

International Standard



4190/5

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Passenger lifts and service lifts — Part 5 : Control devices, signals and additional fittings

Ascenseurs et monte-charge — Partie 5 : Dispositifs de commande et de signalisation et accessoires complémentaires

First edition — 1982-12-01

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UDC 621.876-51

Ref. No. ISO 4190/5-1982 (E)

Descriptors : lifts, good lifts, control devices, signals, control signal, specifications.

Price based on 7 pages

Foreword

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Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4190/5 was developed by Technical Committee ISO/TC 178, *Lifts, escalators and passenger conveyors*, and was circulated to the member bodies in January 1981.

It has been approved by the member bodies of the following countries:

Belgium	Iraq	South Africa, Rep. of
Canada	Ireland	Spain
Czechoslovakia	Italy	Switzerland
Egypt, Arab Rep. of	Korea, Dem. P. Rep. of	Thailand
France	Mexico	United Kingdom
Germany, F.R.	Netherlands	USSR
Hungary	Poland	

The member bodies of the following countries expressed disapproval of the document on technical grounds:

Finland
Norway
Sweden

Passenger lifts and service lifts — Part 5 : Control devices, signals and additional fittings

1 Scope and field of application

1.1 This part of ISO 4190 specifies the buttons and indicators to be provided when a lift is constructed and installed taking into account the type of control intended for the lift.

The description of the controls is given only to define the buttons and indicators. It does not constitute a complete description of these controls. The table summarizes the essential or optional devices for each of the cases described.

This part of ISO 4190 also specifies the requirements for hand-rails when they are provided in the car.

1.2 This part of ISO 4190 applies to lifts of classes I to IV as defined in ISO 4190/1 and ISO 4190/2.

1.3 Group collective lifts have common controls and are electrically interconnected so as to provide a better service and for reasons of economy. The system can be more or less complex according to the number of lifts and the expected traffic. Consequently, this part of ISO 4190 does not deal with supplementary signals which the manufacturer may consider useful (for example, "next car", "stand clear of the doors", etc.).

1.4 The following are also not dealt with in this part of ISO 4190 :

- a) special features (and their corresponding signals), as for example, certain features for improving the service of bed lifts;
- b) any devices for speeding the traffic in the case of automatic doors (variable time delays according to different criteria, closing button for doors, etc.).

Even in these special cases, the requirements of this part of ISO 4190 have to be followed for the controls and the basic signals and should be taken as a guide in developing supplementary signals (for example, a button for closing a door will be marked  ).

2 References

ISO 4190/1, *Passenger lift installation — Part 1 : Lifts of classes I, II and III*.

ISO 4190/2, *Passenger lifts and service lifts — Part 2 : Lifts of class IV*.

3 Definitions and specifications relating to controls

3.1 Single push button control

3.1.1 Single push button control is the simplest type of automatic control whereby the car answers a landing call only if it is available, (car at rest, landing door closed) and able to carry the passengers to their destination.

Simple time devices enable passengers to register their calls and then leave the car at leisure.

The use of this type of control is particularly suitable for small residential buildings with light passenger traffic or for specialized lifts for the transportation of goods (class IV).

3.1.2 The following control devices shall be provided :

3.1.2.1 On the landings

One call button on each landing (black or white, no marking required).

3.1.2.2 In the car

One button for each floor (black or white and marked -2, -1, 0, 1, 2, etc.).

One alarm button (yellow with bell-shaped symbol).

One door "re-open" button (for automatic doors) (black or white and marked ).

One stopping device (if required by the safety standards in force) (red with the word "STOP").

3.1.3 The following **minimum indicators** shall be provided :

3.1.3.1 On the landings

Red illuminated sign indicating when the lift is being used by someone (lift running or landing door open);

For manually operated landing doors,

a) either, preferably, one or more transparent vision panels so that the passenger can see that the car is at the floor (car permanently lighted);

b) or a green illuminated stop sign which will only be illuminated if the car is about to stop or has already stopped at the landing concerned. This sign shall remain illuminated during the whole time the car is stationary.

3.1.3.2 In the car

An illuminated position indicator.

NOTE — For class IV lifts with manually-operated landing doors, the position indicator need not be illuminated.

An interphone, telephone or similar device (if required by the safety standards in force).

3.1.4 **Optional indicators** may be provided :

3.1.4.1 On the landings

An illuminated "out of use" sign (red disc with a white horizontal line similar to the "do not enter" signs).

3.1.4.2 In the car

A telephone, interphone or similar device (unless required by the safety standards, see 3.1.3.2).

Mainly for class IV lifts, an illuminated and possibly audible overload indicator.

3.2 **Down collective control**

3.2.1 With **down collective control**, landing calls can be registered whether or not the car is available.

The calls are registered by pressing the call button provided on each landing. If the car is free or coming down, it will answer the landing call from the highest landing and then the other calls in succession as it approaches the main floor.

The calls registered in the car will be retained at any time and answered in logical sequence according to the direction of travel.

This control can be used when there is no normal passenger traffic between floors (passengers make use of the lift from the main floor to the required floor or vice versa) and there is no level served below the main floor. It can be used with a single lift or in group collective lifts (see 1.3).

Alternative : When one or more levels below the main floor level are served, the control shall be down collective for the levels above the main floor, but up collective for the levels below the main floor.

3.2.2 The following **control devices** shall be provided :

3.2.2.1 On the landings

3.2.2.1.1 Generally

On each landing : a call button (or more than one in parallel) marked ∇ on the floors above the main floor and Δ on the main floor (white or black).

3.2.2.1.2 In case of the alternative

The call button on each landing below the main floor will be marked Δ .

At the main floor :

a) either a button marked Δ , if the only anticipated traffic from the main floor goes to the upper floors;

b) or two buttons, one marked Δ and the other marked ∇ , if from the main floor it should be possible to go to the lower levels (for example, basement parking).

3.2.2.2 In the car

One button for each floor (black or white and marked -2, -1, 0, 1, 2, etc.).

One alarm button (yellow with bell-shaped symbol).

One door re-open button (for automatic doors) (black or white and marked $\triangleleft \triangleright$).

One stop switch (only if required by the safety standards in force) (red with the word "STOP").

3.2.3 The following **minimum indicators** shall be provided.

3.2.3.1 On the landings

One illuminated white indicator to show that the call has been registered and will be answered.

Two white illuminated indicator arrows giving advance information on the next departure direction of the car (only one at the terminal landings) placed above or near the doors in a visible place, to indicate the direction in which the car will subsequently move.

A sound signal to accompany the lighting of the arrow, except where the noise would be a major inconvenience and also in the case provided in clause 4.

For manually-operated landing doors :

a) either, preferably, one or more transparent vision panels so that the passenger can see that the car is at the floor (car permanently lighted);

b) or a green illuminated stop sign which will only be illuminated if the car is about to stop or has already stopped at the landing concerned. This signal shall remain illuminated during the whole time the car is stationary.

3.2.3.2 In the car

A white illuminated sign to indicate the car calls registered.

A prominently located illuminated sign showing the position of the car.

An interphone, telephone or similar device (if required by the safety standards in force).

For single or duplex lifts with automatic doors (see clause 4), two white direction arrows in place of the indicator arrows specified for each landing; indicating the direction in which the car will move.

3.2.4 The following **optional indicators** may be provided.

3.2.4.1 On the landings

An illuminated "out of use" sign (red disc with a white horizontal line similar to the "do not enter" signs).

3.2.4.2 In the car

An interphone, telephone or similar device (unless required by the safety standards, see 3.2.3.2).

Mainly for class IV lifts; an illuminated and possibly an audible overload indicator.

3.3 Directional collective control in the two directions of operation

3.3.1 This control requires two call buttons on each intermediate landing : one for ascent and one for descent so that the passenger can indicate the direction in which he wishes to travel (one single button at the terminal landings).

Both landing and car calls registered are answered in logical sequence according to the direction of travel of the car.

This system is installed when interfloor traffic is expected during upward and downward travel. It can be used with a single lift or in group collective lifts (see 1.3).

3.3.2 The following **control devices** shall be provided.

3.3.2.1 On the landings

At each intermediate landing, two call buttons (or two groups of buttons in parallel for each group) one of which is marked Δ and the other ∇ (white or black).

At each terminal landing : only one button.

3.3.2.2 In the car

Same as in 3.2.2.2.

3.3.3 The following **minimum indicators** shall be provided.

3.3.3.1 On the landings

Same as in 3.2.3.1.

3.3.3.2 In the car

Same as in 3.2.3.2.

3.3.4 The following **optional indicators** may be provided.

3.3.4.1 On the landings

Same as in 3.2.4.1.

3.3.4.2 In the car

Same as in 3.2.4.2.

4 Specifications for single or duplex lifts with automatic doors

4.1 A sound signal is not necessary.

4.2 The white illuminated indicator arrows specified for each landing may be replaced by direction arrows in the car (see 3.2.3.2, fourth paragraph) provided they can be seen clearly from the landing.

5 Position of controls

5.1 Lift controls shall be located not higher than 1 800 mm above floor level.

5.2 For lifts which are designed to be used by handicapped people in wheelchairs, the control devices necessary for automatic operation and the alarm devices shall be placed between 900 mm and 1 200 mm above floor level on the side wall (on the slam post side in the case of side opening doors) and at a distance of at least 400 mm from the front and the back walls.

5.3 Within these limits, the arrangement of the controls is at the discretion of the manufacturer. However, it is recommended that the alarm button always be placed at the top.

6 Dimensions of the markings

The minimum height of the characters used in marking buttons shall be :

- 10 mm for capital letters and figures;
- 7 mm for small case letters.

The symbols used shall be such that all the markings are clear and legible.

7 Special provisions for illuminated devices

Where this International Standard refers to white buttons, arrows or signs, they may display a colour when illuminated.

8 Hand-rail

If hand-rails are provided in the car at least one of them shall be located on one car side, and on the slam post side in the case of side opening doors. Hand-rails shall be placed approximately 0,90 m above the car floor and spaced a small distance from the car wall.

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Table — Summary of buttons, signal and intercommunication devices

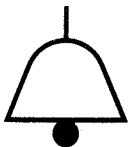
Clause cross-reference	Colour	Markings
3.1 Single push button		
3.1.2 Controls		
3.1.2.1 On the landings		
— 1 call button	Black or white	
3.1.2.2 In the car		
— floor button	Black or white	–2, –1, 0, 1, 2, 3, etc.
— alarm button	Yellow	Bell-shaped symbol [See note, 1)]
— door re-opening button (in the case of automatic doors)	Black or white	Stylised arrows [See note, 2)]
— stop device (if required by the safety standards in force)	Red	"STOP"
3.1.3 Minimum indicators		
3.1.3.1 On the landings		
— signal "in use"	Red	
— signal "lift here" (only for manually-operated doors and without vision panels)	Green	
3.1.3.2 In the car		
— illuminated car position indicator	No matter	–2, –1, 0, 1, 2, 3, etc.
— interphone, telephone or similar device (if required by the safety standards in force)	Not red	Symbol of the receiver when the telephone is hidden. [See note, 3)]
3.1.4 Optional indicators		
3.1.4.1 On the landings		
— Illuminated signal "not in use"	Red and white	Red disc with white line [See note, 4)]
3.1.4.2 In the car		
— Interphone, telephone or similar device (compulsory in some countries, see 3.1.3.2)	Not red	Symbol of receiver (when the telephone is hidden) [See note, 3)]
— Illuminated and possibly audible overload indicator (mainly for class IV lifts)	Red	Symbol of balance dial [See note, 6)]
3.2 Down collective control		
3.2.2 Controls		
3.2.2.1 On the landings		
— upper : 1 call button	Black or white	Downward arrow
— ground floor : 1 or 2 call buttons	Black or white	One downward arrow, one upward arrow
— lower : 1 call button (alternative)	Black or white	Upward arrow [See note, 5)]

Table — Summary of buttons, signal and intercommunication devices (concluded)

Clause cross-reference	Colour	Markings
3.2.2.2 In the car		
— floor button	Black or white	—2, —1, 0, 1, 2, 3, etc.
— alarm button	Yellow	Bell-shaped symbol [See note, 1)]
— door re-opening button (for automatic doors only)	Black or white	Stylized arrows [See note, 2)]
— stop device (only if required by the safety standards in force)	Red	"STOP"
3.2.3 Minimum indicators		
3.2.3.1 On the landings		
— illuminated indicator "call registered"	White	
— illuminated and audible indicator (except for the case of clause 3 as far as the audible indicator is concerned)	White	Stylized downward and/or upward arrow(s) [See note, 5)]
— signal "lift here" (in case of manually-operated doors and without vision panels)	Green	
3.2.3.2 In the car		
— illuminated "call registered" indicator	White	
— illuminated position indicator	No matter	—2, —1, 0, 1, 2, 3, etc.
— illuminated indicator of future direction (in the case of clause 4)	White	Stylized downward and upward arrows [See note, 5)]
— interphone, telephone or similar device (if required by the safety standards in force)	Not red	Symbol of receiver (when the telephone is hidden) [See note, 3)]
3.2.4 Optional indicators		
3.2.4.1 On the landings		
— illuminated "not in use" indicator	Red	Red disc with white line [See note, 4)]
3.2.4.2 In the car		
— interphone, telephone or similar device (compulsory in some countries see 3.2.3.2)	Not red	Symbol of receiver when the telephone is hidden [See note, 3)]
— illuminated and possibly audible, overload indicator (mainly for class IV lifts)	Red and white	Symbol of a balance dial [See note, 6)]
3.3 Directional collective control in the two directions of operation		
The same as for down collective control except that there will be two call buttons at each intermediate landing with the corresponding arrow in the desired direction and only one call button at each terminal landing.		

NOTE — The symbols used shall be approximately as follows. These are, however, only typical and need not be reproduced exactly.

1) Alarm button



Bell-shaped symbol to IEC Publication 417, *Graphical symbols for use on equipment — Index, survey and compilation of single sheets*.

2) Door re-opening button



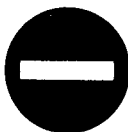
Stylized arrows.*

3) Telephone



Stylized receiver, handset symbol to ISO 7001, *Public information symbols*.

4) "not in use" signal



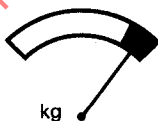
Red disc with white line similar to the "do not enter" signs.

5) Direction indication on
— call button
— indicator arrows
— direction arrows



Stylized arrows.*

6) Overload indicator



Stylized balance dial.

* Non-stylized arrows or arrow symbols to ISO 7000, *Graphic symbols — Index, survey and compilation of single sheets* (at present at the stage of draft), or ISO 4196, *Graphic symbols — use of arrows* (at present at the stage of draft) may be used as well.