

DATASHEET



Turntide Gen4 Low Voltage Inverters Size 2-4-6

This range of Low Voltage motor controllers are highly reliable and are intended for on and off-highway electric vehicles. They have control functions to utilise the in-built I/O, or can operate as a CAN slave. Thanks to compact dimensions and high efficiency it is possible to integrate these controllers in difficult spaces without sacrificing performance. The optimised design delivers superior reliability in the most demanding applications.

Benefits

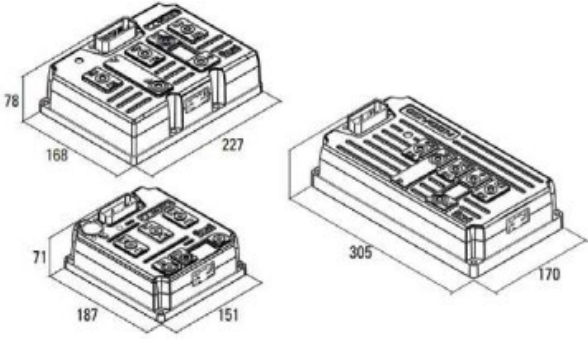
Scalability - Consistent functionality across the range of voltage and power options allows you to redeploy the application across a range of machines or vehicle. Quality and reliability - Our products are used by some of the worlds leading automotive and industrial companies in several innovative and 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
- Highly efficient advanced flux vector motor control
- Range of voltage options from 24VDC to 116VDC nominal battery voltage
- Scalable power levels to satisfy many On and Off-highway applications
- 12V or 24V supply



Specifications

Voltage, Current & Power Range						
Model	Gen4-Size 6		Gen4-Size 4		Gen4-Size 2	
	80V, 550A	48V, 650A	80V, 350A	48V, 450A	80V, 180A	48V, 275A
Nominal (VDC)	80	48	80	48	80	48
100% derating (VDC)	116	69.6	116	69.6	116	69.6
Min Battery Voltage (V)	39.1	19.3	39.1	19.3	39.1	19.3
Boost current 10 sec (A_{rms})	660	780	420	540	215	330
Peak current (2 min) (A_{rms})	550	650	350	450	180	275
Continuous (60 min) (A_{rms})	220	260	140	180	75	110
Coolant	Air	Air	Air	Air	Air	Air
Controller functionality	Yes	Yes	Yes	Yes	Yes	Yes
Dimensions						
Model	Gen4-Size 6		Gen4-Size 4		Gen4-Size 2	
	80V, 550A	48V, 650A	80V, 350A	48V, 450A	80V, 180A	48V, 275A
Length (mm)	170		168		151	
Width (mm)	305		227		187	
Height (mm)	78		78		71	
						
Electrical Safety						
Electrical Safety	<ul style="list-style-type: none"> • IEC60664 • UL840 • ISO6469 					
Environmental						
IP Rating	IP66 (when mated with logic connector)		Temperature		<ul style="list-style-type: none"> • Ambient temperature -40°C to +45°C • Automatic derating based on a range of • parameters including internal temperature 	

Details are correct at time of publishing

Controls			
Control Method	<ul style="list-style-type: none"> • Master controller or slave • No electrical isolation of CAN port 	I/O	<ul style="list-style-type: none"> • 8 digital inputs • 2 analogue inputs (<i>can be configured as digital</i>) • 3 contactor/solenoid outputs • 1 encoder supply output – programmable 5V or 10V
Encoders	<ul style="list-style-type: none"> • Absolute UVW encoder input • Absolute Sin/Cos encoder input • Incremental AB encoder input 	Communications	<ul style="list-style-type: none"> • CAN 1.0B
		Communications protocol	<ul style="list-style-type: none"> • CANOpen
Configuration			
<p>Turntide offers 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.</p>			
Multiple Motor Sensor Feedback Options			
<p>Our inverters provide a number of motor feedback possibilities from a range of hardware inputs and software control, allowing a great deal of flexibility.</p> <ul style="list-style-type: none"> ○ Absolute UVW encoder input ○ Absolute Sin/Cos encoder input ○ Incremental AB encoder input 			
Other Features			
<ul style="list-style-type: none"> • A CANOpen bus allows easy interconnection of controllers and devices such as displays and driver controls • The CANbus allows the user to wire the vehicle to best suit vehicle layout since inputs and outputs can be connected to any of the controllers on the vehicle and the desired status is passed over the CAN network to the relevant motor controller • Our inverters can dynamically change the allowed battery current by exchanging CAN messages with a compatible Battery Management System • Configurable as vehicle control master or motor slave 			

For further information please contact our team of experts at electrificationsales@turntide.com

TURNTIDE TECHNOLOGIES

Our breakthrough technologies accelerate electrification and sustainable operations for energy-intensive industries

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