

# Data sheet

## Single-phase bidirectional energy meter with integrated S0-interface.

S0-Interface  
ALD1

Controls Division

Bidirectional energy meter with LC display and integrated S0-interface. The S0-interface (spoken S-zero-interface) is a hardware interface used for the transmission of measurements in building automation.

### Specifications:

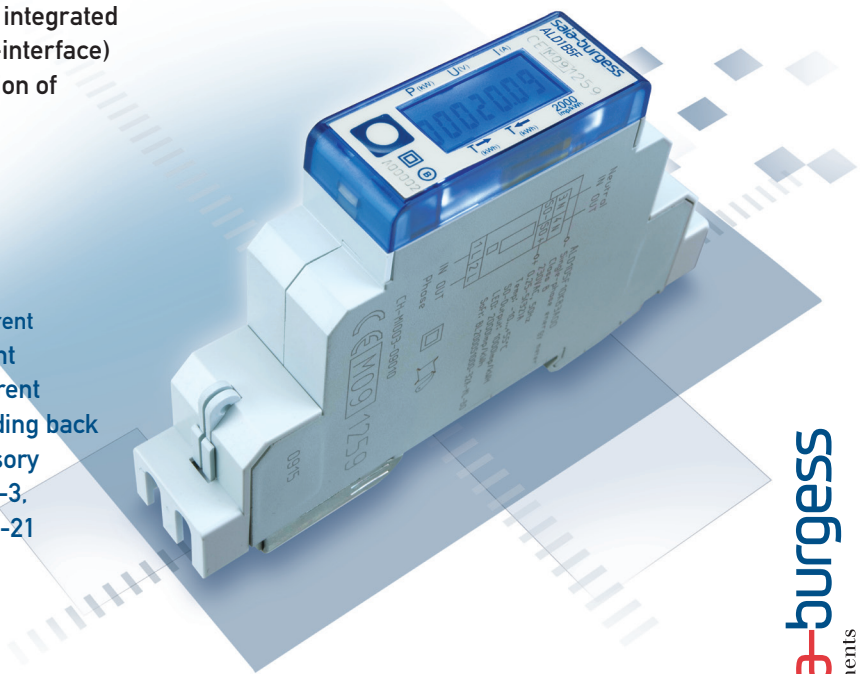
- 1-phase energy meter, 230 VAC 50 Hz
- Direct metering to 32 A in both directions of current
- Display of the active power, voltage and current
- S0-output: Independent of the direction of current
- 7-digit LCD display for energy supply and feeding back
- Can be sealed with a sealing cap as an accessory
- 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



### Technical data

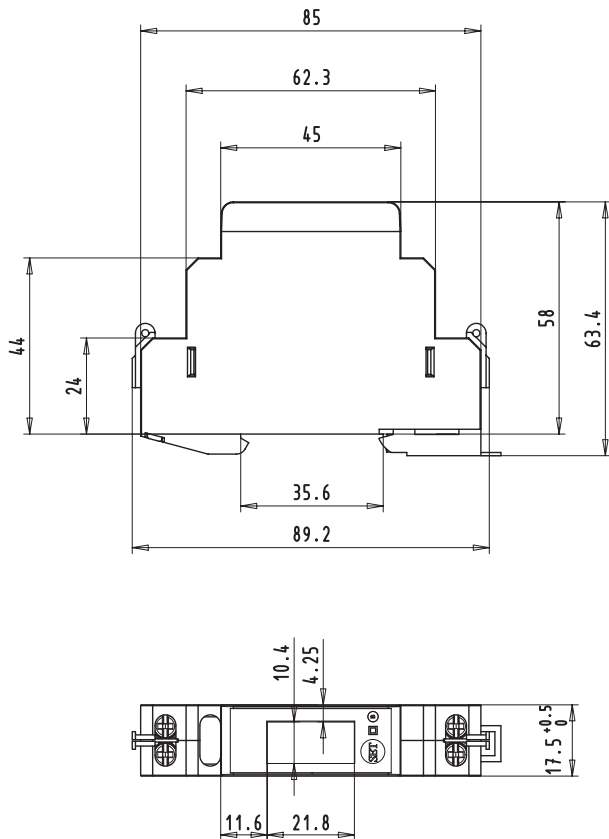
Accuracy class	B in accordance with EN50470-3, Class 1 in accordance with IEC62053-21	
Operating voltage	230 VAC, 50 Hz Tolerance -20% / +15%	
Reference current/ measuring current	$I_{ref} = 5 \text{ A}$ , $I_{max} = 32 \text{ A}$	
Start current/minimum current	$I_{st} = 20 \text{ mA}$ , $I_{min} = 0.25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

### Assembly

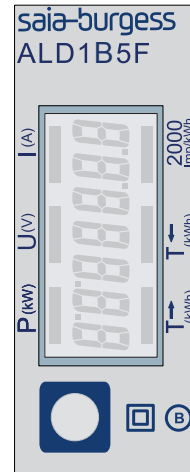
Assembly	on 35 mm top-hat rail in accordance with EN60715TH35
Connections Main circuit	Max. conductor cross section 6 mm <sup>2</sup> , Pozidrive screwdriver size 1, flat-head screwdriver size 1 Torque: 1.2 Nm
Connections Control circuit	Max. conductor cross section 2.5 mm <sup>2</sup> , Pozidrive screwdriver 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  6 kV 1.2 / 50 $\mu$ s overvoltage in accordance with IEC255-4  2 kV / 50 Hz in accordance with VDE0435 for interfaces  Device protection class II
Ambient temperature	-25 °...+55 °C
Storage temperature	-30 °...+85 °C
Relative humidity	95 % at 25 °...+40 °C, 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  burst voltage in accordance with IEC61000-4-4, at the main circuit, 4 kV at the S-bus interface, 1 kV  ESD in accordance with IEC61000-4-2, contact 8 kV, air 15 kV

## Dimension drawings

### Architecture

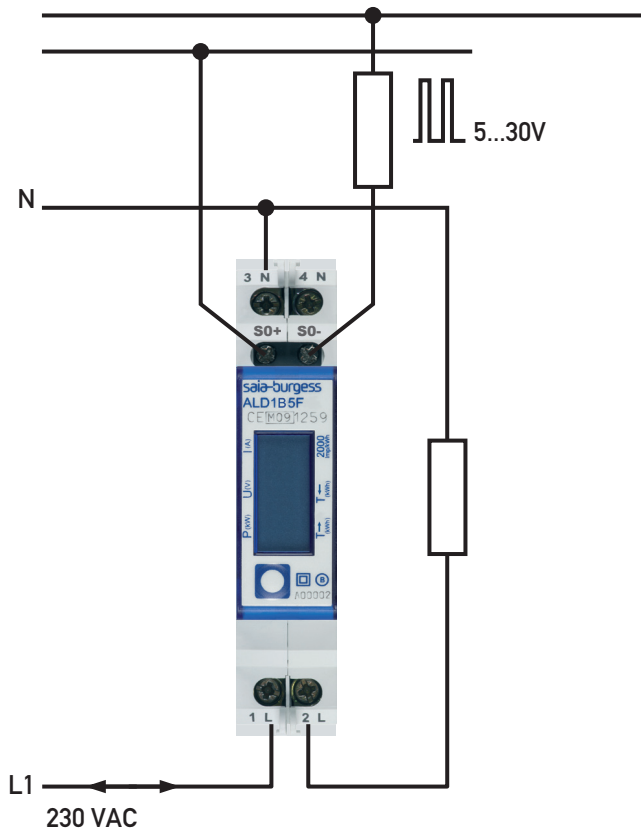


## Display components, direct measurement

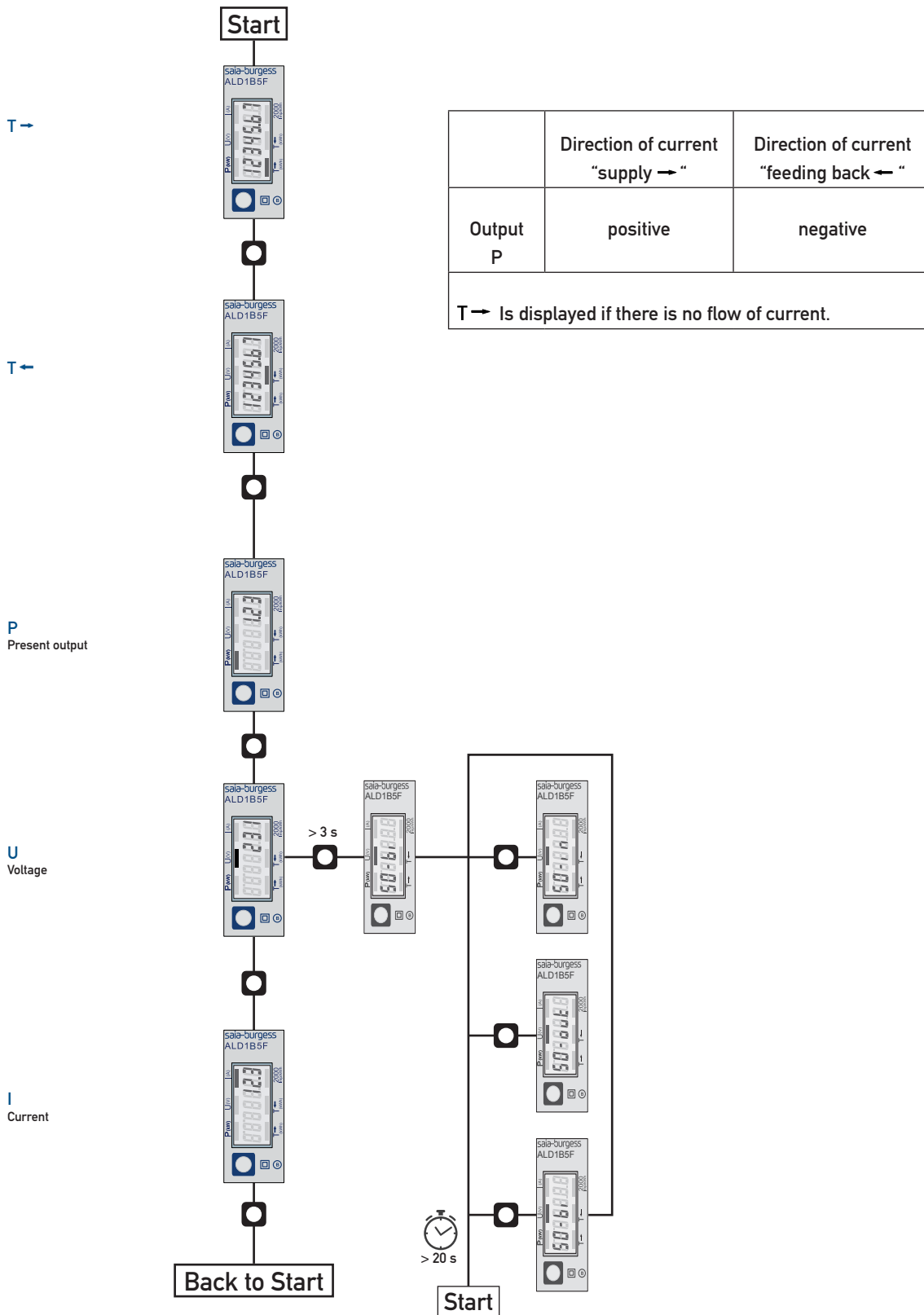


- T (kWh) → Shows the total consumption →
- T (kWh) ← Shows the total feeding back ←
- P (kW) Shows the present power  
current « → » = reference (P positive)  
current « ← » = feeding back (P negative)
- U (V) Shows the voltage
- I (A) Shows the current
- 2000 pulses/kWh Pulses in accordance with the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

## Connection diagram



## Menu used to display the values on the LCD display



## 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  $T \rightarrow$  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  $T \leftarrow$  increases.

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

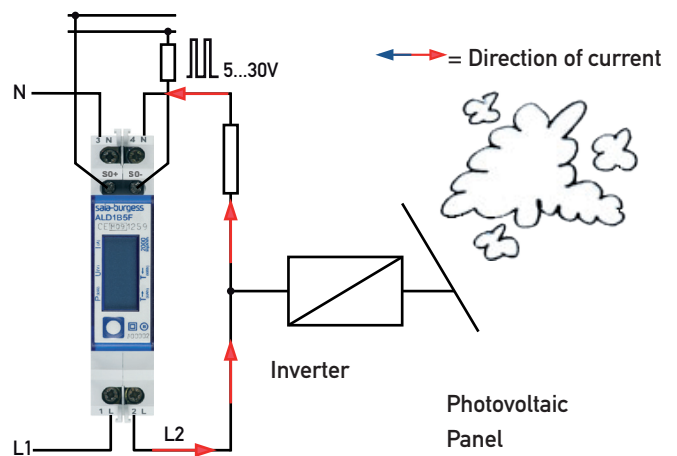
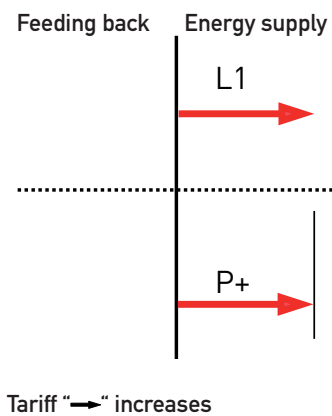
The S0 output can be configured.

S0 IN: S0 pulses only for consumption

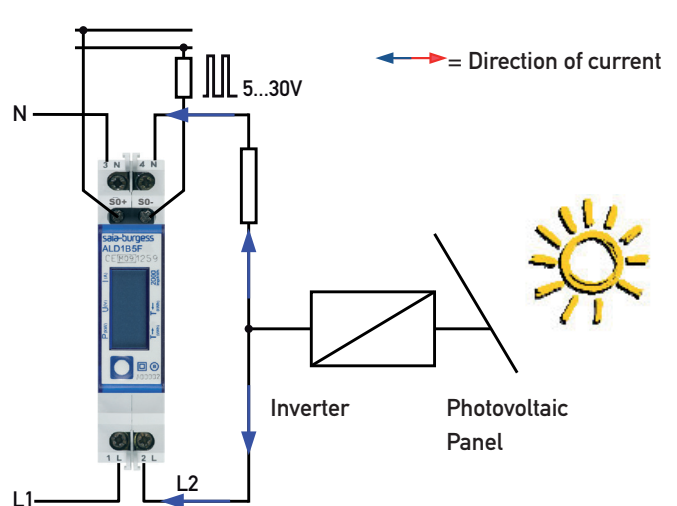
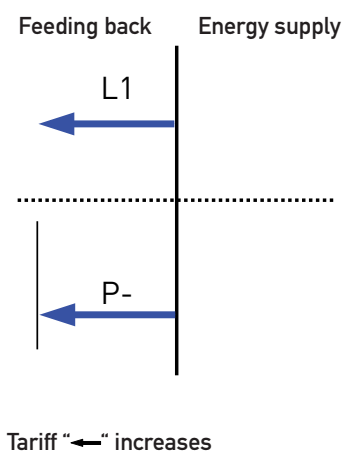
S0 OUT: S0 pulses only for feeding back

S0 BI: S0 pulses for both directions of current

### Method of operation with direction of current «supply $\rightarrow$ »



### Method of operation with direction of current «feeding back $\leftarrow$ »





## Contact

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Product Support,  
Technical reference website:

[www.saia-support.com](http://www.saia-support.com)