User Guide - Auto Translation

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Application program description

EZD-FW

1.1 Function Description:

The new Lingg & Janke KNX REG counters are multi-functional, only 90mm (5TE) narrow, 3-phase electrical energy meter with outstanding flexibility and accuracy. Via direct or CT connection they help to analyze a wide variety of parameters in the most demanding applications in the residential, commercial or industrial environment and monitor. They combine the functions of a multimeter logger, an energy counter and a data. a variety of measured values via KNX FacilityWeb can be read out and sign,

for example, active and reactive power, active and reactive power, voltage, current and power values are different Leistungsfaktor.Für the two threshold values for monitoring. The standard KNX counters are available for direct measurement (75A) and converter measurements (1 and 5A). The transducer factor in transformer meter can be parameterized in many areas of the unit. The counter is a device saldierender meters for active energy. Up to 4 tariffs supported. The Superior KNX counter directly measuring (75A) or transducers (1 and 5A) is a Saldierender bidirectional meter which detects and reactive energy. He also supports up to 4 tariffs. In addition, the Superior 4 outputs (max. 230V, 90mA), which can be addressed via the KNX bus.

2.1 Communication objects on delivery:

EZD-FW

Nummer	Name	Objektfunktion	Beschreibu...	Gruppenadressen	Län...	...	L	S	Ü	A
3	Eingang 1bit EIS1	Zählerstandabfrage			1 bit	K	-	S	-	A
4	Ausgang 4Byte EIS11	Wirkenergie A+ tot. (kWh)			4 Byte	K	-	-	Ü	-
5	Ausgang 4Byte EIS11	Wirkenergie A+ tot. (Wh)			4 Byte	K	-	-	Ü	-
16	Ausgang 4Byte EIS11	T1 Wirkenergie A+ tot. (kWh)			4 Byte	K	-	-	Ü	-
17	Ausgang 4Byte EIS11	T1 Wirkenergie A+ tot. (Wh)			4 Byte	K	-	-	Ü	-
18	Ausgang 4Byte EIS11	T2 Wirkenergie A+ tot. (kWh)			4 Byte	K	-	-	Ü	-
19	Ausgang 4Byte EIS11	T2 Wirkenergie A+ tot. (Wh)			4 Byte	K	-	-	Ü	-
20	Ausgang 4Byte EIS11	T3 Wirkenergie A+ tot. (kWh)			4 Byte	K	-	-	Ü	-
21	Ausgang 4Byte EIS11	T3 Wirkenergie A+ tot. (Wh)			4 Byte	K	-	-	Ü	-
22	Ausgang 4Byte EIS11	T4 Wirkenergie A+ tot. (kWh)			4 Byte	K	-	-	Ü	-
23	Ausgang 4Byte EIS11	T4 Wirkenergie A+ tot. (Wh)			4 Byte	K	-	-	Ü	-
24	Ausgang 4Byte EIS11	Wirkenergie A+ L1 (kWh)			4 Byte	K	-	-	Ü	-
25	Ausgang 4Byte EIS11	Wirkenergie A+ L1 (Wh)			4 Byte	K	-	-	Ü	-
26	Ausgang 4Byte EIS11	Wirkenergie A+ L2 (kWh)			4 Byte	K	-	-	Ü	-
27	Ausgang 4Byte EIS11	Wirkenergie A+ L2 (Wh)			4 Byte	K	-	-	Ü	-
28	Ausgang 4Byte EIS11	Wirkenergie A+ L3 (kWh)			4 Byte	K	-	-	Ü	-
29	Ausgang 4Byte EIS11	Wirkenergie A+ L3 (Wh)			4 Byte	K	-	-	Ü	-

2.1.1 Description of communication objects:

object	Object	Function / DPT	Type	flags
0	Starting serial number	EIS11 / 12 *	4 Byte CT	
Using this object, the serial number of the counter is output.				
1	Output Meter number	EIS11 / 12 *	4 Byte CT	
Via this object the counter number of the counter is output.				
2	output status	Enabling / EIS 1 / 1,003 1 bit		CT
Using this object, the status is sent. Also communication between BCU - counter can be found.				
3	Input meter reading	Timer / EIS 1/1017	1 bit	KSA
Using this object, a query of the count can be made.				
4	Output active energy A + dead. (KWh)	Active energy / EIS11 13.013 4 Byte CT		
Via this object the active energy can be output Total reference in kWh.				
5	Output active energy A + dead. (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Via this object the active energy can be output Total reference in Wh.				
6	Output 15 min. Difference A + (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Using this object every 15 minutes sent a telegram with the difference to the last quarter of an hour.				
7	Output 60 min. Difference A + (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Using this object every 60 minutes sent a telegram with the difference to the last hour.				
8th	Output Rel. Forward counter A + (kWh)	Active energy / EIS11 13.013 4 Byte CT		
With this object a count of 0 kWh counting is sent.				
9	reset input Rel. Count up	Timer / EIS 1 1,017	1 bit	KSA
Using this object, the count of object 8 is reset to 0 kWh.				
10	Output Rel. Backward counter A + (kWh)	Active energy / EIS11 13.013 4 Byte CT		
Using this object, the count of the down counter is output in kWh.				
11	Set Input Rel. Count down	Active energy / EIS11 13013 4 bytes KSA		
With this object a meter reading in kWh is set.				
12	Output down counter zero Rel.	Boolean / EIS 1 1,002	1 bit	CT
Using this object, a telegram is sent when the down counter reaches 0 kWh.				
13	Starting date active energy A + (kWh)	Active energy / EIS11 13.013 4 Byte CT		
On this object, the counter reading is automatically sent to a date which has been defined in object 15th				
14	Starting date Date	Date / EIS4 11001	3 Byte CT	
Using this object, the date of the deadline is read.				
15	Set Input date Date	Date / EIS4 11001	3 bytes KSA	
Using this object, the date of the deadline is set.				
16,18,20,22	Output T1-T4 Active energy A + dead. (KWh)	Active energy / EIS11 13.013 4 Byte CT		
Via this object the active energy in the 4 possible tariffs in kWh can be issued.				
17,19,21,23	Output T1-T4 Active energy A + dead. (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Via this object the active energy in the four possible rates in Wh can be issued.				

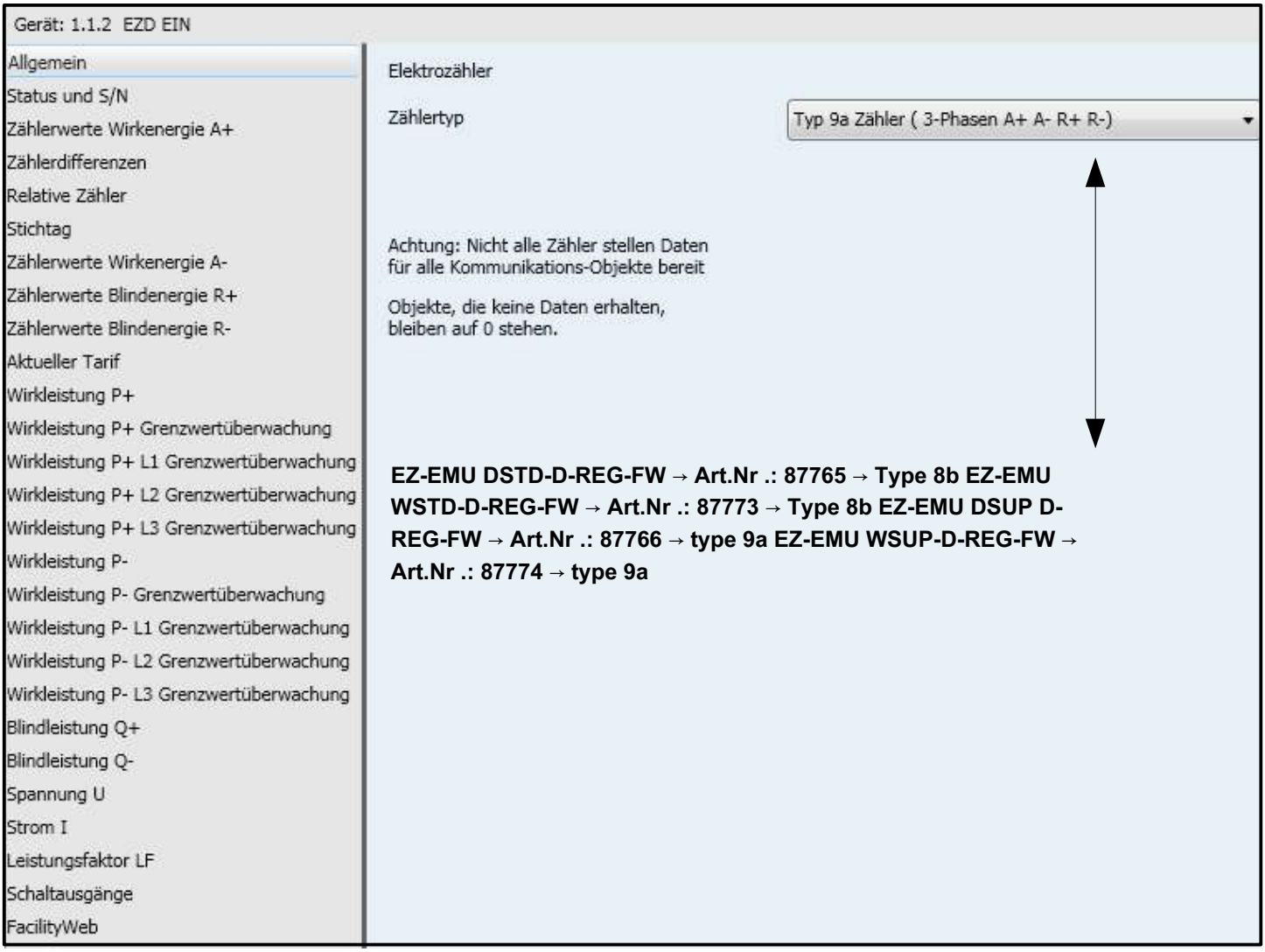
2.1.1 Description of communication objects:

24,26,28	Output active energy A + L1, L2, L3 (kWh)	Active energy / EIS11 13.013 4 Byte CT		
Via this object the active energy can be spent on each outer conductor in reference direction in kWh.				
25,27,29	Output active energy A + L1, L2, L3 (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Via this object the active energy can be spent on each outer conductor in reference direction in Wh.				
30	Output active energy A- dead. (KWh)	Active energy / EIS11 13.013 4 Byte CT		
Via this object the active energy can be output in kWh Total Delivery				
31	Output active energy A- dead. (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Via this object the active energy can be spent overall delivery in Wh.				
32,34,36,38	Output T1-T4 Active energy A- dead. (KWh)	Active energy / EIS11 13.013 4 Byte CT		
Via this object the active energy in supply direction in the 4 possible tariffs in kWh can be issued.				
33,35,37,39	Output T1-T4 Active energy A- dead. (Wh)	Active energy / EIS11 13.010 4 Byte CT		
Via this object the active energy in supply direction in the four possible rates in Wh can be issued.				
40	Output Reactive energy R + dead. (Kvarh)	Reactive / EIS11 13.015 4 Byte CT		
Via this object the inductive reactive energy can be displayed in kvarh.				
41	Output Reactive energy R + dead. (Varh)	Reactive / EIS11 13.012 4 Byte CT		
Via this object the inductive reactive power can be output in varh.				
42,44,46,48	Output T1-T4 reactive energy R + dead. (Kvarh)	Reactive / EIS11 13.015 4 Byte CT		
Via this object the inductive reactive energy in the four possible rates can be output in kvarh.				
43,45,47,49	Output T1-T4 reactive energy R + dead. (Varh)	Reactive / EIS11 13.012 4 Byte CT		
Via this object the inductive reactive energy in the four possible rates can be output in varh.				
50	Output Reactive energy R- dead. (Kvarh)	Reactive / EIS11 13.015 4 Byte CT		
Using this object, the capacitive reactive energy can be displayed in kvarh.				
51	Output Reactive energy R- dead. (Varh)	Reactive / EIS11 13.012 4 Byte CT		
Using this object, the capacitive reactive energy can be spent in varh.				
52,54,56,58	Output T1-T4 reactive energy R- dead. (Kvarh)	Reactive / EIS11 13.015 4 Byte CT		
Using this object, the capacitive reactive energy in the four possible rates can be output in kvarh.				
53,55,57,59	Output T1-T4 reactive energy R- dead. (Varh)	Reactive / EIS11 13.012 4 Byte CT		
Using this object, the capacitive reactive energy in the four possible rates can be output in varh.				
60	Output rate 1/2 (3.4)	Boolean / EIS 1 1,002	1 bit	CT
On this object, the switching between Tariff 1 Tariff 2 and (3,4) is outputted.				
61	Output tariff number (0 ... 3)	Tariff (0 ... 255) / 5,006 EIS6 1 Byte CT		
Using this object the current heading is output.				
62	Output effective power P tot +. (W)	Power / EIS9 14056	4 Byte CT	
Via this object the active power direction is total output in W.				
63	Output Upper switching point P + dead.	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set upper switching point P is exceeded + Totat.				
64	Output Lower switching point P + dead.	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set lower switching point P + is totally below.				

2.1.1 Description of communication objects:

65,68,71	Output effective power P + L1, L2, L3 (W)	Power / EIS9 14056	4 Byte CT	
Using this object, the real power is output in reference direction for each phase in W.				
66,69,72	Output Upper switching point P + L1, L2, L3	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set upper switching point P + is exceeded.				
67,70,73	Output lower switch point P + L1, L2, L3	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set lower switching point P + is reached.				
74	Effective output power P tot. (W)	Power / EIS9 14056	4 Byte CT	
Using this object, the active power supply direction is total output in W.				
75	Output Upper switching point P- dead.	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set upper switching point P + is exceeded.				
76	Output Lower switching point P- dead.	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set lower switching point P + is reached.				
77,80,83	Output active power P L1, L2, L3 (W)	Power / EIS9 14056	4 Byte CT	
Using this object, the real power is output in delivery direction for each phase in W.				
78,81,84	Output Upper switching point P L1, L2, L3	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set upper switching point P + is exceeded.				
79,82,85	Output lower switch point P L1, L2, L3	On / Off / EIS 1 1001	1 bit	CT
With this object a message is sent when the set lower switching point P + is reached.				
86	Output reactive power Q + dead. (Var)	Power / EIS9 14056	4 Byte CT	
Using this object, the reactive power is inductively total output in var.				
87,88,89	Output reactive power Q + L1, L2, L3 (var)	Power / EIS9 14056	4 Byte CT	
Using this object, the reactive power is inductive output for each individual phase in var.				
90	Output reactive power Q tot. (Var)	Power / EIS9 14056	4 Byte CT	
Using this object, the reactive power is capacitively output in total var.				
91,92,93	Output reactive power Q L1, L2, L3 (var)	Power / EIS9 14056	4 Byte CT	
Using this object, the reactive power is capacitive output for each individual phase in var.				
94,95,96	Output voltage U L1, L2, L3 (V) or LL	Electr. Potential / EIS9 14027	4 Byte CT	
Using this object, the voltage per phase to phase or N is output to phase in volts.				
97,98,99	Output current I L1, L2, L3 (A)	Electr. Current / EIS9 14019	4 Byte CT	
Using this object the current per phase is ausgegen in amperes.				
100,101,102	Output power factor cos phi L1, L2, L3	Power factor / EIS9 14057 1 Byte CT		
Using this object, the power factor cos phi is output per phase.				
103,104,105,106	Input switching output 1,2,3,4	On / Off / EIS 1 1001	1 bit	CT
Using this object 4 switching outputs can be defined.				

3.1 General parameters:



EZ-EMU DSTD-D-REG-FW → Art.Nr .: 87765 → Type 8b EZ-EMU WSTD-D-REG-FW → Art.Nr .: 87773 → Type 8b EZ-EMU DSUP D-REG-FW → Art.Nr .: 87766 → type 9a EZ-EMU WSUP-D-REG-FW → Art.Nr .: 87774 → type 9a

General parameters

are set in the General Application EZD-FW "must" before using the right type of meter.

In total 36 application versions are available. These are each divided into groups:

Group: 1 ad, 2 ad, ad 3, 4 ad, ad 5, 6 ad, ad 7, 8 ad, ad 9
The higher the quality the group (ranging from 1d to ending at 9a), the more extensive the application. Each counter of Lingg & Janke is assigned to a specific group which must then be explicitly set in programming in the application. The parameters and functions of the individual variants of the following allocation list can be taken on site. 9

Important:
Notes in the application should always be followed.

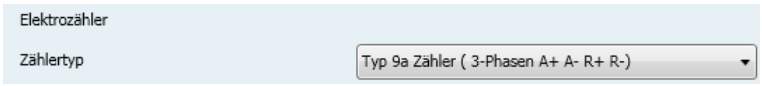
In occasional counters especially when using EIC - counters, it is possible that no data are available for all communication objects. Objects received no data will be set to 0.

class	Type			Counter values Active energy A- Active energy A +	Counter values R reactive energy + & Ser. Counter values	Counter values reactive energy R- switching outputs Status	Counter differences	Power factor LF Relative counter	Date (only FacilityWeb) QSpannung U Current I	Current collective	active power P + reactive power	Active power P	Reactive power Q +						FacilityWeb
A	1 x		Dead, T1-4				xx		x	x L1 L1 L1 L1 L1 L1 L1									x
	2 x		Dead, T1-4	Dead, T1-4			xx		x	x L1 L1 L1 L1 L1 L1 L1									x
	3 x		Dead, T1-4	Dead, dead T1-4, T1-4 dead, T1-4 xx					x	x L1 L1 L1 L1 L1 L1 L1									x
	4 x		Dead, T1-4				xx		x	x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123 L 123 L 123 L 123					x
	5 x			Dead, T1-4						x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123	L 123 L 123 L 123				x
	6 x		Dead, T1-4	Dead, T1-4			xx		x	x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123 L 123 L 123 L 123					x
	7 x		Dead, T1-4	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x	x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123 L 123 L 123 L 123					x
	8 x		Dead, T1-4, L 123				xx		x	x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123 L 123 L 123 L 123					x
	9 x		Dead, T1-4, L 123	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x	x	Dead, L 123	Dead, L 123	Dead, L 123	Dead, L 123 L 123 L 123 L 123				xx	
B	1 x		Dead, T1-4				xx		x		L1 L1				L1 L1 L1				x
	2 x		Dead, T1-4	Dead, T1-4			xx		x		L1 L1				L1 L1 L1				x
	3 x		Dead, T1-4	Dead, dead T1-4, T1-4 dead, T1-4 xx					x		L1 L1				L1 L1 L1				x
	4 x		Dead, T1-4				xx		x		Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
	5 x			Dead, T1-4							Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
	6 x		Dead, T1-4	Dead, T1-4			xx		x		Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
	7 x		Dead, T1-4	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x		Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
	8 x		Dead, T1-4, L 123				xx		x		Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
	9 x		Dead, T1-4, L 123	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x		Dead, L 123	Dead, L 123			L 123 L 123 L 123				x
C	1 x		Dead, T1-4				xx		x		L1 L1								x
	2 x		Dead, T1-4	Dead, T1-4			xx		x		L1 L1								x
	3 x		Dead, T1-4	Dead, dead T1-4, T1-4 dead, T1-4 xx					x		L1 L1								x
	4 x		Dead, T1-4				xx		x		Dead, L 123	Dead, L 123							x
	5 x			Dead, T1-4							Dead, L 123	Dead, L 123							x
	6 x		Dead, T1-4	Dead, T1-4			xx		x		Dead, L 123	Dead, L 123							x
	7 x		Dead, T1-4	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x		Dead, L 123	Dead, L 123							x
	8 x		Dead, T1-4, L 123				xx		x		Dead, L 123	Dead, L 123							x
	9 x		Dead, T1-4, L 123	Dead, T1-4	Dead, T1-4	Dead, T1-4	xx		x		Dead, L 123	Dead, L 123							x
D	1 x		Dead, T1-4				xx		x										x
	2 x		Dead, T1-4	Dead, T1-4			xx		x										x
	3 x		Dead, T1-4	Dead, dead T1-4, T1-4 dead, T1-4 xx					x										x
	4 x		Dead, T1-4				xx		x										x
	5 x			Dead, T1-4															x
	6 x		Dead, T1-4	Dead, T1-4			xx		x										x
	7 x		Dead, T1-4	Dead, dead T1-4, T1-4 dead, T1-4 xx					x										x
	8 x		Dead, T1-4, L 123				xx		x										x
	9 x		Dead, T1-4, L 123	Dead, dead T1-4, T1-4 dead, T1-4 xx					x										x

3.1.2 parameter settings of the general functions, status and S / N, counter values Active energy A +:

General

→ applies to EMU standard counter **8b**
→ applies to EMU Superior counter **9a**
See also page. 8



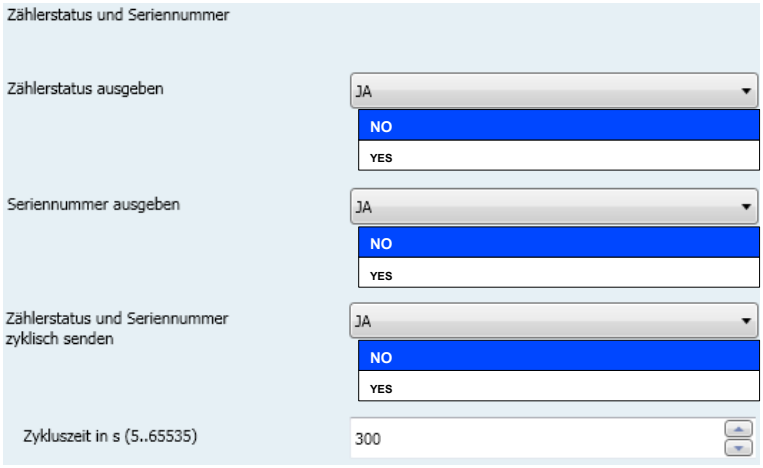
Status and S / N

When activated, the parameter adjustment of status and S / N seconds! In the general parameter settings of the meter type used following KO be unlocked:

→ KO 0 4-byte serial number
transferred 65,535 seconds on the bus. The factory setting is 300
→ KO 2 Status 1 bit

Thus can be transmitted serial / and meter number and the status NK-FW-graphic! The KO 0-2, all cyclically in a time of 5 - are of the connected meter on the bus!

KO 1 and 2 are also used to set up data collection on the



Counter values Active energy A +

KO all be unlocked in the reference direction (consumer plant) by using "counter values active energy A +". These are:

→ KO 3 meter reading 1 bit

→ **4 KO active energy A + total (kWh) 4-byte**
Total output of the current counter reading (active energy) in the reference direction

→ **5 KO active energy A + total (Wh) 4-byte**
Total output of the current counter reading (active energy) in the reference direction

→ **KO 16 tariff 1 active energy A + total (kWh) 4-byte**
Output of the current counter reading (active energy) in tariff 1 reference direction

→ **KO 17 tariff 1 active energy A + total (Wh) 4-byte**
Output of the current counter reading (active energy) in tariff 1 reference direction

→ **KO 18 tariff 2 active energy A + total (kWh) 4-byte**
Output of the current counter reading (active energy) in tariff 2 reference direction

→ **KO 19 tariff 2 active energy A + total (Wh) 4-byte**
Output of the current counter reading (active energy) in tariff 2 reference direction

→ **KO 20 Tariff 3 active energy A + total (kWh) 4-byte**
Output of the current counter reading (active energy) by collective reference direction 3

→ **KO 21 Tariff 3 active energy A + total (Wh) 4-byte**
Output of the current counter reading (active energy) by collective reference direction 3

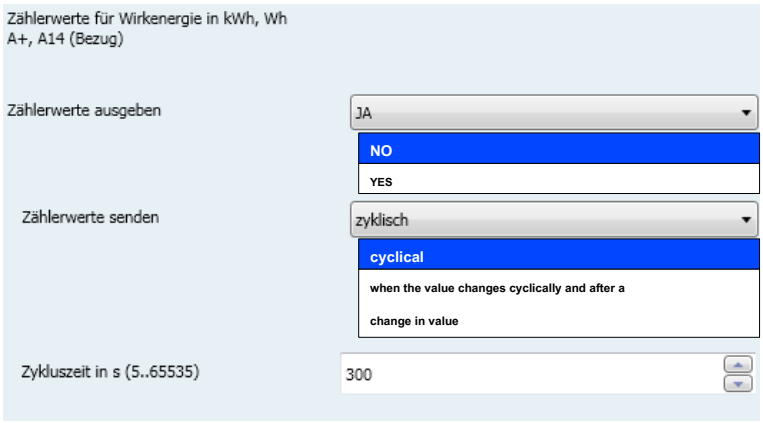
→ **KO 22 tariff 4 active energy A + total (kWh) 4-byte**
Output of the current counter reading (active energy) by collective reference direction 4

→ **KO 23 tariff 4 active energy A + total (Wh) 4-byte**
Output of the current counter reading (active energy) by collective reference direction 4

→ **KO 24 active energy A + L1 (kWh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L1

→ **KO 25 active energy A + L1 (Wh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L1

→ **KO 26 active energy A + L2 (kWh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L2



→ **KO 27 active energy A + L2 (Wh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L2

→ **KO 28 active energy A + L3 (kWh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L3

→ **KO 29 active energy A + (L3 Wh) 4-byte**
Output of the current counter reading (active energy) on the outer conductor L3

Tip:
Sending a telegram via 1 KO 3 meter reading, the KO 4 Send - 29, if this associated with a group address are immediately its value. This happens in addition to the cyclic transmit or send on change in value of the parameter setting!

The P 4 - 29 may all cyclically in a time of 5 - 65,535 seconds are transferred to the bus. The factory setting is 300 seconds!

*CO = communication object

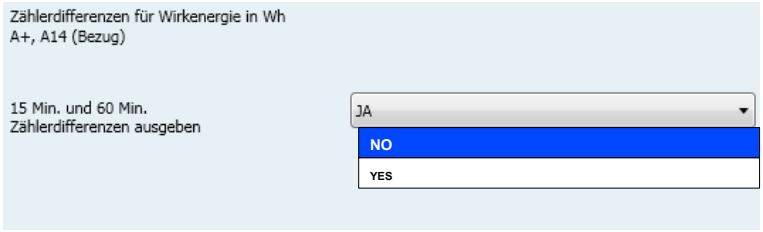
Note:
The display in (kWh) represents only the full kWh values "without" decimal represent !! The display in (Wh) represents the value with decimal place !!

3.1.3 Parameter Settings counter differences Relative counter and date:

Counter differences:

If active is output via the KO 6/7 the 15minütig or 60minütig energy consumed. This always refers to the consumption of the last 15 or 60 minutes. KO for counter difference:

→ **KO 15min 6 difference. (Wh) 4-byte**
→ **KO 60min 7 difference. (Wh) 4-byte**



Relative counter:

In the application, two variants of the relative standing counter available. The Relative Count up:

This counter can be compared to a trip odometer in car which always runs with the total counter, but unlike any can be reset to 0 often. The Relative down counter:

This counter can be compared to a coin-operated machine in which after insertion of a credit a certain quota is to flow to disposal. That is, it can be preset a count (KO 11) which then after the output (CO 12) sends a telegram to the bus 1. About 10 KO the relative counter value can be represented. KO for Relative counter:

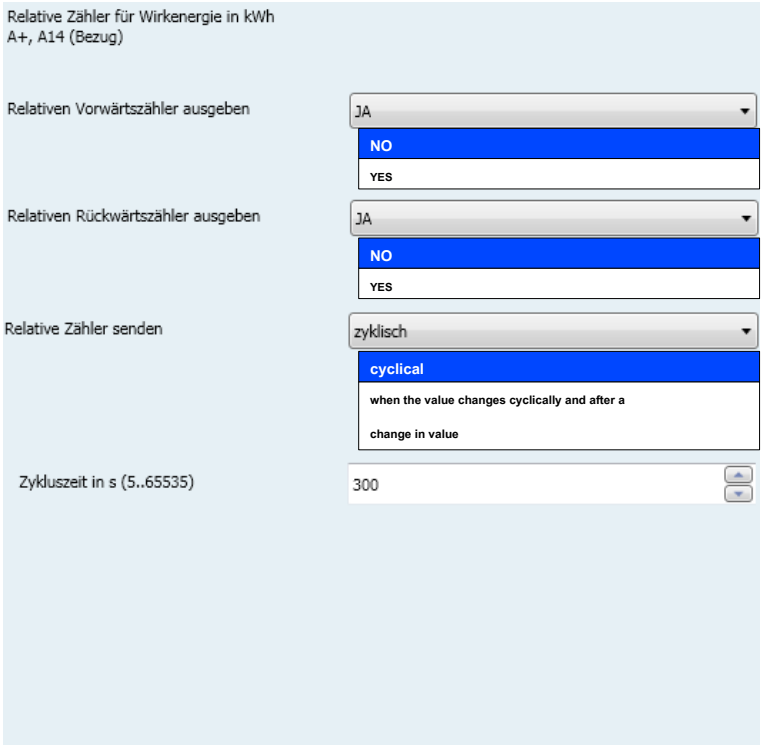
→ **KO 8 rel. Forward counter A + (kWh) 4-byte**
Output for indicating the relative humidity. forward counter

→ KO 9 rel. Up counter reset 1 bit
Input to reseten with 1 telegram which KO. 8

→ **KO 10 rel. A down counter + (kWh) 4-byte**
Output for indicating the relative humidity. down counter

→ KO 11 rel. Down counter set 4-byte
Entrance to the down counter its count - Value to specify

→ KO 12 rel. Count down to zero 1 bit
Exit to the settling of the telegram 1 when count reaches 0



The KO 8 & 10 can all cyclically in a time of 5 - 65,535 seconds are transferred to the bus. The factory setting is 300 seconds!

Deadline:

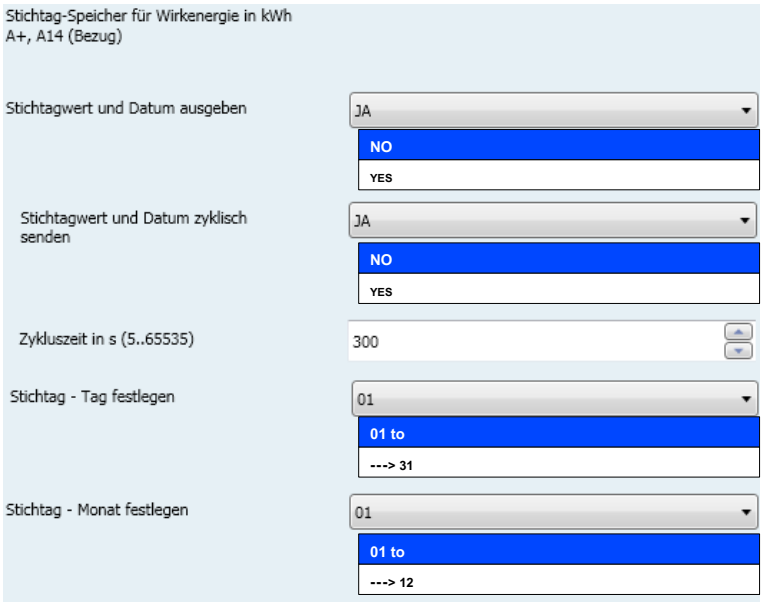
Note:
The functionality of date may be used in conjunction with a network coupler Lingg & Janke FW ONLY !!

The time stamp is only by FacilityWeb to the counter - transmitted BCU !!

Means date, the count of a certain time point can be determined and read out. This will automatically set the month and day KO transferred to the bus. 13 KO for date:

→ **KO 13 date active energy A + (kWh) 4-byte**
→ KO 14 cutoff date 3byte
Output for reading the Specified Date

→ KO 15 cutoff date set 3byte
Input for external date when the default date readout is to be an alternative, the date can also be specified via the application program.

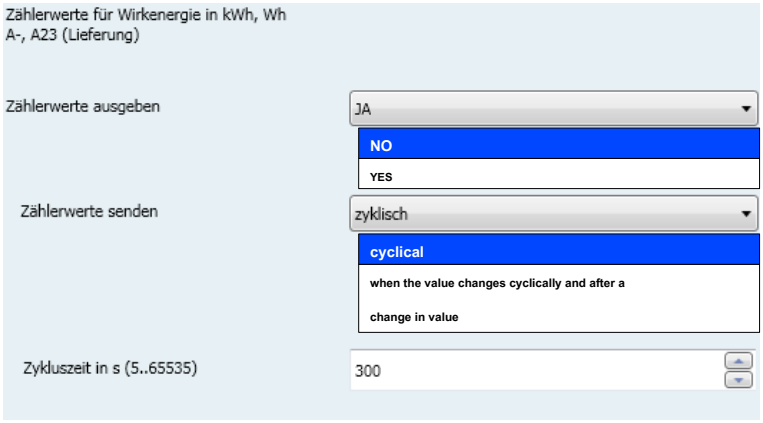


3.1.4 Parameter settings counter values A- active energy, reactive energy + R:

Counter values Active energy A-:

By using "active energy counter values A-" KO all in supply direction be unlocked (EVU network). These are:

- → **KO 30 active energy A- total (kWh) 4-byte**
  Total output of the current counter reading (active energy) in supply direction
- → **KO 31 active energy A- total (Wh) 4-byte**
  Total output of the current counter reading (active energy) in supply direction
- → **KO 32 tariff 1 active energy A- total (kWh) 4-byte**
  Output of the current counter reading (active energy) in 1 tariff supply direction
- → **KO 33 tariff 1 active energy A- total (Wh) 4-byte**
  Output of the current counter reading (active energy) in 1 tariff supply direction
- → **KO 34 tariff 2 active energy A- total (kWh) 4-byte**
  Output of the current counter reading (active energy) in tariff 2 delivery direction
- → **KO 35 tariff 2 active energy A- total (Wh) 4-byte**
  Output of the current counter reading (active energy) in tariff 2 delivery direction
- → **KO 36 Tariff 3 active energy A- total (kWh) 4-byte**
  Output of the current counter reading (active energy) in collective supply direction 3
- → **KO 37 Tariff 3 active energy A- total (Wh) 4-byte**
  Output of the current counter reading (active energy) in collective supply direction 3
- → **KO 38 tariff 4 active energy A- total (kWh) 4-byte**
  Output of the current counter reading (active energy) in collective supply direction 4
- → **KO 39 tariff 4 active energy A- total (Wh) 4-byte**
  Output of the current counter reading (active energy) in collective supply direction 4



The KO 30 - 39, all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

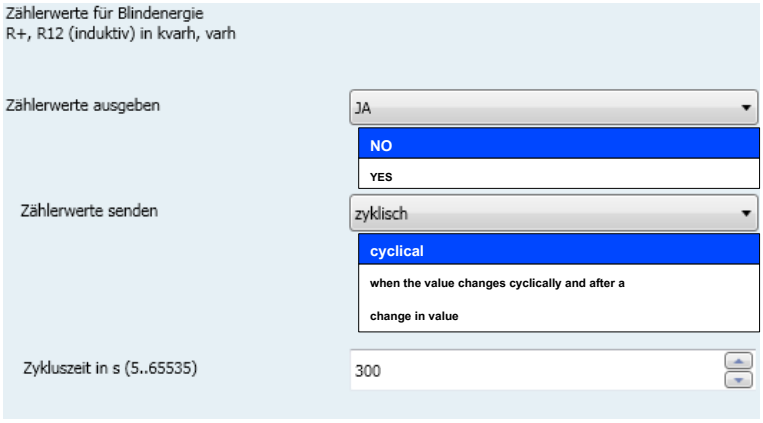
*CO = communication object

Note:
The display in (kWh) represents only the full kWh values "without" decimal represent !! The display in (Wh) represents the value with decimal place !!

Counter values reactive energy R +:

By using "counter values reactive energy R +" KO all positive (inductive) reactive power be unlocked. These are:

- → **KO 40 reactive energy R + total (kvarh) 4-byte**
  Total output of the current counter reading (reactive energy) in the direction of inductive
- → **KO 41 reactive energy R + total (varh) 4-byte**
  Total output of the current counter reading (reactive energy) in the direction of inductive
- → **KO 42 tariff 1 reactive energy R + total (kvarh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 1
- → **KO 43 tariff 1 reactive energy R + total (varh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 1
- → **KO 44 tariff 2 reactive energy R + total (kvarh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 2
- → **KO 45 tariff 2 reactive energy R + total (varh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 2
- → **KO 46 Tariff 3 reactive energy R + total (kvarh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive Tariff 3
- → **KO 47 Tariff 3 reactive energy R + total (varh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive Tariff 3
- → **KO 48 tariff 4 reactive energy R + total (kvarh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 4
- → **KO 49 tariff 4 reactive energy R + total (varh) 4-byte**
  Output of the current counter reading (reactive energy) in the direction of inductive tariff 4



The KO 40 - 49, all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

*CO = communication object

Note:
The display in (kvarh) represents only the full kvarh values "without" decimal represent !! The display in (varh) represents the value with decimal place !!

3.1.5 Parameter Settings counter values reactive energy R, Current price:

Counter values reactive energy R:

By using "counter values reactive energy R" all KO negative (capacitive) are unlocked reactive energy. These are:

→ **KO 50 reactive energy R- total (kvarh) 4-byte**
Total output of the current counter reading (reactive energy) in the direction of capacitive

→ **KO 51 reactive energy R- total (varh) 4-byte**
Total output of the current counter reading (reactive energy) in the direction of capacitive

→ **KO 52 tariff 1 reactive energy R- total (kvarh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 1

→ **KO 53 tariff 1 reactive energy R- total (varh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 1

→ **KO 54 tariff 2 reactive energy R- total (kvarh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 2

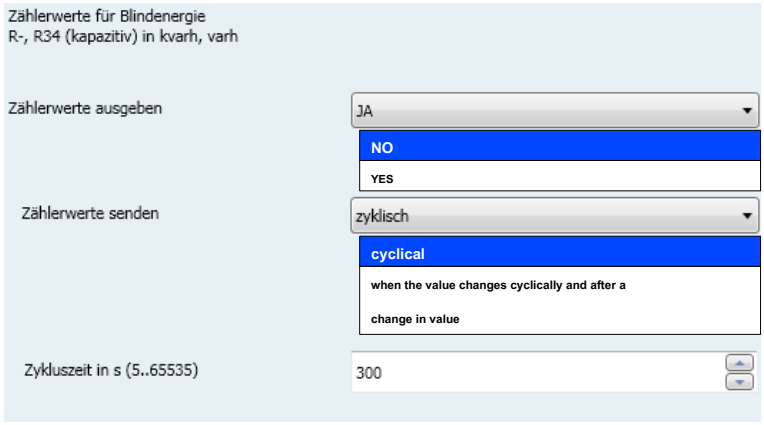
→ **KO 55 tariff 2 reactive energy R- total (varh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 2

→ **KO 56 Tariff 3 reactive energy R- total (kvarh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive Tariff 3

→ **KO 57 Tariff 3 reactive energy R- total (varh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive Tariff 3

→ **KO 58 tariff 4 reactive energy R- total (kvarh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 4

→ **KO 59 tariff 4 reactive energy R- total (varh) 4-byte**
Output of the current counter reading (reactive energy) in the direction of capacitive tariff 4



The KO 50-59, all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

*CO = communication object

Note:
The display in (kvarh) represents only the full kWh values "without" decimal represent !! The display in (varh) represents the value with decimal place !!

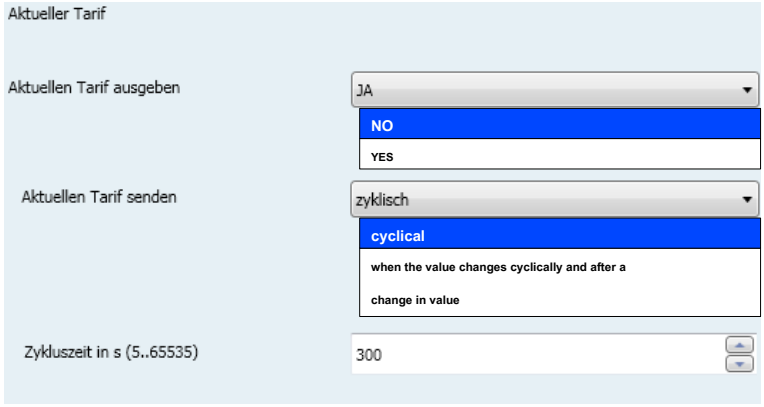
Current price:

When the parameter setting "Current tariff" enable the following KO be unlocked:

→ KO 60 tariff 1/2 (3,4) 1 bit
Issue of the current tariff, with the assignment:
Tariff 1 → 0 → 1 telegram
Tariff 2 Tariff 3 → 1 telegram
telegram Rate 4 → 1 telegram

→ KO 61 heading 1byte
Expenditure of current heading, with the assignment:
Tariff 1 Tariff 2 → Tarifnummer.0 → Tarifnummer.1 Tariff 3 Tariff Tarifnummer.2 → 4 → Tarifnummer.3

The output of the current tariff may find use in the preparation of conventional tariffs HT and LT!



The KO 60 - 61 may all cyclically in a time of 5 - 65,535 seconds are transferred to the bus. The factory setting is 300 seconds!

*CO = communication object

3.1.6 Parameter settings active power P + (also applies to P):

Active power P + (also applies to P):

By activating of the active power P + Current can (instantaneous) active power are total and per phase transferred to the bus. Here, the following KO are free:

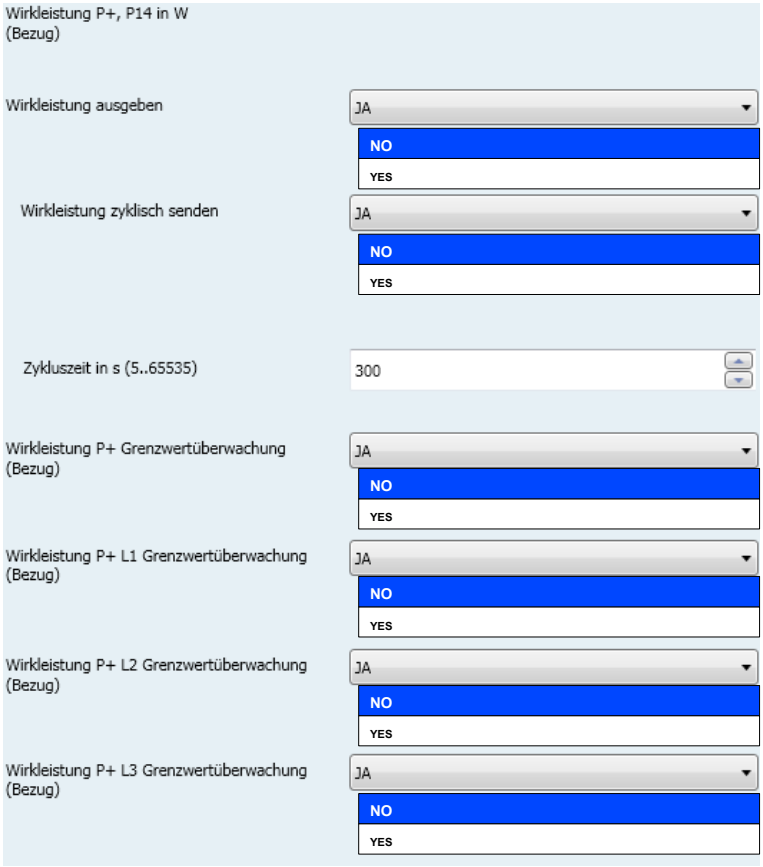
→ KO 62 + Active power P (W) 4byte
Output of the current total active power P + in reference direction
→ KO 65 active power P + L1 (W) 4byte
Output of the actual active power P + with respect to the direction of phase L1
→ KO 68 + L2 active power P (W) 4byte
Output of the actual active power P + with respect to the direction of phase L2
→ KO 71 active power P + L3 (W) 4byte
Output of the current active power P + regarding the direction of phase L3 Next there is a possibility over the limit value monitoring maximum and monitor a minimum power value and to signal. There is a limit monitoring for the overall performance as well as for the individual phases. Here, the following KO are free:

→ KO 63 upper switching point P + dead. 1bit
Output upper limit value of the total active power P + in reference direction
→ KO 64 lower switching point P + dead. 1bit
Output lower limit value of the total active power P + in reference direction
→ KO 66 upper switching point P L1 + 1bit
Output upper limit value of the active power P + at phase L1 in reference direction
→ KO 67 lower switching point P L1 + 1bit
Output lower limit value of the active power P + at phase L1 in reference direction
→ KO 69 upper switching point P + L2 1bit
Output upper limit value of the active power P + at phase L2 in the reference direction
→ KO 70 lower switching point P + L2 1bit
Output lower limit value of the active power P + at phase L2 in the reference direction
→ KO 72 upper switching point P + L3 1bit
Output upper limit value of the active power P + at L3 phase in reference direction
→ KO 73 lower switching point P + L3 1bit
Output lower limit value of the active power P + at L3 phase in the reference direction with the threshold values it is possible to achieve a capacity to perform a switching action.

IMPORTANT:

The entire declaration and the amount of KO stands for the active power P in delivery direction available.

For the energy flow Q + (inductive) and Q (capacitive) is no limit monitoring to define Ready. It can be issued only performance in the corresponding energy flow.



The KO 62,65,68 and 71 may all cyclically in a time of 5 - 65,535 seconds are transferred to the bus.

The factory setting is 300 seconds!

*CO = communication object

Note:
Cut off communication (status = 0), all KO be associated with a group address transmitted only with the value (0) on the bus.

An evaluation such as limits will no longer take place.

3.1.7 Parameter settings limit active power P + and voltage:

Active power P + limit value monitoring:

The limits may free from 1W min. to 65000W max. To be defined. This income limit also applies in the current application version for the transformer meter.

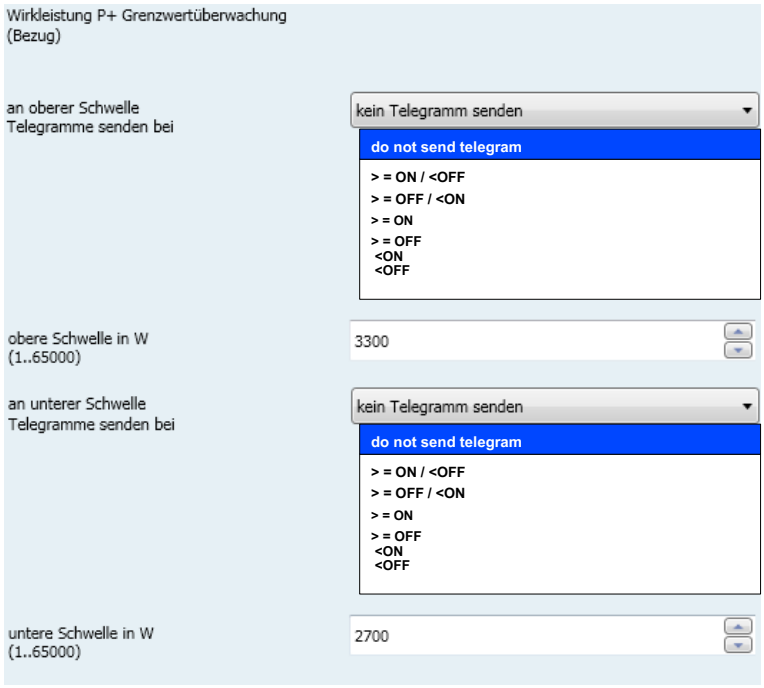
Is achieved such defined "threshold", a message can be sold on the bus. This is then as follows available:

Order relation	Declaration
> = ON / <OFF	(Value) greater than, equal **1Telegramm** or (value) less **0Telegramm**
> = OFF / <ON	(Value) greater than, equal **0Telegramm** or (value) less **1Telegramm**
> = ON	(Value) greater than, equal **1Telegramm**
> = OFF	(Value) greater than, equal **0Telegramm**
<ON	(Value) less **1Telegramm**
<OFF	(Value) less **0Telegramm**

The factory preset limit for "upper threshold W" → 3300

Factory preset limit for "lower threshold in W" → 2700

Please Note P.14 note !!



Note:
The settings listed here for limit setting active power P + is also applicable for the following parameters: Active power P + L1 limit monitoring (reference direction) active power P + L2 limit value monitoring (reference direction) active power P + L3 limit monitoring (reference direction) active power P limit monitoring (supply direction) active power P L1 limit monitoring (delivery direction) active power P L2 limit monitoring (supply direction) active power P L3 limit monitoring (supply direction)

Voltage U:

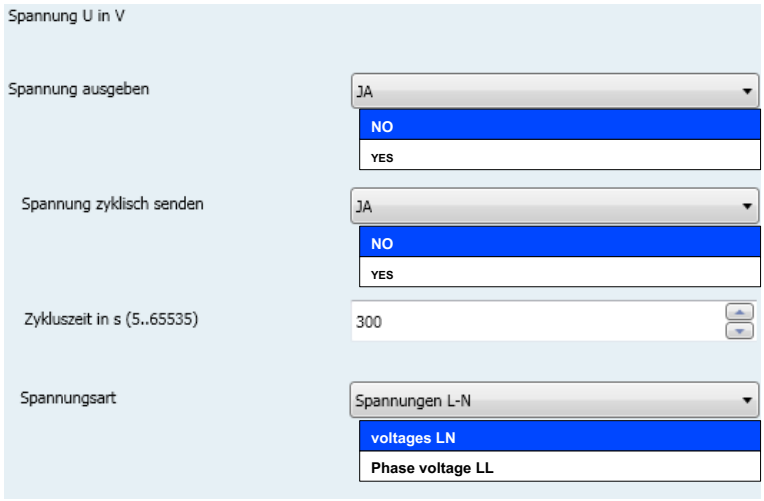
Furthermore, the option is the current connected to the mains voltage meter on the KNX bus output.

Adjustment of voltage, voltage LN:

→ KO 94 voltage U L1-N (V)
Output of the actual grid voltage is measured to the outer conductor L1 to N
→ KO 95 voltage U L2-N (V)
Output of the current mains voltage at outer conductor L2 measured at N
→ KO 96 voltage U L3-N (V)
Output of the actual grid voltage is measured to the outer conductor L3 to N

Adjustment of voltage, phase voltage LL:

→ KO 94 voltage U L1-L2 (V)
Output of the current line voltage between phase L1 and L2
→ KO 95 voltage U L2-L3 (V)
Output of the current line voltage between phase L2 and L3
→ KO 96 voltage U L3-L1 (V)
Output of the current line voltage between phase L3 and L1



The KO 94-96, all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

*CO = communication object

3.1.8 Parameter settings current and power factor:

I:

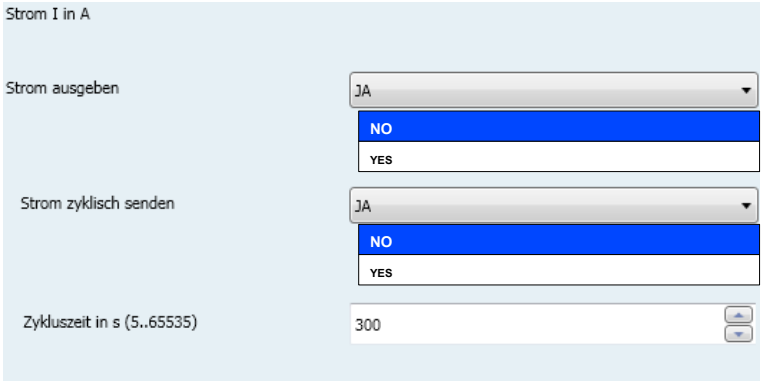
Further, the option is the current measured at the counter current to the KNX bus output.

To output power following KO active are:

→ KO 97 current I L1 (A)
Output of the current flow on outer conductor L1

→ KO 98 current I L2 (A)
Output of the current flow on outer conductor L2

→ KO 99 current I L3 (A)
Output of the current flow on outer conductor L3



The KO 94-96, all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

*CO = communication object

Power factor PF: Power

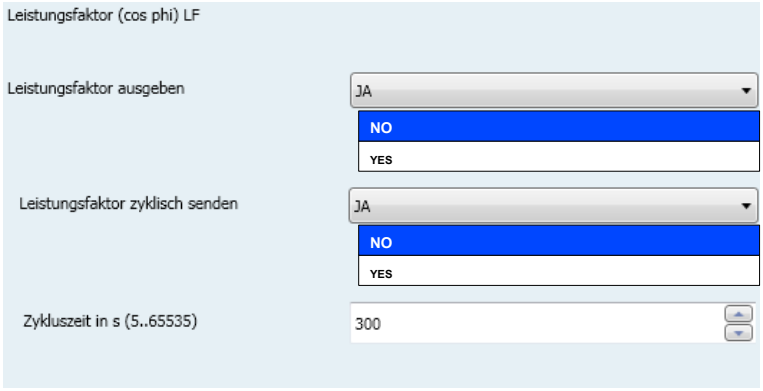
The power factor is the ratio of the amount of active power P and apparent power S. The power factor can be between 0 to 1.

When outputting LF following KO active are:

→ KO 100 Power factor L1 4-byte output of the current LF at outer conductor L1

→ KO 101 Power factor L2 4-byte output of the current LF to conductor L2

→ KO 102 Power factor L3 4-byte output of the current LF at outer conductor L3



The KO 100-102 can all cyclically in a time of 5 - are transferred 65,535 seconds on the bus. The factory setting is 300 seconds!

*CO = communication object

3.2 Representation of the counter quadrant / assignment OBIS:

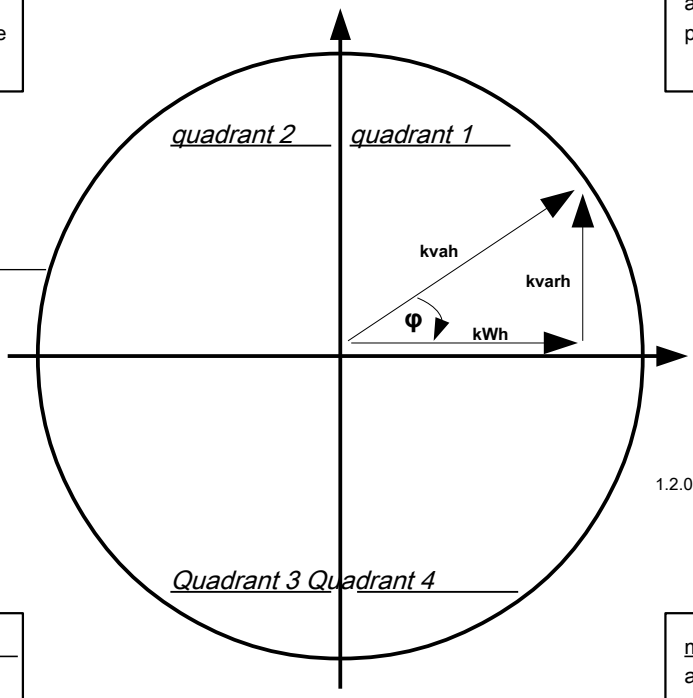
positive reactive energy kvarh

3.8.0 Reactive power + R
3.8.1 Reactive energy tariff R + 1
3.8.2 Reactive power + R tariff 2
(2) Secondary 3.8.0 Reactive power + R

3.7.0 Current power Q +
3.6.0 Active max. Power Q + max
3.2.0 Cumulative max. Power Q + max acc

a generator, inductive
negative active energy
negative cos positive reactive energy

motor, inductive positive
active energy positive cos
positive reactive energy



negative active energy kWh Delivery

2.8.0 Active Energy A
2.8.1 Active energy tariff A- 1
2.8.2 Active Energy A Tariff 2 (2) 2.8.0
Secondary active energy A-

2.7.0 Current power P-
2.6.0 Active max. Power P max
2.2.0 Cumulative max. Power P max acc

positive active energy kWh reference

1.8.0 Active Energy A +
1.8.1 Active energy tariff 1 + A
1.8.2 Active Energy A + tariff 2
(2) Secondary 1.8.0 Active Energy A +

1.7.0 Current power P +
1.6.0 Active max. Power P + max
1.2.0 Cumulative max. Power P + max acc

a generator, capacitive
negative active energy
negative cos negative reactive energy

motor, capacitive positive
active energy positive pf
negative reactive energy

negative reactive energy kvarh

4.8.0 Reactive energy R-
4.8.1 Reactive energy tariff 1 R-
4.8.2 Reactive Energy Tariff 2 R-
(2) Reactive 4.8.0 Secondary energy R-

4.7.0 Current power Q-
4.6.0 Active max. Power Q max
4.2.0 Cumulative max. Power Q max acc

More OBIS:

0.0.1	counter number	21:25	Current power P + L1
0.4.2	CT ratio	41.25	Current power P + L2
0.2.1	software version	61.25	Current power P + L3
0.9.1	Time	31.25	current L1
0.9.2	date	51.25	current L2
0.128.1	pulse input	71.25	current L3
1.13.7	Total Power Factor	32.25	voltage L1
1.128.0	Resetting Active Energy A +	52.25	voltage L2
96.1.0	serial number	72.25	voltage L3
96.8.0	Hour meter		

FacilityWeb is an extension of the KNX / EIB bus standard ISO / IEC 14543 and was developed by Lingg & Janke together with the KNX Association and its members.

FacilityWeb turns every bus user via FTP over KNX a Web server and enables the recording, mapping, switching and control as well as control of energy consumption in real time.

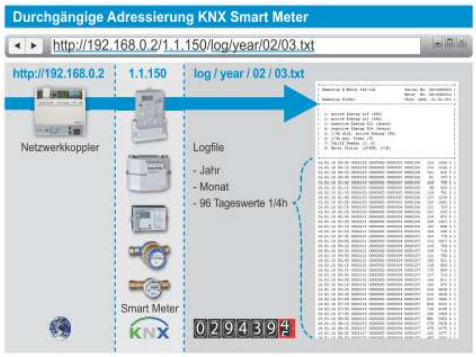
Why *FacilityWeb:*

- Low power consumption of only 200mW per bus coupler
- Low-cost bus coupler
- Functions almost like large Web servers

- Minimal start-up costs, as all functions ready for use
- Little planning effort
- Each bus device has its own website

- No additional software for the user necessary

Essential feature of FacilityWeb technology from Lingg & Janke is the overarching KNX communication via HTTP and FTP services.



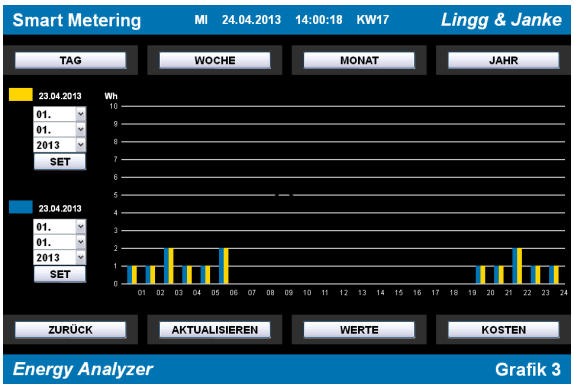
Each bus station receives, in addition to the physical address its own IP address and thus has its own home page. During the reading and visualization of consumption data is available for smart metering in the foreground, can be KNX IP switch as a virtual switch using a Web browser that represent Vista Sidebar or mobile devices. The Netzerkkoppler of Lingg & Janke forming the central member as a connection interface for FacilityWeb. Here About data is displayed directly from the bus couplers of the terminals with FacilityWeb- technique of the browser interface, or provided for download. The devices use to the "Certified" protocol "FTP over KNX".

applications for *FacilityWeb:*

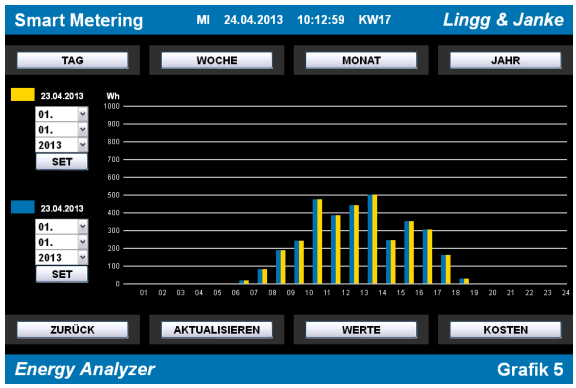
- Actual value display
- Saving of counter values
- Long-term recording example of temperature trends
- Energy consumption data acquisition for up to 10 years
- Data preparation, eg via Micosoft Exel®
- View and read out the data via a browser interface
- Acquisition of data for consumption billing
- Remote diagnostics

Energy consumption data acquisition for up to 10 years SOLAR

reference



SOLAR Delivery



4.1.1 Parameter settings FacilityWeb:

FacilityWeb:

The BCU EMU electric meters can variety of meter data (see Fig. Right) store. These values are for 1 year more in 15 minutes. Rhythm recorded and saved in a log file. The settings for this are then selected in the application under parameter "FacilityWeb". This log file (.txt file) can then be picked up from the counter means BCU Lingg & Janke network coupler per FacilityWeb (FTP over KNX) protocol and for further processing in other

Applications are transferred. When using FacilityWeb no further KO enabled the recording completed at the BCU!

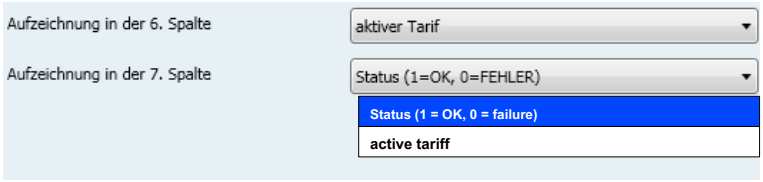
Please note:
The FacilityWeb recording works only with a Lingg & Janke network coupler held since time and date exclusively through FacilityWeb be transferred.

For the record FacilityWeb Column 1 - Column 5 the following parameters can be selected:

Active energy A + dead. (KWh) active energy A + dead. (Wh) T1 active energy A + dead. (KWh) T1 active energy A + dead. (Wh) T2 active energy A + dead. (KWh) T2 active energy A + dead. (Wh) T3 active energy A + tot . (kWh) T3 active energy A + dead. (Wh) T4 active energy A + dead. (kWh) T4 active energy A + dead. (Wh) active energy A + L1 (kWh) active energy A + L1 (Wh) active energy A + L2 (kWh) active energy A + L2 (Wh) active energy A + L3 (kWh) active energy A + L3 (Wh) active energy A- dead. (kWh) active energy A- dead. (Wh) T1 active energy A- dead. (kWh) T1 active energy A- dead. (Wh) T2 active energy A dead. (kWh) T2 active energy A- dead. (Wh) T3 active energy A- dead. (kWh) T3 active energy A- dead. (Wh) T4 active energy A- dead. (kWh) T4 active energy A- dead. (Wh) reactive energy R + dead. (kvarh) reactive energy R + dead. (varh) T1 reactive energy R + dead. (kvarh) T1 reactive energy R + dead. (varh) T2 reactive energy R + dead. (kvarh) T2 reactive energy R + dead. (varh) T3 reactive energy R + dead. (kvarh) T3 reactive energy R + dead. (varh) T4 reactive energy R + dead. (kvarh) T4 reactive energy R + dead. (Varh)

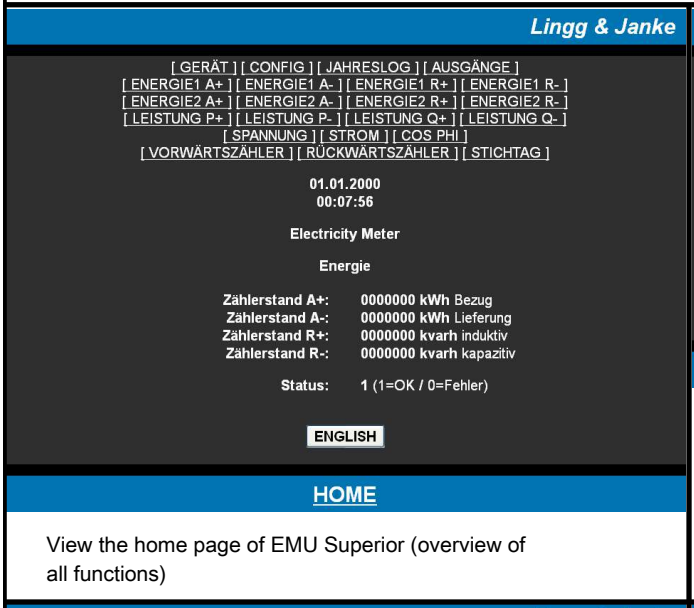
Reactive energy R- dead. (Kvarh) reactive energy R- dead. (Varh) T1 reactive energy R- dead. (Kvarh) T1 reactive energy R- dead. (Varh) T2 reactive energy R- dead. (Kvarh) T2 reactive energy R- dead. (varh) T3 reactive energy R- dead. (kvarh) T3 reactive energy R- dead. (varh) T4 reactive energy R- dead. (kvarh) T4 reactive energy R- dead. (varh) Rel. forward counter A + (kWh) Rel. backward counter A + (kWh) active power P + dead. (W) active power P + L1 (W) active power P + L2 (W) active power P + L3 (W) active power P tot. (W) active power P L1 (W) active power P L2 (W) active power P- L3 (W) reactive power Q + dead. (var) reactive power Q + L1 (var) reactive power Q + L2 (var) reactive power Q + L3 (var) reactive power Q tot. (var) reactive power Q L1 (var) reactive power Q L2 (var) reactive power Q-L3 (var) voltage U L1 (V) voltage U L2 (V) voltage U L3 (V) current I L1 (A) current I L2 (A) current I L3 (A) power factor LF L1 (cos phi) power factor LF L2 (cos phi) power factor LF L3 (cos phi)

For the record FacilityWeb column 6 and column 7 the following parameters can be selected:

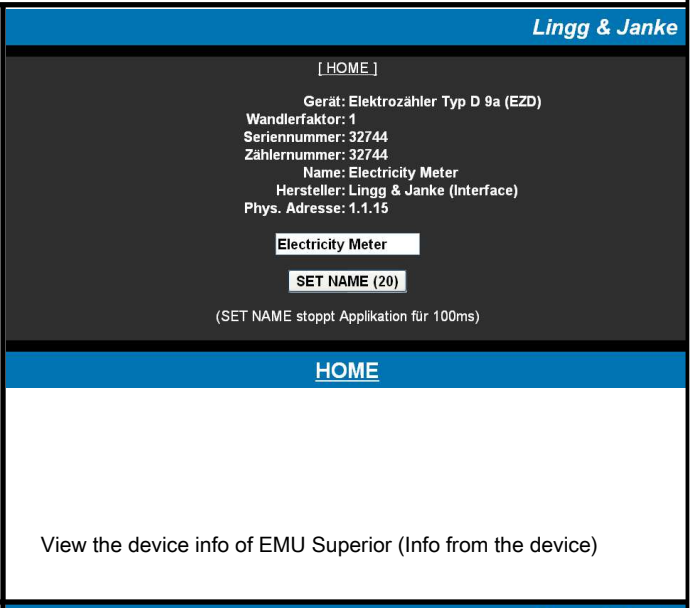


4.1.2 *FacilityWeb* Browser operating / display surface:

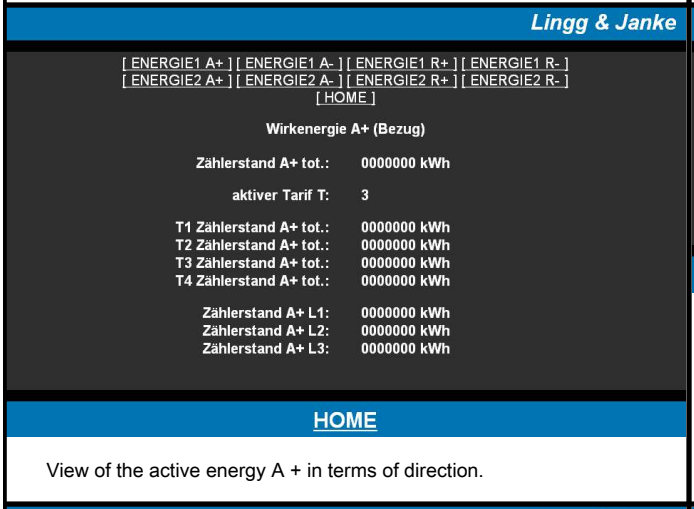
When using FacilityWeb in conjunction with a network coupler Lingg & Janke (FW), it is possible to look directly from the network to the counter and retrieve current data. In this case (eg EMU counter), the device can be accessed in any browser by entering the IP address of the network coupler and the physical address of the KNX participant in the address bar. The following are a few examples to view the FacilityWeb surface:



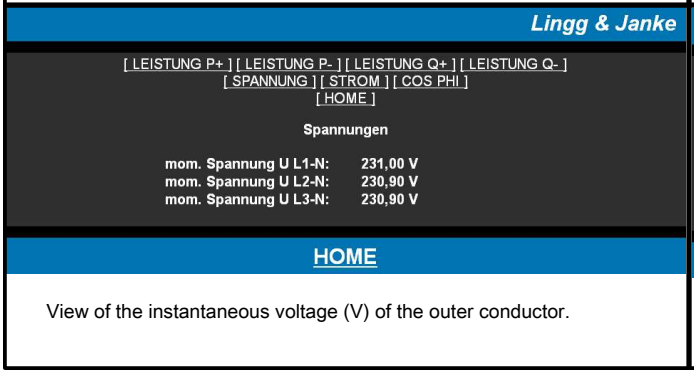
View the home page of EMU Superior (overview of all functions)



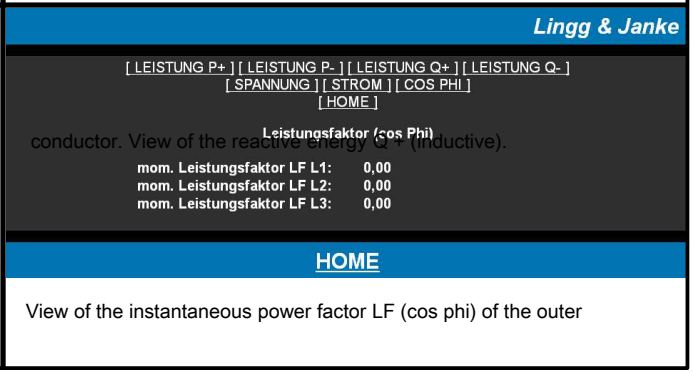
View the device info of EMU Superior (Info from the device)



View of the active energy A + in terms of direction.



View of the instantaneous voltage (V) of the outer conductor.



conductor. View of the reactive energy Q + (inductive).

View of the instantaneous power factor LF (cos phi) of the outer

5.1 Declaration of EIS types:

5.1.1 EIS / DPT and your function interworking and

telegrams (EIS / DPT)

In a KNX system, the subscribers communicate via a standardized standard, which ensures that both receiver and transmitter speak the same language and thus the telegram and the commands contained be decrypted correctly. In KNX system, this is about the DPT (data point type), formerly EIS (EIB Interworking Standard) regulated. The DPT is an extension and improvement of the previously valid EIS types. Individual EIS types are further divided into the new DPT. As applies for example to switch the DPT 1.001 and driving shutters of DPT 1.008. It is irrelevant how a group address in the ETS is coated with DPT as the group address numbering in the ETS merely serves as a "organizational element" when linking sending and receiving KNX devices.

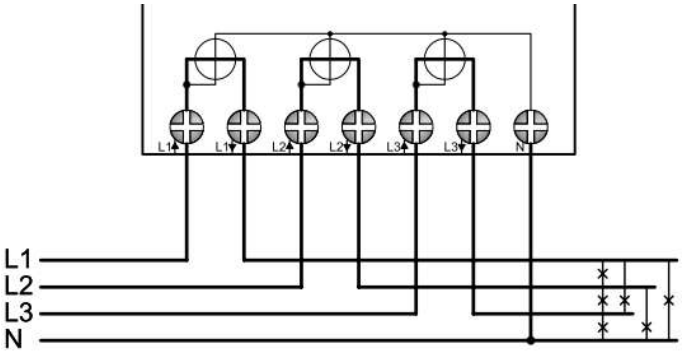
If both devices exactly the same DPT type (data point type) EIS, can exchange information them together.

KNX function	information length	ICE CREAM (EIB Interworking Standard)	DPT (Data Point Type)
switch	1 bit	EIS 1	DPT 1
dimming	4 bits	ICE 2	DPT 3
Time	3 bytes	ICE 3	DPT 10
date	2 bytes	EIS 4	DPT 11
floating point	2 bytes	EIS 5	DPT 9
relative value	1 byte	EIS 6	in DPT DPT 5 and 6 contain
Blinds / shutters	1 bit	EIS 7	in DPT 1
Priority	2 bits	EIS 8	DPT 2
IEEE floating point	4 bytes	EIS 9	DPT 14
16 bit counter values 32 bit	2 bytes	EIS 10	DPT 7/8 DPT
counter values	4 bytes	EIS 11	DPT 12 / DPT 13
access control	4 bytes	EIS 12	DPT 15
ASCII characters	1 byte	EIS 13	DPT 4
8 bit counter values	1 byte	EIS 14	DPT 5 / DPT 6
string max. 14 characters	14 bytes	EIS 15	DPT 16

Wiring diagram EMU Superior

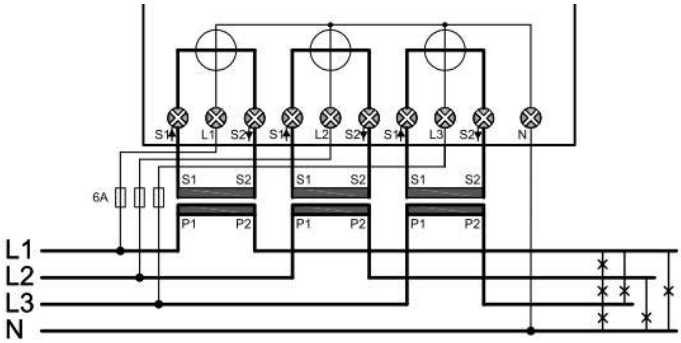
By selecting the menu in the display of EMU Superior counter

3-phase direct connection with neutral



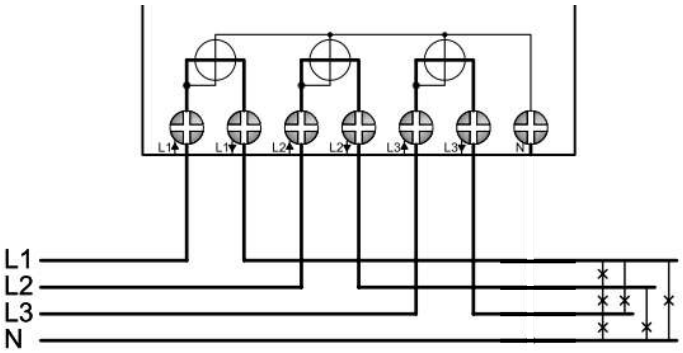
Display illumination with the menu button press active

3-phase transformer connection with neutral



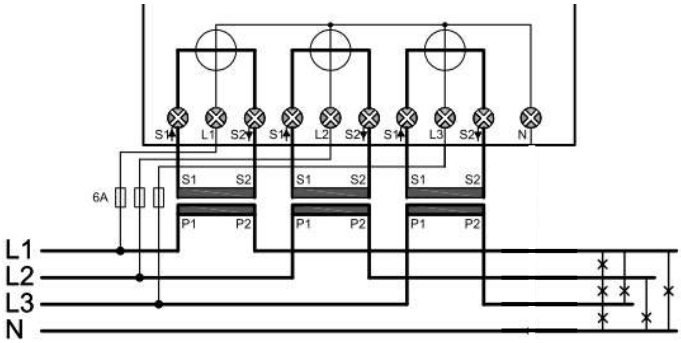
Display illumination with the menu button press active

3-phase direct connection without neutral (Aron)



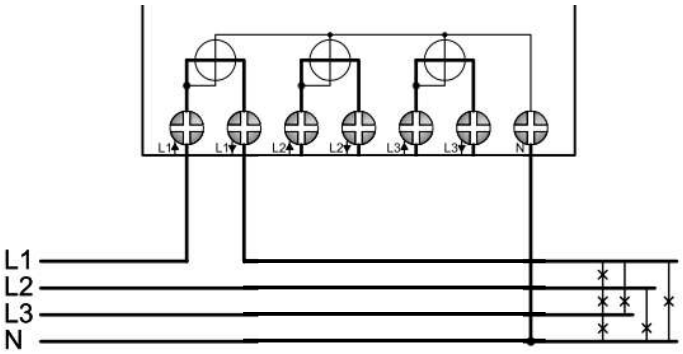
Display illumination with the menu button press active

3-phase transformer connection without neutral



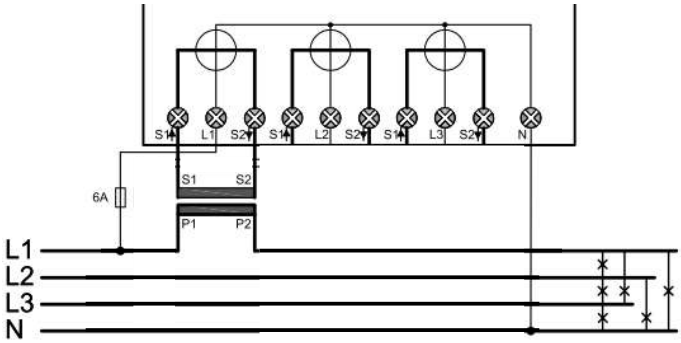
Display illumination with the menu button press active

1-phase direct connection with neutral



Backlight always inactive

1-phase transformer connection with neutral

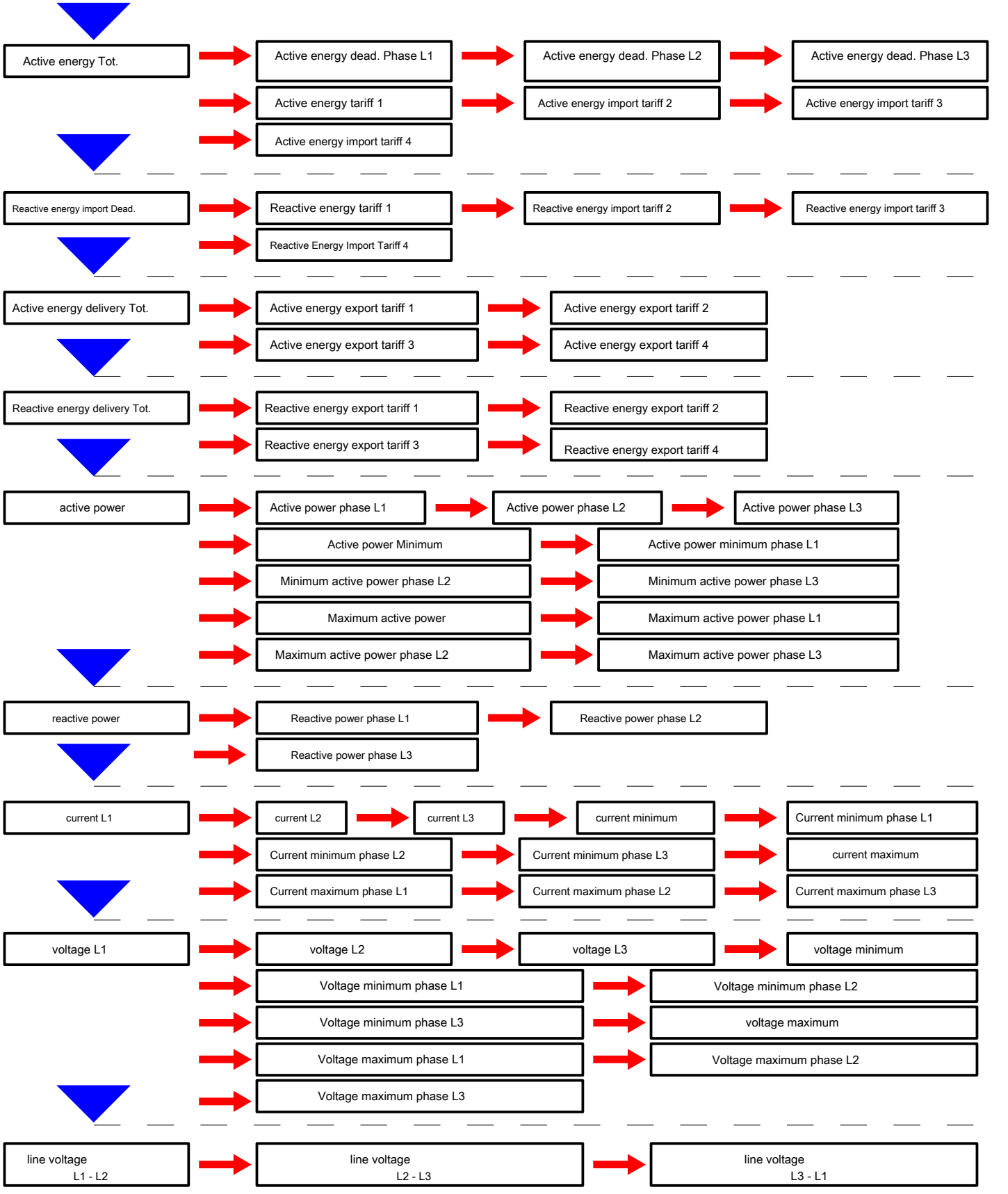


Backlight always inactive

Menu structure EMU Superior

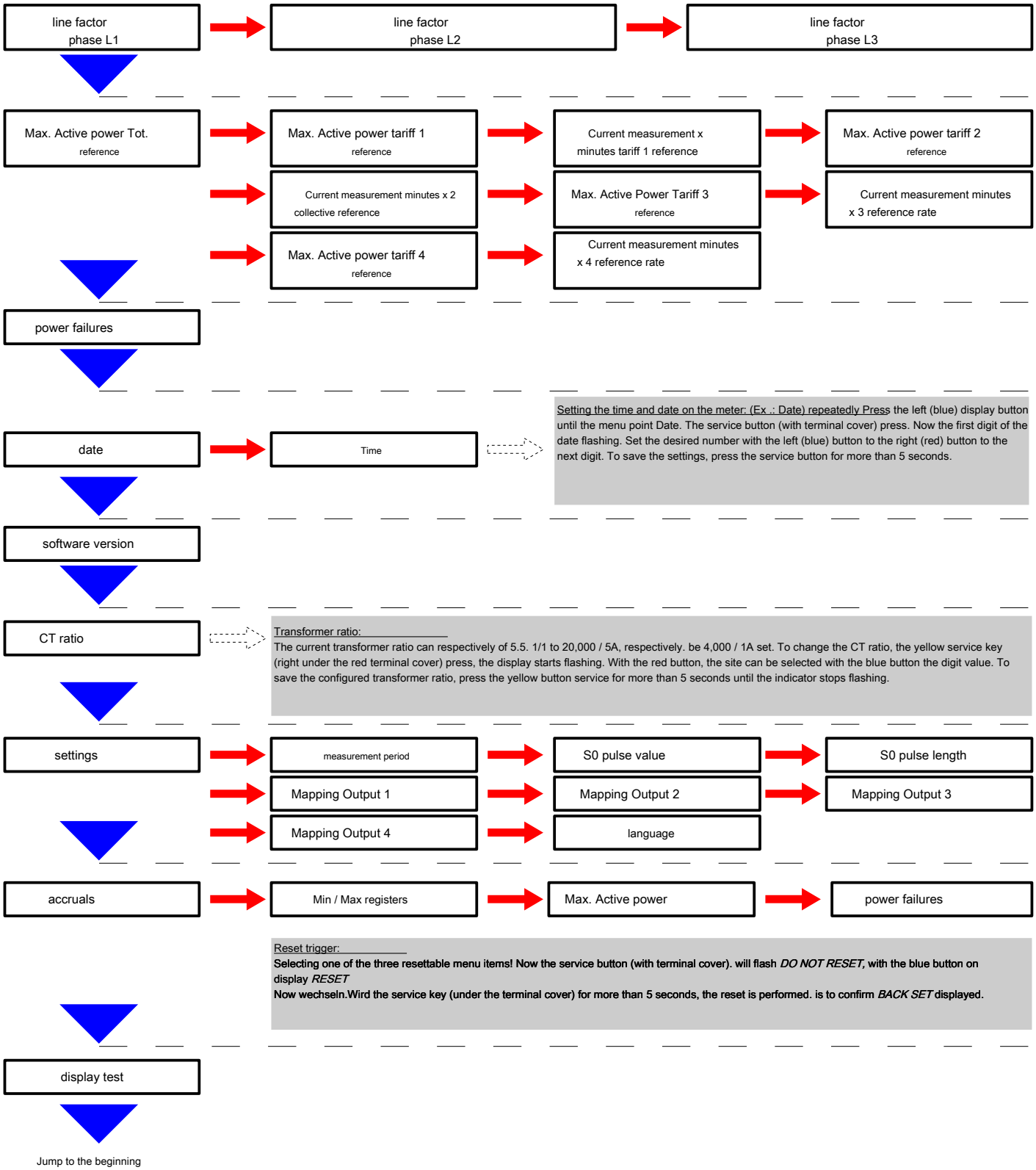
By selecting the menu in the display of EMU Superior counter

After the active Irish of the counter and the choice of language following menu items can be selected.



Menu structure EMU Superior

By selecting the menu in the display of EMU Superior counter



Change language setting:

The display language (German / English) can be changed in the settings menu. When commissioning or after a power interruption the language after the segment test can be changed. The red button the desired language can be selected and confirmed with the blue button. Change language on "Settings" → "Language":

Select the menu item language service button (under red terminal cover) for more than 4 seconds Press. With the left (blue) button to select the desired language. In order to save the setting, the service button press more than 4 seconds.

Lingg Janke

Wohn- und Gebäude-Elektronik. **einfach. smart.**

Phase meter

EZ-EMU-D (STD / SUP) -D-REG-FW

KNX REG counter

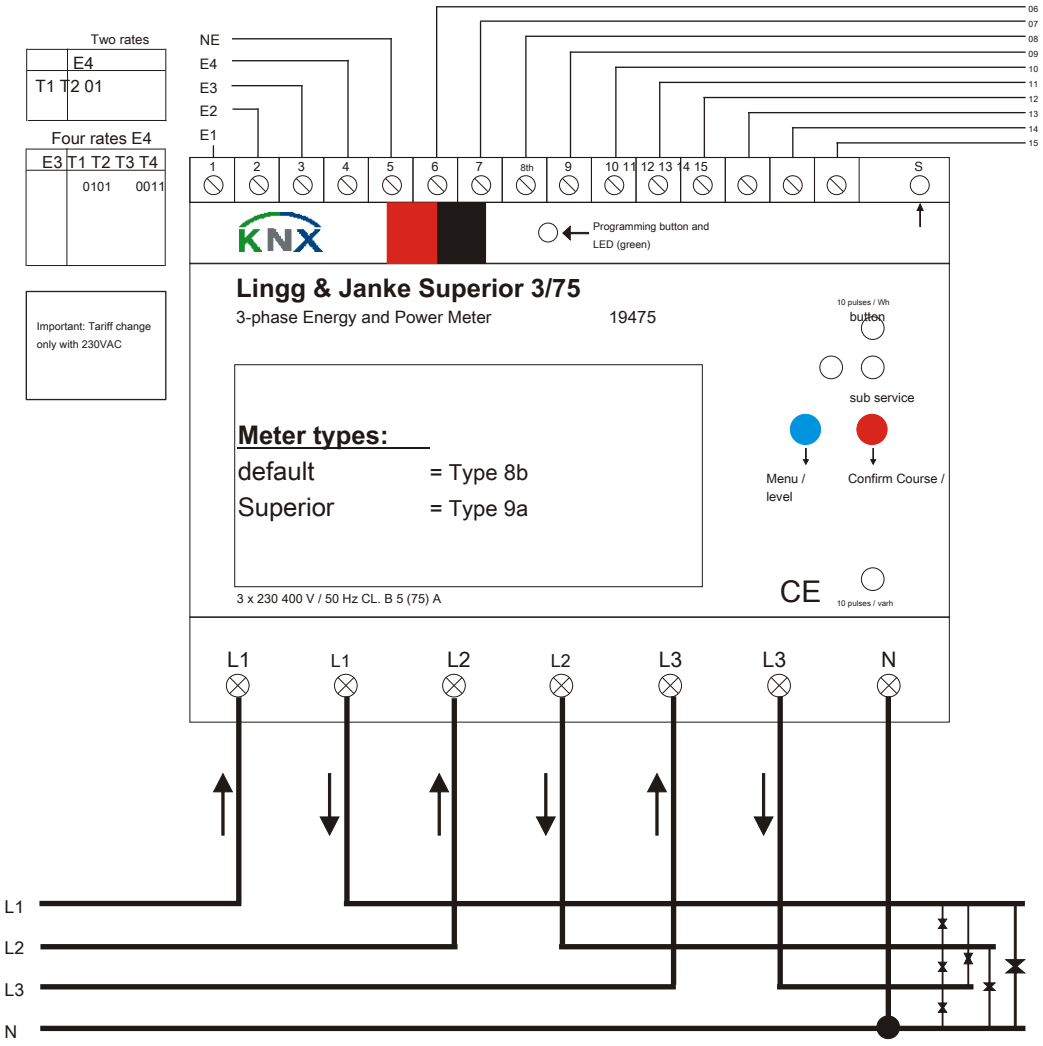
The Lingg & Janke KNX REG counters are multi-functional electric energy meter with outstanding flexibility and accuracy. They combine the functions of a multimeter, a power meter and a data logger. a variety of measured values via KNX FacilityWeb can be read out and sign, for example, active and reactive energy, active and reactive power, voltage, current and power factor. are two thresholds to monitor available for different power levels.

KNX the standard meter is available for direct measurement (75 A) and transducer measurements (1 and 5 A). The transducer factor in transformer meter is in many areas on the device parametr ierbar. The counter is a saldierender Establishment meters for active energy. Up to 4 tariffs supported.

The Superior KNX counter directly measuring (75 A) or transducers (1 and 5 A), is a saldierender Bidirectional meter which detects and reactive energy. He also supports up to 4 tariffs. In addition, the superior has 4 switch outputs, which can be addressed via the KNX bus.

Technical specifications

Max group addresses.:	108
Power supply:	3 x 230V / 400V AC 0.25-5 (75) A
Frequency:	50 - 60 Hz
Starting current:	<9 mA
DIMENSIONS (mm): 90 x 91 x 68 (5 TE) Assembly:	
	35 mm rail
	-5 .... 45 ° C
Ownconsumption:	<0.6 W / phase
Operating temperature:	EN62056-21
Lower connection terminals:	0.5 to 35mm², 2 Nm
Upper connection terminals:	up to 2.5mm², 0.5 Nm
Accuracy: Optical Interface:	B (+/- 1%) for active energy EN 50470-1, -3
Switching outputs:	Opto Power MOSFET 230V AC / DC, max. 90 mA



terminals

Terminal strip above:

1 -> E1 (reserve) 2 -> E2 (reserve) 3 -> E3 tariff switching 4 -> E4 tariff switching 5 -> NE tariff switching N 6 -> switching output 4 (only Superior) 7 -> switching output 4 (only Superior) 8 -> switching output 3 (only Superior) 9 -> switching output 3 (only Superior) 10 -> switching output 2 (only Superior) 11 -> switching output 2 (only Superior) 12 -> switching output 1 (only Superior) 13 -> output 1 (only Superior) 14 -> (reserve) 15 -> (reserve) S -> service key

Switching transformer ratio

Lower terminal block (left to right):

L1 outer conductor terminal "INPUT" L1 outer conductor terminal "OUT" L2 outer conductor terminal "INPUT" L2 outer conductor terminal "OUT" L3 outer conductor terminal "INPUT" L3 outer conductor terminal "OUT" N neutral conductor connection

warning

The device must be installed by a licensed electrician and put into operation! The relevant safety and accident prevention regulations must be observed! Before using the equipment all contact screws are loose! The device must not be opened. Any faulty devices should be replaced immediately and return it to the Lingg & Janke OHG!

Safety and Liability Safety and Liability

The device is intended solely for measuring electric power and may not be operated outside the specified values. When installing or changing the meter all live conductors are disconnected from the supply and secure against restart. The selection of the counter and the determination of the suitability of the meter type for the purpose subject to the sole responsibility of the electrician or the buyer. Liability for damages due to the incorrect connection, use or configuration of the counter is excluded.

Lingg & Janke

Wohn- und Gebäude-Elektronik. **einfach. smart.**

Three-phase electricity meter

EZ-EMU-D (STD / SUP) -D-REG-FW

order. no. 87765 standard order.

no. 87766 Superior

KNX DIN RAIL meters

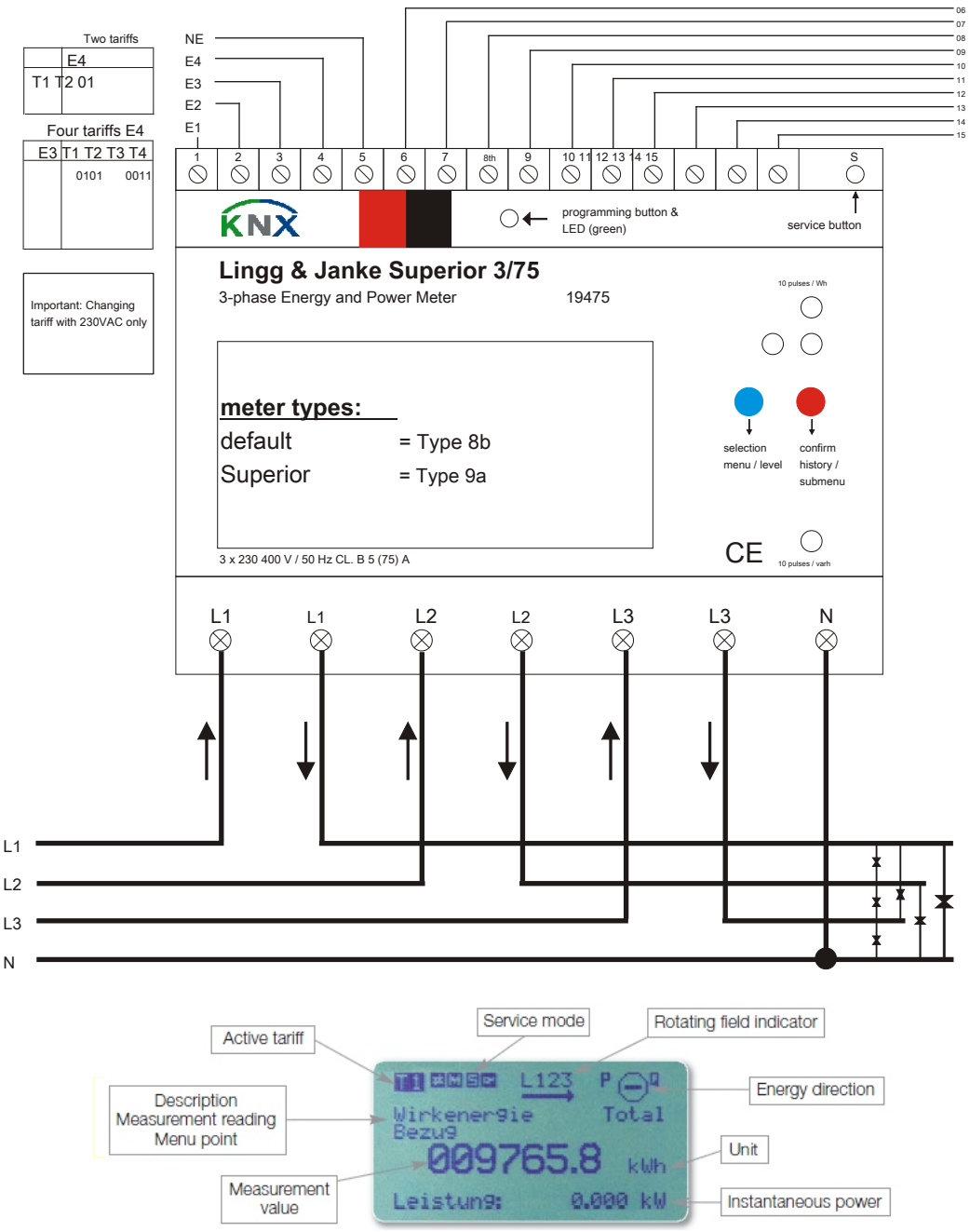
The Lingg & Janke KNX REG meters are multifunctional electric energy meters with outstanding flexibility and accuracy. They combine the functions of a multimeter, energy meter and data logger. Using KNX FacilityWeb, the meters can read out and log Numerous Measured values, color: such as active and reactive energy, active and reactive power, voltage, current and power factor. Each one of the different power values can be monitored with two thresholds.

The Standard KNX meter can be used for direct measurement (75 A) and transformer measurement (1 and 5 A). The rating factor for the transformer meter can be defined in a wide range on the device. The Standard KNX meter is an accumulating unidirectional meter for active energy reading supporting up to 4 tariffs.

The Superior KNX meter is an accumulating bidirectional meter did is therefore capable of reading reactive energy. It can be used for direct (75 A) or transformer measurement (1 and 5 A) and thus supports up to 4 tariffs. In addition, It provides four switching outputs (max. 230V, 90mA), did can be operated over the KNX bus.

specifications

addresses:	
voltage:	3 x 230V / 400V AC 0.25-5 (75) A
frequency:	50 - 60 Hz
starting current:	<9 mA
WxHxD dimension (mm):	90 x 91 x 68 (5 units)
installation:	for mounting on DIN rail, TH35
operating temperature:	-5 .... 45 ° C
consumption:	<0.6 W / phase
	EN62056-21
lower terminals:	0.5 to 35mm², 2 Nm
optical interface:	to 2.5mm², 0.4 Nm
accuracy class:	B (+/- 1%) for active energy EN 50470-1, -3
switching outputs: max. group	Opto Power MOSFET 230V AC / DC, max. 90 mA



terminals

upper terminals:

1 -> E1 (reserve) 2 -> E2 (reserve) 3 -> E3 tariff switching 4 -> E4 tariff switching 5 -> NE tariff switching N 6 -> switching output no 4 (only Superior) 7 -> switching output no 4 (only Superior) 8 -> switching output no 3 (only Superior) 9 -> switching output no 3 (only Superior) 10 -> switching output no 2 (only Superior) 11 - -> switching output no 2 (only Superior) 12 -> switching output no 1 (only Superior) 13 -> switching output no 1 (only Superior) 14 -> (reserve) 15 -> (reserve) S - -> service button

switching transformer ratio

lower terminals (from left to right):

L1 cable terminal "IN" L1 cable terminal "OUT" L2 cable terminal "IN" L2 cable terminal "OUT" L3 cable terminal "IN" L3 cable terminal "OUT" N neutral cable terminal

warning

The device must be installed and Configured by a qualified professional! Health and safety regulations have to be Complied with! Before commissioning the device check did all contact screws are tight! Do not open the device. Any faulty devices must be returned immediately to the Lingg & Janke OHG!

safety instructions and liability

The device is Intended Exclusively for measuring electrical energy and can not be operated outside the specified technical data. When installing or changing the meter, disconnect all live wires and prevent unintentional reclosing. The choice of the meter and the determination of the suitability of the meter type for the intended use is the sole responsibility of the electrician or the buyer. Liability for damages Resulting from a faulty connection, use or configuration of the meter is excluded.

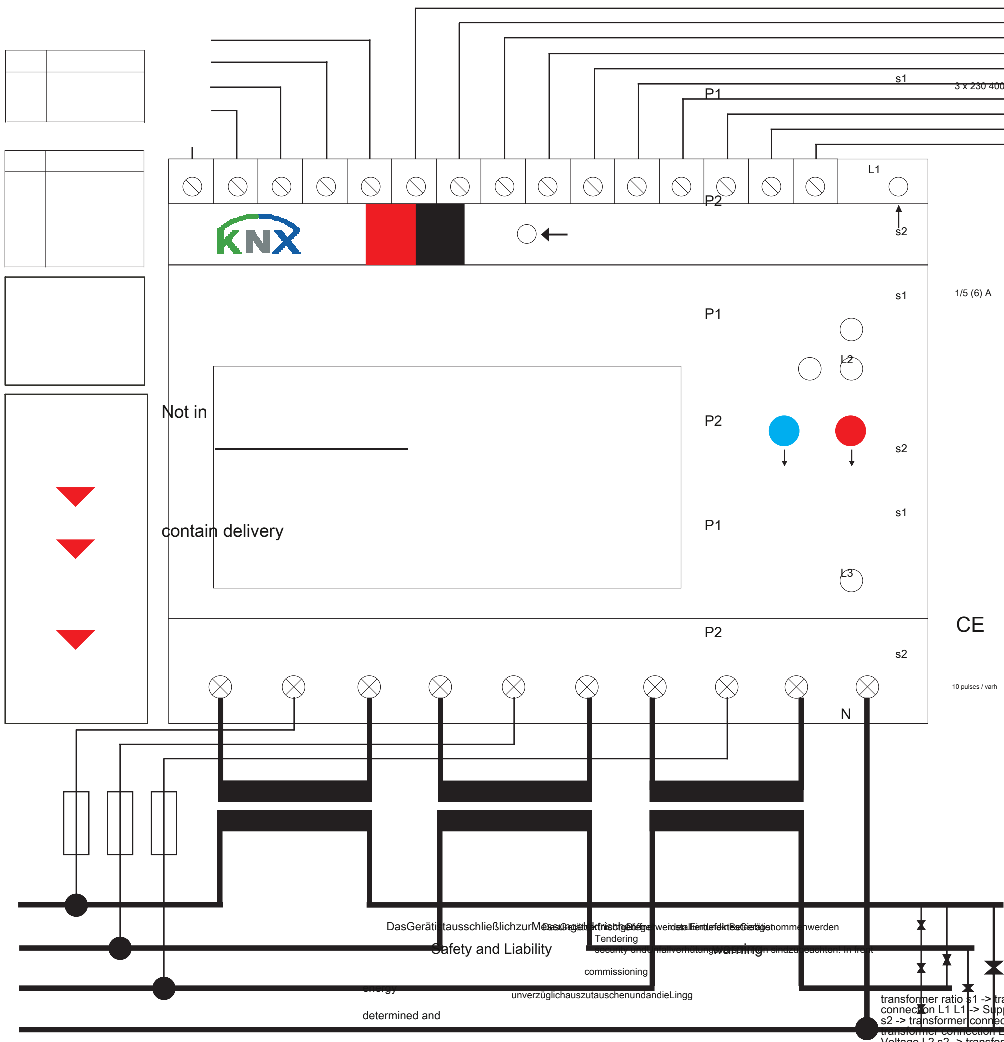
Current transformers and fuses

Wohn- und Gebäude-Elektronik. **einfach. smart.**

transformer ratio Service key Menu
Tariff 1 0 1 0 1 0
T1 T2 T3 T4
ratio change: change only with 230VAC 0 1 1 0 E3
Four rates E4
E4 E3 E2 E1
NE

3 x 230 400 V / 50 Hz CL. B default

Meter types: 3-phase **Lingg & Janke Superior 3/5**



Type 8b Superior

= Type 9a

2
3
4
5
6
7
8th
9
27832 Programming 10
11
button and LED (green) 12
13
Menu / level 14
15
Confirm 10 pulses / Wh service key
Course / submenu S

Warnung

07 08 09 10 11 12 13 14 15 16

DasGerät ausschließlich zur Messung elektrischer Energie ... Safety and Liability ... Tendering ... warning ... commissioning ... unverzüglich auszutauschen und die Lingg ... energy determined and ... & JankeOHG return!

Lower terminal block (left to right): 6 1 Terminal strip above: **terminals**

Switching

-> switching output 4 (only Superior) 7 -> switching output 4 (only Superior) 8 -> switching output 3 (only Superior) 9 -> switching output 3 (only Superior) 10 -> switching output 2 (only Superior) 11 -> switching output 2 (only Superior) 12 -> switching output 1 (only Superior) 13 -> switching output 1 (only Superior) 14 -> (reserve)

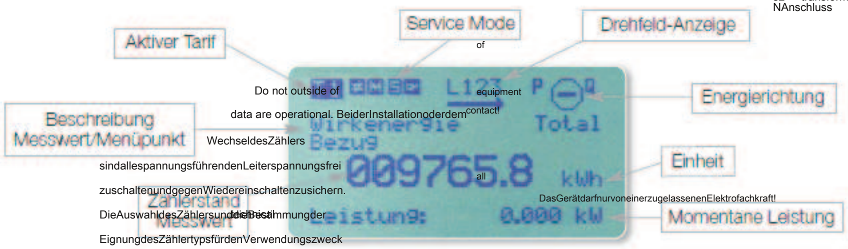
-> E1

(reserve) 2 ->

transformer ratio s1 -> transformer connection L1 L1 -> Supply voltage L1 s2 -> transformer connection L1 s1 -> transformer connection L2 L2 -> Line Voltage L2 s2 -> transformer connection L2 s1 -> transformer connection L3 L3 -> Supply voltage L3 s2 -> transformer connection L3 N -> NAnschluss

Sicherheitshinweise und Haftung

3 -> 4 E3Tarifumschaltung -> E4Tarifumschaltung



Do not outside of equipment data are operational. Beider Installation oder dem contact! Wechsel des Zählers sind alle spannungsführenden Leiter spannungsfrei zuschalten und gegen Wiedereinschalten zu sichern. all Das Gerät darf nur von einer zugelassenen Elektrofachkraft Die Auswahl des Zählers und der Bestimmungder Eignung des Zählertyps für den Verwendungszweck unterliegt alleinder Zuständigkeit der Elektrofachkraft schraubenauf festen Sitz prüfen oder des Käufers. Haftung für Schaden, die auf den erroneous specifying connection, use or project des Zählers zurück zuführen sind ist ausgeschlossen.

Lingg & Janke

Wohn- und Gebäude-Elektronik. **einfach. smart.**

change value blue button = digit red button = position Save transformer ratio, push service button more than 5 seconds

Change

Changing

1 0 1 0 1 0

T1 T2 T3 T4

0 1 1 0 E3

tariff with 230VAC only

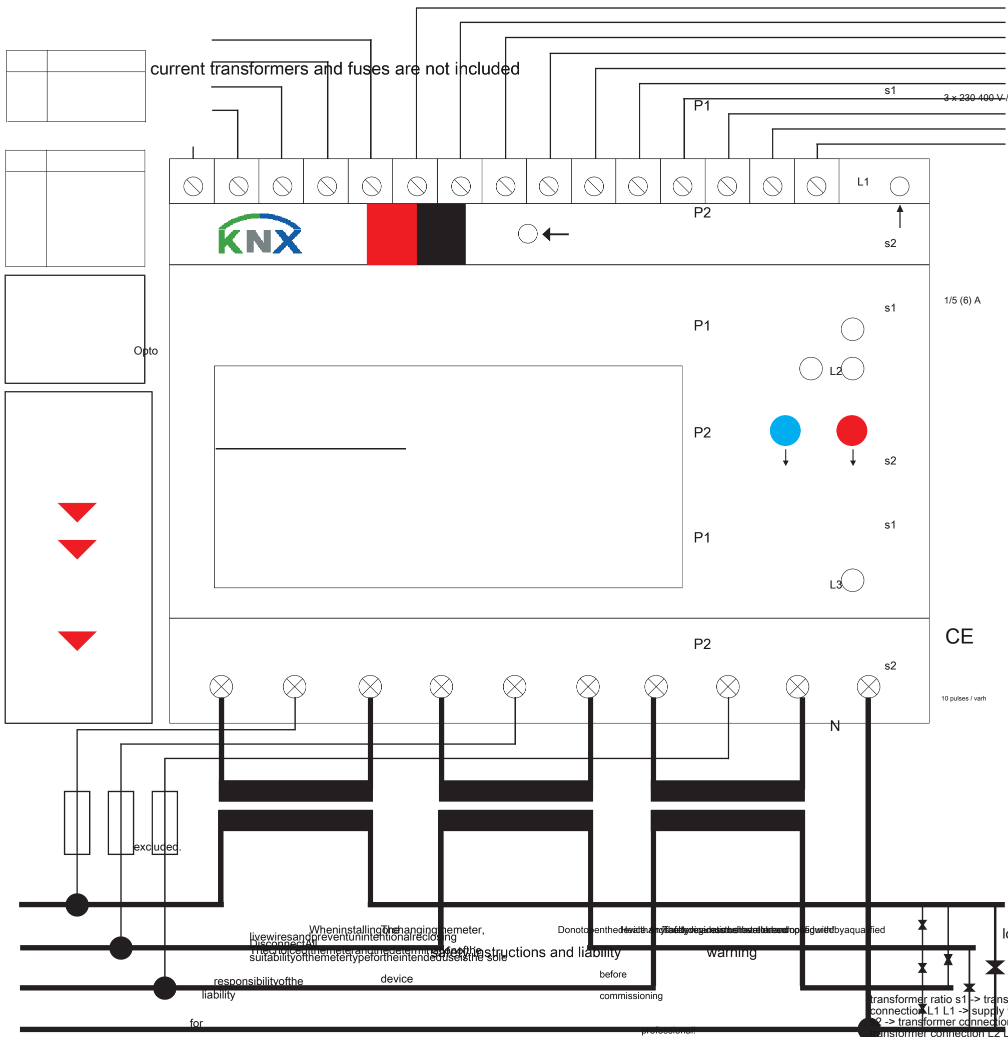
Transformer ratio:

four tariff E4

E4 E3 E2 E1

NE

current transformers and fuses are not included



3 x 230-400 V / 50 Hz CL. B

default meter types: 3-phase **Lingg & Janke Superior 3/5**

Type 8b Superior

= Type 9a

1/5 (6) A

27832

programming

button & LED (green)

CE

10 pulses / varh

10 pulses / Wh

selection menu / level

confirm

history / submenu

service button

S

1 2 3 4 5 6 7 8th 9 10 11 12 13 14 15

warning

07 08 09 10 11 12 13 14 15 16

When installing or changing the meter, Disconnect live wires and prevent unintentional reclosing. The choice of the meter and the determination of the suitability of the meter type for the intended use is the sole responsibility of the device before commissioning. ... Do not open the device. ... Health and safety regulations ... only by a qualified professional ... screws are tight! ... liability for damages ... connection, use or configuration ... The device is intended exclusively for measuring electrical energy and cannot be operated outside the specified technical data. Resulting electrician ... immediately to Lingg & JankeOHG! ... check that all contact ... Meters ... faulty ... buyer.

safety instructions and liability

lower terminals (from left to right):

transformer ratio s1 -> transformer connection L1 L1 -> supply voltage L1 s2 -> transformer connection L1 s1 -> transformer connection L2 L2 -> supply voltage L2 s2 -> transformer connection L2 s1 -> transformer connection L3 L3 -> supply voltage L3 s2 -> transformer connection L3 N -> N connection

switching

-> switching output no 4 (only Superior) 8 -> switching output no 3 (only Superior) 9 -> switching output no 3 (only Superior) 10 -> switching output no 2 (only Superior) 11 - -> switching output no 1 (only Superior) 13 -> switching tariff switching

N 6

-> switching output no 4 (only Superior)

upper terminals: **terminals**

7 1

-> E1 (reserve) 2 -> E2 (reserve) 3 -> E3 tariff switching 4 -> E4 5 -> NE tariff

safety instructions and liability