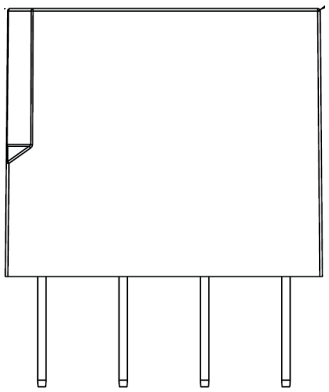
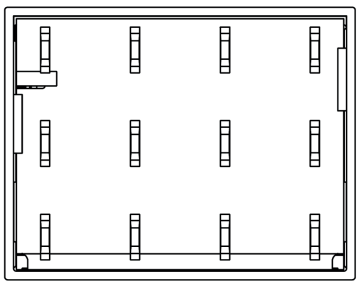


mounting direction



view of plug

DESCRIPTION

Our MicroPlex Gateway is the smallest CAN Gateway in the MRS product line, given its small size and easy installation, it offers a wide range of applications. It has 12 pins with two CAN and LIN interfaces, as well as an optional RS232 interface. The product can be delivered as LIN Slave or as LIN Master circuitry and is perfect for tight installation spaces.

TECHNICAL DATA

Housing	PA66 + GF30
Connector	2.8 mm tab
Weight	Approx. 2 oz
Temperature range (ISO 16750-4 compliant)	- 40 °C bis +85 °C
Environmental protection	IP 67 in combination with fuse box
Current consumption	60 mA
Over-current protection	10 A
Total inputs and outputs	7 (3 input, 4 I/O's)
Inputs	2 Analog/Digital Input
Outputs	**Configurable as:** Digital output PWM output
Operating voltage	9-30 V
Starting voltage	≥ 6 V
Overvoltage protection	≥ 33 V
Undervoltage cut-off	≤ 6 V
Quiescent current	124 µA at 24 V; 50 µA at 12 V
Reverse polarity protection	Yes
Interfaces	2x CAN-Bus 2x LIN-Bus[1] 1x RS232[1]

1: The Second LIN BUS is sharing the same output pin as the RS232. Orderable option is either one or the other

REGULATORY APPROVALS AND TESTING

Electrical tests	Short circuit protection Reverse polarity Load Dump

SOFTWARE/PROGRAMMING

Programming System

MRS Developers Studio
MRS Developers Studio with built-in functions library, similar programming with FUP. Custom software blocks can be integrated into “C-code”. Program memory is sufficient for about 300 basic logic components.

PROCESSOR

Manufacturer	NXP
Part Number	MC9S12XEG
Clock Frequency	8 MHz
Flash	128 K
Ram	12 K
EEPROM	2 K

PIN ASSIGNMENT POWER SUPPLY AND INTERFACES

Pin	Description
1	Ground
3	Supply Voltage

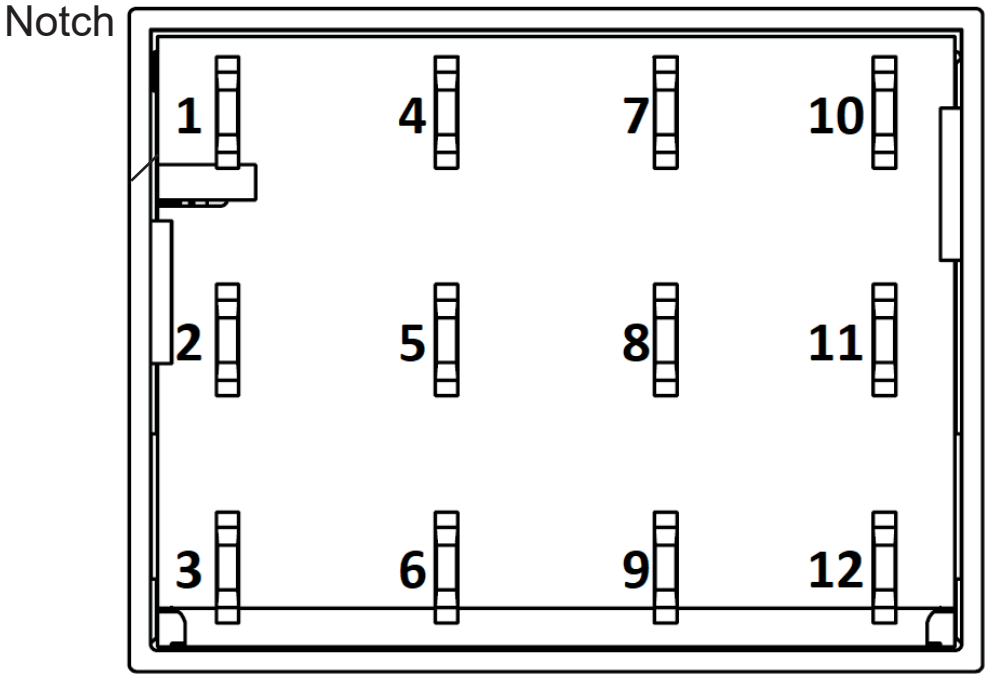
Pin	Description
6	Ignition contact KL15

PIN ASSIGNMENT INPUTS AND OUTPUTS

Pin	Signal	Description
2	AI/DI 1	Analog or Digital Input 1
4	CAN 1 L	CAN 1 Low
5	CAN 1 H	CAN 1 High
7	LIN 1	LIN 1

Pin	Signal	Description
8	AI/DI 2	Analog or Digital Input 2
9	RS232 RXD or LIN 2	RS232 OR LIN 2[1]
10	CAN 2 L	CAN 2 Low
11	CAN 2 H	CAN 2 High
12	RS232 TXD	RS232

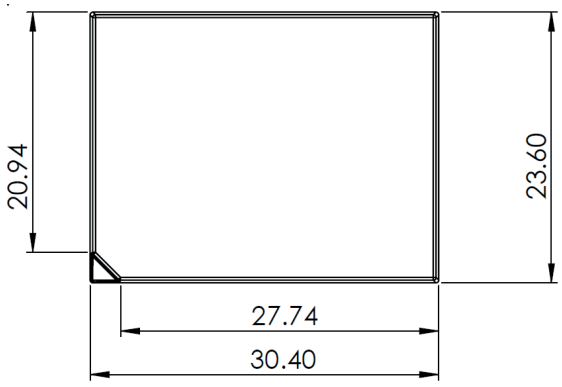
1: The Second LIN BUS is sharing the same output pin as the RS232. Orderable option is either one or the other



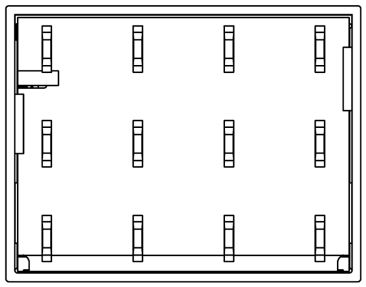
Pin assignment - bottom view

When connecting the module, it is important to pay attention to the correct terminal assignment and direction (see notch) of the module. Improper connection (such as twisting or shifting) can cause unexpected behavior and / or dangerous situations!

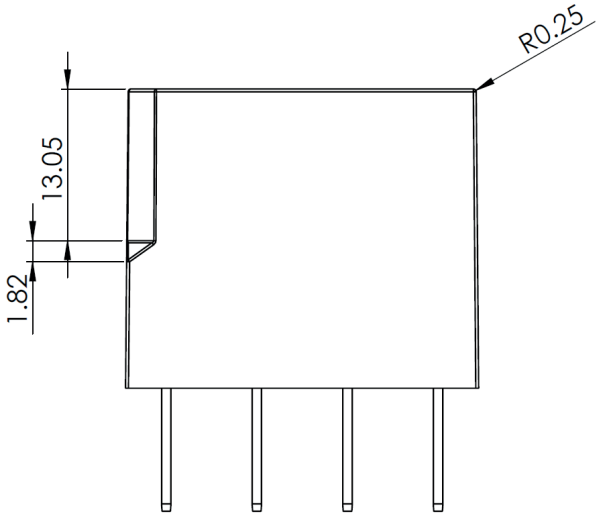
TECHNICAL DRAWING IN MM



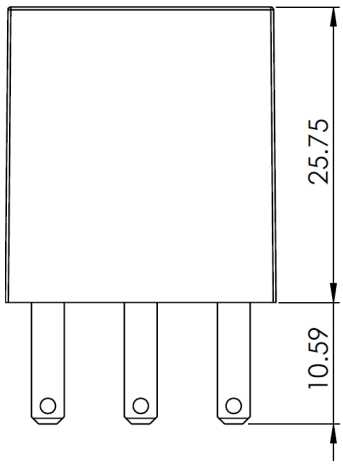
aerial view



bottom view



side view



side view

ACCESSORIES

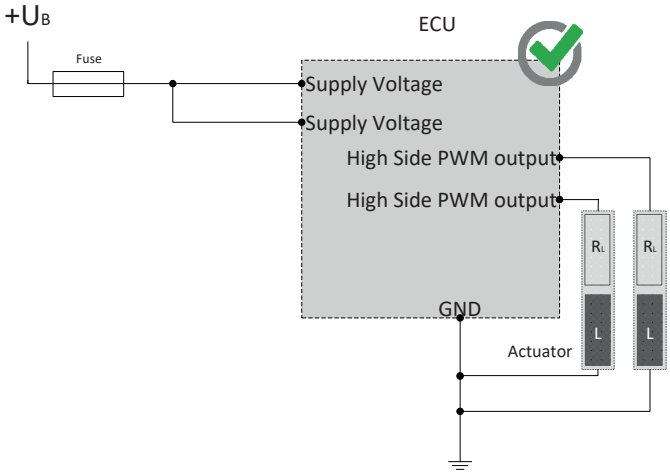
Description	Order number
Programming tool MRS Developers Studio	1.100.100.09
MicroPlex socket (Fuseholder)	301302
Wiring harness for MicroPlex with Fuseholder	301301
Connector package MicroPlex	301288
PCAN-USB Interface	105358

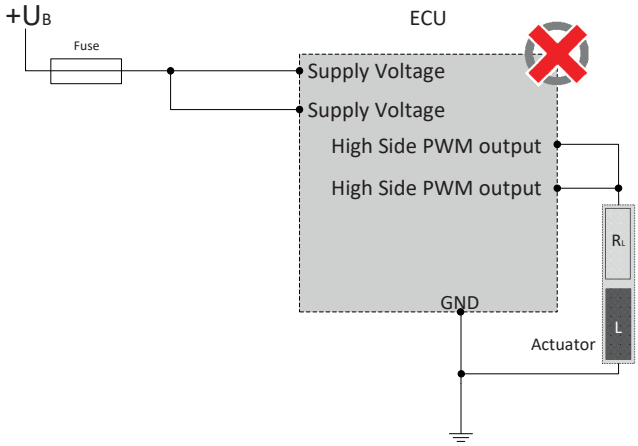
MANUFACTURER

MRS Electronic, Inc.
6680 Poe Ave Suite 100
Dayton, OH 45414
USA

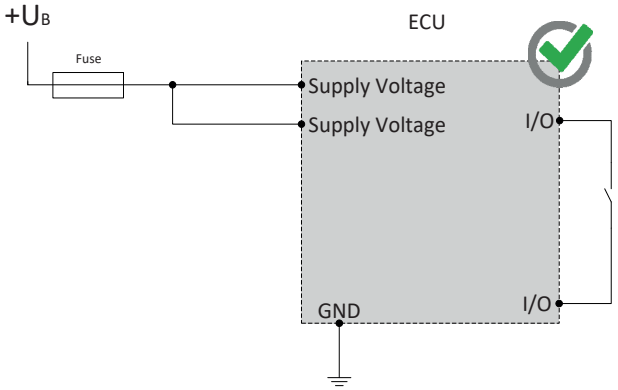
NOTES ON WIRING AND CABLE ROUTING

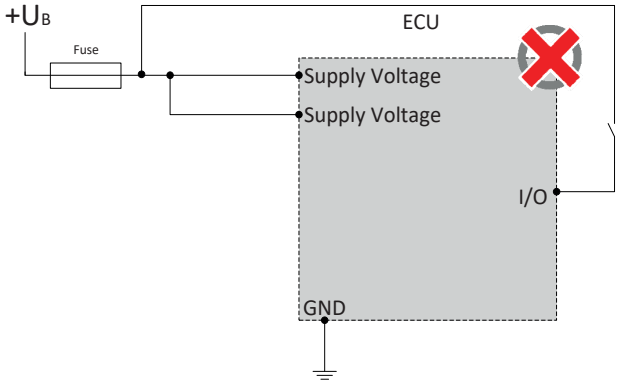
PWM outputs may not be connected with each other or bypassed.





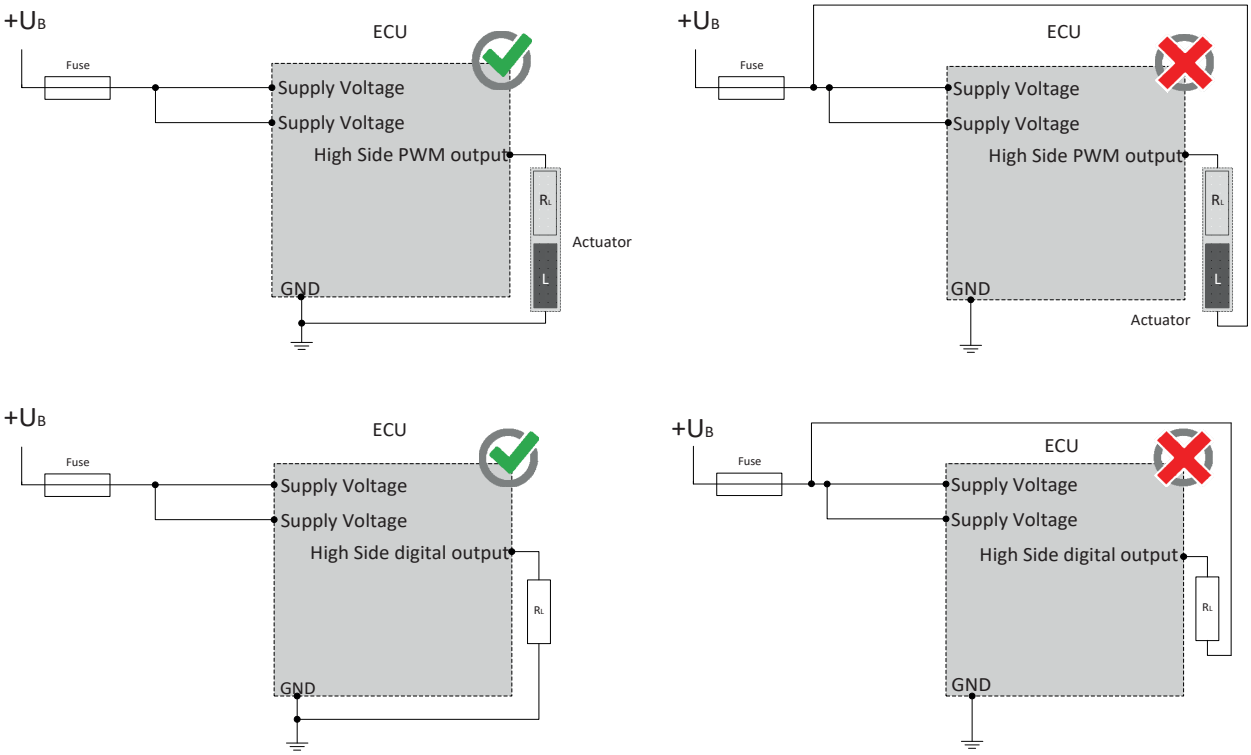
The pins (I/Os) can be used in combination and may not be switched externally against supply voltage.



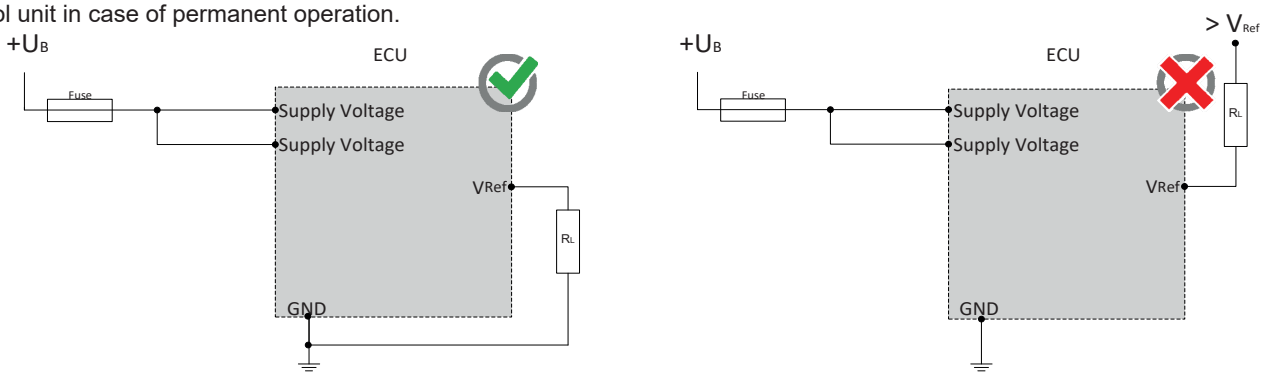


NOTES ON WIRING AND CABLE ROUTING

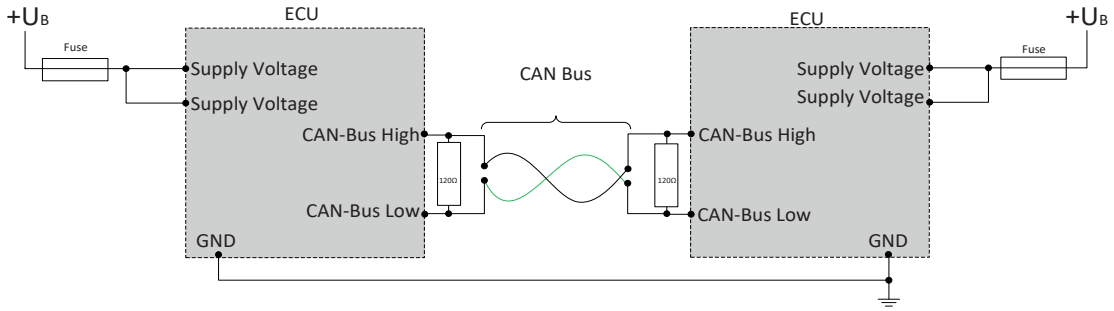
Higside outputs may only be switched to ground.



The sensor supplies can be “lifted” through an external circuitry, for example the creation of higher voltage, as they only work as a voltage source but not as voltage drain. The lift of a voltage source may lead to unforeseen malfunctions and damages of the control unit in case of permanent operation.



CAN bus communication is the main communication between the control unit and the vehicle. Therefore, connect the CAN bus with special care and check the correct communication with the vehicle to avoid undesired behavior.



SAFETY AND INSTALLATION INFORMATION

It is essential to read the instructions in full thoroughly before working with the device.

Please note and comply with the instructions in the operating instructions and the information in the device data sheet, see www.mrs-electronic.com **Staff qualification:** Only staff with the appropriate qualifications may work on this device or in its proximity.

SAFETY

WARNING! Danger as a result of a malfunction of the entire system.
Unforeseen reactions or malfunctions of the entire system may jeopardise the safety of people or the machine.

- Ensure that the device is equipped with the correct software and that the wiring and settings on the hardware are appropriate.

WARNING! Danger as a result of unprotected moving components.
Unforeseen dangers may occur from the entire system when putting the device into operation and maintaining it.

- Switch the entire system off before carrying out any work and prevent it from unintentionally switching back on.
- Before putting the device into operation, ensure that the entire system and parts of the system are safe.
- The device should never be connected or separated under load or voltage.

CAUTION! Risk of burns from the housing.
The temperature of the device housing may be elevated.

- Do not touch the housing and let all system components cool before working on the system.

PROPER USE

The device is used to control or switch one or more electrical systems or sub-systems in motor vehicles and machines and may only be used for this purpose. The device may only be used in an industrial setting.

WARNING!Danger caused by incorrect use.
The device is only intended for use in motor vehicles and machines.

- Use in safety-related system parts for personal protection is not permitted.
- Do not use the device in areas where there is a risk of explosion.

Correct use:

- operating the device within the operating areas specified and approved in the associated data sheet.
- strict compliance with these instructions and no other actions which may jeopardise the safety of individuals or the functionality of the device.

Obligations of the manufacturer of entire systems

It is necessary to ensure that only functional devices are used. If devices fail or malfunction, they must be replaced immediately.

System developments, installation and the putting into operation of electrical systems may only be carried out by trained and experienced staff who are sufficiently familiar with the handling of the components used and the entire system.

It is necessary to ensure that the wiring and programming of the device does not lead to safety-related malfunctions of the entire system in the event of a failure or a malfunction. System behaviour of this type can lead to a danger to life or high levels of material damage.

The manufacturer of the entire system is responsible for the correct connection of the entire periphery (e.g. cable cross sections, correct selection/ connection of sensors/actuators).

Opening the device, making changes to the device and carrying out repairs are all prohibited. Changes or repairs made to the cabling can lead to dangerous malfunctions. Repairs may only be carried out by MRS.

Installation

The installation location must be selected so the device is exposed to as low a mechanical and thermal load as possible. The device may not be exposed to any chemical loads.

Install the device in such a manner that the plugs point downwards. This means condensation can flow off the device. Single seals on the cables/leads must be used to ensure that no water gets into the device.

Putting into operation

The device may only be put into operation by qualified staff. This may only occur when the status of the entire system corresponds to the applicable guidelines and regulations.

FAULT CORRECTION AND MAINTENANCE

NOTE The device is maintenance-free and may not be opened.

- If the device has damage to the housing, latches, seals or flat plugs, it must be taken out of operation.

Fault correction and cleaning work may only be carried out with the power turned off. Remove the device to correct faults and to clean it.

Check the integrity of the housing and all flat plugs, connections and pins for mechanical damage, damage caused by overheating, insulation damage and corrosion. In the event of faulty switching, check the software, switches and settings.

Do not clean the device with high pressure cleaners or steam jets. Do not use aggressive solvents or abrasive substances.