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Acrel®
安科瑞电气

ADL系列导轨式安装电能表

ADL Series Guide Rail Electricity meters

(DDS/DDSF/DTS/DTSF/DTSD1352)

安装使用说明书V1.0

Installation and Operation Instruction V1.0

上海安科瑞电气股份有限公司
Shanghai Acrel Co., Ltd.

申　　明
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1 概述 General

DDS/DDSF1352、DTS/DTSF/DTSD1352（ADL）系列导轨式安装电能表是安科瑞电气集多年的电表设计经验，所推出的新一代微型电能表。

该电能表采用LCD显示，可进行时钟、费率时段等参数设置，并具有电能脉冲输出功能；可用RS485通讯接口与上位机实现数据交换，极大地方便了用电自动化管理。

该电能表具有体积小巧、精度高、可靠性好、安装方便等优点，性能指标符合国标GB/T17215、GB/T17883和电力行业标准DL/T614对电能表的各项技术要求。

DDS/DDSF1352、DTS/DTSF/DTSD1352（ADL）Series guide rail Electricity meters is a new generation miniature electricity meter developed by Acrel Electric, resulting from many years experience in designing Electricity meters.

LCD display and electricity pulse output function is installed in the power meter; Clock, rate period parameters can be set also. data swap with the superordination machine Via RS485 Communication interface greatly facilitating the power automated administration.

This power meter has advantages of smaller volume, high precision, good EMC, easily installing etc, meet the related technical requirements of electronic power meter in the GB/T 17215、GB/T 17883 and DL/T 614 standards.

2 产品规格 Product specification

产品型号 Type	精度等级 Accuracy class	额定电压 Rated voltage	电流规格 Current specification	脉冲常数 Pulse constant
DDS1352（ADL10）	1.0	220V	5(30)A	3200 imp/kW · h
DDSF1352（ADL100）			1.5(6)A	12800imp/kW · h
			5(20)A	3200 imp/kW · h
			10(40)A	1600 imp/kW · h
			20(80)A	800 imp/kW · h
DTS1352/ DTSF1352（ADL300）	1.0	3×220/380V	3×1.5(6)A	6400imp/kW · h
			3×5(20)A	1600imp/ kW · h
			3×10(40)A	800imp/ kW · h
			3×20(80)A	400imp/ kW · h
DTSD1352（ADL3000）	0.5	3×220/380V	3×1.5(6)A	6400imp/kW · h
			3×5(20)A	1600imp/ kW · h
			3×10(40)A	800imp/ kW · h
			3×20(80)A	400imp/ kW · h

3 技术参数 Technical parameter

项目 Item		技术指标 Technical Value			
		DDS1352（ADL10）	DDSF1352（ADL100）	DTS/DTSF1352（ADL300）	DTSD1352（ADL3000）
精度等级 Accuracy class		有功：1级 Active：1 Class			有功:0.5级 Active：0.5 Class 无功：2级 Reactive：2 Class
额定电压 Un Rated voltage Un		220V		3×220/380V	
电流规格 Current specification		5(30)A	1.5(6)A、5(20)A、10(40)A、20(80)A		
工作电压 Operational voltage		正常工作电压范围：0.9～1.1Un，Normal Operational voltage range：0.9~1.1Un 极限工作电压范围：0.7～1.2Un，Limit Operational voltage range：0.7~1.2Un			
参比频率 Reference frequency		50Hz或60Hz 50Hz or 60Hz			
起动电流 Starting current	直接接入 Direct connecting	0.004Ib			
	经CT接入 Via CT connecting	0.002In			
功耗 Power consumption	电压线路 Voltage line	≤5VA/相 ≤5VA/phase			
	电流线路 Current line	<4VA/相 <4VA/phase			
电能脉冲输出 Electricity pulse output		脉冲宽度：80ms±20ms Pulse width：80ms±20ms 光耦隔离，集电极开路输出 Photo isolator，collector open output			
数字通信 Digital communication		无	RS485，MODBUS-RTU（其他协议可定制） RS485，MODBUS-RTU（customed other protocol）		
时钟误差 Clock error			≤0.5s/d		
温度范围 Temperature range		正常工作温度：-10℃～+45℃，Normal working temperature：-10℃~+45℃ 极限工作温度：-20℃～+55℃，Limit working temperature：-20℃~+55℃ 存储温度：-40℃～+70℃，Storage temperature：-40℃~+70℃			
相对湿度 Relative humidity		≤95%（无凝露） ≤95% (No condensation)			

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项目 Item	技术指标 Technical Value			
	DDS1352 (ADL10)	DDSF1352 (ADL100)	DTS/DTSF1352 (ADL300)	DTSD1352 (ADL3000)
外形尺寸 (长×宽×高) Outline (L×W×)	18×91×64 (mm)	76×91×74 (mm)	126×91×74 (mm)	
平均无故障工作时间 (h) Mean time between failures (h)	⩾50000			

4 安装与接线 *Installing and wiring*

4.1安装外形图及接线图

4.1 Installing outline drawing and Wiring diagram

4.1.1 外形尺寸 (单位:mm)

4.1.1 Outline dimension (unit: mm)

(1) DDS1352(ADL10)

正视图
Front view

侧视图
Side view

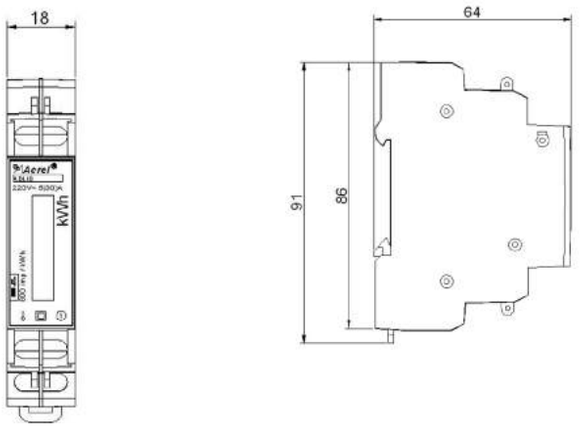


图1 DDS1352(ADL10)外形图
Figure 1 DDS1352(ADL10) outline drawing

(2) DDSF1352(ADL100)

正视图
Front view

侧视图
Side view

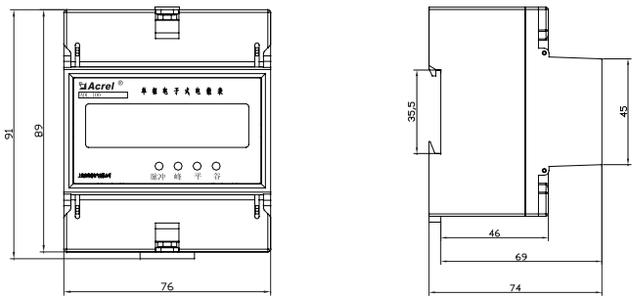


图2 DDSF1352(ADL100)外形图
Figure 2 DDSF1352(ADL100) outline drawing

(3) DTS1352/DTSF1352(ADL300)

正视图
Front view

侧视图
Side view

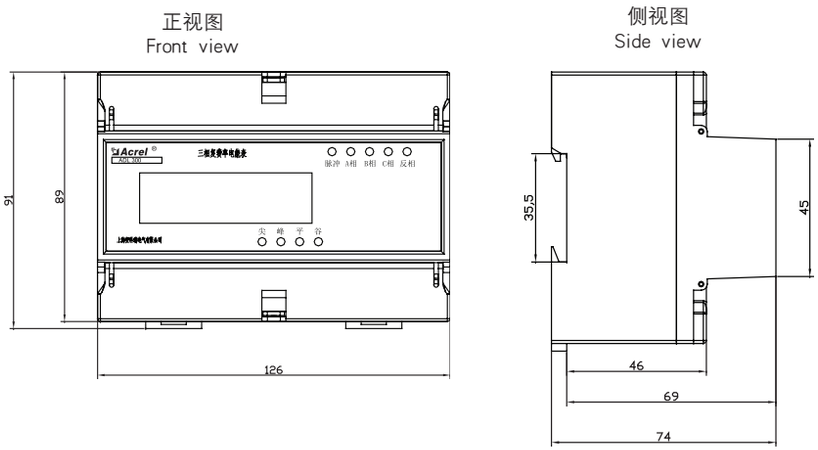


图3 DTS1352/DTSF1352(ADL300)外形图
Figure 3 DTS1352/DTSF1352(ADL300)outline drawing

(4) DTSD1352(ADL3000)

正视图
Front view

侧视图
Side view

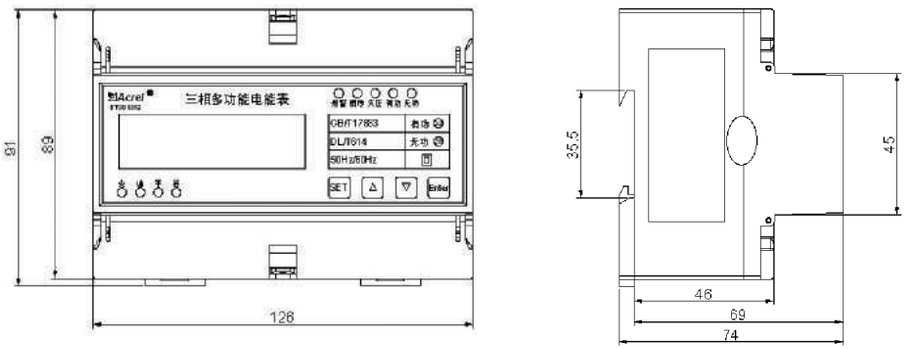


图4 DTSD1352外形图
Figure 4 DTSD1352 outline drawing

4.1.2 安装图

该系列导轨式安装电能表采用35mm标准导轨安装方式，如下图5

4.1.2 Installation diagram

This Series guide rail power meters adopt 35mm standard guide rail installing mode,Shown as figure 5

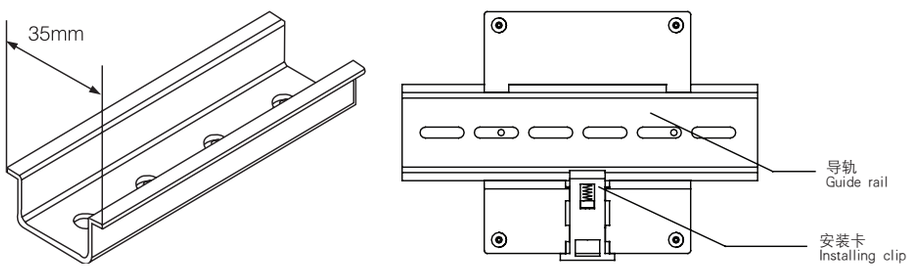


图5 安装图
Figure5 installation diagram

4.1.3 接线图

该系列导轨式安装电能表支持直接接入和经电流互感器CT接入两种接线方式。

4.1.3 Wiring diagram

This Series guide rail power meters support two connection modes of direct connecting or connection via Current transformer CT.

(1) DDS1352(ADL10)

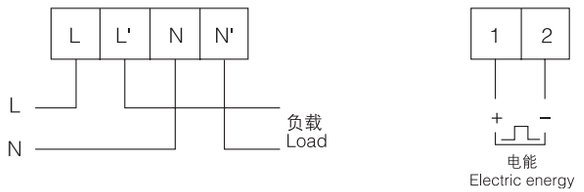


图6 直接接入
Figure6 Direct connecting

(2) DDSF1352(ADL100)

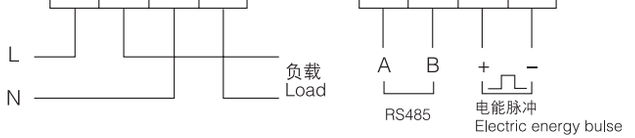


图7 直接接入
Figure7 Direct connecting

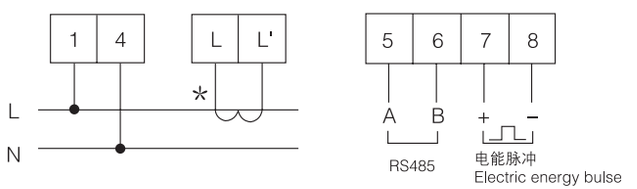


图8 经CT接入
Figure 8 Via CT connecting

(3) DTS/DTSF1352(ADL300)

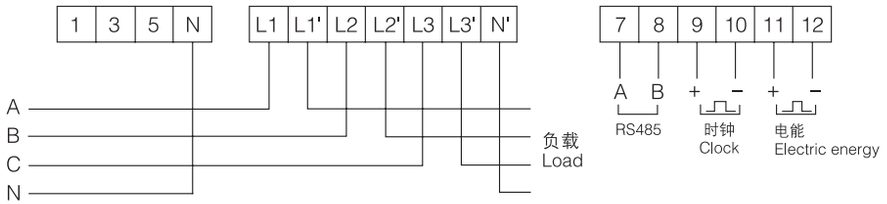


图9 三相四线直接接入

Figure 9 Three phase four wire direct connecting

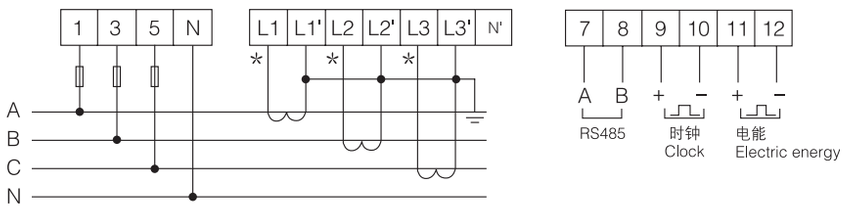


图10 三相四线经CT接入

Figure10 Three phase four wire Via CT connecting

(4) DTSD1352(ADL3000)

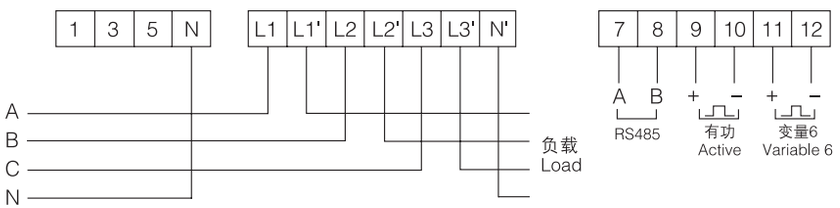


图11 三相四线直接接入

Figure 11 Three phase four wire direct connecting

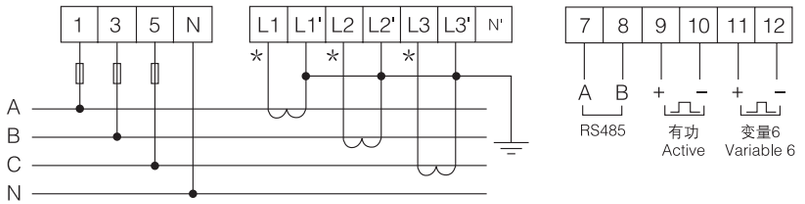


图12 三相四线经CT接入

Figure12 Three phase four wire Via CT connecting

注：实际接线时请以仪表侧接线图为准，其中，ADL3000的接线图中变量6表示无功脉冲和时钟脉冲的可选项，（默认为时钟脉冲输出）

Note：Actual connection take the meter side Wiring diagram as standard. Variable 6 of The Wiring diagram of ADL3000 express optional of no power pulse and clock pulses, (The default is clock pulse output)

4.2 安装注意事项及方法

4.2 Installing method and notice

4.2.1 电能表应装在室内通风干燥的地方，采用35mm标准导轨方式安装。

4.2.1 The electric energy meter should install in indoor, with good dry and ventilation conditon, adopt 35mm standard guide rail

4.2.2 安装接线时应按照电能表侧面的接线图进行接线，最好用铜接线头接入。对于直接接入式电能表接线时应注意进线和出线方向，并将螺钉拧紧，避免因接触不良而引起电能表工作不正常；经电流互感器接入式的电能表接线时应注意电流互感器次级的极性。

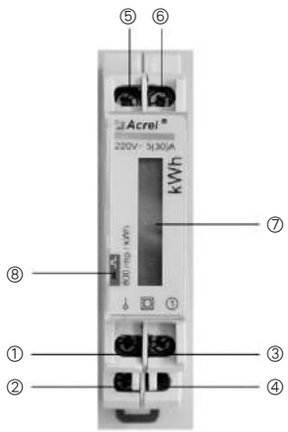
4.2.2 Installing connection according to the wiring diagram on the electric energy meter side. copper connector is a good choice. For direct connecting mode, pay attention to the direction of inlet and outlet, tightening screws to prevent electric energy meter work abnormal of bad contact; When connecting electric energy meter via current transformer, pay attention to the polarity of current transformer secondary.

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5 使用说明 Application description

5.1 面板格式

5.1.1 DDS1352(ADL10)



① L相线进线
② N中性线进线
③ L′ 相线出线
④ N′ 中性线出线
⑤ 电能脉冲输出EP+
⑥ 电能脉冲输出EP−
⑦ 液晶显示LCD
⑧ 红色脉冲指示灯

5.1 Faceplate format

5.1.1 DDS1352(ADL10)

① L−phase into−line
② N−neutral line into−line
③ L′ −phase outlet
④ N′ −neutral line outlet
⑤ Electricity Pulse Output EP+
⑥ Electricity Pulse Output EP−
⑦ LCD display
⑧ Red pulse indicator light

图13 单相DDS1352(ADL10)面板格式及说明
Figure 13 Single phase DDS1352(ADL10)faceplate format and description

5.1.2 DDSF1352(ADL100)

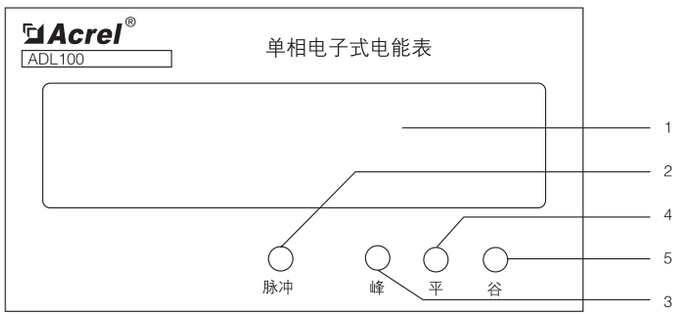


图14 单相DDSF1352(ADL100)面板格式
Figure 14 Single phase DDSF1352(ADL100)Faceplate format

面板说明如下表：Faceplate description as below table：

编号 No	名称 Name	状态示例 Status	功能说明 Function
1	LCD		液晶显示 LCD display
2	脉冲 Pulse	指示灯点亮 Indicator lights	电能脉冲指示 Electricity Pulse indicate
3	峰 Peak	指示灯点亮 Indicator lights	当前费率为峰费率 Current rate is peak rate
4	平 Flat	指示灯点亮 Indicator lights	当前费率为平费率 Current rate is flat rate
5	谷 Valley	指示灯点亮 Indicator lights	当前费率为谷费率 Current rate as valley rate

5.1.3 DTS/DTSF1352(ADL300)

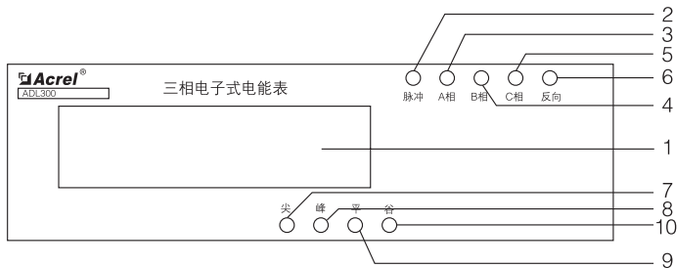


图15 DTS/DTSF1352(ADL300)面板格式
Figure 15 DTS/DTSF1352(ADL300)Faceplate format

面板说明如下表：Faceplate description as below table：

编号 No	名称 Name	状态示例 Status	功能说明 Function
1	LCD		液晶显示 LCD display
2	脉冲 Pulse	指示灯点亮 Indicator lights	电能脉冲指示 Electricity Pulse indicate
3	A相 A phase	指示灯点亮 Indicator lights	A相有电指示 phase A live indication
4	B相 B phase	指示灯点亮 Indicator lights	B相有电指示 phase B live indication
5	C相 C phase	指示灯点亮 Indicator lights	C相有电指示 phase C live indication

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编号 No	名称 Name	状态示例 Status	功能说明 Function
6	反向 Reversing	指示灯点亮 Indicator lights	功率反向指示 Reversing indication
7	尖 Spike	指示灯点亮 Indicator lights	当前费率为尖费率 Current rate is spike rate
8	峰 Peak	指示灯点亮 Indicator lights	当前费率为峰费率 Current rate is peak rate
9	平 Flat	指示灯点亮 Indicator lights	当前费率为平费率 Current rate is flat rate
10	谷 Valley	指示灯点亮 Indicator lights	当前费率为谷费率 Current rate is valley rate

5.1.4 DTSD1352(ADL3000)

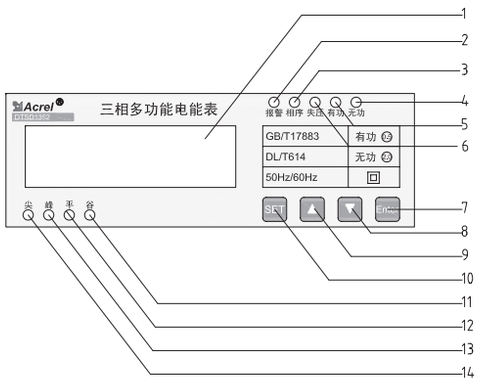


图16 DTSD1352(ADL3000)面板格式
Figure 16 DTSD1352(ADL3000)Faceplate format

面板说明如下表：Faceplate description as below table：

编号 No	名称 Name	状态示例 Status	功能说明 Function
1	LCD		液晶显示 LCD display
2	报警 Alarm	指示灯点亮 Indicator lights	电表异常指示 Abnormal meter instructions
3	相序 Phase sequence	指示灯点亮 Indicator lights	相序错误指示 Phase sequence error indication

面板说明如下表：Faceplate description as below table：

编号 No	名称 Name	状态示例 Status	功能说明 Function
4	无功 Reactive	指示灯点亮 Indicator lights	无功电能脉冲指示 Reactive energy pulse indication
5	有功 Active	指示灯点亮 Indicator lights	有功电能脉冲指示 Active energy pulse indication
6	失压 Pressure loss	指示灯点亮 Indicator lights	失压状态指示 Loss of pressure status indication
7	Enter键 Enter Button		确认按键 Confirm button
8	向下按键 Down button		显示下翻按键 Display the Down button
9	向上按键 Up button		显示上翻按键 Display the Up button
10	SET键 SET button		设置按键 Set button
11	谷 Valley	指示灯点亮 Indicator lights	当前费率为谷费率 Current rate is valley rate
12	平 Flat	指示灯点亮 Indicator lights	当前费率为平费率 Current rate is flat rate
13	峰 Peak	指示灯点亮 Indicator lights	当前费率为峰费率 Current rate is peak rate
14	尖 Spike	指示灯点亮 Indicator lights	当前费率为尖费率 Current rate is spike rate

5.2 功能说明

计量

- DDS1352(ADL10)可实现单相有功电能计量功能；
- DDSF1352(ADL100)可进行单相有功正、反向电能的计量，并具有功率方向指示功能；电能量按总、峰、平、谷分别累计、存储；

5.2 Function description

Metering

- DDS1352(ADL10)can achieve measurement function of Single—phase active electric energy
- DDSF1352(ADL100)can achieve measurement function of positive，reversing of Single—phase active electric energy，It also has the function of power direction indication；Electric energy is accumulated and stored according to Total，peak，flat，valley power respectively；

● DTS1352（ADL300E）可实现三相有功电能的正、反向计量功能，且具有功率方向指示功能；

● DTSF1352(ADL300EF)可进行三相有功正、反向电能的计量，并具有功率方向指示功能；电能按总、尖、峰、平、谷分别累计、存储；

● DTSD1352(ADL3000)可进行正、反向有功电能，输入、输出无功电能的计量，同时可测量A、B、C三相电压，三相电流，各相和总有功功率、无功功率、视在功率、功率因数及电网频率，并具有最大需量记录功能，电能按有、无功及正、反向总、尖、峰、平、谷分别累计、存储；

注：除DDS1352(ADL10)和DTS1352(ADL300E)外，其余型号具有电能数据冻结功能(默认冻结时间为每月末24时),电表内可存储3个月的冻结数据；所有存储数据断电后不丢失，并能保持10年以上。

时钟及时段费率(DDSF/DTSF/DTSD1352)

● 时钟误差在0.5s/天以内，具有日历、计时和闰年自动切换功能

● DDSF1352(ADL100)可编程设置峰、平、谷3种费率，日时段可设8个时段；DTSF1352(ADL300EF)可编程设置尖、峰、平、谷4种费率，日时段可设8个时段；DTSD1352(ADL3000)可编程设置一年二个时区，二个时段表，8个日时段数及尖、峰、平、谷4种费率，时段最小间隔为1分钟。

● DTS1352 (ADL300E) can achieve measurement function of positive, reversing of three—phase active electric energy, It also has the function of power direction indication

● DTSF1352(ADL300EF)can achieve measurement function of positive, reversing of three—phase active electric energy, and with power direction indication function;Electric energy is accumulated and stored according to Total, peak, flat, valley power respectively;

● DTSD1352 (ADL3000) can measure positive, reversing Active electric energy, Import, output reactive electric energy,At the same time it can measure A, B, C three—phase voltage, three—phase current, each phase, total active power, reactive power, apparent power, power factor,power frequency, and maximum demand record. Electric energy is accumulated and stored according to Total, peak, flat, valley power respectively;

NOTE: Except DDS1352 (ADL10) and DTS1352 (ADL300E), Other models have electric energy data freezing function ;Three months frozen data is stored in meter; All saved data can hold more than 10 years after power off,.

Clock and period of time rate (DDSF/DTSF/DTSD1352)

● clock error is within 0.5s / day, with automatic switching function for calendar, clocking and leap year

● DDSF1352(ADL100)can be programmed to set three rate of peak, flat, valley, day period of time can set eight periods; DTSF1352(ADL300EF) can be programmed to set four rate of spike, peak, flat, valley, day period of time can set eight periods; DTSD1352(ADL3000) can program setting two time zones of one year, two time table, eight periods of one day ,our rate of spike, peak, flat, valley,

显示

● 7位宽温型LCD显示

● DDS1352（ADL10）、DTS1352（ADL300E）只显示有功总电能

● DDSF1352(ADL100)、DTSF1352(ADL300EF)可实现数据轮显，轮显时间为4s

● DTSD1352(ADL3000)具有数据轮显和数据键显功能，可通过面板上的按键查询所有显示项，若8秒内无按键按下，自动切换轮显状态，轮显时间为4s

● 电能脉冲和当前费率时段分别用红绿两色LED灯指示

输出

● 有、无功电能脉冲输出，用于校表、远程电能采集

● 无源光电隔离型输出端口，脉冲宽度：80ms±20ms

通信

● 通信接口：RS485

● 通信协议：MODBUS—RTU（其他可定制）

● 通信速率：9600bps（默认）、4800bps、2400bps、1200bps可选

编程功能

● 电表地址设置

● 时间日期设置（复费率电能表）

● 费率时段设置（复费率电能表）

● 电量底数清零设置

Display

● 7 bits wide—temperature type LCD display

● DDS1352 (ADL10) 、DTS1352 (ADL300E) only can show the total active power

● DDSF1352(ADL100)、DTSF1352(ADL300EF) Can display cycling data, one cycle is 4s

● DTSD1352(ADL3000)has data cycling diplay and data button display function ,can inquiry all display items by panel buttons, if no button is pressed within 8 seconds,switch automatically to cycling display state,one cycle is 4s

● Electricity Pulse and Current rate period are indicated by red and green LED

Output

● Function of active electric energy pulse output is used for calibration, collecting electric energy.

● Passive photo—electro isolating type output port, pulse width: 80ms±20ms

Communication

● Communication interface: RS485

● Communication protocol: MODBUS—RTU (other protocol can be customed)

● Communication rate: 9600bps (default),4800bps, 2400bps, 1200bps optional

Programming function

● Meter address setting

● Time date setting

● Rate period of time setting

● KWH base number clearing setting

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抄表和电能管理功能

● 通过RS485或ZIGBEE组成有线或无线网络进行远程自动抄表，实现电能的智能化管理。

Meter reading and power management functions

● RS485 or ZIGBEE Composed of a wired or wireless network for remote automatic meter reading, to achieve power of intelligent management.

5.3 显示说明Display description

默认状态下，DDSF1352(ADL100)电表循环显示时间、日期、总、峰、平、谷电量；DTSF1352(ADL300EF)电表循环显示时间、日期、总、尖、峰、平、谷电量（注：不带分时复费率电能计量功能的电能表，只显示总电量）。循环显示时间为4s。

5.3 Display description

Under default condition, DDSF1352(ADL100)meter display related information of time、date, Total, peak, flat, valleyKWHperiodically, DDSF1352(ADL100) meter display related information of time、date, Total, spike, peak, flat, valley KWH periodically (Note: the electric energy meter without time—sharing multi—rate electric energy Metering function, it is only display Total KWH). Cycling display time is 4s.

序号 No.	名称 Name	格式 Format	说明 Description	
1	当前时间与费率 Current time and rate	hh:mm:ss	时：分：秒 Hour: minute: second	12:00:00 时间
	显示内容表示当前时间为12点00分00秒 Displaying content show current time: 12.00.00.			
	如峰费率指示灯点亮表示当前费率为峰费率 IF peak rate Indicator lights show Current rate as peak rate			

序号 No.	名称 Name	格式 Format	说明 Description	
2	日期 Date	yy.mm.dd	年 月 日 Day month year	080201 日期
	显示内容表示当前日期为2008年2月1日 Displaying content means current date is 2008.2.1			

序号 No.	名称 Name	格式 Format	说明 Description	
3	总电量 Total kWh	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer, 2 bit decimal or 6 bit integer, 1 bit decimal	00057.52 kWh 总 电量
	（电量显示小数位可浮动，以下同） (KWH display decimal place may be floating, same as below)			
	显示内容表示当前总电量为57.52kWh Displaying content means current Total kWH is 57.52kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
4	尖电量 Spike kWh	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer, 2 bit decimal or 6 bit integer, 1 bit decimal	00011.20 kWh 尖 电量
	显示内容表示当前尖电量为11.20kWh Displaying content means current spike kWH is11.20kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
5	峰电量 Peak kWh	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer, 2 bit decimal or 6 bit integer, 1 bit decimal	00024.12 kWh 峰 电量
	显示内容表示当前峰电量为24.12kWh Displaying content means current peak kWH is 24.12kWh			

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序号 No.	名称 Name	格式 Format	说明 Description	
6	平电量 Flat kWh	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer，2 bit decimal or 6 bit integer，1 bit decimal	
	显示内容表示当前平电量为12.10kWh Displaying content means current flat kWh is 12.10kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
7	谷电量 Flat kWh	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer，2 bit decimal or 6 bit integer，1 bit decimal	
	显示内容表示当前谷电量为10.10kWh Displaying content means current valley kWh is 10.10kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
8				
	通讯状态指示：左下角出现通讯标志显示时，表示电表当前正处于通讯状态中 Communication status indication：when communication mark display appear at bottom left corner，means that existing meter is in communication status.			

5.3.1 DDSF1352(ADL100)显示说明

默认状态下，DDSF1352(ADL100)电表循环显示时间、日期、总电量、峰电量、平电量、谷电量还显示电压和电流相关信息,液晶显示部分内容及数据格式说明如下（其它显示内容同上所示）：

5.3.1 DDSF1352(ADL100)Display description

Under default condition，DDSF1352(ADL100) meter display related information of time、date，Total kWh，peak，kWh，flat，kWh，valley kWh periodically，voltage and Current. LCD display content and data format is described as follows：(Shown in other display ibid)

序号 No.	名称 Name	格式 Format	说明 Description	
1	当前电压值 Current voltage value	XXX.X	三位整数，一位小数 3 bit integer,1 bit decimal	
	显示内容表示当前电压有效值为220.0V Displaying content show current voltage effective value is 220.0V			

序号 No.	名称 Name	格式 Format	说明 Description	
2	当前电流值 Existing Current value	XX.XX	两位整数，两位小数 2 bit integer,2 bit decimal	
	显示内容表示当前电流有效值为5.00A Displaying content means existing Current effective value is 5.00A			

5.3.2 DTSF1352(ADL300)显示说明

默认状态下，DTSF1352(ADL300)电表循环显示时间、日期、总电量、尖电量、峰电量、平电量、谷电量还显示表号相关信息。液晶显示部分内容及数据格式说明如下（其它显示内容同上所示）：

5.3.2 DTSF1352(ADL300)Display description

Under default condition，DDSF1352(ADL100) meter display related information of time、date，Total kWh，spike，peak，kWh，flat，kWh，valley kWh，and meter No. periodically. LCD display content and data format is described as follows：(Shown in other display ibid)

序号 No.	名称 Name	格式 Format	说明 Description	
12	当前表号 Current meter No.	XXX	三位整数 3 bit integer	
	显示内容表示当前表号为2 Displaying content show Current meter No.is 2			

5.3.3 DTSD1352(ADL3000)显示说明

5.3.3.1 循显功能

默认状态下，DTSD1352(ADL3000)电表循环显示时间、日期、有功总电量、无功总电量、有功反向总电量、无功反向总电量、总有功功

5.3.3 DTSD1352(ADL3000)Display description

5.3.3.1 Cycling display function

Under default condition，DTSD1352(ADL3000) meter display related information of time、date，total active power，total reactive power，total reverse active power，total reverse reactive power，

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率及表号信息。循环显示时间为4s。液晶显示部分内容及数据格式说明如下：

total active power and meter No. periodically. Cycling display time is 4s. LCD display content and data format is described as follows:

序号 No.	名称 Name	格式 Format	说明 Description	
1	有功总电量 total active power	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer, 2 bit decimal or 6 bit integer, 1 bit decimal	
	（电量显示小数位可浮动，以下同） (kWh display decimal place may be floating, same as below)			
	显示内容表示当前有功总电量为57.52kWh Displaying content show total active power. is 57.52kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
2	无功总电量 total reactive power	XXXXX.XX 或or XXXXXX.X	五位整数，两位小数或六位整数，一位小数 5 bit integer, 2 bit decimal or 6 bit integer, 1 bit decimal	
	（电量显示小数位可浮动，以下同） (kWh display decimal place may be floating, same as below)			
	显示内容表示当前有功总电量为57.52kvarh Displaying content show total active power. is 57.52kvarh			

序号 No.	名称 Name	格式 Format	说明 Description	
3	反向有功总电量 total reverse active power	XXXXX.XX	五位整数，两位小数 5 bit integer, 2 bit decimal	
	显示内容表示当前反向有功总电能为57.52kWh Displaying content show total reverse active power is 57.52kWh			

序号 No.	名称 Name	格式 Format	说明 Description	
4	反向无功总电量 total reverse reactive power	XXXXX.XX	五位整数，两位小数 5 bit integer, 2 bit decimal	
	显示内容表示当前反向无功总电能为27.55kvarh Displaying content show total reverse reactive power. is 27.55kvarh			

序号 No.	名称 Name	格式 Format	说明 Description	
5	当前有功功率值 Current active power	XXX.XX	三位整数，二位小数 3 bit integer, 2 bit decimal	
	显示内容表示当前有功功率为7.52kW Displaying content show current active power. is 7.52kW			

序号 No.	名称 Name	格式 Format	说明 Description	
6	当前表号 Current meter No.	XXX	三位整数 3 bit integer	
	显示内容表示当前表号为2 Displaying content show Current meter No. is 2			

5.3.2.2 键显功能

DTSD1352(ADL3000)还具有键显功能，通过面板上的上、下按键可顺序查看A、B、C三相电流、电压、有功功率、无功功率、视在功率、功率因数、电网频率、有/无功总、尖、峰、平、谷电能，有/无功反向总、尖、峰、平、谷电能，表地址、软件版本号、显示自检等。液晶显示内容及数据格式说明如下：

5.3.2.2 Button display function

DTSD1352(ADL3000) has button display function, through the last and next button on the panel, can measure A、B、C three-phase current, voltage, active power, reactive power, apparent power, power factor, power frequency, with / without power total, tip, peak, flat, valley power, with / without power reverse total, spike, peak, flat, valley power, table addresses, software version number, display self-test, etc. liquid crystal display content and data format is described as follows:

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序号 No.	名称 Name	格式 Format	说明 Description	
1	当前电流值 Existing Current value	XX.XX	两位整数，两位小数 2 bit integer, 2bit decimal	
	显示内容表示当前C相电流有效值为5.00A Displaying content show existing Current C phaseeffective value is 5.00A			

序号 No.	名称 Name	格式 Format	说明 Description	
2	当前电压值 Current voltage value	XXX.X	三位整数，一位小数 3 bit integer, 1 bit decimal	
	显示内容表示当前C相电压有效值为220.0V Displaying content show current C phase voltage effective value is 220.0V			

序号 No.	名称 Name	格式 Format	说明 Description	
3	当前有功功率值 Current active power	XXX.XX	三位整数，二位小数 3 bit integer, 2 bit decimal	
	显示内容表示当前A相有功功率为7.52kW Displaying content show current A phase active power is 7.52kW			

序号 No.	名称 Name	格式 Format	说明 Description	
4	当前无功功率值 Current reactive power	XXX.XX	三位整数，二位小数 3 bit integer, 2 bit decimal	
	显示内容表示当前B相无功功率为5.72kvar Displaying content show current B phase reactive power is 5.72kvar			

序号 No.	名称 Name	格式 Format	说明 Description	
5	当前视在功率值 Current apparent power	XXXX.X	四位整数，一位小数 4 bit integer, 1 bit decimal	
	显示内容表示当前C相视在功率为275VA Displaying content show current C phase apparent power is 275VA			

序号 No.	名称 Name	格式 Format	说明 Description	
6	当前C相功率因数值 Current C phase power factor	X.XX	一位整数，两位小数 1 bit integer, 2 bit decimal	
	显示内容表示当前C相功率因数为1.00 Displaying content show current C phase power factor.is 1.00			

序号 No.	名称 Name	格式 Format	说明 Description	
7	当前电网频率值 Current power frequency	XX.X	两位整数，一位小数 2 bit integer, 1 bit decimal	
	显示内容表示当前频率值为50.0Hz Displaying content show current power frequency is 50.0Hz			

注：在DTSD1352(ADL3000)中A、B、C各相的有功功率、无功功率、视在功率、功率因数、电压、电流的标识字符分别显示为PA、Pb、PC、qA、qb、qc、SA、Sb、SC、PFA、PFb、PFC、UA、Ub、UC、IA、Ib、IC。

Note：InDTSD1352(ADL3000),Logo characters of the Active power, reactive power, apparent power, power factor, voltage, current of A, B, C phase each phase is PA、Pb、PC、qA、qb、qc、SA、Sb、SC、PFA、PFb、PFC、UA、Ub、UC、IA、Ib、IC

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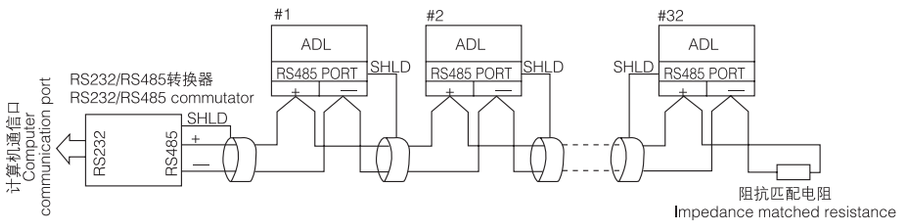
5.4 通信说明

5.4.1 RS485/MODBUS—RTU通信方式

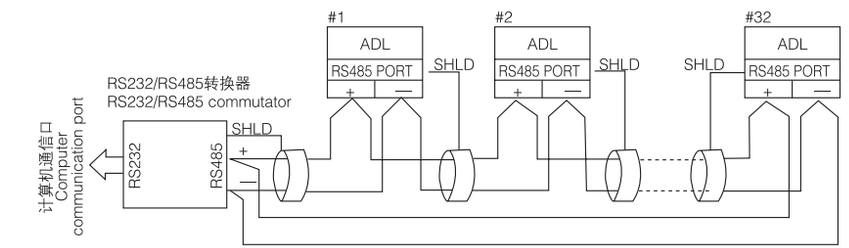
- 通信接口：RS485
- 通信接线方式：二线制（RS485+、RS485—），屏蔽双绞线
- 通信工作方式：半双工
- 通信速率：9600bps（默认）、4800bps、2400bps、1200bps可选

5.4.2 通信接线

- 通信连接的线形连接方式Linear connection mode with Communication connection



- 通信连接的环形连接方式Ring connection mode with Communication connection



5.4.3 通信协议

ADL系列导轨式安装电能表使用MODBUS—RTU通讯协议，MODBUS协议详细定义了校验码、数据序列等，这些都是特定数据交换的必要内

5.4 Communication description

5.4.1 RS485/MODBUS—RTU Communicationmode

- Communication interface：RS485
- Communication connection mode：two—wire (RS485+，RS485—)，shielded twisted pair conductors
- Communication working mode：half— duplex
- Communication speed：9600bps (default)，4800bps，2400bps，1200bps optional

Communication connection

5.4.3 Communication protocol

ADL Series guide rail power meters MODBUS—RTU Communication protocol，MODBUS protocol to define the check code，data sequence etc. in detail，they are necessary content for specific data exchange.

容。MODBUS协议在一根通讯线上使用主从应答式连接（半双工），这意味着在一根单独的通讯线上信号沿着相反的两个方向传输。首先，主计算机的信号寻址到一台唯一的终端设备（从机），然后，终端设备发出的应答信号以相反的方向传输给主机。

MODBUS协议只允许在主机（PC，PLC等）和终端设备之间通讯，而不允许独立的终端设备之间的数据交换，这样各终端设备不会在它们初始化时占据通讯线路，而仅限于响应到达本机的查询信号。

（1） 传输方式

信息传输为异步方式，并以字节为单位，在主机和从机之间传递的通讯信息是10位字格式，包含1个起始位、8个数据位（最小的有效位先发送）、无奇偶校验位、1个停止位。

（2） 数据帧格式

地址码 Address code	功能码 Function code	数据区 Data area	CRC校验码 CRC check code
1字节 1 byte	1字节 1 byte	n字节 n byte	2字节 2 byte

地址码：地址码在帧的开始部分，由一个字节（8位二进制码）组成，十进制为0～255，在ADL系列电能表中只使用1～247，其它地址保留。这些位标明了用户指定的终端设备的地址，该设备将接收来自与之相连的主机数据。每个终端设备的地址必须是唯一的，仅仅被寻址到的终端会响应包含了该地址的查询。当终端发送回一个响应，响应中的从机地址数据便告诉了主机哪台终端正与之进行通信。

MODBUS protocol use master/slave responding connection (half duplex) on the same Communication line. After signal from host computer addressing of the only one terminal device (slave computer), the terminal device sends answering signal and transmit to host computer.

MODBUS protocol can only permitted to used between host computer (PC，PLC etc.) and terminal device, thus to prohibit the data exchange between independent terminal devices. In this way, every terminal device does not occupy Communication line in their initialization, only responding to the enquiry signal from host

(1) Transmission mode

The information transmit in asynchronous mode in bytes, the Communication information transmitting between the host computer and the slave computer is the 10 bits format, including one Initial bit, 8 data bit (Firstly Transmitting the least effective bit), without parity check bit, 1 stop bit.

(2) Data frame format

Address code：address code is located at beginning of frame, composed of one byte (8 bit binary system code), decimal system is 0~255, in the ACR meters, just 1~247 is used, other address is Reserved. these bits indicate terminal device address specified by users, this device will receive the connecting host computer data. Every terminal device has only one address, only the addressing terminal respond to enquiry including this address. When terminal is transmitting one responding, the responding slave address data tell host computer that which terminal is it.

功能码：功能码告诉了被寻址到的终端执行何种功能。下表列出了该系列仪表用到的功能码，以及它们的意义和功能。

Function code：function code tell the target terminal to execute what function. Below table list: function code used in this Series meters, and their meaning and function.

功能 Function	定义 Definition	操作 Operation
03H/04H	读数据寄存器 Read data register	获得一个或多个寄存器的当前二进制值 Obtain current binary system value of one or multiple register
10H	预置多寄存器 Preset multi－register	设定二进制值到一系列多寄存器中 Set binary system value into a series of multi－registe

数据区：数据区包含了终端执行特定功能所需要的数据或者终端响应查询时采集到的数据。这些数据的内容可能是数值、参考地址或者设置值。例如：功能码告诉终端读取一个寄存器，数据区则需要指明从哪个寄存器开始及读取多少个数据，内嵌的地址和数据依照类型和从机之间的不同内容而有所不同。

Data area：data area includes the data needed by terminal for executing specific function, or the collected data when terminal is responding enquiry. Content of these data could be value, reference address or setting value. For example: The function code tell terminal to Read one register, the data area need to specify the starting register and Read how many data, the built—in address and data have different content depending on type and slave computer.

CRC校验码：错误校验（CRC）域占用两个字节，包含了一个16位的二进制值。CRC值由传输设备计算出来，然后附加到数据帧上，接收设备在接收数据时重新计算CRC值，然后与接收到的CRC域中的值进行比较，如果这两个值不相等，就发生了错误。

CRC check code：Error check (CRC) domain occupies 2 byte, including one 16 bit binary system value. CRC value is calculated by transmission device, and then attached to the data frame, the receiving device, while receiving, it calculates the CRC value again, then comparing it with the receiving CRC domain value, if these two values are not equal, it an error occurs.

生成一个CRC的流程为：

1、预置一个16位寄存器为0FFFFH（全1），称之为CRC寄存器。

2、把数据帧中的第一个字节的8位与CRC寄存器中的低字节进行异或运算，结果存回CRC寄存器。

3、将CRC寄存器向右移一位，最高位填以0，最低位移出并检测。

Flow for forming one CRC:

1、Preset one 16 bit register as 0FFFFH(All—1), called as CRC register.

2、8 bit of data frame first byte and low byte of CRC register carry out exclusive or operation, then save its result back to CRC register.

3、Right shift CRC register for one bit, the most significant bit is filled with 0, the least significant bit is shifted out and tested.

4、如果最低位为0，重复第三步（下一次移位）；如果最低位为1，将CRC寄存器与一个预设的固定值（0A001H）进行异或运算。

5、重复第三步和第四步直到8次移位。这样处理完了一个完整的八位。

6、重复第2步到第5步来处理下一个八位，直到所有的字节处理结束。

7、最终CRC寄存器的值就是CRC的值。此外还有一种利用预设的表格计算CRC的方法，它的主要特点是计算速度快，但是表格需要较大的存储空间，该方法此处不再赘述，请参阅相关资料。

4、If the least significant bit is 0, Repeat the third step (next shift); If the least significant bit is 1, CRC register and preset fixed value specified (0A001H) carry out exclusive or operation.

5、Repeat the third step and the fourth step until shift for 8 times, the complete 8 bit is done.

6、Repeat the second step to the fifth step to treat next 8 bit until all the byte is treated.

7 The CRC register final value is CRC value. Besides, there is another CRC calculation method by preset table, its main feature is fast calculating speed, but large saving space is needed, please refer to related data.

5.4.4 通信应用格式详解

（1）功能码03H：读寄存器

此功能允许用户获得设备采集与记录的数据及系统参数。主机一次请求的数据个数没有限制，但不能超出定义的地址范围。

下面的例子是从01号从机读1个采集到的基本数据（数据帧中每个地址占用2个字节）。采集的数据为总电能E（占用4个字节），其地址为00H

5.4.4 Expatiating for communication applicable format

（1）Function 03H: read register

This function allow user to obtain data and parameters collected and recorded by equipment. Data amount of once requested by host computer have no limit. but the address should be in range.

Following example is one basic data read from 01 slave (each address in data frame occupy 2 bytes). The collected data is the total electric energy E (occupy 4 bytes), other address is 00H

（2）功能码10H：写寄存器2）

功能码10H允许用户改变多个寄存器的内容，该仪表中时间日期、费率时段等可用此功能号写入。主机一次最多可以写入16个(32字节)数据。

下面的例子是预置地址为01的仪表日期和时间为08年02月01日，12时00分00秒。

（2） Function code 10H: writing register

Function code 10H allows the user to change the contents of multiple registers .Time, date, rate period of time etc. in meter can be written by this function code. The one shot maximum write in data (32 byte) of host computer is 16.

Below meter example show: Preset address01, date, time : 12:00:00, 01/02/2008.

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主机发送 Master transmitting		发送信息 Transmitted information
地址码 Address code		01H
功能码 Function code		10H
起始地址 Initial address	高字节 High byte	00H
	低字节 Low byte	12H
寄存器数量 Register No.	高字节 High byte	00H
	低字节 Low byte	03H
字节数 Byte number		06H
0012H 待写入数据 Data to be written	高字节 High byte	08H
	低字节 Low byte	02H
0013H 待写入数 Data to be written	高字节 High byte	01H
	低字节 Low byte	0CH
0014H 待写入数据 Data to be written	高字节 High byte	00H
	低字节 Low byte	00H
CRC校验码 CRC check code	高字节 High byte	FFH
	低字节 Low byte	A8H

从机返回 Slave returning		返回信息 Returning information
地址码 Address code		01H
功能码 Function code		10H
起始地址 nitial address	高字节 High byte	00H
	低字节 Low byte	12H
寄存器数量 Register No.	高字节 High byte	00H
	低字节 Low byte	03H
CRC校验码 CRC check code	高字节 High byte	20H
	低字节 Low byte	0DH

5.4.5 通信参量地址表及应用细节

5.4.5 Communication parameter address table and application details

(1) DDSF1352(ADL100)地址表DDSF1352(ADL100)address table

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0000H 0001H	当前总电能 Current total electricity	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0002H 0003H	当前峰电能 Current peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0004H 0005H	当前平电能 Current flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0006H 0007H	当前谷电能 Current valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0008H 0009H	反向电能 Reversing electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
000AH 000BH	无功电能 Reactive electric energy	R/W	保留Reserved	Dword
000CH	电压 Voltage	R	XXX.X V	Word
000DH	电流 Current	R	XX.XX A	Word
000EH	有功功率 Active power	R	保留 Reserved	Word
000FH	无功功率 Reactive power	R	保留 Reserved	Word
0010H	功率因数 Power factor	R	保留 Reserved	Word
0011H	频率 Frequency	R	保留 Reserved	Word
0012H	年、月Year, month	R/W	yy.mm.dd hh:mm:ss	Word
0013H	日、时Day, hour	R/W		Word
0014H	分、秒Minute,second	R/W		Word
0015H 高字节 High byte	通信地址 Communication address	R/W	001—247	Char

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0015H 低字节 Low byte	通信波特率 Communication baudrate	R/W	01 —— 9600bps （默认）(default) 02 —— 4800bps 03 —— 2400bps 04 —— 1200bps	Char
0016H ～ 0021H	八时段参数设置信息 8—period of time Parameters setting information	R/W	每个时段占用3个字节 Each period of time occupys Three bytes nn mm hh	Char
0022H 0023H	本月总电能 This month total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0024H 0025H	本月峰电能 peak electric energy of this month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0026H 0027H	本月平电能 flat electric energy of this month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0028H 0029H	本月谷电能 valley electric energy of this month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002AH 002BH	上月总电能 total electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002CH 002DH	上月峰电能 peak electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002EH 002FH	上月平电能 flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0030H 0031H	上月谷电能 Ultimo valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0032H 0033H	上上月总电能 Before ultimo total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0034H 0035H	上上月峰电能 Before ultimo peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0036H 0037H	上上月平电能 Before ultimo flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0038H 0039H	上上月谷电能 Before ultimo valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

（2）DTSF1352(ADL300)地址表DTSF1352(ADL300)address table

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0000H 0001H	当前总电能 Current total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0002H 0003H	当前尖电能 Current spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0004H 0005H	当前峰电能 Current peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0006H 0007H	当前平电能 Current flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0008H 0009H	当前谷电能 Current valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
000AH	年、月Year，month	R/W	yy.mm.dd hh:mm:ss	Word
000BH	日、时Day，hour	R/W		Word
000CH	分、秒Minute,second	R/W		Word
000DH 高字节 High byte	通讯地址 Communication address	R/W	0001～0247	Char
000DH 低字节 Low byte	通讯波特率 Communication baudrate	R/W	01 —— 9600bps （默认） 02 —— 4800bps 03 —— 2400bps 04 —— 1200bps	Char
000EH ～ 0019H	八时段 参数设置信息 8—period of time parameters setting information	R/W	每个时段占用3个字节 Each period of time occupys Three bytes nn mm hh	Char
001AH	保留Reserved			

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
001BH 001CH	本月总电能 This month total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
001DH 001EH	本月尖电能 This month spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
001FH 0020H	本月峰电能 This month peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0021H 0022H	本月平电能 This month flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0023H 0024H	本月谷电能 valley electric energy of This month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0025H	保留Reserved			
0026H 0027H	上月总电能 total electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0028H 0029H	上月尖电能 spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002AH 002BH	上月峰电能 peak Electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002CH 002DH	上月平电能 flat Electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002EH 002FH	上月谷电能 valley Electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0030H	保留Reserved			
0031H 0032H	上上月总电能 total electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0033H 0034H	上上月尖电能 Before ultimo spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0035H 0036H	上上月峰电能 Before ultimo peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0037H 0038H	上上月平电能 Before ultimo flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0039H 003AH	上上月谷电能 Before ultimo valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

(3) DTSD1352(ADL3000)地址表DTSD1352(ADL3000)address table

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0000H 0001H	当前总有功电能 Current total active Electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0002H 0003H	当前总有功尖电能 Current total spike Electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0004H 0005H	当前总有功峰电能 Current total active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0006H 0007H	当前总有功平电能 Current total active flat Electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0008H 0009H	当前总有功谷电能 Current total active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
000AH 000BH	当前正向有功总电能 Current forward active total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
000CH 000DH	当前正向有功尖电能 Current forward active spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
000EH 000FH	当前正向有功峰电能 Current forward active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0010H 0011H	当前正向有功平电能 Current forward active flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0012H 0013H	当前正向有功谷电能 Current forward active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0014H 0015H	当前反向有功总电能 Current reversing active total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0016H 0017H	当前反向有功尖电能 Current reversing active spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0018H 0019H	当前反向有功峰电能 Current reversing Active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
001AH 001BH	当前反向有功平电能 Current reversing active flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
001CH 001DH	当前反向有功谷电能 Current reversing Active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
001EH 001FH	当前总无功电能 Current total reactive electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0020H 0021H	当前总无功尖电能 Current total reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0022H 0023H	当前总无功峰电能 Current total reactive peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0024H 0025H	当前总无功平电能 Current total reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0026H 0027H	当前总无功谷电能 Current total reactive valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0028H 0029H	当前正向无功总电能 Current forward reactive total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002AH 002BH	当前正向无功尖电能 Current forward reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
002CH 002DH	当前正向无功峰电能 Current forward reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
002EH 002FH	当前正向无功平电能 Current forward reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0030H 0031H	当前正向无功谷电能 Current forward reactive valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0032H 0033H	当前反向无功总电能 Current reversing reactive total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0034H 0035H	当前反向无功尖电能 Current reversing reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0036H 0037H	当前反向无功峰电能 Current reversing reactive peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0038H 0039H	当前反向无功平电能 Current reversing reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
003AH 003BH	当前反向无功谷电能 Current reversing reactive valleyelectric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
003CH	年、月Year，month	R/W	yy.mm.dd hh.mm.ss	Word
003DH	日、时Day，hour	R/W		Word
003EH	分、秒Minute,second	R/W		Word
003FH 高字节 High byte	通讯地址 Communication address	R/W	0001—0247	Char
003FH 低字节 Low byte	通讯波特率 Communication baudrate	R/W	01—9600bps （默认）(default) 02—4800bps 03—2400bps 04—1200bps	Char

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0040H	脉冲常数 Pulse constant	R	占两个字节 occupy 2 byte	Word
0041H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0042H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0043H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0044H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0045H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0046H	时区 Period of time	R/W	占两个字节 occupy 2 byte	Word
0047H ～ 0052H	第一时段8时段 The first time 8 times	R/W	每个时段占用3个字节 Each period of time occupys Three bytes nn.mm.hh	Char
0053H ～ 0060H	第二时段9时段 The second time 9 times	R/W	每个时段占用3个字节 Each period of time occupys Three bytes nn.mm.hh	Char
0060H 低字节 Low byte	保留reserved			Char
0061H	A相电压 voltage of A phase	R	XXX.XXV	Word
0062	B相电压 voltage of B phase	R	XXX.XXV	Word
0063H	C相电压 voltage of C phase	R	XXX.XXV	Word
0064H	A相电流 electricity of A phase	R	XX.XXXA	Word

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0065H	B相电流 electricity of B phase	R	XX.XXXA	Word
0066H	C相电流 electricity of C phase	R	XX.XXXA	Word
0067H	A相有功功率 active power of A phase	R	XXX.XXkW	Word
0068H	B相有功功率 active power of B phase	R	XXX.XXkW	Word
0069H	C相有功功率 active power of C phase	R	XXX.XXkW	Word
006AH	总有功功率 total active power	R	XXX.XXkW	Word
006BH	A相无功功率 reactive power of A phase	R	XXX.XXkVar	Word
006CH	B相无功功率 reactive power of B phase	R	XXX.XXkVar	Word
006DH	C相无功功率 reactive power of C phase	R	XXX.XXkVar	Word
006EH	总无功功率 total reactive power	R	XXX.XXkVar	Word
006FH	A相视在功率 apparent power of A phase	R	XXXX.XVA	Word
0070H	B相视在功率 apparent power of b phase	R	XXXX.XVA	Word
0071H	C相视在功率 apparent power of c phase	R	XXXX.XVA	Word
0072H	总视在功率 total apparent power	R	XXXX.XVA	Word
0073H	A相功率因数 power factor of A phase	R	X.XX	Word

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0074H	B相功率因数 power factor of B phase	R	X.XX	Word
0075H	C相功率因数 power factor of C phase	R	X.XX	Word
0076H	总功率因数 total power factor	R	X.XX	Word
0077H	频率frequency	R	XX.XHz	Word
0078H	保留reserved	R		Word
0079H	状态指示 status indication	R	0—没有报警 0—No alarm 1—计量数据出错 1—Measurement data error 2—相序出错 2—Wrong phase sequence 3—校表数据导入错 3—Table data wrong	Word
007AH	保留reserved	R		Word
007BH 007CH	有功最大需量 active maximum demand	R	每个电能占用4个字节 Each electric energy occupy 4 bytes	Dword
007DH 007EH	无功最大需量 Maximum demand for reactive power	R	每个电能占用4个字节 Each electric energy occupy 4 bytes	Dword
007FH 0080H	有功最大需量发生时间 Time of occurrence for the active maximum amount	R	mm.dd hh.mm	Word
0081H 0082H	无功最大需量发生时间 Time of occurrence for the reactive maximum amount	R	mm.dd hh.mm	Word
0083H 0084H	保留reversed	R		Dword

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2010.7.6 8:32:48 AM

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0085H 0086H	保留reversed	R		Dword
0087H 0088H	失压次数 The number of voltage lost	R	占用4个字节 occupy 4 byte	Dword
0089H 008AH	保留reversed	R		Dword
008BH 008CH	失压发生时间 Time of occurrence for voltage lost	R	mm.dd hh.mm	Word
008DH 008EH	保留reversed	R	mm.dd hh.mm	Dword
008FH 0090H	当前月总有功电能 Current month total active electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0091H 0092H	当前月总有功尖电能 Current month total active spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0093H 0094H	当前月总有功峰电能 Current month total active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0095H 0096H	当前月总有功平电能 Current month total active flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0097H 0098H	当前月总有功谷电能 Current month total active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0099H 009AH	当前月正向有功总电能 Current month forward active total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
009BH 009CH	当前月正向有功尖电能 Current month forward active spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
009DH 009EH	当前月正向有功峰电能 Current month forward active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
009FH 00A0H	当前月正向有功平电能 Current month forward active flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00A1H 00A2H	当前月正向有功谷电能 Current month forward active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00A3H 00A4H	当前月反向有功总电能 Current month reversing active total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00A5H 00A6H	当前月反向有功尖电能 Current month reversing active spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00A7H 00A8H	当前月反向有功峰电能 Current month reversing active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00A9H 00AAH	当前月反向有功平电能 Current month reversing active flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00ABH 00ACH	当前月反向有功谷电能 Current month reversing active valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00AD 00AEH	当前月总无功电能 Current month total reactive electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
00AFH 00B0H	当前月总无功尖电能 Current month total reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00B1H 00B2H	当前月总无功峰电能 Current month total reactive peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00B3H 00B4H	当前月总无功平电能 Current month total reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00B5H 00B6H	当前月总无功谷电能 Current month total reactive valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00B7H 00B8H	当前月正向无功总电能 Current month forward reactive total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00B9H 00BAH	当前月正向无功尖电能 Current month forward reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00BBH 00BCH	当前月正向无功峰电能 Current month forward reactive peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00BDH 00BEH	当前月正向无功平电能 Current month forward reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00BFH 00C0H	当前月正向无功谷电能 Current month forward reactive valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00C1H 00C2H	当前月反向无功总电能 Current month reversing reactive total electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
00C3H 00C4H	当前月反向无功尖电能 Current month reversing reactive spike electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00C5H 00C6H	当前月反向无功峰电能 Current month reversing reactive peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00C7H 00C8H	当前月反向无功平电能 Current month reversing reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00C9H 00CAH	当前月反向无功谷电能 Current month reversing reactive valley electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00CBH 00CCH	上月总有功电能 total active electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00CDH 00CEH	上月总有功尖电能 total active spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00CFH 00D0H	上月总有功峰电能 total active peak electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00D1H 00D2H	上月总有功平电能 total active flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00D3H 00D4H	上月总有功谷电能 total active valley electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00D5H 00D6H	上月正向有功总电能 forward active total electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
00D7H 00D8H	上月正向有功尖电能 forward active spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00D9H 00DAH	上月正向有功峰电能 Ultimo forward active peak electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00DBH 00DCH	上月正向有功平电能 forward active flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00DDH 00DEH	上月正向有功谷电能 forward active valley electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00DFH 00E0H	上月反向有功总电能 reversing active total electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00E1H 00E2H	上月反向有功尖电能 reversing active spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00E3H 00E4H	上月反向有功峰电能 reversing active peak electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00E5H 00E6H	上月反向有功平电能 reversing active flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00E7H 00E8H	上月反向有功谷电能 reversing active valley electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00E9H 00EAH	上月总无功电能 total reactive electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
00EBH 00ECH	上月总无功尖电能 ototal reactive spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00EDH 00EEH	上月总无功峰电能 total reactive peak electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00EFH 00F0H	上月总无功平电能 total reactive flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00F1H 00F2H	上月总无功谷电能 total reactive valley electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00F3H 00F4H	上月正向无功总电能 forward reactive total electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00F5H 00F6H	上月正向无功尖电能 forward reactive spike electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00F7H 00F8H	上月正向无功峰电能 forward reactive peak electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00F9H 00FAH	上月正向无功平电能 forward reactive flat electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00FBH 00FCH	上月正向无功谷电能 forward reactive valley electric energy of last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
00FDH 00FEH	上月反向无功总电能 reversing reactive total electric energy of the last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
00FFH 0100H	上月反向无功尖电能 reversing reactive spike electric energy of the last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0101H 0102H	上月反向无功峰电能 reversing reactive peak electric energy of the last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0103H 0104H	上月反向无功平电能 reversing reactive flat electric energy of the last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0105H 0106H	上月反向无功谷电能 reversing reactive valley electric energy of the last month	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0107H 0108H	上上月总有功电能 total active electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0109H 010AH	上上月总有功尖电能 total active spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
010BH 010CH	上上月总有功峰电能 total active peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
010DH 010EH	上上月总有功平电能 total active flat electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
010FH 0110H	上上月总有功谷电能 total active valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0111H 0112H	上上月正向有功总电能 forward active total electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0113 0114H	上上月正向有功尖电能 forward active spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0115H 0116H	上上月正向有功峰电能 forward active peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0117H 0118H	上上月正向有功平电能 forward active flat electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0119H 011AH	上上月正向有功谷电能 forward active valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
011BH 011CH	上上月反向有功总电能 reversing active total electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
011DH 011EH	上上月反向有功尖电能 reversing active spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
011FH 0120H	上上月反向有功峰电能 reversing active peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0121H 0122H	上上月反向有功平电能 reversing active flat electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0123H 0124H	上上月反向有功谷电能 reversing active valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0125H 0126H	上上月总无功电能 total reactive electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

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地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
0127H 0128H	上上月总无功尖电能 total reactive spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0129H 012AH	上上月总无功峰电能 total reactive peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
012BH 012CH	上上月总无功平电能 total reactive flat electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
012DH 012EH	上上月总无功谷电能 total reactive valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
012FH 0130H	上上月正向无功总电能 forward reactive total electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0131H 0132H	上上月正向无功尖电能 forward reactive spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0133H 0134H	上上月正向无功峰电能 forward reactive peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0135H 0136H	上上月正向无功平电能 forward reactive flat electric energy	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0137H 0138H	上上月正向无功谷电能 forward reactive valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0139H 013AH	上上月反向无功总电能 reversing reactive total electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

地址 Address	变量名称 Variable	读写属性 Belong to R/W	数据格式 Data format	数据类型 Data Model
013BH 013CH	上上月反向无功尖电能 reversing reactive spike electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
013DH 013EH	上上月反向无功峰电能 reversing reactive peak electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
014FH 0140H	上上月反向无功平电能 reversing reactive flat electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword
0141H 0142H	上上月反向无功谷电能 reversing reactive valley electric energy of the month before last	R/W	每个电能占用4个字节 Each electric energy occupy 4 byte	Dword

附：

1、读写属性：“R”只读，读参量用03H号命令；“R/W”可读可写，写参量用10H号命令。禁止向未列出的或不具可写属性的地址写入。

2、电能表的通讯地址出厂时给出，亦可通过本公司提供的软件读出。

3、电能表中所测电压值固定为2位小数，数据格式为XXX.XX，单位为V，若通讯读出电压值为55EEH（21998），则电压的实际值为219.98V；所测电流值固定为3位小数，数据格式为XX.XXX，单位为A，若通讯读出电流值为05DBH（1499），则电流的实际值为1.499A；

4、电能表的有、无功功率值固定为2位小数，数据格式为XXX.XX，单位为kW(kvar)，若通

Attachment：

1，Belong to Read/ Write：“R” read only，read this parameter use 03H command；”R/W” Readable，writable，write parameter use 10H command. write in address of non—listed，or non—writable address is forbidden.

2，The Communication address of electric energy meter is given with delivery，also read out through the software provided by our company.

3，The voltage value detected by electric energy meter is fixed by 2 bit decimal number，data format is XXX.XX，unit is V，if Communication read out voltage value is 55EEH (21998)，then voltage actual value is 219.98v；the measured current value is fixed by 3 bit decimal number，data format is XX.XXX，unit is A，if Communication read out Current value is 50DBH (1499)，then Current actual value is 1.499A；

4，The active and reactive power value by electric energy meter is fixed by 2 bits decimal number，data formatisXXX.XX，unitiskW(kvar)，ifcommunication

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讯读出有、无功功率值为0020H（0032），则有、无功功率的实际值为0.32kW(kVar)；视在功率值固定为1位小数，数据格式为XXXX.X，单位为VA,若通讯读出视在功率值为CE44H（3300），则视在功率的实际值为330.0VA。

read out the active and reactive power value is 0020H (0032), then the active and reactive power actual value is 0.32kW(kVar); the apparent power value is fixed by 1 bit decimal number, data format is XXXX.X, unit is VA,if communication read out the apparent power value is CE44H (3300), then the apparent power actual value is 330.0VA.

5、电能表中所测电能值占4个字节，单位为kWh。高位在前，低位在后，若读出值为0012D687H（1234567），则电能计量值为1234567×0.01=12345.67kWh。

5, The electric energy value measured by electric energy meter occupy 4 bytes, unit is kWh. The high bit is before the low bit, if the reading value is 0012D687H (1234567), then electric energy Metering value is 1234567×0.01=12345.67kWh.

6、上述地址表中八时段参数设置信息依次为：

6, Order of 8—period of time Parameters setting information of above Address Table:

八时段参数设置信息 8—period of time Parameters setting information	备注Note
第1时段费率号NN Rate number for 1st period of time NN	1.第1时段的起始时间为00:00 Starting time for 1st period of time 00:00 2.在DDSF1352(ADL100)中， 费率号与费率段的对应关系如下： 01—峰、02—平、03—谷 In DDSF1352(ADL100), corresponding relation between rate No. and rate period: 01—peak, 02—flat, 03—valley 3.DTSF1352(ADL300)和DTSD1352(ADL3000)中，费率号与费率段的对应关系如下： 01—尖、02—峰、03—平、04—谷 In DTSF1352(ADL300)and DTSD1352(ADL3000), corresponding relation between rate No. and rate period: 01—spike, 02—peak, 03—flat,04—valley
第1时段终止时间——分mm Terminal time for 1st period of time — minute	
第2时段费率号NN Rate number for 2st period of time NN	
第2时段终止时间——分mm Terminal time for 2st period of time — minute	
第2时段终止时间——时hh Terminal time for 2st period of time — hour	
.....	
第8时段费率号NN Rate number for 8st period of time NN	
第8时段终止时间——分mm Terminal time for 8st period of time — minute	
第8时段终止时间——时hh Terminal time for 8st period of time — hour	

5.5 注意事项

5.5.1 电能表的负载能力在0.05Ib～Imax（直接接入）或0.02Ib～Imax（经电流互感器接入）之间，超过这一负载能力范围，将会使电能计量不准或损坏。

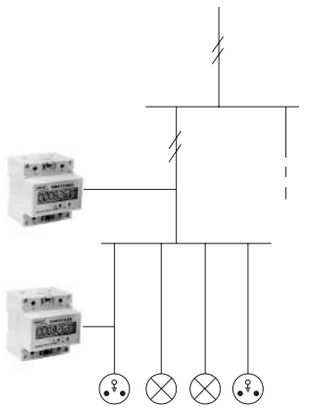
5.5.2 当电能表直接接入时，其电能示数即为实际用电量；当电能表配用电流互感器接入时，在读取电能示数后必须乘以电流互感器倍率才是其实际用电量。

5.5 Notice

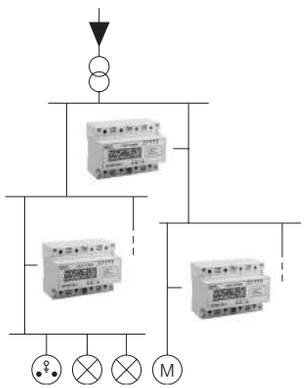
5.5.1 The loading capacity of electric energy meter is 0.05Ib~Imax (direct connecting) or0.02Ib~Imax (connecting via current transformer), if this loading capacity range is exceeded, the electric energy Metering will be incorrect or damageable .

5.5.2 When electric energy meter is directly connected, its electric energy reading value is the actual KWH; when electric energy meter is equipped with Current transformer, the electric energy reading value must multiply the Current transformer multiplying power to obtain actual KWH.

六、典型应用



六、Typical application



- 该系列导轨式安装电能表通过LCD液晶显示屏显示电能消耗。

- 该电能表带有电能脉冲输出接口，可采集有功电能，实现DCS远传。并且带有RS485通讯接口，可通过上位机实现抄表和编程设置。

- The series guide rail Electricity meters is via LCD liquid crystal display screen to display power consumption.

- This electric energy meter is equipped withelectric energy pulse output interface,collecting active electric energy to implement DCS remote transmit .And fitted with RS485 Communication interface, via super ordination machine to implement meter reading and programming setting.

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- 此外，微型化的结构方便其与微型断路器一起使用，安装于终端配电箱内。为低压配电终端的电能计量提供了有效的解决方案。

- 广泛适用于楼宇、商场、会展中心、学校、机场、港口及工厂等。

七、订货范例

例1：
型　　号：DDSF1352或ADL100-EF/C
应用场合：单相系统
接入方式：直接接入
额定电压：AC 220V
电流规格：5（20）A
测量参数：总电能、分时复费率电能，电流，电压
附加功能：RS485通信，MODBUS协议
其　　他：分时时段出厂预设置
（未作说明则按照默认设置出厂）

例2：
型　　号：DTSF1352或ADL300-EF/C
应用场合：三相四线系统
接入方式：经电流互感器接入
额定电压：AC 3×220/380V
电流规格：1.5（6）A
测量参数：总电能、分时复费率电能
附加功能：RS485通信，MODBUS协议
其　　他：分时时段出厂预设置
（未作说明则按照默认设置出厂）

- In addition, its miniature construction facilitate match use with the miniature circuit breaker, installing in terminal power distribution box to provide an effective solution of electric energy metering for low voltage power distribution terminal.

- It is widely used in building, marketplace,convention and exhibition center, schools, airport, harbor and factory etc.

七、Ordering example

Example 1:
Type: DDSF1352 or ADL100-EF/C
Application: Single phase system Connecting mode: Directly connecting
Rated voltage: AC 220V
Current specification: 5 (20) A
Measuring parameter: Total electric energy, time-sharing multi-rate electric energy, Current, voltage
Additional function: RS485 Communication, MODBUS protocol
Others: Time-sharing period for delivery presetting (Default setting for no statement)

Example 2:
Type: DTSF1352 or ADL300-EF/C
Application: Three-phase-four-wire system
Connecting mode: Connecting via current transformer
Rated voltage: AC 3×220/380V
Current specification: 1.5 (6) A
Measuring parameter: Total electric energy, time-sharing multi-rate electric energy
Additional function: RS485 Communication, MODBUS protocol
Others: Time-sharing period for delivery pre-setting (Default setting for no statement)

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总部：上海安科瑞电气股份有限公司
Headquarter: Shanghai Acrel Co., Ltd.
地址：上海市嘉定马东工业园区育绿路253号
Addr: No. 253 Yulv Road, MaDong Industrail Park, Jiading District, Shanghai, China
Tel: (86)21-69158300 69158301 69158302
Fax: (86) 21-69158303 69158339
服务热线Service Hot Line：800-820-6632
E-mail: ACREL001@vip.163.com
Http://www.acrel.cn
PC: 201801

生产基地：江苏安科瑞电器制造有限公司
Production Base: Jiangsu Acrel Appliance Manufacture Co., Ltd.
地址：江阴市南闸镇东盟工业园区东盟路5号
Add：5 Domeng Road Dongmeng Industrial Park Nanzha town Jiangyin
Tel：(86) 0510-86179966 86179967 86179968
Fax：(86) 0510-86179975 86179970
E-mail: JY-ACREL001@vip.163.com
PC：214405

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