**Start-up Guide for the Almega 2 / Magnetek HPV1000 connected to a gearless machine.**
Switching the panel onto INSPECTION for the first time.

For all the below procedures please use site specific drawings for correct connections prior to wiring!

Installation State:

1. The main 3 phase power, Motor, Braking resistors, Encoder, Motor Thermistor's, Brake/s and brake monitoring switches along with associated screening & earths are to be connected to the control panel. Motor wiring must be connected correctly ensuring that from the inverter the terminal U is connected to U on the motor, V to V & W to W otherwise this could cause irregularities in setup & control.

    I. If no motor thermistors are present, then please connect the provided 1k resistor to terminal's THA/THB.

    II. The encoder being used must now be connected to the inverter, please connect to the encoder card within the inverter and refer to the below table / manual for pin assignment.

Encoder connections
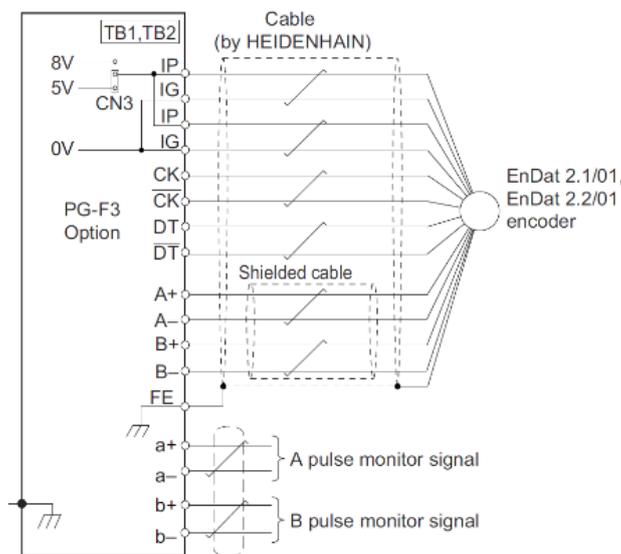
Please note for the Encoder

- *IP is the +VDC, and IG as the common.*
- *The encoder voltage is selected via the jumper CN3 as 5V.*
- *Note that the encoder is wired into the upper-case terminals. The lower-case terminals are an output from the drive and will not necessarily be used.*

Encoder Signal	PG-F3 Terminal	Cable Colours							
		Heidenhain	Ziehl	CEG	IMEM (Ext)	Wittur	Wittur (Ext)	Sassi ECN 1313	Sicor
A/	A-	Yellow & Black	Red & Blue	Brown	Purple	Yellow	Pink	Purple	Red & Blue
A	A+	Green & Black	Grey & Pink	White	Green	Green	Grey	Red	Grey & Pink
B/	B-	Red & Black	Red	Yellow	Pink	Pink	Yellow	White	Violet
B	B+	Blue & Black	Blue	Green	Blue	Grey	Green	Brown	Black
Data/	/DT	Pink	Brown	Pink	Brown	White	Brown	Blue	Pink
Data	DT	Grey	White	Grey	Grey	Brown	White	Yellow	Grey
Clock/	/CK	Yellow	Black	Red	White	Black	Purple	Pink	Yellow
Clock	CK	Purple	Purple	Blue	Black	Purple	Black	Green	Green
0V Com	IG	Green & White	Pink	Purple	Yellow	Blue	Blue	Red & Blue	White
+5V	IP	Green & Brown	Grey	Black	Red	Red	Red	Grey & Pink	Brown
0V Sense	IG	White	Yellow	N/A	N/A	N/A	N/A	Black	Blue
+5V Sense	IP	Blue	Green	N/A	N/A	N/A	N/A	Grey	Red
Shield	FE	Shield	Shield	Shield	Shield	Shield	Shield	Shield	Shield

2. The safety and lock circuits must be in a state of continuity starting at OTL then following the site-specific drawings to the end which will be G4. If using Pre-locks, then the end will be G5.

3. The test limits must be wired in, these are normally closed contacts, so continuity is needed between TUL to TU & *(if fitted)* TDL to TD.

   Note: If almega version is 4.15 or higher then INSTALLATION MODE can be set, this will deactivate the monitoring of THERMISTOR, PRE-FLIGHT CHECK, CAR GATE MONITORING, UMD FAILURE, ROPE MONITORING, BRAKE TEST MODE whilst working on INSPECTION CONTROL. This can be found in ENGINEERS SELECTION.

4. The door limits must be wired in. These are normally closed contacts so the processor should show limit OP closed and limit CL open.

   If there are physical slowing limits in the shaft and NOT electronically via the positioning system:
5. These must be wired in. The connections for these are G2 to RSU & G2 to RSD, the processor should show RSU & RSD as Black when mid shaft and both top & bottom limits not activated.

   If a panel test pendant is provided within the lift controller:
6. The panel test pendant MUST be switched to INSPECTION, then continuity must be made between terminals TTS to TS via the cartop controls test/normal switch. NOTE: CARE MUST BE TAKEN AS THIS IS THE CONNECTION FOR THE LIFT TO OPERATE IN NORMAL CONDITION.
   Please ensure that all wiring is connected correctly and checked prior to switching on.

7. The panel can now be switched on.

8. Check the incoming 3 phase sequence is correct, if incorrect the phase failure will display a flashing LED.

9. Check that the TR contactor is NOT energised, this proves that the panel is not in the normal state.

10. *(if fitted)* The PIT ACCESS RESET PUSH needs to be pressed,

11. Pre-checks on the main lift viewer display:
    I. EMR,CARL,LANL, (PRE-Locks if fitted) are displayed as active.
    II. OP limit is shown as closed; CL limit is shown as open.
    III. If physical slowing limits both RSU & RSD are shown as not active (Black).
    IV. Within ENGINEERS SELECTION check the following are set to NO
       UMD MON FAILURE
       OVERTRAVEL FAULT
       CAR GATE MONITORING
    (Almega Ver 4.15 or higher will have INSTALLATION MODE which can be used as per above Note)

12. The relays BM1 & BM2 should be energised to prove that the brake monitoring switches are connected (If fitted).

13. Drive settings:
    I. You will now need to verify the parameters entered in the drive match that of the motor data plate, please do not assume that these are already entered correctly.
    II. Enter / verify the following parameters:
       • CONTRACT CAR SPD (O1-25) *parameter should be the lift contract speed in m/s. This can be verified with a hand tachometer if required and adjusted if required.*
       • CONTRACT MTR SPD (O1-26) *parameter should be set to the RPM that is required to make the lift travel at contract car speed.*
    NOTE: The above two parameters are utilized by the drive for many purposes regarding speed control of the lift, therefore its important these are set correctly prior to continuing any further.

III.   Enter the Line Voltage in INPUT VOLTAGE (E1-01) this parameter should be set to the measured incoming phase to phase voltage.

IV.   The autotune can now be performed. The drive has several options for autotuning the motor, however as usually the motor is roped the 'Tune-No Rotate1' (Static) method can be used. If the ropes are off, and the motor can turn freely, the 'Standard Tune' (Rotating) method can be used.

Firstly, Ensure parameter S1-12 is set to 2

Navigate to the Autotune menu and enter the following information:
- 'Tune-No Rotate' (T2-01 TUNING MODE SEL)
- Rated Motor Power in kW (T2-04 MTR RATED POWER)
- Rated Voltage in V (T2-05 RATED VOLTAGE)
- Rated Current in A (T2-06 RATED CURRENT(U9))
- Number of Poles (T2-08 NUMBER OF POLES)
- Rated Speed (T2-09 RATED SPEED)
- Encoder Pulses – should be 2048 (T2-16 PG PULSE/REV)

Stop at this point in the menu and begin running your lift UP on test control.
The drive will ignore the run input until you press the up arrow on the keypad once more, at which point it will begin the autotune. During this process the drive will display motor current on the right-hand side of the screen for reference. Maintain the test run until the drive displays "End Tune Successful". The test run UP button can then be released.

V.   The drive is now ready for an alignment to be carried out using the steps below.
Alignment – Non-Rotating
If the motor is already roped, we recommend the 'PolePos-norotate' (Static) alignment method.

Navigate to the Autotune menu and set:
- 'PolePos-norotate' (T2-01 TUNING MODE SEL)

Stop at this point in the menu and begin running your lift UP on test control.
The drive will ignore the run input until you press the up arrow on the keypad once more, at which point it will begin the autotune. During this process the drive will display motor current on the right-hand side of the screen for reference. Maintain the test run until the drive displays "End Tune Successful". The test run UP button can then be released.

The drive will then automatically populate the Enc Z-Pulse Offs (E5-11)

14. The lift should now be able to move on INSPECTION CONTROL,
Run the drive in low speed inspection mode and…
- Start with a value of 0.5s for INERTIA (P5-03)
- Ensure Motor Contactors are closing, Brake is lifting, and the car can move freely in the shaft.
- Verify encoder polarity. The motor phasing should match the encoder phasing. If you experience Speed Dev Flt/HIT TRQ LIM alarm the phasing may be incorrect – the most likely cause is incorrect motor phasing. Swap two motor phases, perform alignment and run again.
- Verify correct lift car direction. If this is running with correct speed and control, but in the incorrect direction, swap both Encoder Connect (F1-05) and Motor Rotation (B1-14) and repeat alignment procedure.
    If needed please contact technical@lestercontrols.co.uk where someone will be able to assist.