Universal Off-Highway Control – HY-TTC 71

General Description

HY-TTC 71 is a powerful electronic control solution for off-highway industries with 12V power supply. Due to the highly optimized ratio between number of I/Os and the size of the controller, it can be mounted on machines with very little space. Its compact, automotive-style housing withstands extreme conditions such as humidity, vibrations, temperature changes and mechanical load.

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	590	g
Operating Temperature	-40 to +85 (at full load) -40 to +105 (at part load)	°C
Operating Altitude	0 to 4 000	m
Supply Voltage	7 to 16	V
Peak Voltage	28	V_{max}
Standby Current	0.5	mA_{max}
Idle Current	0.15 at 9 V	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 Starting profile, Level II (4,5 V), functional status A 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 XC2288 safety microcontroller, 80 MHz, 1.6 MB int. Flash, 138 kB int. RAM
- 32 kB ext. EEPROM

Interface

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

Outputs

- 6 x digital OUT, up to 2,5 A, high side with freewheeling diode for higher inductive loads
- 12 x digital OUT, up to 2,5 A, high side for individual outputs

Inputs

- 10 x analog IN, 0 to 15V Pull-Up in digital IN mode
- 10 x analog IN, 0 to 15V Pull-Down in digital IN mode
- 1 x digital timer IN (0.1 Hz to 10 kHz) low side, with voltage measurement
- 2 x analog IN, 0 to 5 V
- 1 x analog IN, configurable in software
  - 0 - 5V   0 - 25 mA
  - 0 - 65 kOhm   digital IN low side
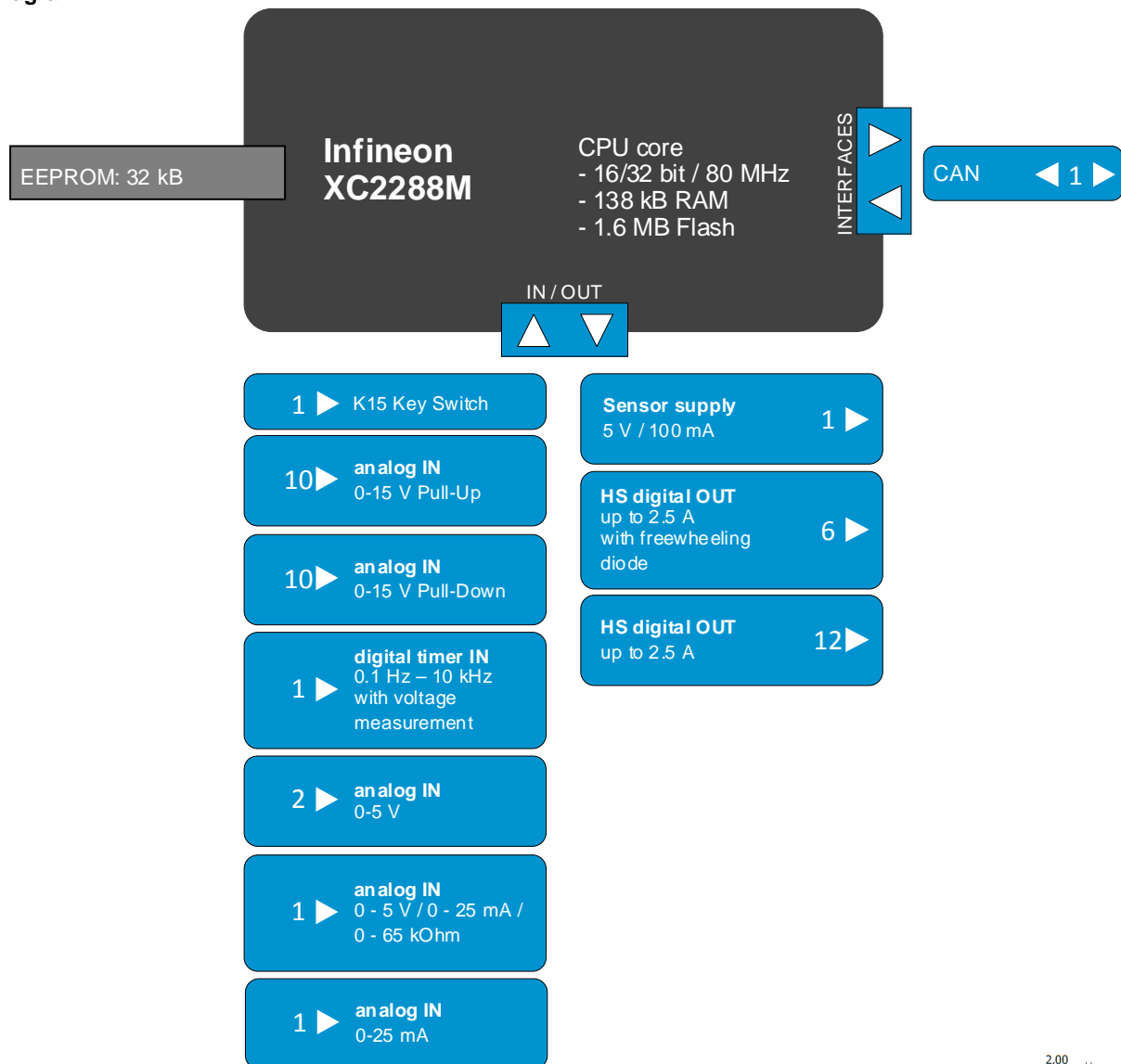- 1 x analog IN, 0 – 25 mA

Other

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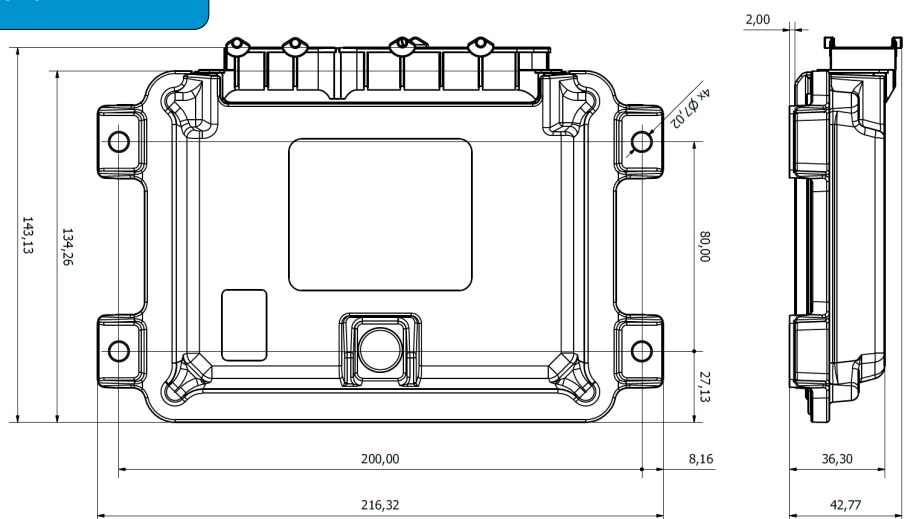- 1 x digital sensor ground

Software

- Programming: C

Block Diagram

EEPROM: 32 kB

**Infineon
XC2288M**

CPU core
- 16/32 bit / 80 MHz
- 138 kB RAM
- 1.6 MB Flash

INTERFACES

CAN ◀ 1 ▶

IN / OUT ▲ ▼

1 ▶ K15 Key Switch	Sensor supply 5 V / 100 mA 1 ▶
10 ▶ analog IN 0-15 V Pull-Up	HS digital OUT up to 2.5 A with freewheeling diode 6 ▶
10 ▶ analog IN 0-15 V Pull-Down	HS digital OUT up to 2.5 A 12 ▶
1 ▶ digital timer IN 0.1 Hz – 10 kHz with voltage measurement	
2 ▶ analog IN 0-5 V	
1 ▶ analog IN 0 - 5 V / 0 - 25 mA / 0 - 65 kOhm	
1 ▶ analog IN 0-25 mA	

Housing and Connector

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

143,13
134,26
200,00
216,32
2,00
4x Ø7,02
80,00
27,13
8,16
36,30
42,77

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