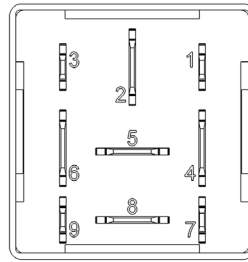


Angled view



Plug view

DESCRIPTION

The PWM analog converter converts a PWM signal into an analog signal. Thanks to the linearized output voltage, you can precisely control your hydraulic applications, such as hydraulic valves or motors.

TECHNICAL DATA

Housing	Plastic PA 66GF30
Connector	Base plate 5 resp. 9 pins (2 channels resp. 4 channels)
Weight	25 g
Temperature range (Acc. to ISO 16750-4)	-40°C...+85°C
Environmental protection (Acc. to ISO 20653)	IP 6K8 with correct mounting direction and use of the waterproof plug-in socket, otherwise IP53
Current consumption	-
Fuse protection	-
Total Inputs and outputs	Depending on assembly 4 resp. 8
Inputs	2 resp. 4x PWM input
Outputs	2 resp. 4x Analog output
Operating voltage	-
Overvoltage protection	-
Quiescent current	-
Reverse voltage protection	Yes
CAN Interfaces	-

REGULATORY APPROVALS AND TESTING

E1 approval	not necessary as it is a passive module
Electrical tests	Acc. to ISO 16750 – 2 resp. -4: Reverse polarity test Long-term overvoltage at T _{Max-20K}
Chemical tests (@ Room temperature, brushed)	Acc. to ISO 16750-5:2010 Battery fluid (22 h) Interior cleaner (2h) Glass cleaner (2h) Aceton (10 min) Ammoniumcontaining cleaner (22 h) Denatured alcohol (10 min) Transpiration (22 h) Cosmetic Products (Nivea Creme, 22 h) Refreshment containing coffein and sugar (Cola, 22 h) Cream, coffee whitener (22 h)

INPUT FEATURES SUMMARY (DEPENDING ON ASSEMBLY)

Pin 1, 2, 5, 7

PWM-Input (see A)	Input resistance	1 kΩ
	Input amplitude	9...32 V
	Input frequency	0...3000 Hz
	Duty cycle	0...100 %

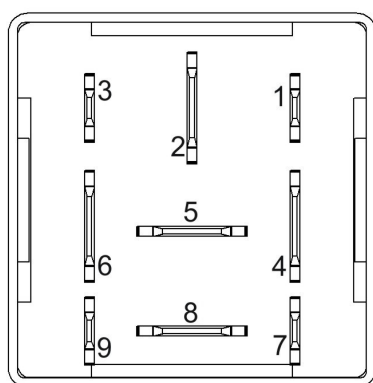
OUTPUT FEATURES SUMMARY (DEPENDING ON ASSEMBLY)

Pin 3, 4, 8, 9

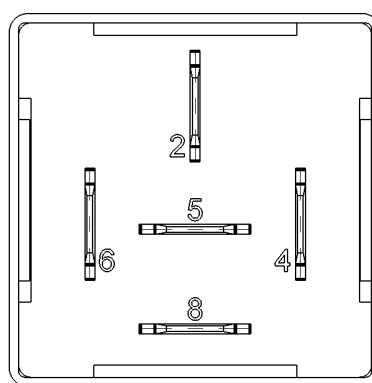
Analog output (see B)	Output voltage	0...31 V
	Load resistance	> 10 kΩ
Accuracy of conversion		Deviation <5% for 20 Hz...500 Hz and duty cycles >25%
		Devation <10% for 10 Hz...1100 Hz and duty cycles >20%

PIN ASSIGNMENT

Pin	Pin Description	Pin	Pin Description
1	PWM input 3	6	contact 31 / Ground
2	PWM input 2	7	PWM input 4
3	Analog output 3	8	Analog output 1
4	Analog output 2	9	Analog output 4
5	PWM input 1		

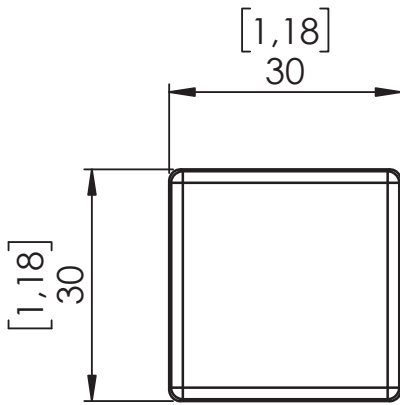


Pin assignment 9-pin

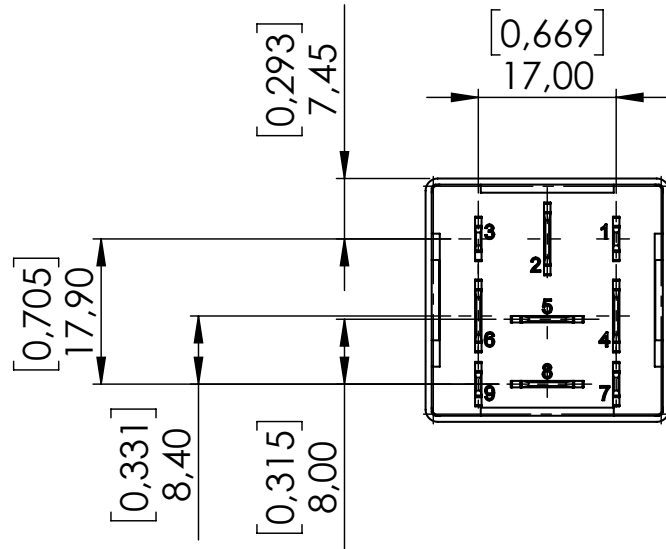


Pin assignment 5-pin

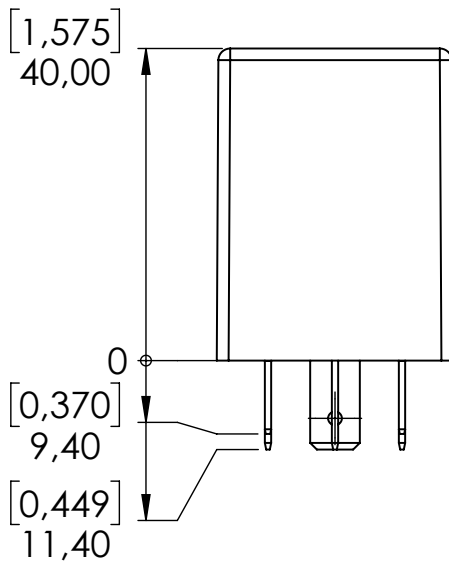
TECHNICAL DRAWING IN MM [INCH]



Top view



Bottom view



Side view

ASSEMBLY OPTIONS AND ORDER INFORMATION

Order number	Pin assignment inputs	Outputs	Remarks
	A PWM inputs	B Analog outputs	
1.071.300.02	2, 5	4, 8	
1.071.300.04	1, 2, 5, 7	3, 4, 8, 9	

ACCESSORIES

Description	Order number
Socket package watertight 40 mm	1.017.010.40
Socket ST FL 9 pol. 5x 6.3 / 4 x 2.8	1.017.002.00
Tab receptacle 2.8 mm 0.5 – 1.0 mm ²	105292
Tab receptacle 6.3 mm 1.0 mm ²	102355



Sample image

MANUFACTURER

MRS Electronic GmbH & Co. KG
Klaus-Gutsch-Str. 7
78628 Rottweil
Germany

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.de

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.