

## Universal Off-Highway Control – HY-TTC 48X

### General Description

HY-TTC 48X is an intelligent I/O module that is controlled using CANopen®. It is compliant to CANopen standard certified by CiA. It is part of a complete and compatible product family for the off-highway industry. The HY-TTC 48X is protected by a compact, automotive-style housing and is highly suited for rough operating conditions. It allows local current control on its PWM outputs.

### Specifications

Parameter		Unit
ECU Dimensions	147.6 x 180.3 x 39.8	mm
Dimensions for minimum connector release clearance	197.7 x 202.8 x 39.8	mm
Weight	about 650	g
Operating Temperature	-40 to +85	°C
Operating Altitude	0 to 4000	m
Supply Voltage	8 to 32	V
Peak Voltage	45	V <sub>max</sub>
Idle Current	0.15 at 9 V	A <sub>max</sub>
Standby Current	0.5	mA <sub>max</sub>
Current	25	A <sub>max</sub>
<b>Fulfils the following standards</b>		
CE-Mark	2014/30/EU	
E-Mark	ECE-R10 Rev.4	
EMC	ISO13766, up to 100 V/m, 20 MHz to 1GHz	
ESD	IEC 61000-4-2	
Load Dump	ISO7637-2, 173 V, 2 Ohm	
Ingression Protection	EN 60529 IP 65, IP67 DIN 40050 IP 6K9K	
Communication Profile	CANopen CiA DS 401	
Temperature	EN 60068-2-1, -14Nb, -2, -78, -30	
Vibration, Shock, Bump	IEC 60068-2-29, -64, -27, -32	

### Features

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

#### CPU Core

- 16/32-bit Infineon XC2287 microcontroller, 80 MHz, 768 kB int. Flash, 82 kB int. RAM, 512 kB ext. RAM

#### Interface

- 1x CAN, 125 kbit/s up to 1 Mbit/s

#### Outputs

- 8x digital OUT 2 A high-side, PWM, configurable as timer inputs
- 8x digital OUT 4 A high-side, configurable as analog inputs

#### Inputs

- 8x analog IN 0 to 5 V or 4 to 20 mA / 10 bit, configured by software  
alternative use as resistive measurements
- 8x analog IN 0 to 32 V / 10 bit, range configurable by SW
- 4x current feedback, configurable as digital outputs/ lowside 2 A
- 4x digital IN (4 timer 10 Hz to 10 kHz)
- 8x digital IN

#### Other

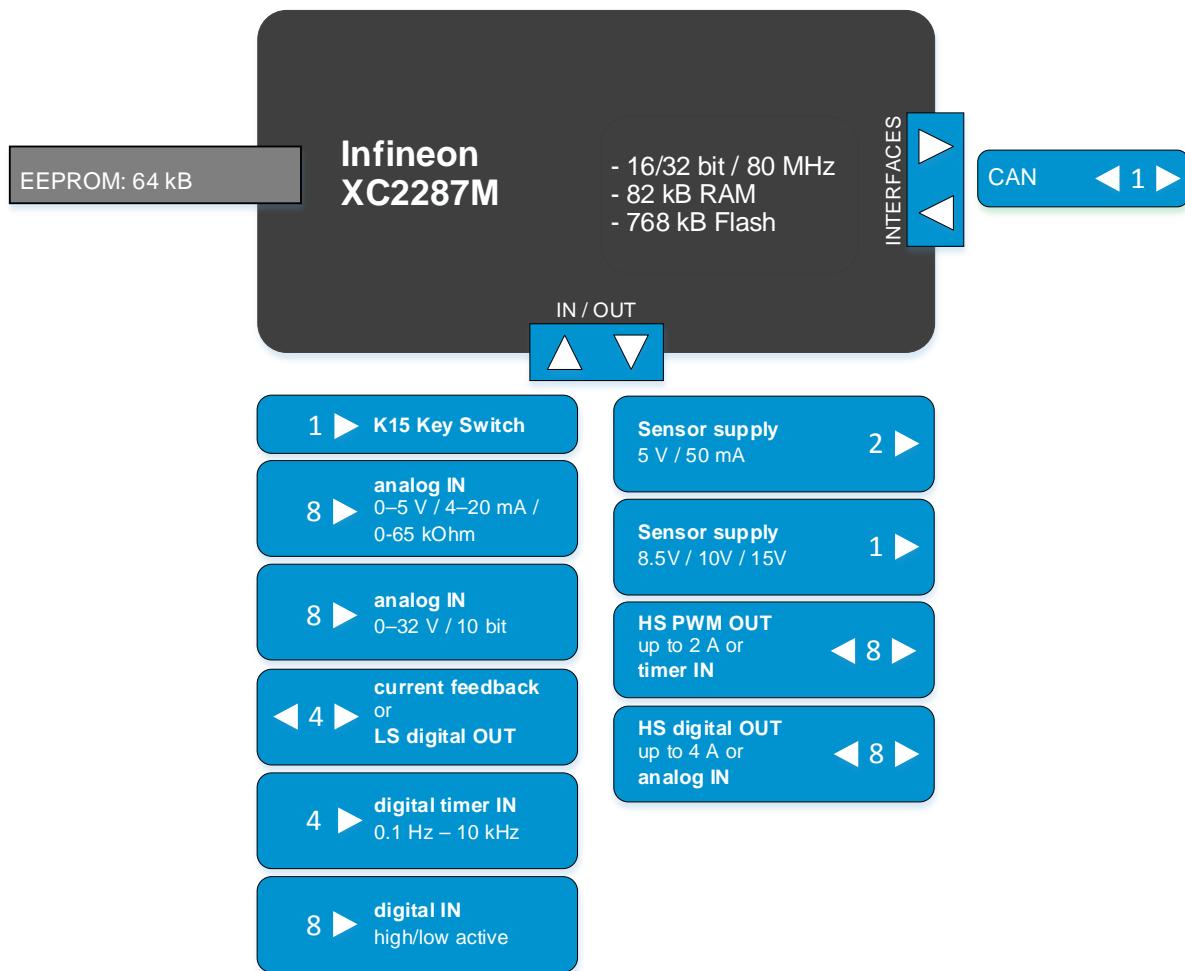
- Internal: monitoring of board temperature, sensor supply and battery
- 1x sensor supply 8.5 V/10.0V/14.5 V configurable
- 2x sensor supply 5 V

#### Software

- CANOpen® slave software preinstalled

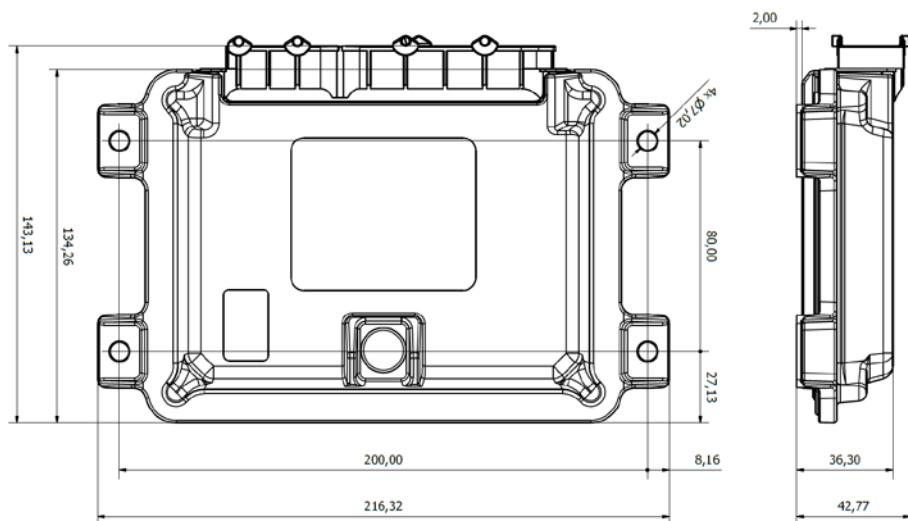


## Block Diagram



## 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](mailto:products@ttcontrol.com)

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