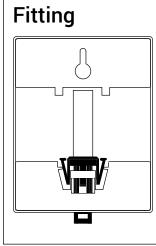# EWS-102 CONTROL UNIT   USER MANUAL

Product Overview

The EWS 102 Elevator Load Weighing Sysytem is a compact easy to install device that provides a comprehensive control system for use with a range of sensor/application types. The EWS 102 standard model monitors the elevator load and provides several alarm outputs. It automatically adjusts to prevent errors caused by friction/compensation chain, and includes intelligent software that enables it to auto zero calibrate when the elevator is inactive. The EWS 102 analog models perform all the functions of the standard model but provides pre torque control via a voltage or current analog output.
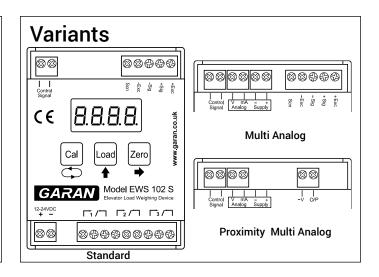
Additional Information

In addition to this user manual, there are calibration and setup flow charts as well as suplemenatry information sheets and data sheets for the EWS 102 and sensors supplied by Garan.

Using the EWS 102

Fitting

The EWS 102 can be mounted either on a DIN rail or on a flat surface using a single screw mounting aperture in the rear plate.

Variants

Multi Analog

Proximity Multi Analog
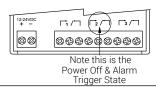
Standard

Wiring: Sensor & Relays

Wire the chosen sensor type to the control unit - see separate data sheet for colour coding.

Wire the NO/NC alarm relays to each required alarm input.

Note this is the Power Off & Alarm Trigger State

Control Signal

Control Signal

If required, wire the control signal input to receive a suitable signal indicating the car has stopped at the landing with the doors opening or closing, for example the brake open close circuit.

If the control signal function is not going to be used, do not remove the link after calibration. This will allow the EWS 102 to remain in continuous weighing mode.

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System Programming

Once you have fitted the system, power up the EWS 102 and configure it to the specific requirements of the installation. The EWS 102 is configured using straightforward step-by-step procedures using the LED screen and three multifunction keys as follows:

Entering System Setup/Calibration Modes

Press the `Cal` and `Load` buttons (display shows: `CAL`) and then press:

- `Cal` for the system setup menus (display shows `5y5t`)
- `Zero` for zero calibration (display shows `2Ero`)
- `Load` for load calibration (display shows `LOAd`)

Navigation

Use the ⬆ button to step through the menu items. Press ➡ to view the value of a menu item

Editing Values
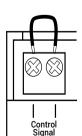
When a value is displayed, use ⬆ to select each digit to edit (selected digit flashes) and use ➡ to step through the value for that digit. Once the required value is displayed press ⟳ to save it.
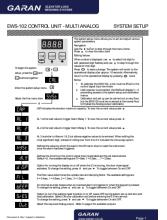
The system will revert to the operational display after approx. 10 seconds. Alternatively, return to the display by pressing ⟳ twice.

System Setup

Before starting the setup process, ensure that you have the correct *Calibration and Setup* flowchart for the EWS 102 control unit you are using and all the relevant data (see table) to enter the required user values.

To enter System Setup and Calibration mode ensure a link is fitted to the control signal input terminals. (see page 1)

Control Signal

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System Setup

Setting	Meaning	Default Value	User Value	Connected to	Comment
CAP	Elevator capacity	1000kg		N/A	
AL 1	Relay 1 trigger value	1100kg			Must be +ve value
AL2	Relay 2 trigger value	1000kg			Must be +ve value
AL3	Relay 3 trigger value	-300kg			Can be +ve or -ve
HYSt	Amount load needs to drop after alarm to reset instrument	30kg		N/A	
dLY	Defines the delay in storing the car load value, after a signal has been applied to the EWS control signal input	2 sec		N/A	0=0sec, 1=0.5sec .... upto 7 = 3.5sec.
d iSP	Disable the display during travel	Off		N/A	
FiL	Defines the update rate and damping factor before the measured signal is stored	1			0=0.4sec, 1=0.8sec .... upto 3 = 1.6 sec.
SrES	Auto system reset function	Off			Must be off during calibration

Maximum Capacity

CAP   To set the maximum capacity of the elevator, enter the system setup menu and press ⬆ once to select the Maximum Capacity setting

Alarm Trigger Values

AL 1   Each of the 3 alarm relays can be individually set to trigger at a particular load. Alarm relays 1 and 2 can trigger on any positive value. Typically, relay 1 would be set to trigger the required overload condition, which prevents the elevator doors from closing. When relay 1 is triggered, the internal buzzer also sounds. Relay 3 can be set to trigger at either a positive or negative value. The negative value can be used to indicate the presence of an obstruction affecting the free movement of the cabin.

Note: When setting a positive value. for Alarm 3, ensure that the left hand digit is set to '0' if it is set to '-' the value will be treated as a negative

Press ➡ to view the current value. Change the value using the ➡ and ⬆ buttons and then press ⟳ to save the new setting and move to the next parameter.

Hysteresis Value

HYSt   Once an alarm has been triggered, it will not reset until the load has dropped below the trigger value by the hysteresis value set here. This prevents cycling of of the alarm.

Press ➡ to view the current value. Change the value using the ➡ and ⬆ buttons and then press ⟳ to save the new setting and move to the next parameter.

Delay

dLY	To adjust the time interval when the control signal state is changed to "short" circuit / EWS 102 returns to weighing mode, this minimises any mechanical shock whilst the elevator comes to rest.
	Defines the time from the control signal input is activated and the load in the car is stored.
	Default =2, the available settings are: 0 = 0sec, 1 = 0.5sec, ...7 = 3.5sec.

Display

dI SP	Option for turning the display on or off when the lift is moving, activated by the the door close signal
	To change the setting, press ⬆ and use ➡ to toggle between On and OFF.

Filter Value

FIL	The filter value determines the update rate and damping factor. The available settings are:
	0 = 0.4sec, 1 = 0.8sec, 2 = 1.2sec, 3 = 1.6sec.

Sounder Control

bEEP	An internal sounder beeps when an overload alarm is triggered or when the keypad is pressed
	To change the setting, press ⬆ and use ➡ to toggle between On and OFF.

System Reset

SrES	Option for turning the auto system reset on or off. When on the system will automatically recalibrate zero if the has remained inactive for 10 minutes.

Calibration

Zero Calibration

ZEro	To enter Zero Calibration mode (Press [Cal] and [Load] buttons together followed by [Zero])
	Ensure that the cabin is empty and press [Cal] to initiate the calibration. The display will count down from 10 to 1 and then displays [CAL] to indicate that the zero point has been calibrated and stored. Press [Zero] within 10 seconds to proceed to the Load calibration mode.

Load Calibration

LOAd	If you press [Load] within 10 seconds at the end of the last procedure, press [Cal] and [Load] buttons together followed by [Load] to enter Load Calibration Mode.
	Place the known load into the cabin and press [Cal]
- - - -	Enter the weight of the known load in kg using the ➡ and ⬆ buttons, then press ↻ to complete the input and start the calibration the display will countdown from 10 to 1 and then displays [CAL] to indicate the load has been calibrated.

Analog Output Variants

Depending on the EWS variant these control units can provide an analog output proportional to the elevator load and provide a signal to allow the controller to pre-torque the motor.

EWS-102 Multi Analog Version
Analog outputs - current (4-20mA, 0-20mA), voltage (0-5V, 0-10V, +/-5V or +/-10V)

For information regarding selection of the required analog output please refer to EWS-102 Control Unit Multi Analog System Setup Sheet & Supplementary Information Sheet

EWS-102 Proximity Multi Analog Version
Analog outputs - current (4-20mA, 0-20mA), voltage (0-5V, 0-10V, +/-5V or +/-10V)

Designed for use with proximity sensors please refer to EWS-102P Multi Analog System Setup Sheet & Supplementary Information Sheet

Multi Analog Selectable Outputs

Display	Output Type	Output
4-20	Output type 4-20mA.	4mA = no load, 20mA = full load
0-20	Output type 0-20mA.	0mA = no load, 20mA = full load
0-24	Output type 0-24mA.	0mA = no load, 24mA = full load
0- 5	Output type 0-5V.	0V = no load, +5V = full load
0- 10	Output type 0-10V.	0V = no load, +10V = full load
bi5	Output type +/-5V	-5V = no load, 0v + half load, +5V = full load
bi10	Output type +/-10V	-10V = no load, 0v + half load, +10V = full load

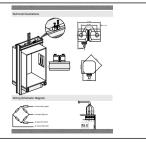## Intelligent Software

Auto Zero
the auto zero function is pre-set and designed to remove any zero drift errors as a result of ambient changes.

System Reset
The system reset function is user defined and will re-zero the overload system only when the elevator is at rest.

Travel Compensation
The travel compensation prevents errors associated with the presence of a compensation chains. It is automatically activated when the Control Signal input is wired to receive a door open/close signal.

Sensors

Garan supply a range of sensors for use in various elevator applications, each has its own data sheet detailing the correct wiring colour code. Also, where applicable a supplementary information sheet is available providing additional installation advice. All are availlable to down load via our website or by contacting Garan directly.

Error Codes

If after powering up the unit, the display shows an error message, it could indicate that the sensor positioning and/or wiring needs to be checked.

EWS 102 Standard, Multi Analog

Code	Error	Cause/Solution
Err 1	Sensor Signal Input - Negative	Reverse connection of sensor signal leads
Err2	Insufficient Sensor Signal	Installation Error - Contact Garan
Err3	Sensor Offset Too High - Positive	Installation Error - Contact Garan
Err4	Sensor Offset Too High - Negative	Installation Error - Contact Garan
Err5	Trying to calibrate without Control Signal link	Fit link between control signal terminals
Err6	Sensor not conected to EWS	Connect sensor/check sensor wiring

EWS 102 Proximity Analog

Code	Error	Cause/Solution
Err4	Distance too large beteween sensor and target	Reduce gap between sensor face and elevator
Err5	Trying to calibrate without Control Signal link	Fit link between control signal terminals

Notes

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