Quick Operation Manual of PD7777 SERIES

Three Phase Multi-functional Digital Panel Meters

Thank you for choosing the product of Zhejiang Chint IoT Technology Co.,Ltd.In order to operate the meter safety and correctly, please read this manual carefully and pay attention to the following points before operating it:

- The instrument must be installed and maintained by the qualified professionals;
- Cut off the input signal and the auxiliary power supply before connecting the instrument;
- Use the appropriate voltage detection device to make sure there is no voltage in the different parts.

The following conditions will lead to the damage or abnormal operation of the instrument:

- Ratio setting of the instrument is not correct;
- Auxiliary power, voltage, current or frequency is out of the range;
- The polarity of the current or the voltage is not correct;
- Connected the terminals not as required.

1. Technical parameters

Table 1

Technical parameters			Index
Connection mode			3 phase 3 wire , 3 phase 4 wire
Input	Voltage	Rated value	AC220V/AC450V, other special specification could be custom-made
		Over load	Continuous:1.2times, instant:2times/5s
		Consumption	≤2VA (per phase)
		Resistance	> 500kΩ
	Current	Rated value	AC 1A/AC 5A
		Over load	Continuous:1.2times, instant:10times/5s
		Consumption of the current circuit	≤1VA(per phase)
		Resistance	< 20mΩ(per phase)
	Frequency	Input range	45Hz~65Hz
Power supply	Supply voltage range		AC/DC85V~264V, 50Hz/60Hz
	Consumption		<5W / 15VA
Clock (※)	Battery capacity of the clock		≥200mAh
	Accuracy of the clock(error per day)		≤0.5s/d（23℃)
Output	Display method		Block code LCD or LED display

Measured parameters	Voltage	Class 0.5	resolving power 0.1V	Conform to GB/T 22264
	Current	Class 0.5	resolving power 0.001A	
	Frequency	Class 0.5	resolving power 0.01Hz	
	Active power	Class 0.5	resolving power 0.1W	
	Reactive power	Class 1	resolving power 0.1var	
	Power factor	Class 0.5	resolving power 0.001	
Electric energy	Active energy	Class 0.5S	resolving power 0.01kWh	Conform to GB/T 17215.322
	Reactive energy	Class 2	resolving power 0.01kvarh	Conform to GB/T 17215.323
	Energy measurement	Support forward、reverse active energy measurement, four quadrant reactive energy.		
	Multi-rate energy measurement（※）	Support multi-rate energy measurement, 4 rates at most.		
	Maximum demand record（※）	Support positive and reverse active and reactive maximum demand record, energy measurement, demand cycle and sliding time can be set.		
	Pulse constant	Active: 10000 imp/kWh, Reactive 10000imp/kvarh, Other constants can be customized.		
	The pulse signal output	Provide 2 groups (active/reactive power) optical signal and the electrical signal pulse output optical coupling isolation of open collector, the pulse width：80±16ms。		
The power quality measuring range and deviation	Total harmonic content	Voltage	Uh ≥ 3%UN / Uh < 3%UN	5% Uh / 0.15% UN
		Current	Ih ≥ 10%IN / Ih < 10%IN	±5% Ih / 0.5% IN
		Comment: UN is nominal voltage, IN is nominal current, Uh is harmonic voltage, Ih is harmonic current.		
Miscellaneous function	Communication protocol	ModBus_RTU		
	Switch/Alarm output (※)	Support the states of 4 relay outputs. the capacity of the relay: AC250V/2A，DC30V/2A.		

Analog/Transmitting Output (※)	current output: DC0mA ~ 20mA、DC 4mA ~ 20mA. Class 0.5.
Multifunctional output (※)	Provide second pulse signal.

Comment 1: The performance indexes marked with ※ are optional, customer can customize when order.

Comment 2: Other performance indicators, reference to indoor standards of GB/T 22264.1
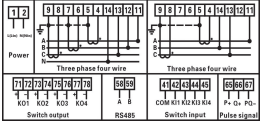
2. Wiring Instructions

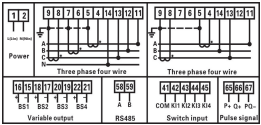Figure 1 Wiring diagram of the three-phase multi-functional meter

Figure 2 Wiring diagram of the three-phase multi-functional meter

Current signal wire

4-------IA*(input high end of A phase current)　　5------IA(output low end of A phase current)

6-------IB*(input high end of B phase current)　　7------IB(output low end of B phase current)

8-------IC*(input high end of C phase current)　　9------IC(output low end of C phase current)

Voltage signal wire

11-------UA(input end of A phase voltage)　　12-------UB(input end of B phase voltage)

13-------UC(input end of C phase voltage)　　14-------UN(input end of earth line voltage)

Auxiliary power supply

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1 ------L (input live line of auxiliary power supply)　　2 ------N(input earth line of auxiliary power supply)

Note: add AC/DC85V ~ 264V between L and N（no earth line or live line）

RS485 communication line

58-------A（RS485 A end）　　　　　　　　　59-------B（RS485 B end）

Transmission

15、17、19、21-------1，2，3，4　input low end of transmission

16、18、20、22-------1，2，3，4　input high end of transmission

Alarm（relay）

71、73、75、77-------Alarm 1，2，3，4 input high end of alarm

72、74、76、78-------Alarm 1，2，3，4 input low end of alarm

Energy pulse output line

65-------P+ (active energy pulse end)　　　66-------Q+ (reactive energy pulse end)

67-------PQ- (common port)

3. Programming parameter instructions

Instruction of keys: "Menu"the key of("Menu") means "confirm"，the key of"Esc" ("Esc")means "exit"，

"∨"means "reduce", and "∧"means "add". Input the password (assumed to be 701),enter the submenu item of "system settings":
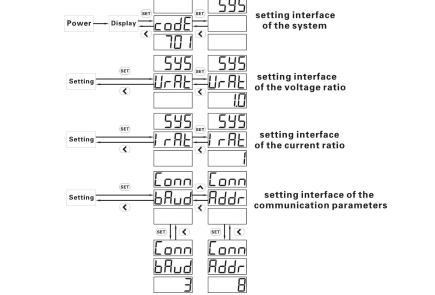

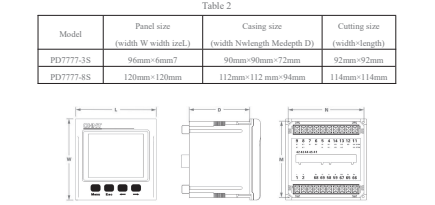Figure 3 Common parameters Settings

4. Installation dimension

Table 2

Model	Panel size (width W width izeL)	Casing size (width Nwlength Medepth D)	Cutting size (width×length)
PD7777-3S	96mm×6mm7	90mm×90mm×72mm	92mm×92mm
PD7777-8S	120mm×120mm	112mm×112 mm×94mm	114mm×114mm

Figure 4 Outline drawing of the meter

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5. Communication protocol

Table 3

Parameter address	Parameter code	Instructions of the parameters	Data type	Data length Word	R/W property
Keyboard parameters(detailed function reference to the instruction of the programming parameters, the actual value of the parameter with(*) ~ communication parameter value e and					
0000H	REV.	Reserved, actual read is the version number	16-bit signed	1	R/W
0001H	UCode	Programming password codE	16-bit signed	1	R/W
0002H	ClrE	Electric energy clearing Clr.E	16-bit signed	1	R/W
0003H	net	Selecting of the connection mode net(0:3P4W,1:3P3W)	16-bit signed	1	R/W
0004H	RESERVED	Reserved	16-bit signed	1	R/W
0005H	RESERVED	Reserved	16-bit signed	1	R/W
0006H	IrAr	CT ratio IrAt	16-bit signed	1	R/W
0007H	UrAt	PT ratio UrAt(*)	16-bit signed	1	R/W
0008H	RESERVED	Reserved	16-bit signed	1	R/W
0009H	RESERVED	Reserved	16-bit signed	1	R/W
000AH	Disp	Rotation display time(s) Disp	16-bit signed	1	R/W
000BH	B.LCD	Time control of the back light lightened(s)	16-bit signed	1	R/W
000CH	B.Light	For future backlight light control, temporarily reserved	16-bit signed	1	R/W
000DH	AL1P	Selection of OUT1 single relay alarm output object AL1P	16-bit signed	1	R/W
000EH	AL1L	OUT1 lower limit alarm point AL1L(*)	16-bit signed	1	R/W
000FH	AL1H	OUT1 upper limit alarm point AL1H(*)	16-bit signed	1	R/W
0010H	AL2P	Selection of OUT2 single relay alarm output object AL2P	16-bit signed	1	R/W

0011H	AL2L	OUT2 lower limit alarm point AL2L(*)	16-bit signed	1	R/W
0012H	AL2H	OUT2 upper limit alarm point AL2H(*)	16-bit signed	1	R/W
0013H	AL3P	Selection of OUT3 single relay alarm output object AL3P	16-bit signed	1	R/W
0014H	AL3L	OUT3 lower limit alarm point AL3L(*)	16-bit signed	1	R/W
0015H	AL3H	OUT3 upper limit alarm point AL3H*)	16-bit signed	1	R/W
0016H	AL4P	Selection of OUT4 single relay alarm output object AL4P	16-bit signed	1	R/W
0017H	AL4L	OUT4 lower limit alarm point AL4L(*)	16-bit signed	1	R/W
0018H	AL4H	OUT4 upper limit alarm point AL4H(*)	word	1	R/W
0019H	dF	Alarm differential gap dF(*)	word	1	R/W
001AH	dt	Alarm delay time dt(*)	word	1	R/W
001BH	Sdt	Specification of transmitting output signal　Sdt	word	1	R/W
001CH	Sd1P	Selection of OUT1 transmitting output object Sd1P	word	1	R/W
001DH	Sd1L	OUT1 lower limit transmitting point Sd1L(*)	word	1	R/W
001EH	Sd1H	OUT1 upper limit transmitting point Sd1H(*)	word	1	R/W
001FH	Sd2P	Selection of OUT2 transmitting output object Sd2P	word	1	R/W
0020H	Sd2L	OUT2 lower limit transmitting point Sd2L(*)	word	1	R/W
0021H	Sd2H	OUT2 upper limit transmitting point Sd2H(*)	word	1	R/W
0022H	Sd3P	Selection of OUT3	word	1	R/W

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		transmitting output object Sd3P			
0023H	Sd3L	OUT3 lower limit transmitting point Sd3L(*)	word	1	R/W
0024H	Sd3H	OUT3 upper limit transmitting point Sd3H(*)	word	1	R/W
0025H	Sd4P	Selection of OUT4 transmitting output object Sd4P	word	1	R/W
0026H	Sd4L	OUT4 lower transmitting point Sd4L(*)	word	1	R/W
0027H	Sd4H	OUT4 upper limit transmitting point Sd4H(*)	word	1	R/W
0028H	DI	Switch value input state: bit0 ~ bit3 respectively corresponds to 1 ~ 4 way switch value input, represents the external switch is off when it's "0", represents the external switch is on when it's "1", the remaining is reserved.	word	1	R
0029H	RESERVED	Reserved	16-bit signed	1	R/W
002AH	DO	Single relay alarm output state: bit0 ~ bit 3 respectively responds to 1 ~ 4 way upper & lower single relay alarm output state, represents the relay contact is off when it's "0", represents the replay contact is on when it's "1",when ALxP(x is 1、2、3 or 4) is 0, corresponding bit0 ~ bit3 can be written, the remaining is reserved.	16-bit signed	1	R/W
002BH	RESERVED	reserved	16-bit signed	1	R/W
002CH	Protocol	Protocol Switching	16-bit signed	1	R/W

002DH	Addr	Communication address Addr	16-bit signed	1	R/W
002FH	bAud	Communication baud rate bAud	16-bit signed	1	R/W
0030H	Second	Time(second)	16-bit signed	1	R/W
0031H	Minute	Time(minute)	16-bit signed	1	R/W
0032H	Hour	Time(our)	16-bit signed	1	R/W
0033H	Day	Time(day)	16-bit signed	1	R/W
0034H	Month	Time(month)	16-bit signed	1	R/W
0035H	Year	Time(year)	16-bit signed	1	R/W
		Secondary side electric data			
2000H	Uab	Line -line voltage, the unit is V(It is invalid for 3 phase 4 wire)	Single precision float	2	R
2002H	Ubc		Single precision float	2	R
2004H	Uca		Single precision float	2	R
2006H	Ua	Phase-phase voltage, the unit is V(It is invalid for 3 phase 3 wire)	Single precision float	2	R
2008H	Ub		Single precision float	2	R
200AH	Uc		Single precision float	2	R
200CH	Ia	current, the unit is A （Ib is invalid for 3 phase 3 wire)	Single precision float	2	R
200EH	Ib		Single precision float	2	R
2010H	Ic		Single precision float	2	R
2012H	Pt	Conjunction phase power, the unit is W	Single precision float	2	R
2014H	Pa	A phase active power, the unit is W	Single precision float	2	R
2016H	Pb	B phase active power, the unit is W (It is invalid for 3 phase 3 wire)	Single precision float	2	R
2018H	Pc	C phase active power, the unit is W	Single precision float	2	R
201AH	Qt	Conjunction phase reactive power, the unit is var	Single precision float	2	R
201CH	Qa	A phase reactive power, the unit is var	Single precision float	2	R
201EH	Qb	B phase reactive power, the unit is var (It is invalid for 3 phase 3 wire)	Single precision float	2	R

2020H	Qc	C phase reactive power, the unit is var	Single precision float	2	R
2022H	RESERVED	Reserved	Single precision float	2	R
2024H	RESERVED	Reserved	Single precision float	2	R
2026H	RESERVED	Reserved	Single precision float	2	R
2028H	RESERVED	Reserved	Single precision float	2	R
202AH	PFt	Conjunction phase power factor	Single precision float	2	R
202CH	PFa	A phase power factor (It is invalid for 3 phase 3 wire)	Single precision float	2	R
202EH	PFb	B phase power factor (It is invalid for 3 phase 3 wire)	Single precision float	2	R
2030H	PFc	C phase power factor (It is invalid for 3 phase 3 wire)	Single precision float	2	R
2032H	RESERVED	Reserved	Single precision float	2	R
2034H	RESERVED	Reserved	Single precision float	2	R
2036H	RESERVED	Reserved	Single precision float	2	R
2038H	UWDa	Percentages of voltage harmonic of A phase	Single precision float	2	R
203AH	UWDb	Percentages of voltage harmonic of B phase	Single precision float	2	R
203CH	UWDc	Percentages of voltage harmonic of C phase	Single precision float	2	R
203EH	IWDa	Percentages of current harmonic of A phase	Single precision float	2	R
2040H	IWDb	Percentages of current harmonic of B phase	Single precision float	2	R
2042H	IWDc	Percentages of current harmonic of C phase	Single precision float	2	R
2044H	Freq	Frequency	Single precision float	2	R
2046H	RESERVED	Reserved	Single precision float	2	R
2048H	RESERVED	Reserved	Single precision float	2	R
204AH	RESERVED	Reserved	Single precision float	2	R
204CH	RESERVED	Reserved	Single precision float	2	R
204EH	RESERVED	Reserved	Single precision float	2	R
2050H	DmPt	Total active power demand	Single precision float	2	R

2052H	RESERVED	Reserved	Single precision float	2	R

Secondary side power data

4000H	RESERVED	Reserved	Single precision float	2	R
4002H	RESERVED	Reserved	Single precision float	2	R
4004H	RESERVED	Reserved	Single precision float	2	R
4006H	RESERVED	Reserved	Single precision float	2	R
4008H	RESERVED	Reserved	Single precision float	2	R
400AH	RESERVED	Reserved	Single precision float	2	R
400CH	RESERVED	Reserved	Single precision float	2	R
400EH	RESERVED	Reserved	Single precision float	2	R
4010H	RESERVED	Reserved	Single precision float	2	R
4012H	RESERVED	Reserved	Single precision float	2	R
4014H	RESERVED	Reserved	Single precision float	2	R
4016H	RESERVED	Reserved	Single precision float	2	R
4018H	RESERVED	Reserved	Single precision float	2	R
401AH	RESERVED	Reserved	Single precision float	2	R
401CH	RESERVED	Reserved	Single precision float	2	R
401EH	ImpEp	Total positive active energy	Single precision float	2	R
4020H	ImpEpT1	Positive active energy of rate 1	Single precision float	2	R
4022H	ImpEpT2	Positive active energy of rate 2	Single precision float	2	R
4024H	ImpEpT3	Positive active energy of rate 3	Single precision float	2	R
4026H	ImpEpT4	Positive active energy of rate 4	Single precision float	2	R
4028H	ExpEp	Total negative active energy	Single precision float	2	R
402AH	ExpEpT1	Negative active energy of rate 1	Single precision float	2	R
402CH	ExpEpT2	Negative active energy of rate 2	Single precision float	2	R
402EH	ExpEpT3	Negative active energy of rate 3	Single precision float	2	R
4030H	ExpEpT4	Negative active energy of rate 4	Single precision float	2	R

4032H	Q1Eq	The first quadrant negative reactive energy	Single precision float	2	R
4034H	Q1EqT1	The first quadrant negative reactive energy of rate 1	Single precision float	2	R
4036H	Q1EqT2	The first quadrant negative reactive energy of rate 2	Single precision float	2	R
4038H	Q1EqT3	The first quadrant negative reactive energy of rate 3	Single precision float	2	R
403AH	Q1EqT4	The first quadrant negative reactive energy of rate 4	Single precision float	2	R
403CH	Q2Eq	The second quadrant negative reactive energy	Single precision float	2	R
403EH	Q2EqT1	The second quadrant negative reactive energy of rate 1	Single precision float	2	R
4040H	Q2EqT2	The second quadrant negative reactive energy of rate 2	Single precision float	2	R
4042H	Q2EqT3	The second quadrant negative reactive energy of rate 3	Single precision float	2	R
4044H	Q2EqT4	The second quadrant negative reactive energy of rate 4	Single precision float	2	R
4046H	Q3Eq	The third quadrant negative reactive energy	Single precision float	2	R
4048H	Q3EqT1	The third quadrant negative reactive energy of rate 1	Single precision float	2	R
404AH	Q3EqT2	The third quadrant negative reactive energy of rate 2	Single precision float	2	R
404CH	Q3EqT3	The third quadrant negative reactive energy of rate 3	Single precision float	2	R
404EH	Q3EqT4	The third quadrant negative reactive energy of rate 4	Single precision float	2	R
4050H	Q4Eq	The fourth quadrant negative reactive energy	Single precision float	2	R
4052H	Q4EqT1	The fourth quadrant negative reactive energy of rate 1	Single precision float	2	R
4054H	Q4EqT2	The fourth quadrant negative reactive energy of rate 2	Single precision float	2	R

4056H	Q4EqT3	The fourth quadrant negative reactive energy of rate 3	Single precision float	2	R
4058H	Q4EqT4	The fourth quadrant negative reactive energy of rate 4	Single precision float	2	R

Parameter

6000H		The start date of 01 time zone of the first set	16-bit signed	1	R/W
6002H		Day time table index of 01 time zone of the first set	16-bit signed	1	R/W
6004H		The start date of 02 time zone of the first set	16-bit signed	1	R/W
6006H		Day time table index of 02 time zone of the first set	16-bit signed	1	R/W
6008H		The start date of 03 time zone of the first set	16-bit signed	1	R/W
600AH		Day time table index of 03 time zone of the first set	16-bit signed	1	R/W
600CH		The start date of 04 time zone of the first set	16-bit signed	1	R/W
600EH		Day time table index of 04 time zone of the first set	16-bit signed	1	R/W
6010H		The start date of 05 time zone of the first set	16-bit signed	1	R/W
6012H		Day time table index of 05 time zone of the first set	16-bit signed	1	R/W
6014H		The start date of 06 time zone of the first set	16-bit signed	1	R/W
6016H		Day time table index of 06 time zone of the first set	16-bit signed	1	R/W
6018H		The start date of 07 time zone of the first set	16-bit signed	1	R/W
601AH		Day time table index of 07 time zone of the first set	16-bit signed	1	R/W
601CH		The start date of 08 time zone of the first set	16-bit signed	1	R/W
601EH		Day time table index of 08	16-bit signed	1	R/W

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		time zone of the first set			
6020H		The start date of 09 time zone of the first set	16-bit signed	1	R/W
6022H		Day time table index of 09 time zone of the first set	16-bit signed	1	R/W
6024H		The start date of 10 time zone of the first set	16-bit signed	1	R/W
6026H		Day time table index of 10 time zone of the first set	16-bit signed	1	R/W
6028H		The start date of 11 time zone of the first set	16-bit signed	1	R/W
602AH		Day time table index of 11 time zone of the first set	16-bit signed	1	R/W
602CH		The start date of 12 time zone of the first set	16-bit signed	1	R/W
602EH		Day time table index of 12 time zone of the first set	16-bit signed	1	R/W
6030H		The start date of 13 time zone of the first set	16-bit signed	1	R/W
6032H		Day time table index of 13 time zone of the first set	16-bit signed	1	R/W
6034H		The start date of 14 time zone of the first set	16-bit signed	1	R/W
6036H		Day time table index of 14 time zone of the first set	16-bit signed	1	R/W
6038H		The start date of 01 time zone of the first table of the first se	16-bit signed	1	R/W
603AH		Day time table index of 01 time zone of the first table of the first set	16-bit signed	1	R/W
603CH		The start date of 02 time zone of the first table the first set	16-bit signed	1	R/W
603EH		Day time table index of 02 time zone of the first table of the first set	16-bit signed	1	R/W
6040H		The start date of 03 time zone of the first table of the first set	16-bit signed	1	R/W

6042H		Day time table index of 03 time zone of the first table of the first set	16-bit signed	1	R/W
6044H		The start date of 04 time zone of the first table of the first set	16-bit signed	1	R/W
6046H		Day time table index of 04 time zone of the first table of the first set	16-bit signed	1	R/W
6048H		The start date of 05 time zone of the first table of the first set	16-bit signed	1	R/W
604AH		Day time table index of 05 time zone of the first set	16-bit signed	1	R/W
604CH		The start date of 06 time zone of the first table of the first set	16-bit signed	1	R/W
604EH		Day time table index of 06 time zone of the first set	16-bit signed	1	R/W
6050H		The start date of 07 time zone of the first table of the first set	16-bit signed	1	R/W
6052H		Day time table index of 07 time zone of the first set	16-bit signed	1	R/W
6054H		The start date of 08 time zone of the first table of the first set	16-bit signed	1	R/W
6056H		Day time table index of 08 time zone of the first set	16-bit signed	1	R/W
6058H		The start date of 09 time zone of the first table of the first set	16-bit signed	1	R/W
605AH		Day time table index of 09 time zone of the first set	16-bit signed	1	R/W
605CH		The start date of 10 time zone of the first table of the first set	16-bit signed	1	R/W
605EH		Day time table index of 10 time zone of the first table of	16-bit signed	1	R/W

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		the first set			
6060H		The start date of 11 time zone of the first table of the first set	16-bit signed	1	R/W
6062H		Day time table index of 11 time zone of the first table of the first table of the first set	16-bit signed	1	R/W
6064H		The start date of 12 time zone of the first table of the first set	16-bit signed	1	R/W
6066H		Day time table index of 12 time zone of the first table of the first set	16-bit signed	1	R/W
6068H		The start date of 13 time zone of the first table of the first set	16-bit signed	1	R/W
606AH		Day time table index of 13 time zone of the first table of the first set	16-bit signed	1	R/W
606CH		The start date of 14 time zone of the first table of the first set	16-bit signed	1	R/W
606EH		Day time table index of 14 time zone of the first table of the first set	16-bit signed	1	R/W
6070H		The start date of 01 time zone of the second table of the first se	16-bit signed	1	R/W
6072H		Day time table index of 01 time zone of the second table of the first set	16-bit signed	1	R/W
6074H		The start date of 02 time zone of the second table the first set	16-bit signed	1	R/W
6076H		Day time table index of 02 time zone of the second table of the first set	16-bit signed	1	R/W
6078H		The start date of 03 time zone of the second table of the first set	16-bit signed	1	R/W
607AH		Day time table index of 03	16-bit signed	1	R/W

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		time zone of the second table of the first set			
607CH		The start date of 04 time zone of the second table of the first set	16-bit signed	1	R/W
607EH		Day time table index of 04 time zone of the second table of the first set	16-bit signed	1	R/W
6080H		The start date of 05 time zone of the second table of the first set	16-bit signed	1	R/W
6082H		Day time table index of 05 time zone of the second table of the first set	16-bit signed	1	R/W
6084H		The start date of 06 time zone of the second table of the first set	16-bit signed	1	R/W
6086H		Day time table index of 06 time zone of the second table of the first set	16-bit signed	1	R/W
6088H		The start date of 07 time zone of the second table of the first set	16-bit signed	1	R/W
608AH		Day time table index of 07 time zone of the second table of the first set	16-bit signed	1	R/W
608CH		The start date of 08 time zone of the second table of the first set	16-bit signed	1	R/W
608EH		Day time table index of 08 time zone of the second table of the first set	16-bit signed	1	R/W
6090H		The start date of 09 time zone of the second table of the first set	16-bit signed	1	R/W
6092H		Day time table index of 09 time zone of the second table	16-bit signed	1	R/W

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		of the first set			
6094H		The start date of 10 time zone of the second table of the first set	16-bit signed	1	R/W
6096H		Day time table index of 10 time zone of the second table of the first set	16-bit signed	1	R/W
6098H		The start date of 11 time zone of the second table of the first set	16-bit signed	1	R/W
609AH		Day time table index of 11 time zone of the second table of the first table of the first set	16-bit signed	1	R/W
609CH		The start date of 12 time zone of the second table of the first set	16-bit signed	1	R/W
609EH		Day time table index of 12 time zone of the second table of the first set	16-bit signed	1	R/W
60A0H		The start date of 13 time zone of the second table of the first set	16-bit signed	1	R/W
60A2H		Day time table index of 13 time zone of the second table of the first set	16-bit signed	1	R/W
60A4H		The start date of 14 time zone of the second table of the first set	16-bit signed	1	R/W
60A6H		Day time table index of 14 time zone of the second table of the first set	16-bit signed	1	R/W

All the power data read by the communication is the secondary value (the energy is excluded, the rate is excluded), complement numbers are the representation of negative numbers. Table 4 is the detailed conversion method.

Table 4

Parameter name	Conversion formula	Unit	Parameter items
Voltage	$U = URMSx(x=a，b，c)=UrAt×rAtx(x=$	V	Ua,Ub,Uc,Uab,Ubc,Uca
Current	$I = IRMSx(x=a，b，c)=IrAt×rAtx($	A	Ia,Ib,Ic
Active power	$P = Px(x=a，b，c)=UrAt×IrAt×rAt=a(x$	W	Pt,Pa,Pb,Pc
Reactive power	$Q = Qx(x=a，b，c)=UrAt×IrAt×rAt=a(x$	var	Qt,Qa,Qb,Qc
Power factor	$PF = PFx(x=a，b，c，t)=ax=ax$		PFa,PFb,PFc,PFt
Frequency	$F = Freq×req$	Hz	F

Data format: single-precision float adopts the standard of IEEE754. The forma of IEEE754 has 32 bits, divided into 3 parts: 23-bit decimal f, 8-bit biased exponent e, 1-bit symbol s. The 3 parts is deposited in the 32 bits continuously, and coded. 0:22 bit contains 23-bit decimal f; 23:30 bit contains 8-bit index number e; the 31st contains the symbol s, and details as follows:

  a) The 31 bit is symbol bit, 0 expresses positive number, 1 expresses negative number, the reading value is denoted by s;

  b) The 30~23 bit is power exponent, the reading value is denoted by e;

  c) The 22~0 bit is used as coefficient, regarded as binary number, the decimal system of the decimal is assumed to be x;

  Then according to specified, the decimal number of the floating number is denoted as:

  $x = (-1)^s s × (1 + f) × 2^{(e - 127)}$.

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