

# Data sheet

## Single phase Energy meter with integrated S-Bus interface

Controls Division

Saia® S Bus  
ALD1

Energy meters with an integrated S-Bus interface allow direct reading of all relevant data, such as energy (Total and partial), current, voltage, active and reactive power and  $\cos \varphi$ .

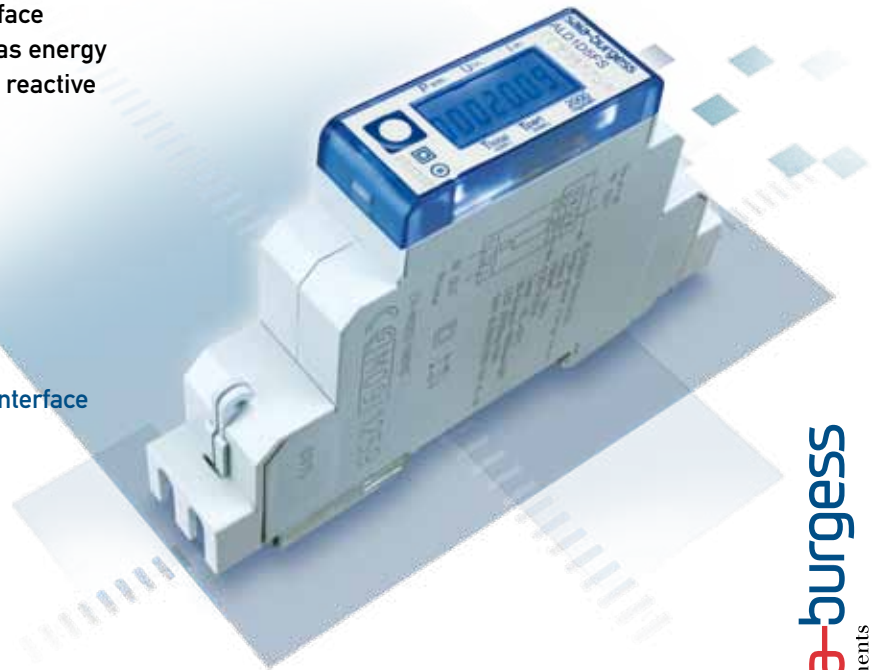
### Main features:

- Single-phase energy meter, 230 VAC 50 Hz
- Direct measurement up to 32 A
- Display of active power, voltage and current
- S-Bus Interface to query the data
- Reactive power and  $\cos \varphi$  available through interface
- Up to 254 meter can be connected to the S-Bus Interface
- 7-digit display
- Lead seal possible with cap as accessory
- Accuracy class B according to EN50470-3, accuracy class 1 according to IEC62053-21

### Order Number

Standard Version: ALD1D5FS00A2A00

MID Version: ALD1D5FS00A3A00



saia-burgess  
Control Systems and Components

### Technical data

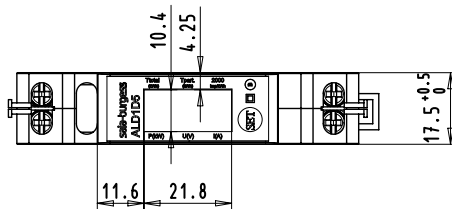
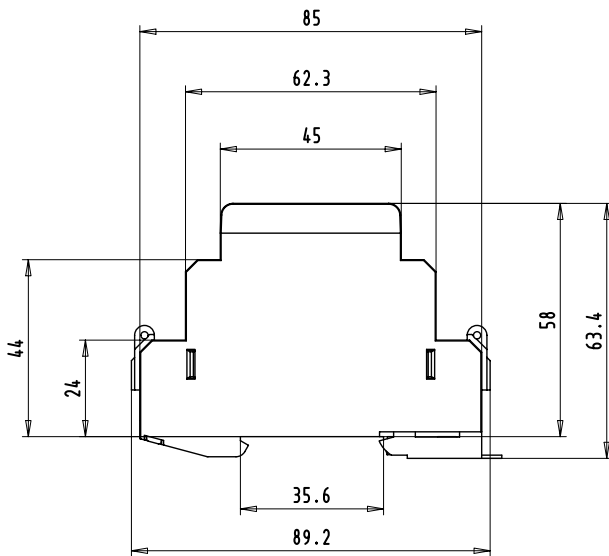
Precision class	B according to EN50470-3, class 1 according to IEC62053-21	
Operating voltage	230 VAC, 50 Hz Tolerance $-20\% / +15\%$	
Reference/ measurement current	$I_{ref} = 5\text{ A}$ , $I_{max} = 32\text{ A}$	
Starting/minimum current	$I_{st} = 20\text{ mA}$ , $I_{min} = 0.25\text{ A}$	
Power consumption	Active 0.4 W per phase	
Counting range	00'000.00...99'999.99 100'000.0...999'999.9	
Display	LCD backlit, digits 5 mm high	
Pulses per kWh	LC-Display	2000 Imp./kWh

### Mounting

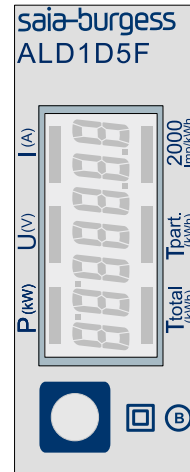
Mounting	On 35 mm rail, according to EN60715TH35
Terminal connections main circuit	Conductor cross-section max. 6 mm <sup>2</sup> , screwdriver Pozidrive no. 1, slot no.1 Breakaway torque: 1.2 Nm
Terminal connections control circuit	Conductor cross-section max. 2.5 mm <sup>2</sup> , screwdriver Pozidrive no. 0, or slot no.1 Breakaway torque: 0.5 Nm
Insulation characteristics	4 kV/50 Hz test according to VDE0435 for Energy Meter part 6 kV 1.2/50 $\mu\text{s}$ surge voltage according to IEC255-4 2 kV/50 Hz test according to VDE0435 for Interface device protection class II
Ambient temperature	$-10^\circ \dots +55^\circ \text{C}$
Storage temperature	$-30^\circ \dots +85^\circ \text{C}$
Relative humidity	95% at 25 $^\circ \dots +40^\circ \text{C}$ , without condensation
EMC/interference immunity	Surge voltage according to IEC61000-4-5 at main circuit, 4 kV at S-Bus interface, 1 kV Burst voltage according to IEC61000-4-4, at main circuit 4 kV at S-Bus interface 1 kV ESD according to IEC61000-4-2, contact 8 kV, air 15 kV

## Dimension diagram

### Structure

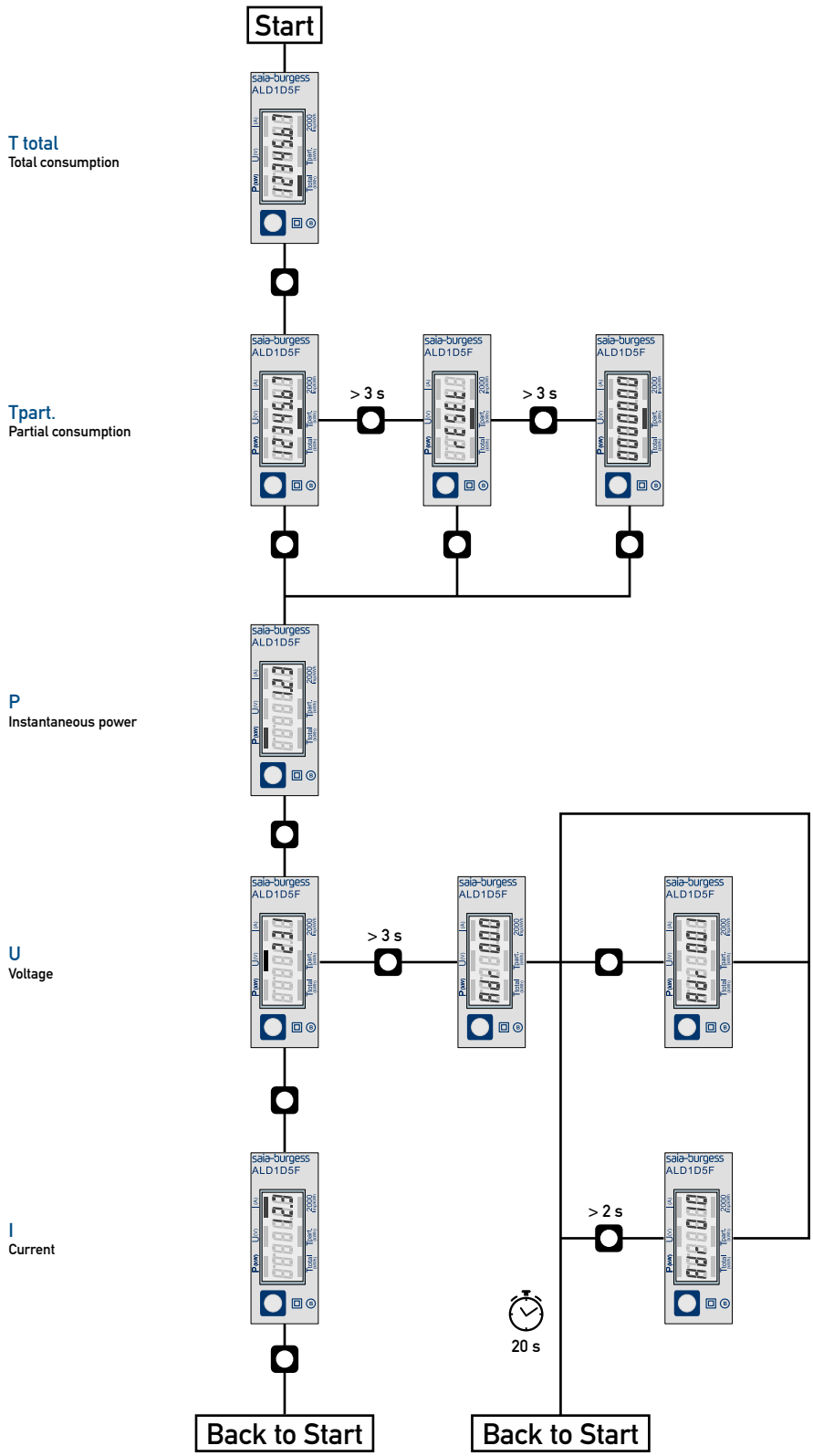


## Display elements, direct measurement

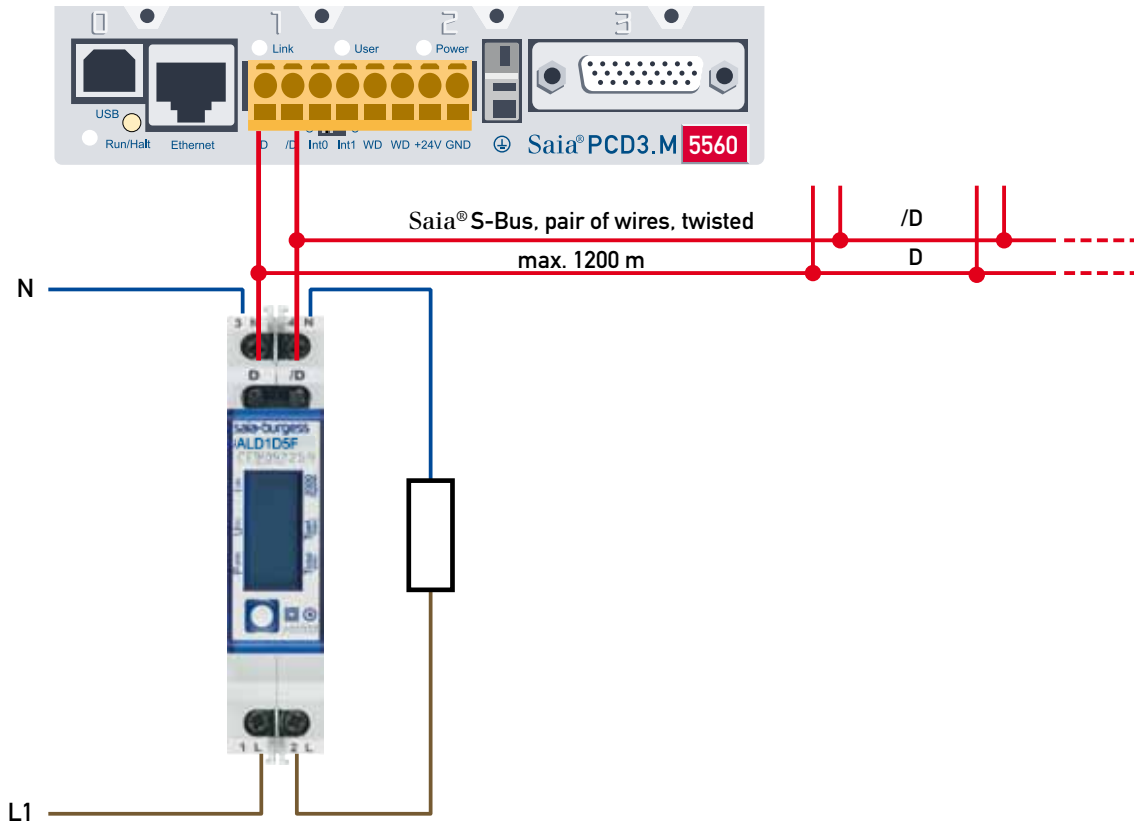


- T total (kWh) Indicates the total consumption
- T part (kWh) Indicates the partial consumption. This value can be reset
- P (kW) Indicates the instantaneous power
- U (V) Indicates the voltage
- I (A) Indicates the current
- 2000 pulses/kWh Pulsates according to the amount of used power.

## Menu to display the value on LCD



## Wirings Diagram



## Technical data S-Bus

Bus system	Saia® S-Bus
Transmission rate	2'400-4'800-9600-19'200-38'400-57'600-115'200. The transmission Baud rate is automatically detected
Transmission mode	Data
Bus length (max.)	1200 m (without repeater)
Response time: (to system response)	Write: up to 60 ms Read: up to 60 ms

- The communication is ready 30 s after the power on
- The use of energy meter in bus with intensive communication could reduce the performance of the bus
- Refresh time for the data is 5 s. For this reason one energy meter should be not polled faster as 5 s
- 254 devices could be connected to the S-Bus. Over 128 devices, a repeater should be used
- The interface don't have a terminal resistor, this should be provided external
- For a description of the used registers please look at the register page

## Data transmission

- Only «read/write» register instructions are recognized
- Only one register can be written at a time
- The device will respond «NAK» if more than 1 register is written
- Up to 10 Registers could be read at a time
- The device will respond «NAK» if more than 10 registers are read
- The device will not respond to any unknown query
- The device has a voltage monitoring system. In case of voltage loss, registers are stored in EEPROM (transmission rate) etc.

## Change the S-Bus address direct on device

- In the menu, go for «U»
- Push long ( $\geq 3$  sec) → «SBUS-ADR»
- Push short → S-Bus address +1, push long → S-Bus address +10
- Once the desired address is selected wait, to validate, till the root menu to come back



## Contact

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Switzerland and international

Saia-Burgess Controls AG  
Bahnhofstrasse 18  
CH-3280 Murten / Switzerland  
T +41 (0)26 672 72 72  
F +41 (0)26 672 74 99  
pcd@saia-burgess.com  
www.saia-pcd.com

Supplied by:

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Product Support,  
Technical reference website:

[www.sbc-support.ch](http://www.sbc-support.ch)