



RMGF7-100A Three Phase Tuya WiFi Smart Energy Meter&Protector Users's Manual



Package Includes:

1. Host x1
2. 3000:1 Current Transformers CTx3
(The current depends on user's choice)
3. Users' Manualx1

Energy Meter Functions:

1. kWh
2. Bidirectional Energy Monitor
3. Voltage
4. Current
5. Power
6. Power Factor
7. Frequency
8. kWh Data Clearing

Technical Data	
Rated Voltage	L+N=AC80-240V
Rated Current	80A/120A/200A/300A/500A/750A/1000A (Depend on the current transformers CT)
Rated Frequency	50/60Hz
Measurement Accuracy	±1%/Class 1 80-300A starts from 0.03A, 500-1000A starts from 0.1A
Device Data Fresh Speed	1 Time/S
App Data Fresh Speed	If fluctuations in kWh (≥5), V (≥5V), A (≥0.8A), or Temperature (≥5°C) occur → Upload to App immediately; otherwise, upload every 5 minutes.
Power Consumption	<1.5W
Installation	35MM Din Rail
Working Temperature	-10°C~+55°C
Storage Temperature	-40°C~+70°C
Working Humidity	5%~95%RH
Dimensions	90*72.5*60MM(L*W*H)
Display Type	LCD
Max kWh Record	999999kWh
Display Working Time	Always On
Load Capacity	0.05Ib-I _{max}
Standard	IEC62053-21&GB/T17215.321-2008
Certification	CE
Warranty	1 Year

Protection Functions:

1. Over Voltage Protection
2. Under Voltage Protection
3. Over Current Protection
4. Under Current Protection
5. Delay Protection
6. Timer Switch
7. Voltage Imbalance Protection(Can only be set on App)
8. Current Imbalance Protection(Can only be set on App)
9. Shortage Phase Protection(Can only be set on App)
10. Phase Sequence Protection(Can only be set on App)
11. High Temperature Protection(Can only be set on App)
12. Current Leakage Protection(An external leakage current transformer is required for this function, it is not included in the package. Users are requested to purchase it on their own if usage is required!)

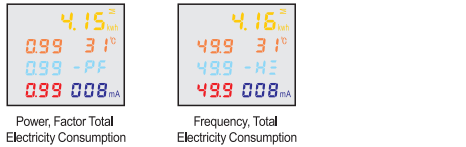
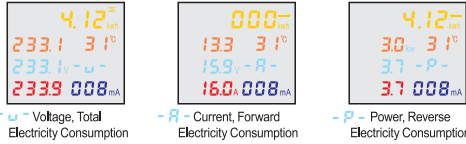
Each parameter can be set with action threshold and On/Off.



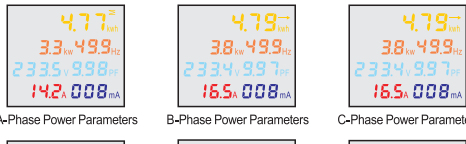
A circuit breaker and a shunt trip device is required for protection functions, which are not included in the package. If required, users should purchase them separately!

1. Display Mode

Mode 1



Mode 2



2. Fault Records:

Record over & under voltage, over & under current, current leakage, voltage imbalance, current imbalance, and phase sequence protection.Note:Tuya app records.

3. WiFi Indicator Light Status:

1. Fast flashing indicates searching for WiFi signal
2. Slow flashing indicates WiFi offline status
3. Long light indicates that WiFi is connected

4. Fault Settings:

Long press key to enter the settings states and show the settings

Change the settings by prese keys

Short press OK key to confirm the settings on this page and jump to the next settings page

Long press OK key to exit the settings states and save the settings

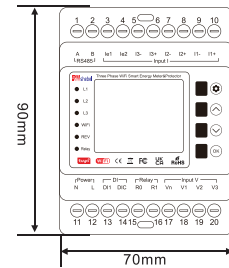
5. Installation and Usage Conditions:

1. Working Temperature:-30°C-70°C
2. Working Humidity:≤85%
3. Working Altitude:Not Exceeding 2000m
4. Pollution Level:Level 3
5. Modular design appearance and din rail installation
6. Wiring Capacity:Insulated copper wire uner 35mm²

6. Notes:

1. This product has no isolation function. Please turn off the power before repairing.
2. The zero line (Neutral N line) of this product is directly connected without any disconnection function.
3. The device must be wired according to the markings and must be installed correctly.
4. Although this device has protection function, but it cannot replace normal circuit breaker, so please install circuit breaker before this device as always.
5. Please tighten the clamp screws hard to avoid the device being damaged caught by poor contact.

7. Installation Wiring & Dimensions:

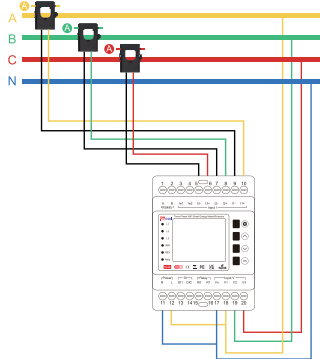


Interface Number	Interface Name	Interface Definition	Interface Type	Notes
1	A	RS485 COMM A	RS485	RS485 COMM
2	B	RS485 COMM B		
3	le1	Leakage current input	Current input	Current channel interface
4	le2	Leakage current input		
5	I3-	C-phase current input negative		
6	I3+	C-phase current input positive		
7	I2-	B-phase current input negative		
8	I2+	B-phase current input positive		
9	I1-	A-phase current input negative		
10	I1+	A-phase current input positive		
11	N	Power supply(-)	Power supply	Power supply range (customizable DC version) 95~265VAC, 45~60Hz 110~260VDC
12	L	Power supply(+)		
13	DI1	Digital input channel 1	Digital input	Input for dry contacts
14	DIC	Digital channel public end		
15	R0	Relay common contact	Relay	One relay output, normally open contact
16	R1	Normally open contact of relay		
17	Vn	N-phase voltage input	Voltage input	Measure voltage input channel
18	V1	A-phase voltage input		
19	V2	B-phase voltage input		
20	V3	C-phase voltage input		

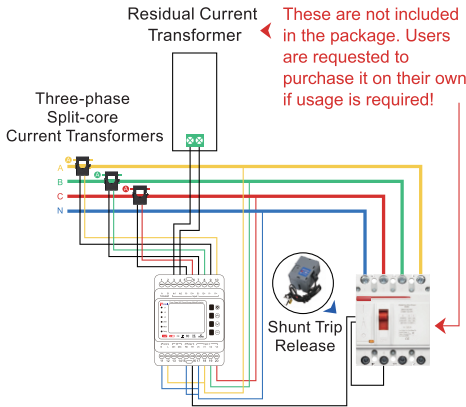
8.Wiring Diagram

① Pure Energy Meter

Three-phase Split-core Current Transformers



②Energy Meter+Protector



Terminal 15 is the common contact (COM).
Terminal 16 is the Normally Open (NO) contact, with a maximum load capacity of 5A.

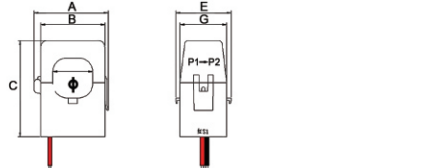
Wiring Instructions for a Three-Phase Circuit Breaker with an Integrated 220V Shunt Trip Release:

Connect one wire of the shunt trip release to the C-phase (Phase C) point of the circuit breaker's output line.
(Warning: This wire can only be connected with the circuit breaker output line not input line, if not, the Shunt Trip Release will be burnt!)

Connect the other wire of the shunt trip release to the normally open (NO) terminal 16.
Connect the neutral wire (N) from the electric meter to the common (COM) terminal 15.

Terminal Functions:
Terminal 16: Normally Open (NO) contact.
Terminal 15: Common (COM) contact.

9.Current Transformers CT Datasheet



Model	80A	120A	200A	300A	500A	750A	1000A
Φ	10mm	16mm	24mm	24mm	36mm	50mm	50mm
A	32.5mm	36.2mm	53.5mm	53.5mm	68.5mm	86.5mm	86.5mm
B	24mm	30mm	44.5mm	44.5mm	58mm	75mm	75mm
C	41mm	50.5mm	65.5mm	65.5mm	87mm	114.5mm	114.5mm
E	32mm	39.5mm	41.5mm	41.5mm	50mm	58mm	58mm
G	26mm	32.5mm	34mm	34mm	42mm	48.5mm	48.5mm

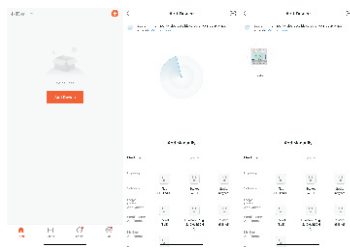
Current Transformer CT Transformation Ratio 3000:1

Function	Set Parameter Range	Factory Default Settings	Function Description
Over Voltage Limit	120V-300V	275V	If the over voltage limit is set at 300V, when the voltage is over 300V, the device will automatically switch off.
Under Voltage Limit	80-210V	175V	If the under voltage limit is set at 80V, when the voltage is under 80V, the device will automatically switch off.
Under & Over Voltage Protection Delay	1-9999Second(S)	3s	If the voltage is over or under the set value, the device will automatically switch off after the set delay time.
Over & Under Voltage Protection Recovery Time	1-9999Second(S)	20s	If the voltage is over or under the set value, the device will automatically switch off and when the voltage returns to normal value it will recover after the set delay time.
Over Current Limit	1.0-100.0A	80.0A	If the over current limit is set at 80A, the device will automatically switch off when the current is over 80A.
Over & Under Current Protection Delay	0000-9999Second(S)	5s	If the current is over or under the set value, the device will automatically switch off after the set delay time.

Function	Set Parameter Range	Factory Default Settings	Function Description
Over & Under Current Protection Recovery Time	0000-9999Second(S)	20s	If the current is over or under the set value, the device will automatically switch off and when the current returns to normal value it will recover after the set delay time.
Under Current Limit	1.0-100.0A	10.0A	If the under current limit is set at 60A, the device will automatically switch off when the current is under 60A.
Current Leakage Limit	10-100mA	30mA	If the current leakage limit is set at 30mA, the device will automatically switch off when the current leakage is over 30mA.
Display Mode	Display Mode 1 Display Mode 2	Display Mode 1	Default Display Mode 1, refer to page 3 (Display Mode)
Energy Consumption Zero Clearing		Default OFF	OFF/On
Factory Settings Reset		Default OFF	OFF/On

HOW TOADD DEVCE TOAPP

1. Use your smart phone to scan QR codes, or search "Smart Life" or "Tuya Smart" app in Google play or APP Store to download and instal.
2. Create an account with your mobile number.
3. Connect you mobile to your Wi-Fi router. Click "+" in the upper right corner of homepage or click "Adddevice" then select breaker "Switch module (Wi-Fi)" from "Energy", long press WiFi button for 5 seconds, after the WiFi indicators starts to flash quickly, open app to pair.

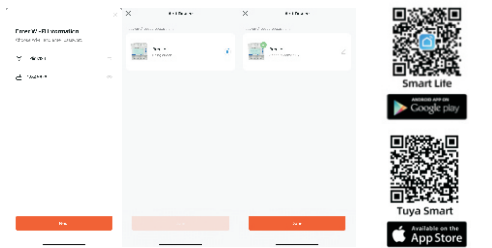


PROOUCT PARAMETERS

Rated Supply Voltage:AC380V
Rated Frequency:50/60Hz
Power Display Range:0-99999.9kwh
Protection Trip Action Time:<0.5s

Setting Range:
Over Voltage(>U):120-300V
Under Voltage(<U):80-210V

Over Current & Leakae Protection
Current Leakage:10-99mA/OFF
Protect Times:1-30 times/off



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WeChat



WhatsApp



2. 3000:1互感器CT×3 (电流根据用户选项)
3. 说明书×1

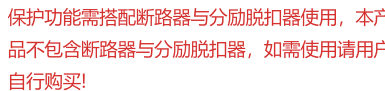
将分励脱扣器的一根导线连接到断路器输出线的 C 相 (C 相点)。

(警告: 此导线只能连接到断路器的输出线, 不能连接到输入线。若不遵守, 分励脱扣器将会烧毁!)

1. 电能表
2. 双向用电量监测
3. 电压
4. 电流
5. 功率
6. 功率因素
7. 频率
8. 用电量清零

技术参数	
额定电压	L+N=AC80-240V
额定电流	80A/120A/200A/300A/ 500A/750A/1000A(取决于互感器)
额定频率	50/60Hz
测量精度	±1%/级 80-300A 0.03A起测, 500-1000A 0.1A起测
硬件端数据刷新速度	1次/秒
App端数据刷新速度	若kWh (≥5)、电压 (≥5V)、电流 (≥80A) 或温度 (≥5℃) 发生波动 → 立即上传至 App; 否则每5分钟上传一次。
功耗	≤1.5W
安装	35MM导轨
工作温度	-10℃~+55℃
储存温度	-40℃~+70℃
工作湿度	5%~95%RH
尺寸	90*72.5*60MM(L*W*H)(长*宽*高)
显示屏类型	LCD
最大用电量记录	999999kWh
显示工作时间	常亮
负载	0.05lb-Imax
标准	IEC62053-21&GB/T17215.321-2008
认证	CE
保修	1年

12. 漏电保护：该功能需搭配外置漏电流互感器使用，本产品不包含该互感器，如需使用请用户自行购买！
每个参数可设置动作阈值和开/关。



Three digital multimeter displays are shown, each with a different color-coded background and a corresponding symbol below it:

- Left Display (Blue background):** Shows voltage measurements. The top line displays 4.12^{V} with a blue V symbol. The bottom line displays 233.1 and 31^{V} with a blue V symbol. Below the display is the label V - 电压、总电量.
- Middle Display (Green background):** Shows current measurements. The top line displays 000^{A} with a green A symbol. The bottom line displays 133 and 31^{A} with a green A symbol. Below the display is the label A - 电流、正向电量.
- Right Display (Red background):** Shows power measurements. The top line displays 4.12^{W} with a red W symbol. The bottom line displays 30 and 31^{W} with a red W symbol. Below the display is the label W - 功率、反向电量.

功率因数、总电量

Phase	Active Power (kW)	Reactive Power (kvar)	Complex Power (kVA)	Current (mA)
A	3.3	4.99	2.335	142
B	3.8	4.99	2.334	165
C	3.8	4.99	2.334	165

A相参数及温度

长按 设置键进入设置状态显示设置页面、闪烁显示设置的数据位

长按OK退出设置状态 保存设置

6. 注意事项

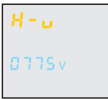
5.在使用前请拧紧卡线螺钉,防止接触不良而损坏产品。

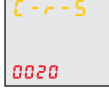
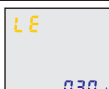
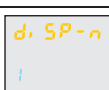
接口编号	接口名称	接口定义	接口类型	备注
1	A	RS485 通信 A	RS485	RS485通信
2	B	RS485 通信 B		
3	le1	漏电流输入	电流输入	电流通道接口
4	le2	漏电流输入		
5	I3-	C 相电流输入负		
6	I3+	C 相电流输入正		
7	I2-	B 相电流输入负		
8	I2+	B 相电流输入正		
9	I1-	A 相电流输入负		
10	I1+	A 相电流输入正		
11	N	供电(-)	供电电源	供电范围(可定制DC版本) 95~263VAC 40~60Hz 110~260VDC
12	L	供电(+)		
13	D11	数字输入通道 1	数字输入	为干接点输入
14	D1C	数字输入通道公共端		
15	R0	继电器公共触点	继电器输出	一路继电器输出,常开触点
16	R1	继电器等开触点		
17	Vn	N 相电压输入	电压输入	测量电压输入通道
18	V1	A 相电压输入		
19	V2	B 相电压输入		
20	V3	C 相电压输入		

端子功能:
端子 16: 常开 (NO) 触点。
端子 15: 公共 (COM) 触点。

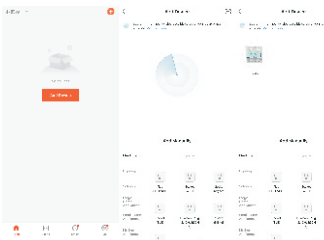
Model	80A	120A	200A	300A	500A	750A	1000A
Φ	10mm	16mm	24mm	24mm	36mm	50mm	50mm
A	32.5mm	36.2mm	53.5mm	53.5mm	68.5mm	86.5mm	86.5mm
B	24mm	30mm	44.5mm	44.5mm	58mm	75mm	75mm
C	41mm	50.5mm	65.5mm	65.5mm	87mm	114.5mm	114.5mm
E	32mm	39.5mm	41.5mm	41.5mm	50mm	58mm	58mm
G	26mm	32.5mm	34mm	34mm	42mm	48.5mm	48.5mm

互感器CT变比3000:1

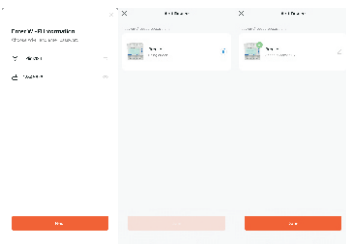
功能	设置参数范围	出厂默认设置	功能描述
过电压限值	120V-300V	275V	 如果过压限值设置为300V, 当电压超过300V时, 设备将自动断开。
欠压限值	80-210V	175V	 如果设置欠压限值为80V, 当电压低于80V时, 设备将自动断开。
欠压和过压电压保护延迟	1-9999秒(S)	3秒	 如果电压超过或低于设定值, 设备将在设定的延迟时间后自动断开。
过压和欠压电压保护恢复时间	1-9999秒(S)	20秒	 如果电压超过或低于设定值时, 设备将自动关闭当电压恢复正常值时, 则在设置的延迟时间后恢复。
过电流限值	1.0-100.0A	80.0A	 如果设置过电流限制为80A, 当电流超过80A时, 设备将自动断开。
大与小电流保护延迟	0000-9999秒(S)	5秒	 如果电流超过或低于设定值, 设备将自动执行在设定的延时时间后关闭。

功能	设置参数范围	出厂默认设置	功能描述	
大与小电流保护恢复时间	0000-9999秒(S)	20秒		如果电流超过或低于设定值, 设备会自动关闭当电流恢复到正常值后, 在设定的延时时间后恢复。
电流限额	1.0-100.0A	10.0A		如果将欠电流限制设置为60A, 当电流低于60A时, 设备将自动关闭。
电流泄漏限额	10-100mA	30mA		如果漏电流限制设置为30mA, 则当漏电流超过30mA时, 设备将自动关闭。当泄漏电流超过30mA时, 设备将自动关闭。
显示模式	显示模式 1 显示模式 2	显示模式 1		默认显示模式1, 参见第3页(显示模式)
能源消耗零清除		默认关闭		关/开 关/开
出厂设置重置		默认关闭		关/开 关/开

3. 将手机连接到 Wi-Fi 路由器。点击主页右上角的 “+” 或点击 “添加设备”，然后从 “能量” 中选择断路器 “开关模块 (Wi-Fi)”，长按 WiFi 按钮 5 秒，WiFi 指示灯开始快速闪烁后，打开应用程序进行配对。



限流和漏电保护
保护时间: 1-30次/关
复位/启动延迟: 0秒-9999秒

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