# EC-PWM-P12-MPC6-H PWM DRIVER AND MACHINE MANAGEMENT SAFETY CONTROLLER

# DESCRIPTION

Multi-function PWM controller in a rugged nylon enclosure, fully potted. Control through CANbus or analogue voltage signals. Microprocessor-based PWM driver for remote control of 6 dual-coil proportional solenoid valves. Enhanced version available, with redundant electronics to be used in safety related applications up to PL=d. Fully adjustable via a specific software calibration tool.

# OPERATION

EC-PWM-P12 is designed to be the main controller of multi-function hydraulic manifolds. The control signals can be provided using either CAN Bus or analogue voltage signals. Last generation microcontroller for handling the PWM proportional solenoids. Firmware upgrade available through CANbus line. Enhanced version is equippred with a 16-bit Automotive CPU for Safety architecture up to HW Cat.3.

# FEATURES

- Robust nylon enclosure, fully potted (excellent power dissipation).
- Hardware Category 1 (standard driver) or Category 3 (enhanced version).
- · Power Supply is protected against reversed polarity and automotive disturbances.
- · Inputs are protected against short circuits to GND and power supply.
- · Outputs are protected against short circuits, overcurrent and overtemperature.
- Electro Magnetic Compatibility (EMC): EN 13766, EN 14982.
- High Diagnostics Capability.
  - Enhanced version for applications with high safety requirements:
    Two microcontrollers with independent power supply and watchdog.
    2 CANbus connections, can be merged in one single physical line.
    Combination of High and Low Side outputs from two independent controllers.
    Detection of ground disconnection (as according to ISO EN 13849).
    Independent Power pin on specific High Side outputs.

# SPECIFICATIONS

Operating voltage:	8 ÷ 30 Vdc
Max. current consumption:	< 200 mA (no load applied)
Operating Temperature:	-40 ÷ +105°C
Degree of protection:	IP69K
Analog inputs (16 bits):	6 (0 ÷ 5 V or 4 ÷ 20 mA)
Digital inputs:	6
Inputs for current feedback	6
High Side power outputs	15
Low Side outputs	2
(Enhanced) Outputs with Power pin	6
(Enhanced) Ground detection input	1
CANbus line:	1 (Enhanced: 2)
CANbus interface	ISO 11898
	CAN 2.0A/B
	baudrate up to 1 Mbit/s

# **APPLICATIONS**

- 12/24 Vdc Multi-function PWM Driver or machine management systems.
- Enhanced Safety ECU for aerial platforms, cranes, telehandlers, agriculture vehicles (architecture up to Category 3).

# DIMENSIONS

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WARNING: the specifications/application data shown in our catalogs and data sheets are intended only as a general guide for the product described (herein). Any specific application should not be undertaken without independent study, evaluation, and testing for suitability.

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## **CIRCUIT BOARD PINOUT - WIRING DIAGRAM**



## ADJUSTMENTS

Working parameters can be adjusted via CANbus line.

- Imin (minimum output current)
- Imax (maximum output current)
- Ramp-up time
- Ramp-down time



PC configuration tool available



CANUSB adapter ordering code: 21.0801.040

### APPLICATION EXAMPLE



# **ORDERING INFORMATION**



Part number (Std Version) 23.0412.113

**P12** = 12 PWM proportional outputs

MPC6 = 6 Bidirectional functions

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