

3-phase, bidirectional energy meter with S0 pulse output

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

Specifications

- 3-phase energy meter, 3 × 230 / 400 VAC 50 Hz
- Direct metering to 65 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 caps an accessory
- Accuracy class B in accordance with EN50470-3, Accuracy class 1 in accordance with IEC62053-21

Order number

Standard version: ALE3B5F10KC2A00
 Version MID: ALE3B5F10KC3A00
 Sealing caps: 4 104 7485 0



Technical data

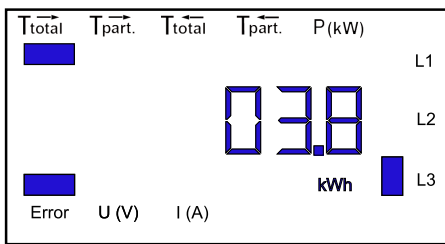
Accuracy class	B in accordance with EN50470-3, 1 in accordance with IEC62053-21
Operating voltage	3 × 230 / 400 VAC, 50 Hz Tolerance -20%/+15%
Reference current/ maximum current	$I_{ref} = 10 \text{ A}$, $I_{max} = 65 \text{ A}$
Start current /min current	$I_{st} = 40 \text{ mA}$, $I_{min} = 0.5 \text{ A}$
Power consumption	Active 0.4 W per phase
Meter range	00'000.00... 99'999.99 100'000.0... 999'999.9
Display	Backlit LCD, numbers 6 mm high
Display without mains voltage	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. 1000 m (at 30 V / 20 mA)
Pulses per kWh	LED: 1000 pulses/kWh S0-output: 1000 pulses/kWh

Assembly

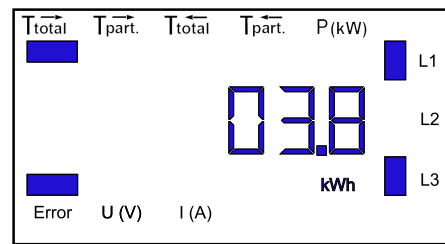
Assembly	On 35 mm top-hat rail in accordance with EN60715TH35
Connections Main current circuit	Conductor cross section 1.5–16 mm ² , Pozidrive screwdriver size 1, flat-head screwdriver size 2, torque 1.5 – 2 Nm
Connections Control current circuit	Conductor cross section 2.5 mm ² , Pozidrive screwdriver 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
Environment	Mechanical M2 Electromagnetic E2
Relative humidity	75% 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

Error display

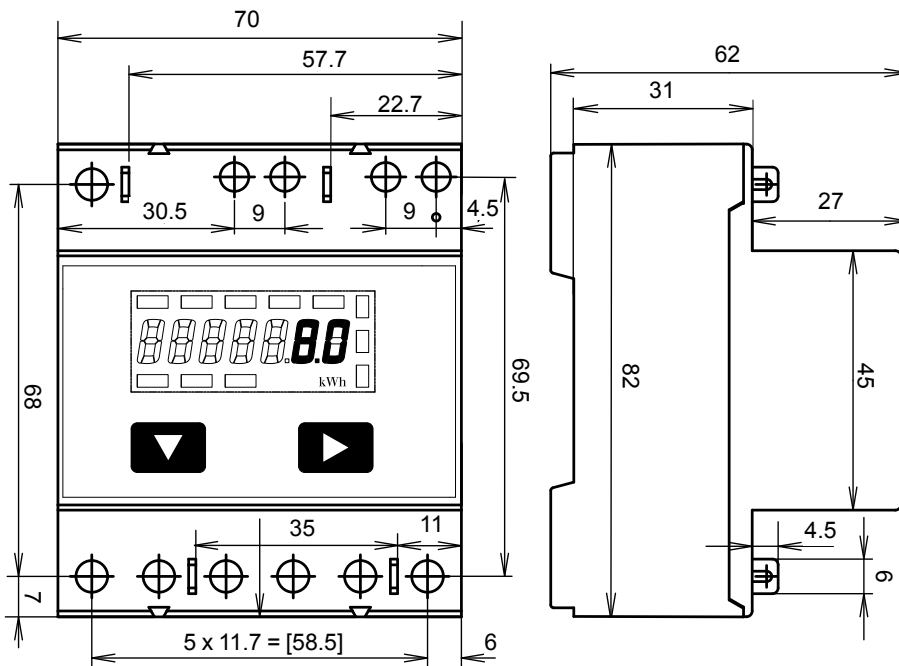
Example: Connection error at L3



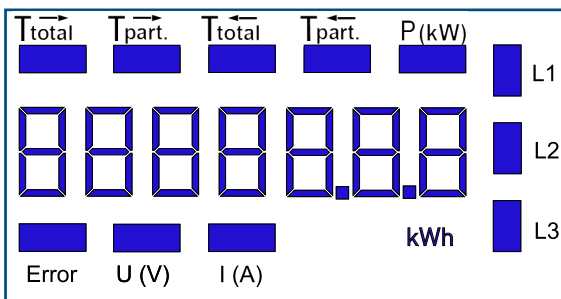
Example: Connection error at L1 and L3



Dimension drawings

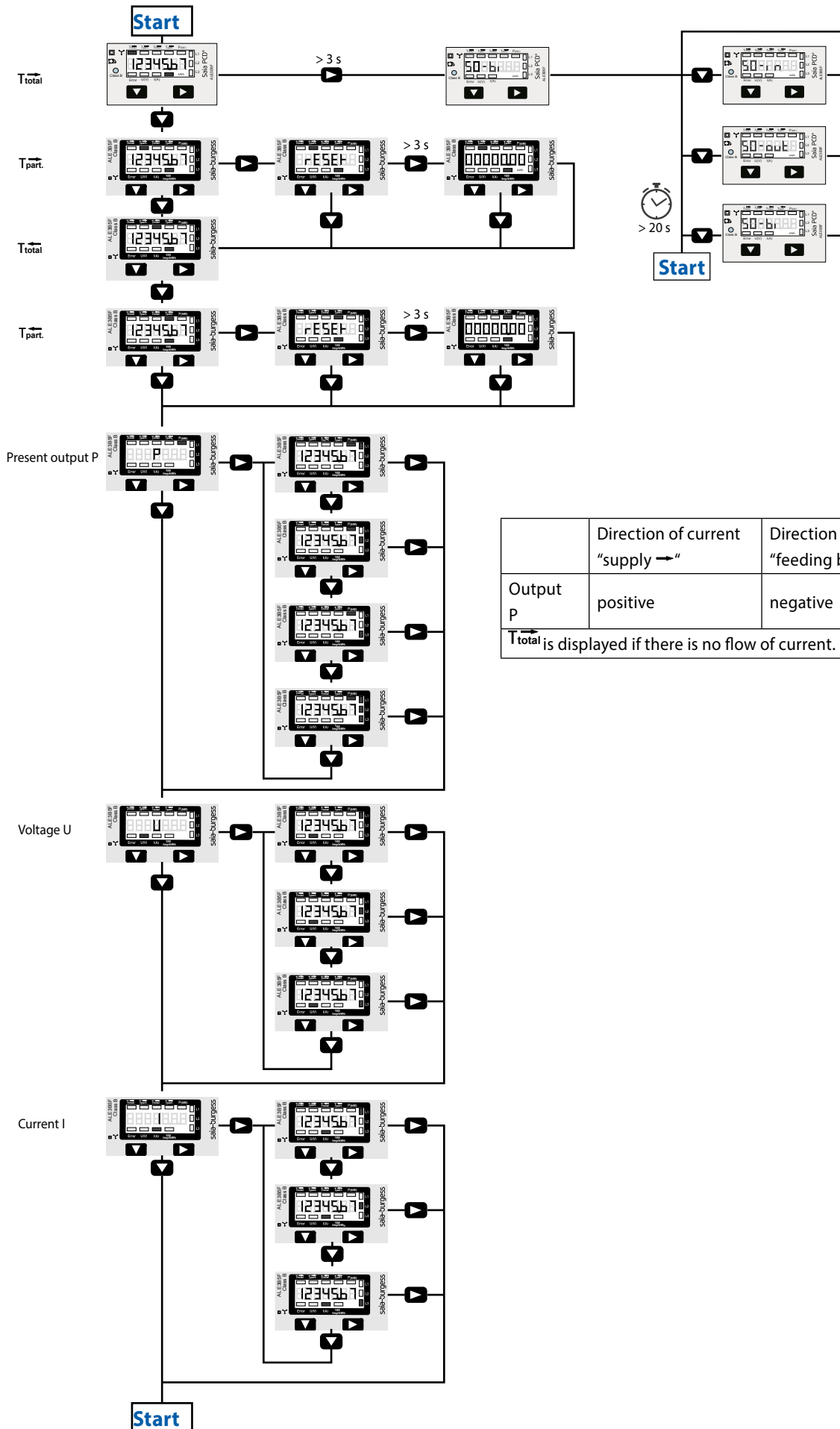


Display components, direct measurement



- ▶ T_{total}^{\rightarrow} Shows the total consumption T^{\rightarrow}
- ▶ $T_{part.}^{\rightarrow}$ Shows the partial consumption at T^{\rightarrow} , this value can be reset
- ▶ T_{total}^{\leftarrow} Shows the total consumption T^{\leftarrow}
- ▶ $T_{part.}^{\leftarrow}$ Shows the partial consumption at T^{\leftarrow} , this value can be reset
- ▶ P (kW) Shows the present output per phase or for all phases
Current « \rightarrow » = supply (P positive) Current « \leftarrow » = feedback (P negative)
- ▶ U (V) Shows the voltage per phase
- ▶ I (A) Shows the current per phase
- ▶ kWh Shows the unit kWh in the consumption or in the feedback display
- ▶ 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



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 $T \rightarrow$ increases.

The LED 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 $T \leftarrow$ increases.

The LED is ON and only switches off if there is a pulse.

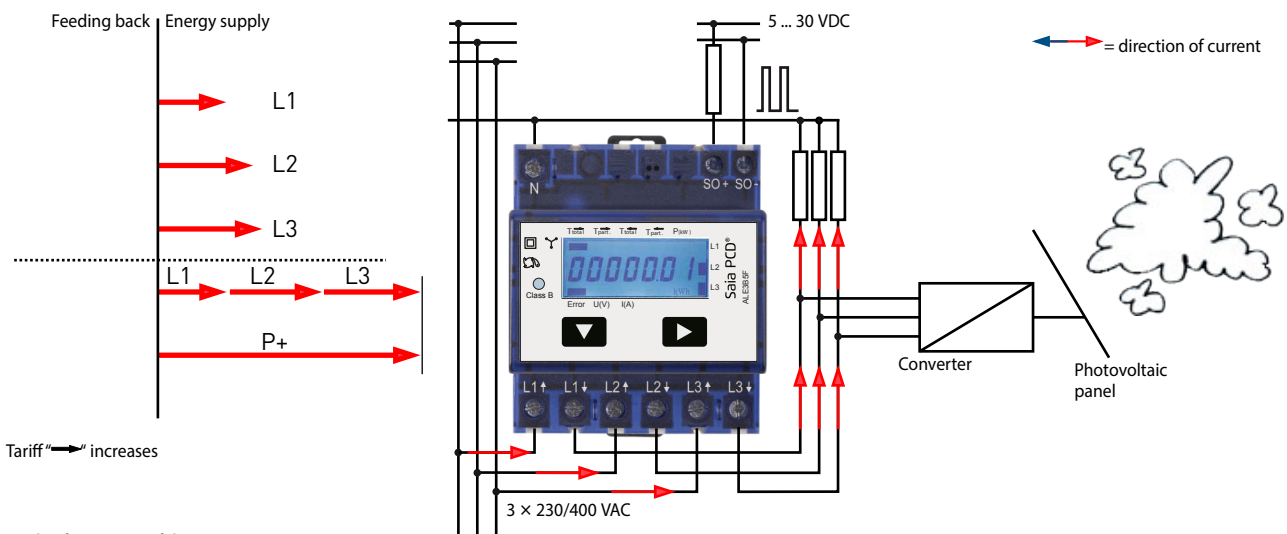
The S0 output can be configured.

S0 IN: S0 pulses only for consumption

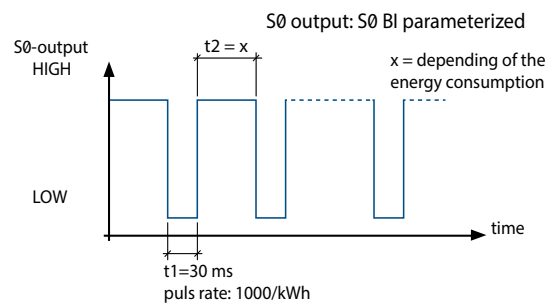
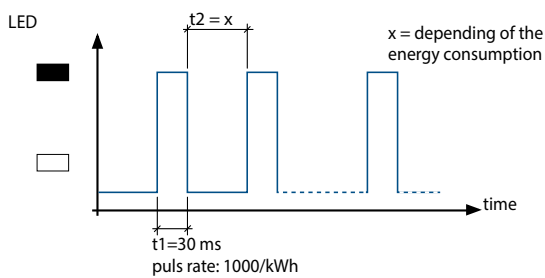
S0 OUT: S0 pulses only for feeding back

S0 BI: S0 pulses for both directions of current

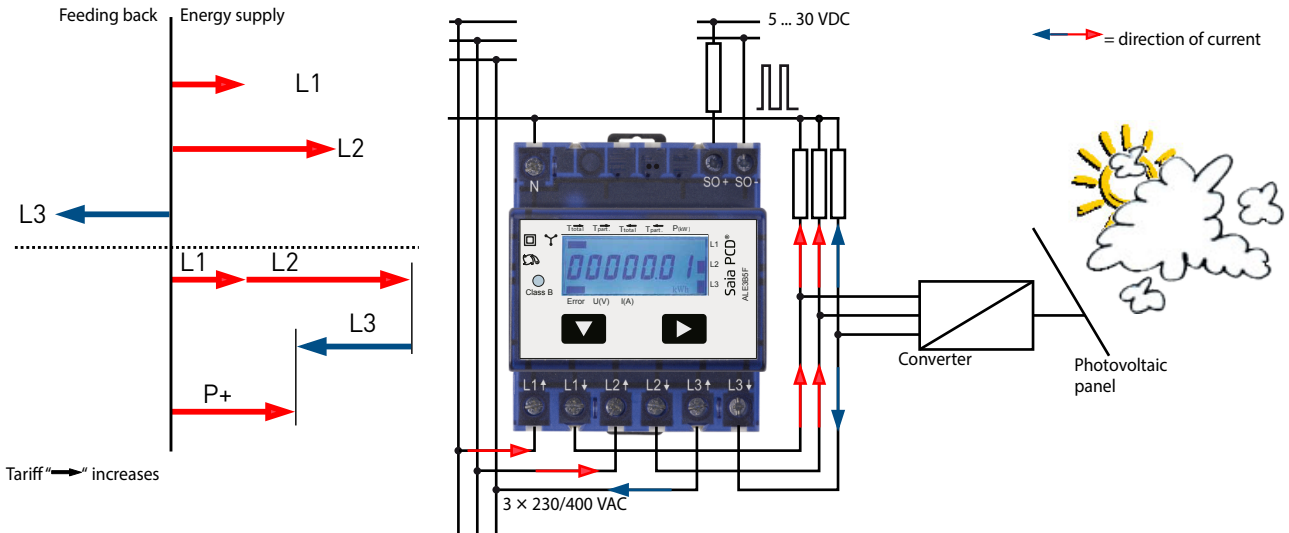
Method of operation with direction of current «supply \rightarrow »



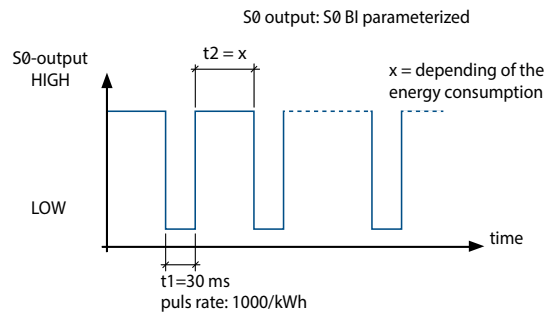
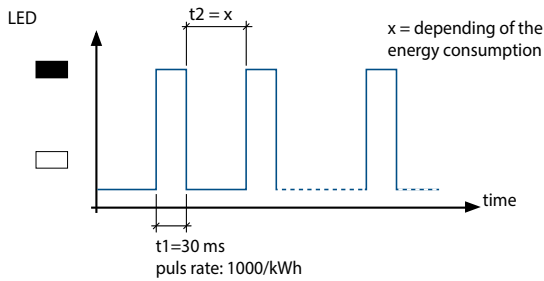
Mode of operation of the LED



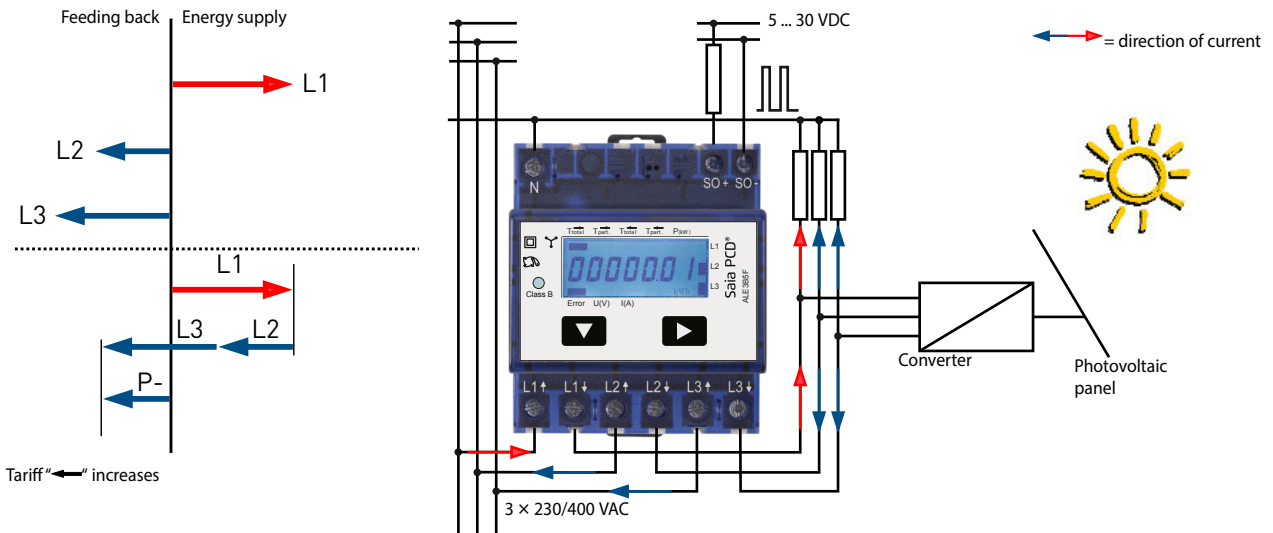
Method of operation with direction of current «supply →» and «feedback ←»



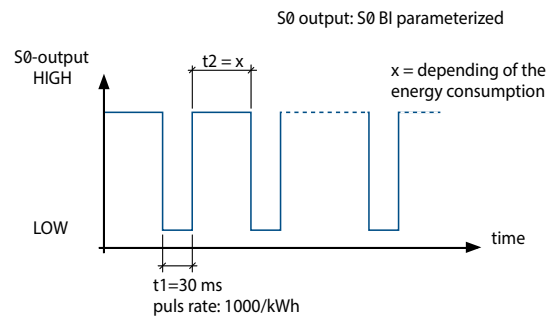
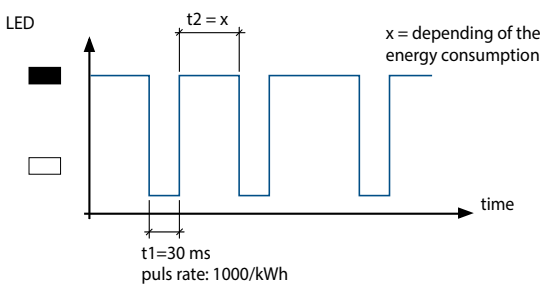
Mode of operation LED



Method of operation with direction of current «feedback ←»



Mode of operation LED



Accessories

Sealing cover for:

- Single-phase Saia PCD® energy meter AAE1
- 3-phase Saia PCD® energy meter ALE3, AWC3 and AWD3

2 units are recommended for contact protection on AAE1.

4 units are recommended for contact protection on ALE3, AWC3 and AWD3.

Order no.

4 104 7485 0



ALE3, AWC3 or AWD3
with sealing cover

Mounting frame for 3-ph energy meters
of the families ALE3/AWC3/AWD3

PMK-EEM400



ALE3, AWC3 or AWD3
mounted in panel kit

Order details

Type	Short description	Description	Weight
ALE3B5F10KC3A00	Three-phase energy meters with S0 pulse output for direct measurement, 3x 230/400 VAC - 50 Hz	Three-phase two-way energy meter with LCD display S0 pulse output = 1'000 pulses/kWh I _{max} = 65 A display of active power, voltage and current display without main power (backup) according to MID directive	215 g
ALE3B5F10KC2A00	Three-phase energy meters with S0 pulse output for direct measurement, 3x 230/400 VAC - 50 Hz	Three-phase two-way energy meter with LCD display S0 pulse output = 1'000 pulses/kWh I _{max} = 65 A display of active power, voltage and current display without main power (backup)	215 g
4 104 7485 0	Accessories for energy meters	Lead sealing cap for energy meters AAE1, AAE3, ALE3 and AWD3	4 g
PMK-EEM400	Accessories for energy meters	Kit for mounting ALE3/AWD3 energy meters on door cabinet	

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