

Universal Off-Highway Control – HY-TTC 77

General Description

HY-TTC 77 is a powerful electronic control solution for off-highway industries with 12V power supply. The HY-TTC 77 is equipped with the Infineon XC2288H CPU, providing enhanced safety features for protecting internal RAM and flash. It is part of a complete and compatible product family and is protected by a compact, automotive-style housing suited to mobile applications.

Specifications

Parameter		Unit
ECU Dimensions	143,13 x 216,32 x 42,77	mm
Dimensions for minimum connector release clearance	197,7 x 216,32 x 42,77	mm
Weight	595	g
Operating Temperature	-40 to +85 (at full load) -40 to +105 (at part load)	°C
Operating Altitude	0 to 4000	m
Supply Voltage	7 to 16	V
Peak Voltage	28	V _{max}
Standby Current	0.5	mA _{max}
Idle Current	0.15 at 9V	A _{max}
Current	35	A _{max}
Fulfills the following standards		
CE-Mark	2014/30/EU	
E- Mark	ECE-R10 Rev.4	
EMC	EN 13309 ISO 14982 CISPR 25	
ESD	ISO 10605	
Electrical	ISO 16750-2 ISO 7637-2,-3	
Ingress Protection	EN 60529 IP67 ISO 20653 IP6k9k	
Climatic	ISO 16750-4	
Mechanical	ISO 16750-3	



Features

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

CPU core

- 16/32-bit Infineon XC2288H safety microcontroller, 80 MHz, 1.6 MB int. Flash, 138kB int. RAM
- 32kB ext. EEPROM
- CPU-internal safety features
 - Hardware CRC checker for supervising flash memory
 - Integrated Memory Protection Unit (MPU)
 - RAM content protection through Error-Correcting-Code (ECC)
- Watchdog CPU Freescale HC 908, including monitoring software

Interface

- 2 x CAN, 125 kbit/s up to 1 Mbit/s
Optional CAN termination via 2 connector pins

Outputs

- 12 x PWM OUT, up to 2.5 A, high side with timer feedback, 6 of them with current feedback; alternative use digital timer IN (10Hz to 10kHz); 3 output groups can be switched off independently for limp-home in case of failure
- 6 x PWM OUT, up to 2.5 A, high side with voltage feedback; up to 4 A for individual outputs
- 8 x digital OUT, up to 2.5 A, high side; up to 4 A for individual outputs

Inputs

- 4 x analog IN, configurable in software
0 – 5 V 0 - 25 mA
0 – 65 kOhm digital IN low side
- 8 x analog IN, 0 to 5 V
- 8 x analog IN, 0 to 10 V
alternative use
digital IN high side/low side
- 2 x analog IN, 0 to 15 V
- 8 x analog IN, 0 to 15 V or digital IN
- 2 x digital timer IN (0.1 Hz to 10kHz) low side
- 7 x digital IN high side

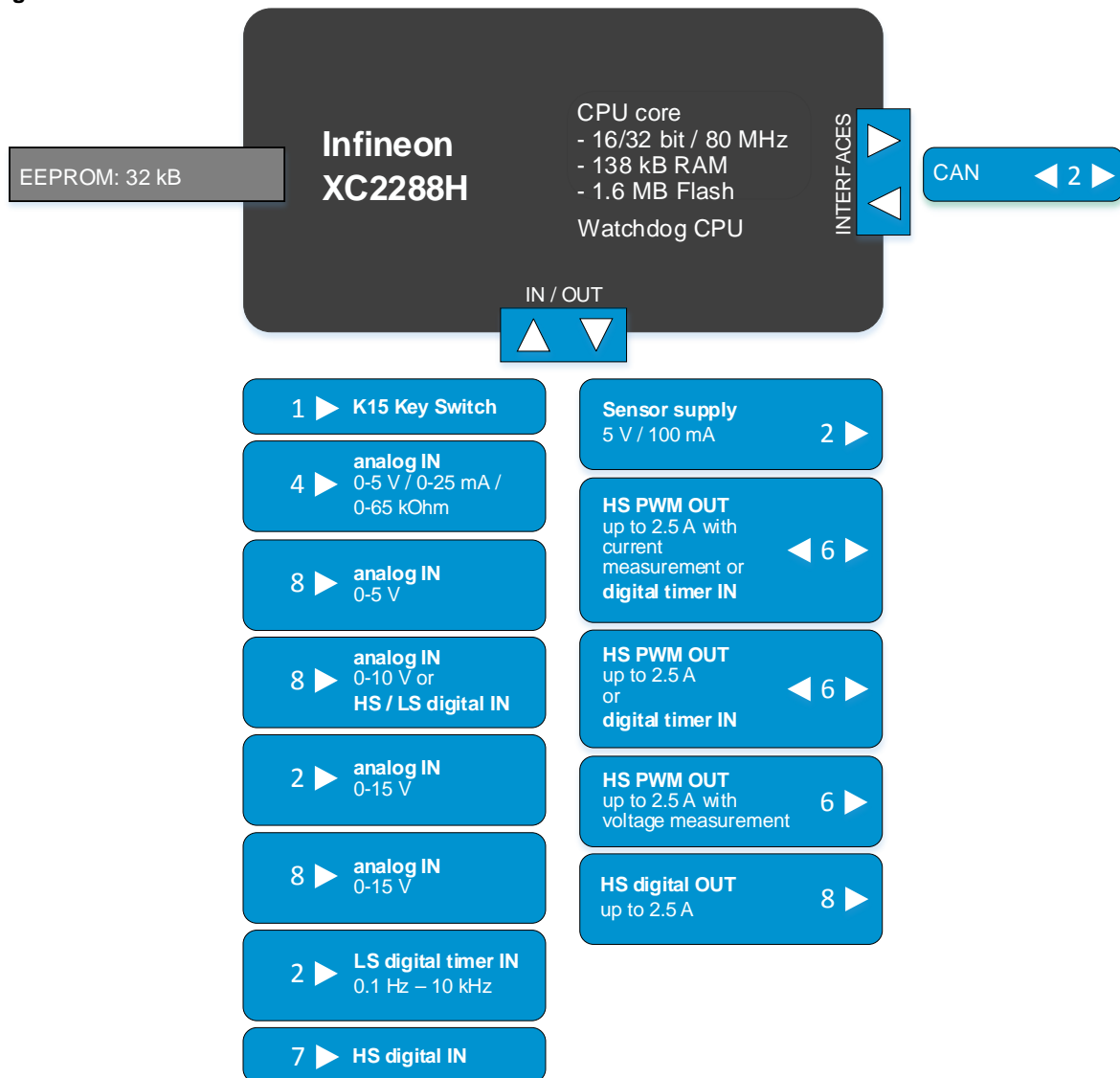
Other

- Internal: monitoring of board temperature, sensor supply and battery
- 2 x sensor supply 5V, 100 mA
- 3 x analog sensor ground
- 1 x digital sensor ground

Software

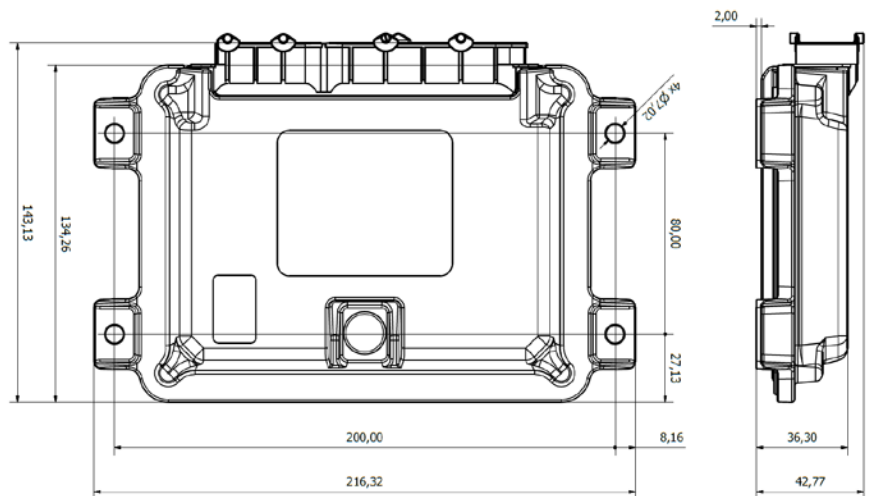
- Programming: C

Block Diagram



Housing and Connector

- Aluminum pressure die-cast housing
- Water-proof 80-pin connector
- Pressure adjusting with water barrier



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

Subject to changes and corrections. HY-TTC 77 is a product name of TTControl GmbH. Trademarks are the property of their respective holders. To the extent possible under applicable law TTControl hereby disclaims any and all liability for the content and use of this product flyer.