

Single-Phase Energy Meter Reference Platform

Product Specification

Ver1.0

Note: This document may subject to change by Renesas Technology Singapore without prior notice.

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Product Specification

Items	Specifications
1. Supported Microcomputer	<ul style="list-style-type: none"> ▪ H8/38086F [FP-80A]
2. Compliance to International standards	<ul style="list-style-type: none"> ▪ IEC62052-11 (IEC 61036) ▪ IEC62053-21 (IEC 61036) ▪ IS13779 ▪ CBIP88 ▪ IEC 62056-21(IEC1107) ▪ Others: EMC/EMI
3. AC Voltage	<ul style="list-style-type: none"> ▪ 240V with tolerance of +15% and (-) 40%.
4. Current Rating	<ul style="list-style-type: none"> ▪ I_{start}: 0.2% of basic current ▪ I_{basic}: 10Amps ▪ I_{max} : 60Amps
5. Frequency	<ul style="list-style-type: none"> ▪ 50Hz with a tolerance of $\pm 5\%$
6. Supported Operating Voltage for Microcomputer	<ul style="list-style-type: none"> ▪ 3.3V
7. Form Factor	<ul style="list-style-type: none"> ▪ A single, 4" x 4" in size, double layer PCB
8. Communication Interface	<ul style="list-style-type: none"> ▪ Serial Interface: RS-232 ▪ Infrared Interface (IrDA 1.0 compliance)
9. Memory Devices	<ul style="list-style-type: none"> ▪ For storage of Power loss and Calibration data <ul style="list-style-type: none"> ▪ Size - 8Kbits to 32Kbits using EEPROM. (9 months -12 months Backup, 88 to 200 tampering events record) ▪ Have a retention period of 10 years [min.]
10. LEDs	<ul style="list-style-type: none"> ▪ Power On ▪ Rate of Power consumption [constant pulse rate, i.e. 1250 pulse/kWh.]
11. Real Time Clock	<ul style="list-style-type: none"> ▪ Using an external RTC chip with low power consumption, shall use an I²C interface ▪ Maximum permissible drift shall be ± 7 min./year ▪ Outlines: <ul style="list-style-type: none"> ▪ Display Hours, Min., Sec., Years, Months, Weeks, Day, Date ▪ Low power consumption ▪ Capable of handling leap years [Software]
12. LEDs	<ul style="list-style-type: none"> ▪ Power On ▪ Rate of Power consumption [constant pulse rate, i.e. 1600 pulses/kWh]

Items	Specifications
13. LCD display	<ul style="list-style-type: none"> ▪ LCD glass with a lifespan of min. 10 years ▪ Support 8 digits and 5 Icons ▪ Display the following parameters: <ul style="list-style-type: none"> ○ Active Energy consumption in kWh ○ Apparent Energy consumption in kVAh ○ Cumulative kWh energy ○ Cumulative KVA energy ○ Power Factor ○ Present Voltage and Current reading ○ Tariff types ○ Maximum demand Kw or KVA ▪ Display shall have ON time of at least 10 seconds for each measured value for auto display cycling ▪ Able to show display upon wake-up key pressed during power failure
14. Maximum Demand Reset	<ul style="list-style-type: none"> ▪ To provide manual reset ▪ To provide auto monthly reset
14. Anti-Tampering or Fraud Protection	<ul style="list-style-type: none"> ▪ Shall not be affected by the action of any remote control device. ▪ Interchanging of incoming and outgoing wires at meter terminals. ▪ Swapping of phase and neutral terminals. ▪ Incoming Neutral is disconnected and outgoing Neutral is connected to earth. Load is also connected to earth. ▪ Neutral at incoming and outgoing points disconnected and the load is connected between phase & earth. ▪ Neutral connected on incoming side but connected to earth via resistor on outgoing side. Load is connected solidly to ground. ▪ Phase & neutral interchanged at incoming and load is connected to earth. ▪ Shorting is provided on current coil terminals if CT is used. ▪ If the load and line are reversed, the meter shall produce visual indication. ▪ Tampering recording [increment Tamper Counter during tampering activity occur]
15. Others	<ul style="list-style-type: none"> ▪ A lithium maintenance free battery of long life (minimum ten years) shall be provided for operation of real time clock. ▪ Battery Operation during the power fail condition (upon secondary supply switch press) ▪ Support E7/E8 interface connector for flash writing and on-chip debugging

16. Environmental

- Operating Temperature: -20°C to +50°C
- Storage Temperature: -40°C to +85°C
- Relative Humidity: 10 to 95%

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