



ULEE INTERNATIONAL (H.K.) LIMITED
 13/F, Caijiang Mansion, 223 South Caihong Road, Ningbo, China

USER MANUAL

DTS541 Three-Phase Meter (Version 1.0)



DTS541 Three -Phase Meter User Manual

Modification

Reversion No	Description of change(s)	By Whom	DATE
v1.0	Draft	Meiling.zhang	2013.2.22



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1 Introduction

The manual is for the DTS541 three-phase meter. It used to guide the meter installation, use and maintenance of the Technical Reference.

What's in this manual?

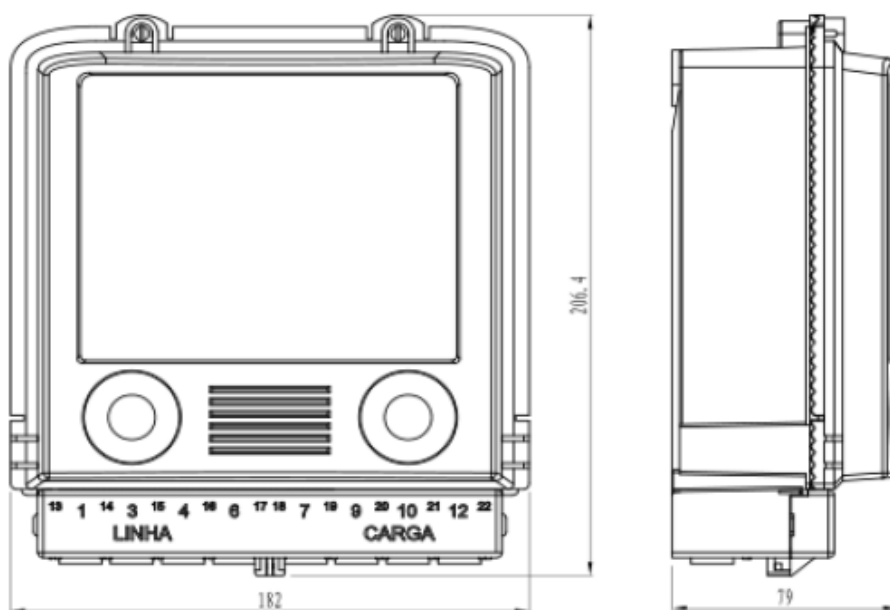
- ✚ Chapter 3~Chapter 4: Meter function section. Introduces the meter function. Describes the meter installation, connection, meter basic technical parameters, description of the basic meter functions description

2 Reference standards

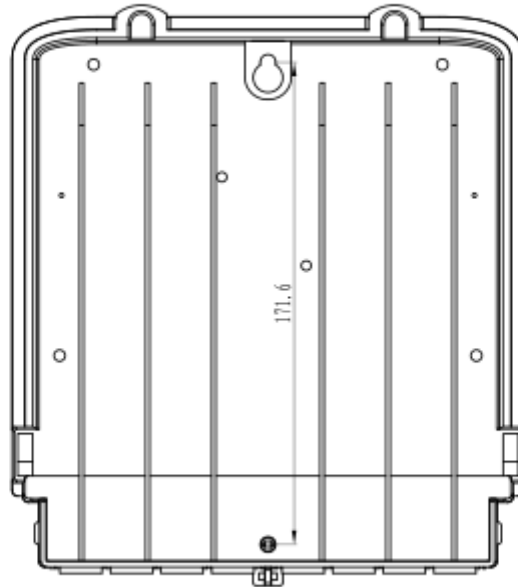
Standard	Description
ABNT NBR-14519	Electric power electronic meters (static) - Specification
ABNT NBR-14520	Electric power electronic meters (static) - Test Method
Inmetro Ordinance 431/2007	Metrological Technical Regulation for Electric Power Electronic Meters of 12/04/2007
	Essays For The Technical Assessment Of Model Electronic Electric Energy Meters
IEC62052-11	Electricity metering equipment (a.c.) – General requirements, tests and test conditions – Part 11: Metering equipment
IEC62053-21	Part 21: Static meters for active energy(classes 1 and 2)
IEC62053-23	Electricity metering equipment (a.c.) – Particular requirements –Part 23: Static meters for reactive energy (classes 2 and 3)

3 Installation connection and dimensions

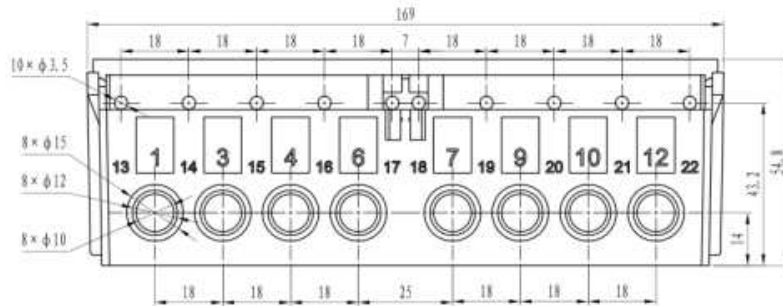
3.1 Front view, side view and dimensions



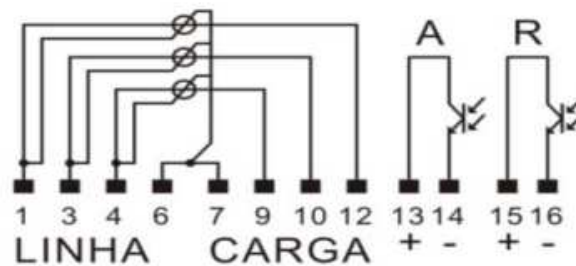
3.2 Mounting holes and dimensions



3.3 Terminal box dimensions



3.4 Connection





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4 Meter Function Introduction

4.1 Specification

Item	Sub-item	Parameter
Basic	Meter Type	Three Phase Four Wires Type
	Active Accuracy	Class 1.0 (IEC 62053-21)
	Reactive Energy	Class 2.0(IEC 62053-23)
	Rated voltage Un	120/230/240 V Voltage Range: 0.8Un~1.15Un
	Operating frequency	60Hz
	Measuring current (A)	10(60)A
	Starting current	0.004Ib
	Pulse constant	200 imp/kWh ;200 imp/kvarh
	Power consumption	Current circuit power consumption $\leq 0.5VA$ Voltage circuit power consumption $\leq 2W/10VA$
	Operating temperature range	-30° C ~ +70° C
	Storage temperature	-40° C ~ +85° C
Type Testing	IEC Standard	IEC 62053-21 IEC 62053-23 IEC 62052-11
Measurement	Active Energy	Active Energy $= + A1 + + A2 + + A3 + - A1 + - A2 + - A3 $
	Reactive Energy	Reactive Energy $= +Ri + +Rc $
LED&LCD Display	LED	1 Active pulse output 1 Reactive pulse output (LED pulse output blink at the rate of energy consumption, off when not.)
	Energy	6+2
	Display content	Total active Energy Total reactive energy
Communication	Local Comm. Port 1	Optical : 300bps~9600bps
	Local Comm. Protocol	IEC62056-21 C mode
Mechanical	Terminal Box	ANSI FORM 9A
	Enclosure protection	IP54
	Seal	1 Meter terminal cover seal 2 Meter cover seal
	Meter Case	Polycarbonate +10%GF
	Against mechanical stroke and shake	NBR 5162 / NBR 5295
	Dimensions(LxWxH)	182mmx79mmx206.4mm
	Weight	Approx. 1.2kg



4.2 Meter Function

4.2.1 Measurement

4.2.1.1 Energy Measurement

- 1) Measurement mode

Active Energy = |+ A1|+|+ A2|+|+ A3|+|- A1|+|- A2|+|- A3|

Reactive Energy = |+Ri|+|+Rc|

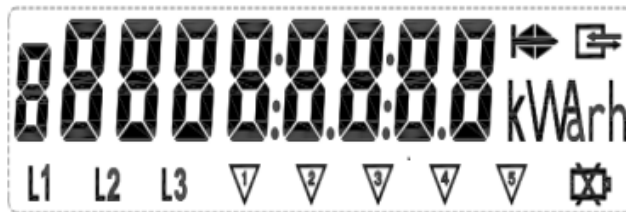
(The +Ri is 1st quadrant reactive, the +Rc is 2nd quadrant reactive)

- 2) Class index: active: class 1; reactive: class 2

4.2.2 Display

4.2.2.1 LCD display



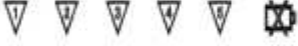

- 1) The LCD full-screen display as below:



- 2) LCD Symbol

LCD Symbol	Description
	Display: for data such as energy
	Sequence no. of the data displayed in the main displaying part
kWh	kWh, kvarh unit
L1	L1 on means meter working on the normal voltage range; L1 off means phase A loss L1 flick means phase A Energy is export
L2	L2 on means meter working on the normal voltage range; L2 off means phase B loss L2 flick means phase B Energy is export
L3	L3 on means meter working on the normal voltage range;



	<p>L3 off means phase C loss</p> <p>L3 flick means phase C Energy is export</p>
	Positive energy
	Negative energy
 	Status indicator (not used in this meter)

4.2.2.2 Display mode

- 1) normal display
- 2) power-off display: LCD displays nothing

4.2.2.3 Display time

- 1) Normal display time is fixed at about 6s;

4.2.2.4 Display content

- 1) Normal display contents

OBIS	Description	Unit
3	Total Rctive Energy	kWh
4	Total Reactive Eenergy	kvarh