

Subject: Independence of Normal Terminal Stopping Devices and Normal Stopping Means
Applicable to: A17.1-2010 and B44-10 requirement 2.25.2 and Inquiry 11-2229

1. **Background**
   1.1 Inquiry 11-2229 to the A17.1 electrical committee has recently received approval of the Standards Committee. The inquiry is shown below. *Italic text in section 1.1 below denotes interpretive text or other text to support this interpretation bulletin.* This interpretation is intended to clarify to what extent normal terminal stopping devices (NTSD) and normal stopping means (NSM) must function independently.


**Question 1.**
Requirement 2.25.2.1.2 states "Such devices shall function independently of the operation of the normal stopping means..." Would it be correct to replace the words "normal stopping means" in this requirement with the A17.1/B44 definition of normal stopping means, which is "that portion of the operation control that initiates stopping of the car in normal operation at landings?"

Answer: Yes. *See Items (5) in attached Figure 1, see questions 2a thru 2d for NSM*

**Question 2.**
Would it be a correct interpretation of the aforementioned definition that the words "portion of the operation control that initiates stopping of the car in normal operation at landings" to be only

- **a.** car position sensing device(s)
  Answer: No. *See Items (1)+(2) in attached Figure 1*

- **b.** car position sensing devices and any electrical/electronic devices that transmit the signals from the position sensing device(s)?
  Answer:
  
  **(b.1) Yes,** *See Items (1) + (2) + (3) in attached Figure 1*
  
  **(b.2) unless there are other devices or functions that are a portion of the operation control that initiate stopping.*
  *See Items (1) + (2) + (3) + (4) in attached Figure 1*

- **c.** car position sensing devices, and any electrical/electronic devices that transmit the signals from the car position sensing device(s), and other electrical/electronic devices used to cause the operation control to initiate stopping?
  Answer: Yes *See Items (1) + (2) + (3) + (4) in attached Figure 1, same as response to (b.2)*

- **d.** car position sensing devices, and any electrical/electronic devices that transmit the signals from the car position sensing device(s), other electrical/electronic devices used to cause the operation control to initiate stopping, and any other electrical/electronic devices that perform operation or motion control functions?
  Answer: No *See Items (1) + (2) + (3) + (4) + (9) in attached Figure 1*

**Question 3:**
Are the electronic / electrical devices used to determine car position for the normal terminal stopping means Item 6 permitted to be common to the electronic / electrical devices required for the normal stopping means Item 5 if a failure in those devices Item 6 or Item 5 could result in both the normal stopping means and normal terminal stopping device not functioning?

Answer: No *Item 6 cannot be common with Item 5. Path (b) or Path (c) not permissible. See attached Figure 1*
2.25.2.1.1 Normal terminal stopping devices shall be provided and arranged to slow down and stop the car automatically, at or near the top and bottom terminal landings,…

2.25.2.1.2 Such devices shall function independently of the operation of the normal stopping means…

Item (6) to function independently of Item (5). Item (6) arranged to slow down and stop the car, so that a failure of Item (5) does not result in both Item (5) and Item (6) not functioning. Path (b) or Path (c) not permissible. See attached Figure 1

Question 4: Does the Code prohibit position signals transmitted from devices used to determine car position for the normal terminal stopping device signal (7) and position signals transmitted from the normal stopping means signal (8) from item(5) from being processed by common means Item (9)?

Answer: No. Signal 7 from NTSD and signal 8 from NSM can be processed by common Item (9). Path (a) IS permissible. See attached Figure 1 Signal 7 from NTSD and signal 3 within NSM cannot be processed by common Item (4) as a failure in Item (4) renders NTSD ineffective, and therefore violates the purpose of NTSD (2.25.2.1.1) and its requirement to be independent (2.25.2.1.2)

8.10.2.2(ff)(1) Test normal terminal stopping device for conformance with 2.25.2 by making inoperative the normal stopping means.

With NSM inoperative (Item 5 and/or signal 8 ineffective), NTSD(Item 6) must be arranged to slow down and stop the car for conformance to 2.25.2

2. Interpretation

2.1 TSSA interprets inquiry 11-2229 as followings:

Figure Notes:
1. ‘Position sensing’ includes sufficient electrical/electronic devices used to determine the location of the car.
2. Normal stopping means (NSM) includes the portion of the control that initiate stopping of the car at all landings. To function effectively, NSM includes the electronic / electrical devices that transmit the signals from the car position sensing devices and other electrical / electronic devices that are used to cause the operation control to initiate a stop.
3. Normal terminal stopping devices (NTSD) shall function independently of the operation of the normal stopping means (NSM). A failure in the normal stopping means (NSM) will not affect operation of NTSD.
4. This illustration is only one example to show independence of NTSD and NSM.

3. Enforcement

3.1 TSSA is enforcing this requirement for all controls submitted to A17.1-2010 / B44-10 code.
3.2 Control designs reviewed to A17.1-2010 / B44-10 code must comply with this interpretation in order to receive a registration.

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