**sbc+**
SAIA BURGESS CONTROLS

# Single-phase bidirectional energy meter
## with S0 pulse output

**Bidirectional energy meter with S0 pulse output. The S0 interface is a hardware interface for the transmission of measured values via pulses.**

## Specifications

- ▶ 1-pase energy meter, 230 VAC 50 Hz
- ▶ Direct metering to 32 A in both directions of current
- ▶ Display of the active power, voltage and current
- ▶ S0-pulse-output; independent of the direction of current
- ▶ 7-digit LCD display for energy supply and feeding back
- ▶ Can be sealed with a sealing cap as an accessory
- ▶ Accuracy class B in accordance with EN50470-3, Accuracy class 1 in accordance with IEC62053-21

## Order number

| | |
|---|---|
| Standard version: | ALD1B5F10KA2A00 |
| MID version: | ALD1B5F10KA3A00 |
| Sealing cap: | 4 104 7420 0 |

ALD1 | 32 A | kWh | MID | EHC
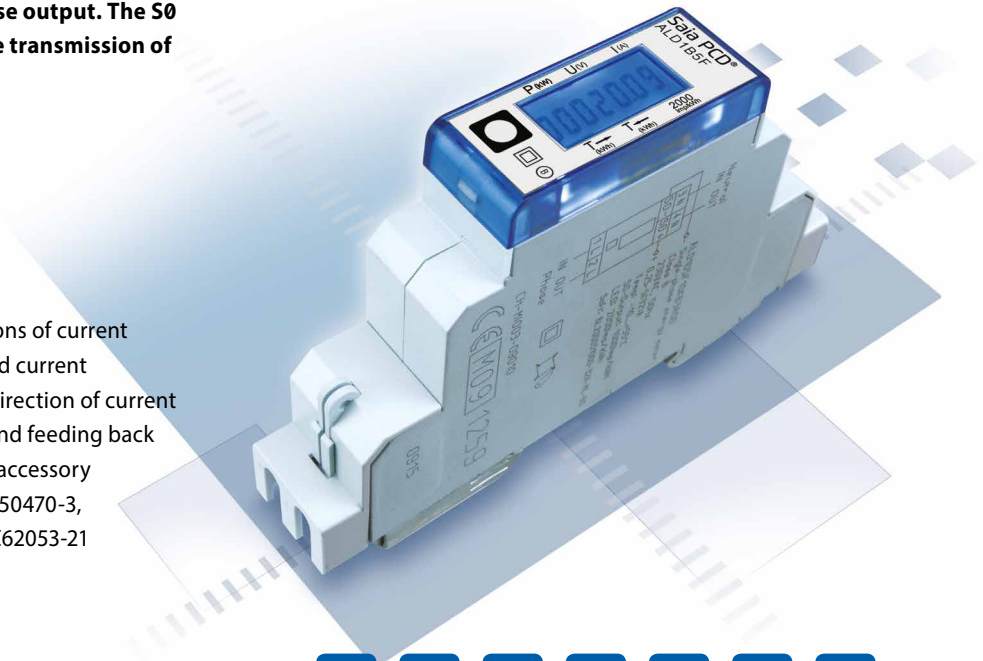
## Technical data

| | |
|---|---|
| Accuracy class | B in accordance with EN50470-3, 1 in accordance with IEC62053-21 |
| Operating voltage | 230 VAC, 50 Hz Tolerance −20 % /+15% |
| Reference current/ maximal | $I_{ref}$ = 5 A, $I_{max}$ = 32 A |
| Start current/minimum current | $I_{st}$ = 20 mA, $I_{min}$ = 0.25 A |
| Power consumption | Active 0.4 W per phase |
| Meter range | 00˙000.00…99˙999.99 100˙000.0…999˙999.9 |
| Display | Backlit LCD, numbers 5 mm high |
| Pulses per kWh | LC display : 2000 pulses/kWh S0-output : 1000 pulses/kWh |

## Assembly

| | |
|---|---|
| Assembly | on 35 mm top-hat rail in accordance with EN60715TH35 |
| Connections Main circuit | Max. conductor cross section 6 mm², Pozidrive screwdriver size 1, flat-head screwdriver size 1 Torque: 1.2 Nm |
| Connections Control circuit | Max. conductor cross section 2.5 mm², Pozidrive screwdriver size 0 or flat-head screwdriver size 1 Torque: 0.5 Nm |
| Insulating properties | – 4 kV / 50 Hz test in accordance with VDE0435 for energy meters<br>– 6 kV 1.2 / 50 µs overvoltage in accordance with IEC255-4<br>– 2 kV / 50 Hz in accordance with VDE0435 for interfaces<br>– Device protection class II |
| Ambient temperature | −25 °…+55 °C |
| Storage temperature | −30 °…+85 °C |
| Environment | Mechanical M2 Electromagnetic E2 |
| Relative humidity | 75 % without condensation |
| EMC/resistance | – Surge voltage in accordance with IEC61000-4-5 at the main circuit, 4 kV at the S-bus interface, 1 kV<br>– burst voltage in accordance with IEC61000-4-4, at the main circuit, 4 kV at the S-bus interface, 1 kV<br>– ESD in accordance with IEC61000-4-2, contact 8 kV, air 15 kV |

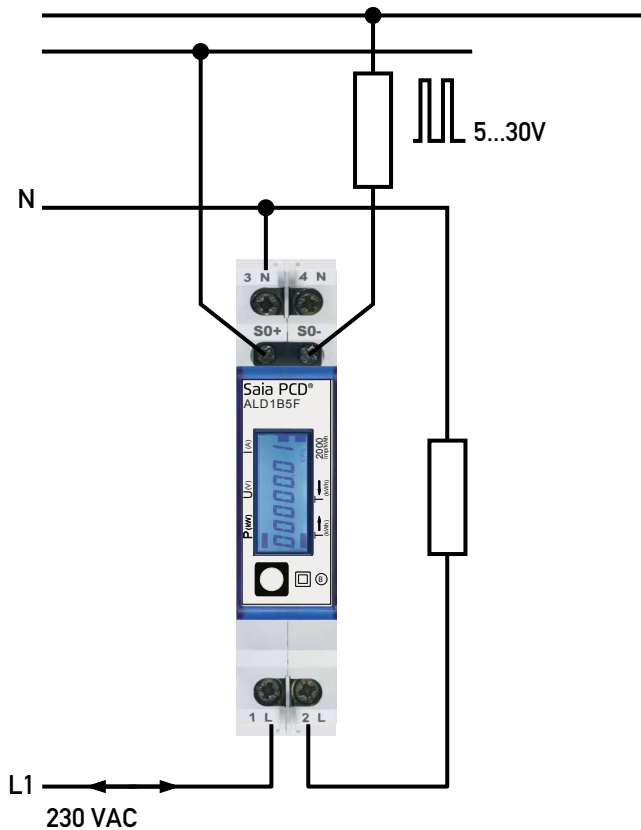## Dimension drawings

Architecture
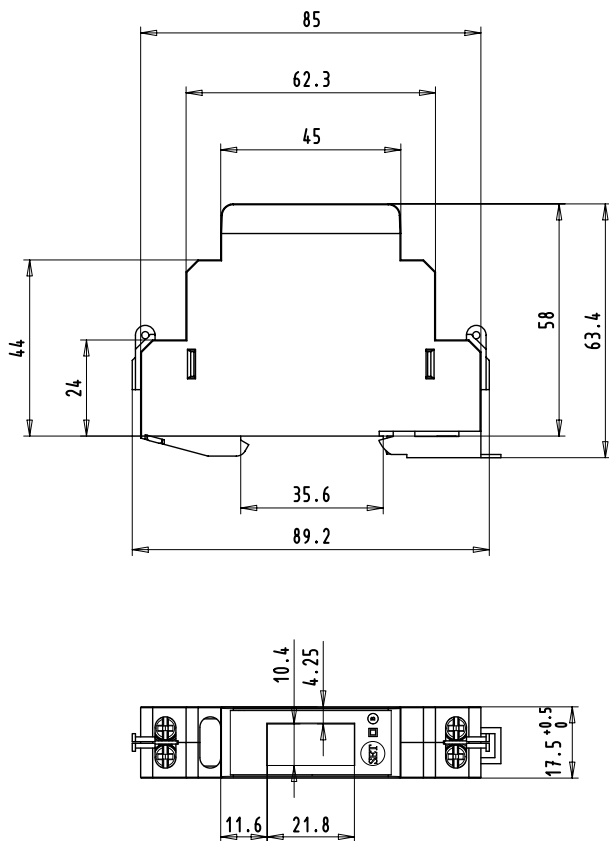


## Display components, direct measurement
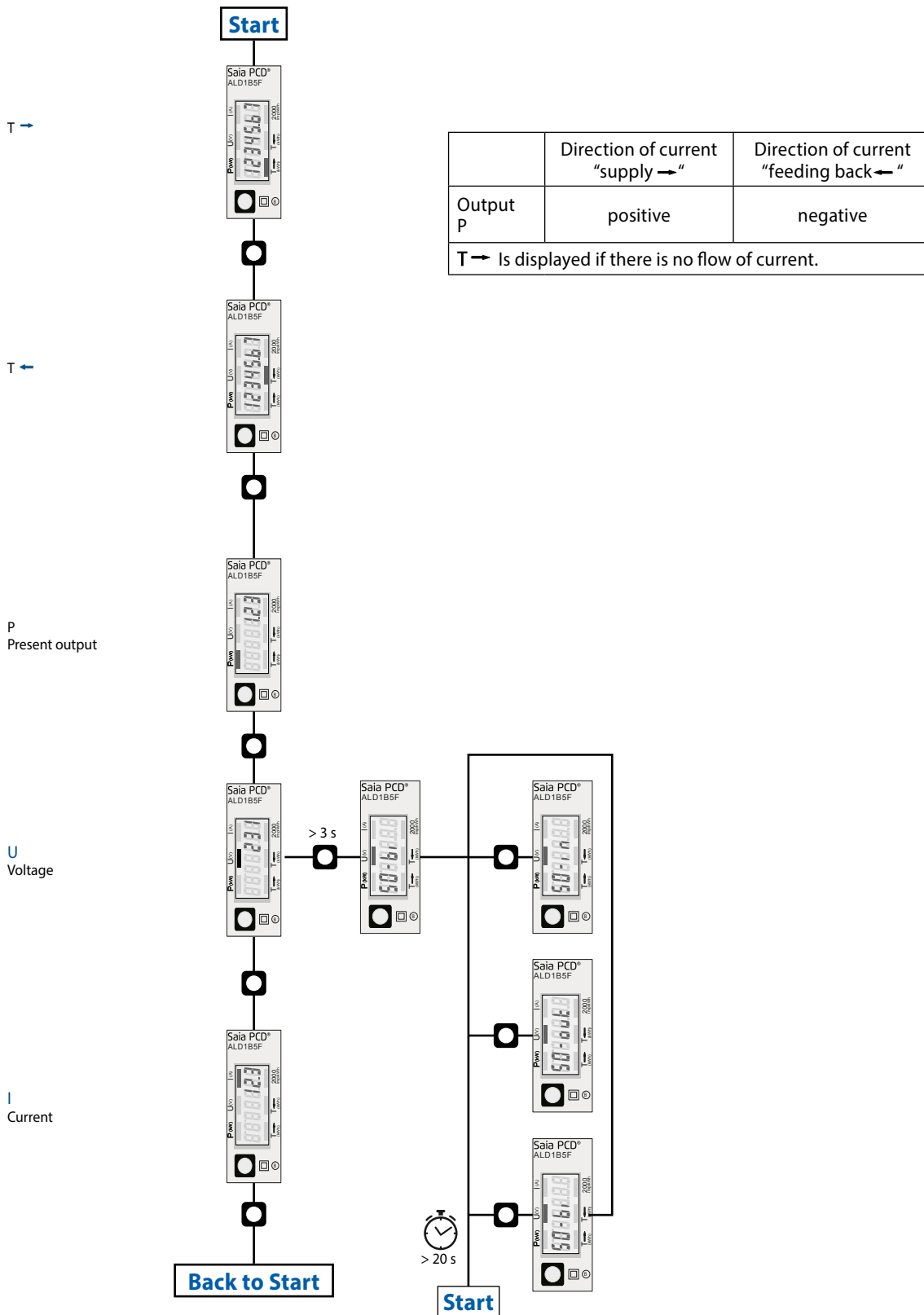


Saia PCD®
ALD1B5F
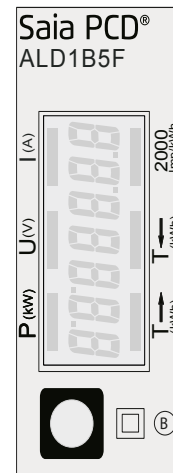
- ▶ T→ (kWh)        Shows the total consumption →
- ▶ T← (kWh)        Shows the total feeding back ←
- ▶ P (kW)            Shows the present power
  current «→» = reference (P positive)
  current «←» = feeding back (P negative)
- ▶ U (V)              Shows the voltage
- ▶ I (A)                Shows the current
- ▶ 2000 pulses/kWh Pulses in accordance with the supplied power.

## Connection diagram



5...30V

N

3 N    4 N
S0+   S0-

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1 L   2 L

L1

**230 VAC**

# Menu used to display the values on the LCD display



| | Direction of current "supply →" | Direction of current "feeding back ←" |
|---|---|---|
| Output P | positive | negative |
| T → Is displayed if there is no flow of current. | | |

**T →**

**T ←**

**P**
Present output

**U**
Voltage

> 3 s

**I**
Current

**Back to Start**

> 20 s

**Start**

## Connection diagram / method of operation

Energy is added as indicated by the arithmetic operator. Positive output in the meter indicates that energy is being supplied, while negative output indicates that energy is being delivered.

If the supply of energy (P positive) is greater than the delivery of energy (P negative), the count register T➡ increases.

The LCD segment «2000 pulses/kWh» is OFF and only switches on if there is a pulse.

If the delivery of energy is greater than the supply of energy, the count register T⬅ increases.

The LCD segment «2000 pulses/kWh» is ON and only switches off if there is a pulse.
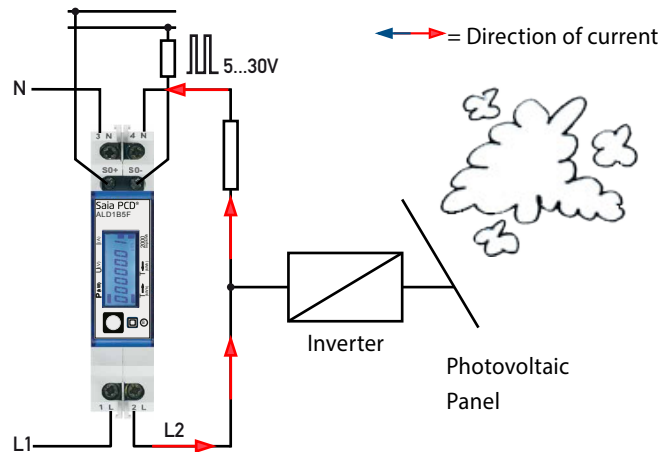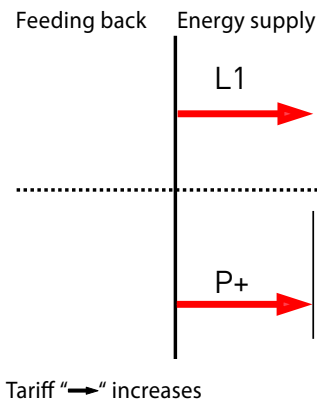
The S0 output can be configured.
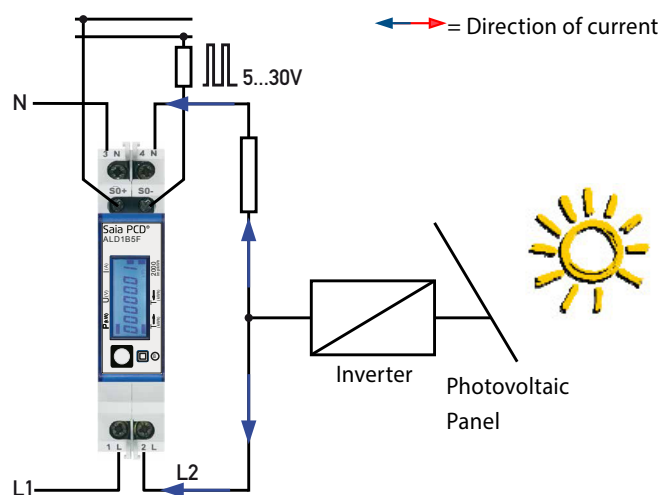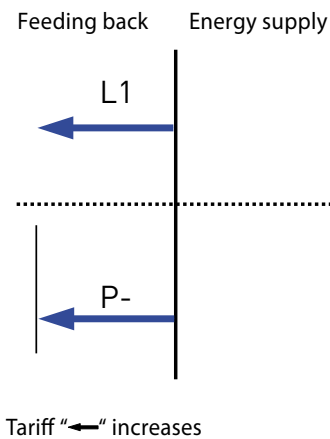
S0 IN: S0 pulses only for consumption

S0 OUT: S0 pulses only for feeding back

S0 BI: S0 pulses for both directions of current

## Method of operation with direction of current «supply ➡»

Feeding back     Energy supply

L1

P+

Tariff "➡" increases

N

5...30V

⬅ ➡ = Direction of current

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Inverter

Photovoltaic Panel

L1     L2

## Method of operation with direction of current «feeding back ⬅»

Feeding back     Energy supply

L1

P–

Tariff "⬅" increases

N

5...30V

⬅ ➡ = Direction of current

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ALD1B5F

Inverter

Photovoltaic Panel

L1     L2