

Technical Data MCC / BC400

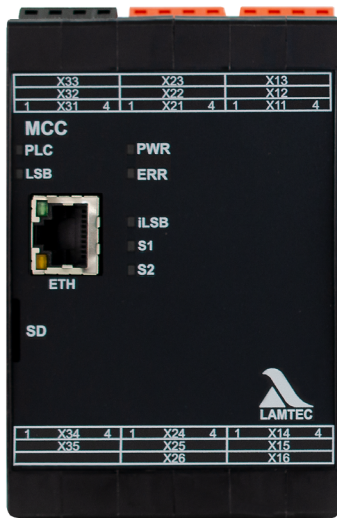


Fig. 1 Figure of MCC

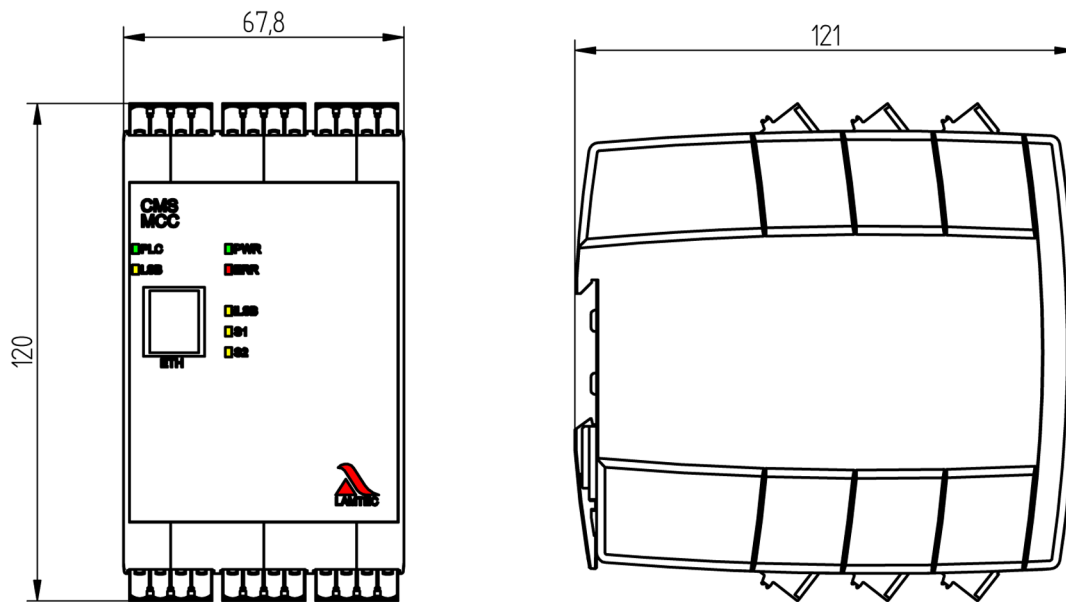


Fig. 2 MCC dimensional drawing

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Fig. 3 Figure of MCC-BC400

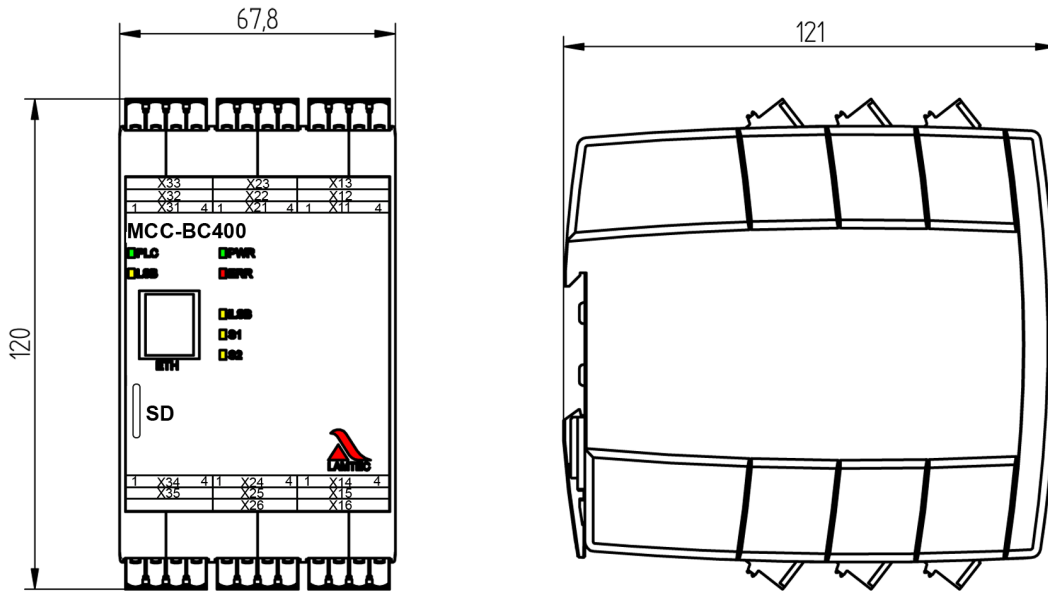


Fig. 4 MCC-BC400 dimensional drawing

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Item number	
MCC Master Control Component	Type 668R0100-XX*

* XX = dependent on the configuration

MCC technical data	
Dimensions (H x W x D)	120 x 67.8 x 121 mm
Weight	0.505 kg
Power supply voltage:	
MCC	24 VDC +/-20%, SELV
Inputs	230 V/120 V +10/-15%, 47-63 Hz, 24 VDC ± 20%
Outputs	230 V/120 V +10/-15%, 47-63 Hz, 24 VDC ± 20%
Maximum pre-fuse/outputs	8 A fast-acting
	To be used in a grounded power line network only!
Current consumption	min: 200 mA max: 335 mA
Max. power consumption	10 W

Digital signal inputs		24 VDC	120 VAC	230 VAC
	Nominal current	2.1 mA Impedance 11 kΩ	2.1 mA Impedance 75 kΩ	2.3 mA Impedance 100 kΩ
Due to the low input currents of the CMS, we recommend using appropriate contact material, e.g. gold-plated silver contacts, or wiring the encoder contacts accordingly.				
Signal ON (min)	0.55 mA △ 6.9 VDC	0.97 mA △ 56 VAC	0.78 mA △ 77 VAC	
Signal OFF (max)	0.27 mA △ 4 VDC	0.35 mA △ 21 VAC	0.35 mA △ 36 VAC	
Cable length max. 200 m				

Digital outputs	$I_{max} = 2 \text{ A}$ per output, in total, however, no more than 8 A $\cos\varphi \geq 0.2$			
	For operation on PLC or similar digital inputs: – Logic 1 = Output ON U = 230 V/120 V/24 V including tolerance – Logic 0 = Output OFF See graphics <i>Fig. 7 Power of the additional resistor with output switched on</i> and <i>Fig. 6 Residual voltage with output in off-state</i>			
	24 VDC	120 VAC	230 VAC	
Short circuit current at output OFF	1.23 mA	1.41 mA	1.47 mA	
Residual voltage due to self-test function (<i>Fig. 6 Residual voltage with output in off-state</i>) Cable length max. 200 m				

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NOTICE

Life Cycle:

The relays of the digital outputs are designed for a life time of 250,000 switching cycles at 2 A and $\cos \varphi \geq 0.2$ in accordance with EN298 and confirmed as part of the type examination.

Operating the outputs under reduced load increases their life time.

The following values can serve as a guide:

Load	AC, $\cos \varphi = 1$	AC, $\cos \varphi = 0,8$	DC, resistive load
0,5 A	>1.000.000	900.000	600.000
1,0 A	1.000.000	600.000	500.000
2,0 A	400.000	300.000	300.000

These values are not part of the type approval, but are expected values according to the relay documentation. This means that the number of switching cycles at reduced current is not tested and therefore cannot be guaranteed. A dangerously failing relay is always reliably recognised by the CMS and leads to the safe shut-down of the burner, regardless of the number of starts completed.

Flame sensor	<p>Optical: Flame sensor connection $U_{nom} = 27 \text{ V} \pm 1 \text{ V}$ Cable length max. FFS07/FFS08: 300 m, shielded FLS09: 100 m, shielded</p> <p>Ionisation: Power supply voltage 230 VAC (120 VAC) $I_{min} = 1 \mu\text{A}$ $I_{max} = 50 \mu\text{A}$ Ion Meas- and Ion Meas+ measurement value output 0 ... 500 mV 1 μA corresponds to 10 mV Depending on the cable used. Maximum line capacity 12nF (including ionisation measurement and ionisation electrode)</p>
Current output	<p>0 ... 20 mA $\pm 2\%$ Output current max.: 25 mA Load max.: 1 kΩ, Cable length max. 200 m, use shielded cables!</p>
Analogue input	<p>Multi-function input for connecting:</p> <ul style="list-style-type: none"> – Potentiometer (2 kΩ ... 10 MΩ) – Current input 0/4 ... 20 mA, $R_i = 150 \Omega$ – Voltage input 0 ... 10 V, $R_i = 100 \text{ M}\Omega$ <p>Reference voltage 10 V, short circuit proof Tolerance $\pm 2\%$ Cable length max. 200 m, use shielded cables!</p>

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Fieldbus coupling	MODBUS/TCP Ethernet defaults PROFINET Ethernet defaults LAMTEC SYSTEM BUS Other bus couplings via separate module Cable lengths: 0 – 40 m 2x2x0.22 mm ² cabled in pairs with screening, impedance 120 Ω 40 – 300 m 2x2x0.34 mm ² cabled in pairs with screening, impedance 120 Ω 300 – 500 m 2x2x0.50 mm ² cabled in pairs with screening, impedance 120 Ω
Flammability	UL94 V-0

Environmental conditions

Operation	permissible temperature range	-30 ... +70 °C (condensation prohibited)
	permissible ambient humidity	5% ... 95% relative air humidity
Transport/storage	permissible temperature range	-40...+80 °C (condensation prohibited)
	permissible ambient humidity	5% ... 95% relative air humidity
Protection class	DIN EN 60529	IP20 (when all terminals are fitted)

Operating altitude above sea level

≤ 2000 m above sea level	Without restriction
2000 m < z ≤ 5000 m above sea level	Can be used with the following restrictions: <ul style="list-style-type: none"> Reduction of the maximum ambient temperature according to the 'Temperature underload for use > 2000 m above sea level' diagram due to reduced cooling properties of the ambient air at altitudes above 2000 m and 24 VDC or 120 VAC power supply to the inputs/outputs.

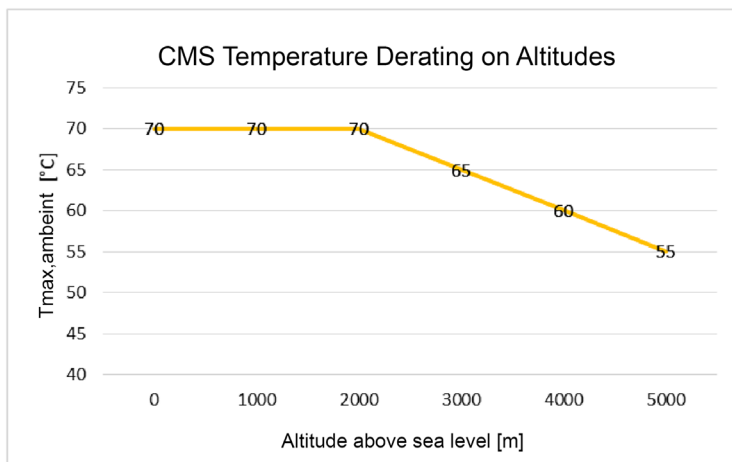


Fig. 5 Temperature underload for use >2000m above sea level



CAUTION!

Devices with 230 VAC input/output power supply not approved for use >2000 m

Residual voltage at output

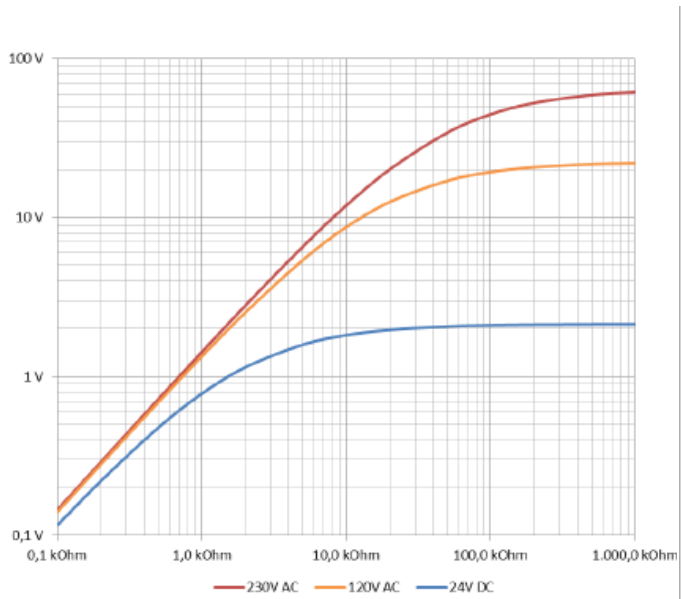


Fig. 6 Residual voltage with output in off-state

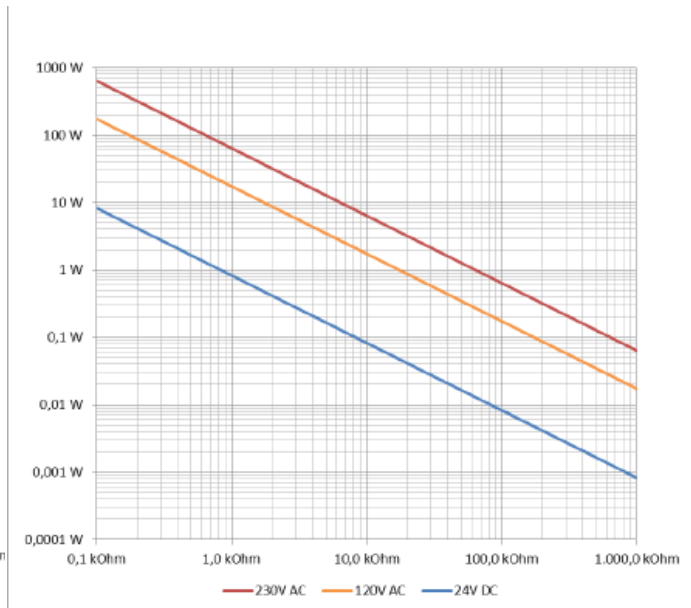


Fig. 7 Power of the additional resistor with output switched on

EU Declaration of Conformity

2014/35/EU	Low Voltage Directive
2014/30/EU	EMC Directive
2014/68/EU	Pressure Equipment Directive Kat. 4 Mod. B+D
(EU) 2016/426	Gas Appliance Regulation (GAR)
2011/65/EU	RoHS

NOTICE

The limits of the technical data must be strictly adhered to.

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Order Information

Description/Type	Order no.
MCC Master Control Component, power supply 24 VDC/8 W Burner module	668R0100...
A 10 – VOLTAGE IN/OUT	
INPUT 230 VAC/OUTPUT 230 VAC	230VAC
INPUT 120 VAC/OUTPUT 120 VAC	120VAC
INPUT 24 VDC/OUTPUT 230 VAC	24-230
INPUT 24 VDC/OUTPUT 120 VAC	24-120
INPUT 24 VDC/OUTPUT 24 VDC	24VDC
A 20 – FLAME MONITORING	
EXTERNAL FLAME MONITORING VIA DIGITAL INPUT	0
INTERNAL FLAME MONITORING OPTICAL FFS...	OP
INTERNAL FLAME MONITORING IONISATION, SUPPLY VOLTAGE	IO-230
A 30 – CUSTOMER	
STANDARD	S
A 40 – COLOUR	
BLACK (STANDARD)	SW
A 50 – CONNECTOR SET	
SCREW TERMINALS Connector set included	SC
SPRING TERMINALS Connector set included	FED
WITHOUT Connector set not included, must be ordered separately, see „Separate Connector Sets for MCC”	0
A 60 – MEMORY EXTENSION	
WITHOUT	0
A80 - BURNER CONTROL BC400	
WITHOUT	0
BURNER CONTROL “GAS OPERATION”	BC410
BURNER CONTROL “GAS OPERATION” SPARE FOR SATRONIC TMG 740-3	BC415
BURNER CONTROL “OIL OPERATION”	BC420
BURNER CONTROL “OIL OPERATION” SPARE FOR SATRONIC TMO 720-4	BC425
BURNER CONTROL “DUAL FUEL OPERATION”	BC430

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Separate connector sets for MCC

when attribute 50 „CONNECTOR SET“ = selection „0“

Description/Type	Order no.
Screw terminals MCC input 120/230 VAC / output 120/230 VAC	668R0085
Screw terminals MCC input 24 VDC / output 120/230 VAC	668R0086
Screw terminals MCC input 24 VDC / output 24 VDC	668R0087
Spring terminals MCC input 120/230 VAC / output 120/230 VAC	668R0095
Spring terminals MCC input 24 VDC / output 120/230 VAC	668R0096
Spring terminals MCC input 24 VDC / output 24 VDC	668R0097

Approvals



The information in this publication is subject to technical changes.



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