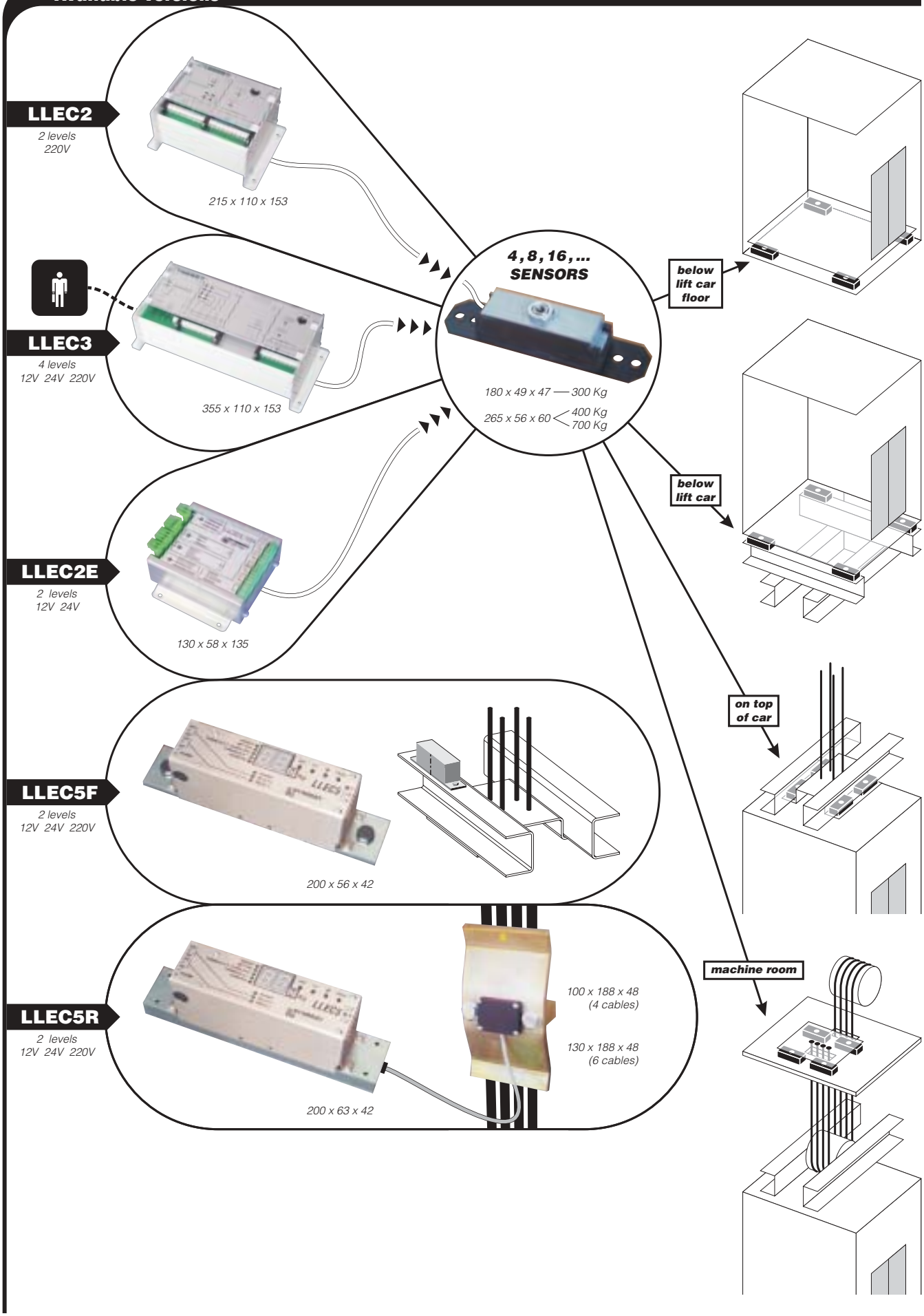
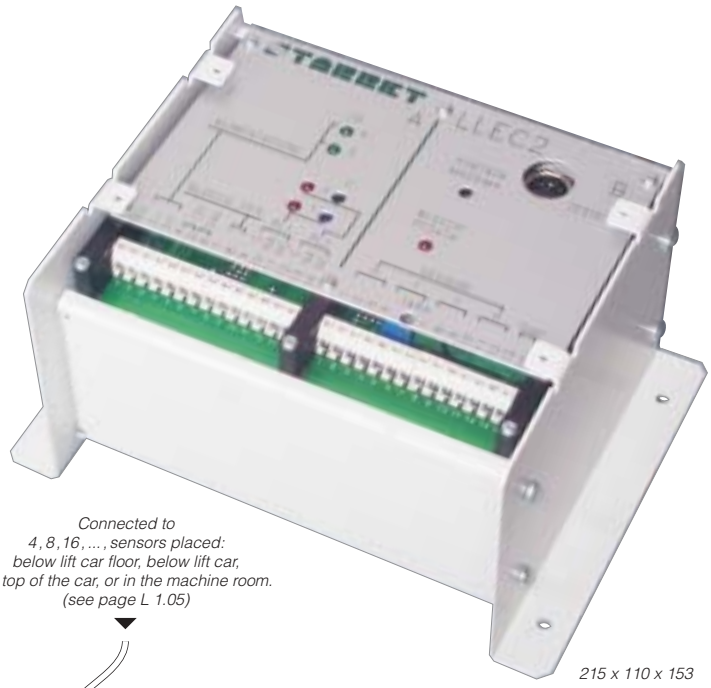
Available versions



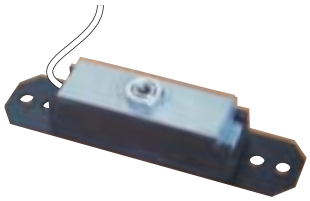
General description, technical features and codes

The LLEC2 system allows the weight of the car to be measured by 4 sensors (or multiples of four) placed below lift car floor, below lift car, on top of the car or in the machine room. Three types of sensors are available, according to the weight measured by each of them (up to 300, 400 and 700 Kg).
The control unit has very small dimensions, 215 x 110 x 153 mm, and is preferably fixed on top of the car.
Weight calibration is carried out with a specific device (not supplied with LLEC2). This can be used for other installations equipped with LLEC2 and LLEC3 systems; The TESTER electronically simulates the required weight.
Control unit outputs go to 2 relays which are triggered when the pre-set weight is reached. The system operates on both hydraulic and traction installations.



215 x 110 x 153

Connected to 4, 8, 16, ..., sensors placed: below lift car floor, below lift car, on top of the car, or in the machine room. (see page L 1.05)



180 x 49 x 47 — 300 Kg
265 x 56 x 60 — 400 Kg / 700 Kg

FUNCTIONAL FEATURES

- simulation of load with a known weight corresponding to at least 25% of the overload
- 2 levels to be selected by operator
- 4 or 8 sensors connected according to various capacities and dimensions of lift floors and cars
- max error on scale: 2%
- 4 trimmers for selection of levels, maximum load and tare outputs on clean relay contacts
- 2 LEDs to view state of relays
- 2 LEDs to show electrical supply
- 1 LED to show circuit block
- possibility to connect load displays LDP1 and LDP2
- weight block circuit to eliminate weight variations during lift operation

ELECTRICAL FEATURES

- power input 220V AC
- relay for levels C-NO-NC
- protection fuse 1A
- outputs: clean relay contacts 3A 220V AC / 1A 80V DC
- weight block input 10mA ÷ 1A AC/DC

MECHANICAL FEATURES

- dimensions: 215 x 110 x 153 mm
- distance between fixing holes 110, 195 mm
- control unit fixed on top of the car
- transparent polycarbonate cover, for spray protection, LED and contact viewing

Tester

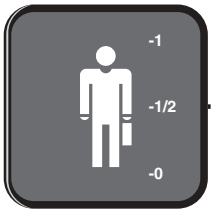
100 x 100 x 28

CODES	220V	max 300 Kg	max 400 Kg	max 700 Kg	Tester
ELECTRONIC UNIT	LLCS2.220				
* WEIGHT SENSOR		LLSP3	LLSC4	LLSC7	
CALIBRATION DEVICE					LLTSS

* For spare parts, please specify if T or P

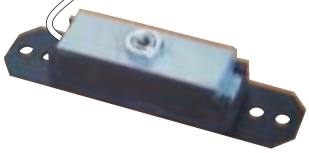
General description, technical features and codes

The LLEC3 system allows the weight of the lift car to be measured by 4 sensors (or multiples of four) placed below lift car floor, below lift car, on top of the car or in the machine room. Three types of sensors are available, according to the weight measured by each of them (up to 300, 400 and 700 Kg). An internal electronic board (on request) allows the system to be connected to load display LLDC1 (see page L 1.10).
The control unit, with dimensions 355 x 110 x 153 mm, is preferably fixed on top of the car.
Weight calibration is carried out with a specific device (not supplied with LLEC3). This can be used for other installations equipped with LLEC3 and LLEC2 systems; The TESTER electronically simulates the required weight.
Control unit outputs go to 2 relays which are triggered when the pre-set weight is reached. The system operates on both hydraulic and traction installations.

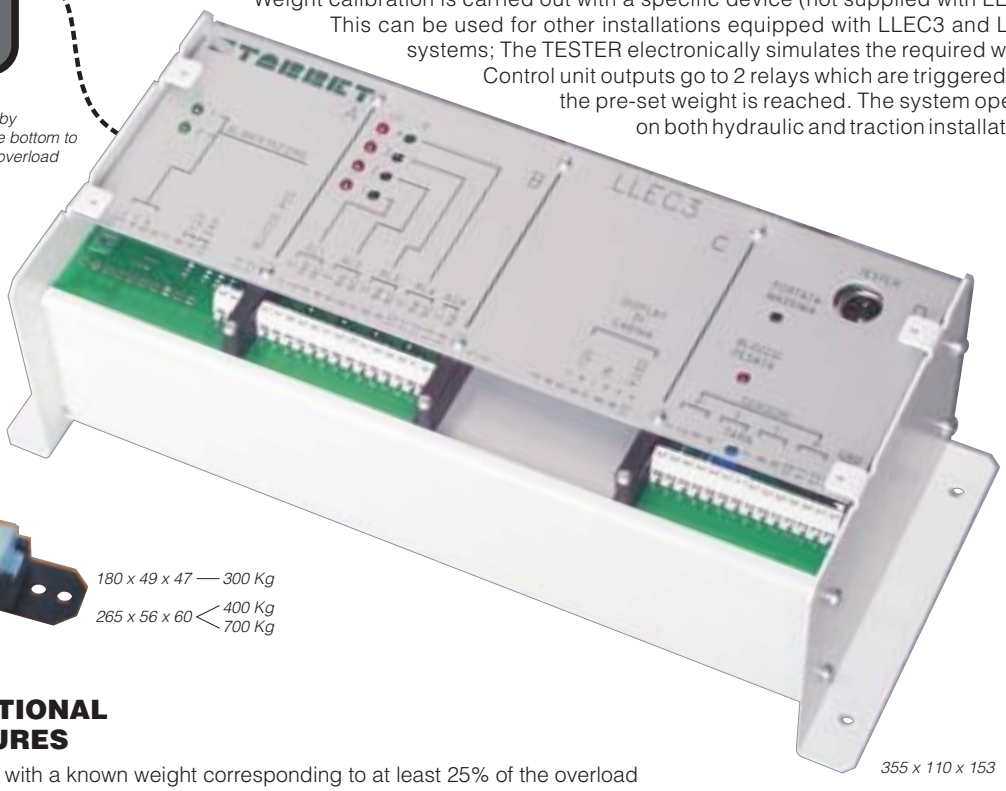


Load display LLDC1
Indicates 7 weight levels by illuminating progressively from the bottom to the top and flashing in case of overload (see page L 1.10)

Connected to 4, 8, 16, ..., sensors placed: below lift car floor, below lift car, on top of the car, or in the machine room. (see page L 1.05)



180 x 49 x 47 — 300 Kg
265 x 56 x 60 < 400 Kg, 700 Kg



355 x 110 x 153

FUNCTIONAL FEATURES

- simulation of load with a known weight corresponding to at least 25% of the overload
- 4 levels to be selected by operator; possibility of adding 2 additional output relays where more than the standard 4 levels are required
- 4 or 8 sensors connected according to various capacities and dimensions of lift floors and cars
- max error on scale: 2%
- 6 trimmers for selection of levels, maximum load and tare outputs on clean relay contacts
- 4 LEDs to view state of relays
- 2 LEDs to show electrical supply
- 1 LED to show circuit block
- possibility to connect, apart from load displays LDP1 and LDP2, also to linear load displays LDC1 for immediate indication of lift car load
- weight block circuit to avoid weight variations during lift operation

MECHANICAL FEATURES

- dimensions: 355 x 110 x 153 mm
- distance between fixing holes 110, 335 mm
- control unit fixed on top of the car
- transparent polycarbonate cover, for spray protection, LED and contact viewing

ELECTRICAL FEATURES

- power input 220V AC; on request 12V/24V/125V AC
- relay for levels C-NO-NC
- protection fuse 1A
- outputs: clean relay contacts 3A 220V AC / 1A 80V DC
- weight block input 10mA ÷ 1A AC/DC

Tester

100 x 100 x 28

CODES	12V 24V	220V	max 300 Kg	max 400 Kg	max 700 Kg	Tester
ELECTRONIC UNIT	LLCS3.1224	LLCS3.220				
INTERFACE for *DISPLAY LLDC1*	LLAD1					
*** WEIGHT SENSORS**			LLSP3	LLSC4	LLSC7	
CALIBRATION DEVICE						LLTSS

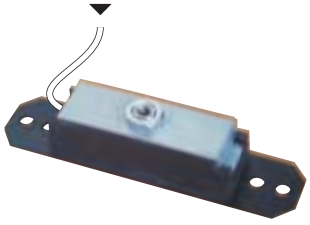
* For spare parts, please specify if T or P

General description, technical features and codes

The LLEC2E system allows the weight of the car to be measured by 4 sensors (or multiples of four) placed below lift car floor, below lift car, on top of the car or in the machine room. Three types of sensors are available, according to the weight measured by each of them (up to 300, 400 and 700 Kg).
The electronic unit has very small dimensions, 215 x 110 x153 mm, and is preferably fixed on top of the car.
Calibration of the electronic unit doesn't require external devices: it is carried out by loading the lift car with the weight corresponding to the required level and by turning the relative potentiometer until the relevant LED lights up (attracting the relay). A *weight block* is also provided, that "freezes" weight measurement during lift operation, thus avoiding false measures. Outputs from the electronic unit go to 2 relays which are triggered when the pre-set weight is reached.
The system can be installed on both traction and hydraulic lifts.

130 x 58 x 135

Connected to 4, 8, 16, ..., sensors placed: below lift car floor, below lift car, on top of the car, or in the machine room. (see page L 1.05)



180 x 49 x 47 — 300 Kg
265 x 56 x 60 < 400 Kg / 700 Kg

FUNCTIONAL FEATURES

- 2 levels to be selected by operator
- 2 trimmers for selection of levels
- outputs on clean relay contacts
- 2 LED to view state of relays
- 1 LED to show electrical supply
- 1 LED to show weight block
- possibility of connecting load displays LDP1 and LDP2
- weight block circuit to eliminate weight variations during lift operation

MECHANICAL FEATURES

- dimensions: 130 x 58 x 135 mm
- distance between fixing holes 80,124 mm
- control unit fixed on top of the car

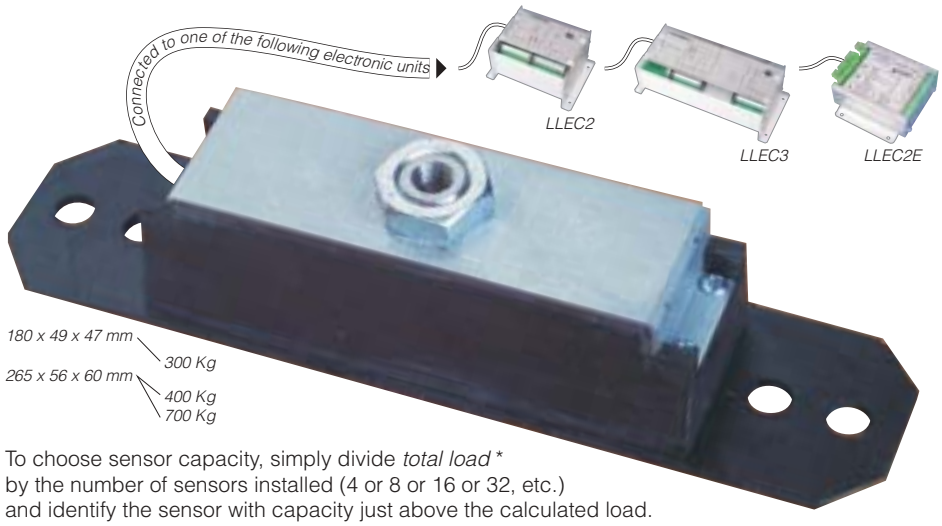
ELECTRICAL FEATURES

- power input 12V AC/DC 24V DC
- maximum power absorbed 200mA
- relay for levels C-NO-NC
- protection fuse 1A
- outputs: clean relay contacts 3A 250V AC / 1A 80V DC
- weight block input 40mA ÷ 1A AC/DC

CODES	12V 24V	max 300 Kg	max 400 Kg	max 700 Kg
ELECTRONIC UNIT	LLCS2/E.1224			
*** WEIGHT SENSORS**		LLSP3	LLSC4	LLSC7

* For spare parts, please specify if T or P

Weight sensor



Sensors measure the weight variation in the lift car and transmit it to the electronic unit to which they are connected. They fit in various positions of the installation (below lift car floor, below lift car, on top of the car or in the machine room) and must be at least 4 in number (or multiples of four).

Each sensor contains calibrated steel rods, protected by rubber vibration-proof buffers, and a strain gauge (a special resistance whose value varies according to its length) to measure the inclination strain. Three different standard versions of sensors, for different loads (300, 400 and 700 Kg) are available.

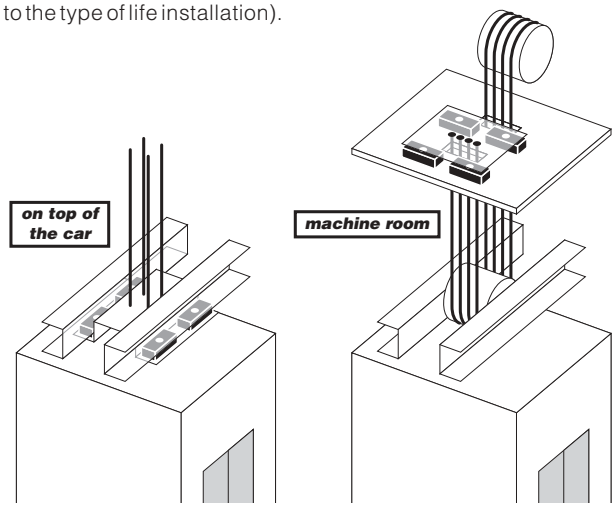
To choose sensor capacity, simply divide *total load* *
by the number of sensors installed (4 or 8 or 16 or 32, etc.)
and identify the sensor with capacity just above the calculated load.

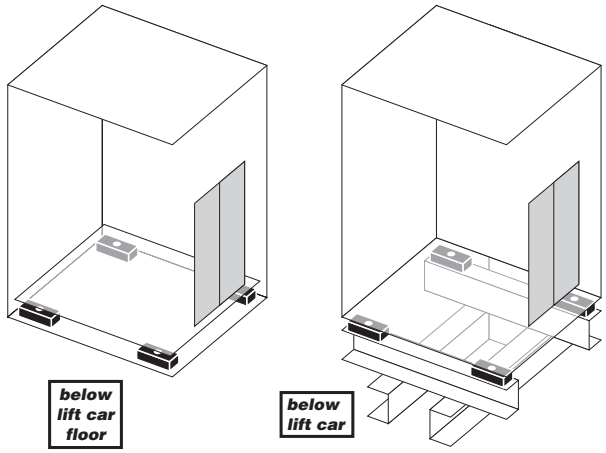
* the *total load* is calculated by adding the tare with the maximum lift car load:
the tare is the weight of the fixed installations controlled by detectors
(lift car floor, lift car, lift car + roof, lift car + roof + cables, according to the type of life installation).

For example:

installation below the lift car with 4 sensors:

- lift car weight = 600 Kg
- maximum lift car load = 800 Kg
- total weight on each sensor = 350 Kg
  (800 Kg + 600 Kg = 1400 Kg / 4 = 350 Kg)
- sensor chosen = LLSC4 (capacity 400Kg)





CODES	max 300 Kg	max 400 Kg	max 700 Kg
WEIGHT SENSOR	LLSP3	LLSC4	LLSC7

Calibration device

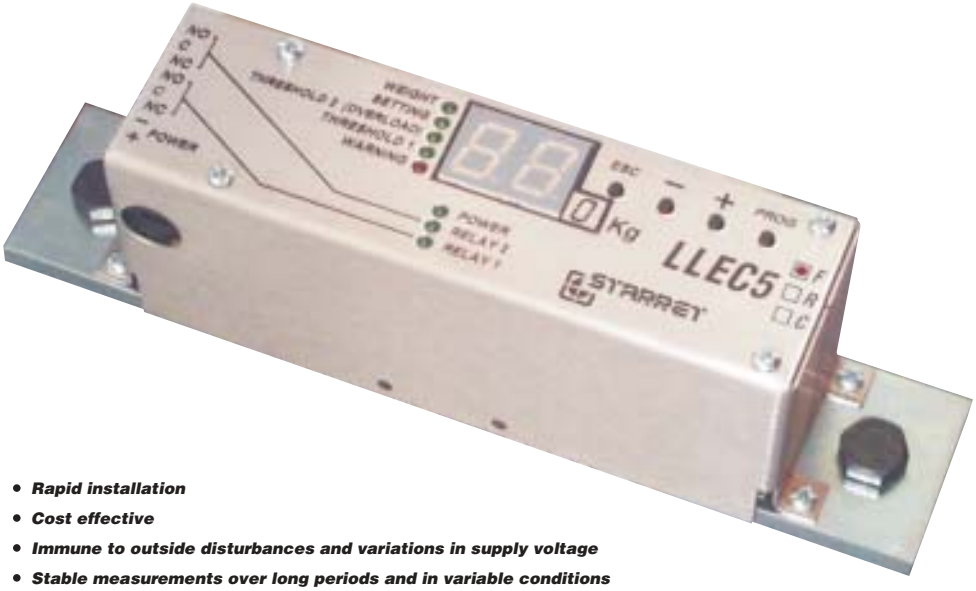
To calibrate the device, it is sufficient to load the car with a known weight, corresponding to at least 20% of total weight. Load levels are then set on the device itself in order to fix the corresponding intervention levels. This device therefore avoids total car loading operations, which are particularly uncomfortable especially with big installations.

Tester

100 x 100 x 28

CODES	Tester
CALIBRATION DEVICE	LLTSS

General description, technical features and codes



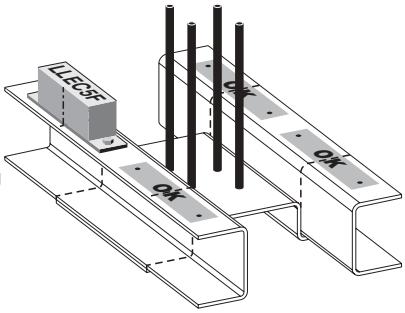
- ***Rapid installation***
- ***Cost effective***
- ***Immune to outside disturbances and variations in supply voltage***
- ***Stable measurements over long periods and in variable conditions (the system zero-sets automatically)***

200 x 56 x 42

The new LLEC5F system measures the deformation of the elevator crosshead, thus providing load control.
Also available with flat cables weight compensation, as well as compensation chains and possible mechanical disturbances.
The sensor and electronic unit are contained in one box of very small dimensions, 200 x 56 x 42 mm, which is fixed on the crosshead of the lift car near the rope anchorage with two M8 bolts.
Installation and calibration are greatly simplified thanks to the use of quick-fit connectors and microprocessor.
Outputs from the box go to two relays which are triggered when the pre-set weight is reached.
Calibration of the electronic box does not require external devices and is carried out by using push-buttons and displays on the box itself.
The system can be installed on traction lifts and some types of hydraulic lifts (please contact our Technical Department).

FUNCTIONAL FEATURES

- simulation of load with a known weight corresponding to at least 25% of the overload
- 2 levels to be selected by operator
- 4 push-buttons for level setting, scale and zero-setting
- 2 digits indicating weight and levels
- outputs on clean relay contacts
- 2 LEDs to view state of relays
- 1 power LED to show electrical supply
- 5 LEDs to show state (weight, zero-setting, level 1 and 2, warning of installation errors)
- supply input and relay output on connectors pitch 3,96 mm
- elimination of brief variations in weight measure
- constant automatic calibration of the device
- weight block circuit to eliminate weight variations during lift operation



MECHANICAL FEATURES

- dimensions: 200 x 56 x 42 mm
- fixing to elevator crosshead with two M8 bolts
- distance between fixing holes 170 mm
- electronics fixed on lower side of a metal plate solid with the detector
- smoke colour shock-resistant polystyrene cover, for spray protection, LED and digit viewing

ELECTRICAL FEATURES

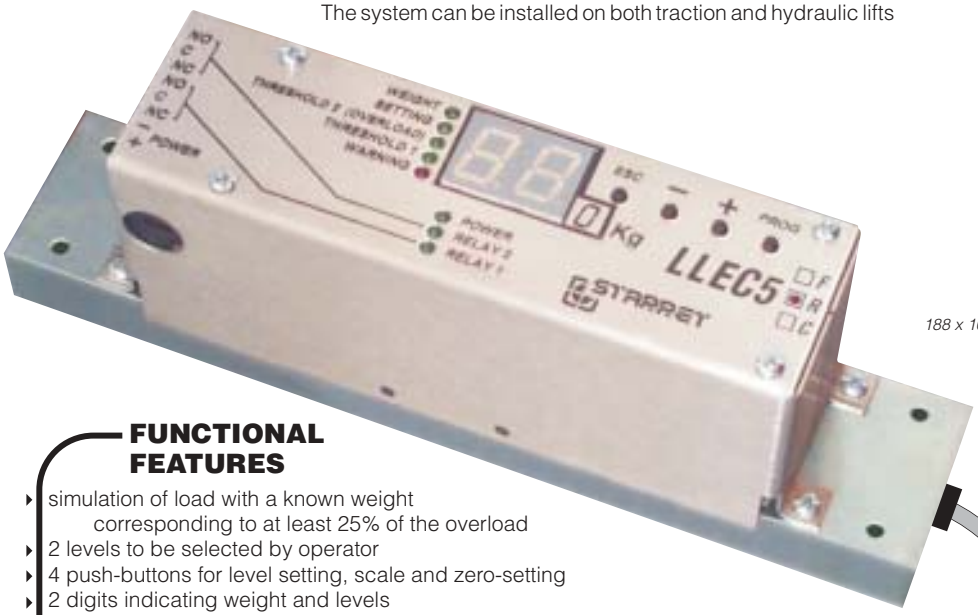
- power input 12V AC/DC, 24V AC/DC, 220V AC (220V AC with external transformer)
- maximum power absorbed 5VA
- relay for levels C-NO-NC
- protection fuse 1A
- outputs: clean relay contacts 3A 220V AC / 1A 80V DC
- weight block input 40mA ÷ 2A AC/DC

ITEM CODES FOR CENTRAL UNIT	12V 24V	220V *(external transformer included)*
without compensation	LLEC5F	LLEC5F.220
with compensation ***(compensation KIT not included)***	LLEC5F/C	LLEC5F/C.220

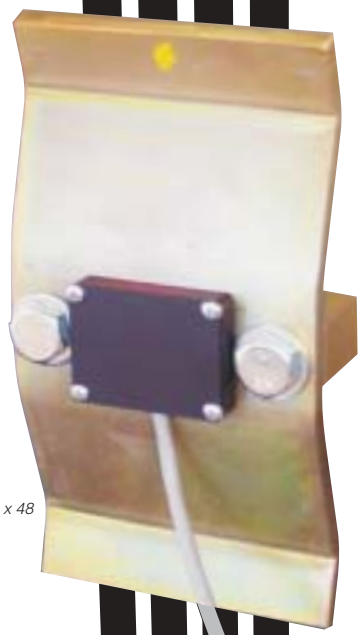
ITEM CODES FOR OPTIONAL COMPONENTS	KIT compensation	transformer for LLEC5 220V
(for both LLEC5F and LLEC5R)	LLEC5/CKIT	LLEC5/TR.220

General description, technical features and codes

The new LLEC5R system measures the tension increase of traction ropes, on which the sensor is fixed (for 2 ÷ 7 cables from 8 to 13 mm diameter). The maximum overload (weight of lift car + structure + maximum load) is 5.000 Kg • Also available with flat cables weight compensation, as well as compensation chains and possible mechanical disturbances • The electronic control unit has very small dimensions, 200 x 63 x 42 mm, and is preferably fixed on top of the car • Installation and calibration are greatly simplified thanks to the use of quick-fit connectors and microprocessor. • Outputs from the control unit go to two relays, which are triggered when the pre-set weight is reached • Calibration of the electronic unit doesn't require external devices and is carried out by using push-buttons and displays on the box itself • The system can be installed on both traction and hydraulic lifts



200 x 63 x 42



188 x 100 x 48

FUNCTIONAL FEATURES

- simulation of load with a known weight corresponding to at least 25% of the overload
- 2 levels to be selected by operator
- 4 push-buttons for level setting, scale and zero-setting
- 2 digits indicating weight and levels
- outputs on clean relay contacts
- 2 LEDs to view state of relays
- 1 power LED to show electrical supply
- 5 LEDs to show state (weight, zero-setting, level 1 and 2, warning of installation errors)
- supply input and relay output on connectors pitch 3,96 mm
- elimination of brief variations in weight measure
- constant automatic calibration of the device
- weight block circuit to eliminate weight variations during lift operation

MECHANICAL FEATURES

- dimensions: control unit: 200 x 63 x 42 mm
  sensor 4 ropes: 100 x 188 x 48 mm
  sensor 6 ropes: 130 x 188 x 48 mm
- distance between fixing holes 26, 180 mm
- electronic unit fixed on top of the car
- smoke colour shock-resistant polystyrene cover, for spray protection, LED and digit viewing

ELECTRICAL FEATURES

- power input 12V AC/DC, 24V AC/DC, 220V AC (220V AC with external transformer)
- maximum power absorbed 5VA
- relay for levels C-NO-NC
- protection fuse 1A
- outputs: clean relay contacts 3A 220V AC / 1A 80V DC
- weight block input 40mA ÷ 2A AC/DC

ITEM CODES FOR CENTRAL UNIT + SENSOR	12V 24V		220V (external transformer included)	
	sensor for 2 ÷ 7 cables Ø 8 ÷ 10 mm	sensor for 2 ÷ 6 cables Ø 11 ÷ 13 mm	sensor for 2 ÷ 7 cables Ø 8 ÷ 10 mm	sensor for 2 ÷ 6 cables Ø 11 ÷ 13 mm
without compensation	LLEC5R.7/10	LLEC5R.6/13	LLEC5R.7/10.220	LLEC5R.6/13.220
with compensation (compensation KIT not included)	LLEC5R.7/10/C	LLEC5R.6/13/C	LLEC5R.7/10/C.220	LLEC5R.6/13/C.220

ITEM CODES FOR OPTIONAL COMPONENTS	KIT compensation	transformer for LLEC5 220V
(for both LLEC5F and LLEC5R)	LLEC5/CKIT	LLEC5/TR.220