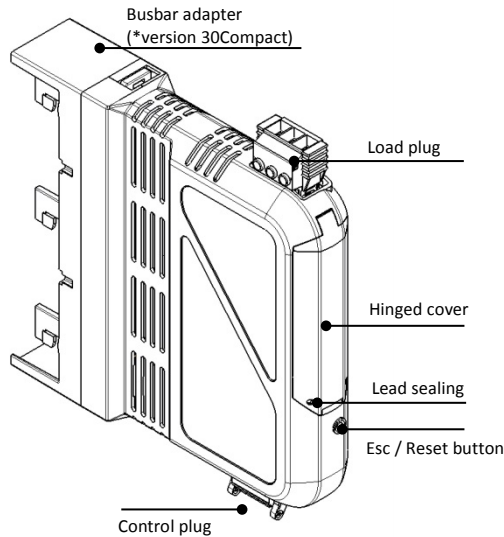


OMUS®

Electronic hybrid switch for resistive loads.

Checklist for a successful Design-In support of OMUS® in the planned application



The completion of the checklist will take about 10min

The OMUS® electronic hybrid switch is a compact switching device with a width of 36 mm. The hybrid switch is composed of a combination of relay contacts and power semi-conductors, integrated short-circuit protection as well as electronic current and temperature monitoring for operational switching of resistive loads (IEC up to 25 A / 400V AC; UL up to 20A / 480V AC). The universal *CrossLink*-interface at the connection side enables fast electrical and mechanical connection with various busbar systems. The limit values of OMUS'® electrical parameters must be adhered to by the Actuation Parameters in order to guarantee orderly operation. The parameters listed only constitute the basis for possible use. Additional parameters must be observed for a successful application (see user manual chapter 9 *Technical Data* and 2.5 *Switching processes in the hybrid switch*).

Suitability of the application

The basis for the use of OMUS® in the planned application is operation within the following limit parameters.

Electrical parameters OMUS®	Specification	
Type of load	resistive loads	
Max. load current $I_{nc\ max}$	25A (IEC)	20A (UL)
Min. load current $I_{nc\ min}$	2A (IEC)	2A (UL)
Max. operating voltage U_e	400V AC (IEC)	480V AC (UL)
Max. switching frequency f	1Hz	
Min. switch on duration t_{ON}	100ms	
Min. switch off duration t_{OFF}	100ms	
Max. switch on delay	80ms	
Max. switch off delay	80ms	
Actuation parameters (e.g. PLC)	Specification	
Max. actuation impulse switching frequency f_{impuls}	1Hz	
Min. duration of actuation impulse $t_{switch\ on\ signal}$	100ms	
Min. switch off duration $t_{off\ signal}$	100ms	
Parameter periphery	Specification	
Evaluating the warning message	Detection and rectification of warning's cause	
Evaluating the error message	Using the error message contacts to switch off the load	
Releasing the load during an error	galvanic isolation via external switchgear	

Acknowledgment of messages

If the cause of a warning has been resolved, the warning itself will be cleared during the next switching process.

Acknowledgment of error messages:

- Pressing Esc/Reset button. The cause of an error must be resolved first in this instance.
- Interruption of the 24V supply voltage may only take place 500ms after switching off the load

The interruption of the 24V supply voltage for operational switching is no intentional operation!

If the 24V operating voltage is interrupted, the loads are shut down. All LEDs are off and the error relay will issue a signal. **The operational switching by disconnecting the 24 V operating voltage is not allowed! Non-observance will lead to higher wear of the hybrid switch.**

General customer information

Customer name	
Customer number	
Plant location	
Technical contact	
Telephone / Email	
Commissioning	
When?	
Where?	
Support desired?*	

*Design-In and commissioning-support by application engineer

Application

Final application	
Purpose	
Number of loads	

Load circuit

Load	
Wiring	
Phase-N, Phase-Phase	
Power	
Maximum load current	
Minimum load current	
System	
Supply voltage	
Supply frequency	
How is the galvanic isolation of the load circuits accomplished?	

Control circuit

Control	
Used inputs	
Max. switching frequency	
Min. switch on duration	
Min. switch off duration	
How are switch on and off durations limited?	
Supply	
Power supply type	
Control supply voltage	
Current carrying capacity	
Warning and error	
Processing	
How is the error message processed?	
Error = galv. isolation?	
Reset wiring	
Functional ground	Input 2 of control plug (PE) has to be connected!

Model

General customer information

Customer name	Max Mustermann GmbH
Customer number	0815
Plant location	Rome, Italy
Technical contact	Lieschen Müller
Telephone / Email	089 XXXXXX /lieschen.mueller@gmbh.de
Commissioning	
When?	01.01.2018
Where?	Munich, Bavaria, Germany
Support desired?*	Support for commissioning desired, from 10.12.2017

*Design-In and commissioning-support by application engineer

Application

Final application	Injection moulding machine
Purpose	Control of mould heaters
Number of loads	9

Load circuit

Load	Ohmic loads
Wiring Phase-N, Phase-Phase	6x single-phase heating cartridge, 1x 3-phase heating
Power	6x 3kW, 1x 12kW (3-phase)
Maximum load current	6x 5A, 1x 18A
Minimum load current	5A
System	Crossboard 405mm
Supply voltage	400V AC
Supply frequency	50Hz
How is the galvanic isolation of the load circuits accomplished?	Contactor after each OMUS®

Control circuit

Control	SPS S7 1200 Siemens
Used inputs	Inputs 3, 8 and 9 for single-phase loads, Input 4 for 3-phase load
Max. switching frequency	0,5Hz
Min. switch on duration	200ms
Min. switch off duration	200ms
How are switch on and off durations limited?	The parameters for min. switch on and off duration as well as the max. switching frequency are limited by the control
Supply	single-phase power supply for control and OMUS®
Power supply type	Quint-PS/1AC/24DC/10 Phoenix Contact
Control supply voltage	24V
Current carrying capacity	10A
Warning and error	Connected to PLC inputs
Processing	Warnings are signalized via lamp, Errors will stop the process
How ist he error message processed? Error = galv. isolation?	Error relay connected to contactor for galvanic isolation
Reset wiring	Waiting period of 500ms after switching off the load until Reset is complied with by the control. Relay switches off 24V of OMUS.
Functional ground	Input 2 of control plug (PE) has to be connected!