

DESCRIPTION

The voltage converter outputs a stabilised reference voltage (5 V or 12 V). This can be used to supply sensors. Because of the integrated regulator, the voltage converter can be used in a voltage range of 9-32 V / 18-32 V.

TECHNICAL DATA

Housing	PA66GF30
Connector	Base plate 4-pin
Weight	20 g
Temperature range (acc. to ISO 16750-4)	-40 °C to +85 °C
Environmental protection acc. to ISO 20653	IP6K8 with correct mounting direction and use of the waterproof socket, otherwise IP53
Current consumption	4.5 mA at 12 V/24 V
Over-current protection	1 A
Total Inputs and outputs	1 reference voltage output
Inputs	-
Outputs	1 reference voltage output
Total Inputs and outputs	9...32 V for 5 V variant 18...32 V for 12 V variant (Code C and E for 9...32 V, Code H for 18...32 V, acc. to ISO 16750-2)
Overvoltage protection	≥ 33 V
Quiescent current	not available
Reverse polarity protection	yes
CAN interfaces	no

REGULATORY APPROVALS AND TESTING

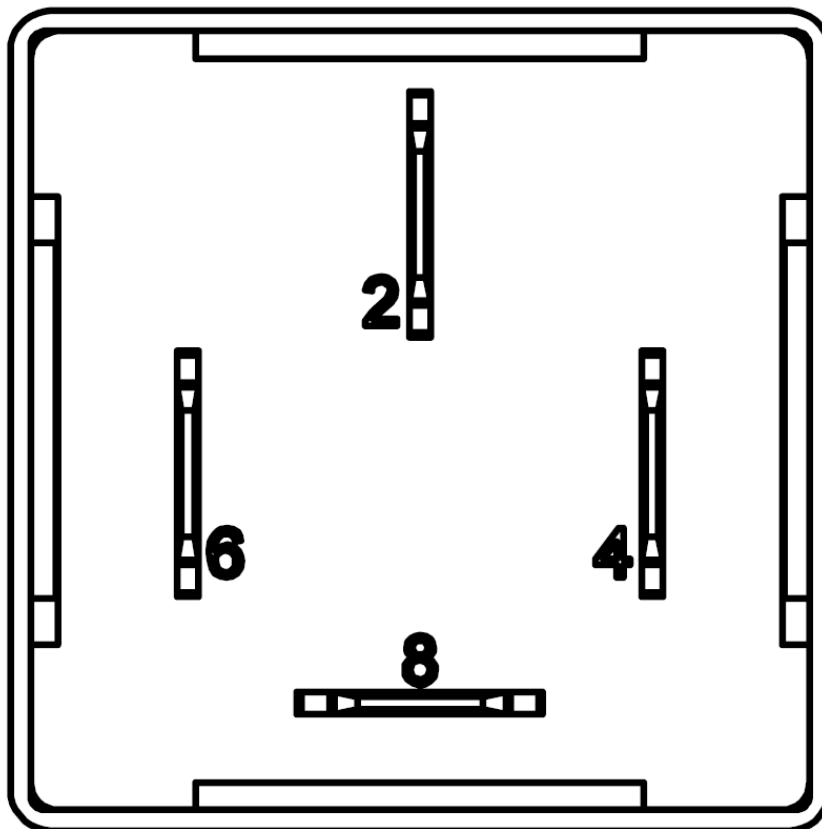
E1 approval	06 7308
Elektrical tests	According to ISO 16750-2: Short circuit protection Reverse polarity protection Interruption pin Interruption plug Long-term overvoltage at +65°C Storage/operation test at $T_{min} = -40^{\circ}C$ Storage/operation test at $T_{max} = 85^{\circ}C$ Temperature steps Superimposed alternating voltage Slow decrease and increase of the supply voltage Short-term voltage drop Reset behavior at voltage drop Starting profile level II Load Dump 5b ($R_f = 4 \Omega$) Acc. to ISO 10605:2008 Air discharge/indirect discharge ± 25 kV Contact discharge ± 15 kV with $C=150 \text{ pF}$ / $R=330 \Omega$ Acc. to ISO 7637-2:2011: Pulse 1 to 3b, degree of severity IV Interference immunity acc. to ISO 11452-5: Stripline: 60 V/m Interference immunity acc. to ISO 11452-2: Antenna: 30 V/m
Mechanical tests	Vibration according to ISO 16750-3 Test VIII; Mechanical shock according to IEC 60068-2-27
Chemical tests (@ room temperature, brushed)	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)

OUTPUT FEATURES - SUMMARY

Pin 8	Protective circuit for inductive loads	via free wheel diode
Reference voltage output (measured with resistive load)	Max. switching current Accuracy Ripple V_{pp}	500 mA $\pm 3\%$ (load-dependent) 5V ≈ 120 mV 12V ≈ 240 mV

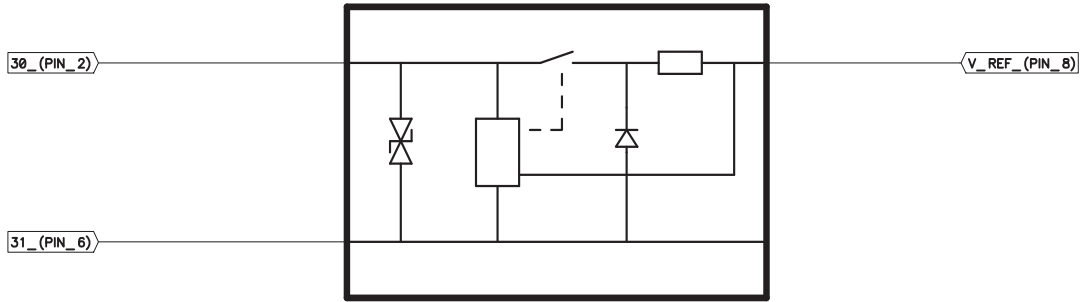
PIN ASSIGNMENT SUPPLY VOLTAGE

Pin	Description	Pin	Description
2	supply voltage/KL30	6	mass / GND
4	not connected		

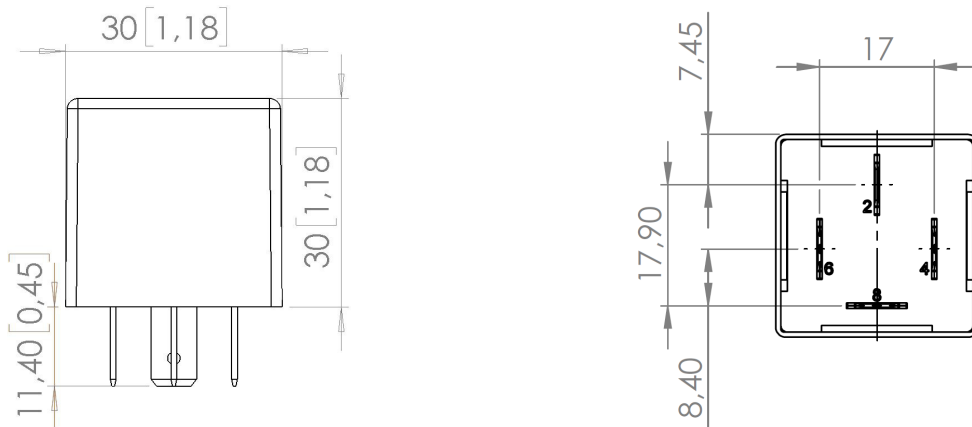


pin assignment - bottom view

BLOCK FUNCTION DIAGRAM



TECHNICAL DRAWING IN MM [IN INCH]



ASSEMBLY VARIANTS AND ORDERING INFORMATIONS

Order number	Reference voltage	Reference voltage
	Pin	
1.038.300.05	8	5 V
1.038.300.12	8	12 V

SCIP NUMBERS

Order number	SCIP number
1.038.300.05	ef22424c-0ffa-4a2b-9f8b-b78a19c4b8c4
1.038.300.12	ef22424c-0ffa-4a2b-9f8b-b78a19c4b8c4

ACCESSORIES

Description	Order number
Socket ST FL 9-pin 5x 6.3 / 4 x 2.8	1.017.002.00
Socket package watertight 30 mm	1.017.010.30
Tab receptacle for latching 6.3 mm 1.0 mm ²	102355
Tab receptacle for latching 6.3 mm 1.5-.2.5 mm ²	103064

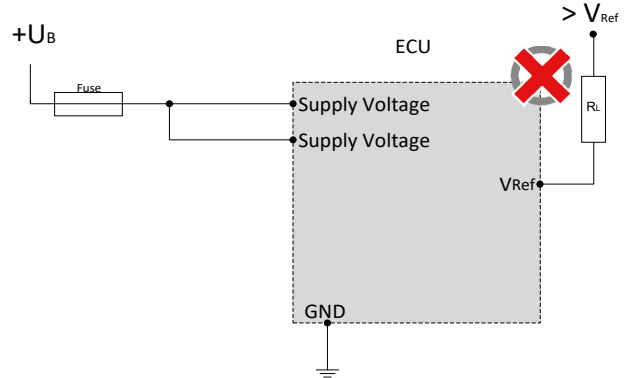
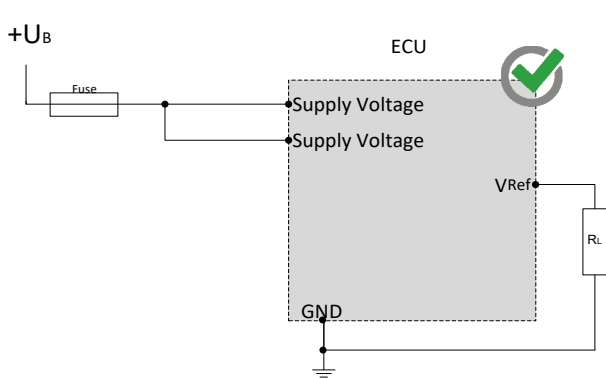


MANUFACTURER

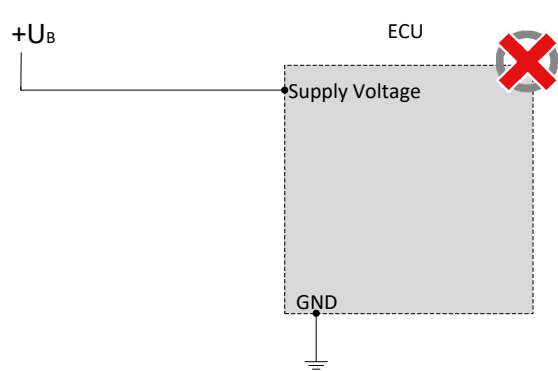
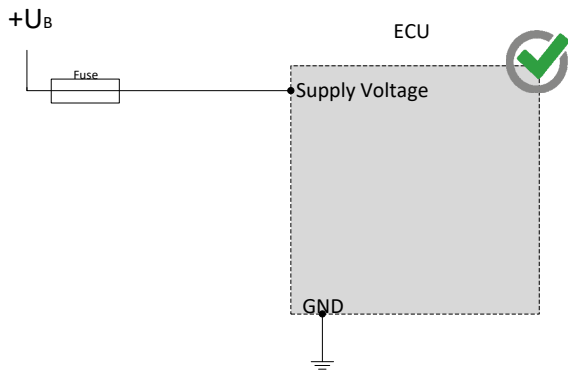
MRS Electronic GmbH & Co. KG
Klaus-Gutsch-Str. 7
78628 Rottweil

NOTES ON WIRING AND CABLE ROUTING

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 unit in case of permanent operation.



The control unit must be protected against overload (see performance data)



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.