Kamstrup OMNIPOWER
Three-phase meter

DATA SHEET

- **Three-phase residential meter**
- **Prepared for Smart Home applications**
- **Optimised for Smart Metering systems**
- **Secured against tampering**
- **Resistant to errors in the supply network**
- **Ultra-low power consumption**
- **Remote firmware update**
- **Power quality measurements according to EN50160**

- **Type approved according to:**
  - Active energy
    EN 50470-1 (MID)
    EN 50470-3 (MID)
  - Active energy
    and reactive energy
    IEC 62052-11 (IEC)
    IEC 62053-21 (IEC)
    IEC 62053-23 (IEC)
- **Communication protocol**
  - DLMS/COSEM
  - IEC62056-21 Mode A, C and D0

Application

Kamstrup OMNIPOWER Three-phase meter is a direct connected electricity meter for registration of electric energy. The meter is full electronic without movable parts. Thus, energy registration is not affected by shock or impact during transport and mounting. Furthermore, measurements are correct, no matter the physical mounting direction.

The shunt measuring principle secures good linearity and a considerable dynamic range. At the same time, the shunt measuring principle is immune to magnetism and DC currents.

The easily readable display scrolls automatically between readings, or readings can be changed manually by the consumer activating a push button. The required display readings as well as their order are configurable.

In addition to being read from the display, data can be collected via the optical output or from the module area. The unique module area also permits external changing of tariffs, pulse inputs and outputs, and configuration as well as a wide range of communication media.

From the factory, the meter can be configured to measure both imported and exported energy. As it is constructed with three independent and galvanically separated measuring systems, the meter makes accurate measurements whether it measures 1, 2 or 3 phases. Measurements are saved in a permanent memory.

As default, Kamstrup OMNIPOWER Three-phase meter can generate load profiles in all four quadrants.

A load profile provides detailed information about consumed and produced energy. An additional logger with 16 channels contains data for analysis purposes.

As default, Kamstrup OMNIPOWER Three-phase meter is supplied with the functions Smart Disconnect and software controlled Prepayment.

The OMNIPOWER Three-phase meter is also designed to support extended analysis of the main grid using measurements of THD, Power Factor, Voltage unbalance, Voltage variations and sags and swells.

The meter registers loss of neutral conductor and allows automatic disconnection to minimize damages to household appliances.

In order to minimise the manual configuration during installation, the meter is pre-configured from the factory. Furthermore, the meter can be reconfigured via a Smart Metering system.

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Contents

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Functions

Display

Kamstrup OMNIPOWER Three-phase meter is provided with a Liquid Crystal Display (LCD). The registers that can be read from the display depend on the chosen configuration. It is also possible to remotely configure the display.

The display configuration is constructed as three independent display lists: One for automatic shift function, one for manual shift function and one for battery-powered shift function. The display is constructed of segments as shown in the figure below.
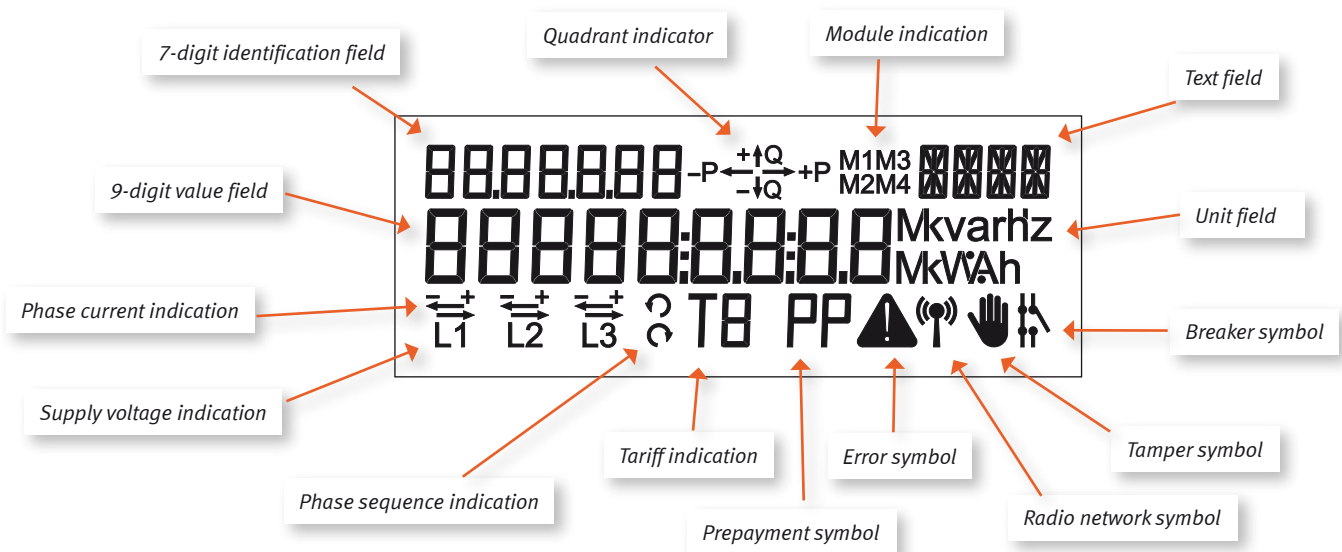
9-digit value field:	This field is used for displaying register values.
Unit field:	This field is used for displaying the units that are related to the value field.
7-digit identification field:	OBIS code identification of the value in the value field.
Quadrant indicator:	Indicates the current load type.
Text field:	Contains additional text in connection with the meter's function.
Module indication:	Indicates if and which modules that communicates in the display.
Error symbol:	Indicates critical internal errors.
Breaker symbol:	Indicates the current position of the breaker if smart disconnect is enabled. If smart disconnect is disabled or the meter is without breaker, there is no indication.
Tamper symbol:	Indicates magnetic influence or opening of the meter cover, either temporary or permanent.
Radio network symbol:	Indicates communication with AMR systems.
Prepayment symbol:	Indicates whether the prepayment functionality is activated.
Tariff indication:	Indicates the current tariff if tariffs have been selected.
Supply voltage indicator:	Indicates that the voltage is above the minimum threshold (160 V).
Phase current indication:	Indicates that the load is above the minimum threshold (2.3 W).
Phase sequence indication:	Indicates the phase sequence af the input phases.

$\curvearrowright$ = L1L2L3 $\curvearrowleft$ = L1L3L2

Kamstrup

Functions

Display

The automatic shift function (scroll) changes between the selected readings every 10 seconds. Up to 16 readings can be selected.

The manual shift function changes through activation of the left push button. Up to 30 readings and the reading order can be selected. However, it is not possible to deselect the **legal** readings.

If the battery-operated shift function is selected, it becomes possible to read the display, also when the meter is not power supplied. Up to 8 readings can be selected, and shifts between readings are made by activating the push button.

The meter automatically returns from manual shift function to automatic scroll function two minutes after the last activation of the left push button.

Energy reading

Kamstrup OMNIPOWER Three-phase meter has one shunt per measuring system for current measurement and resistance division for voltage measurement.

Energy consumption is calculated as an expression of the current compared to the phase voltage and time.

The energy registration per measuring system is communicated to the meter's legal processor via the meter's own internal bus system and is summed in the meter's main registers.

Permanent memory

Measured and calculated data are stored in the meter's permanent memory. Data are stored by every change of energy register values.

Furthermore, the below mentioned values are stored at the end of a debiting period:

Various	Energy registers	Power registers
Date	Active positive energy A+	Peak power P+max
Time	Active negative energy A-	Peak power P+max Date
Quality info	Reactive positive energy R+	Peak power P+max Time
Hour counter	Reactive negative energy R-	Accumulated peak power P+max acc
Debiting stop counter	Apparent positive energy E+	Peak power P+max Tariff 1
Power threshold counter (A+)	Apparent negative energy E-	Peak power P+max Tariff 1 Time
Pulse input	Active positive energy A+ Tariff 1	Peak power P+max Tariff 1 Date
	Active positive energy A+ Tariff 2	Peak power P+max Tariff 2
	Active positive energy A+ Tariff 3	Peak power P+max Tariff 2 Time
	Active positive energy A+ Tariff 4	Peak power P+max Tariff 2 Date
	Reactive positive energy R+ Tariff 1	Peak power S+max
	Reactive positive energy R+ Tariff 2	Peak power S+max Date
	Reactive positive energy R+ Tariff 3	Peak power S+max Time
	Reactive positive energy R+ Tariff 4	Peak power S-max
		Peak power S-max Date
		Peak power S-max Time
		Accumulated peak power P+max Tariff 1
		Accumulated peak power P+max Tariff 2

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Functions

Plug-in modules

Kamstrup OMNIPOWER Three-phase meter can be mounted/retrofitted with plug-in modules without subsequent reverification.

The module communicates with the meter's microprocessor via an internal data bus. This provides innumerable functional possibilities such as extra pulse output, tariff, load control and data communication via e.g. GSM/GPRS, and M-Bus.

Optical reading

An optical interface is placed on the front of the meter. This optical connection can be used to read data or configure e.g. display set-up, meter number and other settings.

Changes via the optical connection can be made by using the software program METERTOOL OMNIPOWER.

It is not possible to change the meter's legal data.

S0 pulse output

Emits pulses of active energy at 1000 pulses per kWh. The pulses are emitted synchronously with the LED. The maximum voltage, which may be connected to the SO output, is 27 V DC (at 1 kΩ), and the maximum current, which can be drawn through the output, is 27 mA. The pulse time is 30 msec.

Breaker

Kamstrup OMNIPOWER Three-phase meter is available with integrated disconnection function, which makes it possible to disconnect the electricity meter's supply outputs. The disconnection can be made locally by activating the meter's push button, automatically via the functions Smart Disconnect or Pre-payment, or remotely via an automatic Smart Metering system.

Do **NOT** use the disconnection as a safety function.

The connection can be made via the same media as the disconnection. Furthermore, connection via push button can be configured to only be permitted after previous release command from a Smart Metering system.

The breaker is a bi-stable breaker that maintains its current position in the event of a power failure and after the subsequent re-establishment of power.

Load profile

Load profiles can be configured to 5, 15, 30 or 60 min. according to the integration period and for all four quadrants. The number of generated profiles corresponds to the selected energy type for the meter.

Logging depth in days:				
Minutes	5	15	30	60
A+	92	275	550	1100
A+/A-	77	231	462	924
A+/A-/R+/R-	58	175	350	700

Analysis logger

Kamstrup OMNIPOWER Three-phase meter is provided with a configurable analysis logger. The logging depth will be 2.5 to 520 days depending on the configuration of the meter as well as the number of registers. The analysis logger can register data from up to 16 different registers at a time.

Kamstrup OMNIPOWER three-phase meter is available with default setting which can be reconfigured subsequently via METERTOOL OMNIPOWER or a Smart Metering system.

Kamstrup

Functions

Tamper proof

Apart from the mechanical sealing, the meter also reveals tampering. In case of attempts of tampering (mechanical or magnetic), an alarm is activated which is time and date stamped and saved to the permanent memory. Alarms can be automatically transferred via the communication infrastructure and, in some case, indicated on the display. Magnetic influence does not affect the measuring accuracy.

Approvals

Kamstrup OMNIPOWER Three-phase meter is type approved according to the Measuring Instruments Directive (MID) for active positive energy and according to the national requirements for other energy types, where required.

Approval	Norm
Type test according to:	
– Active energy	EN 50470-1
	EN 50470-3
– Reactive energy and	IEC 62052-11
active energy	IEC 62053-21
	IEC 62053-23

Various	Norm
Terminal	DIN 43857
S0 pulse output	DIN 43864
Optical reading	DLMS/COSEM, IEC62056-21 mode A, C and D0
OBIS/EDIS codes	IEC 62056-61

Technical data

Measuring principle	
– Current	Single-phased current measurements by current shunt
– Voltage	Single-phased voltage measurements by voltage divider
Nominal voltage Un	3x230 VAC -20 % - +15 % (for Aron meter only)
	1x230 VAC -20 % - +15 %
	2x230/400 VAC -20 % - +15 %
	3x230/400 VAC -20 % - +15 %
Current	I_{tr} - I_b (Imax)

Kamstrup OMNIPOWER Three-phase meter	
Without breaker	**With breaker**
0.25-5(100)A 35 mm²	0.25-5(100)A 35 mm²

Accuracy class	MID: Class A, Class B
	IEC: Class 2, Class 1
Nominal frequency fn	50Hz ± 5 %
Phase displacement	Unlimited
Operating temperature	-40°C - +70°C
Storage temperature	-40°C - +85°C
Protection class	IP54

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Technical data

Protection class	II
Relative humidity	< 75 % year's average at 21ºC
	< 95 % less than 30 days/year, at 25°C
Weight	1300 g with breaker/1000 g without breaker
Application area	Indoors or outdoors in suitable meter cabinet
Internal consumption	

Kamstrup OMNIPOWER Three-phase meter	Without breaker	With breaker
Current circuit	0.03 VA	0.06 VA
Voltage circuit	1.2 VA	1.8 VA
	< 0.3 W	< 0.3 W

Materials	Glass reinforced polycarbonate
Data storage	EEPROM, > › 10 years without voltage
Display	LCD, 7 mm digit height (value field)
	LCD, 5 mm digit height (identification readings)
	LCD, 3 mm digit height (voltage and tariff readings)
Meter constant	1000 imp/kWh
S0 pulse diode	1000 imp/kWh, kvarh
	Pulse time 30ms ± 10 %
S0 pulse output	1000 imp/kWh
	Pulse time 30ms ± 10 %
Short circuit level	4500 A

Real Time Clock (RTC)

Accuracy	Typically 5 ppm at 23ºC
Backup	Battery life > 10 years at normal operation
	Supercap life > 10 years at normal operation
Supercap operating time	7 days fully charged

Connections

Terminals	Elevator terminals

Size	For use with connection:		
	Multi-cored	7-cored	Massive/terminal tube
35 mm²	≥ 6 mm²	≥ 6 mm²	≥ 2.5 mm²

Screws	Pz 2 or straight slot
	Tightening 2.5 - 3 Nm
Voltage output	0.25 – 1.5 mm², 5 mm terminal forks
Screws	TORX Tx 10
	Torque 1 Nm

Kamstrup

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Communication

Kamstrup OMNIPOWER Three-phase meter can be supplied and retrofitted with communication modules. The modules function as inputs and outputs for the meter. Mounting of modules does not require subsequent verification of the meter.

Communication Modules

S0 supply	Sends 24 V via a 2-wire and pulses by drawing the voltage to 0 V at each pulse. Can supply e.g. MULTICAL®.
Serial	Serial RS-485 or RS-232 communication or current loop with pulse inputs, tariff inputs or load control.
M-Bus	Reading via wired M-Bus system.
GSM/GPRS	Collection of consumption data via GSM/GPRS communication. Supports SMS reading.

Integrated radio

Kamstrup OMNIPOWER Three-phase meter can be provided with built-in radio communication.
Radio communication therefore requires no mounting/retrofitting of communication module. If the meter's module area is used for another type of communication, the built-in radio communication can be deactivated.

Consumer communication channel (CCC) module

In Kamstrup OMNIPOWER Three-phase meter it is possible to mount a CCC module. The module can be used for communication and data exchange with Smart Home products such as energy displays and external relays. The CCC module is mounted without using tools or breaking the seal of the meter. The mounting may be done by e.g. the consumer himself.

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Typical accuracy charts

Load curve

Error in %

0,5
0,3
0,1
-0,1
-0,3
-0,5

5 20 100 200 800 1200 2000

Load in % af I$_n$

—— Cos(phi)=1
- - - Cos(phi)=0,5 ind.
—·— Cos(phi)=0,8 cap.

Influence from temperature variation

Error in %

0,6
0,4
0,2
0,0
-0,2
-0,4
-0,6

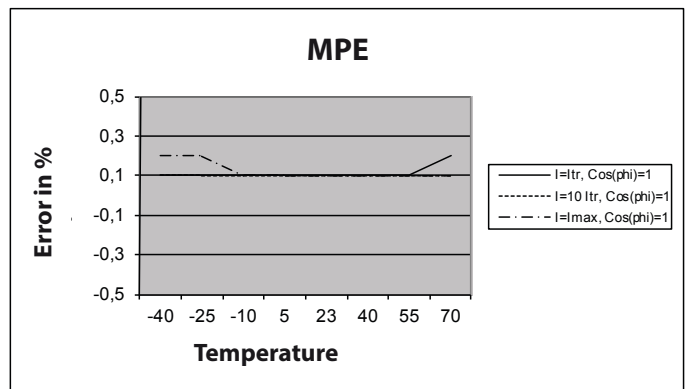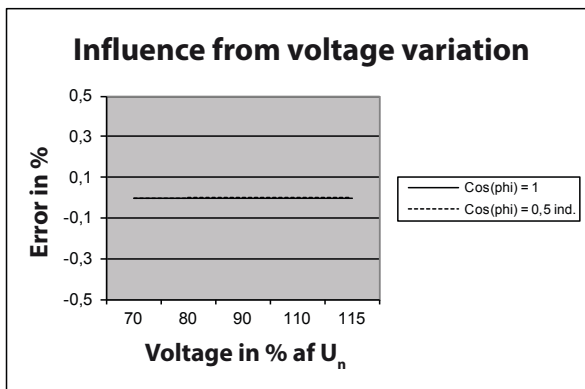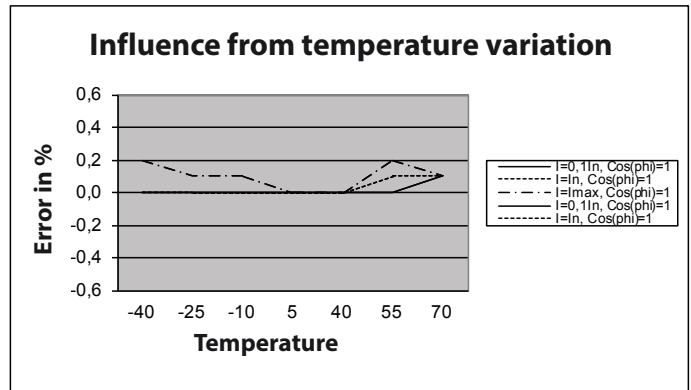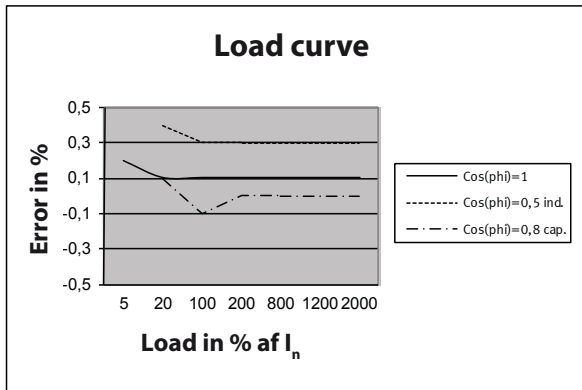-40 -25 -10 5 40 55 70

Temperature

—— I=0,1In, Cos(phi)=1
- - - I=In, Cos(phi)=1
—·— I=Imax, Cos(phi)=1
—·— I=0,1In, Cos(phi)=1
- - - I=In, Cos(phi)=1

Influence from voltage variation

Error in %

0,5
0,3
0,1
-0,1
-0,3
-0,5

70 80 90 110 115

Voltage in % af U$_n$

—— Cos(phi) = 1
- - - Cos(phi) = 0,5 ind.

MPE

Error in %

0,5
0,3
0,1
-0,1
-0,3
-0,5

-40 -25 -10 5 23 40 55 70

Temperature

—— I=Itr, Cos(phi)=1
- - - I=10 Itr, Cos(phi)=1
—·— I=Imax, Cos(phi)=1

Influence from frequency variation at In

Error in %

0,5
0,3
0,1
-0,1
-0,3
-0,5

98 102

Frequency in % of f$_n$

—— I=0,1In, Cos(phi)=1

- - - I=0,5Imax, Cos(phi)=1

—·— I=0,5Imax, Cos(phi)=0,5 ind.

MPE (Maximum Permissible Error)

Error composed of:

– current load
– voltage variation
– frequency variation
– temperature variation

Kamstrup

Kamstrup OMNIPOWER Three-phase meter
D A T A   S H E E T

Configuration - hardware

68	X1 - X2	X3	X4	X5 - X6	X7	X8	X9 - X10	X11	X12 - X13	X14 X15 X16
68	☐ - ☐	☐	☐	☐ - ☐	☐	☐	☐ - ☐	☐	☐ - ☐	☐

X1 - Metertype no. Version

OMNIPOWER Single-phase	6
OMNIPOWER Three-phase	4

X2 - Type no. Version

OMNIPOWER	1

X3 - Housing

Standard	1

X4 - Measuring systems

1 system	1
2 system	2
3 systems	3

X5 - Current range

5-100A	1
5-65A	4
10-60A	6
10-80A	7
5-80A	8

X6 - Accuracy Class

Class A	A
Class B	B
Class 2	2
Class 1	1

X7 - Generation

Generation N	N

X8 - Variant

Standard	1

X9 - Energy type

A+	1
A+/A-	2
A+/A-/R+/R-	4

X10 - Breaker

No breaker	0
Dual breaker	2
Standard breaker	3

X11 - Communication

No radio	0
RF 2.0	1

X12 - Supply back-up

Supercap	0
Supercap + battery	1

X13 - Interface

None	0
S0 output	1
APS	2

X14X15X16 - Country code

Denmark	DK	010
Norway	NO	040
Switzerland (Italian part)	CH (IT)	059
Switzerland (German part)	CH (DE)	063
Poland	PL	064
Switzerland (French part)	CH (FR)	065
Iceland	IS	067
Germany	DE	070
The Netherlands	NL	080
Finland	FI	084
Sweden	SE	090
Saudi Arabia	SA	110
South Africa	ZA	120

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Configuration - software 1 (Z1-Z2-Z3-Z4)

Z1	**Decimals in display (locked)**
Z2	**LED configuration (locked)**
Z3	**Module configuration**
Z4	**Integration period/Load profile period**

			Z1	Z2	Z3	Z4
Z1 - Decimals in display						
7.0			1			
6.1			2			
7.2			3			
6.3			4			
Z2 - LED configuration						
LED off at no consumption				1		
LED on at no consumption				2		
Z3 - Primary module configuration	I/O 1	I/O 2				
No function	-	-			00	
4-tariff	Input	Input			01	
4-tariff inverted	Input	Input			02	
Pulse in / Alarm in	Input	Input			03	
Pulse in / Alarm in inverted	Input	Input			04	
Pulse in / A+ out	Input	Output			05	
R+ out / A+ out	Output	Output			06	
2-tariff / Alarm in	Input	Input			07	
2-tariff inverted / Alarm in	Input	Input			08	
2-tariff / Alarm in inverted	Input	Input			09	
2-tariff inverted / Alarm in inverted	Input	Input			10	
2-tariff / A+ out	Input	Output			11	
2-tariff inverted / A+ out	Input	Output			12	
Pulse in / 2-tariff	Input	Input			13	
Pulse in / 2-tariff inverted	Input	Input			14	
Debiting stop pulse / -	Input	-			15	
A- out / A+ out	Output	Output			16	
Load control load / Status control	Input	Output			17	
Pulse in / Load tariff sync	Input	Output			18	
Pulse in inv. / Load tariff sync	Input	Output			19	
Pulse in / Load tariff sync inverted	Input	Output			20	
Pulse in inv. / Load tariff sync inverted	Input	Output			21	
4-tariff sync load control	Input	Input			22	
4-tariff sync load control inverted	Input	Input			23	
Load control 1 / Load control 2	Output	Output			26	
Pulse in / Load control	Input	Output			27	
Pulse in / Toggle Load control 1 & 2	Input	Output			28	
Z4 - Integration period/Load profile period						
5 min						1
15 min						2
30 min						3
60 min						4

Kamstrup

Configuration - software 2 (Z5-Z6-Z7-Z8)

Z5	**Display configuration**
Z6	**Debiting stop date**
Z7	**Debiting logging interval**
Z8	**Pulse out length / Alarm input**

	Z5	**Z6**
Z5 - Display configuration		
See Display order form or contact Kamstrup		
Z6 - Debiting stop date		
1.		01
2.		02
3.		03
4.		04
5.		05
6.		06
7.		07
8.		08
9.		09
10.		10
11.		11
12.		12
13.		13
14.		14
15.		15
16.		16
17.		17
18.		18
19.		19
20.		20
21.		21
22.		22
23.		23
24.		24
25.		25
26.		26
27.		27
28.		28

	Z7	**Z8**
Z7 - Debiting logging interval		
None (externally controlled)	00	
Monthly	01	
Every second month, January	02	
Every second month, February	03	
Every third month, January	04	
Every third month, February	05	
Every third month, March	06	
Every six month, January	07	
Every six month, February	08	
Every six month, March	09	
Every six month, April	10	
Every six month, May	11	
Every six month, June	12	
Yearly, January	13	
Yearly, February	14	
Yearly, March	15	
Yearly, April	16	
Yearly, May	17	
Yearly, June	18	
Yearly, July	19	
Yearly, August	20	
Yearly, September	21	
Yearly, October	22	
Yearly, November	23	
Yearly, December	24	
Z8 - Pulse out length / Alarm input		
30ms pulse length / Alarm input deactivated		1
30ms pulse length / Alarm input active		2
80ms pulse length / Alarm input deactivated		3
80ms pulse length / Alarm input active		4

Kamstrup OMNIPOWER Three-phase meter
D A T A   S H E E T

Configuration - software 3 (Z9-Z10-Z11-Z12)

Z9   **Disconnect setup**
Z10   **Maximum power**
Z11   **GMT**
Z12   **Unit pulse input**

		Z9	Z10	Z11	Z12
Z9 - Disconnect setup					
See disconnect order form or contact Kamstrup					
Z10 - Maximum power					
Maximum power standard			0		
Z11 - GMT					
0	London time			00	
1	+ 1 Hour (DK/NO/SE/DE/FR/ES)			01	
2	+ 2 Hours (FI)			02	
3	+ 3 Hours			03	
4	+ 4 Hours			04	
5	+ 5 Hours			05	
6	+ 6 Hours			06	
7	+ 7 Hours			07	
8	+ 8 Hours			08	
9	+ 9 Hours			09	
10	+ 10 Hours			10	
11	+ 11 Hours			11	
12	+ 12 Hours			12	
-11	- 11 Hours			13	
-10	- 10 Hours			14	
-9	- 9 Hours			15	
-8	- 8 Hours			16	
-7	- 7 Hours			17	
-6	- 6 Hours			18	
-5	- 5 Hours			19	
-4	- 4 Hours			20	
-3	- 3 Hours			21	
-2	- 2 Hours			22	
-1	- 1 Hours			23	
Z12 - Unit pulse input					
None					00
kWh					01
m3					02
L					03

Kamstrup

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Configuration - software 4 (Z13-Z14-Z15-Z16-Z17-Z18-Z19-Z20)

Z13	**Tariff control tables**	
Z14	**Load control tables**	
Z15	**Daylight saving time / Summer-winter time table**	
Z16	**Frequency code Protocol**	

Z17	**Push button 2 setup**	
Z18	**107 configuration**	
Z19	**Breaker position**	
Z20	**Calendar setup**	

	Z13	Z14	Z15	Z16	Z17	Z18	Z19	Z20
Z13 - Tariff control tables								
See tariff order form or contact Kamstrup								
Z14 - Load control tables								
See load control order form or contact Kamstrup								
No tariff plan		000						
Module port control		001						
Z15 - Daylight saving time / Summer-winter time table								
None			000					
EU			001					
Z16 - Frequency code Protocol								
None				000				
CH 318 K				318				
EU 319 K				319				
SE 328 S				328				
NO 339 K				339				
DK 348 K				348				
DK 349 K				349				
FI 359 K				359				
AT 379 K				379				
Z17 - Push button 2 setup								
See PB2 order form or contact Kamstrup								
Z18 - 1107 configuration								
See 1107 order form or contact Kamstrup								
Disabled						000		
Mode A and C, UD1						001		
Mode A and C, UD2						002		
Z19 - Breaker position								
No breaker							0	
Connected							1	
Disconnected							2	
Z20 - Calendar setup								
See Calendar setup order form or contact Kamstrup								

Kamstrup OMNIPOWER Three-phase meter
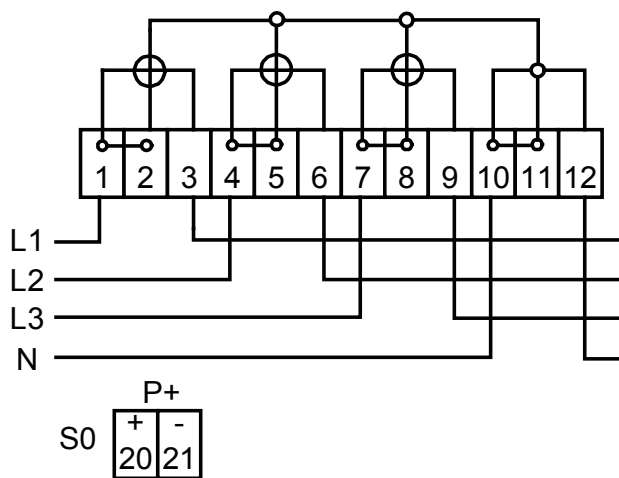## DATA SHEET

Installation
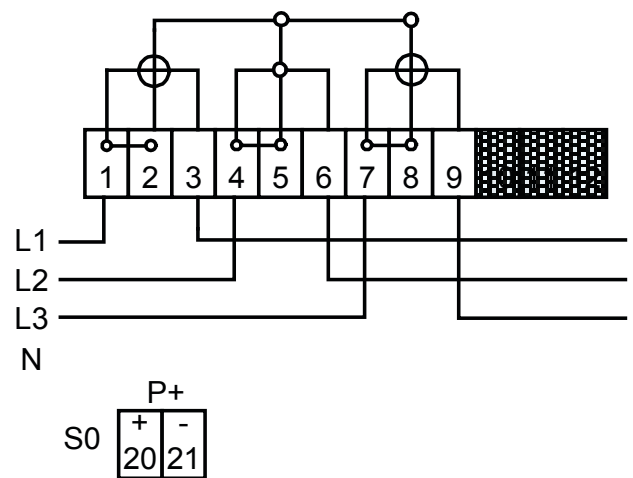
Connection diagram

Connection diagram appears from the front of the meter.

3-phase, 4-wire   **3-phase, 3-wire (Aron)**

Safety and installation guidelines

The meter shall only to be used for measuring electrical energy and shall operate within the specified values only.

The meter must be switched off when working on it. It can be highly dangerous to touch connected meter parts.

Current local standards, guidelines, regulations and instructions must be observed. Only authorized personnel are permitted to install electricity meters.

Meters for direct connection must be protected against short circuit by a backup fuse in accordance with the maximum current stated on the meter.

The relevant backup fuse must therefore be removed and kept in a place where it cannot be inserted in the meter by unauthorized personnel.

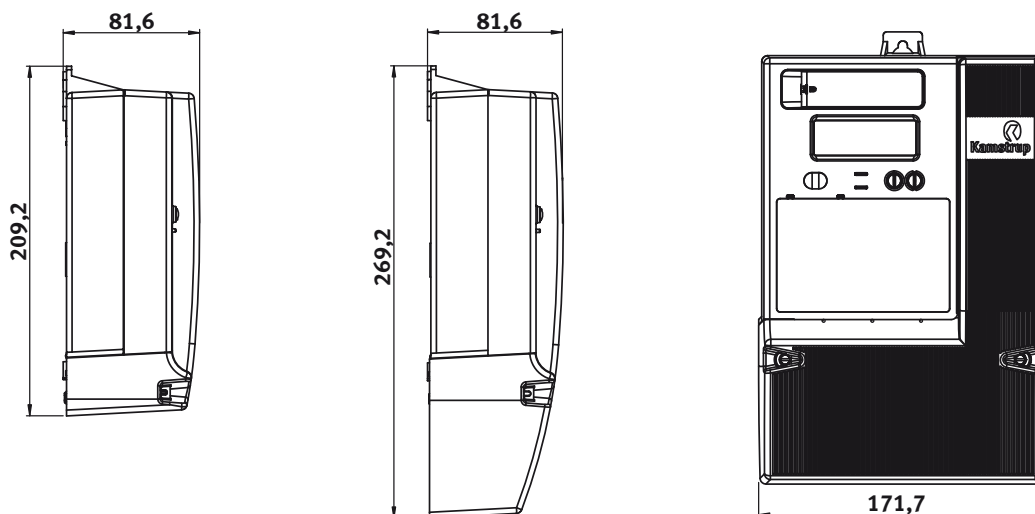The meter constant LED flashes proportionally to the consumed active energy.

Only authorized personnel must break the utility sealing.

Warning!   The breaker function in the meter must **not** be used as safety function.
When the meter's breaker function is used, the meter is still carrying a voltage.

Kamstrup OMNIPOWER Three-phase meter
DATA SHEET

Dimensions

Accessories

Modules

S0 supply module	68 50 001
Data/pulse module, relay output	68 50 075
Tariff control, 4 tariffs, 230V input, current loop	68 50 076
GSM8i	68 50 053
5A load control module	68 50 058
M-Bus module	68 50 068
5A load control module	68 50 069
RS485	68 50 072
Tariff control, 4 tariffs, 230V input	68 50 078

Software

Configuration SW, METERTOOL OMNIPOWER	68 99 580

Various

Short terminal cover 0 mm	59 60 370
Long terminal cover 60 mm	59 60 316
Optical reading head with USB plug	66 99 099
Optical reading head with 9-pole D-sub connector	66 99 102
METERTOOL kit	68 30 017
Pins, 50 pcs.	68 50 102
Cable sockets, 50 pcs.	68 50 103