SIEMENS

Cerberus® MN7000
Power Supplies

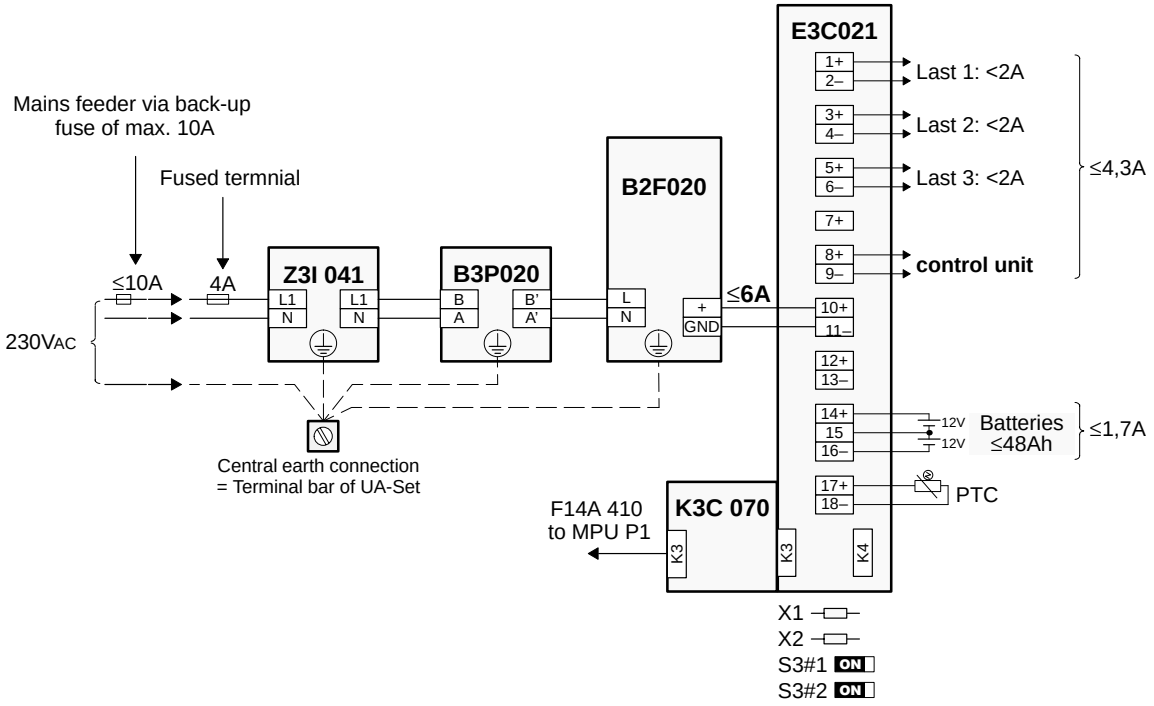
Hardware– /Firmware Installation

Cerberus
Security
for People
and Assets

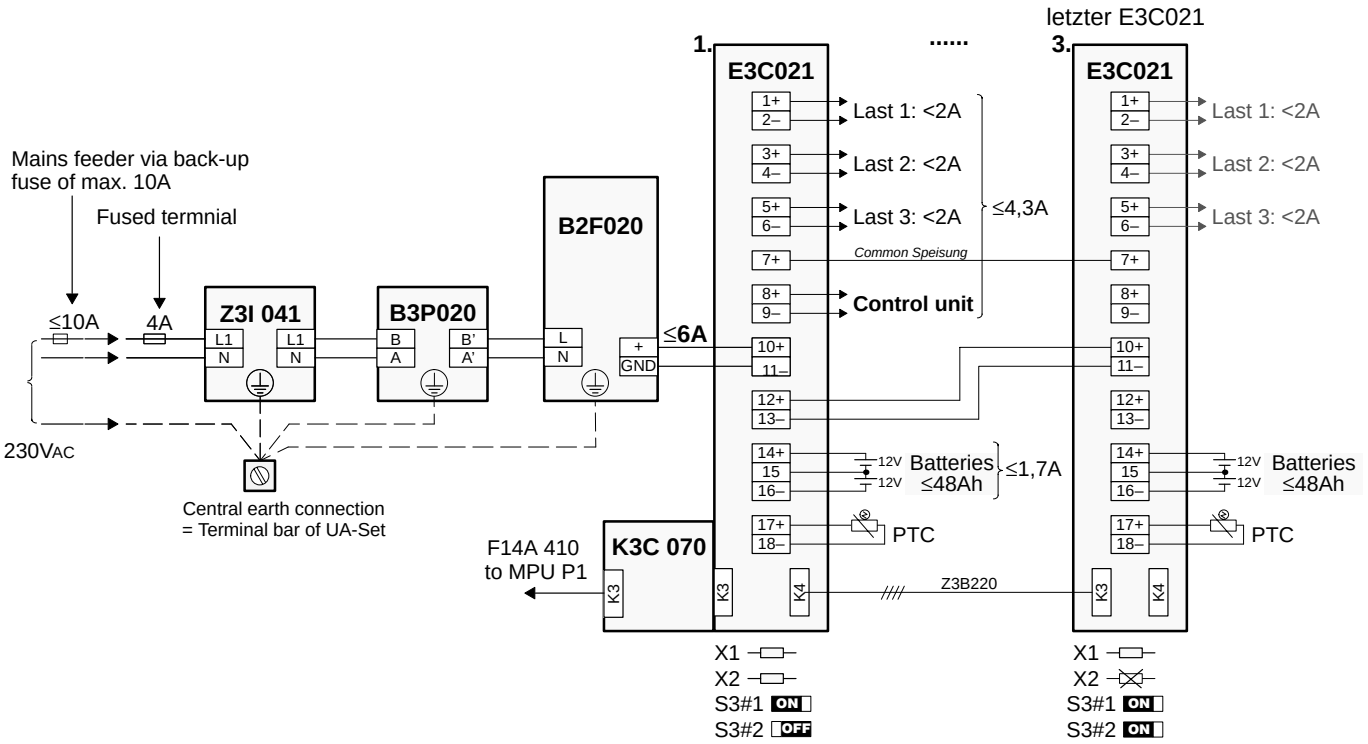
Siemens Building Technologies
Cerberus Division

1. MN7002 Power supply

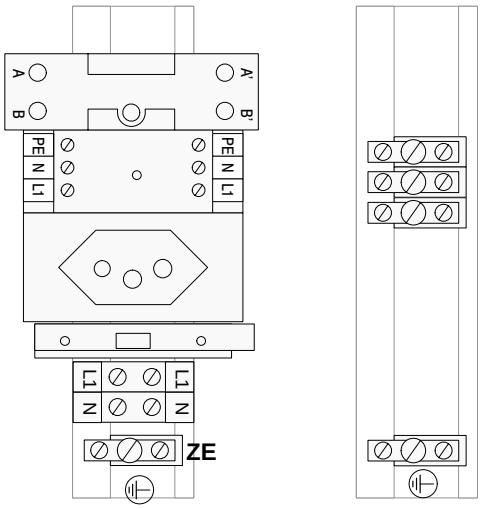
1.1. Power supply up to 48Ah emergency power capacity

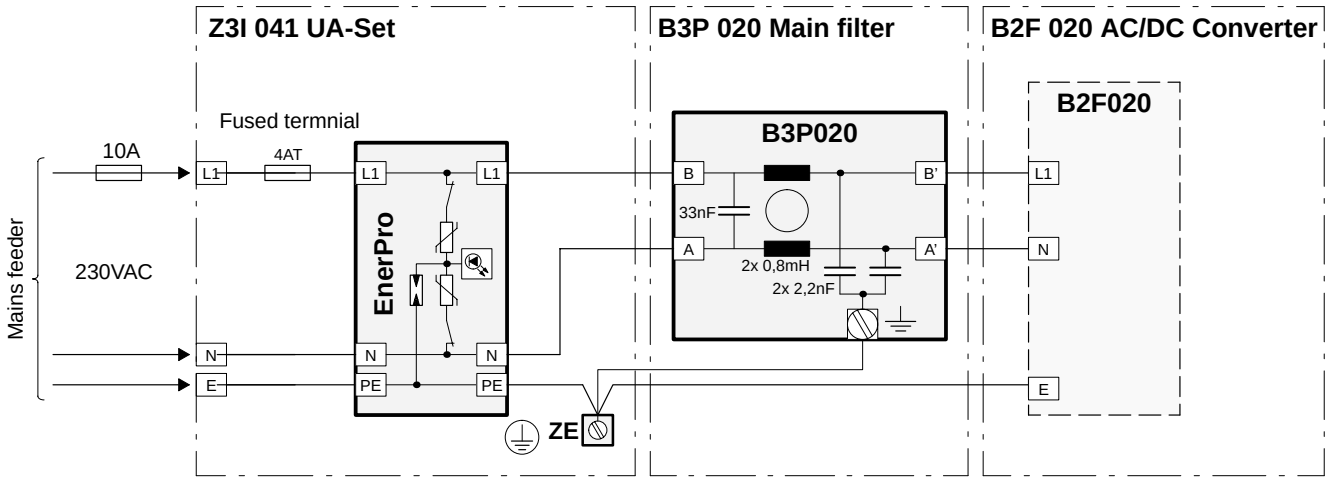


1.2. Power supply up to 144Ah emergency power capacity



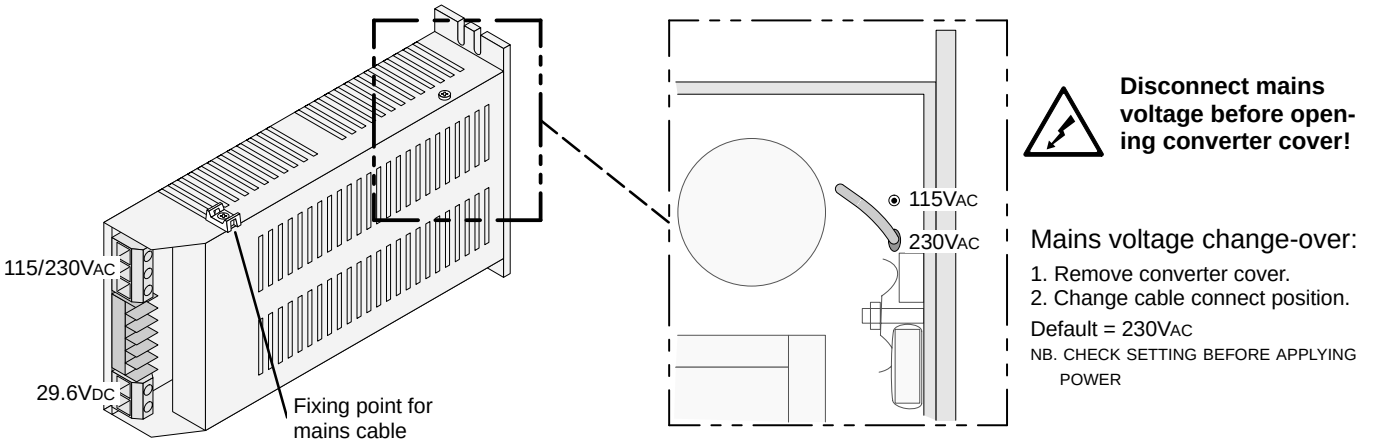
1.3. R1P061 Power supply rack





ZE= Central earth connection = Terminal bar of UA-Set

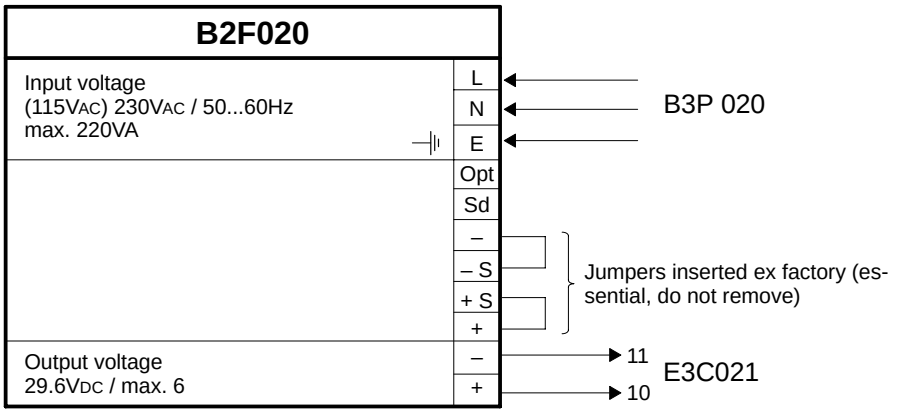
1.4. Converter B2F020



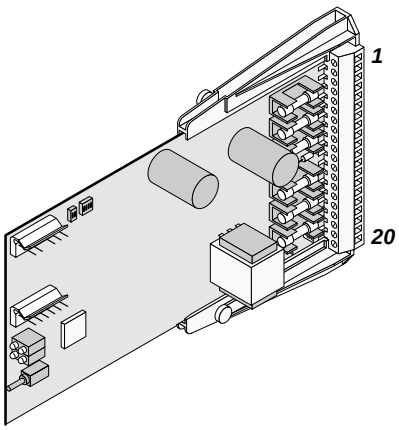
1.4.1. Key data B2F020

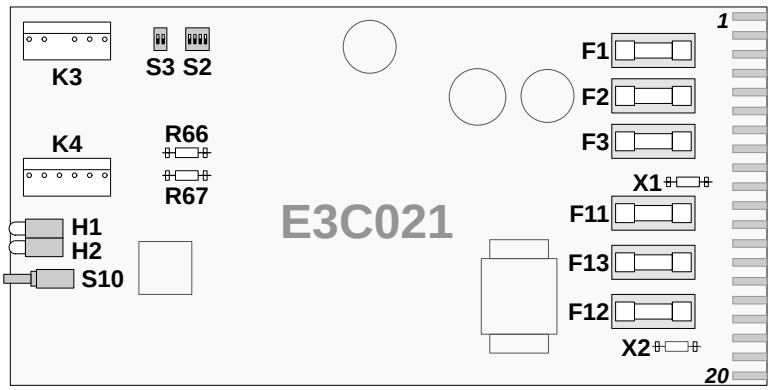
Mains voltage	115 / 230VAC ±15% 50...60Hz
Power consumption	40...220VA
Mains fuse	3.15A slow-blow (can only be changed at factory)
Output current	up to 6A continuous
Output voltage	29.6VDC +2%
Residual ripple	max. 300mVpp
Quiescent current on battery operation	0mA
Temperature fuse	automatic switch-off at >90°C
Cooling	no special cooling required
Temperature range	0...+55°C
Standard	prEN54-4
Dimensions	120 (100) x 42 x 204mm
Wire range	max. 4mm^2

1.4.2. Connections of B2F020



1.5. E3C021 Battery charging module





F1...F3 Output fuses 2A slow-blow

F11...F13 Battery fuses 6.3A slow-blow, with high breaking capacity

H1, H2 LED display block „Power supply state" (chapter 1.5.3.)

K3, K4 Monitoring signals connector (K3 = to control unit, K4 = from external)

R66, R67 Resistors „Operating mode"

S2 Switch „Battery type"

S3 Switch „Monitoring signals"

S10 Push button „Start-up without mains voltage"

X1 Jumper, for function see connection diagram of E3C021

X2 Jumper „Door contact simulation" (not inserted ex works)

1.5.1. Key data E3C021

Input voltage	29.6V$_{DC}$ ±2%, from B2F020 module
Charging section	
Battery	2 x 12V / 6...24Ah, lead battery
Charging characteristics	Can be adjusted to different makes of battery using programming switch "S2"
Charging current	up to 1.7A (current limitation)
Temperature compensation of battery charging voltage	with external temperature sensor
Battery monitoring	battery presence test every 55sec
Symmetry monitoring	asymmetry >1V = trouble
Battery test	automatic battery load test (3A for 10sec, 1 times every 23h)
EMI-protection battery line	no
Supply voltage outputs	
Monitored	load 1, load 2, load 3: each 24V$_{DC}$ <2A
Not monitored	24V$_{DC}$ to the control unit
Quiescent current	30mA when on emergency power operation 50mA when on mains operation without battery charge
Print dimensions	100 x 200 x 30mm
Wire range	max. 2.5mm^2

1.5.2. Programming switches, jumpers

Battery type: S2

Var.	Battery manufacturer	Battery model	S2-1	S2-2	S2-3	S2-4
0			off	off	off	off
1			on	off	off	off
2	Varta Shin-Kobe (Hitachi) Kobe PSD (Power Storage Germany) FIAMM-GS, *only before E3C021 index AA*	CF 12-24 (VM 1224) HP..-12 HP..-12 FG.....	off	on	off	off
3	Genesis	G12V120W15	on	on	off	off
4	Sunrise Panasonic	LCL 12V24S LCL 12V..P	off	off	on	off
5	Phoenix (Korea)	FNC 12..0	on	off	on	off
6	Yuasa	NP..-12B	off	on	on	off
7	Sonnenschein Dryfit	A212/..G5	on	on	on	off
8	**Power-Sonic**	**PS12..0**	**off**	**off**	**off**	**on**
9	Hagen Drysafe	HDS-12..0NB	on	off	off	on
10	Sonnenschein Dryfit	A512/..G5	off	on	off	on
11	FIAMM-GS *(from E3C021 index AA)*	FG.....	on	on	off	on
12			off	off	on	on
13			on	off	on	on
14			off	on	on	on
15			on	on	on	on

Factory settings →

Monitoring signals: S3 (show application examples page 6)

Settings	S3-1	S3-2
last module E3C 021 (or only one E3C 021)	ON	ON
all other modules	ON	OFF

Factory settings →

Operating mode: R66, R67

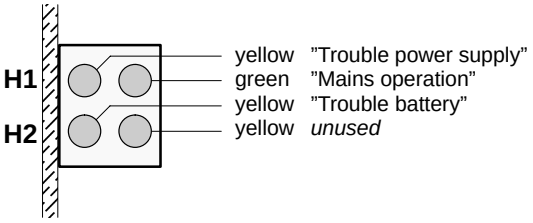
Operating mode:	R66	R67
a) Battery operation *and* symmetry monitoring	⊣▬⊢	⊣▬⊢
b) Battery operation *without* symmetry monitoring	–	⊣▬⊢
c) Operation with external voltage (instead of battery)	⊣▬⊢	–
d) Operation without battery or external voltage	–	–

Factory settings →

Jumper X1; X2 (show application examples page 6)

Jumper	ab Werk	Function
X1	**with**	insert jumper
X2	**without**	Without door contact: insert jumper X2 at first E3C021.

1.5.3. LED display block



Indicators vary in meaning according to operating mode:

a) Battery operation *and* symmetry monitoring

LED "Trouble power supply"
– Fuse F1 / F2 / F3 blown
– Input voltage >31.0V → converter malfunction
– Battery voltage >29.5V or <25V → charging module malfunction
– Battery charging module malfunction
– Temperature sensor open line / short circuit
– Temperature sensor measures >55°C
– EEPROM check sum error

LED "Power on"
– Input voltage >28.5V

LED "Trouble battery"
– Battery voltage <23V
– Asymmetry >1.0V or fuse F12 blown
– Eventually cell short circuit
– Open line to battery or fuse F11 / F13 blown
– Autom. test to indicate battery presence negative
– Autom. battery load test negative

b) Battery operation *without* symmetry monitoring

LED "Trouble power supply"
– Fuse F1 / F2 / F3 blown
– Input voltage >31.0V → converter malfunction
– Battery voltage >29.5V or <25V → charging module malfunction
– Battery charging module malfunction
– Temperature sensor open line / short circuit
– Temperature sensor measures >55°C
– EEPROM check sum error

LED "Power on"
– Input voltage >28.5V

LED "Trouble battery"
– Battery voltage <23V
– Open line to battery or fuse F11 / F13 blown
– Autom. test to indicate battery presence negative
– Autom. battery load test negative

c) Operation with external voltage (instead of battery)

LED "Trouble power supply"
– Fuse F1 / F2 / F3 blown
– Input voltage >31.0V → converter malfunction
– EEPROM check sum error

LED "Power on"
– Input voltage >28.5V

LED "Trouble battery"
– Battery voltage or external voltage <23V or >31.0V
– Autom. presence test (external voltage) negative or fuse F11 / F13 blown

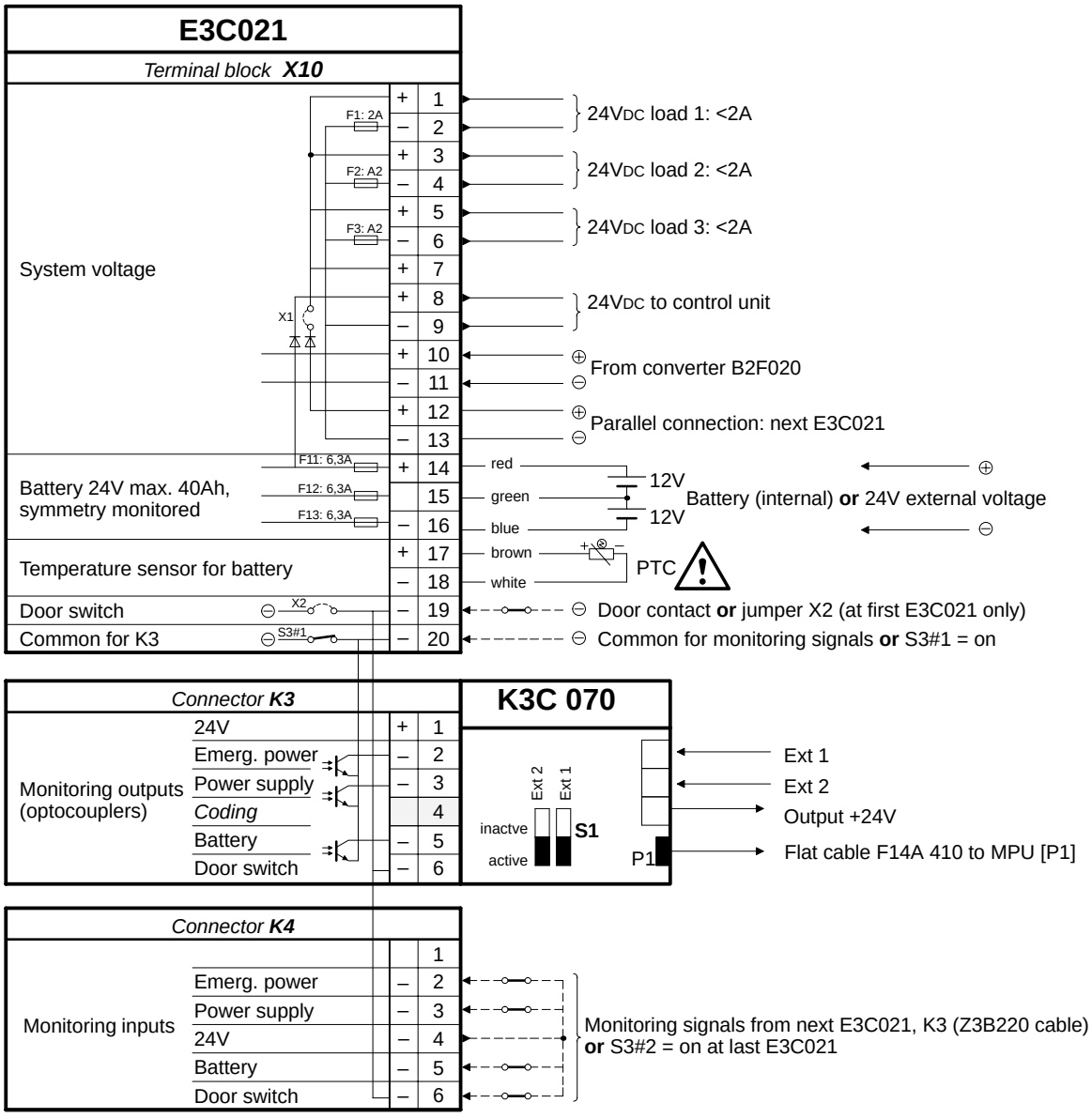
d) Operation without battery or external voltage

LED "Trouble power supply"
– Fuse F1 / F2 / F3 blown
– Input voltage >31.0V → converter malfunction
– EEPROM check sum error

LED "Power on"
– Input voltage >28.5V

LED "Trouble battery"
– no function

1.6. Connections of E3C021 and K3C070

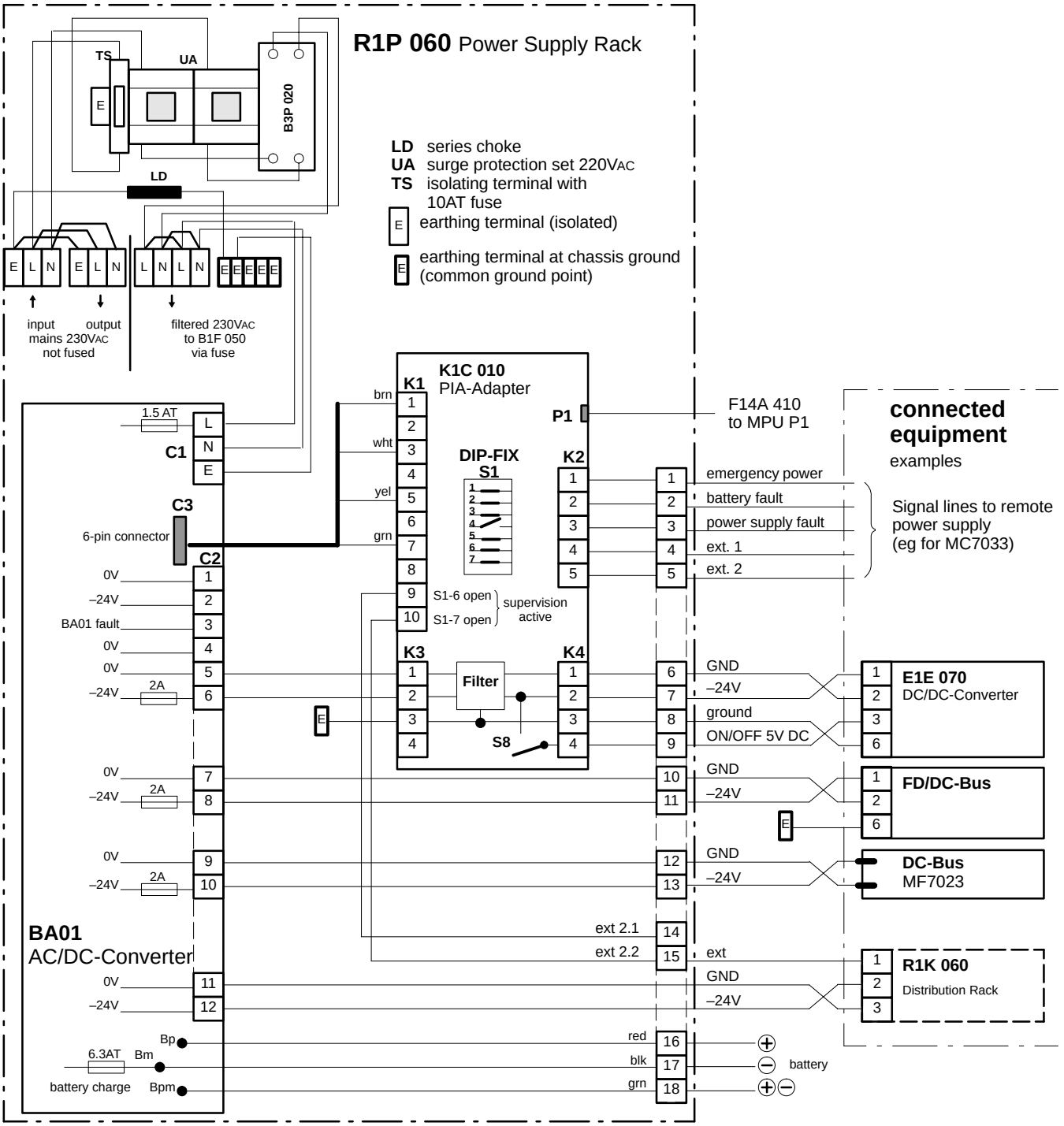


For mode settings and wiring refer to chapter 1. „Application examples”.

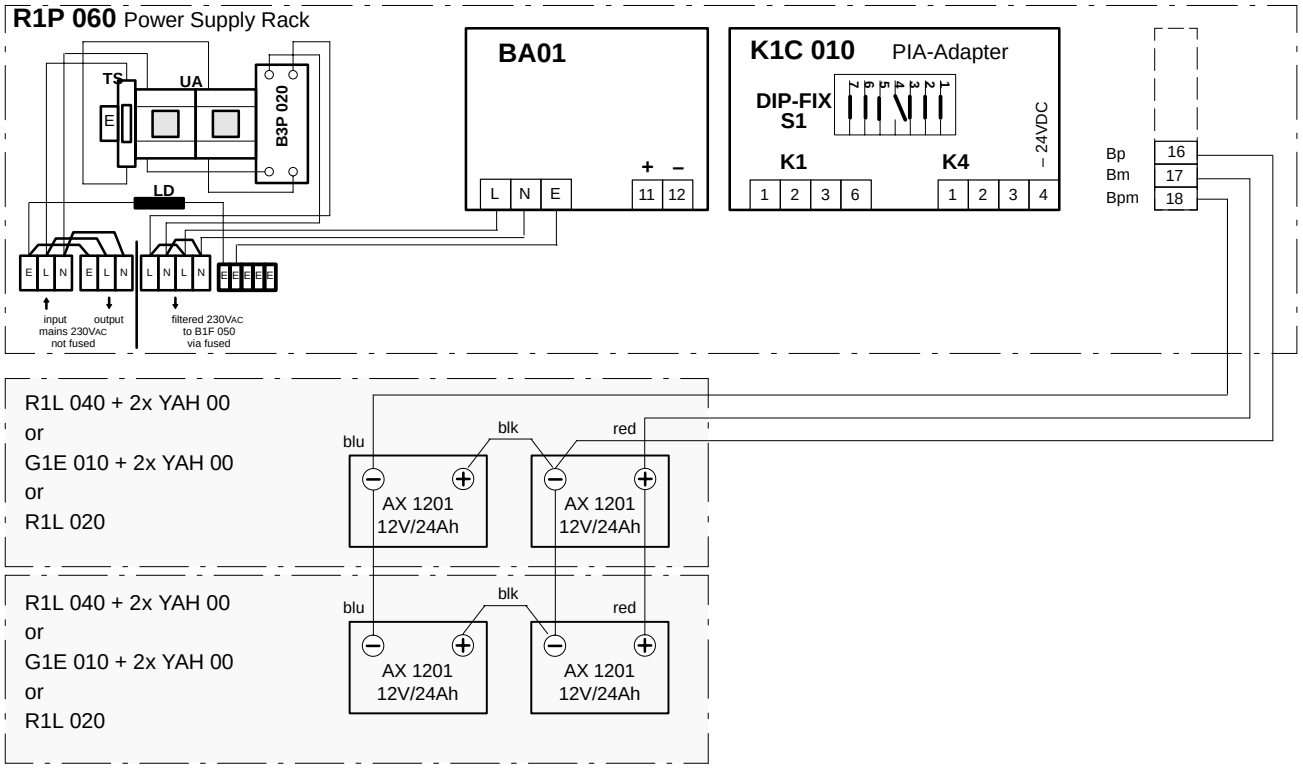
– PTC is always required including for operation ”with external voltage” or ”without battery”.
– PTC is polarity sensitive, observe the correct colour of connection wires!

2. MN7001 Power supply (not available)

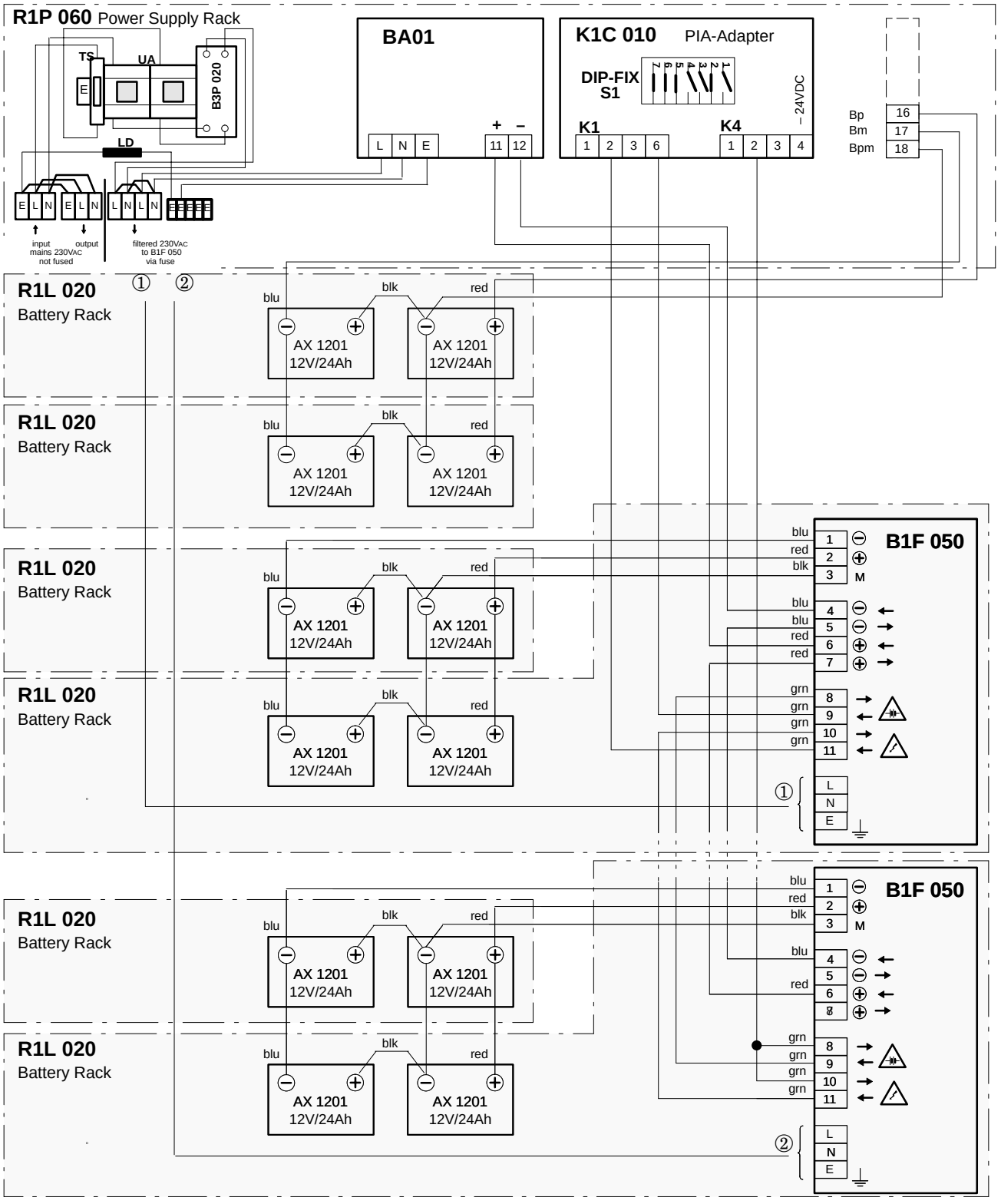
2.1. Block diagrams



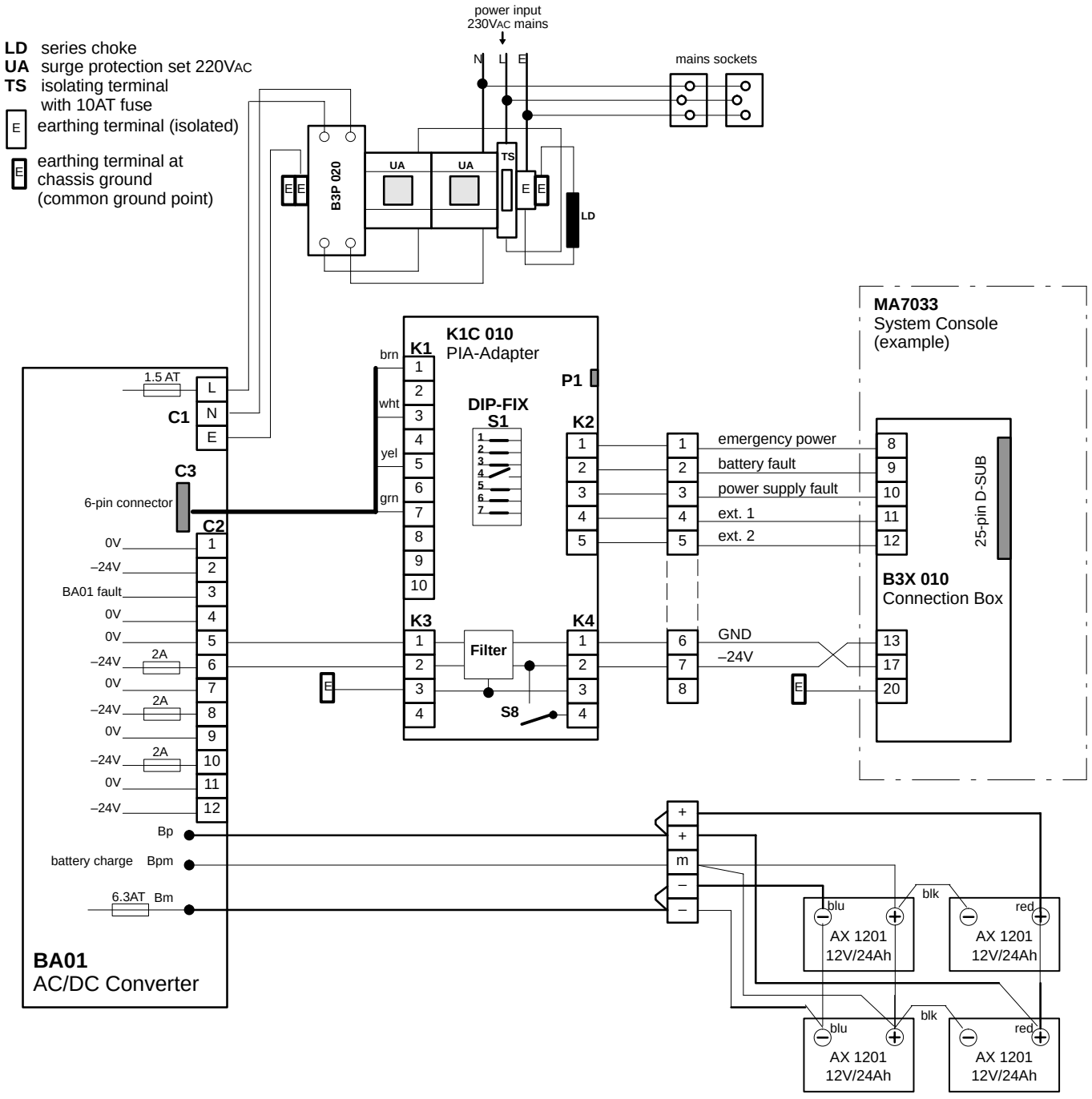
2.2. Emergency Power: Battery Capacity ≤ 48Ah (not available)



2.3. Emergency Power: Battery Capacity > 48Ah (not available)

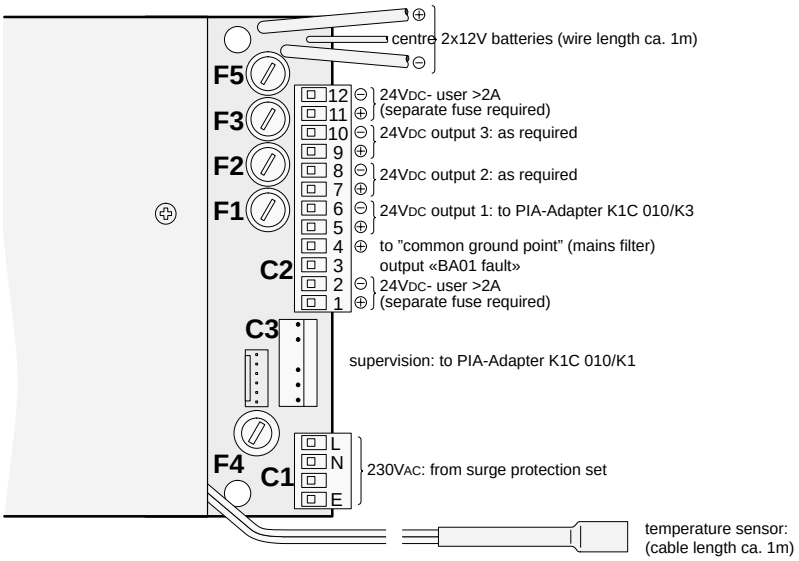


2.4. Power Supply Tower R1P 070 (not available)



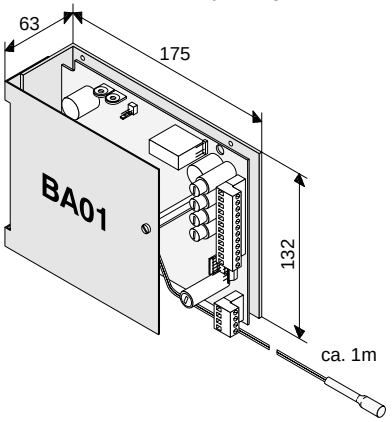
2.5. Modules to power supply rack R1P 060 (not available)

2.5.1. AC/DC Converter BA01

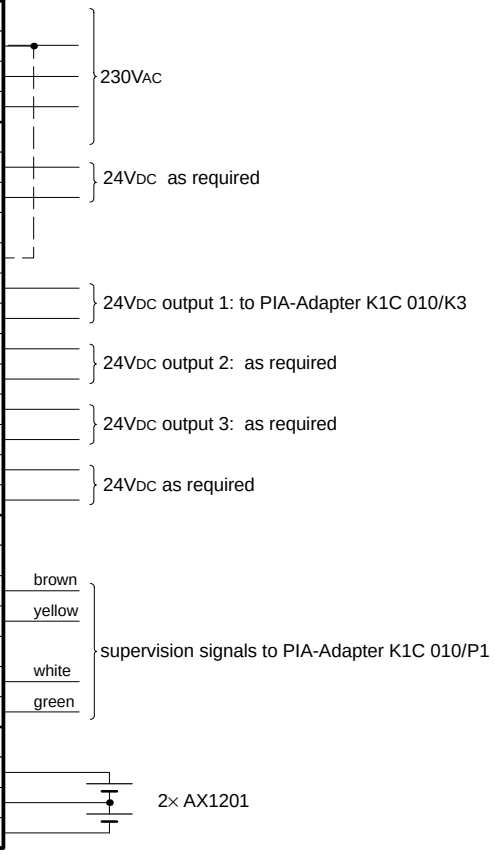


Fuses (all 5×20mm)

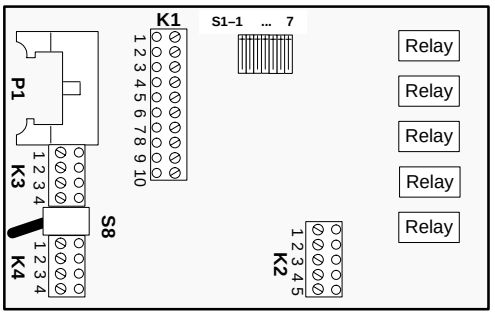
F1	2A slow	24V-output 1	terminals C2, 5+6
F2	2A slow	24V-output 2	terminals C2, 7+8
F3	2A slow	24V-output 3	terminals C2, 9+10
F4	1,5A slow	230VAC input	terminals C1, L
F5	6,3A slow	battery charge:	wires to batteries



BA01			
Plug-in Terminal Block			***C1***
mains voltage 187VAC...264VAC F4		earth	E
		neutral	N
		line	L
Plug-in Terminal Block			***C2***
output: 24VDC unfused	+		1
	–		2
output «BA01 fault»	–		3
24VDC (0V)	+		4
output 1, supervised: 24VDC 2A F1	+		5
	–		6
output 2, supervised: 24VDC 2A F2	+		7
	–		8
output 3, supervised: 24VDC 2A F3	+		9
	–		10
output: 24VDC unfused	+		11
	–		12
6-pin Connector			***C3***
not used			1
emergency power	–		2
power supply fault	–		3
not used			4
battery fault	–		5
24VDC	–		6
Wires (ca. 1.0m in length)			
Battery (lead) 2x12V / max. 110Ah F5	+		red
	+/–		grn
	–		blu

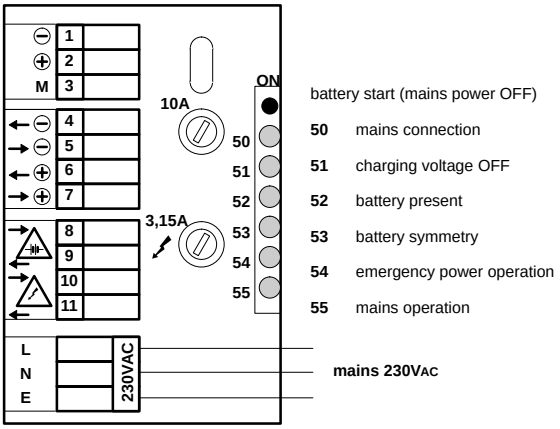


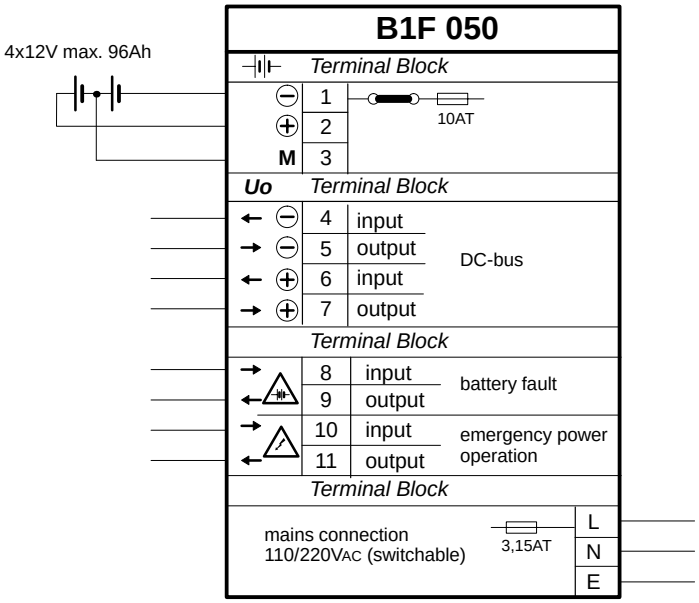
2.5.2. PIA Adapter K1C 010



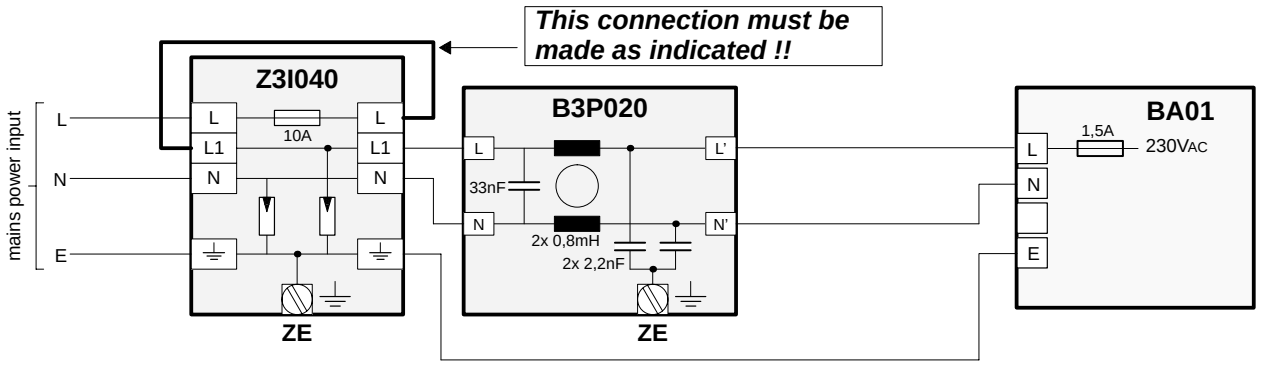
Pos.		Function		Note
Header P1		Power Supply Supervision		TTL-signals
Terminal	1	emergency power	SV1	(SV = power supply 1 or 2)
	2	emergency power	SV2	
	3	battery fault	SV1	
	4	battery fault	SV2	
K1	5	power supply fault	SV1	24V signals (inputs)
	6	power supply fault	SV2	
	7	ext. 1.1		
	8	ext. 1.2		
	9	ext. 2.1		
	10	ext. 2.2		
	1	emergency power operation		
	2	battery fault		24V signals (outputs)
K2	3	power supply fault		power supply supervision for remote
	4	ext.1		System Console MA7033.
	5	ext.2		
	1	GND		input from AC/DC-Converter
	2	-24VDC; 2AT		
K3	3	ground		
	4	-24VDC		
	1	GND		filtered output
	2	-24VDC; 2AT		
K4	3	ground		
	4	-24VDC; 5VDC ON/OFF		output signal to switch off DC/DC-Converter
Switch S8		5VDC ON/OFF		
DIP-FIX	1	emergency power	SV2	(SV2 = power supply 2)
	2	battery fault	SV2	supervision ON/OFF
S1	3	power supply fault	SV2	closed = supervision inactive
	4	ext. 1.1		open = supervision active
	5	ext. 1.2		
	6	ext. 2.1		
	7	ext. 2.2		

2.5.3. Battery Charger B1F 050



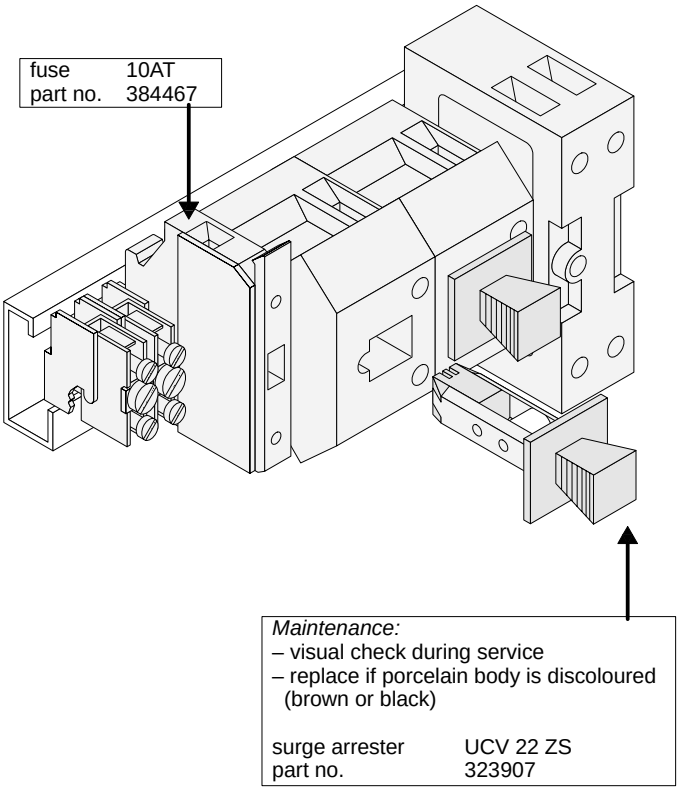


2.5.4. Surge Protection for 230VAC Mains



ZE = common ground point (chassis ground) = terminal rail

suitable for terminal rails
– DIN EN50022
– DIN EN50035



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