Fig. 1 Figure of MCC-BC400

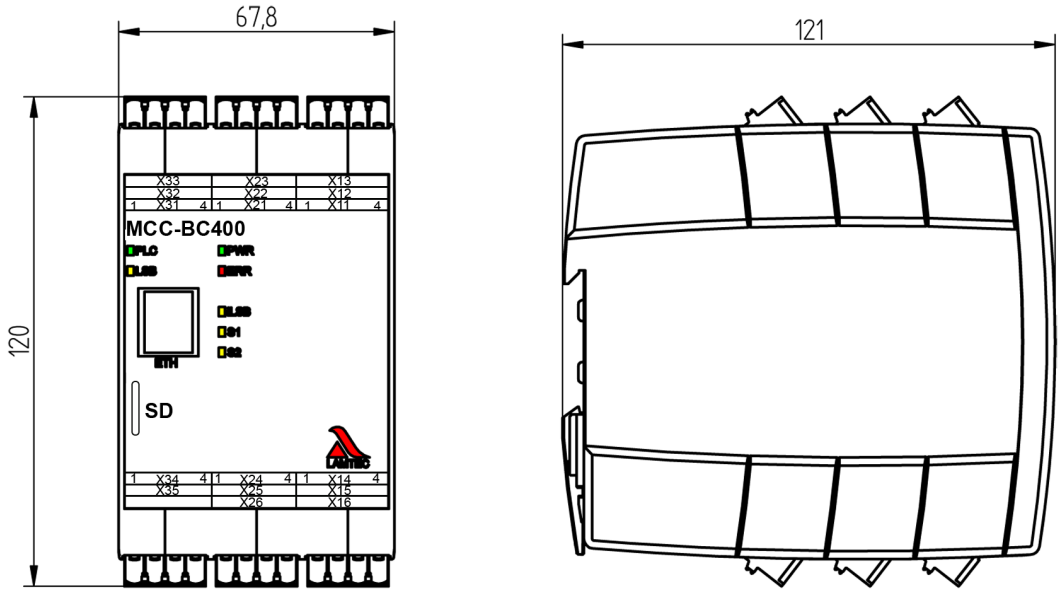

Fig. 2 MCC-BC400 dimensional drawing

Technical Data MCC-BC400

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 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 *Fig. 5 Power of the additional resistor with output switched on* and *Fig. 4 Residual voltage with output in off-state*			
		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 (*Fig. 4 Residual voltage with output in off-state*) Cable length max. 200 m			

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 φ ≥ 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:
-1.000.000 switching cycles 1 A AC, cos φ = 1
- 400.000 switching cycles 2 A AC, cos φ = 1
- 500.000 switching cycles 1 A DC, resistive load
- 300.000 switching cycles 2 A DC, resistive load

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	Optical: Flame sensor connection U_{nom} = 27 V ± 1 V Cable length max. FFS07/FFS08: 300 m, shielded FLS09: 100 m, shielded Ionisation: Power supply voltage 230 VAC (120 VAC) I_{min} = 1 µA I_{max} = 50 µA 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)
Current output	0 ... 20 mA ± 2% Output current max.: 25 mA Load max.: 1 kΩ, Cable length max. 200 m, use shielded cables!
Analogue input	Multi-function input for connecting: – Potentiometer (2 kΩ ... 10 MΩ) – Current input 0/4 ... 20 mA, Ri = 150 Ω – Voltage input 0 ... 10 V, Ri = 100 MΩ Reference voltage 10 V, short circuit proof Tolerance ± 2% Cable length max. 200 m, use shielded cables!

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: • 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.	

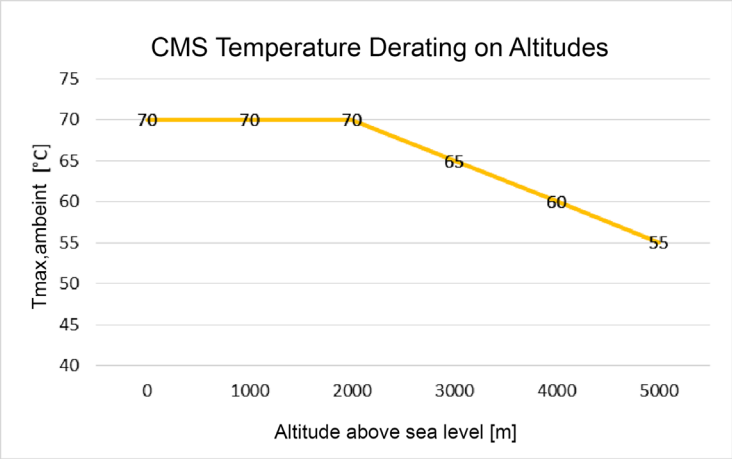

Fig. 3 Temperature underload for use >2000m above sea level

⚠ CAUTION!

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

Residual voltage at output

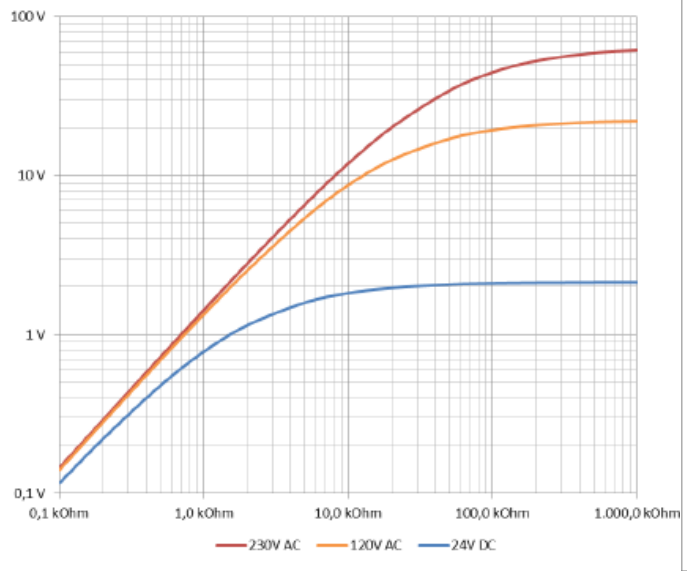

Fig. 4 Residual voltage with output in off-state

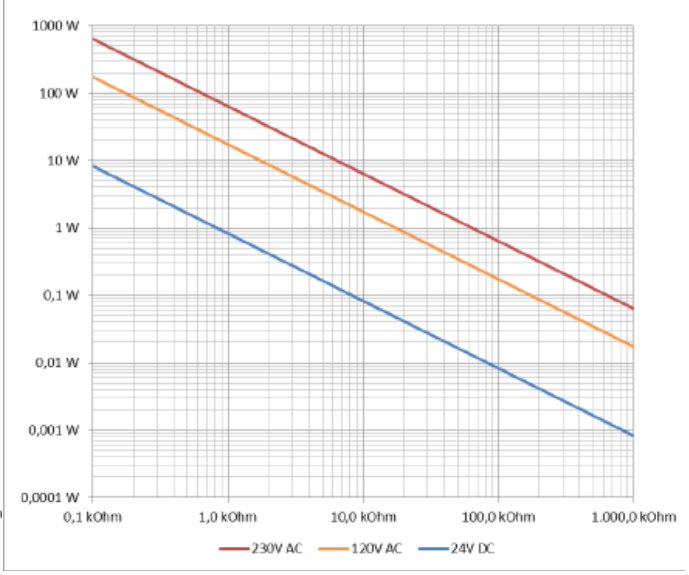

Fig. 5 Power of the additional resistor with output switched on

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.

Technical Data MCC-BC400

Order Information

Description/Type	Order no.
MCC Master Control Component, power supply 24 VDC/8 W Burner module	668R0100...

A 10 – VOLTAGE IN/OUT	Selection
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	Selection
EXTERNAL FLAME MONITORING VIA DIGITAL INPUT	0
INTERNAL FLAME MONITORING OPTICAL FFS...	OP
INTERNAL FLAME MONITORING IONISATION, SUPPLY VOLTAGE	IO-230

A 30 – CUSTOMER	Selection
STANDARD	S

A 40 – COLOUR	Selection
BLACK (STANDARD)	SW

A 50 – CONNECTOR SET	Selection
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	Selection
WITHOUT	0

A80 - BURNER CONTROL BC400	Selection
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

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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