

System Conditions

Abbreviations and Explanations

Available Sensors(传感器)

1. DOS: driver on seat(驾驶员在座)
2. DSBF: driver seat belt fastened(安全带系好)
3. ER: engine running(启动引擎)
4. DC: all doors closed(全门关闭)
5. KIC: key in car(钥匙在车内)
6. DLC: door lock lever(门锁关闭)
7. BP: brake pedal(刹车踩下)
8. CM: car moving(车移动)

Available Actuators(致动器)

1. BELL: A beeper/chime(beeper/chime will start beeping when 1)
2. DLA: door lock actuator(all the doors are locked when 1)
3. BA: brake actuator(activate the disk brakes in each of the four wheels when 1)

Requirement

1. The BELL should chime/sound when the driver starts the engine without fastening his seatbelt.
2. The BELL should sound when the driver starts the car without closing all the doors.
3. The BELL should be off as soon as the conditions change to normal.
4. The doors should not lock when the driver has got out of the car but the keys are still inside the engine, even though the driver has closed the door lock lever. Note: If the driver is on the seat and requests the doors to be locked, the doors must lock.
5. The brake should be engaged when the driver presses the brake pedal. Brakes should disengage when the brake pedal is released. The brake should engage only when the car is moving, when the car is stationary the brake should not unnecessarily engage to reduce mechanical wear and tear of the brake's hydraulic system.

Translation of Requirement

1. 当司机没有系好安全带就发动引擎时，车铃应该鸣响。
2. 当司机启动汽车而不关闭所有车门时，铃应响。
3. 一旦情况恢复正常，铃声应立即停止。
4. 当司机已经下车，但钥匙仍在发动机内时，即使司机已经关闭门锁杆，门也不应该锁上。注意:如果驾驶员在座位上并要求锁门，门必须锁上。
5. 当驾驶员踩下刹车踏板时，刹车应啮合。当松开刹车踏板时，刹车应该断开。只有当汽车移动时，制动器才应接合，当汽车静止时，制动器不应不必要地接合，以减少制动器液压系统的机械磨损。

Truth Table

1——*True*
0——*False*
d——*don'tcare*

DOS(座)	DSBF(带)	ER(启)	DC(关门)	KIC(钥匙)	DLC(锁)	BP(刹)	CM(移)	BELL(铃)	DLA(锁)	BA(刹)
	0	1	d					1		
	d	1	0					1		
	1	1	1					0		
0				1	1				0	
1				1	1				1	
						1	1			1
						1	0			0
						0	d			0