



Air Content Control System



AC1 and AC8



- Real time air content measurement
- Tank top or side mount sensors
- Up to 8 channels capability
- 2% total accuracy
- 4-20 mA output to DCS

The **PMC-Paprican Air Content Probe and Control System** has been designed specifically for use in the pulp and paper industry. It can also be used effectively in other applications where the measurement or control of air content is important, such as water/waste and mining industries.

PMC provides an effective solution to identify and control problems before they start. The System utilizes high accuracy, durable ceramic sensors that are ideally suited for measuring levels and pressures in paper slurry applications. Other applications include controlling the defoamer in recycling and brownstock washing, and verifying the signal from a consistency meter.

The System provides **real-time measurement of entrained or injected gas content** in a pre-determined zone of an aqueous suspension. Two PMC flush-mounted pressure sensors are placed in direct contact with process liquid. The sensors are typically fixed laterally on one or more pipes that are firmly held in place on a plate or in flanges mounted on the top or side of a tank, vessel or flotation cell. The change in pressure between them provides an accurate measurement of dispersed gas content.

Numerous functional gases are used in pulp and paper manufacturing for processes such as pulp-bleaching liquor-oxidation, pulp and water acidification, ink flotation, and effluent treatment. Unwanted air in these systems can seriously impair pumping, washing, and papermaking operations. Online monitoring of air content allows for better understanding of aeration in the decontamination and de-inking of wastepaper pulp. Continuous monitoring of air content in the paper slurry helps to control the air bubble size in recycled pulp suspensions.

Dispersed gas creates surface foam in white water, which eventually releases hydrophobic contaminants when the bubbles burst at the surface. This phenomenon contributes to formation of deposits, web breaks, dirt spots and holes in paper. In pulp washing, air bubbles in pulp mats reduce drainage rate and generate foam in the drop leg. The addition of defoamer is essential for coalescing air bubbles in the pulp suspension or in the surface foam. Moreover, presence of air causes some on-line sensors such as microwave consistency meters to malfunction. Conversely, dispersed air may be beneficial when introduced on purpose in a suspension, by aspiration or sparging systems. For example, dispersed air flotation is a key step for decontamination of recycled pulps, where both the amount and size of air bubbles directly affects the rate at which ink particles and other contaminants are removed from the suspension.

The probe can be mounted temporarily or permanently in both non-agitated and agitated vessels, over a broad range of temperatures, in corrosive and abrasive media. It can be easily made **portable** for monitoring and troubleshooting air content in various site locations.

PRODUCT DESCRIPTION

■ AC1 single channel

System comprises a control box together with a matched pair of PMC flush-mounted pressure transmitters. The powder coated steel box is sealed to NEMA 4 and designed for wall mounting with dimensions of approximately 16"x16"x9".

Note: The single channel system is not expandable.

■ AC8 multi-channel

System comprises a control box capable of simultaneously monitoring, displaying and outputting up to 8 matched pairs of PMC flush-mounted pressure transmitters. Similar box construction to AC1 with dimensions of approximately 16"x24"x9".

■ Functions

System provides set up screens for each channel including Sensor Readout, Sensor Scaling, Sensor Angle, and Sensor Distance. The operating screens provide direct readout for each channel as shown. Also trending data can be displayed. A simultaneous 4-20 mA output for direct connection with DCS system is provided for each channel.

■ Sensors

System is designed to operate with any PMC pressure transmitters supplied and calibrated in pairs. For top mount or portable installations a special version of our PT/EL DS series (see data sheet) is available incorporating two sensors positioned 19.6" (50 cm) apart. The AC System probe utilizes a 1 3/8" diameter stainless steel housing with the two sensors mounted laterally (1" protrusion) within a 4' tube length. Additional tube extensions of 2', 4' and 6' are available. The standard sensor pressure range is 80" WC.

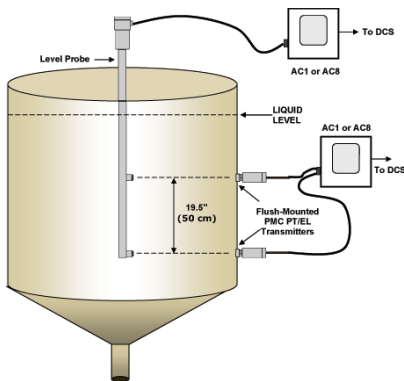
For permanent tank mount installations the PT/EL CV (see data sheet) is offered in the remote format.

■ Installation

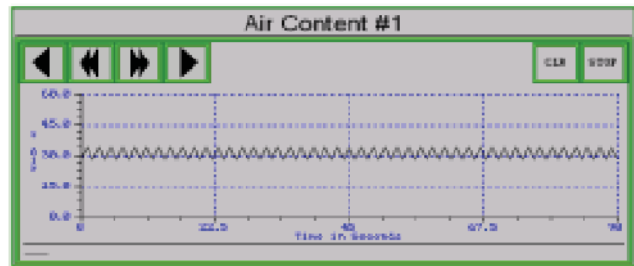
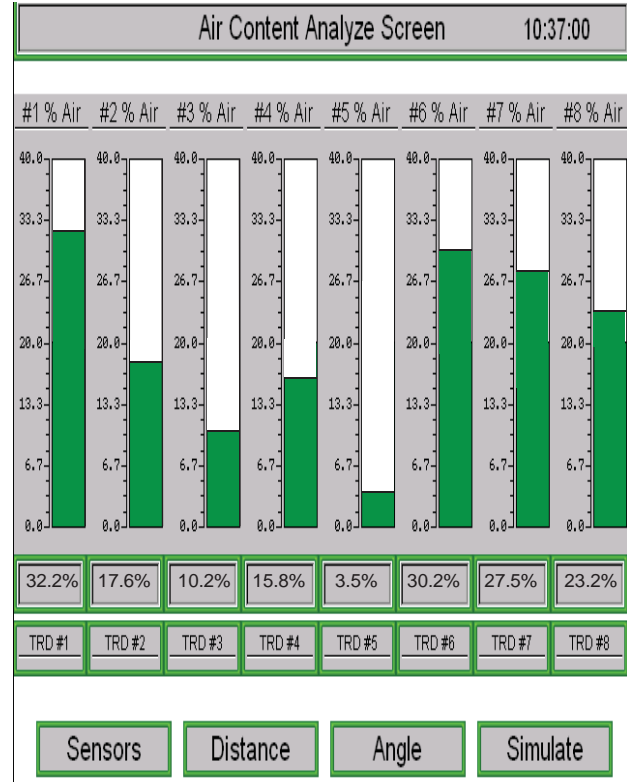
The transmitters can be placed up to 100' from the control box. The level probe is fitted with a Terminal Head and cable is not supplied as standard. The PT/EL CV transmitters are supplied with the required length of integral cable.

Note: For longer cable lengths, PMC will incorporate either PTEL 4-20 mA transmitters or Smart transmitters, please consult the factory.

TYPICAL INSTALLATION



OPERATING DISPLAY



ORDERING INFORMATION

We recommend the installation details be discussed with the factory.

When ordering please specify the following:

- (1) MODEL: AC1 or AC8
- (2) Top mount level probe PT/EL AC
Standard is 80" WC with 4" extension (total 84")
- (3) PT/EL CV transmitters (supplied in pairs)
Range and cable length to be specified

Note: For AC1 either 2) or 3) must be specified.

For AC8 any combination of 2) or 3) up to a maximum of 8 can be specified.

PMC adopts a continuous development program which sometimes necessitates specification changes without notice.

HEAD OFFICE



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