



EN81.20 & EN81.50 RULES





GIOVENZANA INTERNATIONAL B.V.

Giovenzana International B.V., widely recognized as a leader in elevator technology and the name that operators associate with security and quality, has created the new GM series of inspection boxes (complies with International Standard EN 81.20 and EN 81.50).

Its new design philosophy incorporates these rules:

- Mushroom emergency device in accordance with IEC / EN 60947-5-5;
- Mandatory Run button;
- Operators are always protected against accidental impacts;
- Cam switch (not selector) binding to the norm for inspection operation with solid drive and without margin of error in the switching;
- Contact blocks with spring clamp conform to EN 60068-2-6 and EN 60068-2-27 and vibration resistant with IP20 degree of protection;
- AC-15 and DC-13 contact blocks in accordance with EN 60947-5-1:2005 (1M cycles).

With over 60 years of experience in the lift sector, Giovenzana International B.V. offers a wide range of standard products for all installation types with updated specifications and safety guidelines.

GENERAL CHARACTERISTICS

These products comply with European standards **EN 81.20 and EN 81.50** (safety rules for the construction and installation of lifts), North America **CSA-B44.1 / ASME-A17.5** (Elevator and Escalator Electrical Equipment) and Russia **GOST33984.1** (Safety rules for the construction and installation of lifts).

They are also resistant to vibrations and shocks according to EN 60068-2-26, EN 60068-2-27 and EN 60068-2-29.

The components are manufactured in accordance with the respective product standards IEC 947-3, IEC 947-5-1, EN 60947-3, EN 60947-5-1, UL 508, IEC 204-1, EN 60204-1, EN ISO 13850 and to the RoHS, PFOS, RAEE, REACH directives.

They are also IMQ, CCC, EAC and UL approved. Standard executions are accompanied by a wide range of special and customized executions according to customer specifications.

- Pit bottom stations, recall drive control units, inspection and maintenance stations.
- Compliance: EN 81.20, EN 81.50, EN ISO 13850, CSA-B44.1/ASME-A17.5, SIL1, SIL2;
- CSA approval;
- Enclosures made of self-extinguishing thermoplastic material;
- Protection class EN 60529: NEMA 4X, IP65 without socket, IP54;
- With socket, terminal connections IP20;
- Vibration resistance as EN 60068-2-26 and EN 60069-2-27;
- Shock resistance as EN 60068-2-29;
- Connections: spring clamp contacts for push buttons, mushrooms, screws terminals for cam switches, buzzers and socket outlets.
- Ambient temperature: operating -25°+70°C, storage -30°+70°C.

ELECTRICAL CHARACTERISTICS

Conformity	
Approvals	
Rated insulation voltage Ui	V
Rated impulse withstand voltage Uimp	kV
Rated thermal current Ith/Ithe	A
Frequency	Hz
Rated operating current Ie:	V
AC - 15 alternate current	A
DC - 13 direct current	V
AC - 21A - AC - 22A alternate current	A
Conditional short circuit withstand current	A
Fuse rating gG	A
Switching mechanism	A
Contact blocks	
Positive	
Screws and clamps	flex cable and solid cable n. 1 min/max mm ²
Connections:	n. 2 min/max mm ²
	AWG
UL508 characteristics: general use	
Standard motors load	1 phase - 2 poles
	3 phases - 3 poles
Heavy Duty (HD) category	

* Suitable for use as switch disconnector 0-190° 2-3-4 poles.

CONTACT BLOCKS

IEC/EN 60947-5-1, UL508	IEC/EN 60947-3, UL508
IMQ, CCC, EAC, UL, RINA	
690	690
4	4
16	20/16
50/60	50/60
24 60 110 240 400 500 690	-
10 8 6 5 4 4 2	-
24 48 60 110 250	-
2 2 1 0,4 0,4	16A-690V
-	5000
1000	20A - 690V
10A - 500V	
slow break double gap contacts	
contact blocks NC positive open ⊕ *	positive open ⊕ *
Spring clamp connections	M3,5
0,5/2,5	0,75/4
0,5/2,5	0,75/2,5
20-12	16-12
10A 600V AC - 2,5A 125V DC	16A 600V AC
-	1HP (16FLA) 120V AC
-	1,5HP (10FLA) 240V AC
-	3HP (14,4FLA) 200V AC
-	5HP (15,2FLA) 240V AC
-	7,5HP (11FLA) 480V AC
-	7,5HP (9FLA) 600V AC
A600 - Q600	-



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The new **EN 81.20** replace the EN 81-2 & EN 81-1.
Contains requirements for complete passenger or goods passenger lift installations independent from the driving system.

EN 81.20 MAIN FEATURES

In the pit the following items must be present:

- 1 An emergency device (STOP);
- 2 An inspection box operable within 0,30 m of a refuge space;
- 3 A socket;
- 4 Means to switch the well lighting;
- 5 An audible and flashing warning device.

5.2.1.5

Electric equipment in the pit and in machinery spaces and pulley rooms.

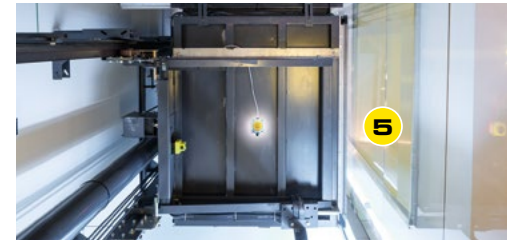
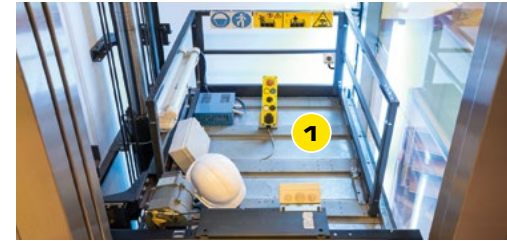
5.2.1.5.1

Placement.

Stopping device(s) visible and accessible on opening the door(s) to the pit, and from the pit floor, in conformity with the requirements of 5.12.1.11.

For pits with depth less than or equal to 1,60 m the stopping device(s) shall be located:

- within a vertical distance of minimum 0,40 m above the lowest landing floor and a maximum of 2,0 m from the pit floor;
- within a horizontal distance of maximum 0,75 m from the door frame inner edge.



5.12.1.5 Control of inspection operation.

5.12.1.5.1 Design requirements.

5.12.1.5.1.1

To facilitate inspection and maintenance, a readily operable inspection control station shall be permanently installed:

1. On the car roof;
2. In the pit;
3. In the car (if there are areas of work in the car);
4. On a platform (if there are areas of work on the platform).

5.12.1.5.1.2

The inspection control station shall consist of:

- a switch (inspection operation switch) which shall satisfy the requirements for electric safety devices (5.11.2). This switch, which shall be bi-stable, shall be protected against involuntary operation;
- direction push buttons "UP" and "DOWN" protected against accidental operation with the direction of movement clearly indicated;
- a push button "RUN" protected against accidental operation;
- a stopping device in conformity with 5.12.1.11.

The control station may also incorporate special switches protected against accidental operation for controlling the mechanism of doors from the car roof.

Return to normal operation of the lift

The return to normal operation of the lift shall only be effected by switching the inspection operation switch(es) back to normal. Additionally return to normal operation of the lift from pit inspection station shall only be made under following conditions:

1. Landing doors giving access to the pit are closed and locked;
2. All stopping devices in pit are inactive;
3. Electrical reset device outside the well is operated:
 - a) In conjunction of emergency unlocking key of the door giving access to the pit, or
 - b) Accessible to authorised persons only, e. g. inside a locked cabinet located in close proximity of the door giving access to the pit.

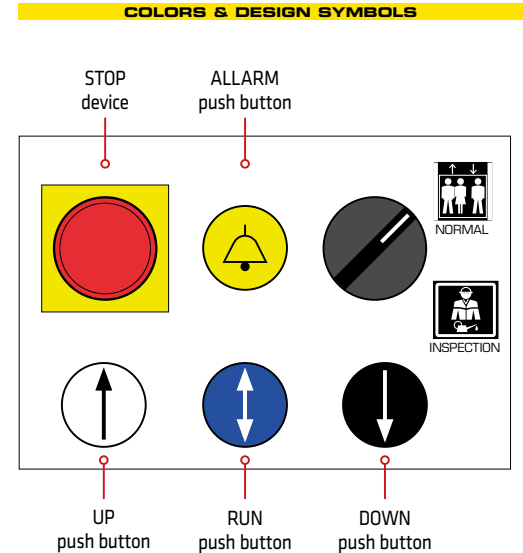
Precautions shall be taken to prevent all involuntary movement of the car in the event of inspection operation. The movement of the car in inspection operation shall solely depend on constant pressure on a direction and the "RUN" push button. It shall be possible to operate the "RUN" button and a direction button with one hand simultaneously.

The inspection operation electric safety device shall be bypassed by one of the following solutions:

- A series connection of a direction and the "RUN" push button. These push buttons shall belong to the following categories as defined in EN 60947-5-1:2004:
 - a) AC-15 for safety contacts in A.C. circuits
 - b) DC-13 for safety contacts in D.C. circuits

The durability shall be at least 1.000.000 operating cycles mechanical and electrical related to the applied load.

- An electric safety device in accordance with 5.11.2 which is monitoring correct operation of direction and "RUN" push buttons.





1. CAR ROOF MAINTENANCE CONTROL STATION



GM750

IP54 Maintenance station.



GM751

IP65 Maintenance station.



GM822

IP54 Maintenance station.

2. CAR ROOF DEVICES WITH 5 LUX LED LIGHT

5.4.10.4

There shall be emergency lights with an automatically rechargeable emergency supply, which is capable of ensuring a lighting intensity of at least 5 lux for 1 h:

- a) at each alarm initiation device in the car and on the car roof;
- b) in the centre of the car 1 m above the floor;
- c) in the centre of the car roof, 1 m above the floor.

This lighting shall come on automatically upon failure of the normal lighting supply.



GM034

Maintenance station with 5 LUX white light and hole plug.

GMS169

Maintenance station with 5 LUX white light and alarm button.

GM033

Maintenance station with 5 LUX white light, alarm button and socket.



3. MAINTENANCE STATION WITH 50/5 LUX LED LIGHT

5.2.1.4 Lighting

5.2.1.4.1

The well shall be provided with permanently installed electric lighting, giving the following intensity of illumination, even when all doors are closed, at any position of the car throughout its travel in the well:

- a) at least 50 lux, 1,0 m above the car roof within its vertical projection;
- b) at least 50 lux, 1,0 m above the pit floor everywhere a person can stand, work and/or move between the working areas;
- c) at least 20 lux outside of the locations defined in a) and b), excluding shadows created by car or components.

To achieve this, sufficient number of lamps shall be fixed throughout the well and where necessary additional lamp(s) may be fixed on the car roof as a part of the well lighting system. Lighting elements shall be protected against mechanical damage. The supply for this lighting shall be in conformity with 5.10.7.1.

NOTE: For specific tasks additional temporary lighting may be necessary, e.g. by hand lamp.

The light meter should be oriented towards the strongest light source when taking lux level readings.



GM036/EU

Maintenance station with LED LIGHT
50 LUX (@230 VAC) / 5 LUX (@12 VACDC)
with schuko socket and selector.

GM036/UK

Maintenance station with LED LIGHT
50 LUX (@230 VAC) / 5 LUX (@12 VACDC)
with UK socket and selector.

On request available with other tipologies of sockets.



4. UNDER THE CAR DEVICE

5.12.1.8.3 (rif.G)

An audible signal at the car and a flashing light under the car shall be activated during movement. The sound level of the audible warning shall be minimum 55 dB(A) below the car at 1 m distance.



GMS 131

Maintenance station with yellow flashing light (without 5 LUX) and continuous buzzer.



GMS 167

Maintenance station with yellow flashing light (without 5 LUX) and continuous buzzer and alarm button.



5. MAINTENANCE PIT STATION

5.12.1.5.1.2

The inspection control station shall consist of:

1. a switch (inspection operation switch) which shall satisfy the requirements for electric safety devices (5.11.2). This switch, which shall be bi-stable, shall be protected against involuntary operation;
2. direction push buttons "UP" and "DOWN" protected against accidental operation with the direction of movement clearly indicated;
3. a push button "RUN" protected against accidental operation;
4. a stopping device in conformity with 5.12.1.11.



16000062

TLP5 Holder.



TLP5

Maintenance pit station.

6. BYPASS DEVICE

5.12.1.8

Landing and car door bypass device

5.12.1.8.1

For maintenance on landing door, car door and door locking contacts a bypass device shall be provided in the control panel or emergency and test panel.

5.12.1.8.2

The device(s) shall be a switch protected against unintended use by mechanically movable means (e.g. cover, security cap) permanently installed, or a plug socket combination which shall satisfy the requirements for electric safety devices according to 5.11.2.

5.12.1.8.3

The landing and car door bypass devices shall be identifiable by the word "BYPASS" written on or near to them. In addition, the contacts to be bypassed shall be indicated with the identifiers according to the electrical diagrams (alternatively the symbol together with identifier according to electric diagrams can be used).

NOTES:

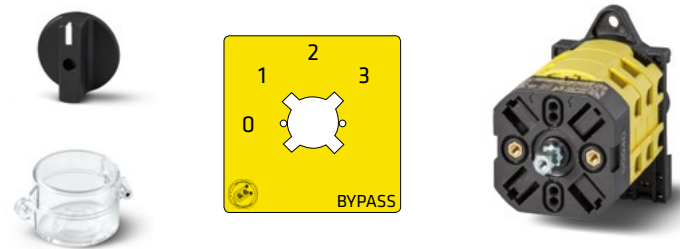
Many solutions are available according to electric scheme.

The two solutions outlined on the right are examples to give indication of the available Bypass type.

OPTION 1
Bypass device with housing



OPTION 2
Rear fixing Bypass device



Fixing screws included.



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