

Uninfluenced by gas quality and atmospheric influences:

Electronic control for gas blower

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The currently standard premix burners ensure flame temperatures of under 1300 °C and thus low nitrous oxide values. However, variations in gas quality will change the gas/air ratio in the combustion chamber. If there is no compensation, this could lead to unwanted noise, increased pollutant emissions or reduced heating capacity. The solution to this is modern electronic controllers.

The new, microprocessor-controlled LambdaConstant controller (see graphic), developed by ebm-papst Landshut for premix burners, automatically detects the combustion quality and optimises it, irrespective of the erection location and the required heating capacity, using a closed loop. Firstly, the mass flow of combustion air is adjusted according to the demand for heat. Additionally, the temperature in the burner is measured. With natural gases and methane, butane and propane-air mixtures, this provides information on the combustion quality. Thus, the excess air (Lambda value) can be kept constant over the entire modulation range, from the minimum to maximum heating capacity.

The electronic combustion controller is extremely compact and is suitable for premix burners with nominal outputs of between approximately 10kW right up to megawatt ranges. The modulating gas fitting does not require expensive parts such as membranes. The brushless, electronically commutated DC drives used in the fans guarantee reliable operation over many years. Control ranges of up to 1:10 can be implemented. If there is a low demand for heat, the number of burner starts will be reduced, the temperature in the combustion chamber remains almost constant and the efficiency increases whilst the level of pollutant emissions fall.



Figure: New electronic controller for premix burners: LambdaConstant (Photo: ebm-papst Landshut)

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