Electropneumatic pressure regulator EPP3 Series

The product
A range of electropneumatic pressure regulators (G 1/8, G 1/4 and G 1/2) which, by means of an integrated electronic control system and pulse width modulated solenoid valve, controls the output pressure proportional to an analogue or digital electrical signal. A high precision is achieved by means of internal feedback through an integrated pressure sensor.

Applications
Pressure control independent of flow in electropneumatic control systems, in particular for the following industries:
-Robotics: welding, painting lines etc.
-Paper and printing: tension regulations, speed and brake control for rolls
-Machine Tools: Plastic moulding, laser welding, presses, polishing etc.
-Trucks and Trains: control of adaptive suspensions.

Benefits
-More flexibility of the controls
-Very fast response times
-Excellent linearity and hysteresis
-No air consumption in rest position
-Increase of productivity (performance, Quality, reliability)
-Direct interface to programmable controllers.

Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

Electropneumatic pressure regulator

EPP3 Series

TECHNICAL DATA

Fluid
Lubricated or non lubricated air and neutral gases recommended filtration : 25-50 µ

Temperature range:
Ambient 0 to 50°C.
Fluid 0 to 50°C.

Inlet pressure range:
1 to 12 bar (the inlet pressure must always be at least 1 bar above the regulated pressure value).

Outlet pressure range:
0.2 to 10 bar

Hysteresis:
~100 mbar. (Factory set up)

Linearity:
1% f.s.o.

Air consumption at constant control signal:
0.

Supply voltage:
24 V DC ± 15% (Max. ripple 1 V)

Power consumption:
Max. 6 W with 24 V DC and constant changes of the control signal ;< 1W without change of control signal

Control signal:
Analog 0 - 10 V Impedance: 10 k Ω
Analog 4 - 20 mA Impedance: 0.5 k Ω

Outlet sensor signal:
A) proportional pressure outlet signal 0-10 V from integrated sensor (recomended load resistance 10 k Ω)
B) proportional pressure outlet signal 4-20 mA from integrated sensor (recommended load resistance 0.5 k Ω)
C) "Alarm" output signal 0/24 V with adjustable triggering level. (Difference between control signal and sensor pressure signal) (Imax. = 40 mA)
- factory set up: diff. signal = ± 0.8 V to ± 1 V
- possible set up: diff. signal = ± 0.1 V to ± 5 V
To neutralize the alarm output signal during the control signal changes, the use of a synchronized time lag relay is required.

Indicative response time:
With a volume of 330 cm^3 at the outlet of the regulator.

Filling :	2 to 4 bar	-	2 to 8 bar
Step response:	~60 ms	-	~120 ms
Emptying:	4 to 2 bar	-	8 to 2 bar
Step response:	~70 ms	-	~130 ms

Safety position:
In case of control failure or if it is less than 1% of its full scale value, the regulated pressure drops automatically to 0 bar (atmospheric pressure). In case of voltage suply failure, the regulated pressure will be kept constant (with eventual discrepancy due to loss of pressure in the servo-chamber).

Electrical connection:
4 screw terminals under the protection cover with Pg 13.5 cable gland or through DIN 43651 connector (6 P + E).

Life expectancy:
> 50 Mio changes of control signal steps.
Attention: It is compulsory to set the control signal at 0 V or 4 mA each time the air pressure supply is turned off (during the night or the weekend). When the air pressure supply cannot be fully exhausted, it is necessary to assure that the deviation between the control value and the inlet pressure remains smaller than 1 bar.

Mounting position:
Indifferent (recommended position: upright; electronic part on top).

Resistance to vibrations:
30 g in all directions

Degree of protection:
IP 65.

External sensors:
All pressure sensors with following characteristics are compatible with the EP-transducer
Sensitivity: 0.5 V/bar up to 10 V/bar
Zero offset: -3 V/bar to 10 V/bar

Assembly:
Silicone free

Electromagnetic compatibility:
in accordance with IEC 801-4 part 4 standards.

Installation and setting instructions:
see publication MI-9202 and appendix supplied with the product.

Please ask for the special technical specification sheet No. 8677 for more details.

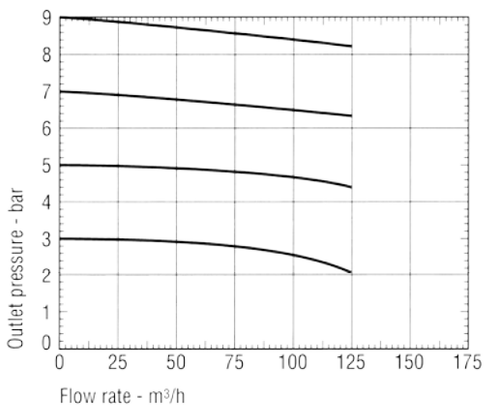
SUMMARY OF TYPES

		Connection G	With integrated pressure sensor	Entry options for external sensor signal: Feedback signal 0-10 V	Entry options for external sensor signal: Feedback signal 4-20 mA	Outlet signal options: without	Outlet signal options: 0 - 10 V 4 - 20 mA	Outlet signal options: 0 - 10 V 0/24 alarm	Electrical connection: DIN 43651 connector	Electrical connection: Cable gland Pg. 13.5
EPP3JC	21 U/I 100 10	1/4	•			•				•
	21 U/I 600 10	1/4	•				•		•	
	21 U/I 700 10	1/4	•					•	•	
EPP3JC	23 U/I 130 10	1/4		•		•			•	
	24 U/I 130 10	1/4			•	•			•	
EPP3JC	41 U/I 100 10	1/2	•			•				•
	41 U/I 600 10	1/2	•				•		•	
	41 U/I 700 10	1/2	•					•	•	
EPP3JC	43 U/I 130 10	1/2		•		•			•	
	44 U/I 130 10	1/2			•	•			•	

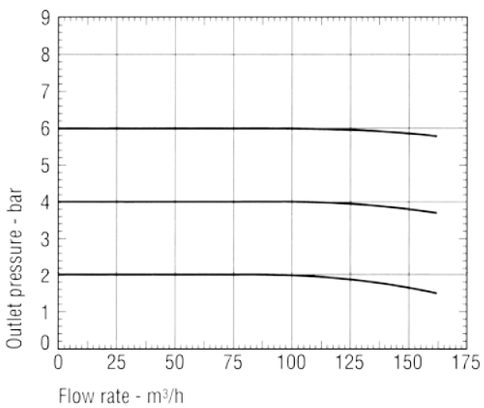
Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

FLOW DATA
Outlet Pressure in Function of Flow at Constant Control Signal (P1 = 10 bar)

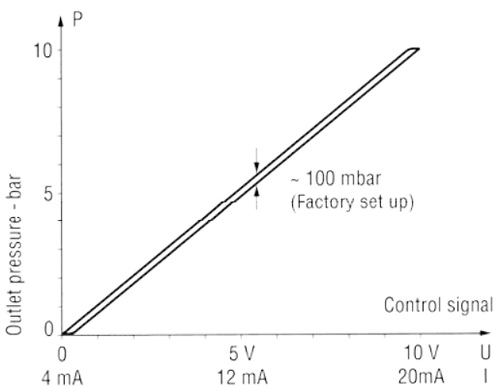
EPP 3 G 1/4



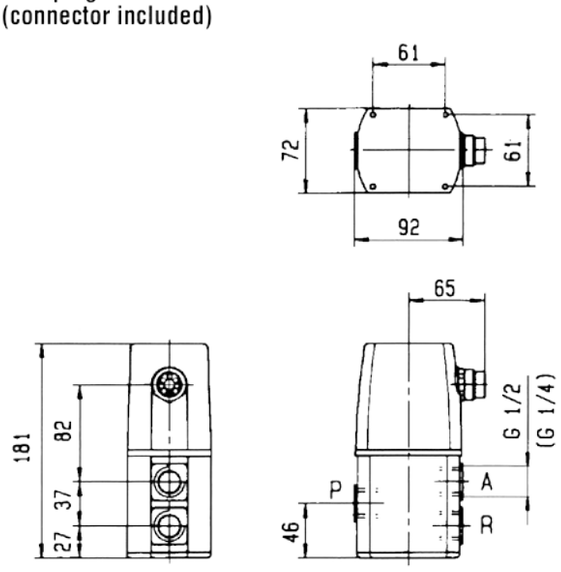
EPP 3 G 1/2



HYSTERESIS DIAGRAM



EPP3JC...130/600/700... with
DIN circular plug-in connection
6 P + E (connector included)



Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

EP-Transducer

EPP3 Series

TECHNICAL DATA

Fluid:
Lubricated or non lubricated air and neutral gases recommended filtration : 25-50 µ

Temperature range:
Ambient 0 to 50°C
Fluid 0 to 50°C

Inlet pressure range:
G 1/8 - 1 to 10 bar
G 1/4 - 1 to 7 bar

Outlet pressure range:
G 1/8 - 0.2 to 10 bar
G 1/4 - 0.2 to 7 bar

Hysteresis:
~ 50 mbar (Factory set up)

Linearity:
1% f.s.o.

Air consumption at constant control signal:
0

Supply voltage:
24 V DC ± 15% (Max. ripple 1 V)

Power consumption:
G 1/8 - max. 6 W } with 24 V DC and constant
G 1/4 - max. 7 W } changes of the control signal
<1 W without change of control signal

Control signal:
Analog 0 - 10 V Impedance: 10 k Ω
Analog 4 - 20 mA Impedance: 0.5 k Ω

Outlet sensor signal:
For types with output signal module.
Proportional pressure output signal supplied by the pressure sensor.
A) 0-10 V, voltage signal (recomended load resistance 10 k Ω)
B) 4-20 mA, current signal (recommended load resistance 0.5 k Ω)
Voltage and current signal can be received simultaneously. Both are protected against short-circuits
C) "Alarm" output signal 0/24 V (Imax. = 40 mA) with adjustable triggering level. (Difference between control signal and sensor pressure signal)
- factory set up: diff. signal = ± 0.8 V to ± 1 V
- possible set up: diff. signal= ± 0.1 V to ± 5 V
To neutralize the alarm output signal during the control signal changes, the use of a synchronized time lag relay is required.

Indicative response time:
With a volume of 30 cm^3 at the outlet of the EP-transducer

Filling :		2 to 4 bar	-
Emptying :		-	4 to 2 bar
Step response:	G 1/8	~ 100 ms	~120 ms
	G 1/4	~ 70 ms	~100 ms

Conductance C (dm^3/s.bar):
G 1/8 - 0.1
G 1/4 - 0.2

Outlet pressure/Flow rate:
G 1/8 - pressure drop 0.5 bar at 1.0 Nm^3/h (P_1 = 7 bar, P_{out} = 6 bar)
G 1/4 - pressure drop 0.5 bar at 2.1 Nm^3/h (P_1 = 7 bar, P_{out} = 6 bar)

Safety position:
In case of control failure or if it is less than 1% of its full scale value, the regulated pressure drops automatically to 0 bar (atmospheric pressure). In case of voltage supply failure, the regulated pressure will be kept constant

Electrical connection:
4 screw terminals under the protection cover with Pg 13.5 cable gland or through DIN 43651 connector (6 P + E)

Life expectancy:
> 50 Mio changes of control signal steps
Attention: It is compulsory to set the control signal at 0 V or 4 mA each time the air pressure supply is turned off (during the night or the weekend). When the air pressure supply cannot be fully exhausted, it is necessary to assure that the deviation between the control value and the inlet pressure remains smaller than 1 bar.

Mounting position:
Indifferent (recommended position: upright; electronic part on top).

Resistance to vibrations:
30 g in all directions

External sensors:
All pressure sensors with following characteristics are compatible with the EP-transducer
Sensitivity: 0.5 V/bar up to 10 V/bar
Zero offset: -3 V/bar to 10 V/bar

Degree of protection:
IP 65

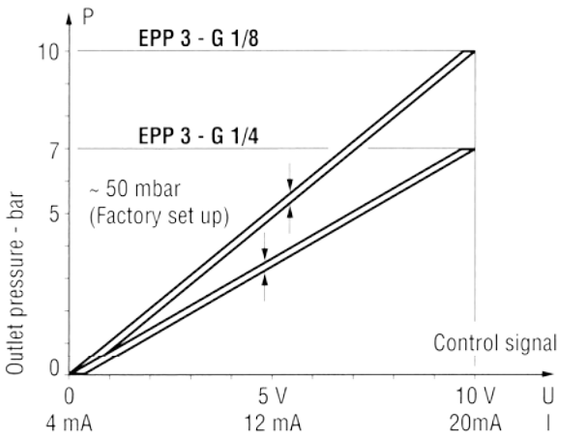
Electromagnetic compatibility:
In accordance with IEC 801-4 part 4 standards

Installation and setting instructions:
See publication MI-9202 and appendix supplied with the product.

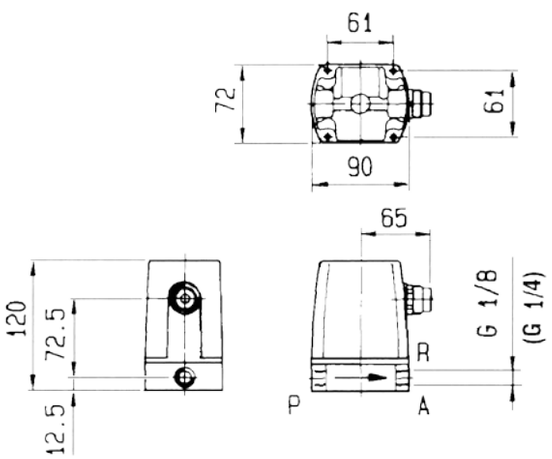
Please ask for the special technical specification sheet No. 8678 for more details.

Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

HYSTERESIS DIAGRAM



EPP3PC ... 130/600/700



SUMMARY OF TYPES

		Connection G	With integrated pressure sensor	Entry options for external sensor signal: Feedback signal 0-10 V	Entry options for external sensor signal: Feedback signal 4-20 mA	Outlet signal options: Without	Outlet signal options: 0 - 10 V 4 - 20 mA	Outlet signal options: 0 - 10 V 0/24 alarm	Electrical connection: DIN 43651 connector	Electrical connection: Cable gland Pg. 13.5
EPP3PC	11 U/I 100 10	1/8	•			•				•
	11 U/I 600 10	1/8	•				•		•	
	11 U/I 700 10	1/8	•					•	•	
EPP3PC	13 U/I 130 10	1/8		•		•			•	
	14 U/I 130 10	1/8			•	•			•	
EPP3PC	21 U/I 100 07	1/4	•			•				•
	21 U/I 600 07	1/4	•				•		•	
	21 U/I 700 07	1/4	•					•	•	
EPP3PC	23 U/I 130 07	1/4		•		•			•	
	24 U/I 130 07	1/4			•	•			•	

Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

Electropneumatic Pressure Regulator - High Flow

EPP3 Series

TECHNICAL DATA

Fluid:
Lubricated or non lubricated air and neutral gases recommended filtration : 25-50 µ

Temperature range:
Ambient 0 to 50°C
Fluid 0 to 50°C

Inlet pressure range:
1 to 12 bar (the inlet pressure must always be at least 1 bar above the regulated pressure)

Outlet pressure range:
0.2 to 10 bar

Hysteresis:
~ 100 mbar (Factory set up)

Linearity:
1% f.s.o.

Air consumption at constant control signal:
0

Supply voltage:
24 V DC ± 15% (Max. ripple 1 V)

Power consumption:
Max. 6 W with 24 V DC and constant changes of the control signal
<1 W without change of control signal

Control signal:
Analog 0 - 10 V Impedance: 10 k Ω
Analog 4 - 20 mA Impedance: 0.5 k Ω

Outlet sensor signal:
A) proportional pressure outlet signal 0-10 V from integrated sensor (recomended load resistance 10 k Ω)
B) proportional pressure outlet signal 4-20 mA from integrated sensor (recommended load resistance 0.5 k Ω)
C) "Alarm" output signal 0/24 V with adjustable triggering level. (Difference between control signal and sensor pressure signal) (Imax. = 40 mA)
- factory set up: diff. signal = ± 0.8 V to ± 1 V
- possible set up: diff. signal = ± 0.1 V to ± 5 V
To neutralize the alarm output signal during the control signal changes, the use of a synchronized time lag relay is required

Safety position:
In case of control failure or if it is less than 1% of its full scale value, the regulated pressure drops automatically to 0 bar (atmospheric pressure). In case of voltage supply failure, the regulated pressure will be kept constant

Electrical connection:
Through DIN 43651 circular plug-in connector (6 P + E)

Life expectancy:
> 20 Mio changes of control signal steps
Attention: It is compulsory to set the control signal at 0 V or 4 mA each time the air pressure supply is turned off (during the night or the weekend). When the air pressure supply cannot be fully exhausted, it is necessary to assure that the deviation between the control value and the inlet pressure remains smaller than 1 bar.

Mounting position:
Indifferent (recommended position: upright; electronic part on top)

Resistance to vibrations:
30 g in all directions

Degree of protection:
IP 65

Assembly:
Silicone free

Electromagnetic compatibility:
In accordance with IEC 801-4 part 4 standards.

Installation and setting instructions:
See publication MI-9202 and appendix supplied with the product.

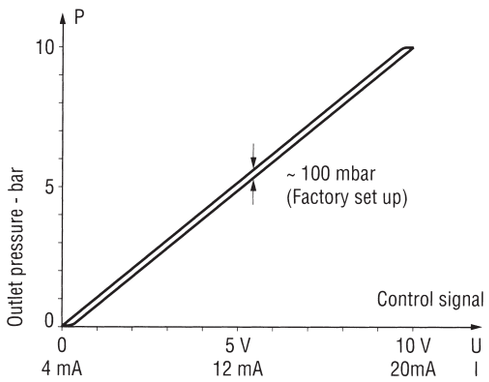
Please ask for the special technical specification sheet No. 8679 for more details.

SUMMARY OF TYPES

		Connection G	With integrated pressure sensor	Outlet signal options		Electrical connection
				0 - 10 V 4 - 20 mA	0 - 10 V 0/24 alarm	DIN 43651 connector
EPP3C8	1 U/I 600 10	1	•	•		•
	1 U/I 700 10	1	•		•	•
EPP34CC	1 U/I 600 10	2	•	•		•
	1 U/I 700 10	2	•		•	•

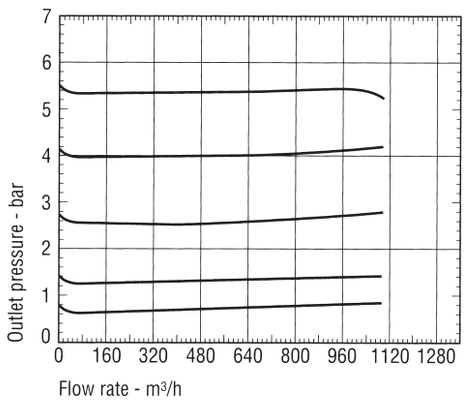
Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

HYSTERESIS DIAGRAM

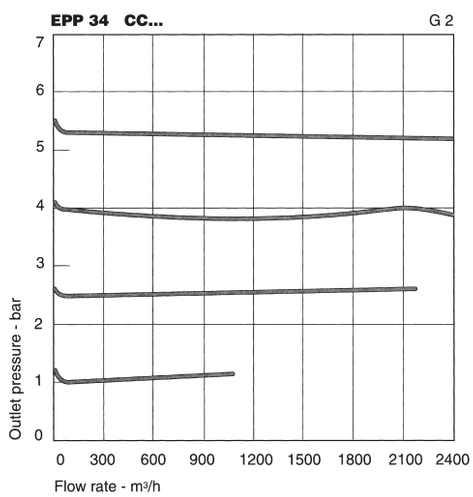


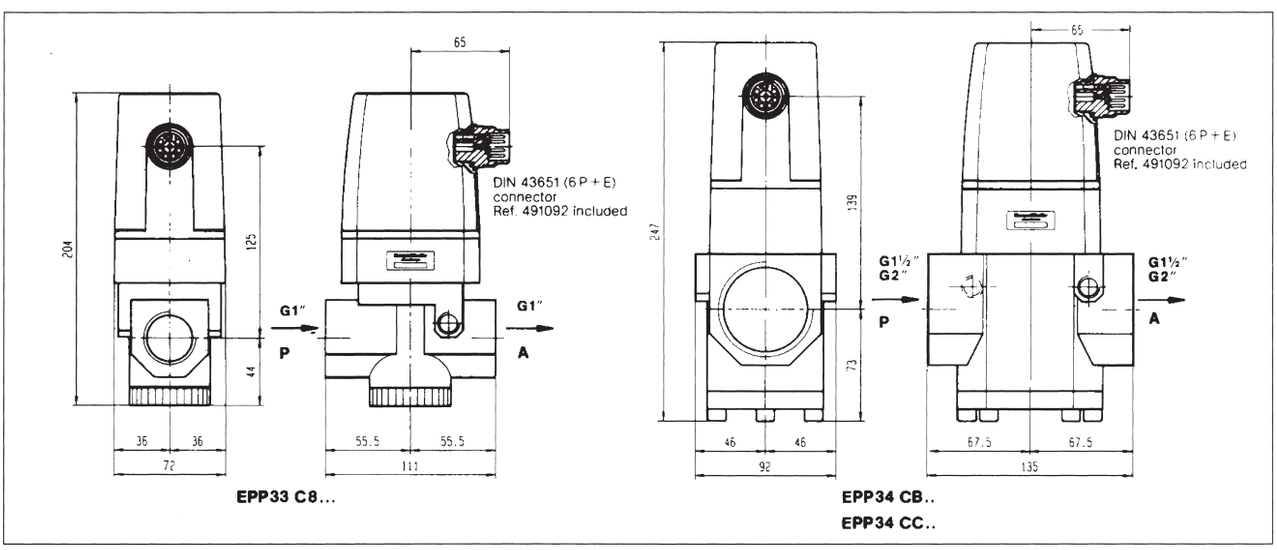
FLOW DATA
Outlet Pressure in Function of Flow at Constant Control Signal (P1 = 7 BAR)

EPP 33 C8... G1



EPP 34 CC... G 2





Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève

Parker Lucifer SA
Fluid Control Division Europe
CH-1227 Carouge-Genève