



**DIRECT CONNECTION
THREE PHASE
ELECTRICITY METER
MID CERTIFICATED
TCIDL - MID**

INSTRUCTIONS MANUAL

INDEX:

1. Introduction3
 2. Working.....3
 2.1. Measurement3
 2.2. Display3
 2.3. Keys.....3
 2.4. Pulse output3
 3.Front panel description4
 4. Display4
 4.1. LCD display contents4
 4.2. Parameters shown on the LCD display4
 5. Wiring diagram6
 6. Dimensions6
 7. Installation6
 8. Technical features7



This equipment meets the requirements of the European directive for safety and EMC. It's the responsibility of the installer ensure the continuity of the implementation of these directives in the rest of the installation.

INS-TCIDL – MID ENGLISH V.02 2/8 20.03.18

1. Introduction

The TCIDL – MID is a three phases four wire electricity meter with infrared and RS485 communications. This meter complies with the standard EN 50470 – 1/3 for accuracy class B active energy and class 2 for reactive energy. Its size is four din rail modules.

It is intended for Mechanical environment M1 and Electromagnetic environment E2 in accordance with the 2014/32/EU directive.

This meter is also a network analyser, measuring other parameters of a three phase line. The measured values can be shown on display or transmitted through the communication ports.

2. Working

2.1. Measurement

The TCIDL – MID measures the active energy per phase and total, positive and negative, and have four tariff. It has also a resettable counter.

Maximum demand calculation.

Possibility of holiday and weekend tariff.

It measures also the rest of the parameters of a three phase line, voltage, current, active reactive and apparent power, power factor, frequency; one of them are available on display and communications and other only through communications.

IR communication complies with EN 62056 protocol, and RS485 communication uses the MODBUS protocol.

2.2. Display

The TCIDL – MID shows on display the total energy, tariff energy, the voltage of the three phases, the current of the three phases, the active and apparent power total and per phase, the power factor per phase and global, the frequency, the output pulse value, the configuration, the resettable meter. There is a table with all the parameters in this manual.

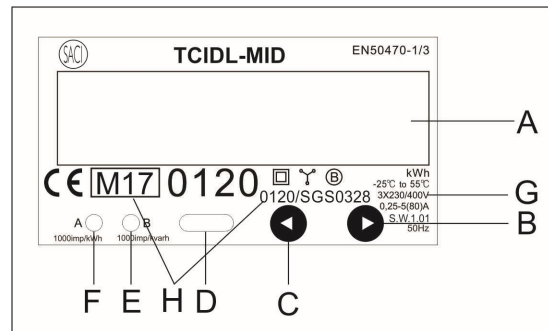
2.3. Keys

There are two keys, all the available parameters on display can be displayed by pressing the buttons.

2.4. Pulse output

The pulse output value can be set by communication between 1000 / 100 /10 / 1 kWh

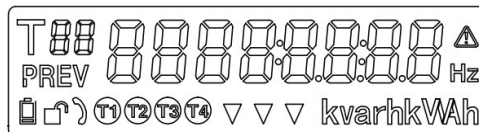
3.- Front panel description



- A Display LCD.
- B Forward key.
- C Backward key.
- D IR port.
- E Reactive energy verification led diode.
- F Active energy verification led Diode.
- G Ratings
- H MID references

4. Display

4.1. Contents of the LCD display.



4.2. Parameters show non the LCD display

- (T1) (T2) (T3) (T4) Present tariff rate
- T88 Indication of parameter shown.
- Hz Frequency magnitude
- kvarhkVAh Rest of magnitudes

Page	Content	Unit	Symbol	Format
1	Date			XX-XX-XX
2	Time			XX:XX:XX
3	Total active energy	kWh		6+2 000000.00
4	T1 Active energy tariff	kWh	T01	6+2 000000.00
5	T2 Active energy tariff	kWh	T02	6+2 000000.00
6	T3 Active energy tariff	kWh	T03	6+2 000000.00
7	T4 Active energy tariff	kWh	T04	6+2 000000.00
8	Total reactive energy	kVarh		6+2 000000.00
9	T1 Reactive energy tariff	kvarh	T11	6+2 000000.00
10	T2 Reactive energy tariff	kvarh	T12	6+2 000000.00
11	T3 Reactive energy tariff	kvarh	T13	6+2 000000.00
12	T4 Reactive energy tariff	kvarh	T14	6+2 000000.00
13	L1 Voltage	V	L1	3+1 000.0
14	L2 Voltage	V	L2	3+1 000.0
15	L3 Voltage	V	L3	3+1 000.0
16	L1 Current	A	L1	4+2 0000.00
17	L2 Current	A	L2	4+2 0000.00
18	L3 Current	A	L3	4+2 0000.00
19	Total active power	kW		5+3 00000.000
20	L1 Active power	kW	L1	5+3 00000.000
21	L2 Active power	kW	L2	5+3 00000.000
22	L3 Active power	kW	L3	5+3 00000.000
23	Total apparent power	kVA		5+3 00000.000
24	L1 apparent power	kVA	L1	5+3 00000.000
25	L2 apparent power	kVA	L2	5+3 00000.000
26	L3 apparent power	kVA	L3	5+3 00000.000
27	Global cos ϕ			1+2 0.00
28	L1 cos ϕ		L1	1+2 0.00
29	L2 cos ϕ		L2	1+2 0.00
30	L3 cos ϕ		L3	1+2 0.00
31	Frequency	Hz		2+2 00.00
32	T1 Maximum demand	kW	T-1	6+2 000000.00
33	T2 Maximum demand	kW	T-2	6+2 000000.00
34	T3 Maximum demand	kW	T-3	6+2 000000.00
35	T4 Maximum demand	kW	T-4	6+2 000000.00
36	Resettable active energy counter	kWh		000000.00
37	Active status word			S 11 111
38	Display Scholl time		1-30s	Lcd-t 05
39	Pulse output value			SO 1000
40	Measuring mode			COdE 01
41	Serial number / IR address			12345678
42	MODBUS ID			Id 255
43	MODBUS baud rate			bd 9600
44	Software version			U 1.01

INS-TCIDL – MID ENGLISH V.02 5/8 20.03.18

Push down the clip under the bottom of the meter for a gear, see fig. 1 and fig.2;

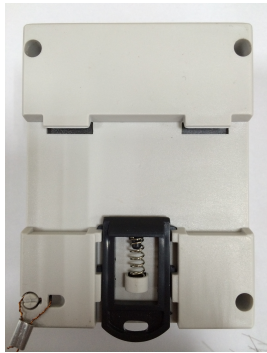


fig 1

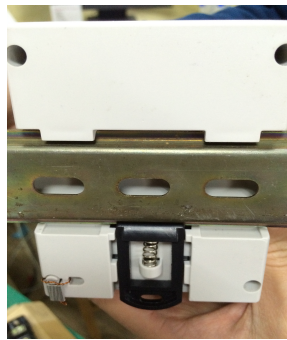


fig. 2

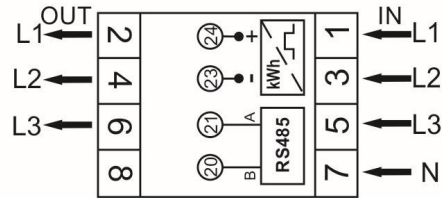
8.- Technical Features

Voltage:	3 x 230 /400 V
Measurement range	± 20 %
Current:	0,25 – 5 (80) A
Measurement range	from 0 to 100 % I _{max} .
Starting current	20 mA
Frequency	50 Hz
Burden	<10 VA, 2 W
Pulse output:	
Number of outputs:	1 for active energy. Type SO (DIN 43864) by Optocoupler.
Isolation	3 kV, 1 min.
Current	< 20 mA
Voltage	< 24 V C.C.
Pulse width	> 50 ms
Pulse value	programmable

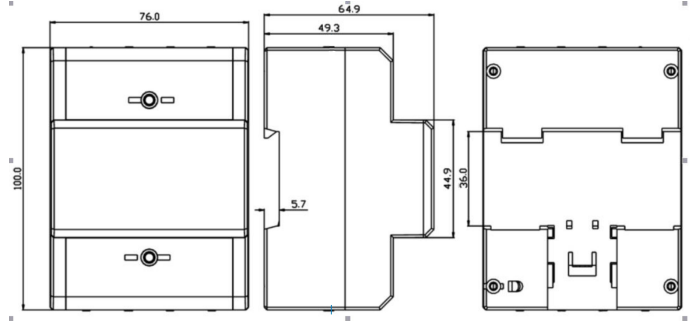
Generals:

Accuracy :	
Active energy	Class B EN50470 – 1
Reactive energy	Class 2 EN62053 – 23
Other parameters	Class 0,5
Verification constant	1000 Imp / kWh, 1000 Imp / kvarh
Temperature range	-25 – 55 °C
Relative humidity. Annual average	85%

5.- Wiring diagram



6.- Dimensions



Height 100 mm
Width 76 mm
Depth 65 mm

7. Installation

The meter must be installed and serviced only by qualified personnel.

During installation, if it comes across severe strike or falling, which causes obvious damage trace, don't install it or turn it on. Please contact us in time. Before leaving our factory, all the meters have been checked out and lead sealed, they can be installed directly.

Meters should be installed indoors or outdoors cabinet. The wall which is installed should be firm and fireproof, besides, no corrosive gas in the air.

Meters should be installed according to the wiring diagram on terminal box. When inserting, using copper wire or copper connector will be better.

INS-TCIDL – MID ENGLISH V.02 6/8 20.03.18

Case material	ABS, UL94 V0
Modular box. 4 modules	(70 mm)
Terminals	Sealable
Screw terminals	
Maximum wire section:	
Main terminals	25 mm ²
Pulse and communications	0,750 mm ²

