

Industry: Plastics

Products Used: Modular PLCs /// Drives /// HMIs

PLCs help keep Emafyl in the frame

An array of productivity-enhancing and energy-saving systems are in place at Emafyl, all using Mitsubishi Electric inverters, PLCs and MAC display systems and operator terminals.



Emafyl makes extrusions from polystyrene for picture frames. The 50 extrusion lines make it the largest extrusion plant in the UK. The output of 230 tonnes a week, represents between 4 and 6.5 million feet of extrusions, and may have captured as much as 90% of the UK and 70% of the US picture frame market. The total power consumption of Emafyl's plant is 2.1MW and the company has its own substation, giving every incentive to incorporate energy-saving ideas at every opportunity.

The champion behind all the ideas, which cover all areas from goods inwards to the finishing plant, is Production Manager Kas Cheema. Emafyl is typical of many process plants where operator judgement and human errors are the main enemies of productivity, and Kas sees the reliability and ease of networking of Mitsubishi Electric equipment pivotal in his quest to provide automation solutions to overcome these problems.

All the 50 extrusion machines are now controlled by Mitsubishi AnS PLCs, with MAC 50 HMIs giving operators interaction. In order to minimise profile distortions, particularly in the larger sections, temperature control must be precisely controlled to within 1°C. As a result, the original control systems provided with the machines have been totally discarded, keeping just the cabinets, which now house the new control systems which were all constructed in-house by Kas and his team.

Mitsubishi PLCs, HMIs and VSDs are used throughout the plant. They are used on processes such as weighing, drying, mixing and colouring. They are also used on processes such as pumping, water management and even chemical dosing for the water towers.

As an additional efficiency-enhancing idea, Mitsubishi inverters are now used to increase the frequency of the cooling fans from 50Hz to 60Hz. These will help drop the factory ambient temperature by 1-2 °C and will also save valuable energy.

As a further development, brand new Mitsubishi temperature controllers are being evaluated. The controllers are not yet available in the UK, yet Mitsubishi Electric has provided Emafyl with special programming expertise from Japan to support this important hardware addition.

Application story first released March 1996 by Mitsubishi Electric UK