480

ADF500L

Installation and operation instruction V1.0

ACREL Co,.Ltd

Declare

Acrel reserves the right to modify the product specifications herein without notification. Please consult the local agent about the latest specifications before placing a purchase order.

Revision record

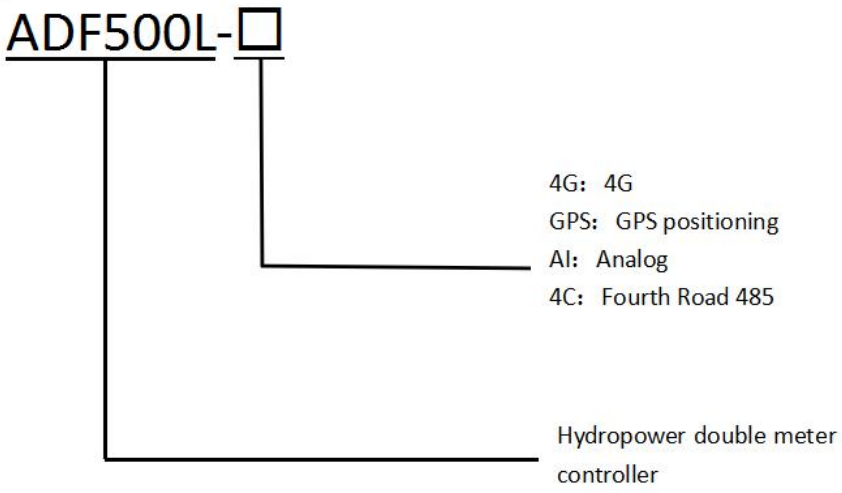
Data	Old	New	Change
2021.9.26		V1.0	1.First version

directory

1 Overview

ADF500L hydropower double meter controller can realize RF card swipe irrigation, water metering, liquid level collection, box door status monitoring, 4G wireless communication, LCD display, voice prompt and other functions in one of the agricultural irrigation terminal. It can be widely used in water-saving control, water resources information monitoring and other projects, and its high reliability has the advantages of high stability, low power consumption, power-down data preservation and so on.

2 Model description



3 Product features

Function	Function description	Feature configuration
Energy metering	Active kWh、Reactive kWh	■
Power measurement	U、I 、P、Q、S、PF、F	■
LCD display	Dot matrix LCD display	■
Communication	Three-way RS485 interface	■
	RF communication, can be paid by card	■
	Fourth Road 485 Communications	□
	4G wireless communication	□
GPS positioning	The longitude and latitude of the GPS positioning device can be realized	□
Analog measurements	6-way measurement analog, connected to the sensor. Voltage type 0-6V, current type 4-20mA	□
Multi-rate	It can be billed according to the time and the peak and valley power statistics	■

(■：Standard；□：Optional)

4 Technical parameters

Voltage input	Reference voltage	3×100V、3×380V、3×57.7/100V、3×220/380V
	Reference frequency	50Hz
	Power consumption	<10VA
Current input	Basic current	1A
	Maximum current	6A
	Starting current	0.004Ib
	Power consumption	<4VA (Maximum current)
Measure performance	Measurement accuracy	Accuracy class 1
	Measuring range	000000.00~999999.99kWh
Correspondence	Interface	RS485(A+、B-)
	Medium	Shielded twisted pair
	Agreement	MODBUS-RTU
	4G	Full Netcom

5 Dimension drawings

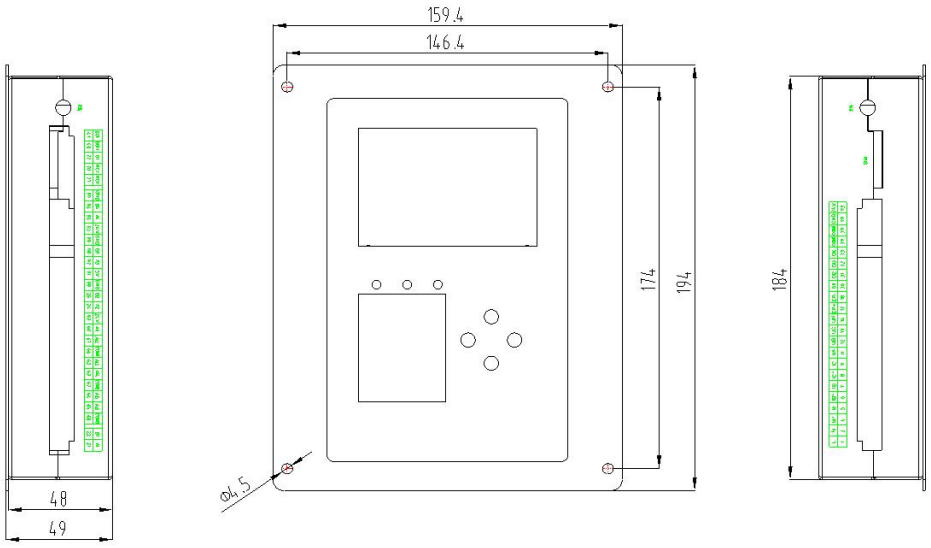


Figure 1: Front and side views

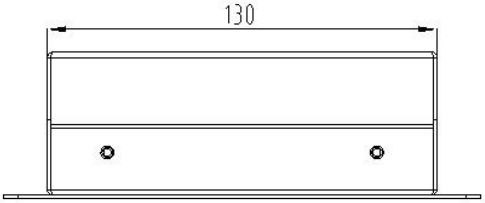


Figure 2: Top view

6 Wiring and installation

6.1 Schematic diagram of voltage and current wiring

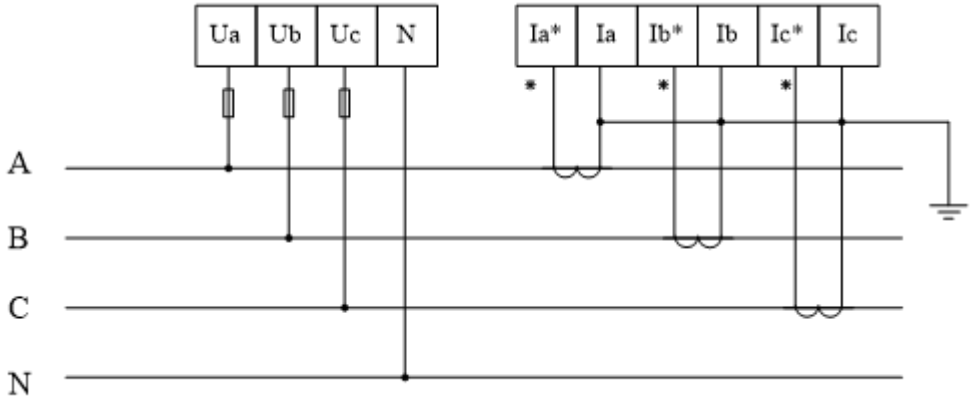


Figure 3: Three-phase four-wire access via a transformer

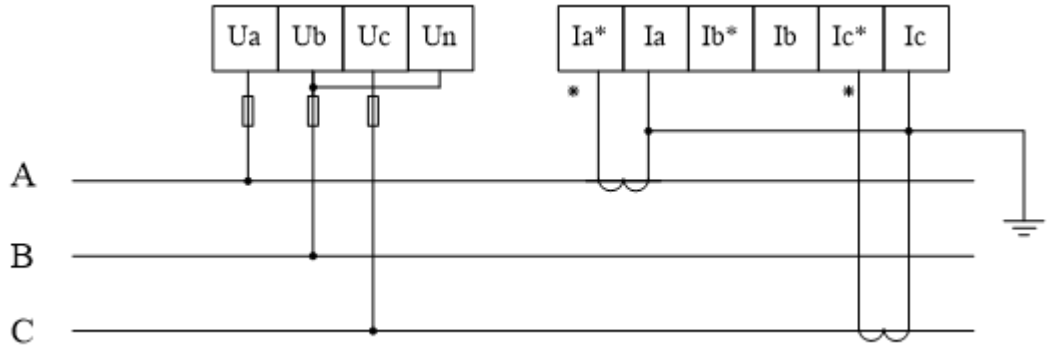
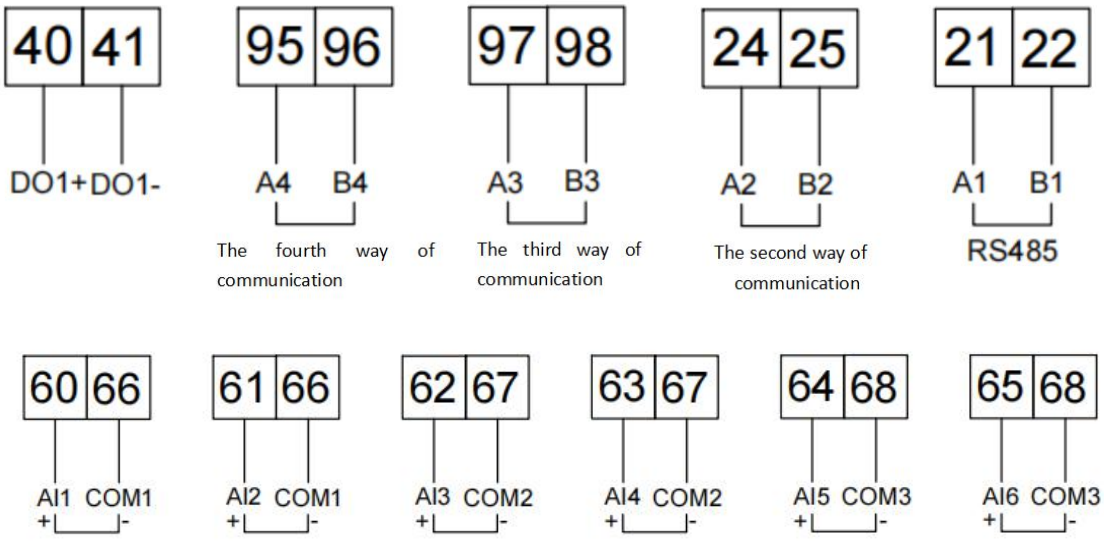


Figure 4: Three-phase three-wire access via a transformer

6.2 Auxiliary segments



7 Address Table

The instrument supports 03H command and 10H command in modBUS-RTU protocol, 03H is to read multiple registers, 10H is to write multiple registers, please query the protocol data format. The following table shows the

register address table of the meter:

Register address	Data items	Length	Attribute	Remark
Power zone				
0000H	Current total active energy	4	R	Integers retain 2 decimal places Unit kWh
0002H	Current spike active energy	4	R	
0004H	Current peak active energy	4	R	
0006H	Current flat active energy	4	R	
0008H	Current valley active energy	4	R	
000AH	Current forward active total energy	4	R	
000CH	Current forward active spike energy	4	R	
000EH	Current forward active peak energy	4	R	
0010H	Current forward active flat energy	4	R	
0012H	Current forward active valley energy	4	R	
0014H	Current reversing active total energy	4	R	
0016H	Current reversing active spike energy	4	R	
0018H	Current reversing Active peak energy	4	R	
001AH	Current reversing active flat energy	4	R	
001CH	Current reversing Active valley energy	4	R	
001EH	Current total reactive energy	4	R	Integers retain 2 decimal places Unit kVarh
0020H	Current reactive spike energy	4	R	
0022H	Current reactive peak energy	4	R	
0024H	Current reactive flat energy	4	R	
0026H	Current reactive valley energy	4	R	
0028H	Current forward reactive total energy	4	R	
002AH	Current forward reactive spike energy	4	R	
002CH	Current forward reactive peak energy	4	R	
002EH	Current forward reactive flat energy	4	R	
0030H	Current forward reactive valley energy	4	R	
0032H	Current reversing reactive total energy	4	R	
0034H	Current reversing reactive spike energy	4	R	
0036H	Current reversing reactive peak energy	4	R	
0038H	Current reversing reactive flat energy	4	R	
003AH	Current reversing reactive valley energy	4	R	
003CH	Total amount of phase A positive active energy	4	R	Integers retain 2

003EH	Total amount of phase B positive active energy	4	R	decimal places
0040H	Total amount of phase C positive active energy	4	R	Unit kWh
Electrical parameter zone				
0042H	Voltage of A phase	2	R	The voltage retains 1 decimal place
0043H	Voltage of B phase	2	R	
0044H	Voltage of C phase	2	R	
0045H	Current of A phase	2	R	Current retains 2 decimal places
0046H	Current of B phase	2	R	
0047H	Current of C phase	2	R	
0048H	Voltage between A-B	2	R	
0049H	Voltage between C-B	2	R	
004AH	Voltage between A-C	2	R	
004BH	Frequency	2	R	2 decimal places are reserved
004CH	A phase active power	2	R	Complement form: Retains 3 decimal places, unit KW
004DH	B phase active power	2	R	
004EH	C phase active power	2	R	
004FH	There is always active power	2	R	
0050H	A phase reactive power	2	R	Complement form: Retains 3 decimal places, in unit Kvar
0051H	B phase reactive power	2	R	
0052H	C phase reactive power	2	R	
0053H	Total reactive power	2	R	
0054H	Apparent power of A phase	2	R	Complement form: Retains 3 decimal places, unit KVA
0055H	Apparent power of B phase	2	R	
0056H	Apparent power of C phase	2	R	
0057H	Total apparent power	2	R	
0058H	Power factor of A phase	2	R	Complement form: Preserves 3 decimal places
0059H	Power factor of B phase	2	R	
005AH	Power factor of C phase	2	R	
005BH	Total power factor	2	R	
005CH	Zero-sequence current	2	R	
005DH	Voltage imbalance	2	R	Int
005EH	Current imbalance	2	R	Unit 0.1%
005FH	PhaseIA	2	R	
0060H	PhaseIB	2	R	

0061H	PhaseIC	2	R	
0062H	PhaseUA	2	R	
0063H	PhaseUB	2	R	
0064H	PhaseUC	2	R	
System parameters area				
0069H	Address 1	1	R/W	Mailing address: 1 ~ 247
	Baud rate 1	1	R/W	Baud rate： 0:1200 1:2400 2:4800 3:9600 4:19200
006AH	Check digit 1	1	R/W	Check digit： 0：None 1：Odd 2：Even
	Stop bit 1	1	R/W	Stop bit： 0：one stop bit 1：1.5 bit stop bit 2：two stop bit
006BH	Address 2	1	R/W	Mailing address: 1 ~ 247
	Baud rate 2	1	R/W	Baud rate： 0:1200 1:2400 2:4800 3:9600 4:19200
006CH	Check digit 2	1	R/W	Check digit： 0：None 1：Odd 2：Even
	Stop bit 2	1	R/W	Stop bit： 0：one stop bit 1：1.5 bit stop bit

				2：two stop bit
006DH	Address 3	1	R/W	Mailing address: 1 ~ 247
	Baud rate 3	1	R/W	Baud rate： 0:1200 1:2400 2:4800 3:9600 4:19200
006EH	Check digit 3	1	R/W	Check digit： 0：None 1：Odd 2：Even
	Obligate			
006FH	Address 4	1	R/W	Mailing address: 1 ~ 247
	Baud rate 4	1	R/W	Baud rate： 0:1200 1:2400 2:4800 3:9600 4:19200
0070H	Check digit 4	1	R/W	Check digit： 0：None 1：Odd 2：Even
	Obligate	1		
0071H-0074H	Serial number	2*4	R/W	Char
0075H-0076H	Password	4	R/W	1-9999
0077H	Backlit time, reboot	2	R/W	The high 8 bits is the backlight time 0-255 minutes
0078-007AH	Table number	2*3	R/W	BCD

007BH	Current ratio	2	R/W	The value range （0~9999）
007CH	Voltage ratio	2	R/W	The value range （0~9999）
007DH	State	2	R/W	
007EH	Pulse constant	2	R/W	
007FH	Basic current	2	R/W	
0080H	Communication selection	2	R/W	
0081H	DO1 output mode	2	R	0: Electrical Level 1: Pulse
0082H	DO2 output mode	2	R/W	0: Electrical Level 1: Pulse
0083H	DO3 pulse width	2	R/W	0-9999ms
0084H	DO4 pulse width	2	R/W	0-9999ms
0085H	Obligate	2	R/W	
Time				
0086H	Year, month	2	R	
0087H	Days, hours	2	R	
0088H	Minutes, seconds	2	R	
0089H	Week, obligate	2	R	

Headquarters: Acrel Co., LTD.
Address: No.253 Yulv Road Jiading District, Shanghai，China
TEL.: 0086-21-69158338　0086-21-69156052　0086-21-59156392　0086-21-69156971
Fax: 0086-21-69158303
Web-site: www.acrel-electric.com
E-mail: ACREL008@vip.163.com
Postcode: 201801

Manufacturer: Jiangsu Acrel Electrical Manufacturing Co., LTD.
Address: No.5 Dongmeng Road,Dongmeng industrial Park, Nanzha Street,Jiangyin City,Jiangsu Province,China
TEL：0086-510-86179966
Fax：0086-510-86179975
Web-site: www.jsacrel.com
Postcode: 214405
E-mail: sales@email.acrel.cn