

Verification of the operating conditions and technical data

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}	25A (IEC)	20A (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 $f_{impulse}$	1Hz	
Min. duration of actuation impulse $t_{Switch\ on\ signal}$	100ms	
Min. timeout duration $t_{Switch\ off\ signal}$	100ms	

Parameter periphery	Specification	
Evaluating the warning message	Detection and rectification of the warning's cause	
Evaluating the error message	Using the error message contacts to switch off the load	
Switch off the load during an error	galvanic isolation via external switchgear	

These Parameters have to be complied with during programming the control!

Technical data

Ambient conditions	
Ambient temperature	-5°C to 35°C in control cabinet; for temperatures up to 55°C or group layout see derating
Pollution degree	2, in the housing
Overvoltage category	II, Load level

Main circuits	
Switching principle	3 separate switches with bypass L1, L2, L3
Number of main circuits	3 independent circuits L1, L2 and L3 for resistive loads
Design operating voltage U_e to IEC60947-1	400V AC, 50Hz
Maximum power loss (relays permanently on)	20W
Setting continuous current limits	16A, 20A, 25A, warning when limits are reached
Overload protection	shutdown if exceeded by more than 15%
Design operating current I_e Utilisation category AC-51 to IEC 60947-4-3	25A 3x single-phase, 25A 1x three-phase
Coordination type 1, system protection	30kA, 400V
IP protection type	IP20
Control circuit and main circuits isolation	U_{imp} 2.5kV
Isolation function EN60947-1 2.1.19	no position indicator for main contacts, device has no isolation function
Leakage current (input, output) separate	Less than 2mA (no electrical isolation)
Residual voltage during switching	1,2V max. 10ms
Temperature protection in the device	65°C warning, 80°C shutdown
Input protection circuits	Fuses IEC: 3x 10x38, 32A gG, 400V UL: 3x Class CC 30A, 600V varistors 510V
UL approval	
File E483362 Vol.1 Sec. 1	Type No. OM25-H cULus listed
Current / Voltage ratings	20A 3x single-phase, 20A 1x 3-phase 480VAC
Short Circuit Current Rating SCCR to UL 508a	30kA, 480V with Class CC 30A
Maximum surrounding air temperature	40°C
Maximum surface temperature	55°C
Pollution degree	2
Maximum busbar temperature	110°C
Timing	
Max. switching frequency	1Hz
Min. duration of actuation ports	100 ms
Min. switch on duration of load	100 ms
Min. switch off duration of load	100 ms
Max. switch on delay	80ms
Max. switch off delay	80ms

Control circuits			
Design control supply voltage U_s to IEC 60947-1 UL 508	24V DC 26.5V DC		
Control supply voltage, noise level "Safe off"	< 5V DC		
Design control supply current to IEC 60947-1	$\leq 150\text{mA}$		
Control input L1, L2, L3, L1+L2+L3 Switching level "Low" Switching level "Safe off" Switching level "High" Input current	- 3 to 9.6 V DC < 5V DC 19.2V - 30V DC $\leq 3\text{mA}$		
Check-back output			
Warning message	Floating contact, 1 normally open contact		
Max. switching voltage	24V AC/DC		
Max. continuous load current I_o	0.5A		
Error signal	Floating contact, 1 changeover contact		
Max. switching voltage	48V AC/DC		
Max. continuous load current I_o	1A		
Front controls			
Buttons Select, Change, Enter	Parameter setting		
Manual button ON	Outputs switched on in manual mode		
Main and Auto LED	Green = OK; Orange = Warning; Red = Error		
Current limit LED	Continuous current limit value 16A, 20A, 25A		
Esc / Reset button outside the hinged control panel	Acknowledgement of errors		
Drilled hinged cover	enables sealing		
Connection cross-sections			
Connection	Conductor type	IEC:	UL
3-pin plug connector with spring terminals	Cu rm, f	1.5 - 6mm ²	AWG16 - AWG8
3-pin plug connector with screw terminals	Cu rm, f	1.5 - 6mm ² , 0.5-0.8Nm	AWG16 - AWG8 7lb-in
12-pin control plug with spring terminals	Cu f	0.2 - 1.5mm ²	AWG24 - AWG16
Derating relative to 25A continuous current through busbar system according to IEC 61439-2			
Installation ambient temperature up to	35°C	45°C	55°C
Single installation/Gap $\geq 36\text{mm}$	RDF = 1.0	RDF = 0.9	RDF = 0.8
Layout with gap $\geq 9\text{mm}$	RDF = 0.9	RDF = 0.8	RDF = 0.7
Side-by-side layout, gap 0mm (4 devices)	RDF = 0.8	RDF = 0.7	RDF = 0.6
Measurement with fuses 32A gG, load plug with screw terminals, busbar temperature 70°C			
Derating relative to 25A continuous current through CrossBoard[®] according to IEC 61439-2			
Installation ambient temperature up to	35°C	45°C	55°C
Single installation/Gap $\geq 36\text{mm}$	RDF = 1.0	RDF = 0.9	RDF = 0.8
Side-by-side layout, gap 0mm	RDF = 0.6	RDF = 0.54	RDF = 0.48
Measurement with CrossBoard [®] CB405, fuses 32A gG, load plug with screw terminals			