

EC-MMS-1521-H MACHINE MANAGEMENT SYSTEM CONTROLLER**DESCRIPTION**

MMS (Machine Management System) controller in rugged aluminum enclosure dual microprocessor, CANbus, built-in safety and fault-detection features for integrated control of complex functions in mobile equipment applications.

OPERATION

It is normally used as the main control unit in a complete management system. Two microprocessors and advanced diagnostics for safety applications. The EC-MMS-1521 comes with an aluminium casing, a silicon rubber gasket and connectors, designed to ensure power dissipation, robustness and tightness required in severe environment conditions. Software download available.

FEATURES

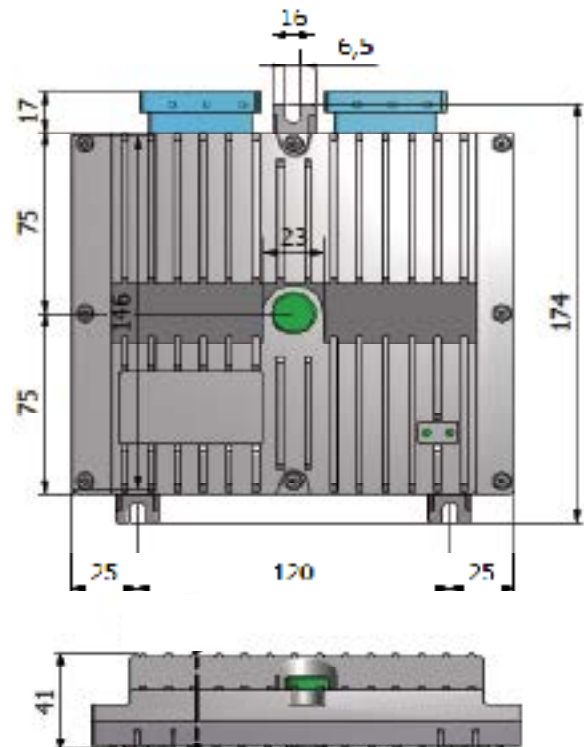
- Robust aluminum enclosure.
- Power supply is protected against reversed polarity (external fuse required) and overvoltage.
- Inputs are protected against short circuits to GND and power supply.
- Outputs protected against short circuits, over-current and over-temperature.
- 2 CANbus connections.
- PWM drivers with current feedback.
- +5 V auxiliary power supply for external control devices.
- Performance level d capability according to ISO 13849, thanks to redundant microcontroller and embedded diagnostics.
- Electro Magnetic Compatibility (EMC): EN 61000-6-2 (Immunity), EN 61000-6-3 (Emissions).
- Reserved power supply pins for safety power outputs.
- Optional add-on inclinometer.
- Optional real time clock for data logging.

**SPECIFICATIONS**

Operating voltage:	8÷32 VDC
Max. current consumption:	< 400 mA (no load applied)
Operating temperature:	-40°C / +105°C
Degree of protection:	IP 69
Analog inputs (16 bits):	3 (0-5 V)
Analog inputs (10 bits):	8 (0-5 V)
Digital (frequency) inputs:	4
High side power outputs:	18 (6 if PWM outputs are used)
Low side power outputs (LS):	2
PWM outputs with current feedback (3A):	12
Analog voltage outputs (0-5 V):	1
Pins selectable as power OUT or digital IN:	6
Inputs with SW selectable pull-up:	4
CANbus lines:	2 (ISO 11898, CAN 2.0A/B)
Available bus speed:	up to 1 Mbit/s

APPLICATIONS

- Main ECU for aerial platforms, cranes, telehandlers, agriculture vehicles.
- 12 VDC and 24 VDC systems.
- Two or more MMS boards can be interconnected through the CANbus line.

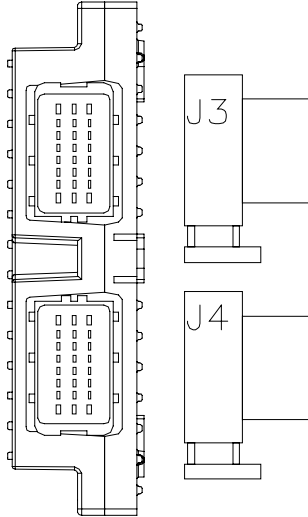
DIMENSIONS

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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EC-MMS-1521-H MACHINE MANAGEMENT SYSTEM CONTROLLER**CIRCUIT BOARD PINOUT - WIRING DIAGRAM**

Connector type: framatome SICMA2

**J3 (GREY)**

- A**
- 1 VHS4
 - 2 OUT_PWM7
 - 3 OUT_PWM2
 - 4 OUT_PWM3
 - 5 DIG INT 1
 - 6 DIG INT 0
 - 7 OUT_PWM4
 - 8 VHS3

B

- 1 LS1
- 2 OUT_PWM6
- 3 ANALOG IN 8
- 4 ANALOG IN 10
- 5 DIG INT 3
- 6 DIG INT 2
- 7 OUT_PWM5
- 8 VHS2

C

- 1 LS0
- 2 5V EXT
- 3 ANALOG IN 9
- 4 CAN L 1
- 5 CAN H 1
- 6 CAN L 2
- 7 CAN H 2
- 8 VHS1

J4 (BLACK)

- A**
- 1 OUT 4
 - 2 OUT 5
 - 3 OUT 0
 - 4 OUT 1
 - 5 OUT_PWM8
 - 6 OUT_PWM9
 - 7 OUT_PWM10
 - 8 +V (POWER SUPPLY)

B

- 1 OUT 2
- 2 OUT 3
- 3 ANALOG IN 1
- 4 ANALOG IN 3
- 5 ANALOG IN 5
- 6 ANALOG IN 7
- 7 OUT_PWM11
- 8 -V (POWER SUPPLY - GND)

C

- 1 OUT_PWM0
- 2 OUT_PWM1
- 3 ANALOG IN 0
- 4 ANALOG IN 2
- 5 ANALOG IN 4
- 6 ANALOG IN 6
- 7 OUT AN 0
- 8 -V (POWER SUPPLY - GND)

ADJUSTMENTS

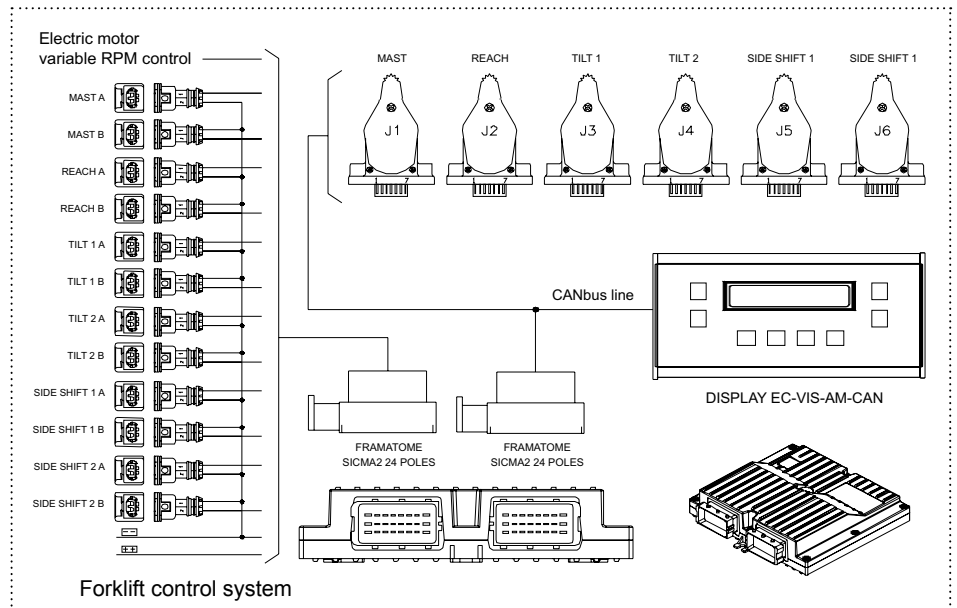
- MMS controllers have a customized firmware to fulfill machine functions.
- A customized calibration tool is available to set main working parameters.



**PC configuration
tool available**



**CANUSB adapter
ordering code: 21.0801.040**

APPLICATION EXAMPLE**ORDERING INFORMATION**

EC-MMS-1521-H

1521 = 15 inputs - 21 outputs
H = Aluminium Housing