Proportional Pressure Regulation
Lucifer® Programmable EPP4 regulators
High Pressure, 1" and 2" Comfort range
Market and/or Sub Market Description

Robotics
Paper industry
Machine tools
Mobile
Buildings
Textile
Instrumentation
Semi conductor

Description of Applications

Welding
Speed and brake control
Sanding
Cutting
Humidification
Tension regulation
Painting
Presses
Polishing
Adaptative suspension control
Value Propositions for Lucifer® EPP4 Comfort Proportional Pressure Regulators

- All parameters fully adjustable through the PC software Calys
- Easy to use software
- Long life expectancy
- Compact and light
- Limited inventory for distributors
- Low power
- Flexible remote display positioning
- Proven expertise of Parker, a pioneer in pressure regulation technology

Calys Software

Calys is a unique software in house developed to configure all the parameters of the EPP4 Comfort range. Calys is an option of the EPP4. It will be sent via email if you order cable reference 496449 which permits the communication between the EPP4 and a PC.

Calys offers many capabilities:
- It enables the distributors to keep a main generic EPP4 reference in stock, and adjust it to the needs of each customer application. They can switch for example from 0-10 V to 4-20 mA, or from 0-7 bar pressure range to 0-5 bar.
- Engineers designing a pneumatic system are able to monitor precisely all the important values (electrical or pneumatical) directly on their laptop.
- After sales technicians are able to receive via email all the parameters measured by the EPP4 installed on a machine wherever its location. This way maintenance operations can be done remotely at distance.

See more detailed technical description of Calys in the "Options" part on page 8.
## Lucifer® EPP4 Comfort Technical Data

| Fluids: | Lubricated or non lubricated air and neutral gases  
Recommended filtration: 50 μm |
|---|---|
| Temperature range: | Ambient: 0 to +50 °C  
Fluid: 0 to +50 °C |
| Inlet pressure range: | 1 to 12 bar - 1 to 14 bar - 1 to 21 bar  
(the inlet pressure must always be at least 1 bar above the regulated pressure) |
| Outlet pressure range: | 0.05 to 10 bar, 0.1 to 1 bar, 0.1 to 20 bar |
| Hysteresis: | ≤ 100 mbar if P inlet ≤ 10 bar  
≤ 200 mbar if P inlet > 10 bar |
| Air consumption at constant control signal: | None |
| 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  
< 2 W without change of control signal |
| Control signal: | Analog 0 - 10 V; standard for 0 - 10 bar; adjustable  
Analog 4 - 20 mA; standard for 0 - 10 bar; adjustable |
| Outlet sensor signal: | Analog 0 - 10 V; standard for 0 - 10 bar; adjustable  
Analog 4 - 20 mA; standard for 0 - 10 bar; adjustable  
Digital 0/24 V for alarm features:  
- Adjustable pressure error (+/-)  
- Adjustable delay ON  
- Adjustable delay OFF  
- Adjustable logic (+/-) |
| Max. flow: | G1/2": 150 m³/h - G1": 1 000 m³/h - G2":>2 700 m³/h |
| Indicative response time: | With a volume of 330 cm³ at the outlet of the regulator  
G1/2"  
G1"  
G2" |
| Filling 2 to 8 bar: | ~120 msec  
~250 msec  
~190 msec  
~400 msec |
| Emptying 8 to 2 bar: | ~250 msec  
~400 msec  
~400 msec |
| Safety position: | In case of control signal failure or if it is less than 50mV, the regulated pressure drops automatically to 0 bar atmospheric pressure (for pressure ranges from 0-10bar, 100mV for pressure range over 10 bar).  
In case of voltage supply failure, the regulated pressure will be kept constant. |
| Electrical connection: | M12 - 8 pin; male connector power supply/control signal  
M12 - 5 pin; male connector communication |
| Life expectancy: | > 20 Mio changes of control signal steps |
| Mounting position: | Indifferent (recommended position: upright; electronic part on top) |
| Resistance to vibrations: | 30 g in all directions |
| Protection index: | IP 65 |
| Assembly: | Silicone free |
| Electromagnetic compatibility: | In accordance with  
EN 61000-6-1: 2001  
EN 61000-6-2: 2001  
EN 61000-6-3: 2001  
+ A11 2004 edition (01/07/07)  
EN 61000-6-4: 2001 |
| Installation and setting instructions: | See our "Notice 408193" and appendix supplied with the product. |

**Note:** Parker reserves the right to change specifications without notification.
### Description of Operation

#### Pneumatic Technology

Construction is made with a full aluminium body.

The piston is fabricated in a special polyacetal and is equipped with high performance dynamic seals, specially developed by Parker Lucifer for this application.

#### Electronic Technology

The Comfort version uses the board of the EPP4 Basic range for the regulation functions and a second board for specified options.

Technology used is fully digital. The cancellation of potentiometers allows customers to realise an easy, safe and precise set-up in their production.

#### Block Diagram

The controller receives both the control signal (set pressure) and the feedback signal from the sensor (outlet pressure).

Any difference between the two amplifier inputs results in a corresponding output (PID regulation) which drives the appropriate 2-way pulse which modulated solenoid valve so that the piston moves to correct the pressure.

The same feedback signal from the sensor is used for the output feedback in voltage and current.

The digital signal (alarm) is activated when the conditions (out of pressure or time tolerance) are met.
## Lucifer® EPP4 Comfort References

<table>
<thead>
<tr>
<th>Codes</th>
<th>Pipe</th>
<th>Max inlet pressure (bar)</th>
<th>Pressure range (bar)</th>
<th>Control signal (see options)</th>
<th>Dimensional Drawing</th>
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<tbody>
<tr>
<td>P4CG4101D001</td>
<td>G1/2</td>
<td>15</td>
<td>0-12</td>
<td>0-10V</td>
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<td>P4CG4201D005</td>
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<td>0-10V</td>
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<td>4-20mA</td>
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<td>0-10</td>
<td>4-20mA</td>
<td>4</td>
</tr>
</tbody>
</table>

Other specific settings or specialties are available, please contact us.

If you need more informations on the rest of the Lucifer® EPP4 range, please consult:
- 8683UK -> EPP4 Basic 1/4”
- 8684UK -> EPP4 Basic 1/2”
- 2201UK -> EPP4 Comfort 1/4” & 1/2”
Lucifer® EPP4 Comfort
Technical Characteristics

Flow Curve 1/2"

Flow Curve 1"

Flow Curve 2"
Lucifer® EPP4 Comfort Options

Additional Features

The EPP4 Comfort offers two main options - a remote display and a software to easily set the regulator’s parameters.

These are the key feature options for a comfortable use.

- A remote display connected to the pressure regulator offers flexible monitoring.
- A panel mounting kit is available to install the remote display.
- Calys is an easy-to-use software package designed to allow the user to match his regulators performance directly to his specific application.
- A power supply and control signal cable.
Lucifer® EPP4 Comfort Options

Remote Display

This option includes the Remote Display and 1.5 meter connecting cable.

Compact and highly readable remote LED display:
- Bar and PSI scales
- Security lock
- 1.5 m cable
- Mounting brackets

Order the Remote Display under reference 496490

Panel Mounting Kit

Order the Panel Mounting Kit under reference 496610
Lucifer® EPP4 Comfort Options

Calys Software

Calys is a software to set all relevant parameters of the Lucifer® EPP4 Comfort.

The cable 496449 (option) is needed to let the EPP4 communicate with any configured PC, this software is supplied free of charge with each cable unit.

Calys offers the following features:

● Live monitoring (control signal, regulated pressure, supply voltage, …)
● Recording of the main parameters (control signal, regulated pressure, supply voltage, …) in an Excel file
● Free calibration for the inputs and outputs
● Adjustable alarm (positive-negative, pressure limits, delays)
● Configuration files easy to duplicate
● Complete and interactive help file
● Data in 4 different pressure units
● Menus in 4 languages (English, German, French and Italian)
● Cable 496449 with RS-232 and USB connection

Power Supply / Control Signal Cable

● 2 m cable with moulded M12-8 pins connector

Order the PC software (including cable) under reference 496449

Order the power supply / control signal cable under reference 496796
Lucifer® EPP4 Comfort Range 1/2"

Dimensions

Accessories

Mounting brackets to be ordered separately

Order reference 491366

Order reference 491367
Lucifer® EPP4 Comfort
Range 1/2"

Dimensions

Accessories

Mounting brackets to be ordered separately

Order reference 491366

Order reference 491367
Lucifer® EPP4 Comfort Range 1"

Dimensions
**Lucifer® EPP4 Comfort Range 2"**

**Dimensions**

![Dimensions Diagram](image)

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**WARNING - USER RESPONSIBILITY**

Failure or improper selection or improper use of the products described herein or related items can cause death, personal injury and property damage.

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**FLUID & GAS HANDLING**

**Key Markets**
- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

**Key Products**
- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hoses
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

**HYDRAULICS**

**Key Markets**
- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

**Key Products**
- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

**PNEUMATICS**

**Key Markets**
- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

**Key Products**
- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluids
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rotorless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, caps & sensors

**AEROSPACE**

**Key Markets**
- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

**Key Products**
- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fluid systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

**CLIMATE CONTROL**

**Key Markets**
- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life science & medical
- Precision cooling
- Processing
- Transportation

**Key Products**
- CO2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hoses & fittings
- Pressure regulating valves
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

**ELECTROMECHANICAL**

**Key Markets**
- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastic machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

**Key Products**
- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearboxes
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides & stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions

**FILTRATION**

**Key Markets**
- Air generators
- Nitrogen, hydrogen & zero gas systems
- Process, chemical, water & gas systems
- Condition monitoring
- Engine, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

**SEALING & SHIELDING**

**Key Markets**
- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductors
- Telecommunications
- Transportation

**Key Products**
- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic stellite composite seals
- Thermal management

**PARKER’S MOTION & CONTROL TECHNOLOGIES**

**ENGINEERING YOUR SUCCESS.**
Parker Worldwide

AE – UAE, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BR – Brazil, Cachoeirinha RS
Tel: +55 51 3470 9144

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

CH – Switzerland, Etoy
Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CL – Chile, Santiago
Tel: +56 2 623 1216

CN – China, Shanghai
Tel: +86 21 2899 5000

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 04
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 330 001
parker.es_pain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s’Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HK – Hong Kong
Tel: +852 2428 8008

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (01) 466 6370
parker.ireland@parker.com

IN – India, Mumbai
Tel: +91 22 6513 7081-85

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

JP – Japan, Tokyo
Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

LV – Latvia, Riga
Tel: +371 6 745 2601
parker.latvia@parker.com

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Ski
Tel: +47 64 91 10 00
parker.norway@parker.com

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SG – Singapore
Tel: +65 6887 6300

SK – Slovakia, Banská Bystrica
Tel: +421 449 27312
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TH – Thailand, Bangkok
Tel: +662 717 8140

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

TW – Taiwan, Taipei
Tel: +886 2 2298 9897

UA – Ukraine, Kiev
Tel: +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

US – USA, Cleveland
Tel: +1 216 896 3000

VE – Venezuela, Caracas
Tel: +58 212 238 5422

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

Parker Hannifin Ltd.
The Tachbrook Park Drive
Tachbrook Park, Warwick CV34 6TU
United Kingdom
Tel.: +44 (0) 1926 317 878
Fax: +44 (0) 1926 317 855
parker.uk@parker.com
www.parker.com

Your local authorized Parker distributor

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European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PT, SE, SK, UK)