Elevator B (4 floors)

The elevator consists of a cage with counterweights, a pit and four floor units, each one containing a pneumatic driven sliding door, call buttons and colored control lamps to indicate the moving direction of the cage. In addition to this there is a control panel, realizing the operating options from inside the cage. In essence, these are selection buttons to choose a floor, an alarm button, an emergency stop and the ability to choose a mode of operation, where the lift is controlled exclusively from outside the cage. The simulated process shows the elevator being brought from a basic position to one of the floors, by operating the control panel or one of the call buttons, and after opening and closing the sliding door being ready for the next sequence: After operation one of the call buttons, indicated by a signal lamp, the cage is brought in a slow-fast-slow-movement, being controlled by mechanical switches depending on the distance, to the chosen floor. The sliding door gets opened and remains open, until the programmed loading time is over. A one way light barrier controls the entrance to prevent, in a real case persons or things that are in the danger zone of the door, from getting hurt. After closing the sliding door, the cage gets moved to the next chosen floor, where the sequence of opening and closing the sliding door occurs in the same manner. A miniature compressor for the pneumatic driven sliding doors is integrated in the model.

Inputs / Sensors

Variable	Name	Direction
x0	Elevator on floor 1	Input
x1	Elevator on floor 2	Input
x2	Elevator on floor 3	Input
x3	Elevator above floor 1	Input
x4	Elevator below floor 2	Input
x5	Elevator above floor 2	Input
x6	Elevator below floor 3	Input
x7	Floor 1 - Door open	Input
x8	Floor 1 - Door closed	Input
x9	Floor 2 - Door open	Input
x10	Floor 2 - Door closed	Input
x11	Floor 3 - Door open	Input
x12	Floor 3 - Door closed	Input
x13	Light barrier floor 1	Input
x14	Light barrier floor 2	Input
x15	Light barrier floor 3	Input
x16	Call button floor 1	Input
x17	Call button floor 2 up	Input
x18	Call button floor 2 down	Input
x19	Call button floor 3	Input
x20	Elevator control - floor 1	Input
x21	Elevator control - floor 2	Input
x22	Elevator control - floor 3	Input
x23	Elevator control - alert	Input
x24	Elevator control - emergency stop	Input
x25	Simulation overload	Input
x26	Elevator on floor 4	Input
x27	Elevator above floor 3	Input
x28	Elevator below floor 4	Input
x29	Floor 4 - door open	Input
x30	Floor 4 - door closed	Input
x31	Light barrier floor 4	Input
x32	Call button floor 3 up	Input
x33	Call button floor 4 down	Input
x34	Elevator control floor 4	Input

Outputs / Actuators

Variable	Name	Direction
y0	Drive upwards	Output
y1	Drive downwards	Output
y2	Drive slowly	Output
y3	Door floor 1 - open	Output
y4	Door floor 1 - close	Output
y5	Door floor 2 - open	Output
y6	Door floor 2 - close	Output
y7	Door floor 3 - open	Output
y8	Door floor 3 - close	Output
y9	Call display floor 1	Output
y10	Call display floor 2 - upward	Output
y11	Call display floor 2 - downward	Output
y12	Call display floor 3 - downward	Output
y13	Indicator display floor 1	Output
y14	Indicator display floor 2	Output
y15	Indicator display floor 3	Output
y16	Drive direction display - downward	Output
y17	Drive direction display - upward	Output
y18	Elevator control - Indicator display floor 1	Output
y19	Elevator control - Indicator display floor 2	Output
y20	Elevator control - Indicator display floor 3	Output
y21	Elevator control - alert	Output
y22	Elevator control - emergency stop	Output
y23	Elevator control - overload	Output
y24	Door floor 4 - open	Output
y25	Door floor 4 - close	Output
y26	Call display floor 3 - upwards	Output
y27	Call display floor 4	Output
y28	Indicator display floor 4	Output
y29	Call display control - Elevator control	Output