Paint savings through superior control

**Powered by IPS**
To save paint, you need a system with fast and accurate control of the paint atomizer. ABB’s Integrated Process System, IPS, is such a system.

**Air control**
One of the important factors in an IPS system is air regulation. Air is used to control the spray pattern (brush). Fast regulation is needed to avoid overspray and waste of paint material. Stable regulation is needed to achieve high finish quality.

**Brush control**
ABB’s FlexBrush proportional pressure regulation unit (PPRU) is one of the fastest and most accurate air regulation units on the market.

It regulates air at millisecond speed with high process accuracy to provide fast brush changes and accurate applicator triggering.

**Fast**
IPS integrates our high speed process control with our superior motion technology. This tight synchronization provides full control of the paint process and cuts down cycle time.

**Compact**
The proportional pressure regulation unit controls up to three channels of air with closed loop pressure- and air flow measurement in one compact unit.

It enables the IPS system to have full control and supervision of the paint brushes.

**Paint savings**
ABB’s IPS system is designed to save paint. High acceleration painting robots combined with fast process regulation provide optimum use of paint material.

IPS will reduce your cost and make you more profitable.
**TECHNICAL DATA**

**GENERAL DATA**
- Ambient temperature: +10 to +50 °C
- Enclosure material: Aluminium / stainless steel
- Protection: IP65
- Storage temperature: -40 to +70 °C
- Dimensions housing: 252 x 192 x 90 mm (WxHxD)
- Weight: 5.4 kg

**PNEUMATIC DATA**
- All supply ports should have the same pressure.
- Supply pressure: 5 - 10 bar
- Air supply regulator: Maximum 5 μm filter
- Supply hoses line inputs: 8 mm inner diameter recommended
- Supply hose SUP input: 6 mm inner diameter recommended
- Exhaust* 1-3 hoses: 8 mm inner diameter recommended
  *The exhausts are equipped with a filter.

**PERFORMANCE DATA**
- Output range: 0 - 8 bar
- Flow-sensor range: 50 - 1000 Nl / min
- Flow-sensor accuracy: +/- 1 % (FS)
- Set-point change: PPRU Response*
  1 to 6 bar: 54 ms
  6 to 1 bar: 69 ms
  *Measured response times for typical set-point changes for the PPRU using a 3 m long air hose and a conventional air spray gun.

**ELECTRICAL DATA**
- Input power: 24 VDC
- Max current: 700 mA

**USE**
The FlexBrush proportional pressure regulation unit is typically used to control the air to an applicator, like a spray gun or a bell. The air channels are used to control things like the spray pattern, the paint flow, the rotation of the bell, etc.

**VERSIONS**
The unit is available in four configurations:
- 2 channels, open loop
- 2 channels, closed loop
- 3 channels, open loop
- 3 channels, two channels closed loop, one open loop

**FUNCTIONALITY**
The FlexBrush proportional pressure regulation unit (PPRU) contains three independent air channels. Each air channel is equipped with a proportional pressure regulator that controls the air pressure.

The air channels are equipped with pressure sensors. The proportional air pressure regulator and the pressure sensor are used to create a closed loop air pressure regulator.

Two air channels are equipped with additional delta pressure sensors to enable air flow measurement.

The internal closed loop air pressure regulator together with the air flow measurement creates a closed loop air flow regulation.

**IPS**
The IPS brush command sets the required outlet pressure or required outlet flow. IPS converts to pressure and sends the information to the PPRU.

The PPRU feeds the measured air pressure and delta air pressure back to the controller.

The IPS software calculates the air flow value from these measured pressures and compares this measured value with the required value. If they are not equal it adjusts the set outlet pressure to the PPRU, such that the measured air flow becomes equal to the required value.

**SUPERVISION**
The FlexBrush proportional pressure regulation unit contains supply pressure supervision that provides an error message if the pressure is too low.

Specifications may be changed without notice.