

Re-levelling For Traction Rope Elevators Using ARL-500 & ADrive

1) Description

Especially, in high rise buildings, there will be a level difference due to bending of ropes when the amount of load increases or decreases in the elevator. Re-levelling to correct these floor level mistakes is carried out according to the following connections and settings.

2) Equipment needed for re-levelling in traction rope elevators

- Software version of ARL-500 has to be R136 or newer one.
- Software version of ADrive has to be V8.83 or newer one.
- To determine the threshold aberration, an incremental encoder has to be used together with a motor encoder.



Figure-1

For re-levelling, an incremental encoder mounted to the speed regulator is to be used as shown Figure-1.

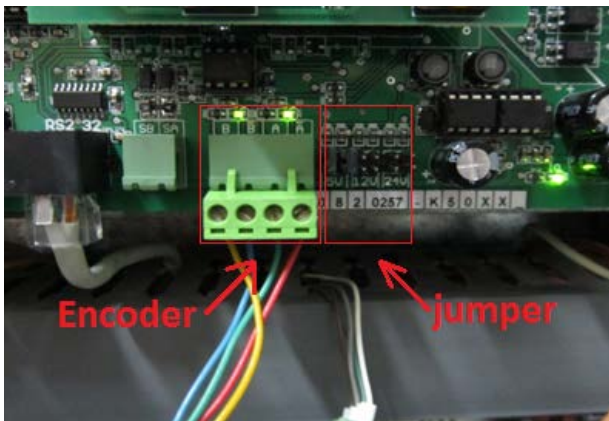


Figure-2

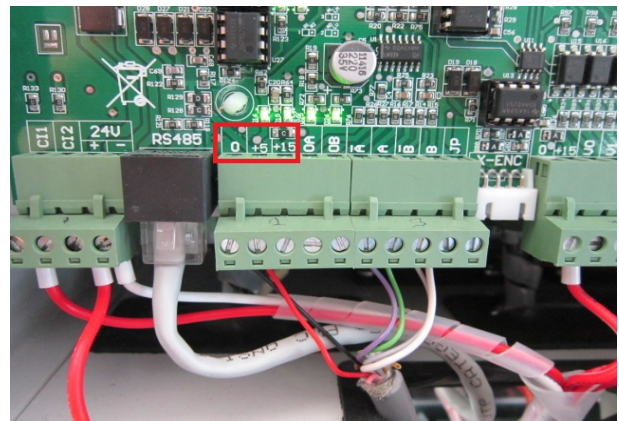


Figure-3

The signal cables of re-levelling encoder are connected to encoder inputs of ARL-500 as shown Figure-2. The supply voltage of the encoder must be selected from within the jumpers beside the connector on ARL-500.

If the encoder works with 24V supply, the supply must be done with 100(+24) and 1000 (-). For encoders having different voltages, the encoder must be supplied by selecting the convenient outputs 0,+5,+15 on ADrive. If the supply is to be taken on ADrive, it can be useful to connect 24V supply on the external 24V supply input on ADrive.

3) Required Settings in ARL-500 Menu

Following settings have to be made in ARL-500 menu in order to activate re-levelling:

a) Main menu→Door Settings→Door timing settings→Door Preopening: 1cm to floor

To activate re-levelling, door preopening has to be selected at least “1 cm to floor” otherwise the re-levelling doesn't work.

b) Main menu→Encoder Settings→Hardware configuration

Encoder Signal Source: Driver/ARL500

To enable re-levelling “Encoder Signal Source” option should be selected as “ARL500”. To disable re-levelling, “Driver” option should be selected.

c) Main menu→ Relevelling

Relevelling: On/Off

On: Re-levelling is active.

Off: Re-levelling is passive.

Relevelling Start: 2 cm

Default setting is 1,2 cm for that parameter. That parameter is used to determine distance of re-levelling start from threshold. Proposed is 2 cm.

Relevelling End: 1.0 cm

Default setting is 1.0 cm for that parameter. That parameter is used to switch off power of motor when elevator arrives that distance. If elevator passes the threshold when it makes re-levelling that parameter should be increased.

4) Required Settings in ADrive Menu

Re-levelling speed should be selected be 0,05m/s.

Main Menu→ 1-TRAVEL CURVE

1-20 Relevel Spd

VL: 0.05 m/s

5) Notes

* Shaft learning procedure has to be started again if encoder signal source is selected as “ARL-500”.

* Any parameter has to be changed to activate new parameters after new firmware update for ARL-500. For example, increase car-light delay by 1 second.