ADL400 - Communication Description

The meter adapts MODBUS-RTU protocol, and the baud rate can be chosen from 1200bps、2400 bps、4800 bps、9600bps、19200bps and 38400 bps. The parity is None.

The meter needs shielded twisted pair conductors to connect. Customers should consider the whole network's parameters such as communication wire length, the direction, communication transformer and network cover range, etc.

Note:

1. Wiring should follow the wiring requirements;
2. Connect all the meter in the RS485 network even some do not need to communication, which is benefit for error checking and testing.
3. Use two color wires in connecting wires and all the A port use the same color.
4. No longer than 1200 meters of RS485 bus line.

1.1 ADDR List

MODBUS-RTU protocol has 03H and 10H command to read and write registers respectively. The following chart is registers' address list:

Table 8 communication address list

Address	Variable	Length	R/W	Notes
0000H	Current total active energy	4	R	kWh Int Keep 2 decimal places Particularly, if ct and Pt is not all 1, actual electric energy value should be product of register reading and Pt*ct, except for the specially noted register data.
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	kvarh

0020H	Current reactive spike energy	4	R	Int
0022H	Current reactive peak energy	4	R	Keep 2 decimal places
0024H	Current reactive flat energy	4	R	
0026H	Current reactive valley energy	4	R	Particularly, note the
0028H	Current forward reactive total energy	4	R	same as above.
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	Time：second、minute	2	R/W	
003DH	Time：hour、day	2	R/W	
003EH	Time：month、year	2	R/W	
003FH	Address（high 8 bit） Baud（low 8 bit）	2	R/W	baud： 0：1200 1：2400 2：4800 3：9600 4：19200 5：38400
0040H	Pulse constant	2	R	
0041H	First time zone address First time zone start data:day	2	R/W	Time zone number：
0042H	First time zone start data:month Second time zone address	2	R/W	1：First time zone 2：Second time zone
0043H	Second time zone start data:day Second time zone start data:month	2	R/W	3：Third time zone
0044H	Third time zone address Third time zone start data:day	2	R/W	4：Fourth time zone 5：Fifth time zone
0045H	Third time zone start data:month Fourth time zone address	2	R/W	6：Sixth time zone 7：Seventh time zone
0046H	Fourth time zone start data:day Fourth time zone start data:month	2	R/W	8：Eighth time zone
0047H-0060H	Reserve			
0061H	Voltage of A phase	2	R	Resolution：0.1V
0062H	Voltage of B phase	2	R	(Secondary side data)
0063H	Voltage of C phase	2	R	
0064H	Current of A phase	2	R	Resolution：0.01A
0065H	Current of B phase	2	R	(Secondary side data)
0066H	Current of C phase	2	R	
0067H	Active power of A phase	2	R	Complement form

0068H	Active power of B phase	2	R	Resolution: 0.001kW
0069H	Active power of C phase	2	R	(Secondary side data)
006AH	Total active power	2	R	
006BH	Reactive power of A phase	2	R	Complement form
006CH	Reactive power of B phase	2	R	Resolution: 0.001kvar
006DH	Reactive power of C phase	2	R	(Secondary side data)
006EH	Total reactive power	2	R	
006FH	Apparent power of A phase	2	R	Complement form
0070H	Apparent power of B phase	2	R	Resolution: 0.001kVA
0071H	Apparent power of C phase	2	R	(Secondary side data)
0072H	Total apparent power	2	R	
0073H	Power factor of A phase	2	R	Complement form
0074H	Power factor of B phase	2	R	Resolution: 0.001
0075H	Power factor of C phase	2	R	
0076H	Total power factor	2	R	
0077H	Frequency	2	R	Resolution: 0.01Hz
0078H	Voltage between A-B	2	R	Resolution: 0.1V
0079H	Voltage between C-B	2	R	
007AH	Voltage between A-C	2	R	
007BH	Forward active maximum demand	2	R	Resolution: 0.001 Sequence of occurrence time: minute Hour day month
007CH	Time of occurrence for the forward active maximum amount:minute、hour	2	R	
007DH	Time of occurrence for the forward active maximum amount:day、month	2	R	
007EH	Reversing active maximum demand	2	R	
007FH	Time of occurrence for the Reversing active maximum demand amount:minute、hour	2	R	
0080H	Time of occurrence for the Reversing active maximum demand amount:day、month	2	R	
0081H	Maximum forward demand for reactive power	2	R	
0082H	Time of occurrence for the forward reactive maximum amount:minute、hour	2	R	
0083H	Time of occurrence for the forward reactive maximum amount:day、month	2	R	
0084H	Maximum reversing demand for reactive power	2	R	
0085H	Time of occurrence for the reversing reactive maximum amount:minute、hour	2	R	
0086H	Time of occurrence for the reversing reactive maximum amount:day、month	2	R	
0087H	Forward active energy of A phase	4	R	kWh

0089H	Forward active energy of B phase	4	R	Int
008BH	Forward active energy of C phase	4	R	Keep 2 decimal places
008DH	PT	2	R/W	
008EH	CT	2	R/W	
008FH-0090H	Reserve			
0091H	Running state	2	R/W	
0092H	Zero sequence current	2	R	
0093H	Voltage imbalance	2	R	Int
0094H	Current imbalance	2	R	Resolution：0.1%
0095H	Parity bit（high 8 bit） Stop bit（low 8 bit）	2	R/W	parity bit： 0：None 1：Odd 2：Even stop bit： 0：one stop bit 1：two stop bit
0096H-00A3H	Reserve			
00A4H-00A5H	Current total apparent Energy	4	R	Resolution：0.01kVAh
00A6H	Code	2	R/W	1-9999
00A7H-00C9H	Reserve			
00CAH	The back light time			
00CBH-0120H	Reserve			
0121H	Daily frozen time:Hour	2	R/W	
0122H	Monthly frozen time:day、hour	2	R/W	
0123H-0163H	Reserve			
0164H	Active power of A phase	4	R	Complement form Resolution：0.001kW (Secondary side data)
0166H	Active power of B phase	4	R	
0168H	Active power of C phase	4	R	
016AH	Total active power	4	R	
016CH	Reactive power of A phase	4	R	Complement form Resolution：0.001kvar (Secondary side data)
016EH	Reactive power of B phase	4	R	
0170H	Reactive power of C phase	4	R	
0172H	Total reactive power	4	R	
0174H	Apparent power of A phase	4	R	Complement form Resolution：0.001kVA (Secondary side data)
0176H	Apparent power of B phase	4	R	
0178H	Apparent power of C phase	4	R	
017AH	Total apparent power	4	R	
017CH	Power factor of A phase	2	R	Complement form Resolution：0.001
017DH	Power factor of B phase	2	R	
017EH	Power factor of C phase	2	R	
017FH	Total power factor	2	R	
0180H	Maximum demand for forward active power on the day	2	R	Three decimal places are reserved for daily demand, and the
0181H	Occur time:minute、hour	2	R	

0182H	Maximum demand for reverse active power on the day	2	R	occurrence time is arranged in minutes and hours.
0183H	Time of occurrence: minute、hour	2	R	
0184H	Maximum demand for forward reactive power on the day	2	R	
0185H	Time of occurrence: minute、hour	2	R	
0186H	Maximum demand for reverse reactive power on the day	2	R	
0187H	Time of occurrence: minute、hour	2	R	
0188H	Maximum demand for forward active power last day	2	R	
0189H	Time of occurrence: minute、hour	2	R	
018AH	Maximum demand for reverse active power last day	2	R	
018BH	Time of occurrence: minute、hour	2	R	
018CH	Maximum demand for forward reactive power last day	2	R	
018DH	Time of occurrence: minute、hour	2	R	
018EH	Maximum demand for reverse reactive power last day	2	R	
018FH	Occur time:minute、hour	2	R	
0190H	Maximum demand for forward active power last 2 days	2	R	
0191H	Time of occurrence: minute、hour	2	R	
0192H	Maximum demand for reverse active power last 2 days	2	R	
0193H	Occur time:minute、hour	2	R	
0194H	Maximum demand for forward reactive power last 2 days	2	R	
0195H	Time of occurrence: minute、hour	2	R	
0196H	Maximum demand for reverse reactive power last 2 days	2	R	
0197H	Time of occurrence: minute、hour	2	R	
0198H	Current forward active demand	2	R	
0199H	Current reversing active demand	2	R	
019AH	Current forward reactive demand	2	R	
019BH	Current reversing reactive demand	2	R	
019BH-01FFH	Reserve			
0200H	Maximum voltage on A phase	2	R	
0201H	Date of occurrence：month、day	2	R	
0202H	Time of occurrence：hour、minute	2	R	
0203H	Maximum voltage on B phase and occurrence time	6	R	
0206H	Maximum voltage on C phase and occurrence time	6	R	

0209H	Maximum current on A phase and occurrence time	6	R	
020CH	Maximum current on B phase and occurrence time	6	R	
020FH	Maximum current on B phase and occurrence time	6	R	
0212H	Maximum active power on A phase	4	R	
0214H	Date of occurrence：month、day	2	R	
0215H	Time of occurrence：hour、minute	2	R	
0216H	Maximum active power on B phase and occurrence time	8	R	
021AH	Maximum active power on C phase and occurrence time	8	R	
021EH	Maximum total active power and occurrence time	8	R	
0222H	Maximum reactive power on A phase and occurrence time	8	R	
0226H	Maximum reactive power on B phase and occurrence time	8	R	
022AH	Maximum reactive power on C phase and occurrence time	8	R	
022EH	Maximum total reactive power and occurrence time	8	R	
0232H	Maximum apparent power on A phase and occurrence time	8	R	
0236H	Maximum apparent power on B phase and occurrence time	8	R	
023AH	Maximum apparent power on C phase and occurrence time	8	R	
023EH	Maximum total apparent power and occurrence time	8	R	
0242H	Minimum voltage on A phase and occurrence time	6	R	
0245H	Minimum voltage on B phase and occurrence time	6	R	
0248H	Minimum voltage on C phase and occurrence time	6	R	
024BH	Minimum current on A phase and occurrence time	6	R	
024EH	Minimum current on B phase and occurrence time	6	R	
0251H	Minimum current on C phase and occurrence time	6	R	
0254H	Minimum active power on A phase and occurrence time	8	R	

0258H	Minimum active power on B phase and occurrence time	8	R	
025CH	Minimum active power on C phase and occurrence time	8	R	
0260H	Minimum total active power and occurrence time	8	R	
0264H	Minimum reactive power on A phase and occurrence time	8	R	
0268H	Minimum reactive power on B phase and occurrence time	8	R	
026CH	Minimum reactive power on C phase and occurrence time	8	R	
0270H	Minimum total reactive power and occurrence time	8	R	
0274H	Minimum apparent power on A phase and occurrence time	8	R	
0278H	Minimum apparent power on B phase and occurrence time	8	R	
027EH	Minimum apparent power on C phase and occurrence time	8	R	
0280H	Minimum total apparent power and occurrence time	8	R	
0285H-077FH	Reserve			
0780H	Fifth time zone address Fifth time zone start data:day	2	R/W	Time zone number：
0781H	Fifth time zone start data:month Sixth time zone address	2	R/W	1： First time zone 2： Second time zone
0782H	Sixth time zone start data:day Sixth time zone start data:month	2	R/W	3： Third time zone 4： Fourth time zone
0783H	Seventh time zone address Seventh time zone start data:day	2	R/W	5： Fifth time zone 6： Sixth time zone
0784H	Seventh time zone start data:month Eighth time zone address	2	R/W	7： Seventh time zone 8： Eighth time zone
0785H	Eighth time zone start data:day Eighth time zone start data:month	2	R/W	
F000H-F006H	serial number	14	R	BCD code

1.2 Primary and secondary data

1.2.1 Floating point electrical parameter data

5300H	Voltage of A phase	4	R	
5302H	Voltage of B phase	4	R	float (Secondary side data)
5304H	Voltage of C phase	4	R	
5306H	Voltage between A-B	4	R	
5308H	Voltage between C-B	4	R	

530AH	Voltage between A-C	4	R	
530CH	Current of A phase	4	R	
530EH	Current of B phase	4	R	
5310H	Current of C phase	4	R	
5312H	Active power of A phase	4	R	
5314H	Active power of B phase	4	R	
5316H	Active power of C phase	4	R	
5318H	Total active power	4	R	
531AH	Reactive power of A phase	4	R	
531CH	Reactive power of B phase	4	R	
531EH	Reactive power of C phase	4	R	
5320H	Total reactive power	4	R	
5322H	Apparent power of A phase	4	R	
5324H	Apparent power of B phase	4	R	
5326H	Apparent power of C phase	4	R	
5328H	Total apparent power	4	R	
532AH	Power factor of A phase	4	R	
532CH	Power factor of B phase	4	R	
532EH	Power factor of C phase	4	R	
5330H	Total power factor	4	R	
5332H	frequency	4	R	
5334H	zero line current	4	R	
0800H	Voltage of A phase	4	R	
0802H	Voltage of B phase	4	R	
0804H	Voltage of C phase	4	R	
0806H	Voltage between A-B	4	R	
0808H	Voltage between C-B	4	R	
080AH	Voltage between A-C	4	R	
080CH	Current of A phase	4	R	
080EH	Current of B phase	4	R	
0810H	Current of C phase	4	R	
0812H	zero line current	4	R	
0814H	Active power of A phase	4	R	Float
0816H	Active power of B phase	4	R	(Primary side data)
0818H	Active power of C phase	4	R	
081AH	Total active power	4	R	
081CH	Reactive power of A phase	4	R	
081EH	Reactive power of B phase	4	R	
0820H	Reactive power of C phase	4	R	
0822H	Total reactive power	4	R	
0824H	Apparent power of A phase	4	R	
0826H	Apparent power of B phase	4	R	
0828H	Apparent power of C phase	4	R	
082AH	Total apparent power	4	R	

082CH	Power factor of A phase	4	R	
082EH	Power factor of B phase	4	R	
0830H	Power factor of C phase	4	R	
0832H	Total power factor	4	R	
0834H	frequency	4	R	
0836H	Voltage imbalance	4	R	
0838H	Current imbalance	4	R	
083AH	Current forward active demand	4	R	
083CH	Current reversing active demand	4	R	
083EH	Current forward reactive demand	4	R	
0840H	Current reversing reactive demand	4	R	
0842H	Current total active energy	4	R	
0844H	Current spike active energy	4	R	
0846H	Current peak active energy	4	R	
0848H	Current flat active energy	4	R	
084AH	Current valley active energy	4	R	
084CH	Current forward active total energy	4	R	
084EH	Current forward active spike energy	4	R	INT32
0850H	Current forward active peak energy	4	R	Resolution：0.1kWh
0852H	Current forward active flat energy	4	R	(Primary side data)
0854H	Current forward active valley energy	4	R	
0856H	Current reversing active total energy	4	R	
0858H	Current reversing active spike energy	4	R	
085AH	Current reversing Active peak energy	4	R	
085CH	Current reversing active flat energy	4	R	
085EH	Current reversing Active valley energy	4	R	
0860H	Current total reactive energy	4	R	
0862H	Current reactive spike energy	4	R	
0864H	Current reactive peak energy	4	R	
0866H	Current reactive flat energy	4	R	
0868H	Current reactive valley energy	4	R	
086AH	Current forward reactive total energy	4	R	
086CH	Current forward reactive spike energy	4	R	INT32
086EH	Current forward reactive peak energy	4	R	Resolution：0.1kvarh
0870H	Current forward reactive flat energy	4	R	(Primary side data)
0872H	Current forward reactive valley energy	4	R	
0874H	Current reversing reactive total energy	4	R	
0876H	Current reversing reactive spike energy	4	R	
0878H	Current reversing reactive peak energy	4	R	
087AH	Current reversing reactive flat energy	4	R	
087CH	Current reversing reactive valley energy	4	R	

1.2.2 Eight rate energy data

E200H	Current total active energy	4	R	INT32
E202H	Current rate 1 (spike) active energy	4	R	Unit: kWh

E204H	Current rate 2 (peak) active energy	4	R	(Secondary side data)
E206H	Current rate 3 (flat) active energy	4	R	Note that the model
E208H	Current rate 4 (valley) active energy	4	R	number distinguishes
E20AH	Current rate 5 active energy	4	R	decimal places:
E20CH	Current rate 6 active energy	4	R	Instrument transformer
E20EH	Current rate 7 active energy	4	R	access: 4 decimal places
E210H	Current rate 8 active energy	4	R	Direct access: 2 decimal
E212H	Current forward active total energy	4	R	places
E214H	Current forward active rate 1 energy	4	R	
E216H	Current forward active rate 2 energy	4	R	
E218H	Current forward active rate 3 energy	4	R	
E21AH	Current forward active rate 4 energy	4	R	
E21CH	Current forward active rate 5 energy	4	R	
E21EH	Current forward active rate 6 energy	4	R	
E220H	Current forward active rate 7 energy	4	R	
E222H	Current forward active rate 8 energy	4	R	
E224H	Current reversing active total energy	4	R	
E226H	Current reversing active rate 1 energy	4	R	
E228H	Current reversing active rate 2 energy	4	R	
E22AH	Current reversing active rate 3 energy	4	R	
E22CH	Current reversing active rate 4 energy	4	R	
E22EH	Current reversing active rate 5 energy	4	R	
E230H	Current reversing active rate 6 energy	4	R	
E232H	Current reversing active rate 7 energy	4	R	
E234H	Current reversing active rate 8 energy	4	R	
E236H	Current total reactive energy	4	R	
E238H	Current rate 1 (spike) reactive energy	4	R	
E23AH	Current rate 2 (peak) reactive energy	4	R	
E23CH	Current rate 3 (flat) reactive energy	4	R	
E23EH	Current rate 4 (valley) reactive energy	4	R	
E240H	Current rate 5 reactive energy	4	R	INT32
E242H	Current rate 6 reactive energy	4	R	Unit: kvarh
E244H	Current rate 7 reactive energy	4	R	(Secondary side data)
E246H	Current rate 8 reactive energy	4	R	Note that the model
E248H	Current forward reactive total energy	4	R	number distinguishes
E24AH	Current forward reactive rate 1 energy	4	R	decimal places:
E24CH	Current forward reactive rate 2 energy	4	R	Instrument transformer
E24EH	Current forward reactive rate 3 energy	4	R	access: 4 decimal places
E250H	Current forward reactive rate 4 energy	4	R	Direct access: 2 decimal
E252H	Current forward reactive rate 5 energy	4	R	places
E254H	Current forward reactive rate 6 energy	4	R	
E256H	Current forward reactive rate 7 energy	4	R	
E258H	Current forward reactive rate 8 energy	4	R	
E25AH	Current reversing reactive total energy	4	R	
E25CH	Current reversing reactive rate 1 energy	4	R	

E25EH	Current reversing reactive rate 2 energy	4	R	
E260H	Current reversing reactive rate 3 energy	4	R	
E262H	Current reversing reactive rate 4 energy	4	R	
E264H	Current reversing reactive rate 5 energy	4	R	
E266H	Current reversing reactive rate 6 energy	4	R	
E268H	Current reversing reactive rate 7 energy	4	R	
E26AH	Current reversing reactive rate 8 energy	4	R	
E26CH	Forward active energy of A phase	4	R	INT32 Unit: kWh
E26EH	Forward active energy of B phase	4	R	(Secondary side data)
E270H	Forward active energy of C phase	4	R	Note the same
E272H-E2FFH	Reserve			
E300H	Current total active energy	4	R	
E302H	Current rate 1 (spike) active energy	4	R	
E304H	Current rate 2 (peak) active energy	4	R	
E306H	Current rate 3 (flat) active energy	4	R	
E308H	Current rate 4 (valley) active energy	4	R	
E30AH	Current rate 5 active energy	4	R	
E30CH	Current rate 6 active energy	4	R	
E30EH	Current rate 7 active energy	4	R	
E310H	Current rate 8 active energy	4	R	
E312H	Current forward active total energy	4	R	
E314H	Current forward active rate 1 energy	4	R	
E316H	Current forward active rate 2 energy	4	R	
E318H	Current forward active rate 3 energy	4	R	INT32
E31AH	Current forward active rate 4 energy	4	R	Resolution：0.1kWh
E31CH	Current forward active rate 5 energy	4	R	(Primary side data)
E31EH	Current forward active rate 6 energy	4	R	
E320H	Current forward active rate 7 energy	4	R	
E322H	Current forward active rate 8 energy	4	R	
E324H	Current reversing active total energy	4	R	
E326H	Current reversing active rate 1 energy	4	R	
E328H	Current reversing active rate 2 energy	4	R	
E32AH	Current reversing active rate 3 energy	4	R	
E32CH	Current reversing active rate 4 energy	4	R	
E32EH	Current reversing active rate 5 energy	4	R	
E330H	Current reversing active rate 6 energy	4	R	
E332H	Current reversing active rate 7 energy	4	R	
E334H	Current reversing active rate 8 energy	4	R	
E336H	Current total reactive energy	4	R	
E338H	Current rate 1 (spike) reactive energy	4	R	
E33AH	Current rate 2 (peak) reactive energy	4	R	INT32
E33CH	Current rate 3 (flat) reactive energy	4	R	Resolution：0.1kvarh
E33EH	Current rate 4 (valley) reactive energy	4	R	(Primary side data)
E340H	Current rate 5 reactive energy	4	R	
E342H	Current rate 6 reactive energy	4	R	

E344H	Current rate 7 reactive energy	4	R	
E346H	Current rate 8 reactive energy	4	R	
E348H	Current forward reactive total energy	4	R	
E34AH	Current forward reactive rate 1 energy	4	R	
E34CH	Current forward reactive rate 2 energy	4	R	
E34EH	Current forward reactive rate 3 energy	4	R	
E350H	Current forward reactive rate 4 energy	4	R	
E352H	Current forward reactive rate 5 energy	4	R	
E354H	Current forward reactive rate 6 energy	4	R	
E356H	Current forward reactive rate 7 energy	4	R	
E358H	Current forward reactive rate 8 energy	4	R	
E35AH	Current reversing reactive total energy	4	R	
E35CH	Current reversing reactive rate 1 energy	4	R	
E35EH	Current reversing reactive rate 2 energy	4	R	
E360H	Current reversing reactive rate 3 energy	4	R	
E362H	Current reversing reactive rate 4 energy	4	R	
E364H	Current reversing reactive rate 5 energy	4	R	
E366H	Current reversing reactive rate 6 energy	4	R	
E368H	Current reversing reactive rate 7 energy	4	R	
E36AH	Current reversing reactive rate 8 energy	4	R	
E36CH	Forward active energy of A phase	4	R	INT32
E36EH	Forward active energy of B phase	4	R	Resolution：0.1kWh
E370H	Forward active energy of C phase	4	R	(Primary side data)

1.3 History energy frozen time and history energy energy date

ADL400's registers on frozen by day and by month.

Table 9 Frozen time communicate address

Address	Name	R/W	Note
0121H	Frozen time by day	R/W	Null (High byte) Hour(Low byte)
0122H	Frozen time by month	R/W	Day(High byte) Hour(Low byte)

ADL400 can achieve the history energy statistic in last 48 months and last 90days. (Each tariff rate of energy can be recorded.) The history energy record can only be read by assemblage and the length of whole part is 120 byte (60 registers), and list below is the registers' name.

Table 10 History energy communicate address

Address	Name		Data list	Name
6000H	Assemblage of last 1 day demand and energy		6000H	Frozen time:YY-MM
6022H	Assemblage of last 2 days demand and energy		6001H	Frozen time: DD-hh
…	…		6002H	total active energy

Address	Name		Data list	Name
6BD2H	Assemblage of last 90 days demand and energy		6004H	Spike active energy
reserve	reserve		6006H	peak active energy
7000H	Assemblage of last 1 month demand and energy		6008H	flat active energy
7022H	Assemblage of last 2months demand and energy		600AH	valley active energy
…	…		600CH	total reactive energy
763EH	Assemblage of last 48 months demand and energy		600EH	Spike reactive energy
			6010H	peak reactive energy
			6012H	flat reactive energy
			6014H	valley reactive energy
			6016H	Total amount of phase A forward active energy
			6018H	Total amount of phase B forward active energy
			601AH	Total amount of phase C forward active energy
			601CH	Maximum active demand
			601DH	Occurrence time: mm-hh
			601EH	Occurrence time : DD-MM
			601FH	Maximum reactive demand
			6020H	Occurrence time: mm-hh
			6021H	Occurrence time: DD-MM

Eight-rate historical energy can be read through blocks with a length of 44 registers, each of which is ordered and the contents are as follows:

Table 11 Eight-rate historical energy

Address	Name		Data list	Name
2000H	Assemblage of last 1 day energy		2000H	Frozen time:YY-MM
202CH	Assemblage of last 2 days energy		2001H	Frozen time: DD-hh
…	…		2002H	Total active energy
2F4CH	Assemblage of last 90 days energy		2004H	Rate 1 (spike) active energy
reserve	reserve		2006H	Rate 2 (peak) active energy
4000H	Assemblage of last 1 month energy		2008H	Rate 3 (flat) active energy
402CH	Assemblage of last 2 months energy		200AH	Rate 4 (valley) active energy
…	…		200CH	Rate 5 active energy
4814H	Assemblage of last 48 months energy		200EH	Rate 6 active energy
			2010H	Rate 7 active energy
			2012H	Rate 8 active energy
			2014H	Total reactive energy
			2016H	Rate 1 (spike) reactive energy
			2018H	Rate 2 (peak) reactive energy
			201AH	Rate 3 (flat) reactive energy

201CH	Rate 4 (valley) reactive energy
201EH	Rate 5 reactive energy
2020H	Rate 6 reactive energy
2022H	Rate 7 reactive energy
2024H	Rate 8 reactive energy
2026H	Forward active energy of A phase
2028H	Forward active energy of B phase
202AH	Forward active energy of C phase

1.4 Sub harmonic data

ADL400 has function of harmonic. The function include 31st harmonic statistics of voltage and current, harmonic voltage and current of each phase apparently, harmonic active/reactive power of each phase apparently, fundamental voltage and current of each phase apparently and fundamental active/reactive power of each phase apparently.

Table 11 Harmonics data address

Address	Name	Length(Bit)	R/W	Note
05DDH	THDUa	2	R	Total distortion rate of voltage and current on each phase Keep 3 decimal places
05DEH	THDUb	2	R	
05DFH	THDUc	2	R	
05E0H	THDIa	2	R	
05E1H	THDIb	2	R	
05E2H	THDIc	2	R	
05E3H	THUa	2×30	R	Harmonic voltage on 2nd-31st Keep 3 decimal places
0601H	THUb	2×30	R	
061FH	THUc	2×30	R	
063DH	THIa	2×30	R	Harmonic current on 2nd-31st Keep 2 decimal places
065BH	THIb	2×30	R	
0679H	THIc	2×30	R	
0697H	Fundamental voltage on A phase	2	R	Int Keep 1 decimal places
0698H	Fundamental voltage on B phase	2	R	
0699H	Fundamental voltage on C phase	2	R	
069AH	Harmonic voltage on A phase	2	R	
069BH	Harmonic voltage on B phase	2	R	
069CH	Harmonic voltage on C phase	2	R	
069DH	Fundamental current on A phase	2	R	Int Keep 2 decimal places
069EH	Fundamental current on B phase	2	R	
069FH	Fundamental current on C phase	2	R	
06A0H	Harmonic current on A phase	2	R	
06A1H	Harmonic current on B phase	2	R	
06A2H	Harmonic current on C phase	2	R	

06A3H	Fundamental active power on A phase	2	R	
06A4H	Fundamental active power on B phase	2	R	
06A5H	Fundamental active power on C phase	2	R	
06A6H	Total fundamental active power	2	R	
06A7H	Fundamental reactive power on A phase	2	R	
06A8H	Fundamental reactive power on B phase	2	R	
06A9H	Fundamental reactive power on C phase	2	R	
06AAH	Total fundamental reactive power	2	R	Int Keep 3 decimal places
06ABH	Harmonic active power on A phase	2	R	
06ACH	Harmonic active power on B phase	2	R	
06ADH	Harmonic active power on C phase	2	R	
06AEH	Total harmonic active power	2	R	
06AFH	Harmonic reactive power on A phase	2	R	
06B0H	Harmonic reactive power on B phase	2	R	
06B1H	Harmonic reactive power on C phase	2	R	
06B2H	Total harmonic reactive power	2	R	

1.5 SOE record

Address	Name
3001H	Last event record
3002H	Last 2 event record
…	…
3064H	Last 100 event record

Data list	Name
0000H	Occur date: YY-MM
0001H	Occur time: DD-hh
0002H	Occur time: mm-ss
0004H	Event number
0005H	Event details
0006H	Reserve

Event num	Name
0100/0101	Power on/off
0200	Clear

Details	Note
0001	Clear current energy
0002	Clear history energy on Flash

			0003	Clear maximum demand
			0004	Clear history energy
			0005	Clear maximum value on a period
			0006	Clear out
0700	Time calibration			

Example: The address is 001 at present, and we send the code: 01 03 30 01 00 06 9B 08 to get the last event record, and the slave station will give back: 01 03 0C <u>12 01 08 0A 01 01</u> （2018/1/8 10:1:1）<u>01 00</u> （powered）　<u>00 00</u>（no details）　<u>00 00</u>（reserved）　80 23