HYDAC INTERNATIONAL

Universal
I/O Expansion Module
HY-TTC 36X

Description

The HY-TTC 36X module is an intelligent I/O module which can be driven and parameterized via CANopen Standard according to CiA DS 401.

It offers the opportunity of extending control systems with additional inputs and outputs, and hence additional functionality, in a simple and uncomplicated way.

The PID control devices built into the instrument make it possible to add independent proportional controls in conjunction with the powerful PWM outputs and the current measurement.

The module is protected by the well-proven, extremely compact housing of the 16-bit controller family, which was specially designed for the off-highway vehicle industry.

Special features

- 36 inputs and outputs:
  - 4 PWM outputs
  - 8 digital outputs
  - 8 analogue inputs
  - 16 digital inputs
- Robust aluminium die cast housing with pressure equalization via a waterproof Gore-Tex® membrane
- Waterproof, 80-pin male connection
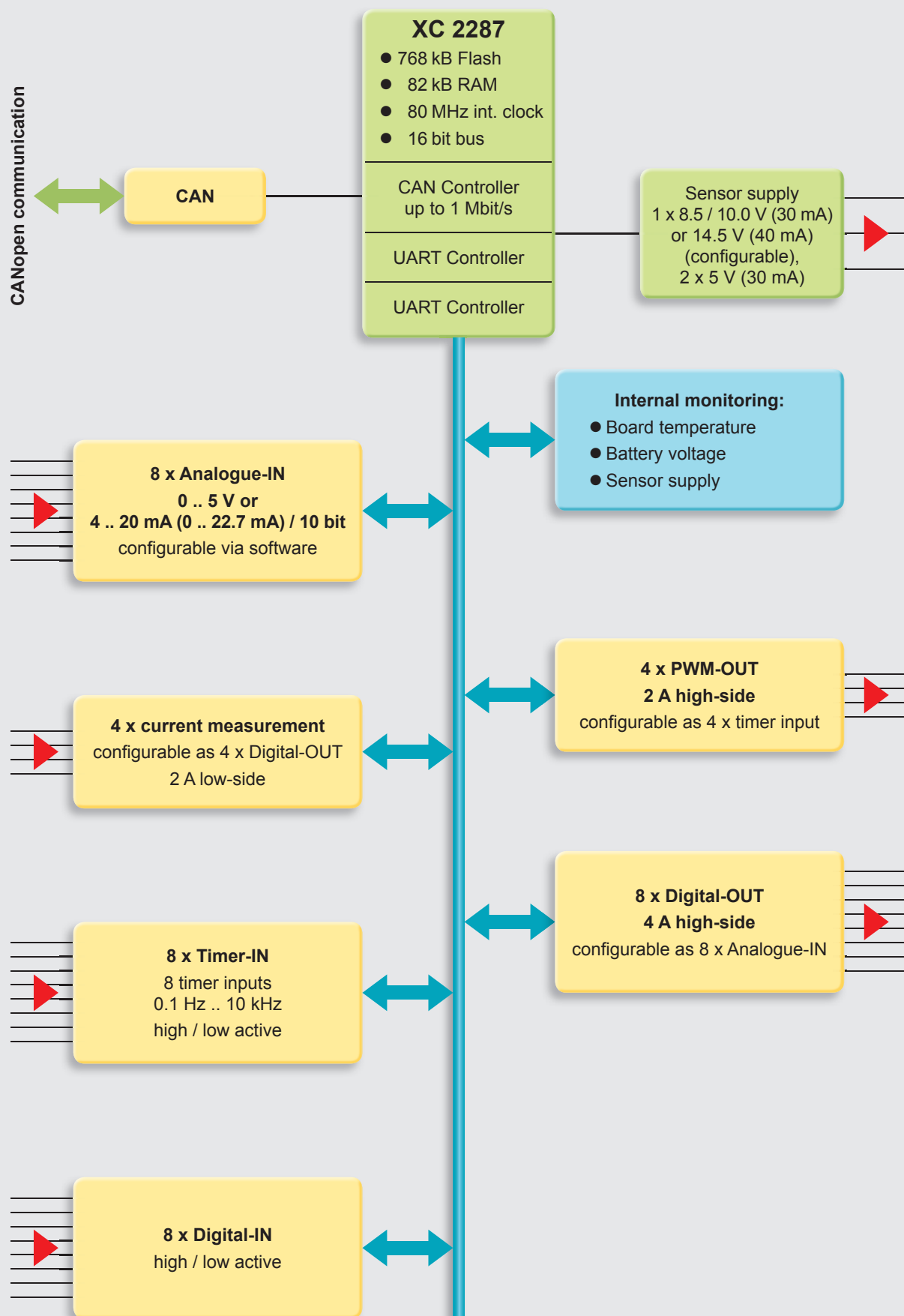- e12 type approval

Technical data

Ambient conditions

Operating temperature	-40 .. +85 °C (with full load) to EN 60068-2
Operating altitude	0 .. 4,000 m
Supply voltage	8 .. 32 V
Peak voltage	45 V max. (1 ms)
Idle current	0.15 A max. at 9 V
Standby current	0.5 mA max.
Current consumption	25 A max. (complete voltage and temperature range)

Fulfils the following standards

C E - mark	Compliant with 2004/108/EC
E-mark	Compliant with 2009/19/EC
EMC	ISO 13766 (up to 200 V/m, 20 MHz .. 1 GHz)
ESD	IEC 61000-4-2
Load dump	ISO 7637-2
Protection class	EN 60529 IP 65 / IP 67 DIN 40050 IP 6k9k
Temperature	EN 60068-2-1; -14Nb; -2; -78; -30
Vibration, Shock, Bump	IEC 60068-2-29; -64; -27; -32
Communication profile	CANopen CiA DS 401

Dimensions and weight

Housing dimensions	148 x 181 x 40 mm
Minimum clearance for connection	198 x 203 x 40 mm
Weight:	652 g

Features*

16 bit Infineon XC 2287 microcontroller, 80 MHz, 768 kB int. flash, 82 kB int. RAM
1 x CAN, up to 1 Mbit/s
8 x Analogue-IN 0 .. 5 V or 4 .. 20 mA (0 .. 22.7 mA) / 10 bit, configurable via software
4 x current feedback, configurable as 4 x Digital-OUT / low-side 2 A
8 x Timer-IN (timer inputs 0.1 Hz .. 10 kHz)
8 x Digital-IN
4 x PWM-OUT 2 A high-side, configurable as 4 x timer inputs
8 x Digital-OUT 4 A high-side, configurable as 8 x Analogue-IN
Internal monitoring of circuit board temperature, sensor supply and battery voltage
Connector types: 52-pole Tyco PN 1393450-5 / 28-pole Tyco PN 1393436-4
1 x sensor supply 8.5 V / 10.0 V (30 mA) or 14.5 V (40 mA) configurable
2 x sensor supply 5 V (30 mA)

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

Block circuit diagram

HY-TTC 36X

CANopen communication

CAN

XC 2287
- 768 kB Flash
- 82 kB RAM
- 80 MHz int. clock
- 16 bit bus

CAN Controller
up to 1 Mbit/s

UART Controller

UART Controller

Sensor supply
1 x 8.5 / 10.0 V (30 mA)
or 14.5 V (40 mA)
(configurable),
2 x 5 V (30 mA)

Internal monitoring:
- Board temperature
- Battery voltage
- Sensor supply

8 x Analogue-IN
0 .. 5 V or
4 .. 20 mA (0 .. 22.7 mA) / 10 bit
configurable via software

4 x PWM-OUT
2 A high-side
configurable as 4 x timer input

4 x current measurement
configurable as 4 x Digital-OUT
2 A low-side

8 x Digital-OUT
4 A high-side
configurable as 8 x Analogue-IN

8 x Timer-IN
8 timer inputs
0.1 Hz .. 10 kHz
high / low active

8 x Digital-IN
high / low active

Model code

HY-TTC 36X – <u>00</u> – <u>000</u>

Equipment option
00 = standard

Modification number
000 = standard

Note

On instruments with a different modification number, please read the label
or the technical amendment details supplied with the instrument.

Accessories

Appropriate accessories, such as electrical connectors, service tools,
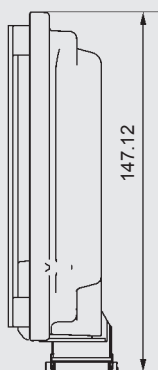software, etc. can be found in the Accessories section.

Dimensions

52-pole Tyco PN 1393450-5 / 28-pole Tyco PN 1393436-4
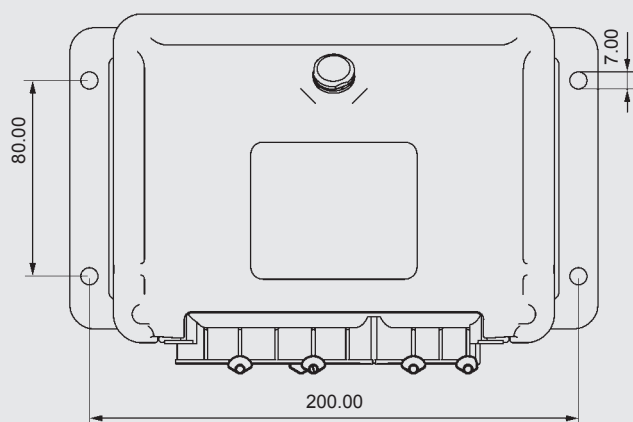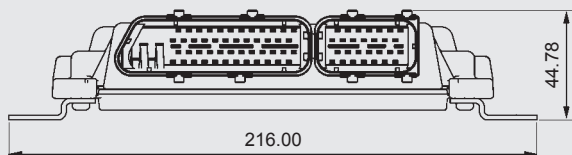

Note

The information in this brochure
relates to the operating conditions
and applications described.

For applications and operating
conditions not described, please contact
the relevant technical department.

Subject to technical modifications.

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