

# **MultiCube350/650/950**

## **Modbus Communications**

### **Revision 16**

## **1 Safety**

This document gives details of the communications option of the **MultiCube** electricity meter. Labels on each meter give details of equipment ratings for safe operation. Take time to examine all labels before commencing installation. Safety symbols on the meter have specific meanings as:



Safety may be impaired if the instructions are not followed or the meter is used in a manner not specified by the manufacturer.



Contains no user serviceable parts. Field wiring and commissioning should only be carried out by qualified personnel, in compliance with applicable national regulations.  
e.g. National Electrical Code (NEC) for US; Canadian Electrical Code for Canada

### **For further Information contact the manufacturer:**

Address: Northern Design (Electronics) Ltd: 228 Bolton Road, Bradford, West Yorkshire, BD3 0QW. (UK)

Web: <http://www.ndmeter.co.uk>

Note: This manual is intended to be used as a supplement to the **MultiCube350/650/950 Installation Guide** which contains further safety information and safe installation instructions.

## 2 Connection

### 2.1 Connection

#### 2.1.1 RS485 Output Terminals

The terminals provided for connection of the RS485 Modbus interface are rated as follows:

Voltage:	Maximum RS485 Voltage (any pair) = 30Vdc
Cable:	30-14 AWG, Stripped 5.5 to 6.5mm (0.2" to 0.25")
Torque:	0.5Nm (4.4in lb)

#### 2.1.2 Screened Cable

A dedicated, screened twisted pair cable is required to provide basic RS485 connection. A second twisted pair may be used for 0V connection if required.

The selected cable should be chosen to suit the data rate and maximum length to be installed.

The EIA RS-485-A standard provides curves that relate cable length to data rate for 24 AWG screened, twisted pair, telephone cable with a shunt capacitance of 50pf/m. For baud rates up to 19,200 the standard suggests a maximum length of 1200m for this type of cable.

If other types of cable are to be used it is recommended that the cable supplier is consulted as to the suitability for use with RS485 to at the chosen baud rate.

### 2.2 Signal 0V and Cable Shield

A signal 0V termination is provided on each meter. Although RS485 does not strictly require a signal 0V, it is recommended this is connected as shown in the diagram below. This creates a known reference for the isolated RS485 system thereby reducing potential common-mode errors in the meter's RS485 driver circuit. This 0V may also be used in circuits requiring a biased connection (see the documentation provided with the Modbus Master).

A cable shield is used to attenuate noise picked up from external sources. This should be continuous, and cover as much of the signal pairs as possible. It is recommended that the shield should be connected to ground at the Modbus Master only. The cable shield should **not** be used as the 0V connection.

### 2.3 Terminating Resistors

In order to minimise signal errors due to noise over long cable lengths, terminating resistors may be fitted. These match the RS485 device impedance to that of the cable. Two 120Ω resistors, one at the host port terminals and the other at the most remote meter terminals are recommended for this purpose.

### 2.4 Connection to Meters

The bus wires should be taken to meters at each location for termination, using the meter terminals as a loop in-out connection. 3-Pairs of terminals, internally shorted, are provided for convenience. The use of spurs should be avoided wherever possible.

#### 2.4.1 Basic Connection

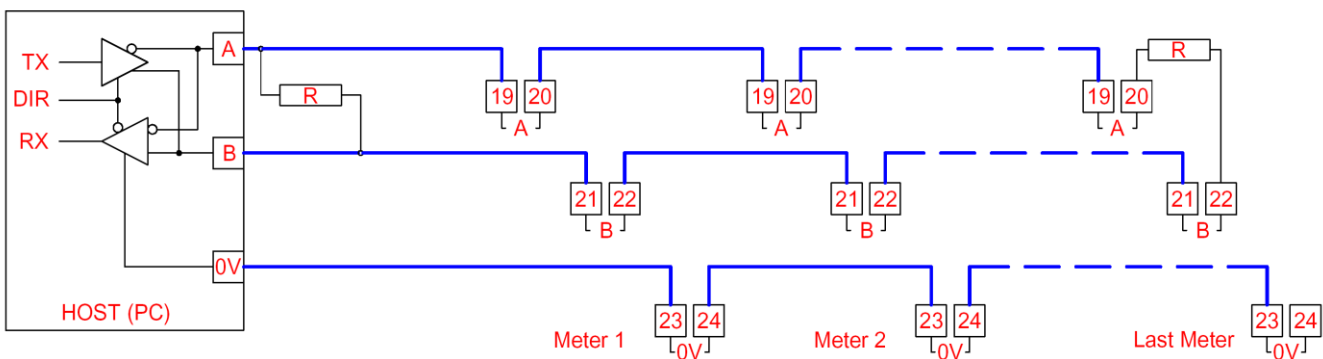


Figure 2-1 Basic RS485 Bus Network

## 3 Protocol

### 3.1 Modbus ID

A number of Modbus IDs need to be reserved for each MultiCube, depending on how many meter points it can measure as follows:

Meter Type	Modbus IDs Required			
	Meter Points	Virtual Meter	Main Unit	Total IDs Required
<b>MultiCube950</b>	3	0 (1 optional)	1	<b>4 (5)</b>
<b>MultiCube650</b>	2	N/A	1	<b>3</b>
<b>MultiCube350</b>	1	N/A	N/A	<b>1</b>

The user is required to set the master ID (N) and the meter automatically assigns the other IDs consecutively as shown in the table below:

Meter Type	Master ID	Meter 1 ID	Meter 2 ID	Meter 3 ID	Virtual Meter ID
<b>MultiCube 950</b>	N	N+1	N+2	N+3	N+4
<b>MultiCube 650</b>	N	N+1	N+2		
<b>MultiCube 350</b>	N/A	N			

The master ID (N) may be set as any number in the range 1 to ( 244 – total IDs required )

### 3.2 Modbus Commands

The **MultiCube** meter supports the following standard Modbus commands:

Command	Function	Broadcast
03	Read Multiple Holding Registers	No
04	Read Multiple Input Registers	No
06	Preset a Single Register	Yes
08 (SF=00)	Sub Function 00 only (Loop Back)	No
16	Preset Multiple Registers	Yes

### 3.3 Exception Responses

If the meter receives a Modbus command, with no errors and a valid address, it will attempt to handle the query and provide an appropriate response. If the meter cannot handle the query a standard Modbus exception response is sent (except broadcast queries). An exception response is characterised by its function byte which has 80H added to that sent in the query. The following exceptions codes are supported:

Code	Function
1	Preset data is out of range for parameter
2	Function cannot access requested register address

## 4 Using the MultiCube Modbus Data Tables

### 4.1 Data Types

For compatibility with the Modbus standard each register contains a single data **Word** (16 bits). Data in the meter is stored as:

#### Unsigned Integer (U-INT)

16-bit data in the range 0 to 65,535. This is used for parameters such as CT primary as this can never be negative.

#### Signed Integer (S-INT)

16-bit data in the range -32,768 to +32,767. This is used for parameters such as instantaneous kW, which may have a negative value indicating export power.

#### Long Integer (LONG)

32-bit data in the range 0 to 4,294,967,295. This is used for parameters such as kWh, which may have large values. Each LONG requires two consecutive Modbus data words. Standard software often handles long integer reads, however, a LONG may be calculated from the individual data words as:

$$\text{LONG} = (65536 \times \text{High Word}) + \text{Low Word}$$

#### Floating Point Instantaneous

A range of instantaneous parameters are available in floating point format.

Floating point numbers are scaled as SI units, Volts, Amps, Watts, var, Hz etc as shown in the Modbus tables below.

All floating point numbers are formatted as IEEE 754 single precision numbers and are represented as 2 consecutive 16 bit Modbus registers, Lowest Word first, as shown below.

Example Decimal Number	1234.5678
Equivalent IEEE 754 (HEX)	0x44 9A 52 2B
Modbus First Register	0x52 2B
Modbus Second Register	0x44 9A

### 4.2 Scaling Modbus Values

#### 4.2.1 Scaling Energy Values

All energy values are stored in Modbus tables as Long Integers in the range 0-99,999,999. This number represents the digits on the LCD with no decimal point or legend. For example, if the LCD shows 1234567.8 kWh then the Modbus register for kWh will hold 12345678.

Two scaling factors, Kesys (system energy values) and Ke (per-phase energy values) are used to scale all energy values and are available at several Modbus register locations for convenience. To convert the long integer to a valid energy value scale as follows:

Long Integer	Kesys, Ke	Factor	LCD Display
12345678	3	0.001	12345.678 kWh
12345678	4	0.01	123456.78 kWh
12345678	5	0.1	1234567.8 kWh
12345678	6	1	12345678 kWh
12345678	7	10	123456.78 MWh
12345678	8	100	1234567.8 MWh
12345678	9	1000	12345678 MWh

#### Examples:

Modbus register for System kWh contains 12345678 and Kesys = 5: represents  $12345678 \times 0.1 = 1234567.8$  kWh

Modbus register for System kvarh contains 32149 and Kesys = 4: represents  $32149 \times 0.01 = 321.49$  kvarh

#### 4.2.2 Scaling Integer Values

Instantaneous values are stored in Modbus tables as 16 bit Integers representing the numeric value shown on the LCD with no decimal point or legend. Different scaling factors are used to convert the integer as:

Parameter	Scaling Factor
Amps	Ki
Volts (Phase)	KVp
Volts (Line)	KVI
System Power	Kpsys
Per Phase Power	Kp

The method for converting the Modbus data to real world parameters is the same for all the Parameter Types and scaling factors as follows:

Integer	Scaling Ki, KVp, KVI, Kpsys or Kp	Factor	Value Amps, Volts, W, var etc
1234	0	0.001	1.234
1234	1	0.01	12.34
1234	2	0.1	123.4
1234	3	1	1234
1234	4	10	12340
1234	5	100	123400
1234	6	1,000	1234000
1234	7	10,000	12340000
1234	8	100,000	123400000
1234	9	1,000,000	1234000000

#### Examples:

Modbus register for Phase 1 Volts contains 2300 and kVp=2: represents  $V1 = 2300 \times 0.1 = 230.0V$

Modbus register for Phase 1 Amps contains 6000 and ki=1: represents  $I1 = 6000 \times 0.01 = 60.00A$

Modbus register for Phase 1 Watts contains 1380 and kp=4: represents  $W1 = 1380 \times 10 = 13800W$

## 5 MultiCube Master Modbus Data Tables

The **MultiCube Modbus Master Device** acts as a data concentrator for each of the additional meters. Communication with the Master device allows a summary of the data from the meters to be accessed with a single read.

**NOTE:** Master Tables are not accessible in a **MultiCube350**

### 5.1 Master Device Table 0 – Meter Model

Data Address	Modbus Register	Data	Scale	Access
0	40001	Meter Model	950 = MultiCube950 650 = MultiCube650 350 = MultiCube350	Read Only

### 5.2 Master Device Table 1 - 3-Phase Energy Registers

This table provides a summary of the 3-Phase energy registers, from all **MultiCube** Meters Points, in a single table.

Data Address	Modbus Register	RTU	Data	Scale	Access
256	40257	Meter 1	System kWh High Word	Meter 1 Kesys	Read/Write
257	40258		System kWh Low Word		
258	40259		System kvarh High Word		Read/Write
259	40260		System kvarh Low Word		
260	40261	Meter 2	System kWh High Word	Meter 2 Kesys	Read/Write
261	40262		System kWh Low Word		
262	40263		System kvarh High Word		Read/Write
263	40264		System kvarh Low Word		
264	40265	Meter 3	System kWh High Word	Meter 3 Kesys	Read/Write
265	40266		System kWh Low Word		
266	40267		System kvarh High Word		Read/Write
267	40268		System kvarh Low Word		
268	40269	Virtual/ Residual Meter	System kWh High Word	Virtual Meter Kesys	Read/Write
269	40270		System kWh Low Word		
270	40271		System kvarh High Word		Read/Write
271	40272		System kvarh Low Word		
272	40273	Meter 1	Meter 1 Kesys	-	Read Only
273	40274	Meter 2	Meter 2 Kesys	-	
274	40275	Meter 3	Meter 3 Kesys	-	
275	40276	Virtual	Virtual Meter Kesys	-	

#### Notes:

**MultiCube** Meters configured as single phase meters will return a zero for all 3-Phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads and an exception error in response to Modbus write commands.

### 5.3 Master Device Table 2 – Single Phase Energy Registers

This table provides a summary of the single phase energy registers, from all **MultiCube** Meter Points, in a single table.

Data Address	Modbus Register	RTU	Data	Scale	Access		
512	40513	Meter 1	Phase 1 kWh High Word	Meter 1 Ke	Read/Write		
513	40514		Phase 1 kWh Low Word				
514	40515		Phase 2 kWh High Word		Read/Write		
515	40516		Phase 2 kWh Low Word				
516	40517		Phase 3 kWh High Word		Read/Write		
517	40518		Phase 3 kWh Low Word				
518	40519		Phase 1 kvarh High Word		Read/Write		
519	40520		Phase 1 kvarh Low Word				
520	40521		Phase 2 kvarh High Word		Read/Write		
521	40522		Phase 2 kvarh Low Word				
522	40523		Phase 3 kvarh High Word		Read/Write		
523	40524		Phase 3 kvarh Low Word				
524	40525		Meter 2		Phase 1 kWh High Word	Meter 2 Ke	Read/Write
525	40526				Phase 1 kWh Low Word		
526	40527	Phase 2 kWh High Word		Read/Write			
527	40528	Phase 2 kWh Low Word					
528	40529	Phase 3 kWh High Word		Read/Write			
529	40530	Phase 3 kWh Low Word					
530	40531	Phase 1 kvarh High Word		Read/Write			
531	40532	Phase 1 kvarh Low Word					
532	40533	Phase 2 kvarh High Word		Read/Write			
533	40534	Phase 2 kvarh Low Word					
534	40535	Phase 3 kvarh High Word		Read/Write			
535	40536	Phase 3 kvarh Low Word					
536	40537	Meter 3		Phase 1 kWh High Word	Meter 3 Ke		Read/Write
537	40538			Phase 1 kWh Low Word			
538	40539		Phase 2 kWh High Word	Read/Write			
539	40540		Phase 2 kWh Low Word				
540	40541		Phase 3 kWh High Word	Read/Write			
541	40542		Phase 3 kWh Low Word				
542	40543		Phase 1 kvarh High Word	Read/Write			
543	40544		Phase 1 kvarh Low Word				
544	40545		Phase 2 kvarh High Word	Read/Write			
545	40546		Phase 2 kvarh Low Word				
546	40547		Phase 3 kvarh High Word	Read/Write			
547	40548		Phase 3 kvarh Low Word				
548	40549		Meter 1	Meter 1 Ke		-	Read Only
549	40550		Meter 2	Meter 2 Ke		-	
550	40551	Meter 3	Meter 3 Ke	-			

**Notes:**

Multicube meters configured as 3 phase meters will return a zero for all 1-phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads and an exception error in response to Modbus write commands.

## 5.4 Master Device Table 3 – Instantaneous Readings

This table provides a summary of the instantaneous readings from the Master and individual Meter Points.

Data Address	Modbus Register	RTU	Data	Scale	Access	
768	40769	Master	Phase 1 Volts	Kvp	Read Only	
769	40770		Phase 2 Volts		Read Only	
770	40771		Phase 3 Volts		Read Only	
771	40772		Frequency	50000 = 50.000Hz	Read Only	
772	40773		Phase 1 Volts THD	1000=100.0%	Read Only	
773	40774		Phase 2 Volts THD		Read Only	
774	40775		Phase 3 Volts THD		Read Only	
775	40776	Meter 1	Phase 1 Amps	Ki	Read Only	
776	40777		Phase 2 Amps		Read Only	
777	40778		Phase 3 Amps		Read Only	
778	40779		Phase 1 kW	Kp	Read Only	
779	40780		Phase 2 kW		Read Only	
780	40781		Phase 3 kW		Read Only	
781	40782		Phase 1 Power Factor	1000=1.000	Read Only	
782	40783		Phase 2 Power Factor		Read Only	
783	40784		Phase 3 Power Factor		Read Only	
784	40785		System kW	Kpsys	Read Only	
785	40786		System kvar		Read Only	
786	40787		System PF		1000=1.000	Read Only
787	40788		Meter 2	Phase 1 Amps	Ki	Read Only
788	40789			Phase 2 Amps		Read Only
789	40790	Phase 3 Amps		Read Only		
790	40791	Phase 1 kW		Kp	Read Only	
791	40792	Phase 2 kW			Read Only	
792	40793	Phase 3 kW			Read Only	
793	40794	Phase 1 Power Factor		1000=1.000	Read Only	
794	40795	Phase 2 Power Factor			Read Only	
795	40796	Phase 3 Power Factor			Read Only	
796	40797	System kW		Kpsys	Read Only	
797	40798	System kvar			Read Only	
798	40799	System PF			1000=1.000	Read Only
799	40800	Meter 3		Phase 1 Amps	Ki	Read Only
800	40801			Phase 2 Amps		Read Only
801	40802		Phase 3 Amps	Read Only		
802	40803		Phase 1 kW	Kp	Read Only	
803	40804		Phase 2 kW		Read Only	
804	40805		Phase 3 kW		Read Only	
805	40806		Phase 1 Power Factor	1000=1.000	Read Only	
806	40807		Phase 2 Power Factor		Read Only	
807	40808		Phase 3 Power Factor		Read Only	
808	40809		System kW	Kpsys	Read Only	
809	40810		System kvar		Read Only	
810	40811		System PF		1000=1.000	Read Only
811	40812		Virtual/ Residual Meter	Phase 1 Amps	Ki	Read Only
812	40813			Phase 2 Amps		Read Only
813	40814	Phase 3 Amps		Read Only		
814	40815	Phase 1 kW		Kp	Read Only	
815	40816	Phase 2 kW			Read Only	
816	40817	Phase 3 kW			Read Only	
817	40818	Phase 1 Power Factor		1000=1.000	Read Only	
818	40819	Phase 2 Power Factor			Read Only	
819	40820	Phase 3 Power Factor			Read Only	
820	40821	System kW		Kpsys	Read Only	
821	40822	System kvar			Read Only	
822	40823	System PF			1000=1.000	Read Only
823	40824	Meter 1		Meter 1 Ki	-	Read Only
824	40825	Meter 2		Meter 2 Ki		Read Only
825	40826	Meter 3	Meter 3 Ki	Read Only		
826	40827	Virtual	Virtual Meter Ki	Read Only		
827	40828	Meter 1	Meter 1 Kp	Read Only		
828	40829	Meter 2	Meter 2 Kp	Read Only		
829	40830	Meter 3	Meter 3 Kp	Read Only		
830	40831	Virtual	Virtual Meter Kp	Read Only		
831	40832	Meter 1	Meter 1 Kpsys	Read Only		
832	40833	Meter 2	Meter 2 Kpsys	Read Only		
833	40834	Meter 3	Meter 3 Kpsys	Read Only		
834	40835	Virtual	Virtual Meter Kpsys	Read Only		
835	40836	All	kVp	Read Only		

### Notes:

**MultiCube** Meters configured as single phase meters will return a zero for all 3-Phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads.



## 5.5 Master Device Table 5 – Sliding Window Averaged Values

This table provides a summary of the average values (sliding window) from the Master and individual Meter Points.

Data Address	Modbus Register	RTU	Data	Scale	Access
1280	41281	Master	Phase 1 Volts Demand (Sliding Window)	Kvp	Read Only
1281	41282		Phase 2 Volts Demand (Sliding Window)		Read Only
1282	41283		Phase 3 Volts Demand (Sliding Window)		Read Only
1283	41284	Meter 1	Phase 1 Amps Demand (Sliding Window)	Ki	Read Only
1284	41285		Phase 2 Amps Demand (Sliding Window)		Read Only
1285	41286		Phase 3 Amps Demand (Sliding Window)		Read Only
1286	41287		Phase 1 kW Demand (Sliding Window)	Kp	Read Only
1287	41288		Phase 2 kW Demand (Sliding Window)		Read Only
1288	41289		Phase 3 kW Demand (Sliding Window)		Read Only
1289	41290		System kW Demand (Sliding Window)	Kpsys	Read Only
1290	41291		System kvar Demand (Sliding Window)		Read Only
1291	41292		System kVA Demand (Sliding Window)		Read Only
1292	41293		Meter 2	Phase 1 Amps Demand (Sliding Window)	Ki
1293	41294	Phase 2 Amps Demand (Sliding Window)		Read Only	
1294	41295	Phase 3 Amps Demand (Sliding Window)		Read Only	
1295	41296	Phase 1 kW Demand (Sliding Window)		Kp	Read Only
1296	41297	Phase 2 kW Demand (Sliding Window)			Read Only
1297	41298	Phase 3 kW Demand (Sliding Window)			Read Only
1298	41299	System kW Demand (Sliding Window)		Kpsys	Read Only
1299	41300	System kvar Demand (Sliding Window)			Read Only
1300	41301	System kVA Demand (Sliding Window)			Read Only
1301	41302	Meter 3		Phase 1 Amps Demand (Sliding Window)	Ki
1302	41303		Phase 2 Amps Demand (Sliding Window)	Read Only	
1303	41304		Phase 3 Amps Demand (Sliding Window)	Read Only	
1304	41305		Phase 1 kW Demand (Sliding Window)	Kp	Read Only
1305	41306		Phase 2 kW Demand (Sliding Window)		Read Only
1306	41307		Phase 3 kW Demand (Sliding Window)		Read Only
1307	41308		System kW Demand (Sliding Window)	Kpsys	Read Only
1308	41309		System kvar Demand (Sliding Window)		Read Only
1309	41310		System kVA Demand (Sliding Window)		Read Only
1310	41311		Virtual/ Residual Meter	Phase 1 Amps Demand (Sliding Window)	Ki
1311	41312	Phase 2 Amps Demand (Sliding Window)		Read Only	
1312	41313	Phase 3 Amps Demand (Sliding Window)		Read Only	
1313	41314	Phase 1 kW Demand (Sliding Window)		Kp	Read Only
1314	41315	Phase 2 kW Demand (Sliding Window)			Read Only
1315	41316	Phase 3 kW Demand (Sliding Window)			Read Only
1316	41317	System kW Demand (Sliding Window)		Kpsys	Read Only
1317	41318	System kvar Demand (Sliding Window)			Read Only
1318	41319	System kVA Demand (Sliding Window)			Read Only

### Notes:

**MultiCube** Meters configured as single phase meters will return a zero for all 3-Phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads.

## 5.6 Master Device Table 6 – Max/Min Averaged Volts/Amps

This table provides a summary of the maximum and minimum average values recorded, from the Master and individual Meter Points

<b>Data Address</b>	<b>Modbus Register</b>	<b>RTU</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
1536	41537	Master	Phase 1 Volts Maximum Demand	Kvp	Read/Write
1537	41538		Phase 2 Volts Maximum Demand		Read/Write
1538	41539		Phase 3 Volts Maximum Demand		Read/Write
1539	41540		Phase 1 Volts Minimum Demand		Read/Write
1540	41541		Phase 2 Volts Minimum Demand		Read/Write
1541	41542		Phase 3 Volts Minimum Demand		Read/Write
1542	41543	Meter 1	Phase 1 Amps Maximum Demand	Ki	Read/Write
1543	41544		Phase 2 Amps Maximum Demand		Read/Write
1544	41545		Phase 3 Amps Maximum Demand		Read/Write
1545	41546		Phase 1 Amps Minimum Demand		Read/Write
1546	41547		Phase 2 Amps Minimum Demand		Read/Write
1547	41548		Phase 3 Amps Minimum Demand		Read/Write
1548	41549	Meter 2	Phase 1 Amps Maximum Demand	Ki	Read/Write
1549	41550		Phase 2 Amps Maximum Demand		Read/Write
1550	41551		Phase 3 Amps Maximum Demand		Read/Write
1551	41552		Phase 1 Amps Minimum Demand		Read/Write
1552	41553		Phase 2 Amps Minimum Demand		Read/Write
1553	41554		Phase 3 Amps Minimum Demand		Read/Write
1554	41555	Meter 3	Phase 1 Amps Maximum Demand	Ki	Read/Write
1555	41556		Phase 2 Amps Maximum Demand		Read/Write
1556	41557		Phase 3 Amps Maximum Demand		Read/Write
1557	41558		Phase 1 Amps Minimum Demand		Read/Write
1558	41559		Phase 2 Amps Minimum Demand		Read/Write
1559	41560		Phase 3 Amps Minimum Demand		Read/Write
1560	41561	Virtual/ Residual Meter	Phase 1 Amps Maximum Demand	Ki	Read/Write
1561	41562		Phase 2 Amps Maximum Demand		Read/Write
1562	41563		Phase 3 Amps Maximum Demand		Read/Write
1563	41564		Phase 1 Amps Minimum Demand		Read/Write
1564	41565		Phase 2 Amps Minimum Demand		Read/Write
1565	41566		Phase 3 Amps Minimum Demand		Read/Write

### Notes:

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads and an exception error in response to Modbus write commands.

## 5.7 Master Device Table 7 – Max/Min Averaged Powers

This table provides a summary of the maximum and minimum average values recorded, from the Master and individual Meter Points.

Data Address	Modbus Register	RTU	Data	Scale	Access		
1792	41793	Meter 1	Phase 1 kW Maximum Demand	Kp	Read/Write		
1793	41794		Phase 2 kW Maximum Demand		Read/Write		
1794	41795		Phase 3 kW Maximum Demand		Read/Write		
1795	41796		Phase 1 kW Minimum Demand		Read/Write		
1796	41797		Phase 2 kW Minimum Demand		Read/Write		
1797	41798		Phase 3 kW Minimum Demand		Read/Write		
1798	41799		System kW Maximum Demand	Kpsys	Read/Write		
1799	41800		System kW Minimum Demand		Read/Write		
1800	41801		System kvar Maximum Demand		Read/Write		
1801	41802		System kvar Minimum Demand		Read/Write		
1802	41803		System kVA Maximum Demand		Read/Write		
1803	41804		System kVA Minimum Demand		Read/Write		
1804	41805		Meter 2		Phase 1 kW Maximum Demand	Kp	Read/Write
1805	41806				Phase 2 kW Maximum Demand		Read/Write
1806	41807	Phase 3 kW Maximum Demand		Read/Write			
1807	41808	Phase 1 kW Minimum Demand		Read/Write			
1808	41809	Phase 2 kW Minimum Demand		Read/Write			
1809	41810	Phase 3 kW Minimum Demand		Read/Write			
1810	41811	System kW Maximum Demand		Kpsys	Read/Write		
1811	41812	System kW Minimum Demand			Read/Write		
1812	41813	System kvar Maximum Demand			Read/Write		
1813	41814	System kvar Minimum Demand			Read/Write		
1814	41815	System kVA Maximum Demand			Read/Write		
1815	41816	System kVA Minimum Demand			Read/Write		
1816	41817	Meter 3			Phase 1 kW Maximum Demand	Kp	Read/Write
1817	41818				Phase 2 kW Maximum Demand		Read/Write
1818	41819		Phase 3 kW Maximum Demand	Read/Write			
1819	41820		Phase 1 kW Minimum Demand	Read/Write			
1820	41821		Phase 2 kW Minimum Demand	Read/Write			
1821	41822		Phase 3 kW Minimum Demand	Read/Write			
1822	41823		System kW Maximum Demand	Kpsys	Read/Write		
1823	41824		System kW Minimum Demand		Read/Write		
1824	41825		System kvar Maximum Demand		Read/Write		
1825	41826		System kvar Minimum Demand		Read/Write		
1826	41827		System kVA Maximum Demand		Read/Write		
1827	41828		System kVA Minimum Demand		Read/Write		
1828	41829		Virtual/ Residual Meter		Phase 1 kW Maximum Demand	Kp	Read/Write
1829	41830				Phase 2 kW Maximum Demand		Read/Write
1830	41831	Phase 3 kW Maximum Demand		Read/Write			
1831	41832	Phase 1 kW Minimum Demand		Read/Write			
1832	41833	Phase 2 kW Minimum Demand		Read/Write			
1833	41834	Phase 3 kW Minimum Demand		Read/Write			
1834	41835	System kW Maximum Demand		Kpsys	Read/Write		
1835	41836	System kW Minimum Demand			Read/Write		
1836	41837	System kvar Maximum Demand			Read/Write		
1837	41838	System kvar Minimum Demand			Read/Write		
1838	41839	System kVA Maximum Demand			Read/Write		
1839	41840	System kVA Minimum Demand			Read/Write		

### Notes:

**MultiCube** Meters configured as single phase meters will return a zero for all 3-Phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads and an exception error in response to Modbus write commands.

## 5.8 Master Device Table 19 – Floating Point Instantaneous Values

This table provides a selection of instantaneous values in floating point format scaled as basic SI units.

<b>Data Address</b>	<b>Modbus Register</b>	<b>RTU</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
4864	44865	Master	Phase 1 Volts	Floating Point Volts	Read Only
4865	44866		Phase 2 Volts		
4866	44867		Phase 3 Volts		
4867	44868				
4868	44869				
4870	44871	Meter 1	Phase 1 Amps	Floating Point Amps	Read Only
4871	44872		Phase 2 Amps		
4872	44873		Phase 3 Amps		
4873	44874				
4874	44875		Phase 1 Watts	Floating Point Watts	
4875	44876		Phase 2 Watts		
4876	44877		Phase 3 Watts		
4877	44878		System Watts		
4878	44879		System vars	Floating Point vars	
4879	44880				
4880	44881				
4881	44882				
4882	44883				
4883	44884				
4884	44885				
4885	44886				
4886	44887	Meter 2	Phase 1 Amps	Floating Point Amps	Read Only
4887	44888		Phase 2 Amps		
4888	44889		Phase 3 Amps		
4889	44890				
4890	44891		Phase 1 Watts	Floating Point Watts	
4891	44892		Phase 2 Watts		
4892	44893		Phase 3 Watts		
4893	44894		System Watts		
4894	44895		System vars	vars	
4895	44896				
4896	44897				
4897	44898				
4898	44899				
4899	44900				
4900	44901				
4901	44902				
4902	44903	Meter 3	Phase 1 Amps	Floating Point Amps	Read Only
4903	44904		Phase 2 Amps		
4904	44905		Phase 3 Amps		
4905	44906				
4906	44907		Phase 1 Watts	Floating Point Watts	
4907	44908		Phase 2 Watts		
4908	44909		Phase 3 Watts		
4909	44910		System Watts		
4910	44911		System vars	Floating Point vars	
4911	44912				
4912	44913				
4913	44914				
4914	44915				
4915	44916				
4916	44917				
4917	44918				
4918	44919	Virtual Meter	Phase 1 Amps	Floating Point Amps	Read Only
4919	44920		Phase 2 Amps		
4920	44921		Phase 3 Amps		
4921	44922				
4922	44923		Phase 1 Watts	Floating Point Watts	
4923	44924		Phase 2 Watts		
4924	44925		Phase 3 Watts		
4925	44926		System Watts		
4926	44927		System vars	Floating Point vars	
4927	44928				
4928	44929				
4929	44930				
4930	44931				
4931	44932				
4932	44933				
4933	44934				

**Note:**

Multicube meters configured as single phase meters will return a zero for all 3-phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads.

## 5.9 Master Device Table 30 – MultiCube Master Configuration

This table provides a summary of the configuration of the MultiCube Master.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Access</b>
7680	47681	Not Used	Read/Write
7681	47682	Not Used	Read/Write
7682	47683	Not Used	Read/Write
7683	47684	Not Used	Read/Write
7684	47685	Not Used	Read/Write
7685	47686	Not Used	Read/Write
7686	47687	Time since Last Power Up in seconds (MSB)	Read Only
7687	47688	Time Since Last Power Up in seconds (LSB)	Read Only
7688	47689	Run Time since Last Calibration (MSB)	Read Only
7689	47690	Run Time Since Last Calibration (LSB)	Read Only
7690	47691	Master Model (e.g. 950 = MultiCube950)	Read Only
7691	47692	Firmware Version (e.g. 100 for Version 1.00)	Read Only
7692	47693	Reserved (Returns 0)	Read Only
7693	47694	Reserved (Returns 0)	Read Only
7694	47695	Reserved (Returns 0)	Read Only
7695	47696	Reserved (Returns 0)	Read Only
7696	47697	Modbus Address (Main Unit) Range (1 – 244, see section 3.1)	Read/Write
7697	47698	Modbus Baud Rate / 100 (e.g. 96 = 9600 ): 48, 96, 192, 384.	Read/Write
7698	47699	Modbus Parity Setting. 1 = no parity, 2 = odd, 3 = even	Read/Write
7699	47700	Customer System Voltage (e.g. 480V L-L) 1- 480 in steps of 1.	Read/Write
7700	47701	PT Ratio 1-1000 in steps of 1.	Read/Write
7701	47702	Average Volts Period. Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
7702	47703	Average Amps Period. Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
7703	47704	Average Power Period. Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
7704	47705	Number of Meters Points (MultiCube950 = 4, MultiCube650 = 2, MultiCube350=1)	Read Only
7705	47706	Reserved (Returns 0)	Read Only
7706	47707	Number of 3-ph System Meters (0, 1, 2 or 3)	Read/Write
7707	47708	Security password. 0-9999 ( 0 = password disabled )	Read/Write
7708	47709	Reserved (Returns 0)	Read Only
7709	47710	Backlight OFF Delay in seconds (0-3600, or -1 = always on)	Read/Write
7710	47711	Serial No.(1-99999999) - High word	Read Only
7711	47712	Serial No.(1-99999999) - Low word	Read Only
7712	47713	Reserved (Returns 0)	Read/Write
7713	47714	Reserved (Returns 0)	Read/Write
7714	47715	Reserved (Returns 0)	Read/Write
7715	47716	Reserved (Returns 0)	Read/Write
7716	47717	Virtual meter type. 0 = residual meter, Non zero = virtual meter	Read/Write

## 5.10 Master Device Table 34– Phase 1 Voltage Harmonics

This table provides power quality values for the *MultiCube*.

Data Address	Modbus Register	Data	Scaling
8704	48705	Phase 1 Voltage THD	1000 = 100.0%
8705	48706	Reserved (returns 0)	
8706	48707	Reserved (returns 0)	
8707	48708	Phase 1 Voltage Harmonic 2	
8708	48709	Phase 1 Voltage Harmonic 3	
8709	48710	Phase 1 Voltage Harmonic 4	
8710	48711	Phase 1 Voltage Harmonic 5	
8711	48712	Phase 1 Voltage Harmonic 6	
8712	48713	Phase 1 Voltage Harmonic 7	
8713	48714	Phase 1 Voltage Harmonic 8	
8714	48715	Phase 1 Voltage Harmonic 9	
8715	48716	Phase 1 Voltage Harmonic 10	
8716	48717	Phase 1 Voltage Harmonic 11	
8717	48718	Phase 1 Voltage Harmonic 12	
8718	48719	Phase 1 Voltage Harmonic 13	
8719	48720	Phase 1 Voltage Harmonic 14	
8720	48721	Phase 1 Voltage Harmonic 15	
8721	48722	Phase 1 Voltage Harmonic 16	
8722	48723	Phase 1 Voltage Harmonic 17	
8723	48724	Phase 1 Voltage Harmonic 18	
8724	48725	Phase 1 Voltage Harmonic 19	
8725	48726	Phase 1 Voltage Harmonic 20	
8726	48727	Phase 1 Voltage Harmonic 21	
8727	48728	Phase 1 Voltage Harmonic 22	
8728	48729	Phase 1 Voltage Harmonic 23	
8729	48730	Phase 1 Voltage Harmonic 24	
8730	48731	Phase 1 Voltage Harmonic 25	
8731	48732	Phase 1 Voltage Harmonic 26	
8732	48733	Phase 1 Voltage Harmonic 27	
8733	48734	Phase 1 Voltage Harmonic 28	
8734	48735	Phase 1 Voltage Harmonic 29	
8735	48736	Phase 1 Voltage Harmonic 30	
8736	48737	Phase 1 Voltage Harmonic 31	
8737	48738	Phase 1 Voltage Harmonic 32	
8738	48739	Phase 1 Voltage Harmonic 33	
8739	48740	Phase 1 Voltage Harmonic 34	
8740	48741	Phase 1 Voltage Harmonic 35	
8741	48742	Phase 1 Voltage Harmonic 36	
8742	48743	Phase 1 Voltage Harmonic 37	
8743	48744	Phase 1 Voltage Harmonic 38	
8744	48745	Phase 1 Voltage Harmonic 39	
8745	48746	Phase 1 Voltage Harmonic 40	
8746	48747	Phase 1 Voltage Harmonic 41	
8747	48748	Phase 1 Voltage Harmonic 42	
8748	48749	Phase 1 Voltage Harmonic 43	
8749	48750	Phase 1 Voltage Harmonic 44	
8750	48751	Phase 1 Voltage Harmonic 45	
8751	48752	Phase 1 Voltage Harmonic 46	
8752	48753	Phase 1 Voltage Harmonic 47	
8753	48754	Phase 1 Voltage Harmonic 48	
8754	48755	Phase 1 Voltage Harmonic 49	
8755	48756	Phase 1 Voltage Harmonic 50	
8756	48757	Phase 1 Voltage Harmonic 51	
8757	48758	Phase 1 Voltage Harmonic 52	
8758	48759	Phase 1 Voltage Harmonic 53	
8759	48760	Phase 1 Voltage Harmonic 54	
8760	48761	Phase 1 Voltage Harmonic 55	
8761	48762	Phase 1 Voltage Harmonic 56	
8762	48763	Phase 1 Voltage Harmonic 57	
8763	48764	Phase 1 Voltage Harmonic 58	
8764	48765	Phase 1 Voltage Harmonic 59	
8765	48766	Phase 1 Voltage Harmonic 60	
8766	48767	Phase 1 Voltage Harmonic 61	
8767	48768	Phase 1 Voltage Harmonic 62	
8768	48769	Phase 1 Voltage Harmonic 63	

**Note:**

All values in this table have Read-Only access

MultiCubes not fitted with the Power Quality option will return zero for values in this table.

## 5.11 Master Device Table 35– Phase 2 Voltage Harmonics

This table provides power quality values for an individual *MultiCube*.

Data Address	Modbus Register	Data	Scaling
8960	48961	Phase 2 Voltage THD	1000 = 100.0%
8961	48962	Reserved (returns 0)	
8962	48963	Reserved (returns 0)	
8963	48964	Phase 2 Voltage Harmonic 2	
8964	48965	Phase 2 Voltage Harmonic 3	
8965	48966	Phase 2 Voltage Harmonic 4	
8966	48967	Phase 2 Voltage Harmonic 5	
8967	48968	Phase 2 Voltage Harmonic 6	
8968	48969	Phase 2 Voltage Harmonic 7	
8969	48970	Phase 2 Voltage Harmonic 8	
8970	48971	Phase 2 Voltage Harmonic 9	
8971	48972	Phase 2 Voltage Harmonic 10	
8972	48973	Phase 2 Voltage Harmonic 11	
8973	48974	Phase 2 Voltage Harmonic 12	
8974	48975	Phase 2 Voltage Harmonic 13	
8975	48976	Phase 2 Voltage Harmonic 14	
8976	48977	Phase 2 Voltage Harmonic 15	
8977	48978	Phase 2 Voltage Harmonic 16	
8978	48979	Phase 2 Voltage Harmonic 17	
8979	48980	Phase 2 Voltage Harmonic 18	
8980	48981	Phase 2 Voltage Harmonic 19	
8981	48982	Phase 2 Voltage Harmonic 20	
8982	48983	Phase 2 Voltage Harmonic 21	
8983	48984	Phase 2 Voltage Harmonic 22	
8984	48985	Phase 2 Voltage Harmonic 23	
8985	48986	Phase 2 Voltage Harmonic 24	
8986	48987	Phase 2 Voltage Harmonic 25	
8987	48988	Phase 2 Voltage Harmonic 26	
8988	48989	Phase 2 Voltage Harmonic 27	
8989	48990	Phase 2 Voltage Harmonic 28	
8990	48991	Phase 2 Voltage Harmonic 29	
8991	48992	Phase 2 Voltage Harmonic 30	
8992	48993	Phase 2 Voltage Harmonic 31	
8993	48994	Phase 2 Voltage Harmonic 32	
8994	48995	Phase 2 Voltage Harmonic 33	
8995	48996	Phase 2 Voltage Harmonic 34	
8996	48997	Phase 2 Voltage Harmonic 35	
8997	48998	Phase 2 Voltage Harmonic 36	
8998	48999	Phase 2 Voltage Harmonic 37	
8999	49000	Phase 2 Voltage Harmonic 38	
9000	49001	Phase 2 Voltage Harmonic 39	
9001	49002	Phase 2 Voltage Harmonic 40	
9002	49003	Phase 2 Voltage Harmonic 41	
9003	49004	Phase 2 Voltage Harmonic 42	
9004	49005	Phase 2 Voltage Harmonic 43	
9005	49006	Phase 2 Voltage Harmonic 44	
9006	49007	Phase 2 Voltage Harmonic 45	
9007	49008	Phase 2 Voltage Harmonic 46	
9008	49009	Phase 2 Voltage Harmonic 47	
9009	49010	Phase 2 Voltage Harmonic 48	
9010	49011	Phase 2 Voltage Harmonic 49	
9011	49012	Phase 2 Voltage Harmonic 50	
9012	49013	Phase 2 Voltage Harmonic 51	
9013	49014	Phase 2 Voltage Harmonic 52	
9014	49015	Phase 2 Voltage Harmonic 53	
9015	49016	Phase 2 Voltage Harmonic 54	
9016	49017	Phase 2 Voltage Harmonic 55	
9017	49018	Phase 2 Voltage Harmonic 56	
9018	49019	Phase 2 Voltage Harmonic 57	
9019	49020	Phase 2 Voltage Harmonic 58	
9020	49021	Phase 2 Voltage Harmonic 59	
9021	49022	Phase 2 Voltage Harmonic 60	
9022	49023	Phase 2 Voltage Harmonic 61	
9023	49024	Phase 2 Voltage Harmonic 62	
9024	49025	Phase 2 Voltage Harmonic 63	

### Notes:

All values in this table have Read-Only access

MultiCubes not fitted with the Power Quality option will return zero for values in this table.



## 5.12 Master Device Table 36– Phase 3 Voltage Harmonics

This table provides power quality values for an individual **MultiCube**.

Data Address	Modbus Register	Data	Scaling
9216	49217	Phase 3 Voltage THD	1000 = 100.0%
9217	49218	Reserved (returns 0)	
9218	49219	Reserved (returns 0)	
9219	49220	Phase 3 Voltage Harmonic 2	
9220	49221	Phase 3 Voltage Harmonic 3	
9221	49222	Phase 3 Voltage Harmonic 4	
9222	49223	Phase 3 Voltage Harmonic 5	
9223	49224	Phase 3 Voltage Harmonic 6	
9224	49225	Phase 3 Voltage Harmonic 7	
9225	49226	Phase 3 Voltage Harmonic 8	
9226	49227	Phase 3 Voltage Harmonic 9	
9227	49228	Phase 3 Voltage Harmonic 10	
9228	49229	Phase 3 Voltage Harmonic 11	
9229	49230	Phase 3 Voltage Harmonic 12	
9230	49231	Phase 3 Voltage Harmonic 13	
9231	49232	Phase 3 Voltage Harmonic 14	
9232	49233	Phase 3 Voltage Harmonic 15	
9233	49234	Phase 3 Voltage Harmonic 16	
9234	49235	Phase 3 Voltage Harmonic 17	
9235	49236	Phase 3 Voltage Harmonic 18	
9236	49237	Phase 3 Voltage Harmonic 19	
9237	49238	Phase 3 Voltage Harmonic 20	
9238	49239	Phase 3 Voltage Harmonic 21	
9239	49240	Phase 3 Voltage Harmonic 22	
9240	49241	Phase 3 Voltage Harmonic 23	
9241	49242	Phase 3 Voltage Harmonic 24	
9242	49243	Phase 3 Voltage Harmonic 25	
9243	49244	Phase 3 Voltage Harmonic 26	
9244	49245	Phase 3 Voltage Harmonic 27	
9245	49246	Phase 3 Voltage Harmonic 28	
9246	49247	Phase 3 Voltage Harmonic 29	
9247	49248	Phase 3 Voltage Harmonic 30	
9248	49249	Phase 3 Voltage Harmonic 31	
9249	49250	Phase 3 Voltage Harmonic 32	
9250	49251	Phase 3 Voltage Harmonic 33	
9251	49252	Phase 3 Voltage Harmonic 34	
9252	49253	Phase 3 Voltage Harmonic 35	
9253	49254	Phase 3 Voltage Harmonic 36	
9254	49255	Phase 3 Voltage Harmonic 37	
9255	49256	Phase 3 Voltage Harmonic 38	
9256	49257	Phase 3 Voltage Harmonic 39	
9257	49258	Phase 3 Voltage Harmonic 40	
9258	49259	Phase 3 Voltage Harmonic 41	
9259	49260	Phase 3 Voltage Harmonic 42	
9260	49261	Phase 3 Voltage Harmonic 43	
9261	49262	Phase 3 Voltage Harmonic 44	
9262	49263	Phase 3 Voltage Harmonic 45	
9263	49264	Phase 3 Voltage Harmonic 46	
9264	49265	Phase 3 Voltage Harmonic 47	
9265	49266	Phase 3 Voltage Harmonic 48	
9266	49267	Phase 3 Voltage Harmonic 49	
9267	49268	Phase 3 Voltage Harmonic 50	
9268	49269	Phase 3 Voltage Harmonic 51	
9269	49270	Phase 3 Voltage Harmonic 52	
9270	49271	Phase 3 Voltage Harmonic 53	
9271	49272	Phase 3 Voltage Harmonic 54	
9272	49273	Phase 3 Voltage Harmonic 55	
9273	49274	Phase 3 Voltage Harmonic 56	
9274	49275	Phase 3 Voltage Harmonic 57	
9275	49276	Phase 3 Voltage Harmonic 58	
9276	49277	Phase 3 Voltage Harmonic 59	
9277	49278	Phase 3 Voltage Harmonic 60	
9278	49279	Phase 3 Voltage Harmonic 61	
9279	49280	Phase 3 Voltage Harmonic 62	
9280	49281	Phase 3 Voltage Harmonic 63	

### Notes:

All values in this table have Read-Only access

MultiCubes not fitted with the Power Quality option will return zero for values in this table.

### 5.13 Master Device Table 40a – High Speed Instantaneous Readings (Option)

This is a factory fitted optional feature on the **MultiCube**.

The normal instantaneous measurements, made by the meter, are calculated over each consecutive 1 second period. These values may be accessed over the Modbus network more often than once per second but the actual measured values remain constant until the next 1 second update.

This option provides an additional set of instantaneous parameters which are measured over consecutive 100mS (0.1 Second) periods. These are made available using the Modbus registers shown in the table below.

<b>Data Address</b>	<b>Modbus Register</b>	<b>RTU</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
10240	410241	Master	Phase 1 Volts	Kvp	Read Only
10241	410242		Phase 2 Volts		Read Only
10242	410243		Phase 3 Volts		Read Only
10243	410244		Frequency	50000 = 50.000Hz	Read Only
10244	410245	Meter 1	Phase 1 Amps	Ki	Read Only
10245	410246		Phase 2 Amps		Read Only
10246	410247		Phase 3 Amps		Read Only
10247	410248		Phase 1 kW	Kp	Read Only
10248	410249		Phase 2 kW		Read Only
10249	410250		Phase 3 kW		Read Only
10250	410251		System kW	Kpsys	Read Only
10251	410252	Meter 2	Phase 1 Amps	Ki	Read Only
10252	410253		Phase 2 Amps		Read Only
10253	410254		Phase 3 Amps		Read Only
10254	410255		Phase 1 kW	Kp	Read Only
10255	410256		Phase 2 kW		Read Only
10256	410257		Phase 3 kW		Read Only
10257	410258		System kW	Kpsys	Read Only
10258	410259		Meter 3	Phase 1 Amps	Ki
10259	410260	Phase 2 Amps		Read Only	
10260	410261	Phase 3 Amps		Read Only	
10261	410262	Phase 1 kW		Kp	Read Only
10262	410263	Phase 2 kW			Read Only
10263	410264	Phase 3 kW			Read Only
10264	410265	System kW		Kpsys	Read Only

**Note:**

Multicube meters configured as single phase meters will return a zero for all 3-phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads.

## 5.14 Master Device Table 40b – High Speed Readings – Floating Point (Option)

The values in this Table are equivalent to those in table 40a but provided in floating point format

<b>Data Address</b>	<b>Modbus Register</b>	<b>RTU</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>			
10265	410266	Master	Phase 1 Volts	Floating Point Volts	Read Only			
10266	410267		Phase 2 Volts					
10267	410268		Phase 3 Volts					
10268	410269		Meter 1	Frequency		Floating Point Hz	Read Only	
10269	410270			Phase 1 Amps		Floating Point Amps	Read Only	
10270	410271			Phase 2 Amps				
10271	410272			Phase 3 Amps				
10272	410273	Phase 1 kW	Floating Point Watts	Read Only				
10273	410274	Phase 2 kW						
10274	410275	Phase 3 kW						
10275	410276	System kW						
10276	410277							
10277	410278	Meter 2	Phase 1 Amps	Floating Point Amps	Read Only			
10278	410279		Phase 2 Amps					
10279	410280		Phase 3 Amps					
10280	410281		Phase 1 kW	Floating Point Watts		Read Only		
10281	410282		Phase 2 kW					
10282	410283		Phase 3 kW					
10283	410284		System kW					
10284	410285		Meter 3	Phase 1 Amps			Floating Point Amps	Read Only
10285	410286			Phase 2 Amps				
10286	410287			Phase 3 Amps				
10287	410288	Phase 1 kW		Floating Point Watts	Read Only			
10288	410289	Phase 2 kW						
10289	410290	Phase 3 kW						
10290	410291	System kW						
10291	410292	Meter 3		Phase 1 Amps		Floating Point Amps	Read Only	
10292	410293			Phase 2 Amps				
10293	410294			Phase 3 Amps				
10294	410295		Phase 1 kW	Floating Point Watts		Read Only		
10295	410296		Phase 2 kW					
10296	410297		Phase 3 kW					
10297	410298		System kW					
10298	410299		Meter 3	Phase 1 Amps	Floating Point Amps			Read Only
10299	410300			Phase 2 Amps				
10300	410301			Phase 3 Amps				
10301	410302	Phase 1 kW		Floating Point Watts	Read Only			
10302	410303	Phase 2 kW						
10303	410304	Phase 3 kW						
10304	410305	System kW						
10305	410306	Meter 3		Phase 1 Amps		Floating Point Amps	Read Only	
10306	410307			Phase 2 Amps				
10307	410308			Phase 3 Amps				
10308	410309		Phase 1 kW	Floating Point Watts		Read Only		
10309	410310		Phase 2 kW					
10310	410311		Phase 3 kW					
10311	410312		System kW					
10312	410313		Meter 3	Phase 1 Amps	Floating Point Amps			Read Only
10313	410314			Phase 2 Amps				
10314	410315			Phase 3 Amps				
		Phase 1 kW		Floating Point Watts	Read Only			
		Phase 2 kW						
		Phase 3 kW						
		System kW						

**Note:**

Multicube meters configured as single phase meters will return a zero for all 3-phase values.

Meter Points not measured by a MultiCube (eg MultiCube650 has only 2 meter points) will return a value of zero for all Modbus reads.

## 6 MultiCube Meter Point Modbus Data Tables

Each Meter Point in a **MultiCube** acts as an individual Modbus RTU, with tables compatible with other meters in the Cube/Rail ranges. These tables are provided for convenience and allow a variety of compatible meters in a single system without the need to reconfigure the Modbus master for each meter type.

**NOTE:**  
Individual meter points are accessed using their extended Modbus ID (N+1, N+2, N+3 and N+4 for the Virtual Meter).

**NOTE:**  
The **MultiCube350** has a single Modbus ID and data registers are accessed only from the tables below.

### 6.1 Master Device Table 0 – Meter Model

Data Address	Modbus Register	Data	Scale	Access
0	40001	Meter Model	950 = MultiCube950 650 = MultiCube650 350 = MultiCube350	Read Only

### 6.2 Individual Meter Point Table 2 - 3-Phase Energy Registers

This table provides 3-Phase system energy values for each MultiCube Meter Point configured for 3-Phase.

Data Address	Modbus Register	Data	Scale	Access
512	40513	System Energy Scaling factor Kesys MSB	-	Read Only
513	40514	System Energy Scaling factor Kesys LSB		
514	40515	kWh High Word	Kesys	Read/Write
515	40516	kWh Low Word		
516	40517	kVAh High Word		
517	40518	kVAh Low Word		
518	40519	kvarh Import High Word		
519	40520	kvarh Import Low Word		
520	40521	Reserved – Returns 0	-	Read Only
521	40522	Reserved – Returns 0		
522	40523	kvarh Import High Word	Kesys	Read/Write
523	40524	kvarh Import Low Word		
524	40525	kWh Export – High Word		
525	40526	kWh Export – Low Word		
526	40527	kvarh Export – High Word		
527	40528	kvarh Export – Low Word		

**Note:**  
For individual Meter Points, in a **MultiCube**, configured to monitor 3 x single phase loads, values in this table will return 0 and an exception error in response to Modbus write commands.

### 6.3 Individual Meter Point Table 3 – Single Phase Energy Registers

This table provides single phase energy values for each MultiCube Meter Point configured for 3xSingle phase.

Data Address	Modbus Register	Data	Scale	Access
768	40769	Phase Energy Scaling factor Ke MSB	-	Read Only
769	40770	Phase Energy Scaling factor Ke LSB		
770	40771	Load 1 kWh High Word	Ke	Read/Write
771	40772	Load 1 kWh Low Word		
772	40773	Load 2 kWh High Word		
773	40774	Load 2 kWh Low Word		
774	40775	Load 3 kWh High Word		
775	40776	Load 3 kWh Low Word		
776	40777	Load 1 Import kvarh High Word		
777	40778	Load 1 Import kvarh Low Word		
778	40779	Load 2 Import kvarh High Word		
779	40780	Load 2 Import kvarh Low Word		
780	40781	Load 3 Import kvarh High Word		
781	40782	Load 3 Import kvarh Low Word		

**Note:**  
For individual Meter Points, in a **MultiCube**, configured to monitor 3-Phase loads, values in this table will return 0 and an exception error in response to Modbus write commands.

## 6.4 Individual Meter Point Table 11– Instantaneous Values

This table provides instantaneous values for each **MultiCube** Meter Point.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
2816	42817	System kW	Kpsys	Read Only
2817	42818	System kVA	Kpsys	Read Only
2818	42819	System kvar	Kpsys	Read Only
2819	42820	System PF	1000 = 1.000	Read Only
2820	42821	Frequency	50000 = 50.000Hz	Read Only
2821	42822	Phase 1 Volts	Kvp	Read Only
2822	42823	Phase 1 Amps	Ki	Read Only
2823	42824	Phase 1 kW	Kp	Read Only
2824	42825	Phase 2 Volts	Kvp	Read Only
2825	42826	Phase 2 Amps	Ki	Read Only
2826	42827	Phase 2 kW	Kp	Read Only
2827	42828	Phase 3 Volts	Kvp	Read Only
2828	42829	Phase 3 Amps	Ki	Read Only
2829	42830	Phase 3 kW	Kp	Read Only
2830	42831	Phase 1 PF	1000 = 1.000	Read Only
2831	42832	Phase 2 PF	1000 = 1.000	Read Only
2832	42833	Phase 3 PF	1000 = 1.000	Read Only
2833	42834	Ph1-Ph2 Volts	Kvl	Read Only
2834	42835	Ph2-Ph3 Volts	Kvl	Read Only
2835	42836	Ph3-Ph1 Volts	Kvl	Read Only
2836	42837	Neutral Current	Ki	Read Only
2837	42838	Amps Scale Ki	-	Read Only
2838	42839	Phase Volts Scale Kvp	-	Read Only
2839	42840	Line Volts Scale Kvl	-	Read Only
2840	42841	System Power Scale Kpsys	-	Read Only
2841	42842	Per Phase Power Scale Kp	-	Read Only

### Notes:

**MultiCube** Meter Points configured as 3 x Single phase meters will return a zero for the 3-Phase System parameters.

## 6.5 Individual Meter Point Table 12– Additional Instantaneous Values

This table provides instantaneous values for each **MultiCube** Meter Point.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scaling</b>	<b>Access</b>
3072	43073	Phase 1 kVA	Kp	Read Only
3073	43074	Phase 2 kVA	Kp	Read Only
3074	43075	Phase 3 kVA	Kp	Read Only
3075	43076	Phase 1 kvar	Kp	Read Only
3076	43077	Phase 2 kvar	Kp	Read Only
3077	43078	Phase 3 kvar	Kp	Read Only
3078	43079	Peak Hold Ph1 Amps	Ki	Read Only
3079	43080	Peak Hold Ph2 Amps	Ki	Read Only
3080	43081	Peak Hold Ph3 Amps	Ki	Read Only
3081	43082	I1 % THD	1000 = 100%	Read Only
3082	43083	I2 % THD	1000 = 100%	Read Only
3083	43084	I3 % THD	1000 = 100%	Read Only
3084	43085	V1 % THD	1000 = 100%	Read Only
3085	43086	V2 % THD	1000 = 100%	Read Only
3086	43087	V3 % THD	1000 = 100%	Read Only

### Note:

For the virtual/residual meter, %I THD values are not displayed and will return zero in this table.

## 6.6 Individual Meter Point Table 13– Peak/Demand Values

This table provides peak hold values for each **MultiCube** Meter Point.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scaling</b>	<b>Access</b>
3328	43329	Peak Hold Ph1 Amps	Ki	Read/Write
3329	43330	Peak Hold Ph2 Amps		
3330	43331	Peak Hold Ph3 Amps		
3331	43332	Peak Hold Ph1 Volts	Kvp	Read/Write
3332	43333	Peak Hold Ph2 Volts		
3333	43334	Peak Hold Ph3 Volts		
3334	43335	System kW Maximum Demand	Kp	Read/Write
3335	43336	Power Demand Period	Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
3336	43337	System kW Demand (Sliding Window)	Kp	Read Only
3337	43338	System kVA Demand (Sliding Window)		
3338	43339	System kVA Maximum Demand	Kp	Read/Write
3339	43340	System kvar Demand (Sliding Window)	Kp	Read Only
3340	43341	System kvar Maximum Demand	Kp	Read/Write
3341	43342	Ph1 Amps – maximum Demand	Ki	Read/Write
3342	43343	Ph2 Amps – maximum Demand		
3343	43344	Ph3 Amps – maximum Demand		
3344	43345	Current Demand Period	Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
3345	43346	Ph1 Amps – Demand (sliding Window)	Ki	Read Only
3346	43347	Ph2 Amps – Demand (sliding Window)		
3347	43348	Ph3 Amps – Demand (sliding Window)		
3348	43349	Ph1 Volts – maximum Demand	Kvp	Read/Write
3349	43350	Ph2 Volts – maximum Demand		
3350	43351	Ph3 Volts – maximum Demand		
3351	43352	Voltage Demand Period	Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
3352	43353	Ph1 Volts – Demand (sliding Window)	Kvp	Read Only
3353	43354	Ph2 Volts – Demand (sliding Window)		
3354	43355	Ph3 Volts – Demand (sliding Window)		
3355	43356	Ph1 Amps – minimum Demand	Ki	Read/Write
3356	43357	Ph2 Amps – minimum Demand		
3357	43358	Ph3 Amps – minimum Demand		
3358	43359	Ph1 Volts – minimum Demand	Kvp	Read/Write
3359	43360	Ph2 Volts – minimum Demand		
3360	43361	Ph3 Volts – minimum Demand		
3361	43362	Ph1 kW – minimum Demand	Kp	Read/Write
3362	43363	Ph2 kW – minimum Demand		
3363	43364	Ph3 kW – minimum Demand		
3364	43365	System kW – minimum Demand	Kp	Read/Write
3365	43366	Ph1 kvar – minimum Demand		
3366	43367	Ph2 kvar – minimum Demand		
3367	43368	Ph3 kvar – minimum Demand	Kp	Read/Write
3368	43369	System kvar – minimum Demand		
3369	43370	Ph1 kVA – minimum Demand		
3370	43371	Ph2 kVA – minimum Demand	Kp	Read/Write
3371	43372	Ph3 kVA – minimum Demand		
3372	43373	System kVA – minimum Demand		

### Note:

**MultiCube** Meter Points configured as 3 x Single phase meters will return a zero for the 3-Phase System parameters and an exception error in response to Modbus write commands..

## 6.7 Individual Meter point Table 14– Configuration

This table provides configuration values for each of the MultiCube Meter Points.

Data Address	Modbus Register	Data	Scaling	Access
3584	43585	Meter Model	950 = MultiCube950 650 = MultiCube650 350 = MultiCube350	Read Only
3585	43586	Meter Type	0=1 x 3-Ph 1=3x1Ph	Read Only Read/Write(in 350)
3586	43587	Firmware Version	Eg. 104 = 1.04	Read Only
3587	43588	CT Primary	5 - 25,000 Amps	Read Only Read/Write(if MultiCube 5A to RJ12 converter used)
3588	43589	CT Secondary	33,333 = 0.33333V	Read Only
3589	43590	CT Phase Angle	±100 = ±1.00 degrees	Read Only
3590	43591	Reserved	Always 0	Read Only
3591	43592	Reserved	Always 0	Read Only
3592	43593	Reserved	Always 0	Read Only
3593	43594	CT Auto Rotate	0=No Rotate, 1=Rotate	Read/Write
3594	43595	CT Phase Sequence	0=Ph1-2-3; >0=Ph3-2-1	Read/Write
3595	43596	CT Detected	Index of Detected CT	Read Only
3596	43597	Reserved	Always 0	Read Only
3597	43598	Customer System Volts	1 to 480 in steps of 1 eg 480V L-L	Read/Write
3598	43599	PT Ratio	1 – 1000 in steps of 1	Read/Write
3599	43600	Number of 3-ph Meters	0, 1, 2 or 3	Read Only
3600	43601	Current Demand Period	Range 1..60 (in 1s steps), then 300..3600 (in 300s steps)	Read/Write
3601	43602	Voltage Demand Period		Read/Write
3602	43603	Power Demand Period		Read/Write
3603	43604	Modbus ID	Modbus ID 1 – 244	Read Only Read/Write(in 350)
3604	43605	Baud	96 = 9600 etc	Read/Write
3605	43606	Parity	1 = no parity, 2 = odd, 3 = even	Read/Write
3606	43607	Serial No. High word	000000001 - 999999999	Read Only
3607	43608	Serial No. Low word		
3608	43609	Backlight Auto OFF (Seconds)	0-3600, (-1 = always on)	Read/Write
3609	43610	Time since Last Power Up	Seconds (MSB)	Read Only
3610	43611		Seconds (LSB)	
3611	43612	Run Time since Last Calibration	Seconds (MSB)	Read Only
3612	43613		Seconds (LSB)	
3613	43614	Security password	0-9999 ( 0 = password disabled )	Read/Write

### Notes:

Modbus configuration values affect all Meter Points. Configured settings made in the Master apply to the individual meters and can be seen in this table.

CT Primary: The CT primary is automatically detected when a recognised transducer is fitted to the meter.

For the virtual/residual meter, Modbus registers 43588, 43589, 43590 and 43596 will always return zero.

## 6.8 Individual Meter Point Table 19– Floating Point Instantaneous Values

This table provides a selection of instantaneous values in floating point format scaled as basic SI units.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
4864	44865	Phase 1 Volts	Floating Point Volts	Read Only
4865	44866			
4866	44867	Phase 2 Volts		
4867	44868			
4868	44869	Phase 3 Volts		
4869	44870			
4870	44871	Phase 1-2 Volts		
4871	44872			
4872	44873	Phase 2-3 Volts		
4873	44874			
4874	44875	Phase 3-1 Volts		
4875	44876			
4876	44877	System Watts	Floating Point Watts VA vars	Read Only
4877	44878			
4878	44879	System VA		
4879	44880			
4880	44881	System, vars		
4881	44882			
4882	44883	Phase 1 Amps	Floating Point Amps	Read Only
4883	44884			
4884	44885	Phase 2 Amps		
4885	44886			
4886	44887	Phase 3 Amps		
4887	44888			
4888	44889	Neutral Amps		
4889	44890			
4890	44891	Phase 1 Watts	Floating Point Watts	Read Only
4891	44892			
4892	44893	Phase 2 Watts		
4893	44894			
4894	44895	Phase 3 Watts		
4895	44896			
4896	44897	Phase 1 vars	Floating Point vars	Read Only
4897	44898			
4898	44899	Phase 2 vars		
4899	44900			
4900	44901	Phase 3 vars		
4901	44902			
4902	44903	Frequency Hz	Floating Point Hz	Read Only
4903	44904			
4904	44905	System PF	Floating PT Power Factor	Read Only
4905	44906			
4906	44907	Phase 1 PF		
4907	44908			
4908	44909	Phase 2 PF		
4909	44910			
4910	44911	Phase 3 PF		
4911	44912			

### Notes:

MultiCube Meters configured as single phase meters will return a zero for all 3-Phase values



## 6.9 Individual Meter Point Table 30– Amalgamated Data (3-Phase meters)

This table provides a combination of instantaneous and energy values for each of the individual MultiCube Meter Points when configured to monitor a 3-Phase load.

Data Address	Modbus Register	Data	Scaling	Access
7680	47681	KWh High Word	Kesys	Read/Write
7681	47682	KWh Low Word		
7682	47683	KVAh High Word		
7683	47684	KVAh Low Word	Kesys	Read/Write
7684	47685	Import Kvarh High Word		
7685	47686	Import Kvarh Low Word		
7686	47687	Export kWh High Word	Kesys	Read/Write
7687	47688	Export kWh Low Word		
7688	47689	Phase 1 Amps	Ki	Read Only
7689	47690	Phase 2 Amps		Read Only
7690	47691	Phase 3 Amps		Read Only
7691	47692	Phase 1 Volts	Kvp	Read Only
7692	47693	Phase 2 Volts		Read Only
7693	47694	Phase 3 Volts		Read Only
7694	47695	Ph1-Ph2 Volts	Kvl	Read Only
7695	47696	Ph2-Ph3 Volts		Read Only
7696	47697	Ph3-Ph1 Volts		Read Only
7697	47698	Frequency	50000 = 50.000Hz	Read Only
7698	47699	Phase 1 PF	1000 = 1.000	Read Only
7699	47700	Phase 2 PF		Read Only
7700	47701	Phase 3 PF		Read Only
7701	47702	System PF	Kp	Read Only
7702	47703	Phase 1 kW		Read Only
7703	47704	Phase 2 kW		Read Only
7704	47705	Phase 3 kW	Kpsys	Read Only
7705	47706	System kW		Read Only
7706	47707	Phase 1 kVA	Kp	Read Only
7707	47708	Phase 2 kVA		Read Only
7708	47709	Phase 3 kVA		Read Only
7709	47710	System kVA	Kpsys	Read Only
7710	47711	Phase 1 kvar		Read Only
7711	47712	Phase 2 kvar	Kp	Read Only
7712	47713	Phase 3 kvar		Read Only
7713	47714	System kvar	Kpsys	Read Only
7714	47715	Ph1 Amps Demand (Sliding Window)		Read Only
7715	47716	Ph2 Amps Demand (Sliding Window)	Ki	Read Only
7716	47717	Ph3 Amps Demand (Sliding Window)		Read Only
7717	47718	Ph1 Volts Demand (Sliding Window)		Read Only
7718	47719	Ph2 Volts Demand (Sliding Window)	Kvp	Read Only
7719	47720	Ph3 Volts Demand (Sliding Window)		Read Only
7720	47721	Peak Hold Ph1 Amps	Ki	Read/Write
7721	47722	Peak Hold Ph2 Amps		Read/Write
7722	47723	Peak Hold Ph3 Amps		Read/Write
7723	47724	Peak Hold Ph1 Volts	Kvp	Read/Write
7724	47725	Peak Hold Ph2 Volts		Read/Write
7725	47726	Peak Hold Ph3 Volts		Read/Write
7726	47727	System kW Demand (Sliding Window)	Kpsys	Read Only
7727	47728	System kVA Demand (Sliding Window)		Read Only
7728	47729	System kvar Demand (Sliding Window)		Read Only
7729	47730	System kW Maximum Demand	Kpsys	Read/Write
7730	47731	System kVA Maximum Demand		Read/Write
7731	47732	System kvar Maximum Demand		Read/Write
7732	47733	Neutral Current	Ki	Read Only
7733	47734	Amps Scale Ki	-	Read Only
7734	47735	Phase Volts Scale Kvp	-	Read Only
7735	47736	Line Volts Scale Kvl	-	Read Only
7736	47737	System Power Scale Kpsys	-	Read Only
7737	47738	System Energy Scale Kesys	-	Read Only
7738	47739	Per Phase Power Scale Kp	-	Read Only

### Notes:

This table is only available for individual meters configured to monitor 3-phase loads. Meters configured to measure single phase loads will return zero for the system parameters in this table.

For the virtual/residual meter, Modbus register, 47733, neutral current will always return zero.

## 6.10 Individual Meter Point Table 31– Amalgamated Data (3 x 1-Phase meters)

This table provides a combination of instantaneous and energy values for each of the MultiCube Meter Points when configured to monitor 3 x single phase loads.

Data Address	Modbus Register	Data	Scaling	Access	
7936	47937	Load 1 kWh High Word	Ke	Read/Write	
7937	47938	Load 1 kWh Low Word		Read/Write	
7938	47939	Load 2 kWh High Word		Read/Write	
7939	47940	Load 2 kWh Low Word		Read/Write	
7940	47941	Load 3 kWh High Word		Read/Write	
7941	47942	Load 3 kWh Low Word		Read/Write	
7942	47943	Load 1 Kvarh High Word		Read/Write	
7943	47944	Load 1 Kvarh Low Word		Read/Write	
7944	47945	Load 2 Kvarh High Word		Read/Write	
7945	47946	Load 2 Kvarh Low Word		Read/Write	
7946	47947	Load 3 Kvarh High Word		Read/Write	
7947	47948	Load 3 Kvarh Low Word		Read/Write	
7948	47949	Load 1 kW Maximum Demand		Kp	Read/Write
7949	47950	Load 2 kW Maximum Demand			Read/Write
7950	47951	Load 3 kW Maximum Demand	Read/Write		
7951	47952	Load 1 kW Demand (Sliding Window)	Read Only		
7952	47953	Load 2 kW Demand (Sliding Window)	Read Only		
7953	47954	Load 3 kW Demand (Sliding Window)	Read Only		
7954	47955	Load 1 kW	Read Only		
7955	47956	Load 2 kW	Read Only		
7956	47957	Load 3 kW	Read Only		
7957	47958	Load 1 kvar	Read Only		
7958	47959	Load 2 kvar	Read Only		
7959	47960	Load 3 kvar	Read Only		
7960	47961	Load 1 kVA	Read Only		
7961	47962	Load 2 kVA	Read Only		
7962	47963	Load 3 kVA	Read Only		
7963	47964	Load 1 Amps	Ki	Read Only	
7964	47965	Load 2 Amps		Read Only	
7965	47966	Load 3 Amps		Read Only	
7966	47967	Load 1 Volts	Kvp	Read Only	
7967	47968	Load 2 Volts		Read Only	
7968	47969	Load 3 Volts		Read Only	
7969	47970	Per Phase Energy Scale Ke	-	Read Only	
7970	47971	Per Phase Power Scale Kp		Read Only	
7971	47972	Amps Scale Ki		Read Only	
7972	47973	Phase Volts Scale Kvp		Read Only	
7973	47974	Load 1 PF	1000 = 1.000	Read Only	
7974	47975	Load 2 PF		Read Only	
7975	47976	Load 3 PF		Read Only	
7976	47977	Frequency	50000 = 50.000Hz	Read Only	

### Notes:

This table is only available for meters configured to monitor single phase loads. Meters configured to measure 3-phase loads will return zero for the energy parameters in this table.

## 6.11 Individual Meter Point Table 34– Phase 1 Current Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
8704	48705	Phase 1 Current THD	1000 = 100.0%
8705	48706	Reserved (returns 0)	
8706	48707	Reserved (returns 0)	
8707	48708	Phase 1 Current Harmonic 2	
8708	48709	Phase 1 Current Harmonic 3	
8709	48710	Phase 1 Current Harmonic 4	
8710	48711	Phase 1 Current Harmonic 5	
8711	48712	Phase 1 Current Harmonic 6	
8712	48713	Phase 1 Current Harmonic 7	
8713	48714	Phase 1 Current Harmonic 8	
8714	48715	Phase 1 Current Harmonic 9	
8715	48716	Phase 1 Current Harmonic 10	
8716	48717	Phase 1 Current Harmonic 11	
8717	48718	Phase 1 Current Harmonic 12	
8718	48719	Phase 1 Current Harmonic 13	
8719	48720	Phase 1 Current Harmonic 14	
8720	48721	Phase 1 Current Harmonic 15	
8721	48722	Phase 1 Current Harmonic 16	
8722	48723	Phase 1 Current Harmonic 17	
8723	48724	Phase 1 Current Harmonic 18	
8724	48725	Phase 1 Current Harmonic 19	
8725	48726	Phase 1 Current Harmonic 20	
8726	48727	Phase 1 Current Harmonic 21	
8727	48728	Phase 1 Current Harmonic 22	
8728	48729	Phase 1 Current Harmonic 23	
8729	48730	Phase 1 Current Harmonic 24	
8730	48731	Phase 1 Current Harmonic 25	
8731	48732	Phase 1 Current Harmonic 26	
8732	48733	Phase 1 Current Harmonic 27	
8733	48734	Phase 1 Current Harmonic 28	
8734	48735	Phase 1 Current Harmonic 29	
8735	48736	Phase 1 Current Harmonic 30	
8736	48737	Phase 1 Current Harmonic 31	
8737	48738	Phase 1 Current Harmonic 32	
8738	48739	Phase 1 Current Harmonic 33	
8739	48740	Phase 1 Current Harmonic 34	
8740	48741	Phase 1 Current Harmonic 35	
8741	48742	Phase 1 Current Harmonic 36	
8742	48743	Phase 1 Current Harmonic 37	
8743	48744	Phase 1 Current Harmonic 38	
8744	48745	Phase 1 Current Harmonic 39	
8745	48746	Phase 1 Current Harmonic 40	
8746	48747	Phase 1 Current Harmonic 41	
8747	48748	Phase 1 Current Harmonic 42	
8748	48749	Phase 1 Current Harmonic 43	
8749	48750	Phase 1 Current Harmonic 44	
8750	48751	Phase 1 Current Harmonic 45	
8751	48752	Phase 1 Current Harmonic 46	
8752	48753	Phase 1 Current Harmonic 47	
8753	48754	Phase 1 Current Harmonic 48	
8754	48755	Phase 1 Current Harmonic 49	
8755	48756	Phase 1 Current Harmonic 50	
8756	48757	Phase 1 Current Harmonic 51	
8757	48758	Phase 1 Current Harmonic 52	
8758	48759	Phase 1 Current Harmonic 53	
8759	48760	Phase 1 Current Harmonic 54	
8760	48761	Phase 1 Current Harmonic 55	
8761	48762	Phase 1 Current Harmonic 56	
8762	48763	Phase 1 Current Harmonic 57	
8763	48764	Phase 1 Current Harmonic 58	
8764	48765	Phase 1 Current Harmonic 59	
8765	48766	Phase 1 Current Harmonic 60	
8766	48767	Phase 1 Current Harmonic 61	
8767	48768	Phase 1 Current Harmonic 62	
8768	48769	Phase 1 Current Harmonic 63	

**Note:** All values in this table have Read-Only access.

For the virtual/residual meter, zero will be returned for each harmonic data value in this table.

## 6.12 Individual Meter Point Table 35– Phase 2 Current Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
8960	48961	Phase 2 Current THD	1000 = 100.0%
8961	48962	Reserved (returns 0)	
8962	48963	Reserved (returns 0)	
8963	48964	Phase 2 Current Harmonic 2	
8964	48965	Phase 2 Current Harmonic 3	
8965	48966	Phase 2 Current Harmonic 4	
8966	48967	Phase 2 Current Harmonic 5	
8967	48968	Phase 2 Current Harmonic 6	
8968	48969	Phase 2 Current Harmonic 7	
8969	48970	Phase 2 Current Harmonic 8	
8970	48971	Phase 2 Current Harmonic 9	
8971	48972	Phase 2 Current Harmonic 10	
8972	48973	Phase 2 Current Harmonic 11	
8973	48974	Phase 2 Current Harmonic 12	
8974	48975	Phase 2 Current Harmonic 13	
8975	48976	Phase 2 Current Harmonic 14	
8976	48977	Phase 2 Current Harmonic 15	
8977	48978	Phase 2 Current Harmonic 16	
8978	48979	Phase 2 Current Harmonic 17	
8979	48980	Phase 2 Current Harmonic 18	
8980	48981	Phase 2 Current Harmonic 19	
8981	48982	Phase 2 Current Harmonic 20	
8982	48983	Phase 2 Current Harmonic 21	
8983	48984	Phase 2 Current Harmonic 22	
8984	48985	Phase 2 Current Harmonic 23	
8985	48986	Phase 2 Current Harmonic 24	
8986	48987	Phase 2 Current Harmonic 25	
8987	48988	Phase 2 Current Harmonic 26	
8988	48989	Phase 2 Current Harmonic 27	
8989	48990	Phase 2 Current Harmonic 28	
8990	48991	Phase 2 Current Harmonic 29	
8991	48992	Phase 2 Current Harmonic 30	
8992	48993	Phase 2 Current Harmonic 31	
8993	48994	Phase 2 Current Harmonic 32	
8994	48995	Phase 2 Current Harmonic 33	
8995	48996	Phase 2 Current Harmonic 34	
8996	48997	Phase 2 Current Harmonic 35	
8997	48998	Phase 2 Current Harmonic 36	
8998	48999	Phase 2 Current Harmonic 37	
8999	49000	Phase 2 Current Harmonic 38	
9000	49001	Phase 2 Current Harmonic 39	
9001	49002	Phase 2 Current Harmonic 40	
9002	49003	Phase 2 Current Harmonic 41	
9003	49004	Phase 2 Current Harmonic 42	
9004	49005	Phase 2 Current Harmonic 43	
9005	49006	Phase 2 Current Harmonic 44	
9006	49007	Phase 2 Current Harmonic 45	
9007	49008	Phase 2 Current Harmonic 46	
9008	49009	Phase 2 Current Harmonic 47	
9009	49010	Phase 2 Current Harmonic 48	
9010	49011	Phase 2 Current Harmonic 49	
9011	49012	Phase 2 Current Harmonic 50	
9012	49013	Phase 2 Current Harmonic 51	
9013	49014	Phase 2 Current Harmonic 52	
9014	49015	Phase 2 Current Harmonic 53	
9015	49016	Phase 2 Current Harmonic 54	
9016	49017	Phase 2 Current Harmonic 55	
9017	49018	Phase 2 Current Harmonic 56	
9018	49019	Phase 2 Current Harmonic 57	
9019	49020	Phase 2 Current Harmonic 58	
9020	49021	Phase 2 Current Harmonic 59	
9021	49022	Phase 2 Current Harmonic 60	
9022	49023	Phase 2 Current Harmonic 61	
9023	49024	Phase 2 Current Harmonic 62	
9024	49025	Phase 2 Current Harmonic 63	

**Note:** All values in this table have Read-Only access

For the virtual/residual meter, zero will be returned for each harmonic data value in this table.

## 6.13 Individual Meter Point Table 36– Phase 3 Current Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
9216	49217	Phase 3 Current THD	1000 = 100.0%
9217	49218	Reserved (returns 0)	
9218	49219	Reserved (returns 0)	
9219	49220	Phase 3 Current Harmonic 2	
9220	49221	Phase 3 Current Harmonic 3	
9221	49222	Phase 3 Current Harmonic 4	
9222	49223	Phase 3 Current Harmonic 5	
9223	49224	Phase 3 Current Harmonic 6	
9224	49225	Phase 3 Current Harmonic 7	
9225	49226	Phase 3 Current Harmonic 8	
9226	49227	Phase 3 Current Harmonic 9	
9227	49228	Phase 3 Current Harmonic 10	
9228	49229	Phase 3 Current Harmonic 11	
9229	49230	Phase 3 Current Harmonic 12	
9230	49231	Phase 3 Current Harmonic 13	
9231	49232	Phase 3 Current Harmonic 14	
9232	49233	Phase 3 Current Harmonic 15	
9233	49234	Phase 3 Current Harmonic 16	
9234	49235	Phase 3 Current Harmonic 17	
9235	49236	Phase 3 Current Harmonic 18	
9236	49237	Phase 3 Current Harmonic 19	
9237	49238	Phase 3 Current Harmonic 20	
9238	49239	Phase 3 Current Harmonic 21	
9239	49240	Phase 3 Current Harmonic 22	
9240	49241	Phase 3 Current Harmonic 23	
9241	49242	Phase 3 Current Harmonic 24	
9242	49243	Phase 3 Current Harmonic 25	
9243	49244	Phase 3 Current Harmonic 26	
9244	49245	Phase 3 Current Harmonic 27	
9245	49246	Phase 3 Current Harmonic 28	
9246	49247	Phase 3 Current Harmonic 29	
9247	49248	Phase 3 Current Harmonic 30	
9248	49249	Phase 3 Current Harmonic 31	
9249	49250	Phase 3 Current Harmonic 32	
9250	49251	Phase 3 Current Harmonic 33	
9251	49252	Phase 3 Current Harmonic 34	
9252	49253	Phase 3 Current Harmonic 35	
9253	49254	Phase 3 Current Harmonic 36	
9254	49255	Phase 3 Current Harmonic 37	
9255	49256	Phase 3 Current Harmonic 38	
9256	49257	Phase 3 Current Harmonic 39	
9257	49258	Phase 3 Current Harmonic 40	
9258	49259	Phase 3 Current Harmonic 41	
9259	49260	Phase 3 Current Harmonic 42	
9260	49261	Phase 3 Current Harmonic 43	
9261	49262	Phase 3 Current Harmonic 44	
9262	49263	Phase 3 Current Harmonic 45	
9263	49264	Phase 3 Current Harmonic 46	
9264	49265	Phase 3 Current Harmonic 47	
9265	49266	Phase 3 Current Harmonic 48	
9266	49267	Phase 3 Current Harmonic 49	
9267	49268	Phase 3 Current Harmonic 50	
9268	49269	Phase 3 Current Harmonic 51	
9269	49270	Phase 3 Current Harmonic 52	
9270	49271	Phase 3 Current Harmonic 53	
9271	49272	Phase 3 Current Harmonic 54	
9272	49273	Phase 3 Current Harmonic 55	
9273	49274	Phase 3 Current Harmonic 56	
9274	49275	Phase 3 Current Harmonic 57	
9275	49276	Phase 3 Current Harmonic 58	
9276	49277	Phase 3 Current Harmonic 59	
9277	49278	Phase 3 Current Harmonic 60	
9278	49279	Phase 3 Current Harmonic 61	
9279	49280	Phase 3 Current Harmonic 62	
9280	49281	Phase 3 Current Harmonic 63	

**Note:** All values in this table have Read-Only access

For the virtual/residual meter, zero will be returned for each harmonic data value in this table.

## 6.14 Individual Meter Point Table 37a – Phase 1 Voltage Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
9472	49473	Phase 1 Voltage THD	1000 = 100.0%
9473	49474	Reserved (returns 0)	
9474	49475	Reserved (returns 0)	
9475	49476	Phase 1 Voltage Harmonic 2	
9476	49477	Phase 1 Voltage Harmonic 3	
9477	49478	Phase 1 Voltage Harmonic 4	
9478	49479	Phase 1 Voltage Harmonic 5	
9479	49480	Phase 1 Voltage Harmonic 6	
9480	49481	Phase 1 Voltage Harmonic 7	
9481	49482	Phase 1 Voltage Harmonic 8	
9482	49483	Phase 1 Voltage Harmonic 9	
9483	49484	Phase 1 Voltage Harmonic 10	
9484	49485	Phase 1 Voltage Harmonic 11	
9485	49486	Phase 1 Voltage Harmonic 12	
9486	49487	Phase 1 Voltage Harmonic 13	
9487	49488	Phase 1 Voltage Harmonic 14	
9488	49489	Phase 1 Voltage Harmonic 15	
9489	49490	Phase 1 Voltage Harmonic 16	
9490	49491	Phase 1 Voltage Harmonic 17	
9491	49492	Phase 1 Voltage Harmonic 18	
9492	49493	Phase 1 Voltage Harmonic 19	
9493	49494	Phase 1 Voltage Harmonic 20	
9494	49495	Phase 1 Voltage Harmonic 21	
9495	49496	Phase 1 Voltage Harmonic 22	
9496	49497	Phase 1 Voltage Harmonic 23	
9497	49498	Phase 1 Voltage Harmonic 24	
9498	49499	Phase 1 Voltage Harmonic 25	
9499	49500	Phase 1 Voltage Harmonic 26	
9500	49501	Phase 1 Voltage Harmonic 27	
9501	49502	Phase 1 Voltage Harmonic 28	
9502	49503	Phase 1 Voltage Harmonic 29	
9503	49504	Phase 1 Voltage Harmonic 30	
9504	49505	Phase 1 Voltage Harmonic 31	
9505	49506	Phase 1 Voltage Harmonic 32	
9506	49507	Phase 1 Voltage Harmonic 33	
9507	49508	Phase 1 Voltage Harmonic 34	
9508	49509	Phase 1 Voltage Harmonic 35	
9509	49510	Phase 1 Voltage Harmonic 36	
9510	49511	Phase 1 Voltage Harmonic 37	
9511	49512	Phase 1 Voltage Harmonic 38	
9512	49513	Phase 1 Voltage Harmonic 39	
9513	49514	Phase 1 Voltage Harmonic 40	
9514	49515	Phase 1 Voltage Harmonic 41	
9515	49516	Phase 1 Voltage Harmonic 42	
9516	49517	Phase 1 Voltage Harmonic 43	
9517	49518	Phase 1 Voltage Harmonic 44	
9518	49519	Phase 1 Voltage Harmonic 45	
9519	49520	Phase 1 Voltage Harmonic 46	
9520	49521	Phase 1 Voltage Harmonic 47	
9521	49522	Phase 1 Voltage Harmonic 48	
9522	49523	Phase 1 Voltage Harmonic 49	
9523	49524	Phase 1 Voltage Harmonic 50	
9524	49525	Phase 1 Voltage Harmonic 51	
9525	49526	Phase 1 Voltage Harmonic 52	
9526	49527	Phase 1 Voltage Harmonic 53	
9527	49528	Phase 1 Voltage Harmonic 54	
9528	49529	Phase 1 Voltage Harmonic 55	
9529	49530	Phase 1 Voltage Harmonic 56	
9530	49531	Phase 1 Voltage Harmonic 57	
9531	49532	Phase 1 Voltage Harmonic 58	
9532	49533	Phase 1 Voltage Harmonic 59	
9533	49534	Phase 1 Voltage Harmonic 60	
9534	49535	Phase 1 Voltage Harmonic 61	
9535	49536	Phase 1 Voltage Harmonic 62	
9536	49537	Phase 1 Voltage Harmonic 63	

**Note:** All values in this table have Read-Only access.

## 6.15 Individual Meter Point Table 37b – Phase 2 Voltage Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
9537	49538	Phase 2 Voltage THD	1000 = 100.0%
9538	49539	Reserved (returns 0)	
9539	49540	Reserved (returns 0)	
9540	49541	Phase 2 Voltage Harmonic 2	
9541	49542	Phase 2 Voltage Harmonic 3	
9542	49543	Phase 2 Voltage Harmonic 4	
9543	49544	Phase 2 Voltage Harmonic 5	
9544	49545	Phase 2 Voltage Harmonic 6	
9545	49546	Phase 2 Voltage Harmonic 7	
9546	49547	Phase 2 Voltage Harmonic 8	
9547	49548	Phase 2 Voltage Harmonic 9	
9548	49549	Phase 2 Voltage Harmonic 10	
9549	49550	Phase 2 Voltage Harmonic 11	
9550	49551	Phase 2 Voltage Harmonic 12	
9551	49552	Phase 2 Voltage Harmonic 13	
9552	49553	Phase 2 Voltage Harmonic 14	
9553	49554	Phase 2 Voltage Harmonic 15	
9554	49555	Phase 2 Voltage Harmonic 16	
9555	49556	Phase 2 Voltage Harmonic 17	
9556	49557	Phase 2 Voltage Harmonic 18	
9557	49558	Phase 2 Voltage Harmonic 19	
9558	49559	Phase 2 Voltage Harmonic 20	
9559	49560	Phase 2 Voltage Harmonic 21	
9560	49561	Phase 2 Voltage Harmonic 22	
9561	49562	Phase 2 Voltage Harmonic 23	
9562	49563	Phase 2 Voltage Harmonic 24	
9563	49564	Phase 2 Voltage Harmonic 25	
9564	49565	Phase 2 Voltage Harmonic 26	
9565	49566	Phase 2 Voltage Harmonic 27	
9566	49567	Phase 2 Voltage Harmonic 28	
9567	49568	Phase 2 Voltage Harmonic 29	
9568	49569	Phase 2 Voltage Harmonic 30	
9569	49570	Phase 2 Voltage Harmonic 31	
9570	49571	Phase 2 Voltage Harmonic 32	
9571	49572	Phase 2 Voltage Harmonic 33	
9572	49573	Phase 2 Voltage Harmonic 34	
9573	49574	Phase 2 Voltage Harmonic 35	
9574	49575	Phase 2 Voltage Harmonic 36	
9575	49576	Phase 2 Voltage Harmonic 37	
9576	49577	Phase 2 Voltage Harmonic 38	
9577	49578	Phase 2 Voltage Harmonic 39	
9578	49579	Phase 2 Voltage Harmonic 40	
9579	49580	Phase 2 Voltage Harmonic 41	
9580	49581	Phase 2 Voltage Harmonic 42	
9581	49582	Phase 2 Voltage Harmonic 43	
9582	49583	Phase 2 Voltage Harmonic 44	
9583	49584	Phase 2 Voltage Harmonic 45	
9584	49585	Phase 2 Voltage Harmonic 46	
9585	49586	Phase 2 Voltage Harmonic 47	
9586	49587	Phase 2 Voltage Harmonic 48	
9587	49588	Phase 2 Voltage Harmonic 49	
9588	49589	Phase 2 Voltage Harmonic 50	
9589	49590	Phase 2 Voltage Harmonic 51	
9590	49591	Phase 2 Voltage Harmonic 52	
9591	49592	Phase 2 Voltage Harmonic 53	
9592	49593	Phase 2 Voltage Harmonic 54	
9593	49594	Phase 2 Voltage Harmonic 55	
9594	49595	Phase 2 Voltage Harmonic 56	
9595	49596	Phase 2 Voltage Harmonic 57	
9596	49597	Phase 2 Voltage Harmonic 58	
9597	49598	Phase 2 Voltage Harmonic 59	
9598	49599	Phase 2 Voltage Harmonic 60	
9599	49600	Phase 2 Voltage Harmonic 61	
9600	49601	Phase 2 Voltage Harmonic 62	
9601	49602	Phase 2 Voltage Harmonic 63	

**Note:** All values in this table have Read-Only access.

## 6.16 Individual Meter Point Table 37c – Phase 3 Voltage Harmonics

This table provides power quality values for an individual MultiCube Meter Point.

Data Address	Modbus Register	Data	Scaling
9602	49603	Phase 3 Voltage THD	1000 = 100.0%
9603	49604	Reserved (returns 0)	
9604	49605	Reserved (returns 0)	
9605	49606	Phase 3 Voltage Harmonic 2	
9606	49607	Phase 3 Voltage Harmonic 3	
9607	49608	Phase 3 Voltage Harmonic 4	
9608	49609	Phase 3 Voltage Harmonic 5	
9609	49610	Phase 3 Voltage Harmonic 6	
9610	49611	Phase 3 Voltage Harmonic 7	
9611	49612	Phase 3 Voltage Harmonic 8	
9612	49613	Phase 3 Voltage Harmonic 9	
9613	49614	Phase 3 Voltage Harmonic 10	
9614	49615	Phase 3 Voltage Harmonic 11	
9615	49616	Phase 3 Voltage Harmonic 12	
9616	49617	Phase 3 Voltage Harmonic 13	
9617	49618	Phase 3 Voltage Harmonic 14	
9618	49619	Phase 3 Voltage Harmonic 15	
9619	49620	Phase 3 Voltage Harmonic 16	
9620	49621	Phase 3 Voltage Harmonic 17	
9621	49622	Phase 3 Voltage Harmonic 18	
9622	49623	Phase 3 Voltage Harmonic 19	
9623	49624	Phase 3 Voltage Harmonic 20	
9624	49625	Phase 3 Voltage Harmonic 21	
9625	49626	Phase 3 Voltage Harmonic 22	
9626	49627	Phase 3 Voltage Harmonic 23	
9627	49628	Phase 3 Voltage Harmonic 24	
9628	49629	Phase 3 Voltage Harmonic 25	
9629	49630	Phase 3 Voltage Harmonic 26	
9630	49631	Phase 3 Voltage Harmonic 27	
9631	49632	Phase 3 Voltage Harmonic 28	
9632	49633	Phase 3 Voltage Harmonic 29	
9633	49634	Phase 3 Voltage Harmonic 30	
9634	49635	Phase 3 Voltage Harmonic 31	
9635	49636	Phase 3 Voltage Harmonic 32	
9636	49637	Phase 3 Voltage Harmonic 33	
9637	49638	Phase 3 Voltage Harmonic 34	
9638	49639	Phase 3 Voltage Harmonic 35	
9639	49640	Phase 3 Voltage Harmonic 36	
9640	49641	Phase 3 Voltage Harmonic 37	
9641	49642	Phase 3 Voltage Harmonic 38	
9642	49643	Phase 3 Voltage Harmonic 39	
9643	49644	Phase 3 Voltage Harmonic 40	
9644	49645	Phase 3 Voltage Harmonic 41	
9645	49646	Phase 3 Voltage Harmonic 42	
9646	49647	Phase 3 Voltage Harmonic 43	
9647	49648	Phase 3 Voltage Harmonic 44	
9648	49649	Phase 3 Voltage Harmonic 45	
9649	49650	Phase 3 Voltage Harmonic 46	
9650	49651	Phase 3 Voltage Harmonic 47	
9651	49652	Phase 3 Voltage Harmonic 48	
9652	49653	Phase 3 Voltage Harmonic 49	
9653	49654	Phase 3 Voltage Harmonic 50	
9654	49655	Phase 3 Voltage Harmonic 51	
9655	49656	Phase 3 Voltage Harmonic 52	
9656	49657	Phase 3 Voltage Harmonic 53	
9657	49658	Phase 3 Voltage Harmonic 54	
9658	49659	Phase 3 Voltage Harmonic 55	
9659	49660	Phase 3 Voltage Harmonic 56	
9660	49661	Phase 3 Voltage Harmonic 57	
9661	49662	Phase 3 Voltage Harmonic 58	
9662	49663	Phase 3 Voltage Harmonic 59	
9663	49664	Phase 3 Voltage Harmonic 60	
9664	49665	Phase 3 Voltage Harmonic 61	
9665	49666	Phase 3 Voltage Harmonic 62	
9666	49667	Phase 3 Voltage Harmonic 63	

**Note:** All values in this table have Read-Only access.



## 6.17 Meter Point Table 40a – High Speed Instantaneous Readings (Option)

This is a factory fitted optional feature on the **MultiCube**.

The normal instantaneous measurements, made by the meter, are calculated over each consecutive 1 second period. These values may be accessed over the Modbus network more often than once per second but the actual measured values remain constant until the next 1 second update.

This option provides an additional set of instantaneous parameters which are measured over consecutive 100mS (0.1 Second) periods. These are made available using the Modbus registers shown in the table below.

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
10240	410241	Phase 1 Volts	Kvp	Read Only
10241	410242	Phase 2 Volts		
10242	410243	Phase 3 Volts		
10243	410244	Frequency	50000 = 50.000Hz	Read Only
10244	410245	Phase 1 Amps	Ki	Read Only
10245	410246	Phase 2 Amps		
10246	410247	Phase 3 Amps		
10247	410248	Phase 1 kW	Kp	Read Only
10248	410249	Phase 2 kW		
10249	410250	Phase 3 kW		
10250	410251	System kW	Kpsys	Read Only

**Note:** All values in this table have Read-Only access.

MultiCube Meters configured as single phase meters will return a zero for 3-Phase values.

Table is not available via virtual/residual meter ID.

## 6.18 Meter Point Table 40b – High Speed Instantaneous Readings (Option)

The values in this Table are equivalent to those in table 40a but provided in floating point format

<b>Data Address</b>	<b>Modbus Register</b>	<b>Data</b>	<b>Scale</b>	<b>Access</b>
10251	410252	Phase 1 Volts	Floating Point Volts	Read Only
10252	410253			
10253	410254			
10254	410255	Phase 2 Volts	Floating Point Hz	Read Only
10255	410256	Phase 3 Volts		
10256	410257			
10257	410258	Frequency	Floating Point Amps	Read Only
10258	410259	Phase 1 Amps		
10259	410260			
10260	410261	Phase 2 Amps	Floating Point Watts	Read Only
10261	410262	Phase 3 Amps		
10262	410263			
10263	410264	Phase 1 kW	Floating Point Watts	Read Only
10264	410265	Phase 2 kW		
10265	410266			
10266	410267	Phase 3 kW	Floating Point Watts	Read Only
10267	410268	System kW		
10268	410269			
10269	410270	System kW	Floating Point Watts	Read Only
10270	410271			
10271	410272	System kW	Floating Point Watts	Read Only
10272	410273			

**Note:** All values in this table have Read-Only access.

MultiCube Meters configured as single phase meters will return a zero for 3-Phase values.

Table is not available via virtual/residual meter ID.

## 7 Specification

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<b><i>Aux Mains</i></b>	Internally supplied from <b>MultiCube</b> Auxiliary Requires additional 1W max
<b><i>Modbus</i></b>	RS485 Half duplex, 2 Wires + 0V RX Load: ¼ Unit load per meter (max 128 per bus) TX Drive: 32 Unit loads maximum Protocol: Modbus RTU, 16-Bit CRC Baud: 4800, 9600, 19200, 38400 user programmable Address: 1-244 user programmable
<b><i>Isolation</i></b>	3.5kV (1 minute) RS485 Port from all other circuit
<b><i>Performance</i></b>	Reply: Maximum 250ms Rate: Min 10ms from reply to next request Data: Meter readings & programmable settings Maximum data length 20 Words.
<b><i>General</i></b>	Environmental: Refer to MultiCube specification Dimensions: Add 10mm to depth of MultiCube

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