

# Turntide Gen4 High Voltage Low Power Inverters HVLP10 (Air) & HVLP20 (Liquid)

A range of high voltage, low power AC motor inverters designed primarily for the control of pumps and fans on hybrid and electric buses, agricultural implements, tractors and other high voltage vehicles. There are two models in the range, which cover both liquid cooled and air cooled designs. A compact, rugged and cost-effective design, Turntide's HVLP Inverter range is well suited for OEMs, hybrid/ electric bus & truck conversions, Agricultural OEMs and EV system integrators. The high voltage range is fully operational from 150V up to 800VDC.



Gen4 HVLP10



Gen4 HVLP20

The high voltage, but low power design is perfect for operating hotel / auxiliary loads, such as pumps and fans, on a wide range of on and Off-highway vehicles. Our products are used by some of the world's leading automotive and industrial companies in several innovative and demanding applications, the same quality and reliability is designed into each and every Turntide product.

## Features

- Supports AC Permanent Magnet synchronous motor and AC Induction motors
- Supports a sensor-less VF induction machine algorithm for pumps/fans
- Highly efficient advanced flux vector motor control
- Up to 800VDC peak supply voltage
- Up to 53Arms peak power output
- Up to 33Arms continuous power output
- Includes a dedicated HVIL circuit for the DC connector
- 12V or 24V supply
- Range of encoders supported including resolver

## Applications



### TURNTIDE TECHNOLOGIES

Details are correct at time of publishing

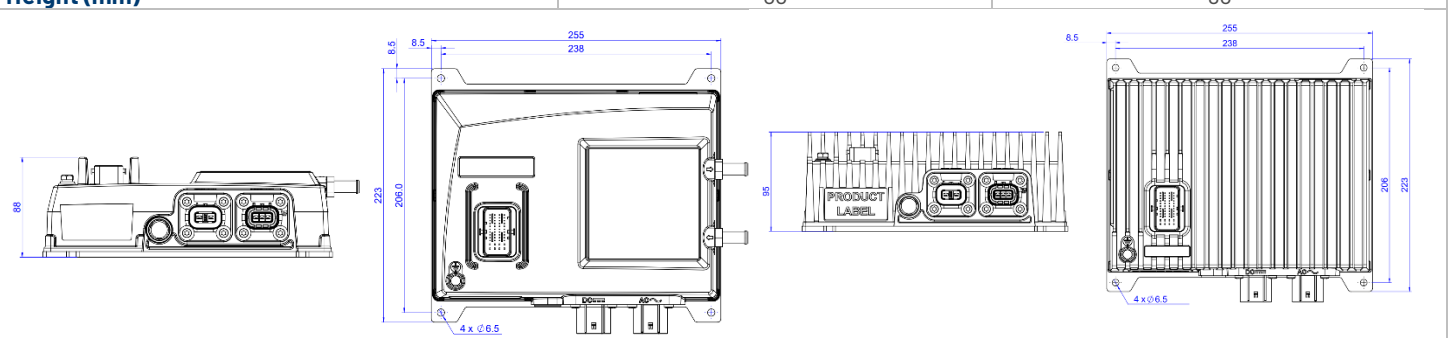
Turntide Technologies designs and manufactures breakthrough electric motors, power electronics and energy storage solutions that optimize performance, reliability, and efficiency in all things that move.

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TTD-MAN-007  
V3.0 – 6/12/2024

# Specification

Key Features			
Model	HVLP20 (Liquid)		HVLP10 (Air)
<b>100% Derating (VDC)</b>	800		800
<b>Nominal (VDC)</b>	700		700
<b>Minium Battery Voltage (VDC)</b>	150		150
<b>1 minute Peak Current (A<sub>rms</sub>)</b>	53		24†
<b>60 minutes Continuous Current (A<sub>rms</sub>)</b>	33		19†
† Rating based on static air. Higher ratings can be achieved with forced air cooling or low coolant temperatures			
<b>Control</b>	<ul style="list-style-type: none"> <li>Master and Slave functionality options</li> </ul>	<b>Communications Protocols</b>	<ul style="list-style-type: none"> <li>CAN 2.0B - isolated</li> <li>CANOpen</li> <li>H-Protocol (J1939)</li> </ul>
Environmental			
Model	HVLP20 (Liquid)		HVLP10 (Air)
<b>IP rating</b>	<ul style="list-style-type: none"> <li>IP67 and IP6K9K with connectors mated</li> </ul>		
<b>Ambient Temperature</b>	<ul style="list-style-type: none"> <li>-30°C to +45°C</li> <li>+45°C to +85°C and -40°C to -30°C with derating</li> </ul>		
<b>Cooling method</b>	<ul style="list-style-type: none"> <li>50:50 Glycol Water mix</li> </ul>	<ul style="list-style-type: none"> <li>Air</li> </ul>	
<b>Flow Rate</b>	<ul style="list-style-type: none"> <li>6l/min</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>	
<b>Coolant Temperature</b>	<ul style="list-style-type: none"> <li>-40°C to +90°C</li> <li>Automatic derating above 65°C</li> </ul>	<ul style="list-style-type: none"> <li>n/a</li> </ul>	
Mass, Dimensions and Drawings			
Model	HVLP20 (Liquid)		HVLP10 (Air)
<b>Mass (kg) ††</b>	2.3		3.7
<b>Length (mm)</b>	255		255
<b>Width (mm)</b>	223		223
<b>Height (mm)</b>	88		95
			
†† Dry weight			
IO			
<b>IO</b>	<ul style="list-style-type: none"> <li>All I/O protected to 40V operation with 12V or 24V</li> <li>4 analogue inputs 0-10V</li> <li>4 digital inputs</li> <li>2 power supplies 5V-10V (100mA and 200mA)</li> <li>2 digital outputs</li> </ul>	<b>Encoders</b>	<ul style="list-style-type: none"> <li>Absolute UVW encoder input</li> <li>Absolute Sin/Cos encoder input</li> <li>Incremental AB encoder input</li> <li>Resolver automatic gain</li> </ul>
Safety and Compliance			
<b>Electrical Safety</b>	<ul style="list-style-type: none"> <li>IEC60664</li> </ul>	<ul style="list-style-type: none"> <li>UL840</li> </ul>	<ul style="list-style-type: none"> <li>ISO6469</li> </ul>
Configuration			
Turntide offer a Windows-based PC tool for configuration of the inverter. The tool provides a simple yet powerful means of accessing the CANOpen bus for diagnostics or parameter adjustment. Communication is through CAN, an IXXAT CAN-to-USB dongle is required.			

For more information on this product or Turntide’s range of inverters, motors, batteries, pumps and fans, please visit our web-site or contact our team of experts at [electrificationsales@turntide.com](mailto:electrificationsales@turntide.com).

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