Annex I

KWHIQ DINrail – Modbus Mapping

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1.KWHIQ DINrail 1-Phase

Instantaneous parameters					
Register (HEX)	**R/W**	**Lenght**	**Data Description**	**Unit**	**Content**
0100	R	2	INT32(3+3)	V	voltage
0102	R	2	INT32(2+3)	A	current
0104	R	2	INT32(5+0)	W	active power
0106	R	2	INT32(5+0)	VA	apparent power
0108	R	2	INT32(5+0)	var	reactive power
010A	R	1	INT16(2+1)	Hz	frequency
010B	R	1	INT16(1+3)	PF	power factor
Energy parameters					
Register (HEX)	**R/W**	**Lenght**	**Data Description**	**Unit**	**Content**
010E	R	2	INT32(6+2)	kWh	Total forward active energy
0110	R	2	INT32(6+2)	kWh	T1 total forward active energy
0112	R	2	INT32(6+2)	kWh	T2 total forward active energy
0114	R	2	INT32(6+2)	kWh	T3 total forward active energy
0116	R	2	INT32(6+2)	kWh	T4 total forward active energy
0118	R	2	INT32(6+2)	kWh	Total reverse active energy
011A	R	2	INT32(6+2)	kWh	T1 total reverse active energy
011C	R	2	INT32(6+2)	kWh	T2 total reverse active energy
011E	R	2	INT32(6+2)	kWh	T3 total reverse active energy
0120	R	2	INT32(6+2)	kWh	T4 total reverse active energy
0122	R	2	INT32(6+2)	kWh	Total active energy
0124	R	2	INT32(6+2)	kWh	T1 total active energy
0126	R	2	INT32(6+2)	kWh	T2 total active energy
0128	R	2	INT32(6+2)	kWh	T3 total active energy
012A	R	2	INT32(6+2)	kWh	T4 total active energy
012C	R	2	INT32(6+2)	kvarh	Total forward reactive energy
012E	R	2	INT32(6+2)	kvarh	T1 total forward reactive energy
0130	R	2	INT32(6+2)	kvarh	T2 total forward reactive energy
0132	R	2	INT32(6+2)	kvarh	T3 total forward reactive energy
0134	R	2	INT32(6+2)	kvarh	T4 total forward reactive energy
0136	R	2	INT32(6+2)	kvarh	Total reverse reactive energy
0138	R	2	INT32(6+2)	kvarh	T1 total reverse reactive energy
013A	R	2	INT32(6+2)	kvarh	T2 total reverse reactive energy
013C	R	2	INT32(6+2)	kvarh	T3 total reverse reactive energy
013E	R	2	INT32(6+2)	kvarh	T4 total reverse reactive energy

0140	R	2	INT32(6+2)	kvarh	Total reactive energy
0142	R	2	INT32(6+2)	kvarh	T1 total reactive energy
0144	R	2	INT32(6+2)	kvarh	T2 total reactive energy
0146	R	2	INT32(6+2)	kvarh	T3 total reactive energy
0148	R	2	INT32(6+2)	kvarh	T4 total reactive energy
014A	R	2	INT32(6+2)	kvarh	Total reactive energy in the first quadrant
014C	R	2	INT32(6+2)	kvarh	T1 total reactive energy in the first quadrant
014E	R	2	INT32(6+2)	kvarh	T2 total reactive energy in the first quadrant
0150	R	2	INT32(6+2)	kvarh	T3 total reactive energy in the first quadrant
0152	R	2	INT32(6+2)	kvarh	T4 total reactive energy in the first quadrant
0154	R	2	INT32(6+2)	kvarh	Total reactive energy in the second quadrant
0156	R	2	INT32(6+2)	kvarh	T1 total reactive energy in the second quadrant
0158	R	2	INT32(6+2)	kvarh	T2 total reactive energy in the second quadrant
015A	R	2	INT32(6+2)	kvarh	T3 total reactive energy in the second quadrant
015C	R	2	INT32(6+2)	kvarh	T4 total reactive energy in the second quadrant
015E	R	2	INT32(6+2)	kvarh	Total reactive energy in the third quadrant
0160	R	2	INT32(6+2)	kvarh	T1 total reactive energy in the third quadrant
0162	R	2	INT32(6+2)	kvarh	T2 total reactive energy in the third quadrant
0164	R	2	INT32(6+2)	kvarh	T3 total reactive energy in the third quadrant
0166	R	2	INT32(6+2)	kvarh	T4 total reactive energy in the third quadrant
0168	R	2	INT32(6+2)	kvarh	Total reactive energy in the fourth quadrant
016A	R	2	INT32(6+2)	kvarh	T1 total reactive energy in the fourth quadrant
016C	R	2	INT32(6+2)	kvarh	T2 total reactive energy in the fourth quadrant
016E	R	2	INT32(6+2)	kvarh	T3 total reactive energy in the fourth quadrant
0170	R	2	INT32(6+2)	kvarh	T4 total reactive energy in the fourth quadrant
0172	R	2	INT32(6+2)	kWh	Resettable total active energy
0174	R	2	INT32(6+2)	kvarh	Resettable total reactive energy
0176	R	2	INT32(6+1)	W	forward active demand
0178	R	2	INT32(6+1)	W	forward maximum active energy demand
017A	R	2	INT32(6+1)	W	reverse active demand
017C	R	2	INT32(6+1)	W	reverse maximum active energy demand
0180	R	2	INT32(6+1)	var	forward reactive demand
0182	R	2	INT32(6+1)	var	forward maximum reactive demand
0184	R	2	INT32(6+1)	var	reverse reactive demand
0186	R	2	INT32(6+1)	var	reverse maximum reactive demand

Meter parameters					
Register (HEX)	**R/W**	**Lenght**	**Data Description**	**Unit**	**Content**
1000	R.W	6	12-bit serial number,the same as DLT645 ID,it need to use 10h together, hexadecimal , 012345678910H serial number is 012345678910		Serial No.
1003	R.W	1	1-247		Modbus ID
1004	R	1	101		FW version
1005	R	1	101		HW version
1006	R	1	XXXX		FW checksum
1007	R.W	4	00 year, month, day, week, hour, minute, second, need to use 10 control code to write at one time		Time
100B	R.W	1	0-99		Scrolling time
100C	R.W	1	6=9600 7=19200 8=38400 9=115200		485 baudrate
100D	R.W	1	0=None 1=Odd 2=even		485 check digit
100E	R.W	1	1=1bit 2=2bit		485 stop bit
100F	R.W	1	1=total=forward 2=total=reverse 3=total=forward+reverse 4=total=forward-reverse		Combined code
1010		1	0=Interval 1=Slip		Demand mode
1011	R.W	1	The unit minute can be set from 1-30, the default is 15 minutes		Demand cycoe
1012	R.W	4	In bitwise,0 means no display, and need use the 10 control code should to write at one time (8 bytes are used for three-phase, but only 4 bytes are used for single-phase)		Cycle display content automatically
1016	R.W	1	Can be set to 0000-9999		Password setting of the LCD button display

2.KWHIQ DINRAIL 3-Phase

Instantaneous parameters					
Register (HEX)	**R/W**	**Lenght**	**Data Description**	**Unit**	**Content**
0400	R	2	INT32(3+3)	V	A phase and N-phase voltage
0402					B phase and N-phase voltage
0404					C phase and N-phase voltage
0406					A Phase and B Phase line voltage
0408					B Phase and C Phase line voltage
040A					C Phase and A Phase Line Voltage
040C					L-N voltage average Value
040E					L-L voltage average Value
0410	R	2	INT32(2+3)	A	Current of A-phase
0412					Current of B-phase
0414					Current of C-phase
0416					Current of N
0418					Three-phase Vector Sum Current
041A	R	2	INT32(5+0)	W	A phase active power
041C					B-phase active power
041E					C-phase active power
0420					Combined active power
0422	R	2	INT32(5+0)	VA	A phase apparent power
0424					B phase apparent power
0426					C phase apparent power
0428					Combined Apparent Power
042A	R	2	INT32(5+0)	var	A Phase reactive power
042C					B phase reactive power
042E					C phase reactive power
0430					Combined reactive power
0432	R	1	INT16(2+1)	Hz	A phase frequency
0433					B phase frequency
0434					C phase frequency
0435					Combined frequency
0436	R	1	INT16(1+3)	/	A phase power factor
0437					B Phase power factor
0438					C Phase power factor
0439					Combined power factor
043A	R	2	INT32(6+1)	W	A phase forward active demand
043C					B phase forward active demand

043E					C phase forward active demand
0440					Combined Forward Active demand
0442					A phase reverse active demand
0444					B phase reverse active demand
0446					C phase reverse active demand
0448					Combined Reverse Active Demand
044A					A phase total active power
044C					B Phase total active power
044E					C Phase total active power
0450					Combined Active Demand
0452	R	2	INT32(6+1)	var	A phase forward reactive demand
0454					B phase forward reactive demand
0456					C phase forward reactive demand
0458					Combined forward reactive demand
045A					A phase reverse reactive demand
045C					B phase Reverse reactive demand
045E					C phase reverse reactive demand
0460					Combined reverse reactive demand
0462					A phase total reactive demand
0464					B phase total reactive demand
0466					C phase total reactive demand
0468					Combined total reactive demand
046A	R	2	INT32(6+1)	W	A phase forward active maximum demand
046C					B phase forward active maximum demand
046E					C phase forward active maximum demand
0470					Combined forward active maximum demand
0472					A phase reverse active maximum demand
0474					B phase reverse active maximum demand
0476					C phase reverse active maximum demand
0478					Combined reverse active maximum demand
047A					A phase total active maximum demand
047C					B phase total active maximum demand
047E					C phase total active maximum demand
0480					Combined total active maximum demand
0482	R	2	INT32(6+1)	var	A phase forward reactive maximum demand
0484					B phase forward reactive power maximum demand
0486					C phase forward reactive maximum demand
0488					Combined forward reactive maximum demand
048A					A phase reverse reactive maximum demand
048C					B phase reverse reactive maximum demand
048E					C phase reverse reactive maximum demand

0490					Combined reverse reactive maximum demand
0492					A phase total reactive maximum demand
0494					B phase total reactive maximum demand
0496					C phase total reactive maximum demand
0498					Combined total reactive maximum demand
Energy parameters					
Register (HEX)	**R/W**	**Lenght**	**Data Description**	**Unit**	**Content**
010E	R	2	INT32(6+2)	kWh	Forward total active energy
0118	R	2	INT32(6+2)		Total reverse active energy
0122	R	2	INT32(6+2)		Active total energy
012C	R	2	INT32(6+2)	kvarh	Total forward reactive energy
0136	R	2	INT32(6+2)		Total reverse reactive energy
0140	R	2	INT32(6+2)		Total reactive energy
014A	R	2	INT32(6+2)		The first quadrant Total reactive energy
0154	R	2	INT32(6+2)		The second quadrant total reactive energy
015E	R	2	INT32(6+2)		The third quadrant total reactive energy
0168	R	2	INT32(6+2)		The fourth quadrant total reactive energy
0500	R	2	INT32(6+2)	kWh	A phase total active energy
050A					A phase forward active energy
0514					A phase reverse active energy
051E	R	2	INT32(6+2)	kvarh	A phase total reactive energy
0528					A phase forward reactive energy
0532					A phase reverse reactive energy
053C					A phase first quadrant total reactive energy
0546					A phase sencond quadrant total reactive energy
0550					A phase third quadrant total reactive energy
055A					A phase fourth quadrant total reactive energy
0564	R	2	INT32(6+2)	kWh	B phase total active energy
056E					B phase forward active energy
0578					B phase reverse active energy
0582	R	2	INT32(6+2)	kvarh	B phase total reactive energy
058C					B phase forward reactive energy
0596					B phase Reverse reactive energy
05A0					B phase first quadrant total reactive energy
05AA					B phase second quadrant total reactive energy
05B4					B phase third quadrant total reactive energy
05BE					B phase fourth quadrant total reactive energy
05C8	R	2	INT32(6+2)	kWh	Phase C total active energy
05D2					C-phase forward active energy
05DC					C phase reverse active energy

05E6					Total reactive energy of phase C
05F0					C-phase forward reactive energy
05FA					C phase reverse reactive energy
0604	R	2	INT32(6+2)	kvarh	C phase first quadrant total reactive energy
060E					C phase second quadrant total reactive energy
0618					C phase third quadrant total reactive energy
0622					C phase fourth quadrant total reactive energy
062C	R	2	INT32(6+2)	kWh	Active resettable energy
062E					foward active resettable energy
0630					Reverse active resettable energy
0632					A-phase active resettable energy
0634					A-phase foward active resettable energy
0636					A phase reverse active resettable energy
0638					B-phase active resettable energy
063A					B-phase forward active resettable energy
063C					B phase reverse active resettable energy
063E					C-phase active energy resettable energy
0640					C-phase foward active resettable energy
0642					Phase C reverse active resettable energy
0644	R	2	INT32(6+2)	kvarh	Reactive resettable energy
0646					foward reactive resettable energy
0648					Reverse reactive resettable energy
064A					A-phase reactive resettable energy
064C					A-phase forward reactive resettable energy
064E					A phase reverse reactive resettable energy
0650					B-phase reactive resettable energy
0652					B-phase forward reactive resettable energy
0654					B phase reverse reactive resettable energy
0656					Phase C reactive energy resettable energy
0658					C-phase forward reactive resettable energy
065A					C phase reverse reactive resettable energy

Meter parameters

Register	R/W	Length	Data Description	Unit	Content
1000	R.W	6	12-bitnumber,the same as DLT645 address, need to use 10h together, hexadecimal, 012345678910H serial number is 012345678910		serial number
1003	R.W	1	1-247		Modbus ID/Mbus ID
1004	R	1	101		software version number
1005	R	1	101		Hardware version number

1006	R	1	XXXX		Firmware Checksum
1007	R.W	4	00 year, month, day, week, hour, minute, second, need to use 10 control code to write at one time		Time
100B	R.W	1	0-99 seconds (0 disables scroll display)		Turn time
100C	R.W	1	6=9600 7=19200 8=38400 9=115200		485 baud rate
100D	R.W	1	0=none 1=odd 2=even		Parity
100E	R.W	1	1=1 bit 2=2 bit		485 stop bit
100F	R.W	1	1-Total=Forward 2-Total=Reverse 3-Total=Forward+Reverse 4-Total=Forward-Reverse		combined code
1010		1	0=Interval 1=Slip		demand mode
1011	R.W	1	The unit minute, can be set from 1-30, the default is 15 minutes		demand cycle
1016	R.W	1	0000-9999 can be set		LCD button display password setting
1017	R.W	1	800, 1000, 1600, etc. above 100,divisible by 96000		SO output