

Lucifer EExPress™ Bus Manifold

For pneumatic actuator control

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



ENGINEERING YOUR SUCCESS.

ARA®
PNEUMATIK

53-012 Wrocław tel. 71 364 72 82
ul. Wyscigowa 38 fax 71 364 72 83

www.arapneumatik.pl



Ex Bus Manifold

for pneumatic actuator control

Parkers EExPress™ bus manifold package has been designed for the control of pneumatic actuators in the Process Industry where hazardous environments Zone 1, 21 and or Zone 2, 22 are present.

EExPress™ is a stackable system that includes Gateway
- Input sensor modules -
Solenoid valve modules.

NAMUR Standard ON/OFF
Where the (NPN) sensor can be directly connected on the input sensor module.

The Ex manifold uses the Profibus DP protocol.



Increased Process Productivity

- When plant installation's are simplified, the engineering study, component package's and man hour costs are reduced, this results in a quicker production start-up.
- Through more efficient process control, quality and quantity of production is improved.
- EExPress™ bus manifold replaces a lot of proprietary components, thus reducing cost of installation.
- EExPress™ bus manifold simplifies commissioning time resulting in quicker plant start up time.
- EExPress™ bus manifold reduces overall product life cost through reduction in maintenance costs.



Reg. No. 10440

A User Friendly Product

- EExPress™ uses the well known profibus DP protocol.
- It as been designed to approach a “plug and play” usage.
- At a glance at the LED the user knows immediately the current production Process status.
- Authorised users may re-address the 5/2 valves directly from the manifold.



Plant installation simplification

- EExPress™ significantly reduces the need of electronic components such as couplers, repeaters, safety barriers, PLC, etc.
- It significantly reduces the need of mechanical components such as pressurised cabinet's, pneumatic piping, electrical wiring, connectors, etc.
- One bus address can operate and control up to 32 x solenoid valves on one manifold (or combination of sensor modules and solenoid valves).
- Integrated solution with high flow valves and sensor signal inputs.

Better process & personnel safety

- With separated wiring, the bus communication* is maintained «ON» even if the coil voltage supply is cut.
* Solenoid valve status + inputs sensor status + safety pressure status, etc.
- The diagnostic capabilities offer permanently a real reliable Process Control.
- Ex px [ia] [ib] ib mb IIC T5
Ex tD A21 IP65 T100°C protection as well as the patented coil connection eliminate risks associated with bad handling.
eg.: disconnection of bus or sensor connectors in presence of gases.
- It provides more efficient Process Control due to centralised mounting close to actuators.

Proven achievement through innovative fluid control.

IECEX

IECEX LCI 07.0027 X

CE 0081

LCIE 01 ATEX 6013 X

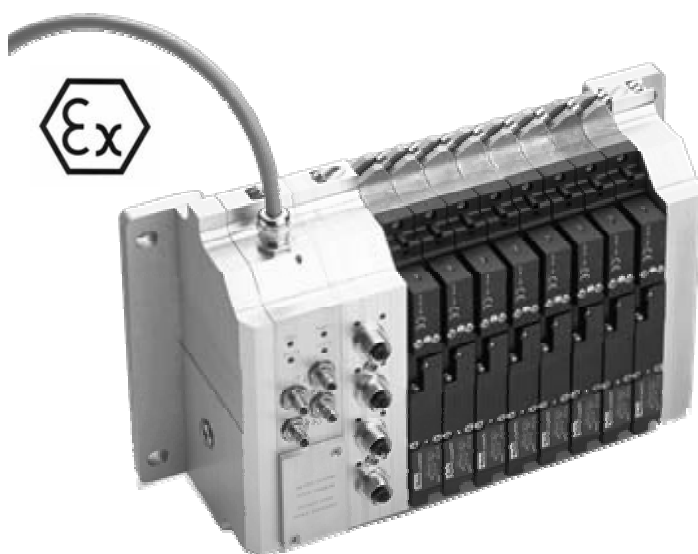
Ex II 2/(1) G D

Ex px [ia] [ib] ib mb IIC T5
Ex tD A21 IP65 T100°C



EExPress™

EEx p [ia] m IIC T5 Bus Manifold for Pneumatic actuator control



Parker Lucifer has developed industry's first fully integrated fieldbus manifold system – the patented EExPress™ Bus Manifold – for the control of pneumatic actuators in hazardous (Zone 1 and Zone 2) process industry environments like chemical, petrochemical applications. The EExPress™ Bus Manifold is a stackable valve system that fully integrates 5/2 solenoid valves, control electronics and input sensors, a unique feature on the market today, and uses the Profibus DP fieldbus communications protocol – the preferred protocol of the process industries. One bus address can operate up to 32 individual 5/2 modular solenoid valves, or a combination of valves and actuator position sensors.

The concept consists in an “integrated solution” which permits to install the manifold close to the pneumatic actuators - without the need for expensive explosion-proof pressurised cabinets. The **EEx p [ia] m IIC T5** protection is reached by using a “safety pressure” - the complete block is put under 50 mb safety pressure. This permits a substantial reduction of installation and maintenance costs, a simplification of the electrical connections, the use of Profibus DP and offers increased safety due to separated wiring of communication and power supply.

For more information see brochure 8752/GB

1. PRODUCT INTRODUCTION

The EExPress™ bus Manifold is a patented stackable system composed of:

- 1 x End plates Kit
- X x Solenoid valve module
- X x Input sensor module
- 1 x Gateway

The EExPress™ Explosion-proof manifold 5/2 valve island design uses the **EEx [ia] pm protection**.



Up to 32 valves per island require one bus address only.

The system includes a bus part satisfying the intrinsic safety requirements and communicating directly with a master control unit by using the Profibus DP protocol.

The manifold assembly and the dedicated power supply are coping with the "p" protection. The galvanic separation between the EEx ia zone and the EEx p is assured by opto-coupler and by a transformer.

The valve coils are coping with the ìmî protection.

2. APPLICATIONS

This smart EExPress™ bus manifold package has been designed for the control of pneumatic actuators in Process Industries with **hazardous environments Zone 1 or Zone 2** such as:

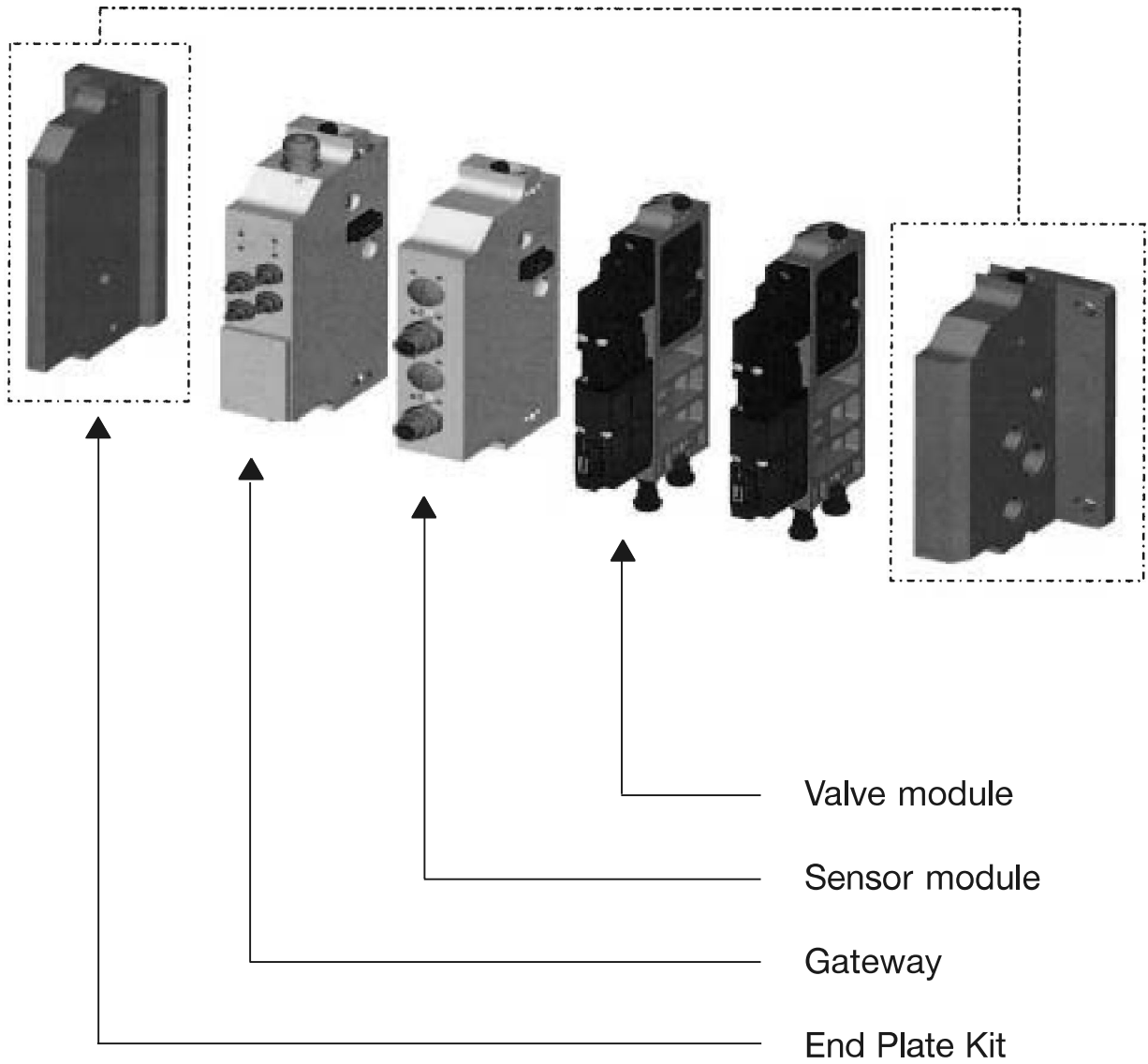
- Ghemical & Pharmaceutical.
- Gas and solvant handling
- Powder transportation.
- Refining.
- Etc.

These high demanding markets are concerned with:

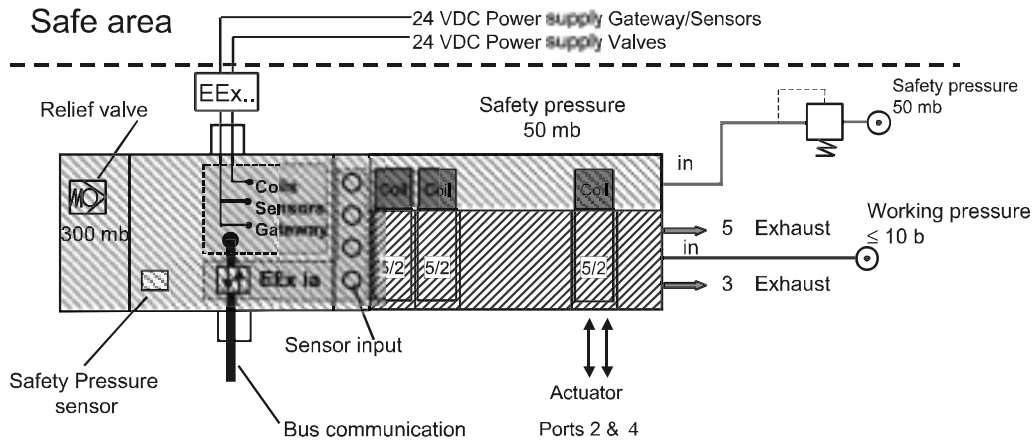
- Process & people safety
- Plant installation simplification
- Process productivity
- Friendly use product
- Partners support







3. PRODUCT CONFIGURATION



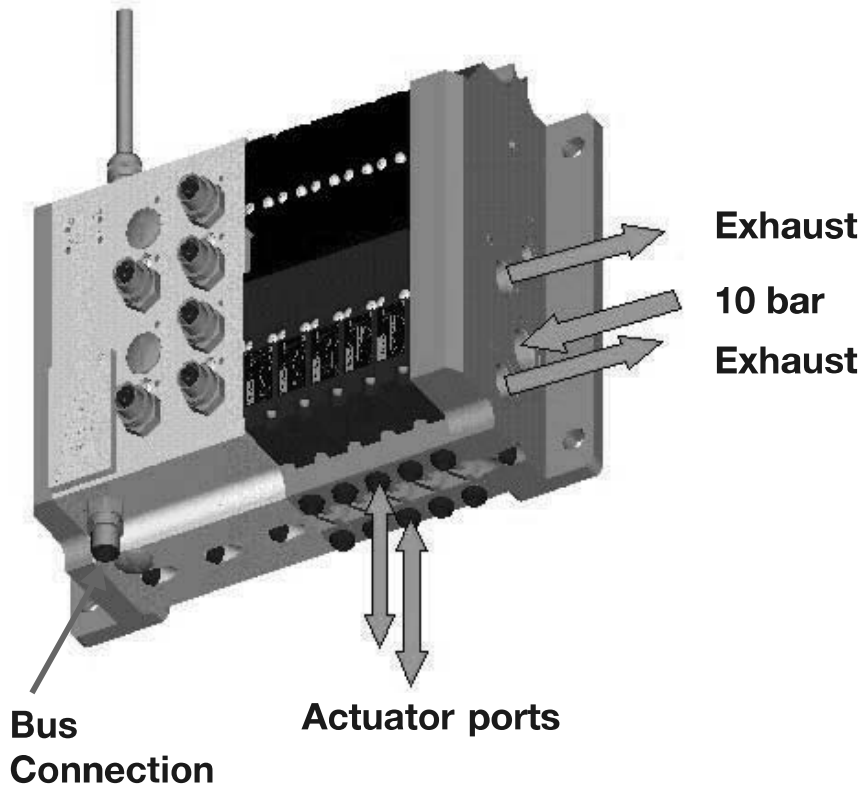
5. PRODUCT OPERATING PRINCIPLE



Hazardous area zone 1 or 2

-  Gateway
-  Intrinsically safe circuit = "ia" protection
-  Solenoid valve coil = "m" protection
-  ≤ 50 mb safety pressure area = "p" protection
-  ≤ 10 b working pressure area

Power supply



HOW TO ORDER **ASSEMBLED MANIFOLDS**

21.2 Choose the components for 1 manifold in the following order:

1 - Plate kit				
N.B. One plate kit only per manifold				
<i>End plate A</i>	<i>Pressure supply plate B</i>	<i>Order No.</i>	<i>Qty</i>	
BSP	BSP	495190	1	
2 - Gateway selection				
N.B. One gateway only per manifold				
<i>Protocol</i>	<i>Communication link</i>	<i>Order No.</i>	<i>Qty</i>	
Profibus DP	Copper (1 connector)	495176	1	
Profibus DP	Copper (1 connectors + 1 repeater)	495275	1	
Profibus DP	Optical fibre	493972	1	
3 - Sensor modules				
N.B. 0 up to 8 sensor modules per manifold				
<i>Nb of connectors</i>	<i>Connection</i>	<i>ON/OFF</i>	<i>Order No.</i>	<i>Qty*</i>
2x IN connectors	M 12	x	495141	0 to 8
4x IN connectors	M 12	x	495142	0 to 8
4 - Valve modules		<i>Order No.</i>	<i>Qty</i>	
N.B. 0 up to 32 valve modules per manifold				
Module with 5/2 valves		494237	0 to 32	

* **Warning:** For one bus address, the combination sensor module + valve module has to fit the following formula: $4 \times (\text{Number of sensor modules with } 2 \times \text{IN connectors} + \text{Number of sensor modules with } 4 \times \text{IN connectors}) + \text{Number of valve modules} < 32$.

21.3 Example of manifold configuration and order:

Description	Order No. chosen	Qty per Manifold chosen
Plate Kit	495190	1
Gateway	495176	1
Sensor module – 2 IN connectors	495141	4
Sensor module – 4 IN connectors	–	–
Valve module	494237	8

Order: 5 manifold with above mentioned components.

The selected components will be supplied as an assembled manifold.

A – The label on the manifold shows:

1. The LCIE conformity for the EEx ia pm protection.
2. The LCIE approval code: EM followed by a manufacturing code. I.e. **EM 12345**

B – Each manufacturing code defines a specific manifold configuration

C – The **EM XXXXX** is also mentioned on the shipping bulletin and on the invoice

D – To simplify, customers can re-order the same manifold by using the **EM XXXXX** code mentioned on these documents.