



NORGREN

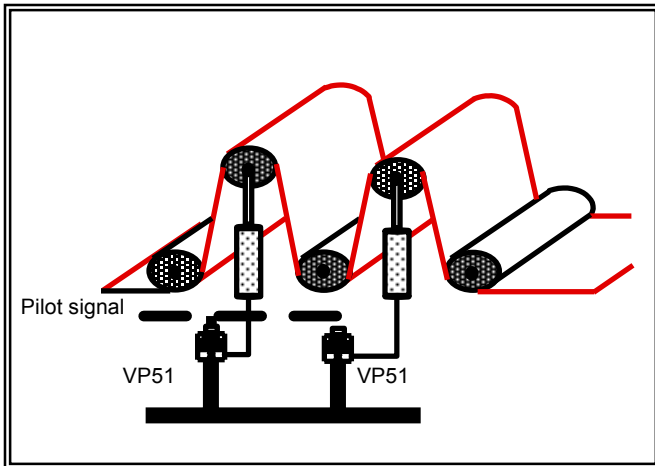
The VP51 Proportional Pressure Control valve has a microprocessor giving a unique User specific labour saving set-up time with improved performance.

The on-board pressure display gives instant notification of the required output pressure. User settable proportional and integral values ensure high stability for the majority of load volume applications. This allows optimum process speed setting with high accuracy.

The Glandless spool gives fast response time with proven long life and is a reliable pneumatic control for long term operation.

- Air piloted Digital proportional pressure control valve
- Fully Programmable with on-board Diagnostics
- Multi-Option Language Display
- Password Protection option at first level functionality
- Instant LED warning functions
- Application specific set-up
- Pressure Output Display; No Gauge Necessary
- High Speed Response
- Closed Loop Control
- Special Option - Manifold Mounted

TYPICAL APPLICATIONS



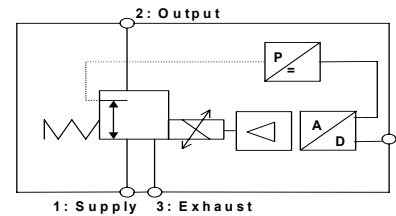
Solution:

Controlling the speed of rotation of the bobbin, rollers etc, as the diameter increases, the speed decreases to maintain a constant tension and therefore no breakages.

VP51 Programmable Proportional Pressure Control Valve

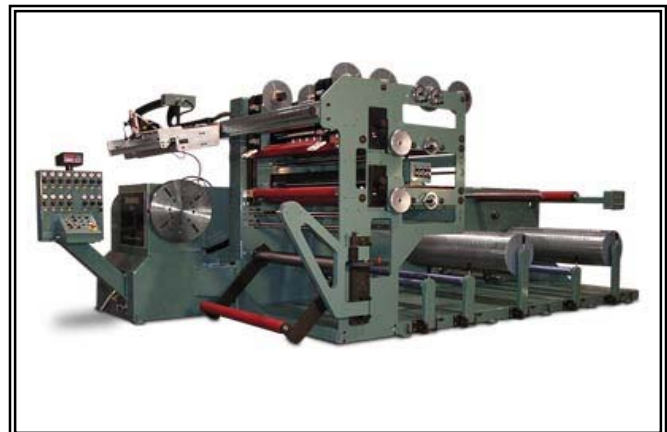


Functional Symbol



Industry:

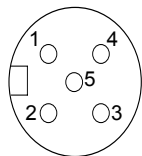
Any Industry which requires tension control i.e. Paper converting machinery, automotive, laboratory. Screen-printing, packaging – dosing filling.



TECHNICAL DATA

Medium:	Compressed air, non-lubricated
Filtration Levels:	50µm, fast moving dynamic applications 5µm, static or slow moving applications
Operation:	Proportional, direct acting piloted spool valve
Output Pressure:	User adjustable up to 10 bar
Min/Max Supply pressure:	5bar minimum & 14bar max on standard units
*Response Time (into 0.1litre load)	
Step response:	10-90% <100ms
Air Consumption:	<5NI/min
Port Size:	¼" BSP or ¼" NPT, in line Manifold mounting
Total Error:	Max. error +/-100mbar (independent error includes the combined effect of non-linearity, hysteresis, deadzone and repeatability)
Operating Temperature (ambient):	0° to 50°C (Contact Manufacturer about Low Temperature use)
Dew Point:	-20°C pressure at 7bar g in accordance with ISO 8573.1
Temperature Effect:	Typically 3mbar/°C for full scale and zero over operating range
Degree of Protection:	IP65 in normal operation
Life:	>30million 100% steps
Mounting Position:	Any (ideally vertical for display use), Screw mounting
Material of Construction:	Aluminium body, zinc diecast lid and end cover
Overall Dimensions:	131.5 x 55 x 50mm
Weight:	800g approx.

Instrument pin configuration



- 1 +24V d.c. supply
- 2 output pressure feedback signal
- 3 control signal (+ve)
- 4 common (DC supply, signal and feedback return)
- 5 chassis

*For continuous operation up to three 100% steps per second. For applications requiring greater continuous cyclic frequency of operation, please consult Norgren.

ELECTRICAL INFORMATION

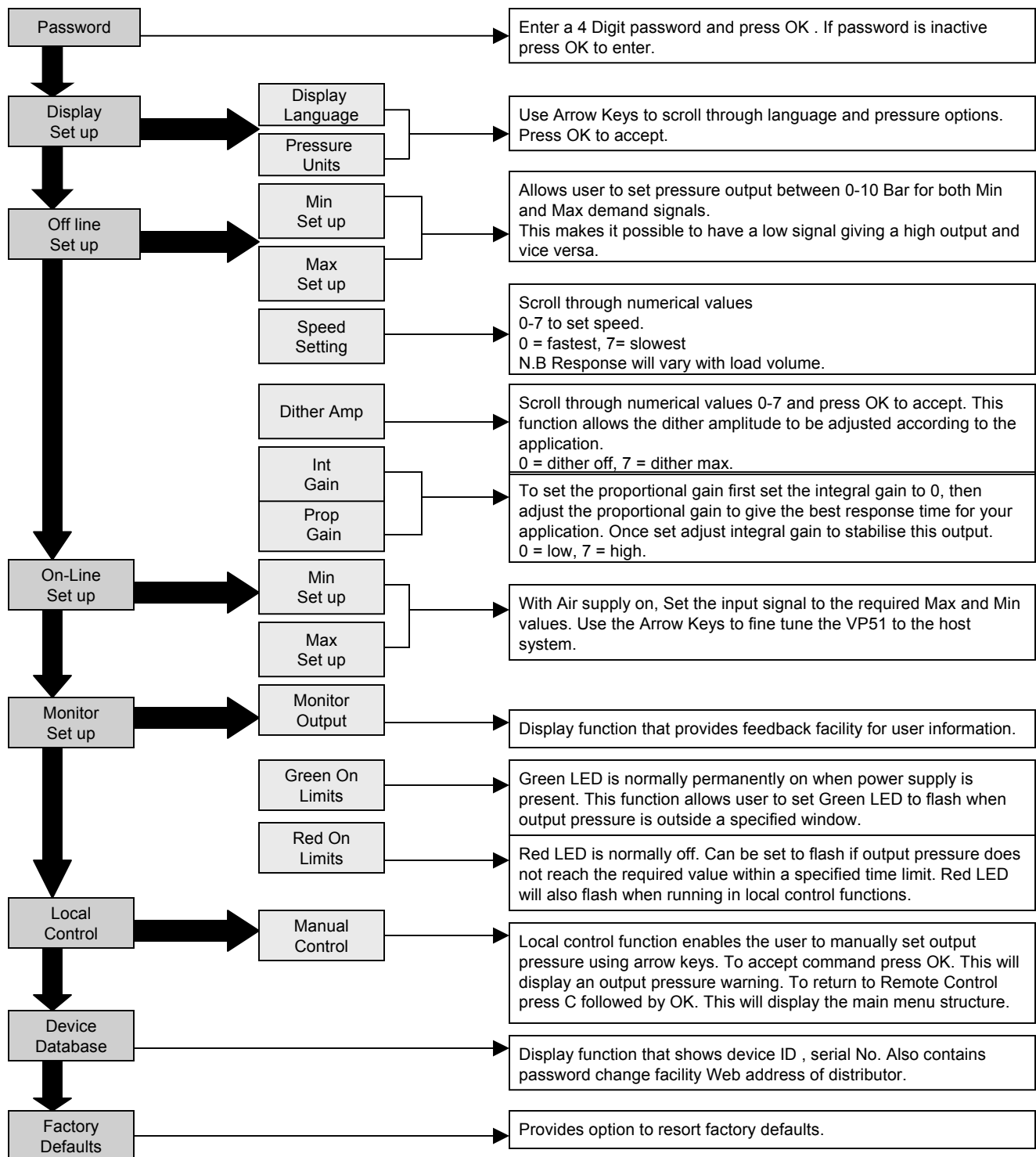
Electromagnetic Compatibility	CE marked. Conforms to E.C.s requirements EN50081-2(1994) and EN50082-2(1995). For this standard specification shielded cables must be used
Electrical input signal	0-10V or 4-20mA
Electrical Power input	24Vdc \pm 25%
Output pressure feedback signal	User Configurable: 0-10V analogue or Hi-Lo mode
Connections	M12, 5 pin connector e.g. Hirschmann 933 170-100

GENERAL CHARACTERISTICS

Hysteresis	<50mbar <0.5% of span
Linearity	<+/-50mbar <0.5% of span (BSL)
Response Sensitivity	<1bar overshoot 10-90% \leq 80ms 90-10% \leq 120ms 100cc load
Flow Capacity	1300 l/min
Operating Pressure	5bar minimum operating pressure
Flow Direction	fixed
Vibration Immunity	<0.3bar, 3 g sine, 10-150Hz (3 axes)
Supply Sensitivity	\leq 50mbar between 11bar and 6bar supply

INPUTS (SIGNAL) ANALOGUE SET POINTS

Input resistance	50 k Ω (voltage) 220 Ω (current)
Control signal	0-10 V / 4-20 mA
Load resistance	10 k Ω (voltage) 220 Ω (current)


Keypad Functions:

- “OK”** • Enter the menu from default screen
- Move to the next level of the menu
 - Accept changes
 - Move right on tree

- “C”** • Move back through levels of the menu
- Cancel changes
 - Moves left on tree


- Arrow Keys** • Up and Down move between options and set digit values within functions
- ← ↑ ↓ →
- Move up and down tree
 - Left and Right move between settable digits


Ordering Information

Part Numbering:

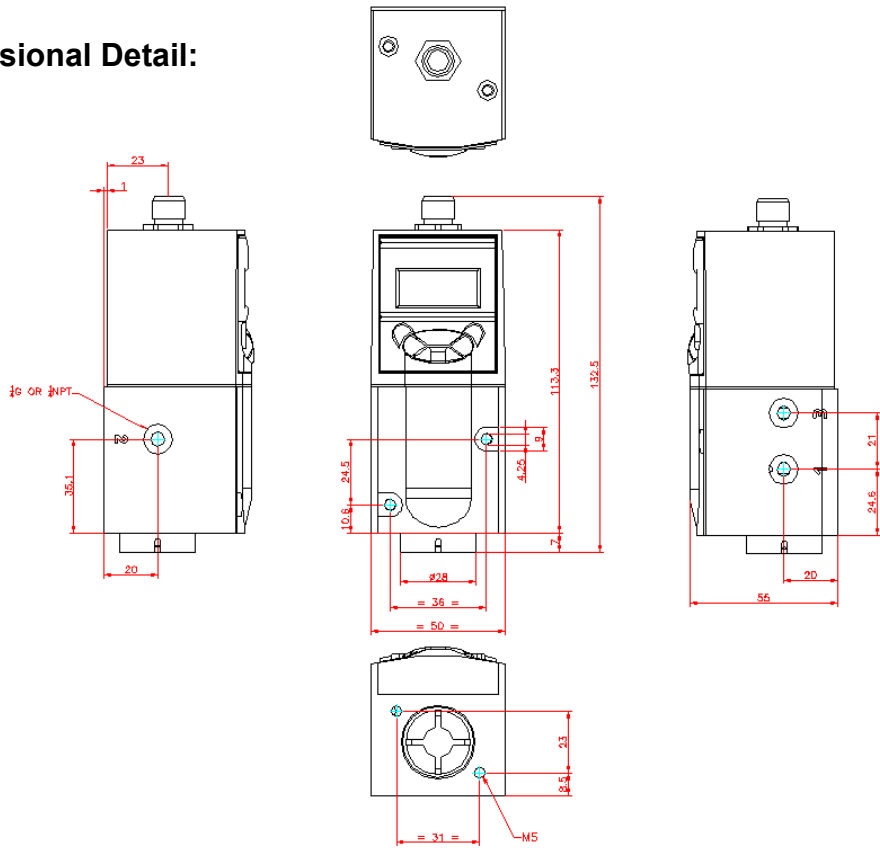
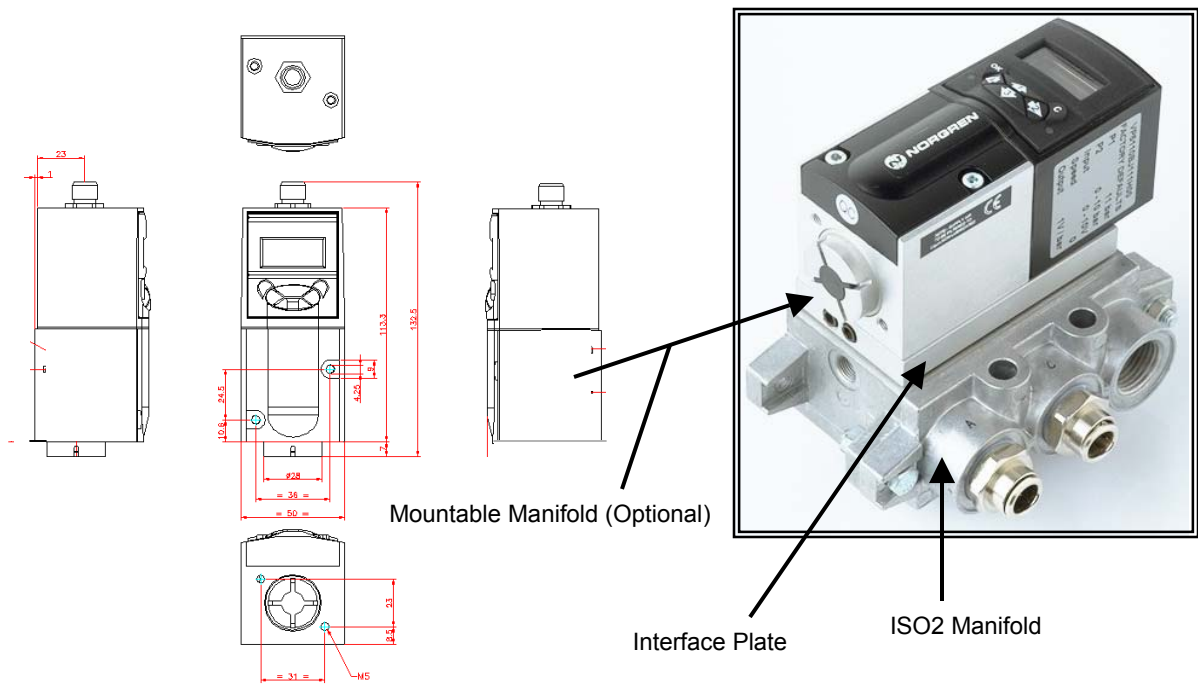
Part Number	Description
VP5110BJ111H00	10 Bar outlet; 0-10V control signal; ¼" BSP ports
VP5110BJ411H00	10 Bar outlet; 4-20mA control signal; ¼" BSP ports
VP5110PK111H00	150 psig outlet; 0-10V control signal; ¼" NPT ports
VP5110PK411H00	150 psig outlet; 4-20mA control signal; ¼" NPT ports
VP5110BX411H00	4-20mA, 10Bar/Manifold 10V fs feedback
ZZ5M00	Manifold Mounting Kit – VP50 & VP51

Accessories (Inclusive with the Unit):

<p>Plug Connector, 5 pin, M12, female receptacle Watson Smith Instrumentation Part Number: PL 500 01 (Defined as "H" in VP51 Part Number)</p> 
<p>Specification</p> <p>M12 x 1; 5 pole Length: 54 mm Plug securing nut: 20 mm Female connector piece: 8mm</p>

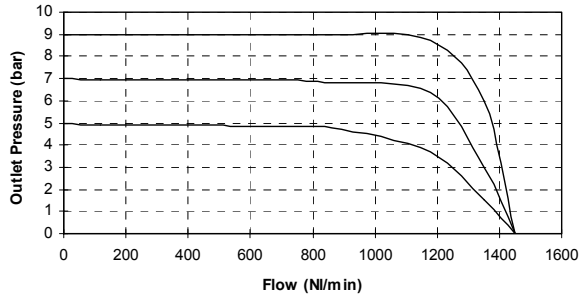
<p>Elbow Plug Connector, 90°, 5 pin, M12 female receptacle Watson Smith Instrumentation Part Number: PL 500 02 (Defined as "G" in VP51 Part Number)</p> 
<p>Specification</p> <p>M12 x 1; 5 pole Height: 35 mm Depth: 36 mm Plug securing nut: 20 mm Female connector piece: 8mm</p>

- 1: Inlet Port
- 2: Outlet Port
- 3: Exhaust Port

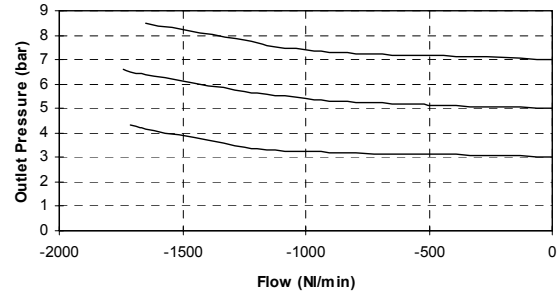
Dimensional Detail:

Dimensions: Special Option Manifold Mounted Unit


Characteristic Curves:

Forward Flow Characteristics
(Supply Pressure 11bar)



Relief Flow Characteristics
(Supply Pressure 9 bar)



Installation and Commissioning

Pneumatic Installation

Supply Pressure:

Minimum 1 bar (14.5psig) above maximum required output pressure for function (11 bar (203psig) max.)

Output Pressure Range:

0-10 bar (0-145psig)

Media:

Clean, dry 5 micron filtered air

Port Size:

1/4" BSP or 1/4" NPT: *ISO2 Sub base version on request*

Connection:

Pipe-work connection using 10mm OD, 8mm ID, plastic pipe, cut cleanly at right angles, with push-fit pipe connections.

Exhaust silencer at Port 3 if required (this will only slightly degrade exhaust performance).

The connector plug must be hand-tight only, to a tightening force less than 3 Newton.

Mounting:

Any mounting orientation.

Screw mounting through body mounting holes to suit M4 screws.

Adjustment Controls:

Various via user interface.

Electrical installation

Power Supply:

24V dc power supply (+/- 25% with 250mA current capability)

Signal:

0-10V, 4-20mA

Feedback:

10V full scale; switch mode settable

Connection:

5-core, screened cable and M12 socket connector

Servicing and Repairs

A two year warranty applies to all Norgren products. For terms and conditions please ask for a copy of our 'General Conditions of Sale.'

You should by no means attempt to repair the product by yourself.

For repair please return the product concerned with a description of the error, malfunction or failure to your local representative dealer or agent.

Transport, Storage and Cleaning

The product can only be transported and stored in the original Norgren packaging which ensures suitable protection against mechanical damage.

Norgren Ltd.,
Cross Chancellor Street,
Leeds, LS6 2RT. England.
Telephone: +44 (0) 113 245 7587
Fax: +44 (0) 113 246 5735
Email: salesenquiries@norgren.com
Website: <http://www.norgren.com>

ds VP51g_ 01/04
Controlled Doc. 2006-125a

Warning

These products are intended for use in industrial compressed air systems only. Do not use these products where *pressures* and *temperatures* can exceed those listed under '**Technical Data**'.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.