

BEFORE USE

Thank you for choosing M-System. Before use, please check contents of the package you received as outlined below.

If you have any problems or questions with the product, please contact M-System's Sales Office or representatives.

■ PACKAGE INCLUDES:

Multi power monitoring module.....(1)

■ MODEL NO.

Confirm Model No. marking on the product to be exactly what you ordered.

■ INSTRUCTION MANUAL

This manual describes necessary points of caution when you use this product, including installation, connection and basic maintenance procedures.

The R7EWTU is programmable by using the PC Configurator Software. For detailed information on the PC configuration, refer to the PMCFG users manual. The PMCFG PC Configurator Software is downloadable at M-System's web site: <http://www.m-system.co.jp>

POINTS OF CAUTION**■ POWER INPUT RATING & OPERATIONAL RANGE**

- Locate the power input rating marked on the product and confirm its operational range as indicated below:
100 – 240V AC rating: 85 – 264V, 50/60 Hz, < 8VA
110 – 240V DC rating: 99 – 264V, < 3W

■ GENERAL PRECAUTIONS

- Before you remove or mount the unit, turn off the power supply and input signal for safety.

■ ENVIRONMENT

- Indoor use.
- When heavy dust or metal particles are present in the air, install the unit inside proper housing with sufficient ventilation.
- Do not install the unit where it is subjected to continuous vibration. Do not subject the unit to physical impact.
- Environmental temperature must be within -10 to +55°C (14 to 131°F) with relative humidity within 30 to 90% RH in order to ensure adequate life span and operation.

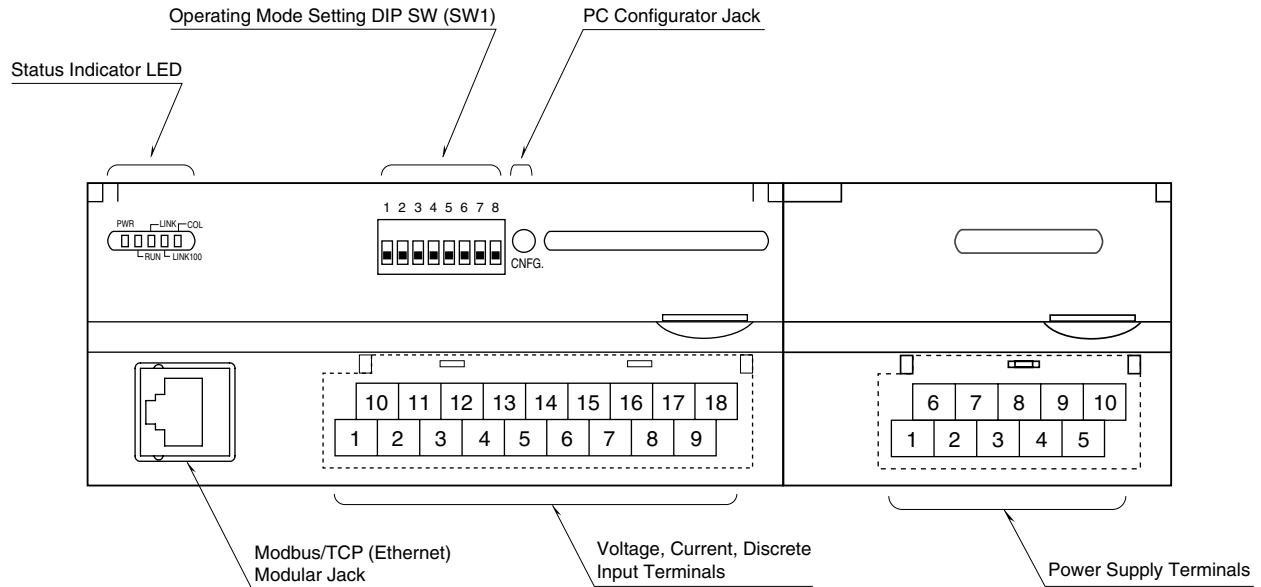
■ WIRING

- Wiring to the unit must be conducted by qualified service personnel.
- Do not install cables close to noise sources (relay drive cable, high frequency line, etc.).
- Do not bind these cables together with those in which noises are present. Do not install them in the same duct.

■ AND

- The unit is designed to function as soon as power is supplied, however, a warm up for 10 minutes is required for satisfying complete performance described in the data sheet.

COMPONENT IDENTIFICATION



■ STATUS INDICATOR LED

ID	COLOR	STATUS	FUNCTION
PWR	Red	ON	Normal
		Blinking approx. 0.5 Hz	Input overload or no input
		Blinking approx. 2 Hz	Setting error or device error
		OFF	Error in the internal 5V
RUN	Red	ON	Normal communication
LINK	Red	ON	LINK status
LINK100	Red	Blinking	100BASE link interchanging data
COL	Red	Blinking	Data collision

■ OPERATING MODE SETTING

(*) Factory setting

• System Configuration (SW1-1, 2)

SW1-1	SW1-2	SYSTEM CONFIGURATION
OFF	OFF	Three-phase / 3-wire (*)
ON	OFF	Single-phase / 2-wire
OFF	ON	Single-phase / 3-wire
ON	ON	Three-phase / 4-wire

• Balanced or Unbalanced Load (SW1-3)

SW1-3	BALANCED / UNBALANCED
OFF	Unbalanced (*)
ON	Balanced

• Clamp Sensor Type (SW1-4, 5, 6)

Clamp sensor type setting is common to all circuits.

The sensor type and other settings for individual circuit is available with the PC Configurator.

SW1-4	SW1-5	SW1-6	CLAMP SENSOR TYPE
OFF	OFF	OFF	CLSE-R5 (5A) (*)
ON	OFF	OFF	CLSE-05 (50A)
OFF	ON	OFF	CLSE-10 (100A)
OFF	OFF	ON	CLSE-20 (200A)
ON	ON	OFF	CLSE-40 (400A)
OFF	ON	ON	CLSE-60 (600A)

• Configuration Mode (SW1-8)

SW1-8	CONFIGURATION MODE
OFF	DIP switch setting (*) (PC Configurator setting is not available)
ON	PC Configurator and communication (DIP switch setting is not available)

Note 1: Turn on the power supply to the unit after setting operating mode.

Note 2: Be sure to set unused SW1-7 to OFF.

■ INPUT TERMINAL ASSIGNMENT

• 1 Circuit, 4-point Discrete Inputs

10	11	12	13 1ch	14 1ch	15 1ch	16	17	18
P3	NC	NC	1K	2K	3K	DI1+	DI3+	COM
1	2	3	4 1ch	5 1ch	6 1ch	7	8	9
P1	P2	N	1L	2L	3L	DI2+	DI4+	COM

No.	ID	FUNCTION	No.	ID	FUNCTION
1	P1	Voltage Input P1	10	P3	Voltage Input P3
2	P2	Voltage Input P2	11	NC	Unused
3	N	Voltage Input N	12	NC	Unused
4	1ch 1L	Ch.1, Current input 1L	13	1ch 1K	Ch.1, Current input 1K
5	1ch 2L	Ch.1, Current input 2L	14	1ch 2K	Ch.1, Current input 2K
6	1ch 3L	Ch.1, Current input 3L	15	1ch 3K	Ch.1, Current input 3K
7	DI2 +	Discrete input 2	16	DI1 +	Discrete input 1
8	DI4 +	Discrete input 4	17	DI3 +	Discrete input 3
9	COM	Discrete input common	18	COM	Discrete input common

• 2 Circuits

10	11	12	13 1ch	14 1ch	15 1ch	16 2ch	17 2ch	18 2ch
P3	NC	NC	1K	2K	3K	1K	2K	3K
1	2	3	4 1ch	5 1ch	6 1ch	7 2ch	8 2ch	9 2ch
P1	P2	N	1L	2L	3L	1L	2L	3L

No.	ID	FUNCTION	No.	ID	FUNCTION
1	P1	Voltage Input P1	10	P3	Voltage Input P3
2	P2	Voltage Input P2	11	NC	Unused
3	N	Voltage Input N	12	NC	Unused
4	1ch 1L	Ch.1, Current input 1L	13	1ch 1K	Ch.1, Current input 1K
5	1ch 2L	Ch.1, Current input 2L	14	1ch 2K	Ch.1, Current input 2K
6	1ch 3L	Ch.1, Current input 3L	15	1ch 3K	Ch.1, Current input 3K
7	2ch 1L	Ch.2, Current input 1L	16	2ch 1K	Ch.2, Current input 1K
8	2ch 2L	Ch.2, Current input 2L	17	2ch 2K	Ch.2, Current input 2K
9	2ch 3L	Ch.2, Current input 3L	18	2ch 3K	Ch.2, Current input 3K

■ POWER SUPPLY ASSIGNMENT

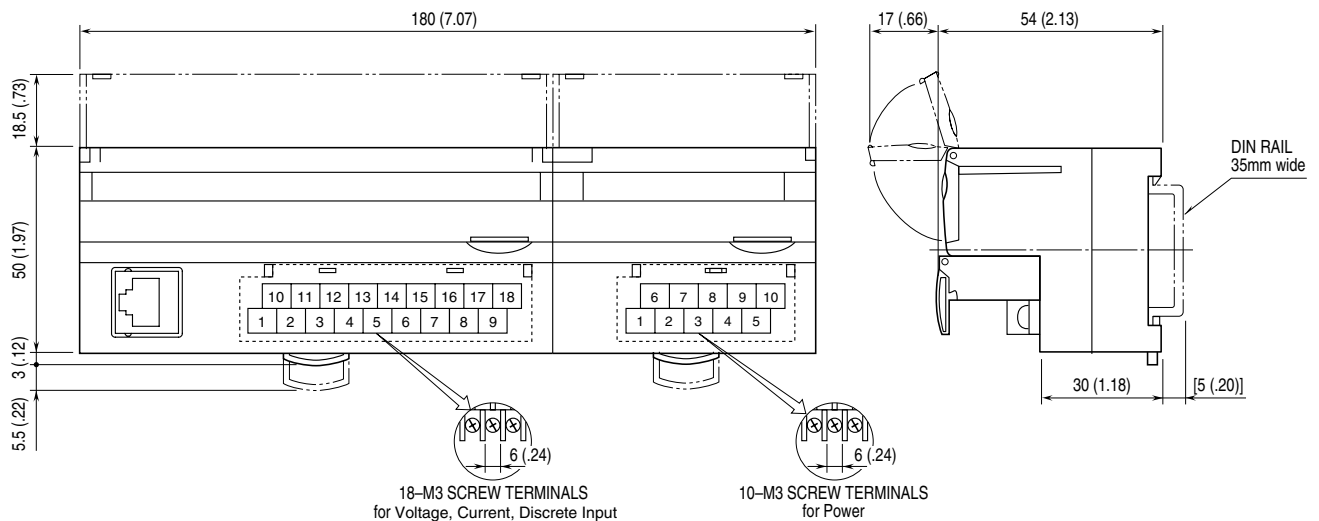
6	7	8	9	10
NC	NC	NC	NC	NC
1	2	3	4	5
NC	NC	FE1	U(+)	V(-)

No.	ID	FUNCTION	No.	ID	FUNCTION
1	NC	Unused	6	NC	Unused
2	NC	Unused	7	NC	Unused
3	FE1	Power ground	8	NC	Unused
4	U(+)	Power input (+)	9	NC	Unused
5	V(-)	Power input (-)	10	NC	Unused

TERMINAL CONNECTIONS

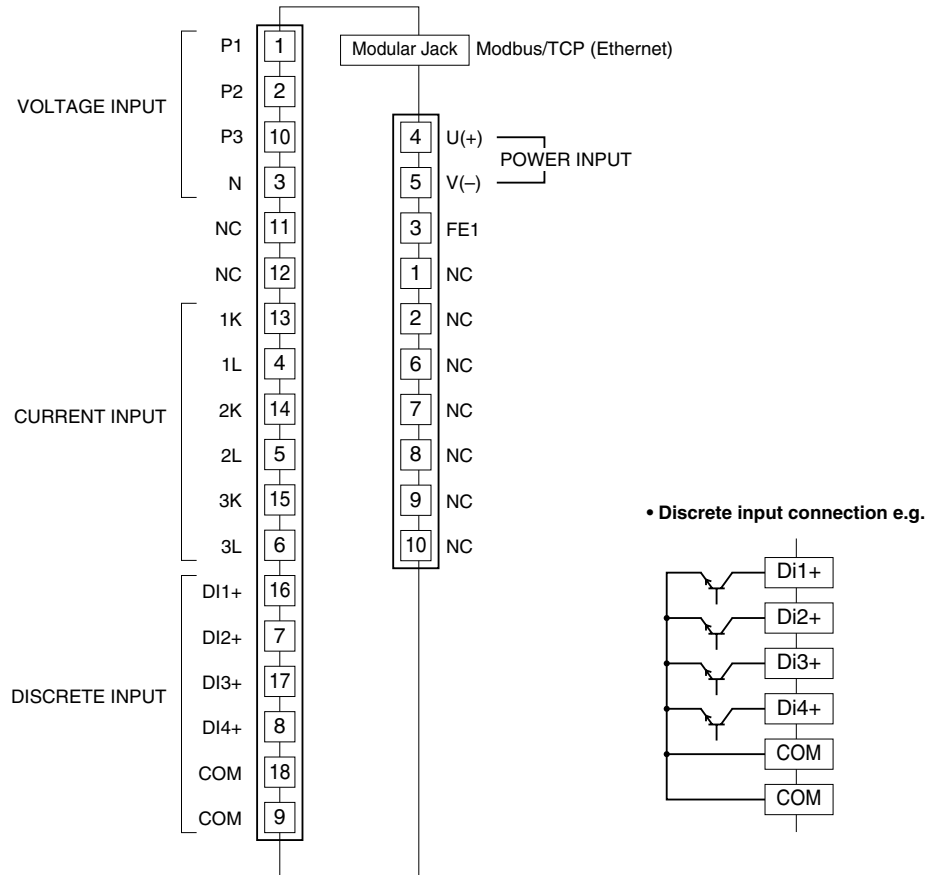
Connect the unit as in the diagram below.

■ EXTERNAL DIMENSIONS unit: mm (inch)

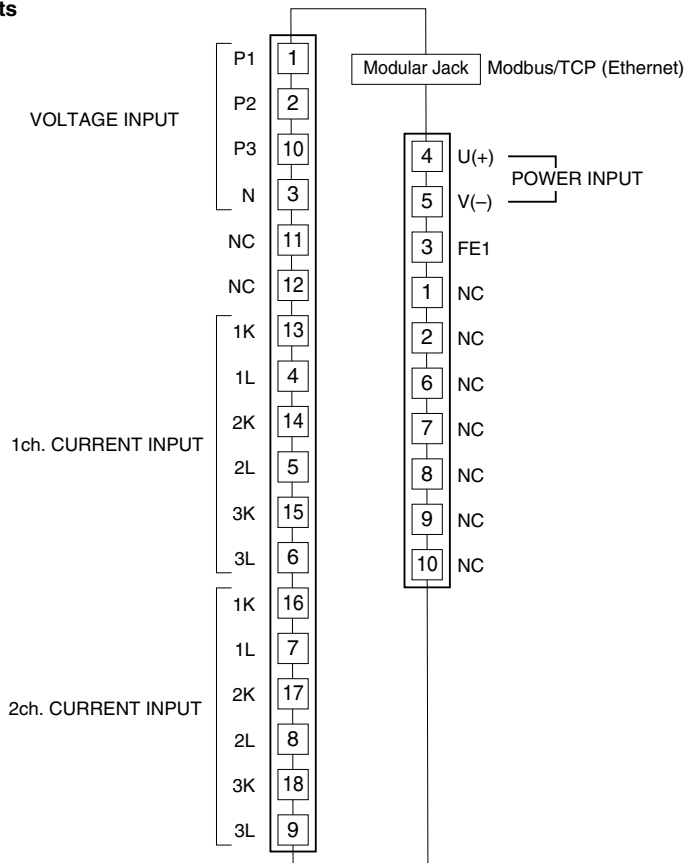


■ CONNECTION DIAGRAM

• 1 Circuit, 4-point Discrete Input



• 2 Circuits



INPUT WIRING

System / Application	Terminal	System / Application	Terminal
Single-phase / 2-wire		Single-phase / 3-wire Three-phase / 3-wire unbalanced load (2CT)	
Three-phase / 3-wire, balanced load		Three-phase / 4-wire, balanced load	
Three-phase / 4-wire, unbalanced load			

Caution: Use CLSE for CT.
Grounding is unnecessary for low-voltage circuit.

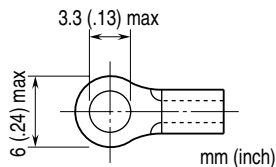
WIRING INSTRUCTIONS

SCREW TERMINAL

Torque: 0.5 N·m

SOLDERLESS TERMINAL

Refer to the drawing below for recommended ring tongue terminal size. Spade tongue type is also applicable.
Applicable wire size: 0.25 to 1.65 mm² (AWG 22 to 16)
Recommended manufacturer: Japan Solderless Terminal MFG. Co., Ltd, Nichifu Co., Ltd



CHECKING ETHERNET CONNECTION

■ IP ADDRESS

The R7EWTU does not support BootP Table Software. The IP Address and Subnet Mask can be configured using the PMCFG Configurator Software.

The Modbus/TCP Port No. is fixed at 502.

■ NODE ADDRESS

The R7EWTU firmware sets its Node Address to "01."

The Node Address (ID) is sent via Modbus together with data. Set "01" with the application software of the user.

■ CHECK WIRING

Connect an Ethernet cable to the RJ-45 connector.

■ CHECK LED

When wiring is correct, LINK LED is turned on with 10BASE or 100BASE link.

When the module is receiving data with 100BASE, LINK100 LED blinks.

■ CHECK R7EWTU CONNECTION

Enter "ping command" on the Windows MS-DOS as follows:

```
C:\WINDOWS>ping *.*.*.*.*
(*.*.*.*.*. Enter IP address in decimal.)
```

```
ping *.*.*.*.* with 32 bytes of data:
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
Reply from *.*.*.*.* : bytes=32 time<10ms TTL=64
```

```
Ping statistics for *.*.*.*.*
Packets: Sent=4,Received=4,Lost=0(0% loss)
```

Replies in case of normal connection are as shown above. If the connection cannot be established normally due to, wrong IP address for example, other replies such as 'time out' will be received.

MODBUS - OPERATIONS

All registers are assigned to Holding Registers, which can be read out with Read Holding Registers or Read Input Registers command. If reading an address with no assigned register is attempted, '0' is given.

Write Multiple Registers command is used to write in registers. If writing an address with no assigned register is attempted, 'Exception' is given.

FUNCTION	COMMAND	EXPLANATION	RECOMMENDED TIME OUT VALUE
03	Read Holding Registers	Used to read registers	0.5 seconds
04	Read Input Registers	Used to read registers	0.5 seconds
16	Write Multiple Registers	Used to write in registers	2 seconds

These commands enable reading measured values and writing configurations.

One (1) word registers are represented in 16-bit integers, while two (2) word registers are in 32-bit. All registers are in the form of signed integer unless specifically given in the explanations.

The lower digit word in a 32-bit register is assigned to the lower address (n), while the upper digit word is assigned to the higher address (n+1).

Address	n	n + 1
Contents	Lower digit word	Upper digit word

The 32-bit register (2 words) must be read out and written in single command sequence.

It is recommended to wait for a time period indicated under 'recommended time out value' in the above table to receive a response for a command. If no response is received for these time periods, take appropriate error processing such as retrying.

MODBUS REGISTER ACCESS SETTING

ADDR.	WORD	PARAMETER
4943	2	Deactivate Modbus register writing protection Writing a preset passcode in this register deactivates the writing protection via Modbus. When the Modbus passcode set in this register matches the preset one, setting '1' or '2' in the register address 4945 becomes available to enable writing in Modbus registers. Reading out the register value is not possible. It reads always '-1' regardless of the code setting. After writing is complete, be sure to set a value other than the passcode ('0' is recommended) to activate the writing protection again.
4945	1	Modbus register access setting 0 : Write disable (*) 1 : Write enable 2 : Write enable the count values Other : Write disable This setting is erased when the power supply to the unit is removed. It always starts with '0' (Write disable) when the power supply is turned on. Set '1' or '2' before starting writing at other registers. In order to write a count value (e.g. active energy), set '2' at this register address. When it is set, the unit stops counting so that a new count value can be written in the register address. Be careful to use '2' setting because no counting will be performed if the unit remains with this setting. When the Modbus register writing protection is enabled, this register setting cannot be changed from '0' to '1' or '2' unless a correct security code is set in the address 4943.

(*) Factory setting

■ SYSTEM OPERATIONS

System operations include switching the tariff or resetting energy counts, and rebooting.

ADDR.	WORD	PARAMETER
5329	1	<p>Deactivate Modbus register writing protection</p> <p>Writing a preset passcode in this register deactivates the writing protection via Modbus.</p> <p>When the Modbus passcode set in this register matches the preset one, setting '1' or '2' in the address 4945 becomes available to enable writing in Modbus registers.</p> <p>Reading out the register value is not possible. It reads always '-1' regardless of the code setting.</p> <p>After writing is complete, be sure to set a value other than the passcode ('0' is recommended) to activate the writing protection again.</p>
5330	1	<p>Modbus register access setting</p> <p>0 : Write disable (*)</p> <p>1 : Write enable</p> <p>2 : Write enable the count values</p> <p>Other : Write disable</p> <p>This setting is erased when the power supply to the unit is removed. It always starts with '0' (Write disable) when the power supply is turned on. Set '1' or '2' before starting writing at other registers.</p> <p>In order to write a count value (e.g. active energy), set '2' at this register address. When it is set, the unit stops counting so that a new count value can be written in the register address. Be careful to use '2' setting because no counting will be performed if the unit remains with this setting.</p> <p>When the Modbus register writing protection is enabled, this register setting cannot be changed from '0' to '1' or '2' unless a correct security code is set in the address 4943.</p>
5331	1	<p>Reboot system</p> <p>Write '10001' to reboot the system. (Any other values can be written but invalid.)</p>
5332	1	<p>Backup / restore setting</p> <p>20002 : Backup the present setting</p> <p>30003 : Restore the device with the backup setting data</p> <p>The register is automatically set to '0' when the procedure is complete after one of these values is written at this address. If another value is written before '0' has been set, the former procedure ends indefinitely.</p>
5334	2	<p>Modbus register writing protection passcode</p> <p>Setting a passcode to control writing registers via Modbus.</p> <p>1 to 999 999 999</p> <p>0 : Cancel writing protection (*)</p> <p>The Modbus passcode must be set to the address 4943 before setting '1' or '2' in the address 4945 to deactivate the writing protection.</p> <p>The value in this register is encrypted when it is read out. Only '0' (Cancel protection) is read out as it is.</p> <p>When a new code is set in this register, the address 4945 is immediately reset to '0' so that a next command will be already limited in access.</p>
5336	1	<p>Loop test (Circuit 1)</p> <p>Measuring is stopped when '1' is set in this address. Then any value can be written in measurement value registers (1 through 87) for loop test purposes.</p> <p>Modbus register access setting (4945) must be separately set to Write Enable mode.</p> <p>Measuring is restarted when '0' is set in this address.</p>
5337	1	<p>Switch tariff (Circuit 2)</p> <p>Switching tariff for Circuit 2. Same as with the address 5329.</p>
5338	1	<p>Reset energy count (Circuit 2)</p> <p>Resetting energy count for Circuit 2. Same as with the address 5330.</p>
5339	1	<p>Loop test (Circuit 2)</p> <p>Turning Circuit 2 to the loop test mode. Same as the address 5336.</p>

(*) Factory setting

MODBUS - SETTING**■ SYSTEM SETTING**

ADDR.	WORD	PARAMETER	UNIT
5601	1	System configuration 0 : Single-phase / 2-wire (1CT) 1 : Single-phase / 3-wire (2CT) 2 : 3-phase / 3-wire, balanced load (1CT) 3 : 3-phase / 3-wire, unbalanced load (2CT) (*) 4 : 3-phase / 4-wire, balanced load (1CT) 5 : 3-phase / 4-wire, unbalanced load (3CT)	---
5602	1	CT rating, Primary (Circuit 1) 1 to 20 000 : Current (A) Factory setting : 5 Valid only for the sensor type CLSE-R5. Selected sensor's rating is automatically set for other types of sensors.	A
5603	1	CT sensor type (Circuit 1) 0 : CLSE-R5 (*) 1 : CLSE-05 2 : CLSE-10 3 : CLSE-20 4 : CLSE-40 5 : CLSE-60 6 : Reserved 7 : Reserved	---
5604	2	VT rating, Primary 50 to 400 000 : Voltage (V) Factory setting : 110	V
5606	1	VT rating, Secondary 50 to 500 : Voltage (V) Factory setting : 110 The secondary can be set up to 500V. However, this does not mean the unit accepts 500V for input. Do not use with the condition exceeding input rating written in the specification sheet of the unit.	V
5607	1	Frequency input 0 : Voltage (*) 1 : Current	---
5608	1	Low-end cutout, Current (Circuit 1) 0 to 999 : Rated current × 0.001 × Specified value Factory setting : 10	%/10
5609	1	Low-end cutout, Voltage 0 to 999 : Rated voltage × 0.001 × Specified value Factory setting : 10	%/10
5610	1	CT rating, Primary (Circuit 2) Same as with the address 5602.	A
5611	1	CT sensor type (Circuit 2) Same as with the address 5603.	---
5612	1	Low-end cutout, Current (Circuit 2) Same as with the address 5608.	%/10

(*) Factory setting

MODBUS SETTING

The device must be reset or the power supply to it must be turned off and on in order to enable the Modbus setting.

ADDR.	WORD	PARAMETER	UNIT									
5738	1	RUN LED time out RUN LED turns off if the unit receives no Modbus command for the specified time period. 0 to 32 000 : Specified value × 0.1 second Factory setting : 10	Sec./10									
5739	2	Modbus/TCP IP address IP address is stored in the form of 'A.B.C.D' in the following address: <table style="margin-left: 20px;"> <tr> <td>Address</td> <td>Upper Byte</td> <td>Lower Byte</td> </tr> <tr> <td>5739</td> <td>A</td> <td>B</td> </tr> <tr> <td>5740</td> <td>C</td> <td>D</td> </tr> </table> Factory setting : 192.168.0.1	Address	Upper Byte	Lower Byte	5739	A	B	5740	C	D	---
Address	Upper Byte	Lower Byte										
5739	A	B										
5740	C	D										
5741	2	Modbus/TCP subnet mask Subnet mask is stored in the form of 'A.B.C.D' in the following address: <table style="margin-left: 20px;"> <tr> <td>Address</td> <td>Upper Byte</td> <td>Lower Byte</td> </tr> <tr> <td>5741</td> <td>A</td> <td>B</td> </tr> <tr> <td>5742</td> <td>C</td> <td>D</td> </tr> </table> Factory setting : 255.255.255.0	Address	Upper Byte	Lower Byte	5741	A	B	5742	C	D	---
Address	Upper Byte	Lower Byte										
5741	A	B										
5742	C	D										
5743	2	Modbus/TCP default gateway Default gateway is stored in the form of 'A.B.C.D' in the following address: <table style="margin-left: 20px;"> <tr> <td>Address</td> <td>Upper Byte</td> <td>Lower Byte</td> </tr> <tr> <td>5743</td> <td>A</td> <td>B</td> </tr> <tr> <td>5744</td> <td>C</td> <td>D</td> </tr> </table> Factory setting : 0.0.0.0	Address	Upper Byte	Lower Byte	5743	A	B	5744	C	D	---
Address	Upper Byte	Lower Byte										
5743	A	B										
5744	C	D										
5745	1	Modbus/TCP port No. 0 to 65535 Factory setting : 502	---									
5746	1	Modbus/TCP connection time out Connection is severed if no communication is established for the specified time period. 0 to 32 000 : Specified value × 0.1 second Factory setting : 600	Sec./10									

DEMAND SETTING

ADDR.	WORD	PARAMETER	UNIT
5857	1	Average (demand) current update interval 0 : External trigger signal 1 to 60 : Minutes Factory setting : 30	Minutes
5858	1	Average (demand) power update interval 0 : External trigger signal 1 to 60 : Minutes Factory setting : 30	Minutes

STYLE SETTING

ADDR.	WORD	PARAMETER
5987	1	Power factor (PF1 through PF3, PF) sign 0 : Standard (IEC) (*) Identical to the active energy 1 : Special type 1 (IEEE) Positive in LAG, Negative in LEAD
5988	1	Reactive power (Q1 through Q3, Q) sign 0 : Standard (IEC) (*) Positive from [PF = 1.0] to 180° in LAG direction; Negative for the other direction 1 : Special type 1 Positive in LAG, Negative in LEAD
5989	1	Reactive power (Q1 through Q3) calculation (Q = Q1 + Q2 + Q3) 0 : Standard (*) $Q_n = \sqrt{S_n^2 - P_n^2}$ 1 : Reactive power meter method $Q_n = \frac{1}{N_{smp}} \sum_{i=1}^{N_{smp}} (U_{ni} - N_{ui}) I_{i+(N_{smp}/4)}$
5990	1	Apparent power (S) calculation 0 : Standard (*) $S = \sqrt{P^2 + Q^2}$ 1 : Sum $S = S1 + S2 + S3$

(*) Factory setting

Note: '1,' '2,' '3' in expressions like Q1, Q2, Q3 indicate 'R,' 'S,' 'T' respectively.

MODBUS - MEASURED VARIABLES

Measured variables, except for the nth harmonic distortion, are read out as signed 32-bit integer.

Each variable has different engineering unit (Refer to the table below). For example, when 40000 is read at the address 41 for the 1 – N delta voltage, the actual voltage value equals to $400.0V = 40000 \times 0.01$, as the engineering unit for this item is V/100 (0.01V).

Readable range for each parameter depends upon the parameter type, as shown in the table below. For example, Current unit is applied to Line current or Neutral current, and Voltage unit is applied to the 1 – N delta voltage or the minimum value voltage.

PARAMETER	UNIT	RANGE
Current	mA	0 to 2 000 000 000 mA
Voltage	V/100	0 to 20 000 000.00 V
Active power	W	-2 000 000 000 to 2 000 000 000 W
Reactive power	var	-2 000 000 000 to 2 000 000 000 var
Apparent power	VA	0 to 2 000 000 000 VAx
Power factor	1/10 000	-1.0000 to 1.0000
Frequency	Hz/100	0 or 40.00 Hz to 70.00 Hz
Active energy	kWh/10	0 to 99 999 999.9 kWh*1
Reactive energy	kvarh/10	0 to 99 999 999.9 kvarh*1
Apparent energy	kVAh/10	0 to 99 999 999.9 kVAh*1
Energy count time	h/10	0 to 99 999 999.9 hours*1
Harmonic	%/10	0 to 999.9%
Phase angle between phase voltages	°	-180 to +180°

*1. Reset to 0 at overflow.

■ MOMENTARY VALUE

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
1	4001	2	I	Current	mA
3	4003	2	U	Voltage	V/100
5	4005	2	P	Active power	W
7	4007	2	Q	Reactive power	var
9	4009	2	S	Apparent power	VA
11	4011	2	PF	Power factor	1/10 000
13	4013	2	F	Frequency	Hz/100
15	4015	2	DIR	Phase difference direction (0 = inductive or lag, 1 = capacitive or lead)	---
33	4033	2	I1	Current, Line 1	mA
35	4035		I2	Current, Line 2	mA
37	4037		I3	Current, Line 3	mA
39	4039		IN	Neutral current	mA
41	4041	2	U12	Delta voltage, 1 – 2	V/100
43	4043		U23	Delta voltage, 2 – 3	V/100
45	4045		U31	Delta voltage, 3 – 1	V/100
47	4047	2	U1N	Phase voltage, Phase 1	V/100
49	4049		U2N	Phase voltage, Phase 2	V/100
51	4051		U3N	Phase voltage, Phase 3	V/100
53	4053	2	P1	Active power, Phase 1	W
55	4055		P2	Active power, Phase 2	W
57	4057		P3	Active power, Phase 3	W
59	4059	2	Q1	Reactive power, Phase 1	var
61	4061		Q2	Reactive power, Phase 2	var
63	4063		Q3	Reactive power, Phase 3	var
65	4065	2	S1	Apparent power, Phase 1	VA
67	4067		S2	Apparent power, Phase 2	VA
69	4069		S3	Apparent power, Phase 3	VA
71	4071	2	PF1	Power factor, Phase 1	1/10 000
73	4073		PF2	Power factor, Phase 2	1/10 000
75	4075		PF3	Power factor, Phase 3	1/10 000
77	4077	2	DIR1	Phase difference direction, Phase 1 (0 = inductive or lag, 1 = capacitive or lead)	---
79	4079		DIR2	Phase difference direction, Phase 2 (0 = inductive or lag, 1 = capacitive or lead)	---
81	4081		DIR3	Phase difference direction, Phase 3 (0 = inductive or lag, 1 = capacitive or lead)	---
83	4083	2	UT12	Phase angle between Phase 1 – 2 voltages	°
85	4085		UT23	Phase angle between Phase 2 – 3 voltages	°
87	4087		UT31	Phase angle between Phase 3 – 1 voltages	°

ENERGY

Writing the following registers enables energy presetting. Set Modbus Register Access in order to write in the energy and fractions.

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
129	4129	2	EP	Active energy, high tariff, incoming	kWh/10
131	4131	2	EQ	Reactive energy, high tariff, LAG	kvarh/10
133	4133	2	ES	Apparent energy, high tariff	kVAh/10
135	4135	2	EP-	Active energy, high tariff, outgoing	kWh/10
137	4137	2	EQ-	Reactive energy, high tariff, LEAD	kvarh/10
139	4139	2	EQ+LAG	Reactive energy, high tariff, incoming, LAG	kvarh/10
141	4141	2	EQ+LEAD	Reactive energy, high tariff, incoming, LEAD	kvarh/10
143	4143	2	EQ-LAG	Reactive energy, high tariff, outgoing, LAG	kvarh/10
145	4145	2	EQ-LEAD	Reactive energy, high tariff, outgoing, LEAD	kvarh/10
147	4147	2	TIMER	Energy count time, high tariff	h/10
149	4149	2	EQ+P	Reactive energy, high tariff, incoming	kvarh/10
151	4151	2	EQ-P	Reactive energy, high tariff, outgoing	kvarh/10
153	4153	2	EPA	Active energy, high tariff, (incoming - outgoing)	kWh/10
155	4155	2	EQA	Reactive energy, high tariff, (incoming + outgoing)	kvarh/10
161	4161	2	L-EP	Active energy, low tariff, incoming	kWh/10
163	4163	2	L-EQ	Reactive energy, low tariff, LAG	kvarh/10
165	4165	2	L-ES	Apparent energy, low tariff	kVAh/10
167	4167	2	L-EP-	Active energy, low tariff, outgoing	kWh/10
169	4169	2	L-EQ-	Reactive energy, low tariff, LEAD	kvarh/10
171	4171	2	L-EQ+LAG	Reactive energy, low tariff, incoming, LAG	kvarh/10
173	4173	2	L-EQ+LEAD	Reactive energy, low tariff, incoming, LEAD	kvarh/10
175	4175	2	L-EQ-LAG	Reactive energy, low tariff, outgoing, LAG	kvarh/10
177	4177	2	L-EQ-LEAD	Reactive energy, low tariff, outgoing, LEAD	kvarh/10
179	4179	2	L-TIMER	Energy count time, low tariff	h/10
181	4181	2	L-EQ+P	Reactive energy, low tariff, incoming	kvarh/10
183	4183	2	L-EQ-P	Reactive energy, low tariff, outgoing	kvarh/10
185	4185	2	L-EPA	Active energy, low tariff, (incoming - outgoing)	kWh/10
187	4187	2	L-EQA	Reactive energy, low tariff, (incoming + outgoing)	kvarh/10
193	4193	2	EP_L	Active energy fraction, high tariff, incoming	kWh/(10×2 ³²)
195	4195	2	EQ_L	Reactive energy fraction, high tariff, LAG	kvarh/(10×2 ³²)
197	4197	2	ES_L	Apparent energy fraction, high tariff	kVAh/(10×2 ³²)
199	4199	2	EP-_L	Active energy fraction, high tariff, outgoing	kWh/(10×2 ³²)
201	4201	2	EQ-_L	Reactive energy fraction, high tariff, LEAD	kvarh/(10×2 ³²)
203	4203	2	EQ+LAG_L	Reactive energy fraction, high tariff, incoming, LAG	kvarh/(10×2 ³²)
205	4205	2	EQ+LEAD_L	Reactive energy fraction, high tariff, incoming, LEAD	kvarh/(10×2 ³²)
207	4207	2	EQ-LAG_L	Reactive energy fraction, high tariff, outgoing, LAG	kvarh/(10×2 ³²)
209	4209	2	EQ-LEAD_L	Reactive energy fraction, high tariff, outgoing, LEAD	kvarh/(10×2 ³²)
211	4211	2	TIMER_L	Energy fraction count time, high tariff	seconds/1 000
213	4213	2	EQ+P_L	Reactive energy fraction, high tariff, incoming	kvarh/(10×2 ³²)
215	4215	2	EQ-P_L	Reactive energy fraction, high tariff, outgoing	kvarh/(10×2 ³²)
217	4217	2	EPA_L	Active energy fraction, high tariff, (incoming - outgoing)	kWh/(10×2 ³²)
219	4219	2	EQA_L	Reactive energy fraction, high tariff, (incoming + outgoing)	kvarh/(10×2 ³²)
225	4225	2	L-EP_L	Active energy fraction, low tariff, incoming	kWh/(10×2 ³²)
227	4227	2	L-EQ_L	Reactive energy fraction, low tariff, LAG	kvarh/(10×2 ³²)
229	4229	2	L-ES_L	Apparent energy fraction, low tariff	kVAh/(10×2 ³²)
231	4231	2	L-EP-_L	Active energy fraction, low tariff, outgoing	kWh/(10×2 ³²)
233	4233	2	L-EQ-_L	Reactive energy fraction, low tariff, LEAD	kvarh/(10×2 ³²)
235	4235	2	L-EQ+LAG_L	Reactive energy fraction, low tariff, incoming, LAG	kvarh/(10×2 ³²)
237	4237	2	L-EQ+LEAD_L	Reactive energy fraction, low tariff, incoming, LEAD	kvarh/(10×2 ³²)
239	4239	2	L-EQ-LAG_L	Reactive energy fraction, low tariff, outgoing, LAG	kvarh/(10×2 ³²)
241	4241	2	L-EQ-LEAD_L	Reactive energy fraction, low tariff, outgoing, LEAD	kvarh/(10×2 ³²)
243	4243	2	L-TIMER_L	Energy fraction count time, low tariff	seconds/1 000
245	4245	2	L-EQ+P_L	Reactive energy fraction, low tariff, incoming	kvarh/(10×2 ³²)
247	4247	2	L-EQ-P_L	Reactive energy fraction, low tariff, outgoing	kvarh/(10×2 ³²)
249	4249	2	L-EPA_L	Active energy fraction, low tariff, (incoming - outgoing)	kWh/(10×2 ³²)
251	4251	2	L-EQA_L	Reactive energy fraction, low tariff, (incoming + outgoing)	kvarh/(10×2 ³²)

■ AVERAGE VALUE

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
257	4257	2	I AVG	Current AVG	mA
259	4259	2	I1 AVG	Current AVG, Line 1	mA
261	4261		I2 AVG	Current AVG, Line 2	mA
263	4263		I3 AVG	Current AVG, Line 3	mA
265	4265	2	IN AVG	Neutral current AVG	mA
273	4273	2	I AVG 1	Current AVG, History 1	mA
275	4275	2	I1 AVG 1	Current AVG, Line 1, History 1	mA
277	4277		I2 AVG 1	Current AVG, Line 2, History 1	mA
279	4279		I3 AVG 1	Current AVG, Line 3, History 1	mA
281	4281	2	IN AVG 1	Neutral current AVG, History 1	mA
289	4289	2	I AVG 2	Current AVG, History 2	mA
291	4291	2	I1 AVG 2	Current AVG, Line 1, History 2	mA
293	4293		I2 AVG 2	Current AVG, Line 2, History 2	mA
295	4295		I3 AVG 2	Current AVG, Line 3, History 2	mA
297	4297	2	IN AVG 2	Neutral current AVG, History 2	mA
305	4305	2	I AVG 3	Current AVG, History 3	mA
307	4307	2	I1 AVG 3	Current AVG, Line 1, History 3	mA
309	4309		I2 AVG 3	Current AVG, Line 2, History 3	mA
311	4311		I3 AVG 3	Current AVG, Line 3, History 3	mA
313	4313	2	IN AVG 3	Neutral current AVG, History 3	mA
321	4321	2	I AVG 4	Current AVG, History 4	mA
323	4323	2	I1 AVG 4	Current AVG, Line 1, History 4	mA
325	4325		I2 AVG 4	Current AVG, Line 2, History 4	mA
327	4327		I3 AVG 4	Current AVG, Line 3, History 4	mA
329	4329	2	IN AVG 4	Neutral current AVG, History	mA
513	4513	2	P AVG	Active power AVG	W
515	4515		Q AVG	Reactive power AVG	var
517	4517		S AVG	Apparent power AVG	VA
529	4529	2	P AVG 1	Active power AVG, History 1	W
531	4531		Q AVG 1	Reactive power AVG, History 1	var
533	4533		S AVG 1	Apparent power AVG, History 1	VA
545	4545	2	P AVG 2	Active power AVG, History 2	W
547	4547		Q AVG 2	Reactive power AVG, History 2	var
549	4549		S AVG 2	Apparent power AVG, History 2	VA
561	4561	2	P AVG 3	Active power AVG, History 3	W
563	4563		Q AVG 3	Reactive power AVG, History 3	var
565	4565		S AVG 3	Apparent power AVG, History 3	VA
577	4577	2	P AVG 4	Active power AVG, History 4	W
579	4579		Q AVG 4	Reactive power AVG, History 4	var
581	4581		S AVG 4	Apparent power AVG, History 4	VA

■ MAXIMUM / MINIMUM VALUE

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
769	2769	2	I MAX	Current MAX	mA
771	2771	2	U MAX	Voltage MAX	V/100
773	2773	2	P MAX	Active power MAX	W
775	2775	2	Q MAX	Reactive power MAX	var
777	2777	2	S MAX	Apparent power MAX	VA
779	2779	2	PF MAX	Power factor MAX	1/10 000
781	2781	2	F MAX	Frequency MAX	Hz/100
801	2801		I1 MAX	Current MAX, Line 1	mA
803	2803	2	I2 MAX	Current MAX, Line 2	mA
805	2805		I3 MAX	Current MAX, Line 3	mA
807	2807	2	IN MAX	Neutral current MAX	mA
809	2809		U12 MAX	Delta voltage MAX, 1 – 2	V/100
811	2811	2	U23 MAX	Delta voltage MAX, 2 – 3	V/100
813	2813		U31 MAX	Delta voltage MAX, 3 – 1	V/100
815	2815		U1N MAX	Phase voltage MAX, Phase 1	V/100
817	2817	2	U2N MAX	Phase voltage MAX, Phase 2	V/100
819	2819		U3N MAX	Phase voltage MAX, Phase 3	V/100
821	2821		P1 MAX	Active power MAX, Phase 1	W
823	2823	2	P2 MAX	Active power MAX, Phase 2	W
825	2825		P3 MAX	Active power MAX, Phase 3	W
827	2827		Q1 MAX	Reactive power MAX, Phase 1	var
829	2829	2	Q2 MAX	Reactive power MAX, Phase 2	var
831	2831		Q3 MAX	Reactive power MAX, Phase 3	var
833	2833		S1 MAX	Apparent power MAX, Phase 1	VA
835	2835	2	S2 MAX	Apparent power MAX, Phase 2	VA
837	2837		S3 MAX	Apparent power MAX, Phase 3	VA
839	2839		PF1 MAX	Power factor MAX, Phase 1	1/10 000
841	2841	2	PF2 MAX	Power factor MAX, Phase 2	1/10 000
843	2843		PF3 MAX	Power factor MAX, Phase 3	1/10 000
865	2865		THD I1 MAX	Current total harmonic distortion MAX, Line 1	%/10
867	2867	2	THD I2 MAX	Current total harmonic distortion MAX, Line 2	%/10
869	2869		THD I3 MAX	Current total harmonic distortion MAX, Line 3	%/10
871	2871	2	THD IN MAX	Neutral current total harmonic distortion MAX	%/10
873	2873		THD U12 MAX	Delta voltage total harmonic distortion MAX, 1 – 2	%/10
875	2875	2	THD U23 MAX	Delta voltage total harmonic distortion MAX, 2 – 3	%/10
877	2877		THD U31 MAX	Delta voltage total harmonic distortion MAX, 3 – 1	%/10
879	2879		THD U1N MAX	Phase voltage total harmonic distortion MAX, Phase 1	%/10
881	2881	2	THD U2N MAX	Phase voltage total harmonic distortion MAX, Phase 2	%/10
883	2883		THD U3N MAX	Phase voltage total harmonic distortion MAX, Phase 3	%/10
897	2897	2	I MAX AVG	Current MAX AVG	mA
899	2899		I1 MAX AVG	Current MAX AVG, Line 1	mA
901	2901	2	I2 MAX AVG	Current MAX AVG, Line 2	mA
903	2903		I3 MAX AVG	Current MAX AVG, Line 3	mA
905	2905	2	IN MAX AVG	Neutral current MAX AVG	mA
907	2907		P MAX AVG+	Active power MAX AVG, incoming	W
909	2909	2	P MAX AVG–	Active power MAX AVG, outgoing	W
911	2911		Q MAX AVG+	Reactive power MAX AVG, incoming	var
913	2913	2	Q MAX AVG–	Reactive power MAX AVG, outgoing	var
915	2915	2	S MAX AVG	Apparent power MAX AVG	VA
929	2929	2	I MIN	Current MIN	mA
931	2931	2	U MIN	Voltage MIN	V/100
933	2933	2	P MIN	Active power MIN	W
935	2935	2	Q MIN	Reactive power MIN	var
937	2937	2	S MIN	Apparent power MIN	VA
939	2939	2	PF MIN	Power factor MIN	1/10 000
941	2941	2	F MIN	Frequency MIN	Hz/100
961	2961		I1 MIN	Current MIN, Line 1	mA
963	2963	2	I2 MIN	Current MIN, Line 2	mA
965	2965		I3 MIN	Current MIN, Line 3	mA
967	2967	2	IN MIN	Neutral current MIN	mA

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
969	2969	2	U12 MIN	Delta voltage MIN, 1 – 2	V/100
971	2971		U23 MIN	Delta voltage MIN, 2 – 3	V/100
973	2973		U31 MIN	Delta voltage MIN, 3 – 1	V/100
975	2975	2	U1N MIN	Phase voltage MIN, Phase 1	V/100
977	2977		U2N MIN	Phase voltage MIN, Phase 2	V/100
979	2979		U3N MIN	Phase voltage MIN, Phase 3	V/100
981	2981	2	P1 MIN	Active power MIN, Phase 1	W
983	2983		P2 MIN	Active power MIN, Phase 2	W
985	2985		P3 MIN	Active power MIN, Phase 3	W
987	2987	2	Q1 MIN	Reactive power MIN, Phase 1	var
989	2989		Q2 MIN	Reactive power MIN, Phase 2	var
991	2991		Q3 MIN	Reactive power MIN, Phase 3	var
993	2993	2	S1 MIN	Apparent power MIN, Phase 1	VA
995	2995		S2 MIN	Apparent power MIN, Phase 2	VA
997	2997		S3 MIN	Apparent power MIN, Phase 3	VA
999	2999	2	PF1 MIN	Power factor MIN, Phase 1	1/10 000
1001	3001		PF2 MIN	Power factor MIN, Phase 2	1/10 000
1003	3003		PF3 MIN	Power factor MIN, Phase 3	1/10 000

■ TOTAL HARMONIC DISTORTION (THD)

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
1281	8281	2	THD I1	Current total harmonic distortion, Line 1	%/10
1283	8283		THD I2	Current total harmonic distortion, Line 2	%/10
1285	8285		THD I3	Current total harmonic distortion, Line 3	%/10
1287	8287	2	THD IN	Neutral current total harmonic distortion	%/10
1289	8289	2	THD U12	Delta voltage total harmonic distortion, 1 – 2	%/10
1291	8291		THD U23	Delta voltage total harmonic distortion, 2 – 3	%/10
1293	8293		THD U31	Delta voltage total harmonic distortion, 3 – 1	%/10
1295	8295	2	THD U1N	Phase voltage total harmonic distortion, Phase 1	%/10
1297	8297		THD U2N	Phase voltage total harmonic distortion, Phase 2	%/10
1299	8299		THD U3N	Phase voltage total harmonic distortion, Phase 3	%/10

■ HARMONIC

ADDR.		WORD	ID	PARAMETER	UNIT
Circuit 1	Circuit 2				
1537	8537	1	HD I1 2	Current harmonic, Line 1, 2nd	%/10
1538	8538		HD I1 3	(id.) 3rd	%/10
1539	8539		HD I1 4	(id.) 4th	%/10
1540	8540		HD I1 5	(id.) 5th	%/10
1541	8541		HD I1 6	(id.) 6th	%/10
1542	8542		HD I1 7	(id.) 7th	%/10
1543	8543		HD I1 8	(id.) 8th	%/10
1544	8544		HD I1 9	(id.) 9th	%/10
1545	8545		HD I1 10	(id.) 10th	%/10
1546	8546		HD I1 11	(id.) 11th	%/10
1547	8547		HD I1 12	(id.) 12th	%/10
1548	8548		HD I1 13	(id.) 13th	%/10
1549	8549		HD I1 14	(id.) 14th	%/10
1550	8550		HD I1 15	(id.) 15th	%/10
1551	8551		HD I1 16	(id.) 16th	%/10
1552	8552		HD I1 17	(id.) 17th	%/10
1553	8553		HD I1 18	(id.) 18th	%/10
1554	8554		HD I1 19	(id.) 19th	%/10
1555	8555		HD I1 20	(id.) 20th	%/10
1556	8556		HD I1 21	(id.) 21st	%/10
1557	8557		HD I1 22	(id.) 22nd	%/10
1558	8558	HD I1 23	(id.) 23rd	%/10	
1559	8559	HD I1 24	(id.) 24th	%/10	
1560	8560	HD I1 25	(id.) 25th	%/10	
1561	8561	HD I1 26	(id.) 26th	%/10	
1562	8562	HD I1 27	(id.) 27th	%/10	
1563	8563	HD I1 28	(id.) 28th	%/10	
1564	8564	HD I1 29	(id.) 29th	%/10	
1565	8565	HD I1 30	(id.) 30th	%/10	
1566	8566	HD I1 31	(id.) 31st	%/10	
1601	8601	1	HD I2 2	Current harmonic, Line 2, 2nd	%/10
:	:		:	:	
1630	8630		HD I2 31	31st	
1665	8665	1	HD I3 2	Current harmonic, Line 3, 2nd	%/10
:	:		:	:	
1694	8694		HD I3 31	31st	
1729	8729	1	HD IN 2	Neutral current harmonic, 2nd	%/10
:	:		:	:	
1758	8758		HD IN 31	31st	
1793	8793	1	HD U12 2	Delta voltage harmonic, 1 – 2, 2nd	%/10
:	:		:	:	
1822	8822		HD U12 31	31st	
1857	8857	1	HD U23 2	Delta voltage harmonic, 2 – 3, 2nd	%/10
:	:		:	:	
1886	8886		HD U23 31	31st	
1921	8921	1	HD U31 2	Delta voltage harmonic, 3 – 1, 2nd	%/10
:	:		:	:	
1950	8950		HD U31 31	31st	
1985	8985	1	HD U1N 2	Phase voltage harmonic, Phase 1, 2nd	%/10
:	:		:	:	
2014	9014		HD U1N 31	31st	
2049	9049	1	HD U2N 2	Phase voltage harmonic, Phase 2, 2nd	%/10
:	:		:	:	
2078	9078		HD U2N 31	31st	
2113	9113	1	HD U3N 2	Phase voltage harmonic, Phase 3, 2nd	%/10
:	:		:	:	
2142	9142		HD U3N 31	31st	

■ DISCRETE INPUT

ADDR.	WORD	PARAMETER
3073	1	Discrete input 1 status 0 : OFF 1 : ON
3074	1	Discrete input 2 status 0 : OFF 1 : ON
3075	1	Discrete input 3 status 0 : OFF 1 : ON
3076	1	Discrete input 4 status 0 : OFF 1 : ON

■ DISCRETE INPUT COUNT

ADDR.	WORD	PARAMETER
3137	2	Discrete input 1 count Pulse train input at Discrete input 1 is counted. The counter resets to 0 when a pulse is added at 999 999 999 counts.
3138	2	Discrete input 2 count Pulse train input at Discrete input 2 is counted. The counter resets to 0 when a pulse is added at 999 999 999 counts.
3141	2	Discrete input 3 count Pulse train input at Discrete input 3 is counted. The counter resets to 0 when a pulse is added at 999 999 999 counts.
3143	2	Discrete input 4 count Pulse train input at Discrete input 4 is counted. The counter resets to 0 when a pulse is added at 999 999 999 counts.

■ DEVICE STATUS

ADDR.	WORD	PARAMETER																	
8001	1	<p>Input overload Bit assignment as shown below.</p> <p>Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0</p> <table border="1" style="margin-left: 40px;"> <tr> <td>I3.2</td><td>I2.2</td><td>I1.2</td><td>F</td><td></td><td>U31</td><td>U23</td><td>U12</td><td></td><td>U3N</td><td>U2N</td><td>U1N</td><td></td><td>I3</td><td>I2</td><td>I1</td> </tr> </table> <p>'1' is placed at the bit where an overload is detected. I3.2, I2.2 and I1.2 are assigned to current values for Circuit 2.</p>	I3.2	I2.2	I1.2	F		U31	U23	U12		U3N	U2N	U1N		I3	I2	I1	
I3.2	I2.2	I1.2	F		U31	U23	U12		U3N	U2N	U1N		I3	I2	I1				
8002	1	Reserved																	
8003	1	<p>System error Bit assignment as shown below.</p> <p>Bit 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0</p> <table border="1" style="margin-left: 40px;"> <tr> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>STAT</td><td>AVG</td><td>ENE</td><td>SET</td><td>FDT</td><td>PRG</td> </tr> </table> <p>PRG : Control software error FDT : Factory calibration data error SET : User setting data error ENE : Energy data error AVG : Average data error STAT : Maximum / minimum data error '1' is placed when the respective errors are detected. All measuring operations stop while one or more system errors are detected.</p>												STAT	AVG	ENE	SET	FDT	PRG
											STAT	AVG	ENE	SET	FDT	PRG			

■ DIAGNOSTICS

ADDR.	WORD	PARAMETER	UNIT
9217	2	Processing delays	times
9219	2	Processing delay sequence number	No.

■ DEVICE INFORMATION

ADDR.	WORD	PARAMETER																											
9601	1	Device ID 7701 : R7xWTU																											
9602	1	Device version Version number × 100 (e.g. Version 1.00 = 100)																											
9603	4	Serial No. Each character is stored in the following address: <table border="1"> <thead> <tr> <th>Address</th> <th>Upper Byte</th> <th>Lower Byte</th> </tr> </thead> <tbody> <tr> <td>9603</td> <td>2nd</td> <td>1st</td> </tr> <tr> <td>9604</td> <td>4th</td> <td>3rd</td> </tr> <tr> <td>9605</td> <td>6th</td> <td>5th</td> </tr> <tr> <td>9606</td> <td>8th</td> <td>7th</td> </tr> </tbody> </table>	Address	Upper Byte	Lower Byte	9603	2nd	1st	9604	4th	3rd	9605	6th	5th	9606	8th	7th												
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9604	4th	3rd																											
9605	6th	5th																											
9606	8th	7th																											
9607	8	Tag name This register is writable. Each character is stored in the following address: <table border="1"> <thead> <tr> <th>Address</th> <th>Upper Byte</th> <th>Lower Byte</th> </tr> </thead> <tbody> <tr> <td>9607</td> <td>2nd</td> <td>1st</td> </tr> <tr> <td>9608</td> <td>4th</td> <td>3rd</td> </tr> <tr> <td>9609</td> <td>6th</td> <td>5th</td> </tr> <tr> <td>9610</td> <td>8th</td> <td>7th</td> </tr> <tr> <td>9611</td> <td>10th</td> <td>9th</td> </tr> <tr> <td>9612</td> <td>12th</td> <td>11th</td> </tr> <tr> <td>9613</td> <td>14th</td> <td>13th</td> </tr> <tr> <td>9614</td> <td>16th</td> <td>15th</td> </tr> </tbody> </table>	Address	Upper Byte	Lower Byte	9607	2nd	1st	9608	4th	3rd	9609	6th	5th	9610	8th	7th	9611	10th	9th	9612	12th	11th	9613	14th	13th	9614	16th	15th
Address	Upper Byte	Lower Byte																											
9607	2nd	1st																											
9608	4th	3rd																											
9609	6th	5th																											
9610	8th	7th																											
9611	10th	9th																											
9612	12th	11th																											
9613	14th	13th																											
9614	16th	15th																											
9623	1	Extension function flag Reading the following values depending upon the function: 0002H : RS-485 (Modbus RTU) 0010H : Three-phase / 4-wire system 0080H : LONWORKS 0100H : CC-Link 2000H : Modbus/TCP This register is read as follows depending upon model numbers. R7LWTU : 0090H (144) R7CWTU : 0110H (272) R7MWTU : 0012H (18) R7EWTU : 2010H (8208)																											
9627	1	Number of circuits 1 : 1 circuit (R7xWTU-211-AD4) 2 : 2 circuits (R7xWTU-221-AD4)																											
9628	1	Number of counters 0 : None (R7xWTU-221-AD4) 4 : 4 points (R7xWTU-211-AD4)																											

LIGHTNING SURGE PROTECTION

M-System offers a series of lightning surge protector for protection against induced lightning surges. Please contact M-System to choose appropriate models.