

AGV Integration with Efaflex door systems

Overview:

With a growing demand for AGV systems in facilities, we are asked for the basics of integration with Efaflex door systems. This document is a brief overview on how the integration works and the various solutions. Efaflex doors are built to order as are the integration elements, so although integration can be fitted retrospectively, it is best practice to plan ahead ensuring enough safety requirements and controller board capacity are considered.

Hardware:

The Efaflex controllers have the capacity for IO connections, there is the capacity for additional IO cards which can be added to the panels for integration with BMS, Fire IO and AGV systems. Cards are specific for each type.

With the AGV IO card, there are two inputs and two outputs, commonly with AGV integration the IO inputs are used for an open command and a close command. This means the AGV sends the close command after it has passed through its predetermined area, thus minimizing the amount of time the door is opened. As per usual operation all safetys are active when the door is open and during the closing sequence. It can be programmed for the door to close on time rather than awaiting for a close command from the AGV if necessary.

The two IO outputs would be used to send data back to the AGV system to advise when the door is fully opened, fully closed and in motion. These would be used by the AGV programmers to schedule the door operations and sequence more effectively reducing door open time, particularly in rooms sensitive to temperature or air pressure.

Safety Elements:

Each Efaflex door has a light curtain between the uprights of the door, which follows the travel of the door, so any obstruction between this will stop the door from closing. With manned operation and AGV's it is recommended that forefield safety protection is utilised. The most suitable product for this capability is the Efaflex Efascan bollard system. This is a laser based safety system, which can be used to map a very specific safety area within a 10m x 10m area. The Efascan features gapless detection of moving and motionless objects as well as intelligent direction recognition, so it can not only track AGV motion, but the direction of the AGV ensuring maximum safety is achieved.