FIRST DISPLAY	Shows parameter name.
2	SECOND DISPLAY	Shows parameter value or error message.
3	R1 LED	Indicates when "R1" is energized.
4	R2 LED	Indicates when "R2" is energized.
5	F1 LED	Not used in this mode.
6	F2 LED	Not used in this mode.

SYMBOLISATION OF ALPHABETICAL CHARACTERS

A	B	C	D	E	F	G	H	I	J	K	L	M
A	b	c	d	e	f	g	h	i	j	k	l	m
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
n	o	p	q	r	s	t	u	v	w	x	y	z

ERROR MESSAGES

Err.1	Sensor connection is broken at "S1" input.
Err.2	Sensor connection is broken at "S2" input.
----	Process value is above the display scale.
----	Process value is below the display scale.

	It is used to change the parameter option or parameter value.
	It is used to change the parameter option or parameter value.
	It is used to access next parameter.
	It is used to return to the first page.
	It is used as a confirmation button for imported settings.
	It is used to return Process-Screen.

Note: 3s means that the button should be pressed for 3 seconds.

Before configuring an unconfigured device, just connect the power supply and configure by following the instructions below:

Entering configuration page and setting parameter values:

- ◆ In order to enter configuration page, while device is energized, press “*” and “<” keys simultaneously until the “L. I”K message is being viewed in first display.
- ◆ While “L. I” message is active in first display, by using the “<” and “>” keys, set the second display value to configuration page parameter.
- ◆ If “<” is pressed and password is false, Process-Screen is activated, if password is true, first parameter of the configuration page is accessed.
- ◆ In this screen, first display shows the parameter name and the second parameter shows the setting option.
- ◆ After this, you can access the other parameters by pressing the “<” key.
- ◆ In order to change parameter value, use the “<” and “>” keys. To access next parameter, press “<” key. If “*” key is pressed for a short time, first parameter is activated. If it is pressed for a long time, Process-Screen is activated.
- ◆ Diagram-3 is a graphical representation of this operations.

Note: In order to access parameters by seeing their parameter numbers, press “*” and “>” simultaneously.

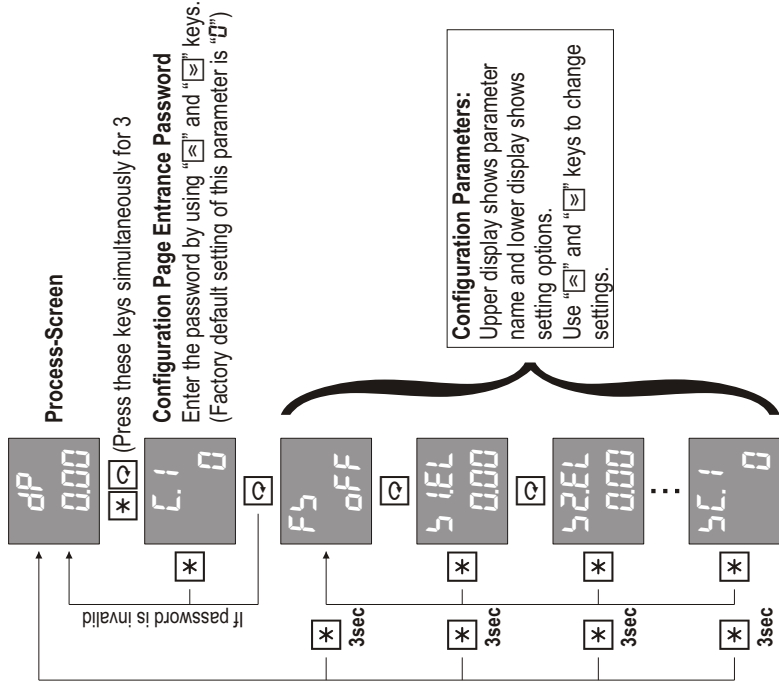


Diagram-3

Details of configuration page parameters can be found in the next section.

Par. 01 — F5
off

In order to restore the settings to the factory default, this parameter should be set to "on" and "↵" key should be pressed for 3 seconds.

Setting Preferences : off, on

Par. 02 — 5.1EL
0.00

If "S1" sensor cannot be read, this parameter determines the default pressure value.

Setting Range : -9.99 - 99.99 Unit : EU

Par. 03 — 5.2EL
0.00

If "S2" sensor cannot be read, this parameter determines the default pressure value.

Setting Range : -9.99 - 99.99 Unit : EU

Par. 04 — F.tC
10

It determines the time constant of digital filter that is applied inputs. If this value is increased, reading stability increases but reading speed decreases.

Setting Range : 0.1 - 100 Unit : sec

Par. 05 — Rot
4-20

It determines the "OP" analog output module type.

Setting Preferences : Table-1

Table-1	No	Analog Output Type
0-20	0	0-20mA
20-0	1	20-0mA
4-20	2	4-20mA
20-4	3	20-4mA
0-10	4	0-10V
10-0	5	10-0V
2-10	6	2-10V
10-2	7	10-2V

Note: In order to be able to use the first four preferences, this module should be identified as being "0/4-20mA" in product code. As for the last four preferences, "0/2-10V" should be used as identifying code.

Par. 06

LLL
-8.00

It determines the lower scale value of transmitter.

Setting Range : -9.99 - 9.99

Unit : EU

Par. 07

LHL
8.00

It determines the higher scale value of transmitter.

Setting Range : -9.99 - 9.99

Unit : EU

Par. 08

rIF
ULC

It determines the function of "RL1" semiconductor relay output module.

Setting Preferences : Table-2

Table-2		No	Relay Function
oFF	0	None	
ULC	1	Upper Limit Control	
LLC	2	Lower Limit Control	
ULR	3	Upper Limit Alarm	
LLR	4	Lower Limit Alarm	

ALARMS

Note: Hatched areas are hysteresis areas and hysteresis of each relay is determined with its "H₃.1" parameter.

"1" in table means that related relay is powered on and "0" means powered off.

Par. 09

rLb
P1

It determines the process variable of "R1" semiconductor relay output module (Ref: Table-2)

Setting Preferences : Table-3

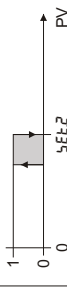
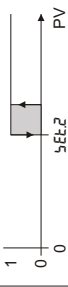
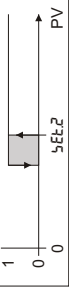
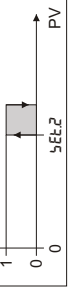
Table-3	No	Process Variable
dP	0	Differential Pressure (DP = P1-P2).
P1	1	Pressure value that is measured from "S1" sensor (P1).
P2	2	Pressure value that is measured from "S2" sensor (P2).

Par. 10

r2F
ULC

It determines the function of "RL2" semiconductor relay output module.

Setting Preferences : Table-4

Table-4		No	Relay Function
OFF	0	None	
ULC	1	Upper Limit Control	
LLC	2	Lower Limit Control	
ULR	3	Upper Limit Alarm	
LLR	4	Lower Limit Alarm	

Note: Hatched areas are hysteresis areas and hysteresis of each relay is determined with its "HYS2" parameter.
 "1" in table means that related relay is powered on and "0" means powered off.

Par. 11

r2b
P2

It determines the process variable of "RL2" semiconductor relay output module (Ref: Table-4)

Setting Preferences : Table-5

Table-5		No	Process Variable
dP	0	Differential Pressure (DP = P1-P2).	
P1	1	Pressure value that is measured from "S1" sensor (P1).	
P2	2	Pressure value that is measured from "S2" sensor (P2).	

Par. 12

R5P5
ON

Permission for changing the set values(5EL, 1, 5EL2) by the operator.

Setting Preferences : OFF(No) , ON(Yes)

Par. 13

H455
on

Permission for changing the hysteresis values (H455, i, H455.2) by the operator.

Setting Preferences : 0FF(No) , on(Yes)

Par. 14

Art
10

While in operator parameters, it determines the automatic return time to Process-Screen.

Setting Range : 0FF(Yok) , 1 - 25 Unit : sec

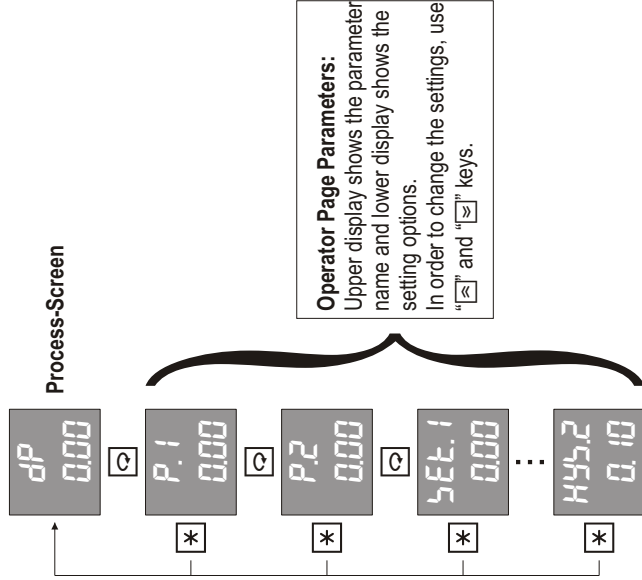
Par. 15

5C.1
0

It determines the security code (password) for Program page.

Setting Range : 1999 - 9999

Operator page parameters are frequently used parameters while in normal operation conditions. So, by pressing a single click (" \square ") you can reach these parameters. By pressing the same button, you can return to Process-Screen again. Permission for changing these parameters can be changed using configuration page. While in Operator page, if user does not press any key for a time that is determined with "Pr-E" parameter in configuration page, Process-Screen is activated automatically.



Detailed information about operator page parameters can be found in the next section.

P.1 0.00	Shows the pressure value that is measured from "S1" sensor. <i>Unit : EU</i>
P.2 0.00	Shows the pressure value that is measured from "S2" sensor. <i>Unit : EU</i>
SEt.1 0.00	It determines the set value of "R1" module. In order to make this parameter visible, "r iF" parameter must be selected as ALARM. <i>Setting Range : -19.99 - 99.99</i> <i>Unit : EU</i>
SEt.2 0.00	It determines the set value of "R2" module. In order to make this parameter visible, "r 2F" parameter must be selected as ALARM. <i>Setting Range : -19.99 - 99.99</i> <i>Unit : EU</i>
HYs.1 0.10	It determines the hysteresis value of "R1" module. In order to make this parameter visible, "r iF" parameter should be selected as being ALARM. <i>Setting Range : 0.01 - 10.00</i> <i>Unit : EU</i>
HYs.2 0.10	It determines the hysteresis value of "R2" module. In order to make this parameter visible, "r 2F" parameter should be selected as being ALARM. <i>Setting Range : 0.01 - 10.00</i> <i>Unit : EU</i>

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