

# Instruction Manual

## Power Supply: Type IV C-A



## Power Supply: Type IV C-E



# Data Sheet: Type IV C-A

# Data Sheet: Type IV C-E

## 1 Electrical Data

### 1.1 Operating ambient temperature

-15 °C ... +40 °C

### 1.2 Input

V<sub>in</sub>: 103 V<sub>AC</sub> – 265 V<sub>AC</sub>, 47-63 Hz

180 V<sub>DC</sub> – 260 V<sub>DC</sub>

I<sub>in</sub>: <0.85 A

Inrush current <10 A<sub>pk</sub>, limited by thermistor

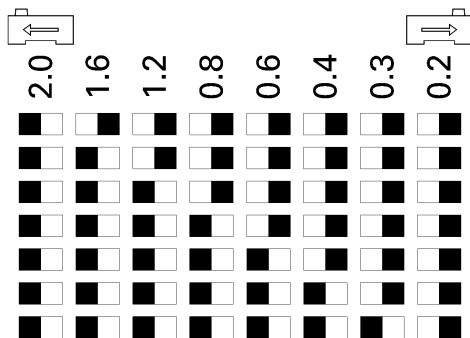
The unit IV C-A has a two-pole power switch with glow lamp.

### 1.3 Output

V<sub>out</sub>: 0 ... 37 V<sub>DC</sub>

I<sub>out</sub>: 0 – 2 A; 0 – 1.6 A; 0 – 1.2 A; 0 – 0.8 A; 0 – 0.6 A; 0 – 0.4 A; 0 – 0.3 A; 0 – 0.2 A

switchable with DIP-switch



The power supply provides a constant current. It is either adjusted by external control voltage or by potentiometer (selectable by DIP-switch). “int/ext”

**IV C-A: Front-side potentiometer (10-gear)**

**IV C-E: Trimming potentiometer (25-gear) “Iset”**

Control voltage is 0 ... 10 V and that means I<sub>out</sub> = 0.2 A/V \* V<sub>st</sub> (2 A-range)

I<sub>out</sub> = 0.16 A/V \* V<sub>st</sub> (1.6 A range)

and so on

Input resistance (PIN 10-AMP / 11-GND): approx. 100 kΩ

Setting accuracy of control voltage, that means deviation of set point +6/-4%

Accuracy of potentiometer adjustment (at maximum current) +/-11%

The negative pole of the output voltage and the negative pole of the control voltage (Vcon) have to be electrically insulated.

The external control voltage can be either adjusted by the internal reference (10 V) and an external potentiometer of 10 k $\Omega$  (see connection layout).

## 1.4 Switch On/Off of the Output Current (Brake)

The output current can be switched On/Off by mains switch (type IVC-A) or by the contacts (PIN 5-FREE / 6-GND).

5 / 6 closed: Output Current Off

6 / 6 open: Output Current On

## 1.5 Soft start and soft shut down of Output Current

Soft start after switch-on and soft decrease after switch-off of the output current can be programmed. Rise time and fall time can be adjusted independently from each other by the potentiometer T $\downarrow$  and T $\uparrow$ . The maximum rise and fall time comes to 5 s (factory setting: 0 s).

The rise/fall time does not work when switching the mains switch.

## 1.6 Emergency Stop/ Emergency Braking

An emergency stop can be triggered by a potential-free input (**Pin 3-STOP / 4-GND**). Short-circuiting of the two inputs (Emergency-Braking) provides an output current that is preset by potentiometer “**E-STOP**”.

(The current that is preset should be higher than the actual by potentiometer or control voltage programmed current.)

By short-circuiting the above contact (Emergency-Braking) the relay gets switched. Alternatively a NOC/NCC can be connected.

Relay-data: OMRON G5V-1 (UL rating): 30 V<sub>DC</sub> / 1 A

During circuiting (Emergency-Braking) the red LED is glowing E-STOP (IVC-E), for IVC-A next to the display.

## 1.7 Auxiliary Voltage

The unit provides an auxiliary voltage of 24 V<sub>DC</sub> to power a hall sensor (Pin 1: 24 V+, Pin 2: 24 V-).

Maximum Current 100 mA, Current limiting with PTC-fuse (self resetting)

## 1.8 Current-Display

Display-output for connecting an external Current-Display: 1...2000 mV for 0...2000 mA

## 1.9 Display (only IV C-A)

4-digit LED-Display for Output-Current in mA

With a jumper the display can be turned by 180°, to install the unit “bottom” or “top”.

„Bottom“ cable fitting below

„Top“ cable fitting above

## 2 Protection

### 2.1 Inrush current limiter

Thermistor

### 2.2 Input fuse: 4 A

### 2.3 Over voltage protection

Input: varistor / Output: by electronic over voltage protection (OVP).

### 2.4 Overload protection

Constant current

## 3 Mechanical Specification

### 3.1 Enclosure

IV C-A:

Aluminium casting 120 mm x 220 mm x 81 mm

Externally adjustable potentiometer with button.

Feeding and connection of electrical connections with three feedthroughs and screw-type terminals.

IV C-E:

Top hat rail housing HxTxB: 75 mm x85 mm x 110 mm

Top hat rail horizontal

Externally (with screwdriver) adjustable potentiometers and DIP-switches.

### 3.2 Cooling: convection

## 4 Standards

### 4.1 Test Voltage

primary - secondary: 3,000 V~ Type-test

primary - PE: 1,500 V~ Type-test

secondary - PE 500 V~ Type-test

### 4.2 Product safety

EN 60950

### 4.3 Protective class: I

### 4.4 Protection category: IP50

### 4.5 Conducted interference:

EN 55022 B

## 5 Terminal assignment

### 5.1 Terminals

All external electrical connections are realized by circuit board connectors.

|             |  |
|-------------|--|
| Input IVC-A | Phoenix clamp G5/3<br>Clamping limit 0.2 - 4 mm <sup>2</sup> rigid or flexible   |
| Input IVC-E | Phoenix plug with screwed connection GMSTB 2,5/3-ST-/,62 (included with delivery)<br>Clamping limit 0.2 – 2.5 mm <sup>2</sup> , rigid or flexible  |
| Output      | Phoenix plug with screw connection 2x MSTBT 2,5/8-ST-5,08 (included with delivery)<br>Clamping limit 0.2 – 2.5 mm <sup>2</sup> , rigid or flexible |

### 5.2 Pin assignment

Positions are labeled.

### 5.3 Installation

Installation of the primary cable must be carried out in accordance with VDE safety standard (double insulation, protection against high voltage)

## 6 Instructions for Safety and Installation

### 6.1 Operation

The unit should be put into operation only by skilled personal. Safety standards like VDE 0100/0110 or other specific safety standards must be respected.

This power supply is a class 1 equipment. Every interruption or removal of the protection earth could result in injury or death in case of failure.

If there is a need to open the unit, always disconnect the unit from mains and wait at least 3 minutes before opening. Repairs and adjustments should be carried out only by experienced service personal.

### 6.2 Input-Voltage

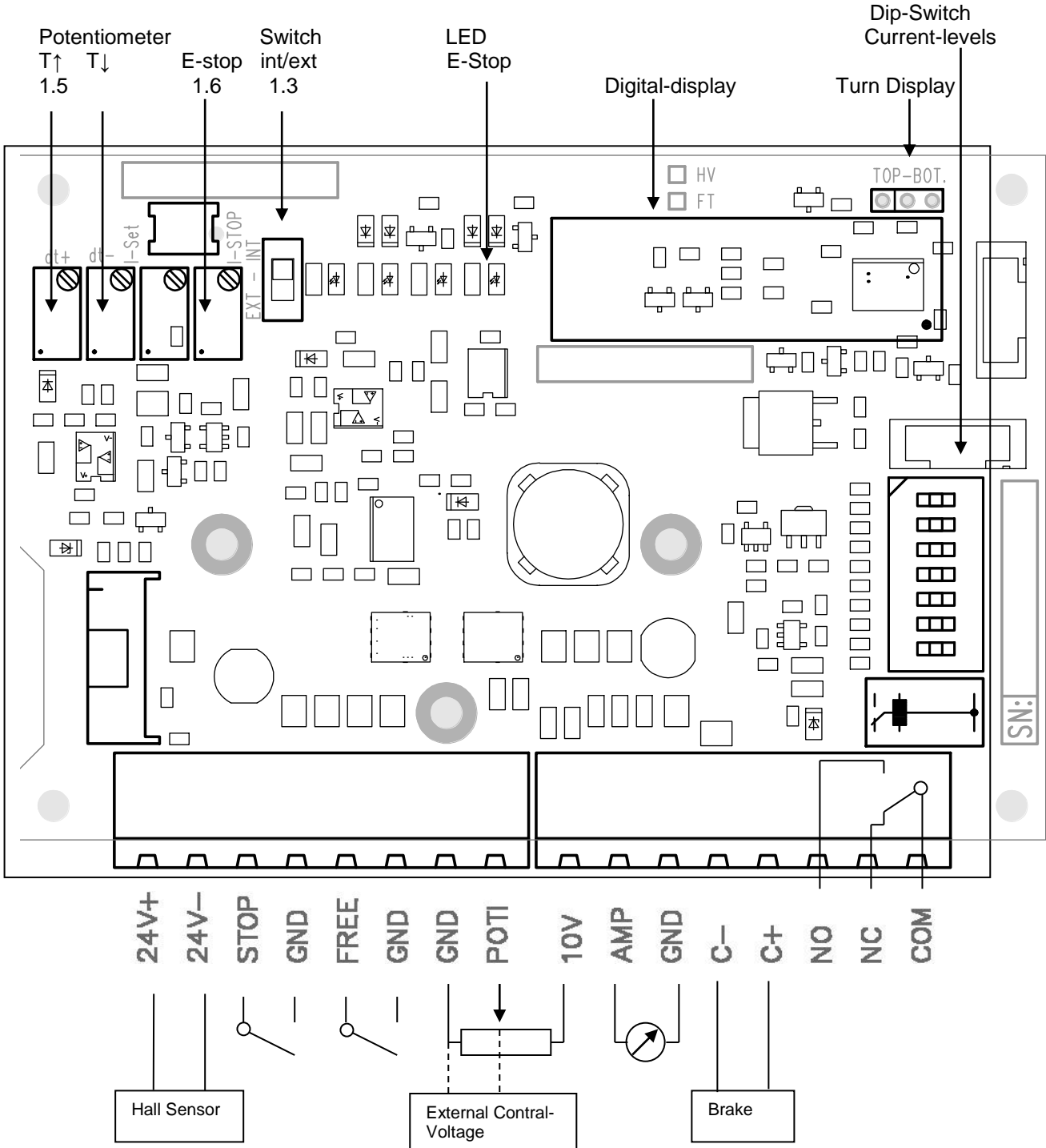
Please use the unit only in the specified input voltage range. In case of electronic loads, the allowable load voltage must not be exceeded under any circumstances. Overvoltages of more than 10% may result in damage of the unit.

### 6.3 Ventilation

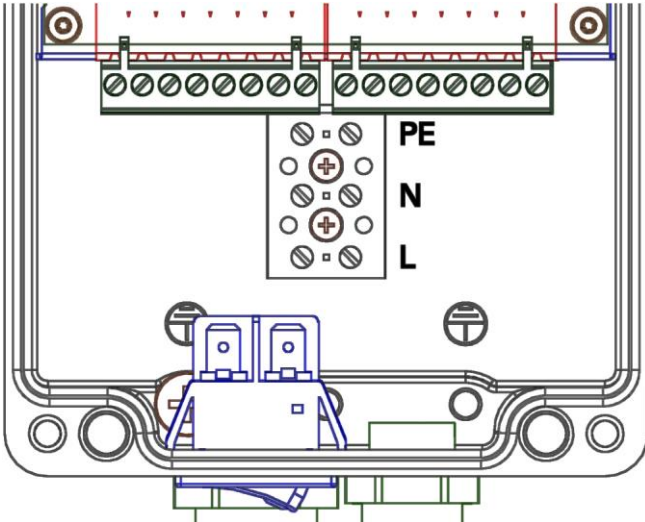
The ambient temperature of the unit is measured below the power supply in a distance of 20 mm. If using a ventilator, the entry temperature is decisive. Please ensure that there is sufficient air flow and the needed air can entry and exit freely. Heating up by neighboring heat sources should be avoided best possible.

## 7 Connection Diagram

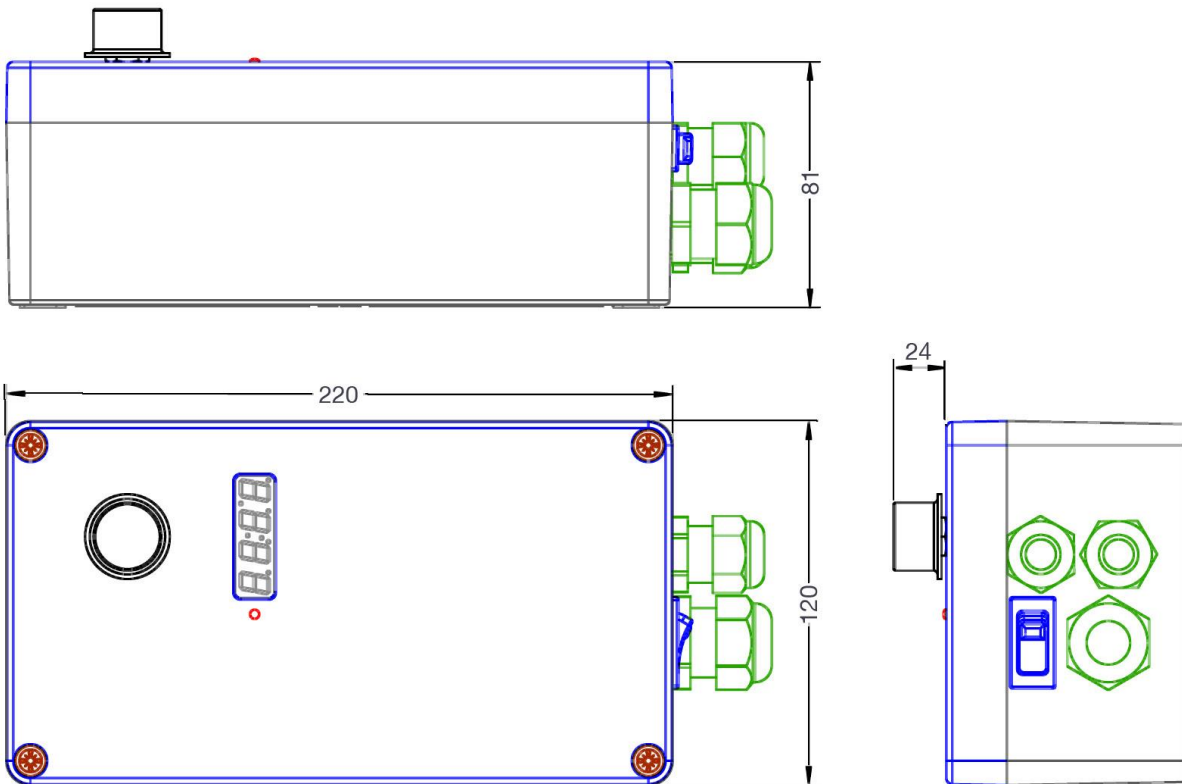
### 7.1 Connection pinout Type IV C-A



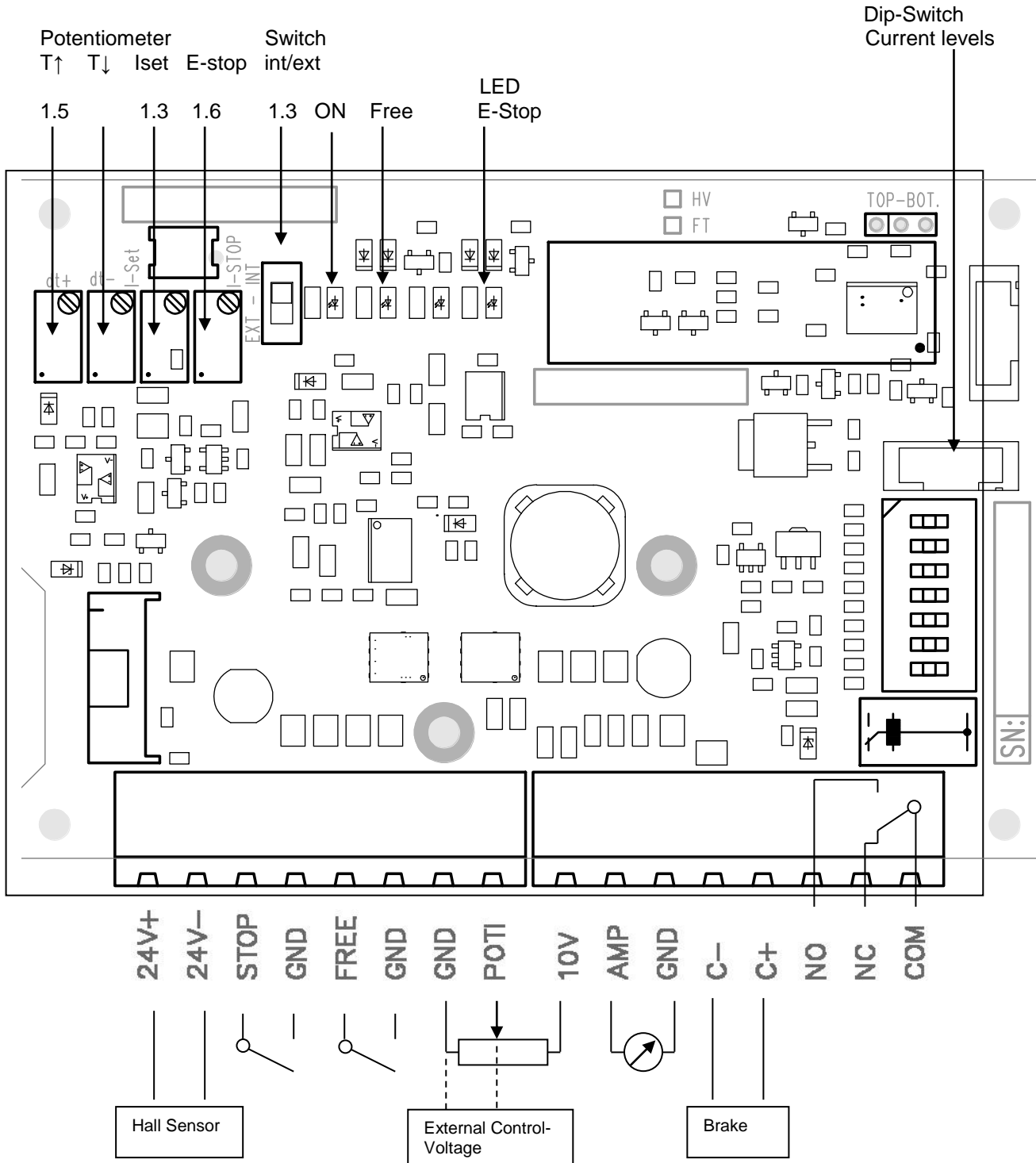
## 7.2 Power Connection Type IV C-A



## 7.3 Mechanics Type IV C-A

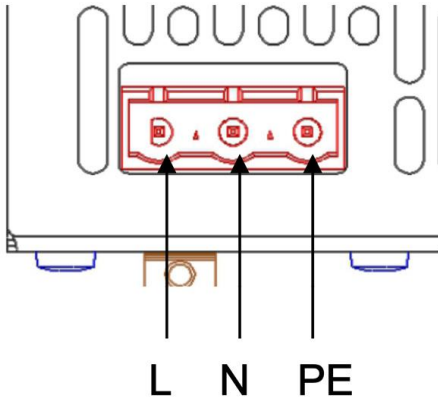


### 7.4 Connection pinout Type IV C-E





### 7.5 Power Connection Type IV C-E



### 7.6 Mechanics Type IV C-E

