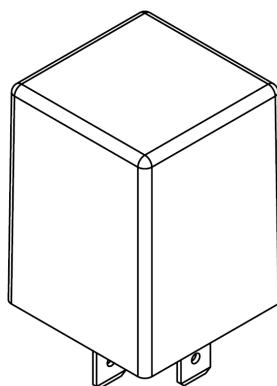


Front view



Angled view

## DESCRIPTION

The DC/DC converter provides you with two stabilized reference voltages for your applications, which can be used e.g. to supply sensors. We offer you the combinations of 17 V and 5 V, 10 V and 5 V or 5 V and 3.3 V.

## TECHNICAL DATA

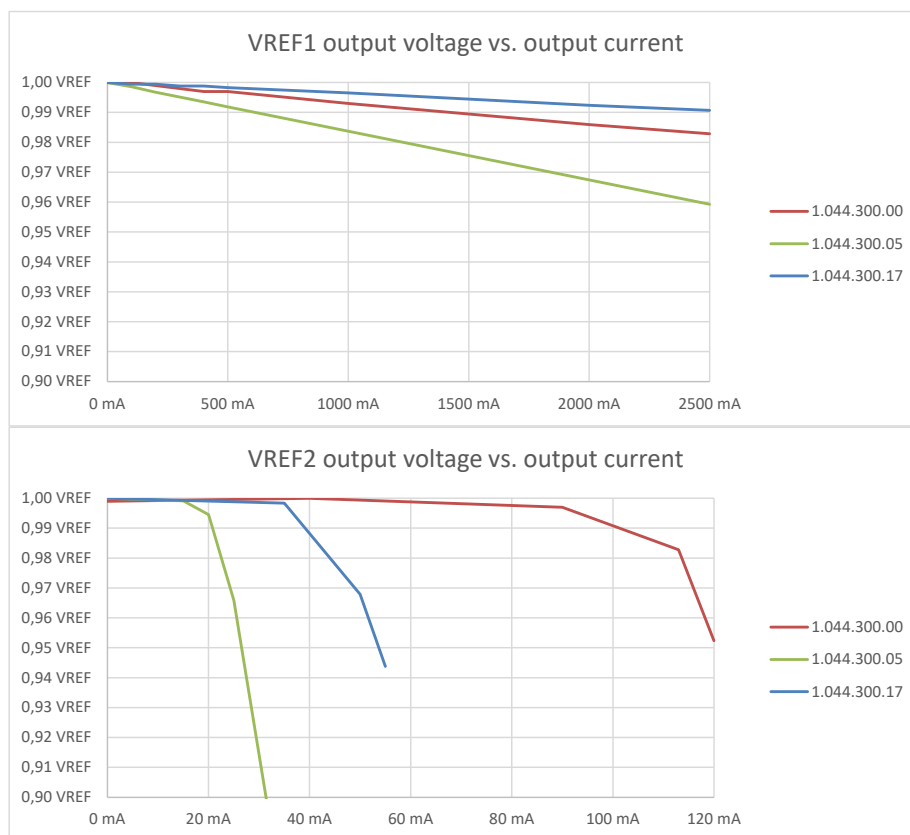
Housing	Plastic PA 66GF30
Connector	Base plate 5-pin
Weight	31 g
Temperature range (acc. to ISO 16750-4)	-40 °C bis +85 °C
Environmental Protection	IP 6K8 with correct mounting direction and use of the waterproof plug-in socket, otherwise IP53
Fuse protection	2 A
Inputs	-
Outputs	2 Reference voltage outputs
Operating voltage	7...32 V for 1.044.300.05 12...32 V for 1.044.300.00 19...32 V for 1.044.300.17
Overvoltage protection	≥ 33 V
Current consumption	6 mA @12 V and 24 V
Reverse polarity protection	yes

## REGULATORY APPROVALS AND TESTING

E1 approval	10 R - 05 9261
Electrical tests	<b>Acc. to ISO 16750 – 2 resp. -4:</b> Operating voltage range Short circuit protection Reverse polarity Interruption pin and connector Long-term overvoltage at TMax -20 °C Storage test at TMax and TMin Operation test at TMax and TMin  <b>Acc. to ISO 7637 - 2:</b> Pulse 1, 2a, 2b, 3a, 3b, severity level III  <b>Acc. to ISO 10605:</b> ESD up to ± 15 kV
Chemical tests (@ Room temperature, brushed)	<b>Acc. to ISO 16750-5:2010</b> 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 (DEPENDING ON ASSEMBLY)

Pin 5 (VREF1)	Protective circuit for inductive loads	integrated	Pin 8 (VREF2)	Protective circuit for inductive loads	integrated
Reference voltage output (DC/DC)	Nominal voltage	5 V, 10 V or 17 V	Reference voltage output (Micropower linear regulator)	Nominal voltage	3,3 V or 5 V
	max. current	see load tests below		max. current	see load tests below
Short circuit resistance against GND and $V_s$	Shutdown of the outputs controlled by output driver		Short circuit resistance against GND and $V_s$	Shutdown of the outputs controlled by output driver	



Note to the diagrams on the left: Representation via factor.  
 0.99 VREF means e.g. at  $V_{REF} = 17 \text{ V} \rightarrow 17 \text{ V} * 0.99 = 16.83 \text{ V}$ . All voltage variants have different characteristics.

LOAD TESTS AT  $T_{+85^\circ\text{C}}$ 

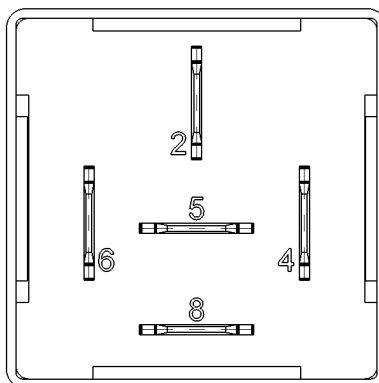
	Test No.	Load	Duration
1.044.300.00	1	VREF1: 1,6 A; VREF2: 0 mA	Permanent
1.044.300.00	2	VREF1: 0,0 A; VREF2: 120 mA	Permanent
1.044.300.00	3	VREF1: 1,5 A; VREF2: 50 mA	Permanent
1.044.300.05	1	VREF1: 1,8 A; VREF2: 0 mA	Permanent
1.044.300.05	2	VREF1: 0,0 A; VREF2: 30 mA	Permanent
1.044.300.05	3	VREF1: 1,8 A; VREF2: 20 mA	Permanent
1.044.300.17	1	VREF1: 1,5 A; VREF2: 0 mA	Permanent
1.044.300.17	2	VREF1: 0,0 A; VREF2: 45 mA	Permanent
1.044.300.17	3	VREF1: 1,0 A; VREF2: 40 mA	Permanent

## PIN ASSIGNMENT POWER SUPPLY

Pin	Pin Description
2	KL30 / supply voltage
4	n.c.
6	KL31 / GND

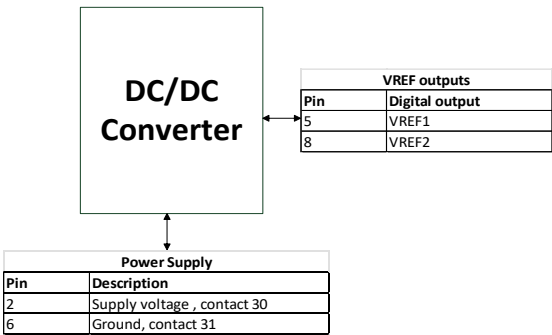
## PIN ASSIGNMENT OUTPUTS

Pin	Pin Description
5	VREF1
8	VREF2

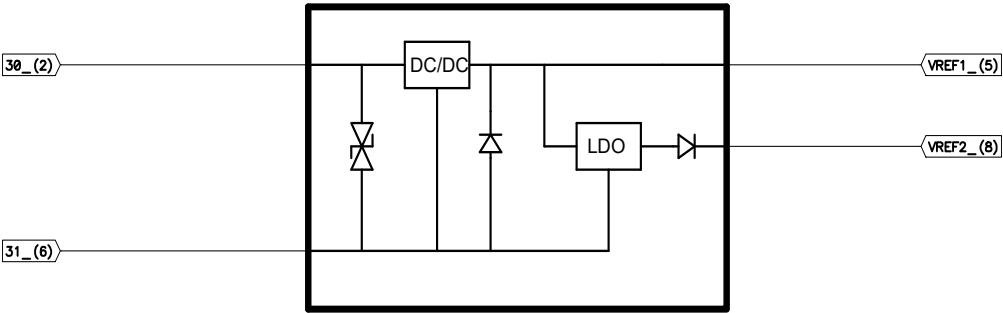


Pin assignment, plug view

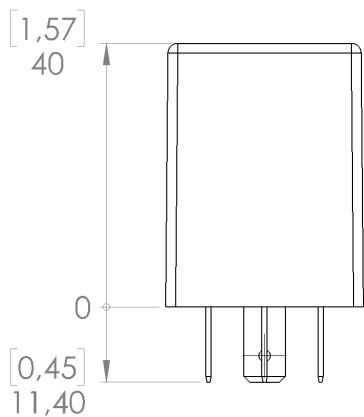
PIN - FEATURE MAP



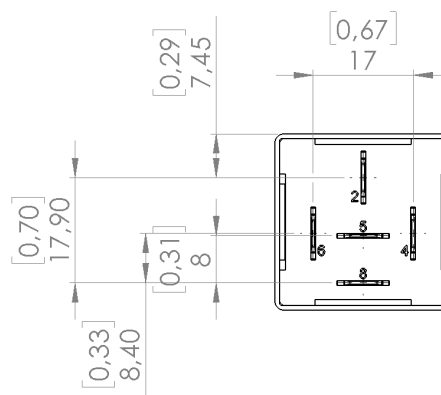
BLOCK FUNCTION DIAGRAM



TECHNICAL DRAWING IN MM [INCH], TOLERANCES ACCORDING TO ISO 2768-1 V



Front view



Plug view



ASSEMBLY VARIANTS AND ORDERING INFORMATION

Drawing number	Reference voltage output	
	Pin 5 (VREF1)	Pin 8 (VREF2)
1.044.300.00	10 V	5 V
1.044.300.05	5 V	3.3 V
1.044.300.17	17 V	5 V

SCIP number: 8f401330-b189-4558-9dd8-7a83c3c88285

ACCESSORIES

Description	Order number
Socket ST FL 9 pol. 5x 6.3 / 4 x 2.8	1.017.002.00
Socket package watertight 40 mm	1.017.010.40
Tab receptacle 6.3 mm 1.0 mm <sup>2</sup>	102355
Tab receptacle 6.3 mm 1.5-.2.5 mm <sup>2</sup>	103064

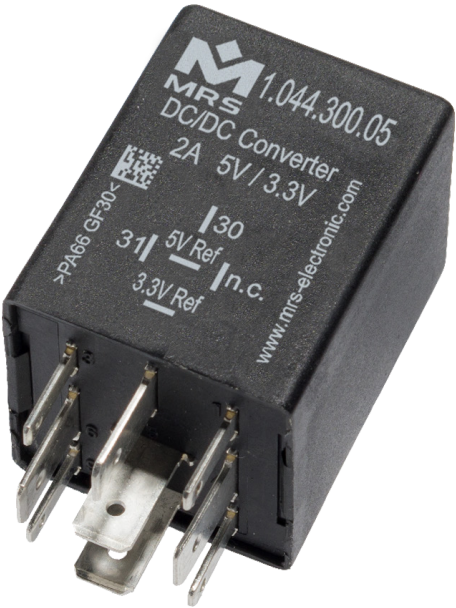


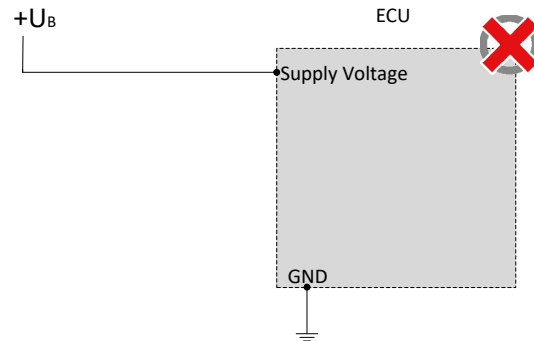
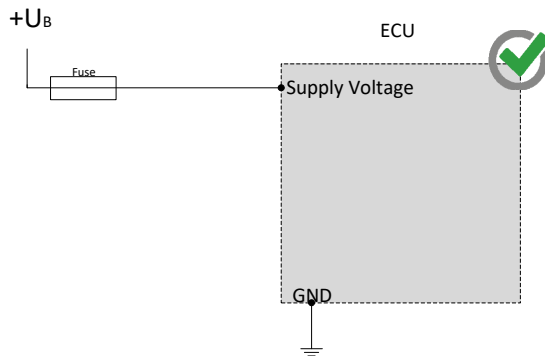
Image similar

MANUFACTURER

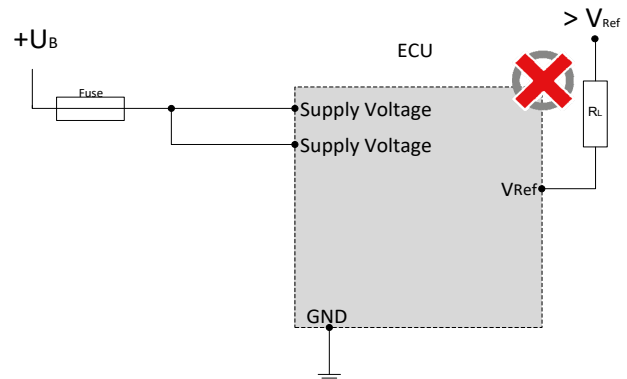
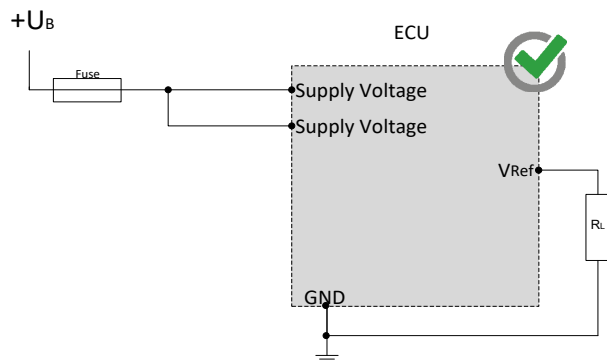
MRS Electronic, Inc.  
6680 Poe Avenue Suite 100  
Dayton OH, 45414  
USA

## NOTES ON WIRING AND CABLE ROUTING

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



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.





## 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](http://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.