SENSORS

Sensors are provided for process, status and jam detection control.
A given sensor may belong to one or more classes.

All switch sensors provide a 0V electrical level in their normal situation. Their output becomes 5V when actuated. This choice allows the detection of broken wires, …

All (paper-) cell sensors provide a 24V electrical level in their normal situation (no paper). Their output becomes 0V when paper is detected.

JAM DETECTION

All paper path sensor (some of which may have another process function) monitor the passing of the sheet and can detect one of four outcomes :
  • OK
  • Illegal (unannounced sheet[3])
  • Trail Edge not present (sheet stuck under sensor)
  • Lead edge not present (sheet not run when expected)

[3] As can happen when a jam was not fully cleared and a sheet arrives at a sensor when the motorisation is turned on again.

STACKER COMPONENTS

The Main Motor (M91)

The main motor is a brushless DC motor. This motor is controlled by a DC voltage created by an E2POT. There is a need for speed monitoring, as the resistive torque varies depending on the motorised area. This need is met by creating a feedback loop the input of which is the motor tacho.

The Input Module

The input module grabs sheets from the IOT. It consists of :
  • the input roller, directly powered by the main motor,
  • the input sensor, and
  • the input diverter

The Input Sensor (B12)

The input sensor detects the lead edge of a print arriving at the stacker. The input sensor is used for jam detection and timing of events. Any sheet coming unannounced will be diverted to the purge tray and generate a jam report.

The Input Diverter Solenoid (Y11)

The input diverter is operated by a solenoid (Y11). The input diverter directs the sheet to the registration/offset generation module or to the purge tray.
The normal operation of the input diverter is under control of the FFIU. The "unpowered" position of the solenoid corresponds to the registration destination.
Given a 50ms response time and the distance from the input sensor, the input diverter can be operated under the control of the input to direct unannounced sheets to the purge tray.

HIGH CAPACITY STACKER SFIDA