

Universal Off-Highway Control – HY-TTC 200

General Description

HY-TTC 200 is a powerful electronic solution for the off-highway industry that relies on its equipment to function under the most difficult conditions.

HY-TTC 200 is compliant with the IEC 61508 international standard. The stand-alone version and the network version with TTP[®] fulfill SIL 2 (Safety Integrity Level) and SIL 3 requirements respectively. It is part of a complete and compatible product family and is protected by a robust housing suited to the off-highway industry.

Specifications

Parameter		Unit
Dimensions	234 x 181 x 48	mm
Weight	790	g
Operating Temperature	-40 to +85	°C
Operating Altitude	0 to 4000	m
Supply Voltage	9 to 32	V
Peak Voltage	45	V _{max}
Idle Current	1 at 9V	A _{max}
Current	50	A _{max}
Fulfills the following standards		
Funct. Safety stand-alone	IEC 61508 SIL 2	
Funct. Safety TTP networked	IEC 61508 SIL 3	
CE-Mark	Conformity with 2004/108/EC	
EMC	ISO13766, up to 300 V/m, 20 MHz to 1GHz	
ESD	IEC 61000-4-2	
Load Dump	ISO 7637-2, 173 V, 2 Ohm	
Ingression Protection	DIN 40050 IP6k9k, EN 60529 IP65	
Temperature	EN 60068-2-1, -14Nb, -2, -78, -30	
Vibration, Shock, Bump	IEC 60068-2-29, -64, -27, -32	

Outline Dimensions

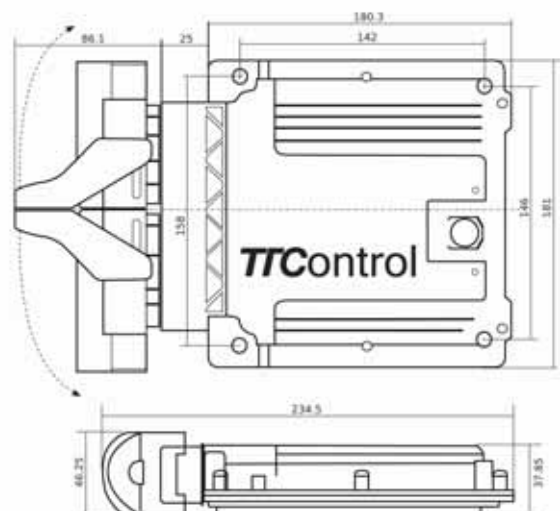
- Aluminum pressure die cast housing
- Splash-proof 154 pin connector
- Pressure adjusting with water barrier
- Housing fins for optimal temperature deduction



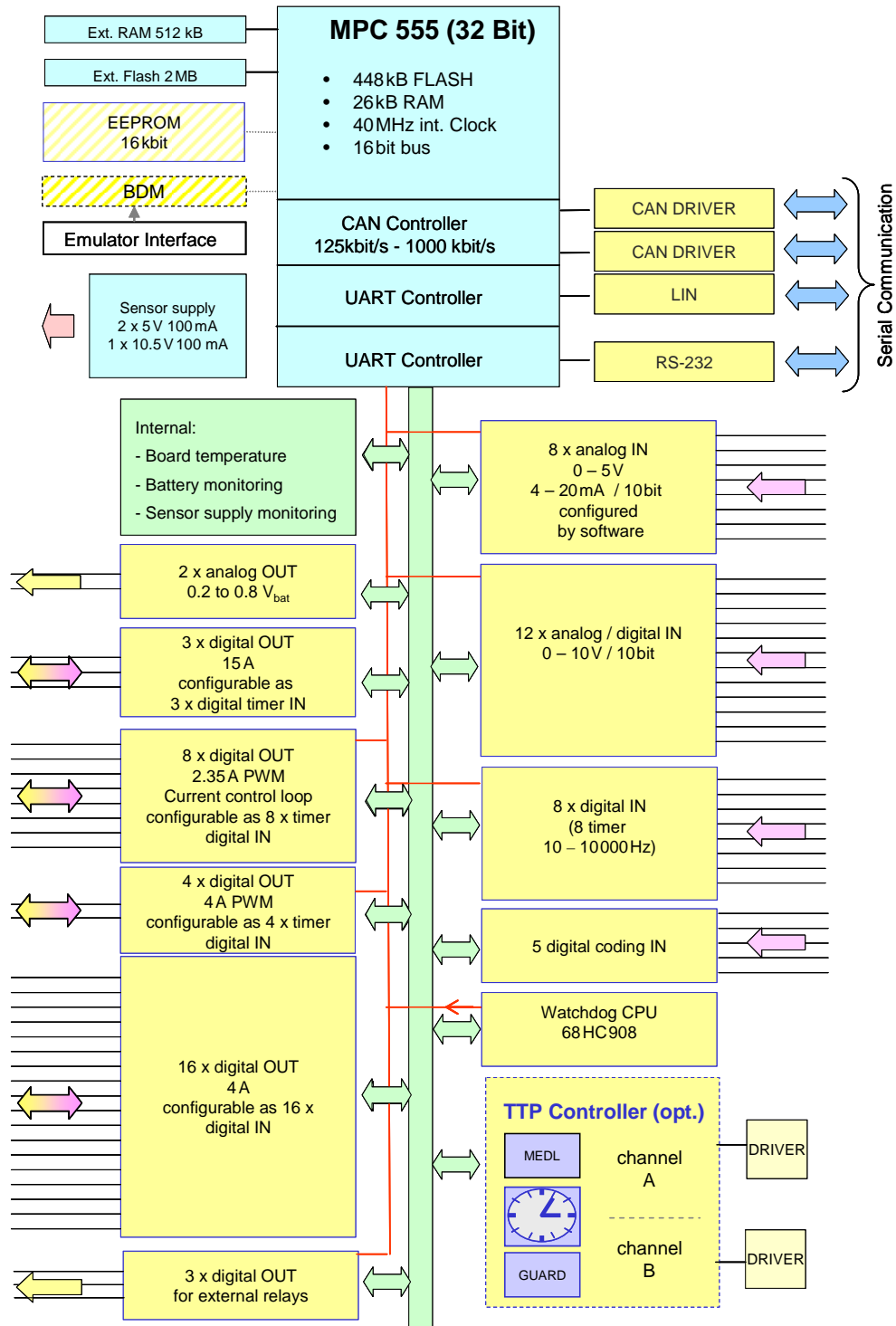
Features

All I/O's and interfaces mentioned below are protected against short circuit to GND and BAT+.

- 32-bit Freescale MPC555 processor, 40 MHz, 448kB int. Flash, 26kB int. RAM, 512kB ext. RAM (opt. 1 MB ext. RAM), 2 MB ext. Flash
- 16 kbit EEPROM
- Watchdog CPU Freescale HC 908, including monitoring software
- 1 x TTP bus with redundant channels, RS-485 physical layer (up to 5 Mbit/s) with austriamicrosystems AS8202NF TTP communication controller (optional)
- 1 x RS-232 and 1 x LIN serial interfaces
- 2 x CAN, 125 kbit/s up to 1 Mbit/s
- 8 x analog IN 0 to 5V or 4 to 20 mA/ 10bit, configured by software
- 12 x analog/ digital IN 0 to 10 V/ 10bit
- 8 x digital IN (timer 10Hz to 10kHz)
- 5 x digital IN
- 8 x digital OUT 2.35A high-side, PWM, current control loop, and open load detection, configurable as digital IN (timer)
- 4 x digital OUT 4A high-side, PWM, open load detection, configurable as digital IN (timer)
- 16 x digital OUT 4A high-side, open load detection, configurable as 16 x digital IN
- 3 x digital OUT 15A high-side, open load detection (1x with wind screen wiper option), configurable as digital IN (timer)
- 3 x digital OUT high-side for external relays to switch off output for safety applications (fail-silent)
- 2 x analog OUT, 0.2 to 0.8 V_{bat}
- Internal: monitoring of board temperature, sensor supply and battery
- 1 x sensor supply 10.5V
- 2 x sensor supply 5V
- Safety: modular safety concept for distributed and stand-alone systems
- Software: C/C++, CoDeSys[®] 2.3 including support for CANopen[®], MATLAB[®]/Simulink[®]



Block Diagram



For further information, including price and availability, please contact products@ttcontrol.com