

VOTRONIC

Installation and Operating Manual

Switch Unit 40

Switching Capacity 12V or 24 V / 40 A

No. 2071

VOTRONIC Switch Unit 40 works on basis of a bistable relay allowing very high capacities combined with a very low own consumption. It suits especially as a remote-controlled main switch or load relay which is on long-term power. The current carrying capacity conducts 40 A.

Switch Unit 40 can be mote-controlled **by a normal switch** (1 pol. ON / OFF).

Furthermore the consumer can be switched on and off through an emergency switch at the relay by hand.

The ranges of application are campers, intervention vehicles and boats:

- Easy selection through ON / OFF switch
- High switching current 40 A, short time to 60 A loadable
- Applicable as battery main switch through ON / OFF switch (remote-controlled)
- Switching state monitor is visible from the outside
- Electronical delay prevent fast reactions like voltage drop or using strong consumer
- Suitable for long-term usage due to a very low consumption of the Switch Unit (compliant EN13976)
- No own electricity consumption if switched off with an external switch (remote-control)
- Automatical disconnection by under voltage 8.5 V (minimum operating voltage of Switch Unit 40)



Switch Unit 40 cannot be used as a safety relay (emergency switch) to switch off dangerous machines or engines. Please check safety regulations!



Please read this operating and installation manual thoroughly prior to connection and start-up.

Installation:

1. Chose an installation place being cleaned and being protected from humidity and dust.
2. The installation place of the unit should be chosen in such a way, that the cables of battery and consumers can be as short as possible (losses) and that the pushbutton "EMERGENCY" is easily accessible. The unit should never be covered by any objects.
3. The switch unit is fastened solidly with screws in the casing flanges. The unit can be installed in any position. But please make sure that the connection terminals are easy to reach
4. Observe to fasten the connection cables in such a way, that neither high tensible force, nor high force of pressure is acting on the terminals.

Connection: (Please regard the connection plan)



ALWAYS DISCONNECT THE POWER SUPPLY TO THE BATTERY PRIOR TO WORKING ON THE ELECTRIC SYSTEM TO AVOID SHORT-CIRCUITS!

It is recommendable to use connection cables of different colours to avoid malfunctions due to mixed up connections.

Observe: Only use red cables for plus "+" connection and black cables for minus "-" connection.

The 2pol. screw terminal is connected correctly when cable lengths show to the right and the crews show up. **The unit will not be damaged by eventual wrong polarization, but it will not be operating.** Imperatively observe the cable cross sections and the polarity. Insert the fuses near the battery (safety for cable fire).

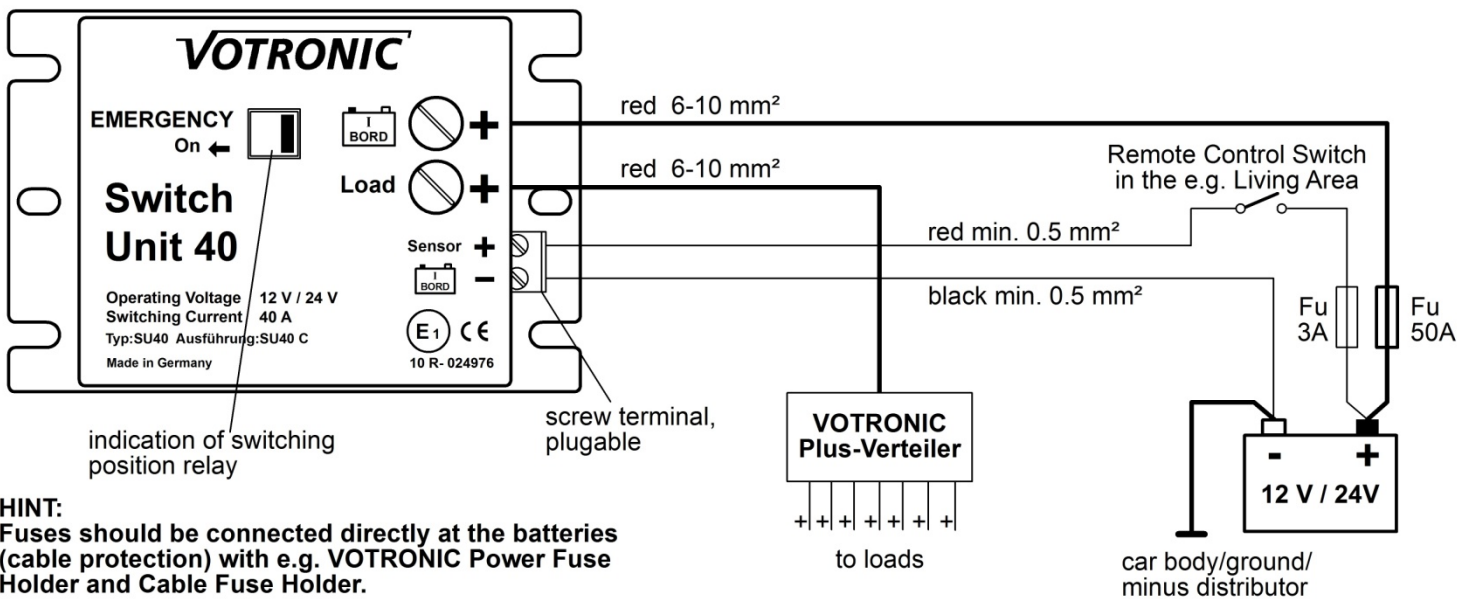
Start-up:

- Switch ON:**
- a.) Through external switch "ON"
(Voltage at sensor cable > 10 V)
 - b.) By hand with switch lever on the product – EMERGENCY towards "ON"
- Switch OFF:**
- a.) By hand every time through external (remote-controlled) switch to „OFF“
 - b.) Automatically through reaching the minimal point of operating voltage
(Undervoltage at sensor cable < 8.5 V)
 - c.) By hand with switch lever on the product – EMERGENCY towards "OFF"



If the „EMERGENCY“ lever is blocked due to dust, dirt or hand-blocking the electronic cannot work properly!

Application example: Using as main switch - Remote control through ON / OFF switch in living room



This application example enables through a switch in the living room the remote-control of the product. Current consumption of the unit is only 0.002 A, therefore a miniature switch is sufficient.

By switching off the switch the electronic is turned off, therefore the low own electricity consumption of the Switch Unit 40 is turned off completely.



Safety Regulations:

The Switch Unit 40 had been designed according to the valid safety regulations.

Appropriate application is restricted to:

1. **As power relay only used under stated nominal voltages and nominal currents.**
2. **Installation of the indicated fuses near the battery to protect the cabling of the unit.**
3. **Technically faultless condition.**
4. **Installation in a well-ventilated room, protected from rain, humidity, dust, aggressive battery gas, as well as in an environment being free from condensation water.**

Never use the unit at locations where the risk of gas or dust explosion exists!

- **Switch Unit 40 cannot be used as a safety relay (emergency switch) to switch off dangerous machines or engines.**
- **Pay attention to safety instructions.**
- Open-air operation of the unit is not allowed.
- Cables are always to be laid in such a way that damage is excluded. Observe to fasten them tightly.
- Never lay 12 V (24 V) cables and 230 V mains supply cables into the same cable conduit (empty conduit).
- Check live cables or leads periodically for insulation faults, points of break or loosened connections. Occurring defects must be remedied immediately.
- The unit is to be disconnected from any connection prior to execution of electrically welding or work on the electric system.
- If the non-commercial end-user is not able to recognize the characteristic values being valid for a unit or the regulations to be observed, a specialist is always to be consulted.
- The user/buyer is obliged to observe any construction and safety regulations.
- **The unit is not equipped with parts, which can be replaced by the user.**
- Keep children away from batteries and connections.
- Non-observance may result in injury or material damage.
- The manufacturer's warranty is 60 months from delivery.
- Improper use, operation outside the technical specifications, improper operation or third-party intervention will void the warranty or manufacturer's guarantee. No liability is accepted for any resulting damage. The exclusion of liability also extends to any services provided by third parties that were not commissioned by us in writing. Services exclusively provided by VOTRONIC Elektronik-Systeme GmbH, Lauterbach.

Technical Data:

Nominal Operating Voltage DC	12 V / 24 V
Operating Voltage Range DC	8.5 V - 32 V
Current Consumption ON	2 mA; 0.002 A
Current Consumption OFF during of with control input	0 mA
Switching current/nominal current (period load current)	40 A
Load current short-time	60 A 1 sec.
Undervoltage disconnection	
Switch-off point	8.5 V
Power-off Delay	1 sec.
Cut-in Point (automatic return)	10.0 V
Switch-On Delay during Resetting after Undervoltage Cut-Off	2 sec.
Fitting Position of Unit	any
Tightening Torque „Bord I +“ and „Load +“	1.2 Nm
Tightening Torque „Sensor +“ and „Bord I -“	0.5 Nm
Working Temperature Range	-20/+50 °C
Protection Class	IP2X
Dimensions	90 x 60 x 38 mm
Weight	97 g
Ambient conditions, humidity of air	max. 95 % RH, no condensation



Declaration of Conformity:

In accordance with the provisions of the statutory requirements and the relevant directives, Electrical Equipment (Safety) Regulations 2016, Electromagnetic Compatibility Regulations 2016, The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 this product complies with the following standards or normative documents:
BS EN55014-1; BS EN61000-6-1; BS EN61000-4-2; BS EN61000-4-3; BS EN61000-4-4; BS EN62368-1; BS EN50498, BS EN IEC 63000.



Declaration of Conformity:

In accordance with the provisions of Directives 2014/35/EU, 2014/30/EU, 2009/19/EC, this product complies with the following standards or normative documents:
EN55014-1; EN61000-6-1; EN61000-4-2; EN61000-4-3; EN61000-4-4; EN62368-1; EN50498.



The product must not be disposed of in the household waste.



The product is RoHS compliant. It complies with the directive 2015/863/EU for Reduction of Hazardous Substances in electrical and electronic equipment.



Recycling:

At the end of its useful life, you can send us this device for professional disposal:
You can find more information about this on our website at www.votronic.de/recycling

Delivery Scope:

- 1 Switch Unit 40
- 1 Installation and Operating Manual

Subject to misprints, errors and technical modification without notice.

All rights reserved. This material may not be published, broadcast, rewritten or redistributed in whole or part without the express written consent of the manufacturer. Copyright © VOTRONIC 04/2024

Made in Germany by VOTRONIC Elektronik-Systeme GmbH, Johann-Friedrich-Diehm-Str. 2, 36341 Lauterbach/GERMANY

Phone: +49 (0)6641/91173-0 Fax: +49 (0)6641/91173-10 E-mail: info@votronic.de Internet: www.votronic.de