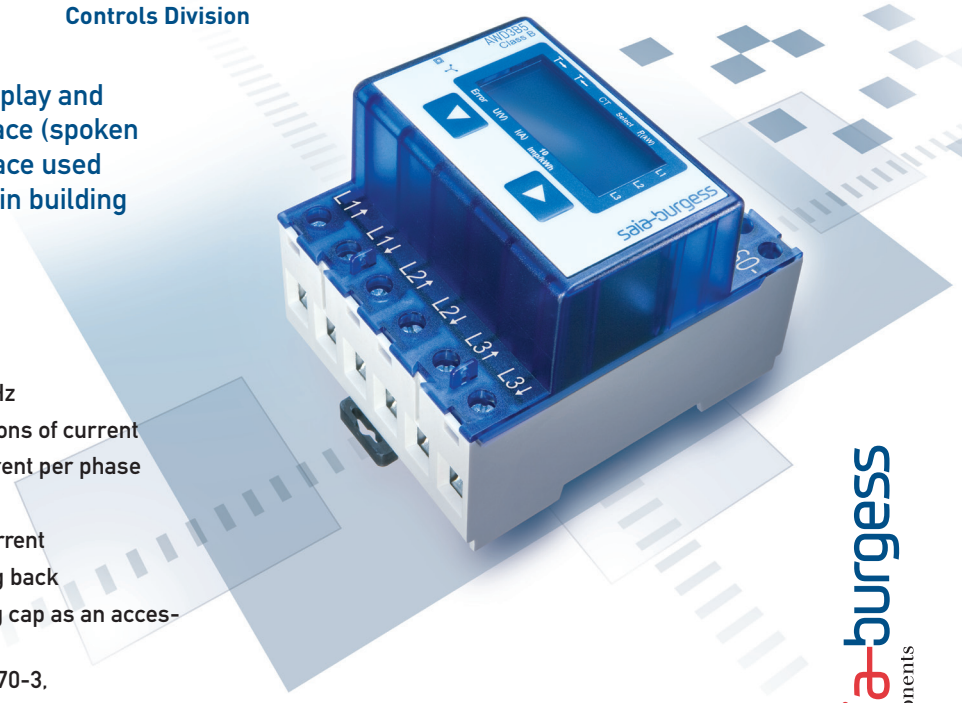
Data sheet

S0-Interface
AWD3

AWD3 3-phase, bidirectional energy meter for current converter metering with integrated S0-output

Controls Division

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



Specifications:

- 3-phase energy meter, 3 × 230 / 400 VAC 50 Hz
- Converter metering to 1500 A in both directions of current
- Display of the active power, voltage and current per phase
- Display of the total active power
- S0-output; independent of the direction of current
- 7-digit display for energy supply and feeding back
- Can be sealed and is provided 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:	AWD3B5W10MC2A00
MID version:	AWD3B5W10MC3A00
Sealing cap:	4 104 7485 0

Technical data

Accuracy class	B in accordance with EN50470-3, Class 1 in accordance with IEC62053-21
Operating voltage	3 × 230 / 400 VAC, 50 Hz
	Tolerance -20 %/+15%
Power consumption	Active 0.4 W per phase
Meter range	000'000.0…9'999'999
Display	Backlight LCD, numbers 6 mm high
Display without mains electricity	Condenser protected LCD
	maximum 2 times in 10 days
S0-output (interface)	Optocoupler max. 30 V / 20 mA and min. 5 V, impedance 100 Ω, pulse duration 30 ms
Transmission distance	S0-output max. 1000m (at 30V/20mA)

Assembly

Assembly	On 35 mm top-hat rail in accordance with EN60715TH35
Connections Main current circuit	Conductor cross section 1.5–16 mm², Pozidrive screwdriver size 1, flat-head screwdriver size 2, torque 1.5–2 Nm
Connections Control current circuit	Conductor cross section 2.5 mm², Pozidrive screwdriver size 0 or flat-head screwdriver size 2, torque 0.8 Nm
Insulating properties	4 kV / 50 Hz test in accordance with VDE0435 for energy meters
	6 kV 1.2 / 50 µs overvoltage in accordance with IEC255-4
	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 current circuit 4 kV at the S0-interface 1 kV
	Burst voltage in accordance with IEC61000-4-4, at the main current circuit 4 kV at the S0-interface 1 kV
	ESD in accordance with IEC61000-4-2, contact 8 kV, air 15 kV

Converter measurement

Reference current / maximum current		5…1500 A			
		I_{ref} = 5 A, I_{max} = 6 A			
Start current / minimum current		I_{st} = 10 mA, I_{min} = 0.05 A			
Conversion factor		5:5	50:5	100:5	150:5
		200:5	250:5	300:5	400:5
		500:5	600:5	750:5	1000:5
		1250:5	1500:5		
Pulses per kWh	LCD display	10 pulses / kWh			
	S0-output	10 pulses / kWh			

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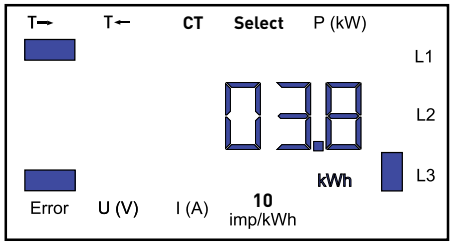
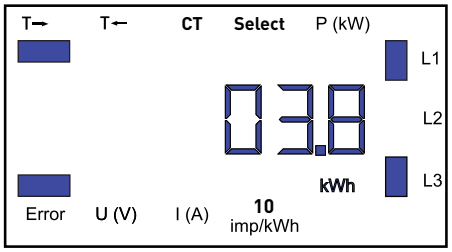
Control Systems and Components

Error display

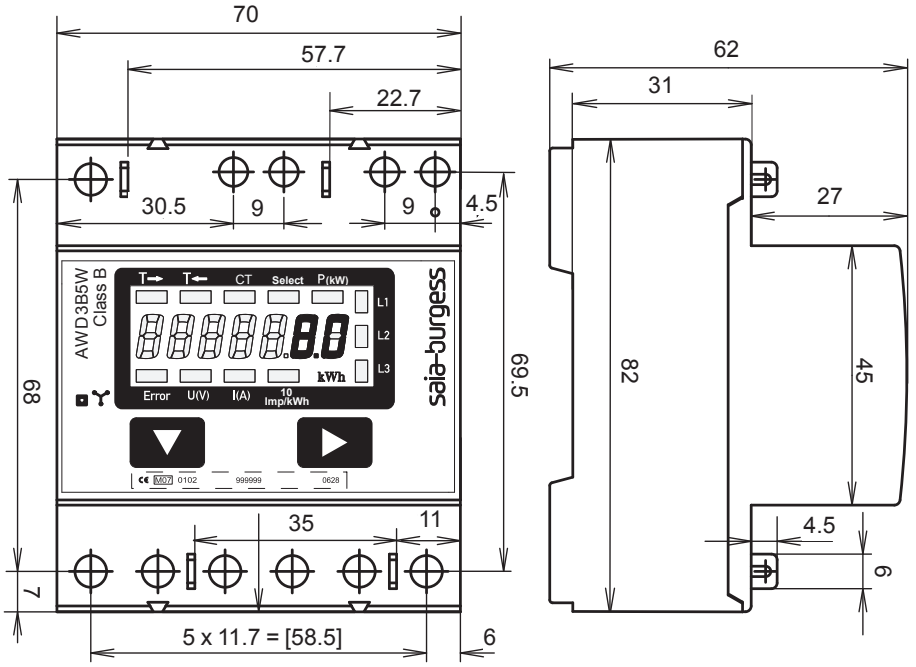
Example: Connection error at L3



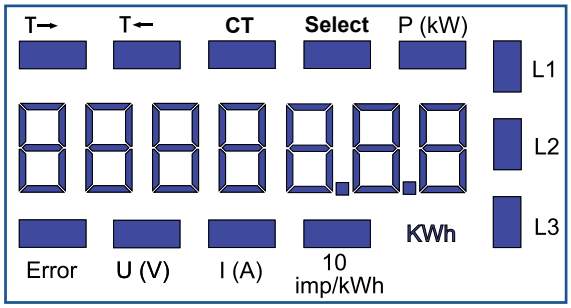
Example: Connection error at L1 and L3



Dimension drawings

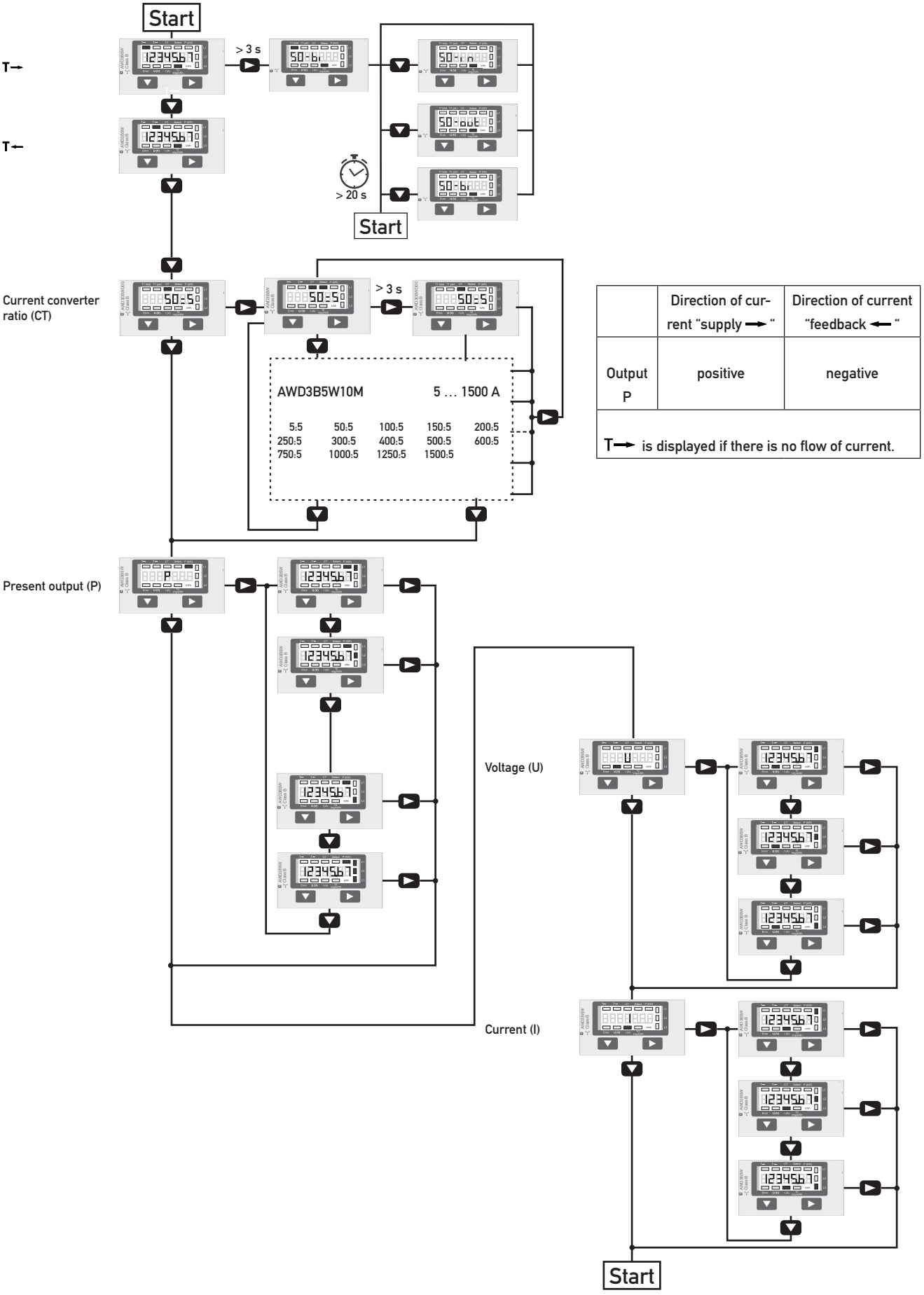


Display components



- **T→** Shows the total consumption →
- **T←** Shows the total consumption ←
- **CT** Shows the set current converter ratio
- **Select** When the Z1-Z2 bridge is open, the converter ratio can be set under the menu item: Select
- **P (kW)** Shows the present output per phase or for all phases
  Current «→» = supply (P positive)
  Current «←» = feeding back (P negative)
- **U (V)** Shows the voltage per phase
- **I (A)** Shows the current per phase
- **10 pulses/kWh** Pulses in accordance with the supplied power.
- **kWh** Shows the unit kWh in the consumption display (only for standard version)
- **L1 / L2 / L3** Displays the corresponding phase for the P, U, I or error display
- **Error** In the absence of a phase. The corresponding phase is also displayed.

Menu used to display the values on the LCD display



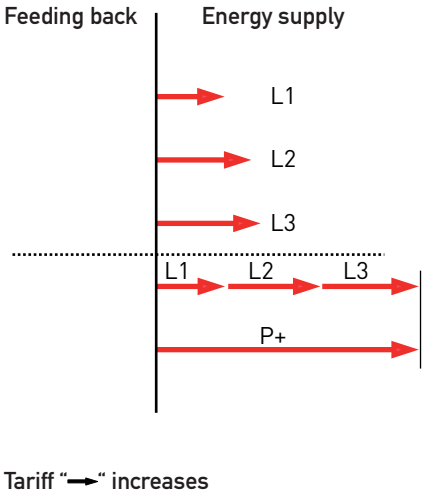
	Direction of current "supply →"	Direction of current "feedback ←"
Output P	positive	negative
T→ is displayed if there is no flow of current.		

Connection diagram / Method of operation

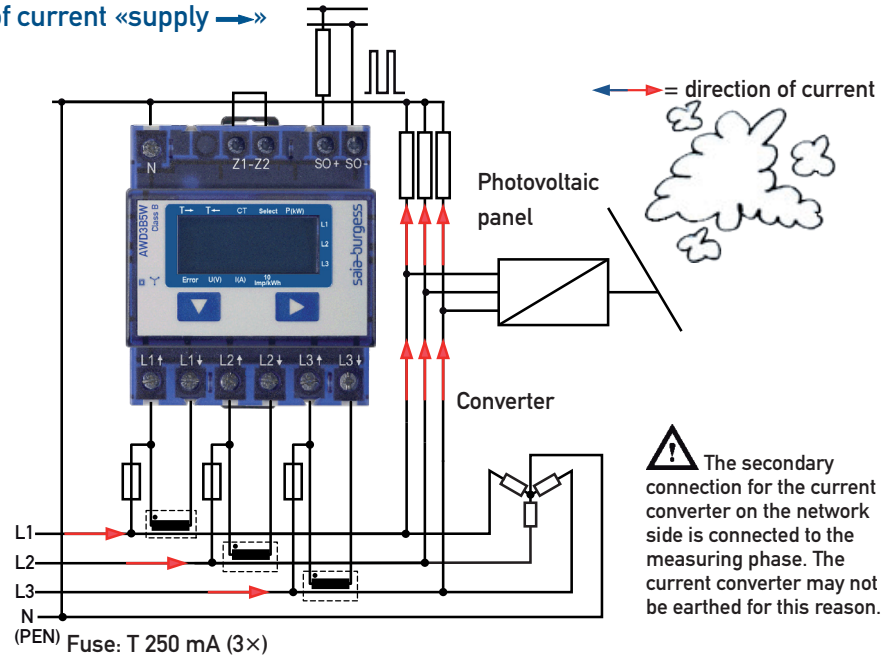
Energy is added as indicated by the arithmetic operator. Positive output in the meter indicates that energy is being supplied, while negative output indicates that energy is being delivered. The energy measurement is carried out in accordance with mode 2, is balanced.

If the supply of energy (P positive) is greater than the delivery of energy (P negative), the counter T→ increases.
The LCD segment «10 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 counter T ← increases.
The LCD segment «10 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 →»

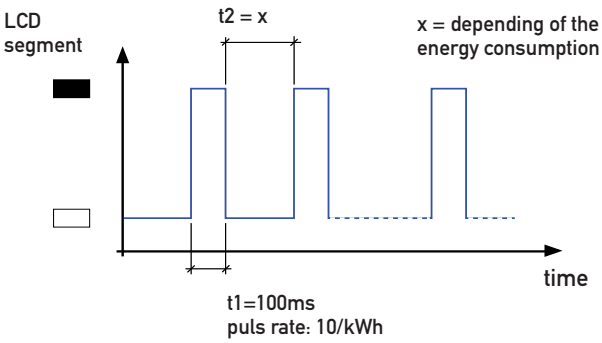


Tariff "→" increases

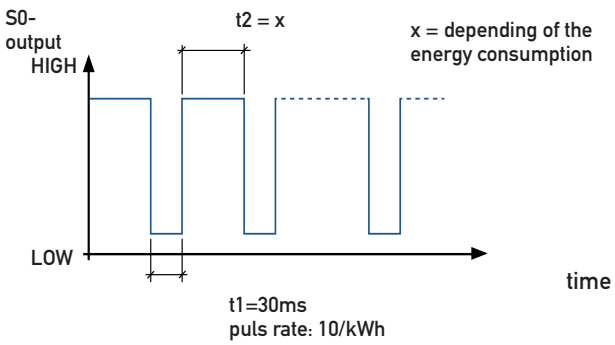


The secondary connection for the current converter on the network side is connected to the measuring phase. The current converter may not be earthed for this reason.

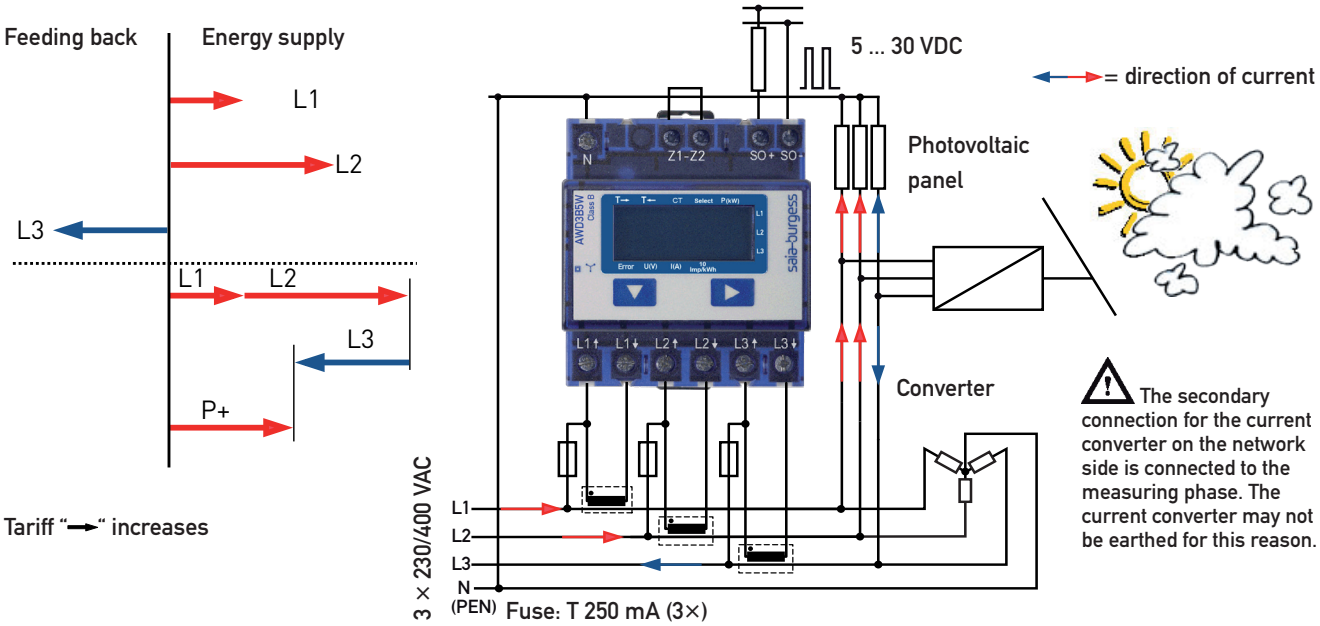
Mode of operation of the LCD segment «pulse/kWh»

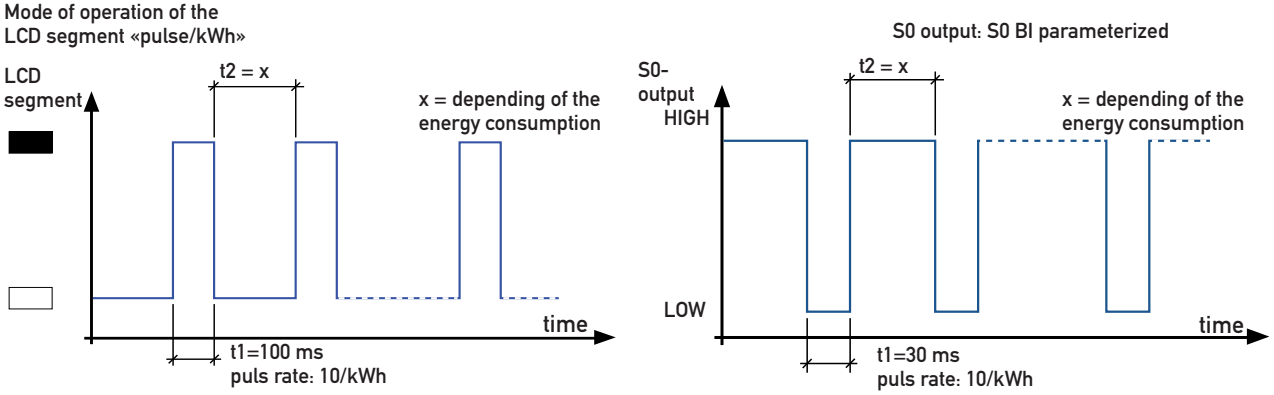


S0 output: S0 BI parameterized

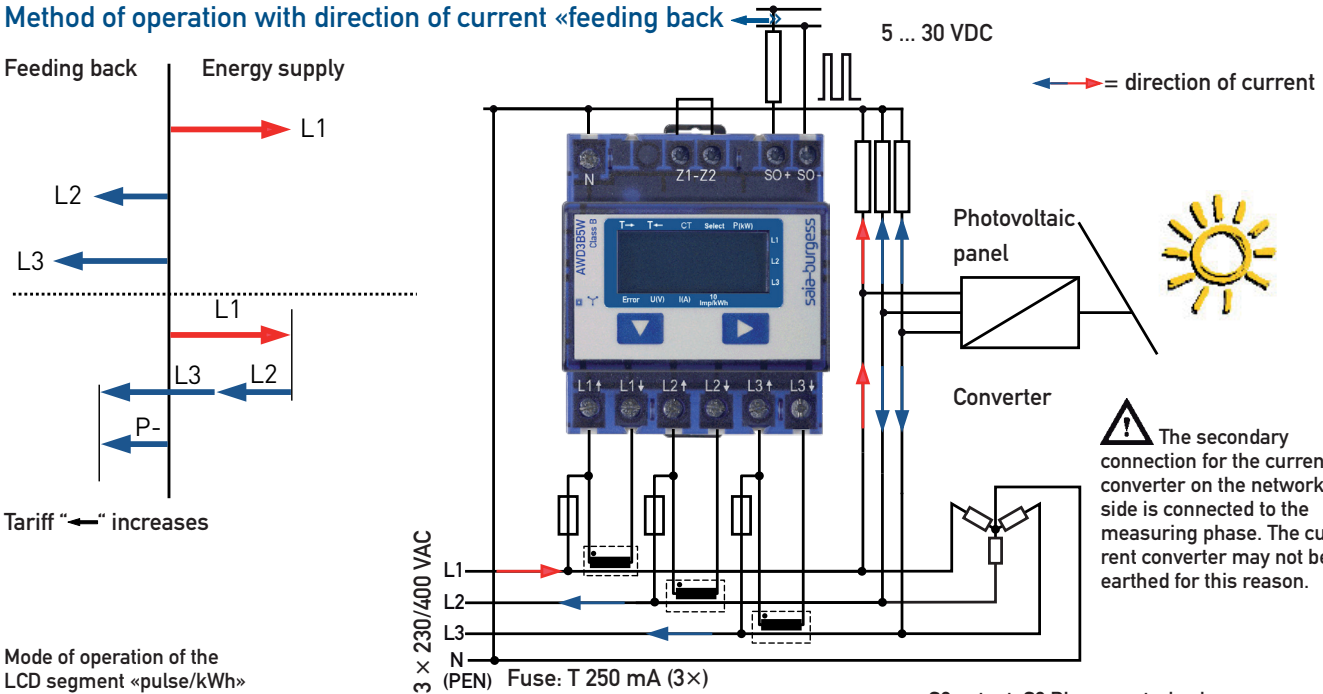


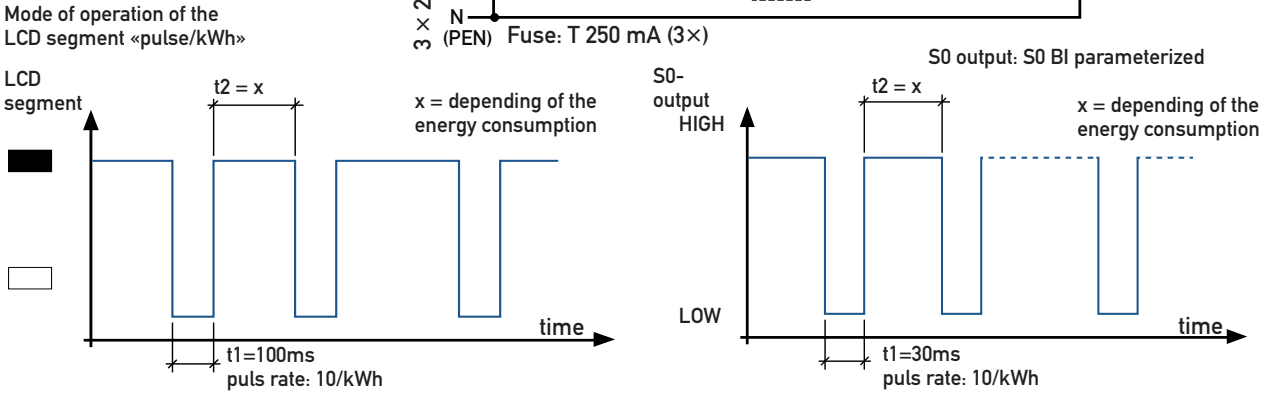
Method of operation with direction of current «supply ⟶» and «feeding back ⟵»





Method of operation with direction of current «feeding back ⟵»





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Technical data and specifications are subject to change without prior notice.