*Datasheet*

# *Vehicle Control Master 2µC*

Publication: **AFDZP0CA**
Edition: **Oct 29, 2018**


## *DESCRIPTION*

Zapi Vehicle Control Master (VCM) is an intelligent module designed to provide a central control of multiple vehicle functions.

The high number of I/Os accommodates a large number – and wide variety – of vehicle controls and sensors.

It can easily work in conjunction with Zapi motor controllers and other CAN devices.

The two-microcontroller structure with two configurable CAN communication ports makes the VCM ideal for a safe single-point “Master” control.

## *APPLICATIONS*

Any distributed or centralized vehicle that requires the control of hydraulic proportional valves or additional inputs and outputs.

**Typical applications:** counterbalanced lift trucks, reach trucks, order picking trucks, aerial lift platforms.

## *FEATURES*

- Operating voltage from 24 V to 80 V.
- Two microcontrollers respectively for main and safety functions, 576+ Kbytes embedded flash memory.
- Up to 11 active-high digital inputs.
- Up to 10 analog inputs with 10-bit resolution.
- 2 incremental encoder interfaces.
- 2 CAN bus ports that allow interconnection to a wide range of devices, including Zapi AC controllers.
- Communication speed up to 500 kbit/s.
- 11-bits and 29-bits communication.
- Communication standard: CAN protocol.
- +12V output supply (up to 500 mA).
- +5V output supply (up to 150 mA).
- 8 power outputs with precise current feedback to control proportional hydraulic valves (up to 2 A per output).
- 1 PWM current-controlled output (up to 4 A).
- 3 PWM voltage-controlled outputs.
- Built-in freewheeling diodes.
- Dither injection with configurable amplitude and frequency.
- Real-time clock.
- Protection from overload, short circuit, open load and ESD.
- Ambient temperature
  - Operating: -40 °C ÷ +50 °C.
  - Storage: -40 °C ÷ +85 °C.
- Sealed connectors (35-pins Ampseal + 23-pins Ampseal)
- IP65 rated.
- Easy access to service, status and diagnostic information.

**Zapi S.p.A.** | Via Parma, 59 | 42028 Poviglio (RE) | ITALY
Tel. +39 522 960050 | Info: zapi@zapispa.it | Sales: sales@zapispa.it
***www.zapigroup.com***

# Vehicle Control Master 2µC

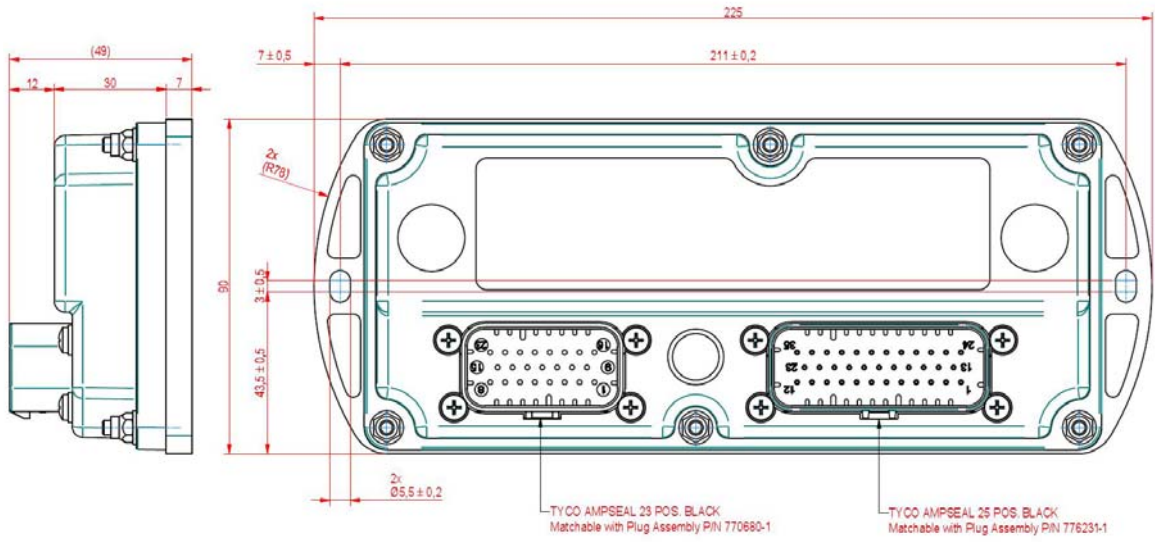
## TECHNICAL DATA

| | Standard | Premium |
|---|---|---|
| **Supply voltage, nominal** | **24 V to 80 V** | |
| **Supply voltage, min/max** | **12 V / 96 V** | |
| **Microcontrollers** | **2** | |
| **Memory (per µC)** | **576+ KB Flash, 48KB SRAM, 64KB emulated EEPROM** | |
| **Connectors** | **35-pins Ampseal** | **35-pins Ampseal + 23-pins Ampseal** |
| **CAN bus ports** | **2** | |
| **Encoder interfaces** | **-** | **2** |
| **Digital inputs** | **7** | **11** |
| **Analog inputs** | **2** | **10** |
| **PWM voltage-controlled outputs** | ***2*** | **3** |
| **PWM current-controlled outputs** ***[Independent outputs]*** | ***8 [4]*** | ***9 [5]*** |
| **+12V output supply** | ***1 (up to 500mA)*** | |
| **+5V output supply** | ***1 (up to 150mA)*** | ***2 (up to 75mA per channel)*** |

## REGULATIONS

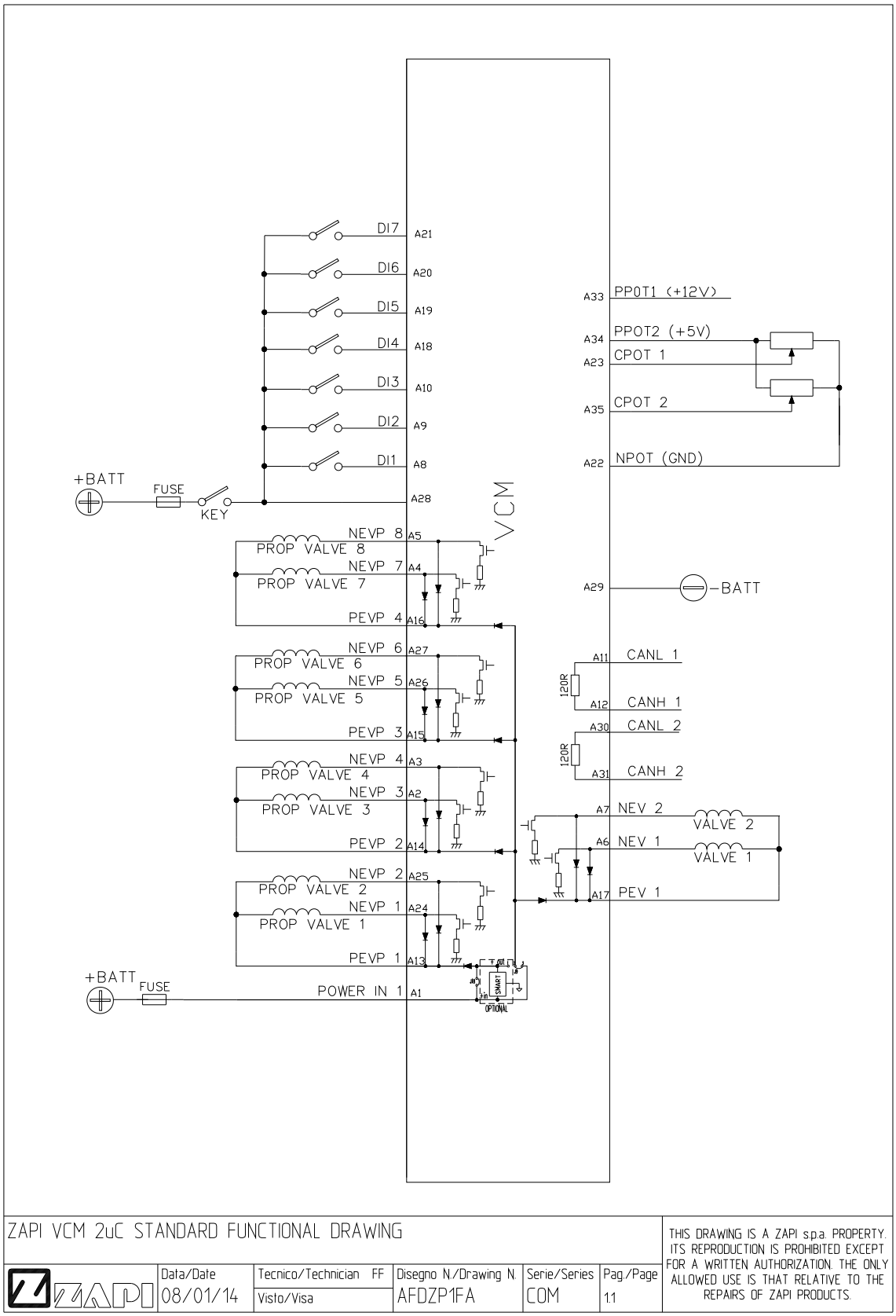
| | |
|---|---|
| **UL certificate** | UL 583 compliant (AU3503). |
| **Functional safety** | Applicable requirements of EN 1175-1:2010, Compliant to upcoming revision of EN1175. |
| **EMC** | Applicable requirements of EN 12895. |
| **IP code** | IP65. |

## DIMENSIONS




**Zapi S.p.A.** | Via Parma, 59 | 42028 Poviglio (RE) | ITALY
Tel. +39 522 960050 | Info: zapi@zapispa.it | Sales: sales@zapispa.it
***www.zapigroup.com***

## TYPICAL WIRING DIAGRAM - STANDARD VERSION



## TYPICAL WIRING DIAGRAM - PREMIUM VERSION