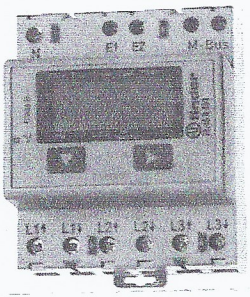

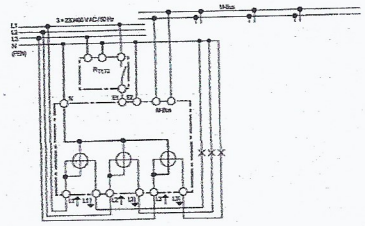

Fig. 2

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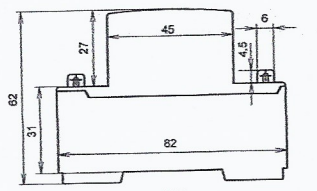
Fig. 1



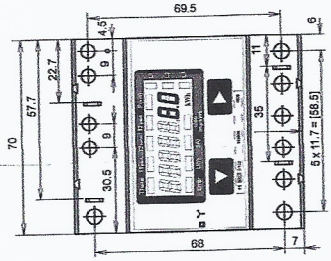
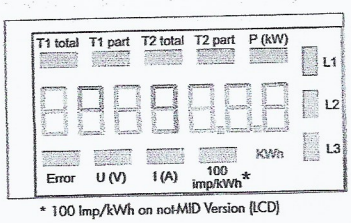
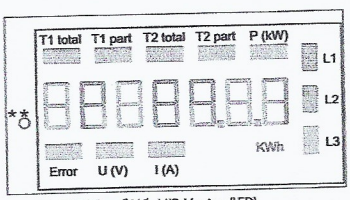


Fig. 3



* 100 Imp/kWh on not-MID Version (LCD)



** 1'000 Imp/kWh MID Version (LED)

Fig. 4

Telegram structure

0x68	0x92	0x92	0x68	0x08	PAdr	0x72	ID	0x2e	0x19	DEV
02	ACC	STAT	0	0	0x8c	0x10	VIF	EtoT1	0x8c	0x11
VIF	EpaT1	0x8c	0x20	VIF	EtoT2	0x8c	0x21	VIF	EpaT2	0x02
0xFD	0xC9	0xFF	0x01	Vph1	0x02	0xFD	VIFE	0xFF	0x01	Iph1
0x02	VIF	0xff	0x01	Pph1	0x82	0x40	VIF	0xFF	0x01	Prph1
0x02	0xFD	0xC9	0xFF	0x02	Vph2	0x02	0xFD	VIFE	0xFF	0x02
Iph2	0x02	VIF	0xFF	0x02	Pph2	0x82	0x40	VIF	0xFF	0x02
Prph2	0x02	0xFD	0xC9	0xFF	0x03	Vph3	0x02	0xFD	VIFE	0xFF
0x03	Iph3	0x02	VIF	0xFF	0x03	Pph3	0x82	0x40	VIF	0xFF
0x03	Prph3	0x02	0xFF	0x68	RappW	0x02	VIF	0xFF	0x00	Ptot
0x82	0x40	VIF	0xFF	0x00	Prtot	0x01	0xFF	0x13	Cur_Tar	Csum
0x16										

Variable at 1, 2 or 4 bytes

Byte	Content	Type	Description	Manufacturer-specific
23 – 26	EtoT1 = x	4 b. BCD	T1 total	
30 – 33	EpaT1 = x	4 b. BCD	T1 partial	
37 – 40	EtoT2 = x	4 b. BCD	T2 total	
44 – 47	EpaT2 = x	4 b. BCD	T2 partial	
53 – 54	Vph1 = x	2b. Integer	Voltage phase 1	
60 – 61	Iph1 = x	2b. Integer	Current phase 1	
66 – 67	Pph1 = x	2b. Integer	Power phase 1	
73 – 74	Prph1 = x	2b. Integer	Reactive power phase 1	
80 – 81	Vph2 = x	2b. Integer	Voltage phase 2	
87 – 88	Iph2 = x	2b. Integer	Current phase 2	
93 – 94	Pph2 = x	2b. Integer	Power phase 2	
100 – 101	Prph2 = x	2b. Integer	Reactive Power phase 2	
107 – 108	Vph3 = x	2b. Integer	Voltage phase 3	
114 – 115	Iph3 = x	2b. Integer	Current phase 3	
120 – 121	Pph3 = x	2b. Integer	Power phase 3	
127 – 128	Prph3 = x	2b. Integer	Reactive power phase 3	
132 – 133	RappW = x	2b. Integer	Transformer ratio	x (=0 for 7E46)
138 – 139	Ptot = x	2b. Integer	Power total	
145 – 146	Prtot = x	2b. Integer	Reaction power total	
150	Cur_Tar	1b. Integer	Current tariff	x (=0 for 7E56)

	Unit with multiplier	7E46
I	(Current)	0.1 [A]
U	(Voltage)	1 [V]
P_{active}	(Power)	0.01 [kW]
$P_{reactive}$	(Reactive Power)	0.01 [kVAR]
E	(Consumption)	0.01 [kWh]

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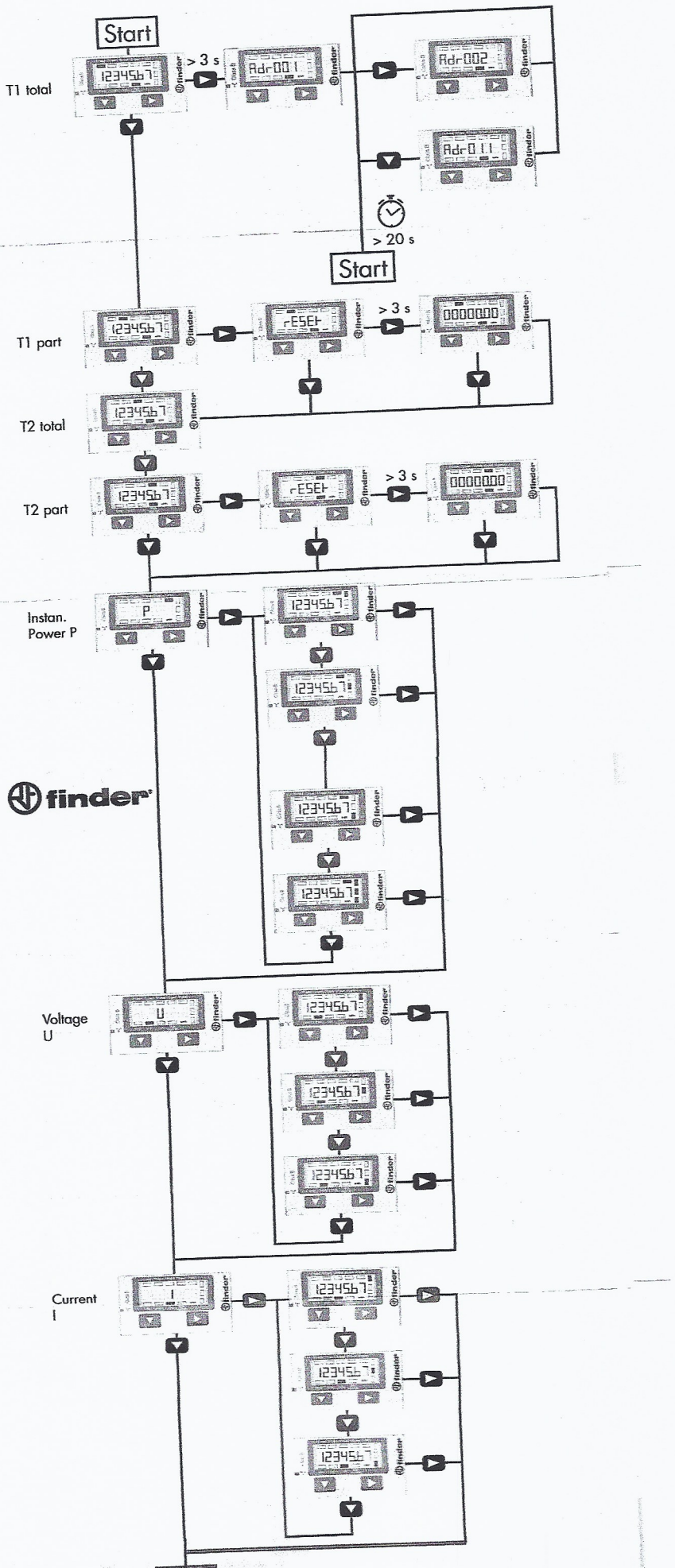
Menu to display the value on LCD



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English

Assembly and operating instructions Type 7E.46

65 A Three-phase active power energy meter with M-Bus interface, Fig. 1

Description

Energy meter with M-Bus interface enables the reading of all relevant data like meter reading, electricity, voltage and power (active and *reactive).

Technical data

Connection diagram	▪ Fig. 2
Dimensions	▪ Fig. 3
Accuracy class	▪ B, according to EN 50470-3, Cl. 1 according to IEC 62053-21
Reference, Maximum, initial current	▪ Iref = 10 A, Imax = 65 A, Ist = 40 mA
operating voltage	▪ 3 × 230/400 V AC, 50 Hz Tolerance –20%/+15%
Counting range	▪ 00000,00...999999,9 kWh
Ouptut	▪ Integrated M-Bus interface (see page with telegram structure)
Connections Main circuit	▪ Conductor cross-section 1,5...16 mm², Screwdriver Pozi No. 1, slotted No. 2, breakaway torque 1,5...2 Nm
Connections Control circuit	▪ Conductor cross-section max. 2,5 mm², Screwdriver Pozi No. 0, slotted No. 2, breakaway torque 0,8 Nm
Operating temperature	▪ –25... +55 °C (noncondensing according standard EN 50470)

Indicating elements (Fig. 4)

T1total	▪ Shows total consumption Tariff 1
T1part.	▪ Shows partial consumption for Tariff 1, this value is resettable
T2total	▪ Shows total consumption Tariff 2
T2part.	▪ Shows partial consumption for Tariff 2, this value is resettable
P(kW)	▪ Shows the instantaneous power per phase or all phases
U(V)	▪ Shows the voltage per phase
I(A)	▪ Shows the current per phase
100 Imp/kWh (Product without MID)	▪ Pulsates according to drawn power (LCD bar)
1'000 Imp/kWh (Product with MID)	▪ Pulsates according to drawn power (LED)
kWh	▪ Shows the unit kWh when the consumption is displayed
L1 / L2 / L3	▪ For P-, U-, I- or Error display, the corresponding phase is displayed
Error	▪ In case of missing phase or wrong current direction. The corresponding phase is additionally displayed.

Notes before connecting

1. Do not connect L1, L2 or L3 to N
2. In order to avoid moisture in the meter due to condensate build-up, acclimatise the meter at room temperature for about half an hour before connecting.
3. N must always be connected.

Attention!
These devices must only be installed by a professional electrician, otherwise there is the risk of fire or the risk of an electric shock.

Operation of the LCD display

See page with LCD menu navigation

Installation instructions

The three-phase energy meter can be attached to a 35 mm rail (EN 60715, TH35).
The meter can be used only in installation cabinets.

Declaration of Conformity CE

Finder SpA declares at its own responsibility:
The following energy meters are in compliance:

- 7E.46.8.400.0022
- 7E.46.8.400.0032

The following energy meters are approved for energy billing:

- 7E.46.8.400.0032

which this certificate refer to, are in accordance with the following standards:

- EN 50470 parts 1 and 3 (electronic meter), of October 2006
- Directive 2004/22/EG of the European parliament and of the council regarding measuring instruments
  - Annex I, essential requirements
  - Annex MI-003, active electrical energy meters

EC - Declaration of Conformity: 2011
Finder SPA
Conformity Assessment Body:
Zertifizierungsstelle METAS-Cert, Nr. 1259
CH-3003 Bern-Wabern
Signed: Marcello Grande, Technical Manager

* The reactive power (idle power) can only be read on the M-Bus interface.

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English

Technical data M-Bus

Bus system	M-Bus
Bus length	According to M-Bus specification
Transmission rates	300, 2400, 9600 Bd. The transmission rate is automatically detected.
Response time (System response)	Write: up to 60 ms Read: up to 60 ms

Data transfer

- When reading out the values, all values are transferred in a telegram.
- It supports the following telegrams:

• Initialisation	SND_NKE	Response: ACK
• Reading meter	REQ_UD2	Response: RSP_UD
• Changing primary address	SND_UD	Response: ACK
• Reset T_{prg}	SND_UD	Response: ACK

(Further information you will find on the website www.finder.de.)

- The device does not respond to unknown queries.
- The transmission rate is automatically detected.
- The device has a voltage monitor. In the case of a power failure, all the registers in the EEPROM are saved.

Changing the M-Bus primary address

- In order to change the M-Bus primary address, hold down ▶.
- In the following menu, ▼ increases the address by 10, ▶ increases the primary address by 1.
- When the desired address is set, wait until the main display appears again.

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