

ICS 91.140.90

CCS Q 78



**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 35850.1-2018

**Programmable electronic systems in safety-related applications
for lifts (elevators), escalators and moving walks -- Part 1: Lifts
(elevators) (PESSRAL)**

Issued on: February 6, 2018

Implemented on: September 1, 2018

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

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Introduction

1 Scope

1.4 This part.

1.5 This section does not contain.

2 Normative references

3 Terms and definitions

4 symbols and abbreviations

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5.1 General

Foreword

GB/T 35850 "Application of programmable electronic systems related to elevators, escalators and moving walkways" is intended to be based on the following sections composition.

--- Part 1. Elevator (PESSRAL);

--- Part 2. Escalators and moving walkways;

--- Part 3. Life cycle guidelines (technical reports) for programmable electronic systems related to PESSRAL and PESSRAE.

This part is the first part of GB/T 35850.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the redrafting method to modify the ISO 22201-1.2017 "Elevator, escalator and moving walkway safety related

Application of the electronic system Part 1. Elevator (PESSRAL).

The technical differences between this part and ISO 22201-1.2017 and their reasons are as follows.

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical conditions, adjustments

The situation is reflected in Chapter 2, "Regulatory References", and the specific adjustments are as follows.

- * Replace IEC 61249 (all parts) with GB/T 4721, GB/T 4723, GB/T 4724, GB/T 4725;
- * Replace IEC 60950 (all parts) with GB 4943 (all parts) modified to international standards;
- * Replace IEC 62326-1 with GB/T 16261;
- * Replace IEC 61508-1 with GB/T 20438.1 equivalent to the international standard;
- * Replace IEC 61508-2 with GB/T 20438.2 equivalent to the international standard;
- * Replace IEC 61508-3 with GB/T 20438.3 equivalent to the international standard;
- * Replace IEC 61508-5 with GB/T 20438.5 equivalent to the international standard;
- * Replace IEC 61508-6 with GB/T 20438.6 equivalent to the international standard;
- * Replace IEC 61508-7 with GB/T 20438.7 equivalent to the international standard;
- * Replace ISO 22200 with GB/T 24808, which is equivalent to the international standard.

---Based on Table A.1 in GB 7588-2003 XG1-2015 and Table A.1 in GB 21240-2007, and reference

EN81-20.2014, this section has made the following modifications.

- * In terms and definitions, 3.1 and 3.2 were deleted because the relevant content in Table 1 has been deleted;
 - * In Table 1, item 1, item 3, item 6, item 8, item 10 (a, b, c, i), item 10 (i).1, item 10 are deleted.
- (a, d, g, h). 2, 10(e).3, 26, 34, 35, 37, 43, 45, 45

51 items to be compatible with GB 7588-2003 XG1-2015 and GB 21240-2007 and EN81-20.2014

Consistent

- * In Table 1, the following elevator safety functions (apparatus) have been added. the first pit stop device and the second pulley stop device

Set, the third item checks the storage position of the pit ladder, the fourth inspection access door, the safety door and the closed position of the access door,

6 inspection mechanical device non-working position (work area in car or car top), 19th car top stop device,

20 items to check the lift of the car or counterweight, the 29th to check the break or slack of the safety rope, and the 30th check to trigger the lever

The position of the retraction, the action of the car accidental movement protection device when the 35th detection door is opened, the 42nd inspection and overhaul

The button used for operation, the 45th maintenance stop device, the stop device on the 46th elevator drive main unit,

47 emergency and test operation screen stop devices, item 49 check hydraulic cylinder plunger position transmission device tension (pole

Limit switch) to be consistent with relevant standards;

* In Table 1, check the safety integrity of the deceleration condition of the stroke reducing buffer in item 39 of the elevator safety function (apparatus).

Level (SIL) is increased from SIL2 to SIL3 to be consistent with relevant standards;

* In Table 2, items 1, 3, 6, 8 and 10 (a, b, c, i), 10 (i). 1 and 10 are deleted.

(a, d, g, h). 2, 10(e).3, 26, 34, 35, 37, 43, 45, 45

51 items to be compatible with GB 7588-2003 XG1-2015 and GB 21240-2007 and EN81-20.2014

Consistent

* In Table 2, the following elevator safety functions (apparatus) have been added. the first pit stop device and the second pulley stop device

Set, the third item checks the storage position of the pit ladder, the fourth inspection access door, the safety door and the closed position of the access door,

Item 6 Check the non-working position of the mechanical device (working area in the car or on the car top), the 19th car top stop loading

Set, item 20 check the car or counterweight lift, item 29 check the safety rope break or slack, the 30th check trigger

The retracted position of the lever, the action of the car accidental movement protection device when the 35th detection door is opened, the 42nd inspection

Button used in conjunction with the inspection operation, the 45th maintenance stop device, and the stop on the 46th elevator drive unit

Device, stop device on the 47th emergency and test operation screen, item 49 check the hydraulic cylinder plunger position transfer device

Tension (limit switch). At the same time, the corresponding safety status requirements are

added;

* In the first column of the safety status requirement column of Table 2, a forced elevator is added, which is modified to "cut off the motor and brake power supply.

(dragging elevator, forced elevator)" to improve applicability;

* In the Safety Status Requirement column of Table 2, the "Block (Prevent) Well Access Operation" is deleted to be consistent with the relevant standards;

* In the "Safety Status Requirements" column of Table 2, "Convert to Emergency Electric Operation" is added to be consistent with the relevant standards;

* In Table 2, R1, R18, and R19 are deleted because their corresponding elevator safety functions (devices) have been deleted;

* In Table 2, R10, R20, and R25 are deleted because they do not match the actual application in China;

* In Table 2, R17 is modified and changed to R12.

When enabled, one or more of the following devices should be disabled.

a) an electrical safety device for checking rope or chain slack (No. 22);

b) electrical safety device on the car safety gear (No. 25);

c) overspeed electrical safety device (No. 26, serial number 27);

d) an electrical safety device on the car's upstream overspeed protection device (No. 33);

e) an electrical safety device on the buffer (No. 36);

f) Limit switch (No. 50).

* In Table 2, R23 is modified and changed to R15 "Ignore this check when leveling and re-leveling and preparatory operations"

The standards are consistent;

* In Table 2, R26 is added "Ignore this check only when the mechanism is in the non-working position";

* In Table 2, R27 "Car speed should not exceed 0.3 m/s" is added.

This section has also made the following editorial changes compared to ISO 22201-1.2017.

--- Removed the contents of the ISO 22201-1.2017 introduction that are not relevant to this section, because of its existence or not to understand and make this part

Use without any effect;

--- The number of the elevator safety function (device) in Table 1 and Table 2 was adjusted,