

# ODL-3-420610-342SB0

Optidrive Elevator Core VFD Datasheet

**15 kW (20 HP), 61 A, 200-240 V, 3PH**  
IP20 Variable Frequency Drive with EMC Filter



### Input Ratings

|                             |           |
|-----------------------------|-----------|
| Supply Voltage              | 200-240 V |
| Input Phases                | 3         |
| Supply Current Continuous   | A         |
| Supply Fuse or MCB (Type B) | A         |

### Output Ratings

|                     |                    |
|---------------------|--------------------|
| Motor Output Rating | 15 kW (20 HP)      |
| Output Voltage      | 0 – Supply Voltage |
| Output Current      | 61 A               |

### Cable Information

|                        |                |
|------------------------|----------------|
| Max Supply Cable Size  | –              |
| Max Motor Cable Size   | –              |
| Max Motor Cable Length | 100 m (328 ft) |

### Factory Build Options

|                  |                |
|------------------|----------------|
| EMC Filter       | Internal EMC   |
| Brake Transistor | Internal       |
| Enclosure        | IP20           |
| Display          | LED            |
| PCB Coating      | Full Conformal |


### Dimensions

|         |                   |
|---------|-------------------|
| Size    | 4                 |
| Height  | 459 mm (18.07 in) |
| Width   | 173 mm (6.81 in)  |
| Depth   | 255 mm (10.04 in) |
| Weight  | -                 |
| Fixings |                   |

### Packaged Dimensions

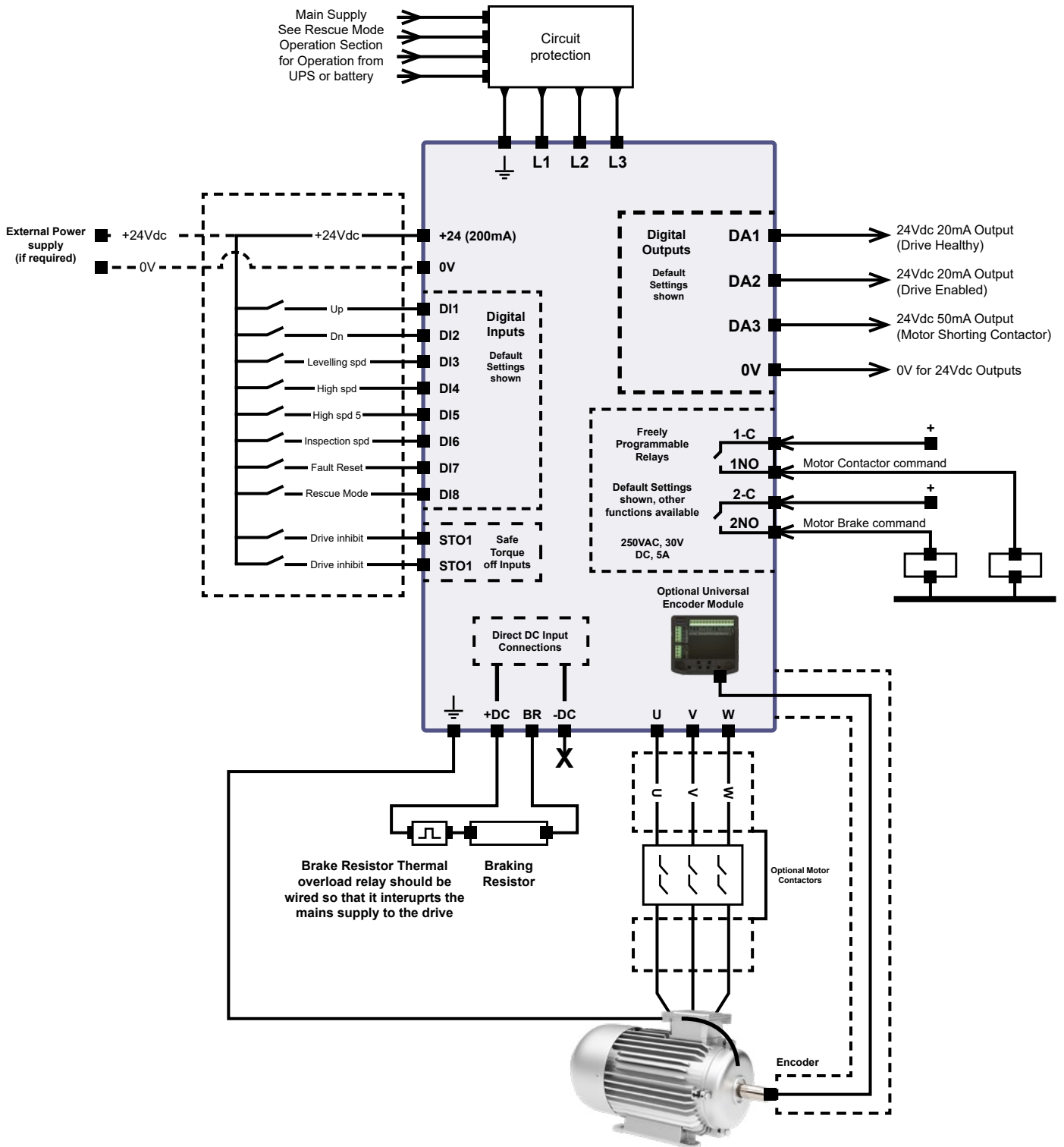
|        |              |
|--------|--------------|
| Height | 0 mm (0 in)  |
| Width  | 0 mm (0 in)  |
| Depth  | 0 mm (0 in)  |
| Weight | 0 kg (0 lbs) |



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The following document provides a summary of the Elevator Core drive's compliance, protection and feature set supported.



## Drive Specification & Features

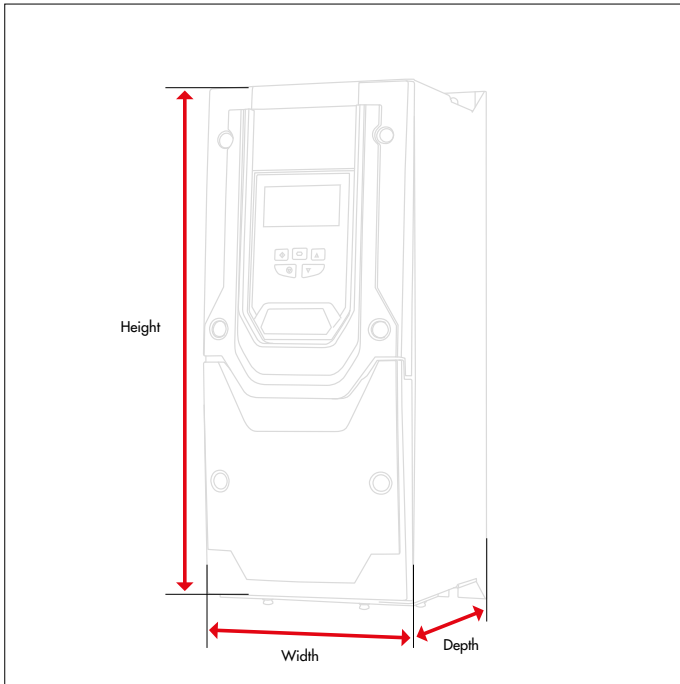
|  |  |   |   |   |  |
|--|--|---|---|---|--|
| Compliance and Certifications  | European product certification EN 61800-5-1  | Elevator Drive Software Features  | Elevator industry menu structure  | Environmental Ratings   | Minimum Temperature -10°C  |
|  | European product certification UL 61800-5-2 (Functional Safety)  |   | 200% overload capability  |   | Maximum Temperature (No Derating Factor) (UL Approved) 50°C                          |
|  | European EMC standards EN61800-3:2004  |   | Frequencies up to 10 kHz @50°C (full load no de-rating throughout travel curve)             |   | Minimum Storage Temperature -40°C  |
|  | USA product certification UL 61800-5-1   |   | Roped static Autotune.  |   | Maximum Storage Temperature 60°C   |
|  | USA product certification UL 61800-5-2 (Functional Safety)   |   | PC Tool support > Programming, Setup, Monitoring, Backup, Scope, Trip Eliminator            |   | Maximum Altitude (No Derating Factor) 1000 m   |
|  | *USA Lift standard ASME A17  |   | USB C connection and mobile device/PC APP support   |   | Maximum Altitude (Derating Factor of 1% per 100m after 1000m) UL Approved 2000 m     |
|  | Dual Safe Torque input according to EN 61800-5-2, SIL 3 *certification by TUV  |   | Analogue and Digital control (NPN/PNP Logic)  |   | Maximum Altitude (Derating Factor of 1% per 100m after 1000m) Non-UL Approved 4000 m |
|  | Brake Contact Monitoring (Unintended Car Movement) EN 81-20:2014+A3 certification by Lift Institute  |   | Control terminal assignment macro system or user definable to match elevator controller.    |   | IP Class IP20  |
|  | Without Motor contactor conformity using Safe Torque Off inputs according to parts of EN 81-20:2014 and EN 81-50:2014 *certification by Lift Institute |   | Trip log time stamping  |   | Relative Humidity <95% non-condensing  |
|  |  |   | Fault detection suppression.  |   | Long life fans   |
| Elevator Motor Control   | Open and Closed Loop Geared motors   | Encoder support   | Built in flight recorder  |   |  |
|  | Closed Loop Gearless motors  |   | Analogue, Binary, Priority control, Control word  |   |  |
|  | Open Loop Gearless (Encoder Fault finding, Commissioning only)   |   | Analogue follower mode.   |   |  |
|  | Built-in full rated Braking transistor throughout all ratings.   |   | User adjustable Contactor sequencing  |   |  |
| Elevator Drive Protection<br><small>The following protection and monitoring features are built into the Optidrive Elevator Core drive as standard.</small> | Motor Contactor Closing delay time   |   | Full travel profile setting and user stop profile configuration                             | Floor sensor correction   |  |
|  | Motor Contactor feedback state check   |   | Multiple speed and current loop gains   | Multiple speed and current loop gains                                     |  |
|  | Brake channel over current   |   | Current loop and Encoder speed feedback filters   | Current loop and Encoder speed feedback filters                           |  |
|  | Brake resistor thermal overload software protection.   |   | Anti-rollback compensation (DC Injection, Position Lock, Load-Cell Input)                   | Anti-rollback compensation (DC Injection, Position Lock, Load-Cell Input) |  |
|  | Brake resistor thermal switch support.   |   | Smooth Start function.  | Smooth Start function.  |  |
|  | Motor short circuit protection in all situations.  |   | Creep to Floor operation  | Creep to Floor operation  |  |
|  | Motor thermal overload protection.   | Short Floor Operation   | Short Floor Operation   |   |  |
|  | Output phase loss detection.   | *Direct to Floor operation  | *Direct to Floor operation  |   |  |
|  | Drive reverse powering protection. (mains power connected to drive output).  | Multiple speed and current loop gains   | Multiple speed and current loop gains   |   |  |
|  | Over voltage on DC bus   | Current loop and speed feedback filters   | Current loop and speed feedback filters   |   |  |
|  | Under voltage on DC bus  | Jerk Adjustments  | Jerk Adjustments  |   |  |
|  | Input phase loss trip  | Low voltage Battery operation from 36Vdc up to drive rated Vdc                              | Low voltage Battery operation from 36Vdc up to drive rated Vdc                              |   |  |
|  | Input Phase imbalance (DC Bus Ripple)  | Load measurement for rescue operation (Light Load Detection), Torque test, last run memory. | Load measurement for rescue operation (Light Load Detection), Torque test, last run memory. |   |  |
|  | Over temperature   | Gravity Mode  | Gravity Mode  |   |  |
|  | Under temperature  | User Unit Selections  | User Unit Selections  |   |  |
|  | Ambient Temperature too High   | Overspeed Governor Test   | Overspeed Governor Test   |   |  |
|  | Multiple on-board thermistors, Within Power device, Control circuit, Power circuit.  | Early Door Opening  | Early Door Opening  |   |  |
|  | Motor PTC monitoring.  | Anti-Stall Protection   | Anti-Stall Protection   |   |  |
|  | Motor KTY monitoring.  | Travel Counter  | Travel Counter  |   |  |
|  | External trip input  | Rope-wear Counter   | Rope-wear Counter   |   |  |
|  | Control signal loss detection  | User customisable Cooling Fan Control   | User customisable Cooling Fan Control   |   |  |
|  | Communications loss Fault detection  | Output Phase Sequence swap.   | Output Phase Sequence swap.   |   |  |
|  | Heatsink Cooling Fan fault detection   | DC Bus connection support of regenerative units   | DC Bus connection support of regenerative units   |   |  |
|  | Safe Torque off circuit Error detection  | OEM Defaults.   | OEM Defaults.   |   |  |
|  | Encoder Feedback Faults  |   |   |   |  |
|  | Autotune Error detection   |   |   |   |  |
|  | Factory Default parameters have been loaded  |   |   |   |  |
|  | Brake Release Monitoring   | Universal Encoder module.   | Universal Encoder module.   |   |  |
| Brake Release Monitoring Lockout   | Encoder wire break detection.  | Encoder wire break detection.   |   |   |  |
| Modbus comms fault   | Encoder direction swap.  | Encoder direction swap.   |   |   |  |
| CAN Open comms trip  | Encoder offset real-time feedback.   | Encoder offset real-time feedback.  |   |   |  |
| Service Timer  | Encoder Feedback shaft copy, simulated Encoder output.   | Encoder Feedback shaft copy, simulated Encoder output.                                      |   |   |  |
|  | Incremental HTL, TTL single and quadrature type Encoders.  | Incremental HTL, TTL single and quadrature type Encoders.                                   |   |   |  |
|  | Absolute Encoder support, Endat, SinCos *Biss.   | Absolute Encoder support, Endat, SinCos *Biss.  |   |   |  |



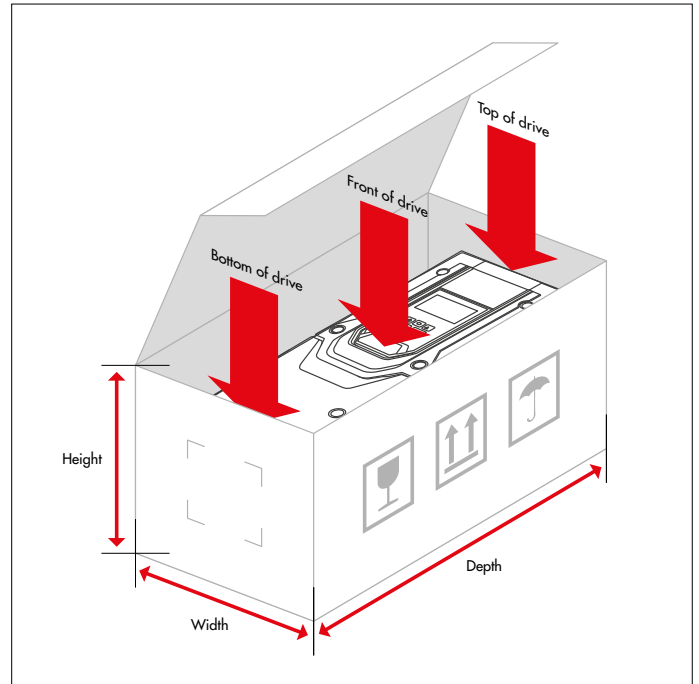
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# How we measure our drives and packaging



Drive Dimensions



Packaging Dimensions



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