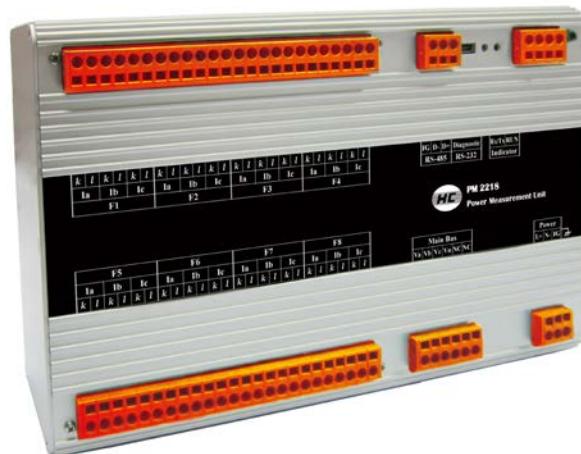


Power Measurement Unit

PM 2218

Application and features

- ◎ Power supervision / SCADA system
- ◎ Feeder automation / customized
- ◎ 0.05% high accuracy
- ◎ Cost saving for 4 feeder transducers
- ◎ Power quality analysis IEC 61000-4-30
- ◎ Speedy real data conversion rate up to 1 cycle



Specification

1. Unit configuration

1-1 Processing and interface

CPU	32 bits
Comports	Main : RS-485 / option : LAN – RJ45
	Diagnostic : RS-232
Protocol	Modbus RTU

1-2 Inputs

Voltages / main bus	3U – 3 phase 4 wires	Software setup	Detection (* vector composed)
	3U – 3 phase 3 wires		Va, Vb, Vc, *V0 ; *Vab, *Vbc, *Vca
Currents / 8 feeders	3I / Ia, Ib, Ic		*Va, *Vb, *Vc ; Vab, Vbc, *Vca
	2I / Ia, Ic	Ia, Ib, Ic, *Io	Ia, *Ib, Ic
Input setup and wiring	3P4W 3CT / 3U12I		
	3P3W 3CT / 3U12I		
	3P3W 2CT / 3U8I		
Conversion	3 elements	P, Q (P1, P2, P3, Q1, Q2, Q3)	
	ADC 16 bits with 8 synchronized channels		
	Rate of real data conversion, 1-32 cycle adjustable		

1-3 Power quality analysis (option)

IEC 61000-4-30
Harmonic analysis
Voltage dips
Voltage unbalance (negative and zero sequence)
Voltage flicker ΔV_{10}
Voltage low frequency spectrum (0.5-5Hz)

1-4 Waveform recording (option)

Ring buffer, length of 16 cycles total 1728 samples / three phase phasor
AC waveform 36 samples / cycle
Trend of speedy real rms datas 36 samples / cycle
5 three phase phasors maximum



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2. Input ranges

Voltages	Frequency : 45 – 65 Hz 10 – 300V phase to neutral Maximum over \leq 1000Vrms, 2 seconds Input resistance \geq 1M Ω
Currents	CT 5A (0 ~ 6A) or CT 1A (0 ~ 1.2A) Maximum over 3 x CT continuous : \leq 25 x CT, 2 seconds : \leq 50 x CT, 1 seconds Burden \leq 0.1VA for 1 x CT input

3. Measured parameters

3-1 Normal parameters

System frequency (Hz)	25 \pm 5 °C
Voltage (RMS)	Stability \leq 50PPM (-10~50°C) , \leq 70PPM (-30~70°C) <input type="radio"/> 0.05% of nominal frequency <input type="radio"/> 0.05% of nominal voltage
Current (RMS)	Voltages phase to neutral, phase and Σ Voltage phase to phase, line and Σ <input type="radio"/> 0.05% of nominal CT, Ia, Ib, Ic and Σ
Active power (W)	<input type="radio"/> 0.2% of (nominal voltage x CT), phase and Σ
Reactive power (Var)	<input type="radio"/> 0.2% of (nominal voltage x CT), phase and Σ
Active energy (WH)	<input type="radio"/> 0.2% of (Equate to Active Power), Σ each Feeder
Reactive energy (VarH)	<input type="radio"/> 0.2% of (Equate to Reactive Power) , Σ each Feeder
Power factor (PF)	<input type="radio"/> 0.2% (each phase and Feeder)
Phase angle	<input type="radio"/> 0.5° for A-V (each phase)
Phase rotation	<input type="radio"/> Auto-detection

3-2 Power quality parameters

Sequence (voltage)	<input type="radio"/> 0.2% of nominal voltage Positive sequence Negative sequence Zero sequence
Voltage unbalance	<input type="radio"/> 0.2% of positive sequence voltage Zero sequence unbalance (%) Negative sequence unbalance (%)
Distortion in harmonics	Analysis in Va, Vb, Vc, Ia, Ib, Ic Analysis with fundamental and 2 th to 17 th Distortion, HD-F and THD-F
Voltage flicker	$\triangle V_{10}$ (%)
Spectrum of low frequency	0.5 – 1 – 2 – 3 – 4 – 5 Hz
Voltage dips	Pick up with time inverted curve



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4. Electrical characteristics

- | | |
|---------------------|--|
| Dielectric strength | ◎ IEC 255-5, 2KV ACRMS 1 minute |
| Impulse and surge | ◎ IEC 61000-4-2, class III
IEC 61000-4-3, class III
IEC 61000-4-4, class III
IEC 61000-4-5, class III
IEC 61000-4-12, class III |
| Safety | ◎ IEC 60068-2 standard for burn-in test : operating
Temperature cycling test -40 to 85°C (start at -40 to 85°C, 2 cycle 8 hours), RH 10 to 95% non-condensed
High temperature test 85°C RH 55% 16 hours
Temperature / humidity cycling test 40°C RH 95% 16 hours
◎ IEC 60068-2-6 :
Vibration endurance 2G 9-350Hz 1 hour
◎ IEC 60068-2-27 :
Mechanical shock test 15G 11ms 24 hours |
| Power supply | LO : DC 20~60V
HI : AC 80~260V @ 40~70 Hz, DC 80~330V
Dissipation maximum 10 VA for AC and 5W for DC |



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Power Measurement Unit

PM 2218

5. Model & Ordering

Model : PM 2218

Ordering :

PM2218_3U24I - A - 1 - 1 - LO - 1 - B

Version

Voltage Input

1 : 10-300V

Current Input

1 : 0-1A

2 : 0-5A

Power

HI : AC 80-260V, DC 80-330V

LO : DC 20-60V

Option

N : None

A : Power Quality Analysis

B : Waveform Recode

Communication Port

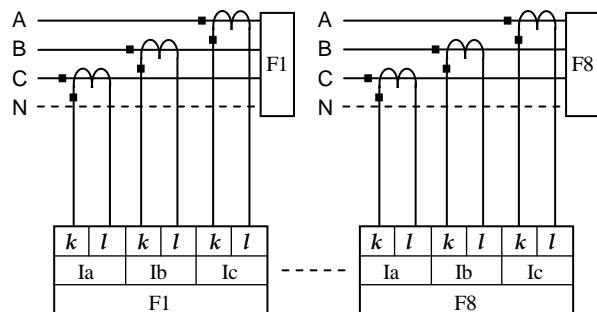
1 : RS-485 + RS-232

2 : RS-485 + RS-232 + RJ-45

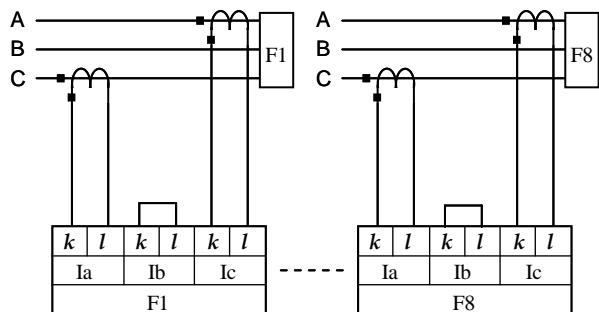
Y : Special ordering

6. Wiring

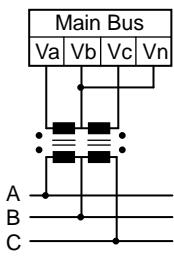
3 Current (Ia, Ib, Ic) for 3P4W, 3P3W



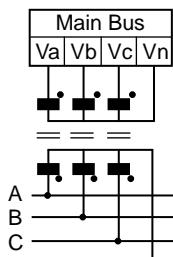
2 Current (Ia, Ic) for 3P3W



3 phase 3 wires 3U input



3 phase 4 wires 3U input



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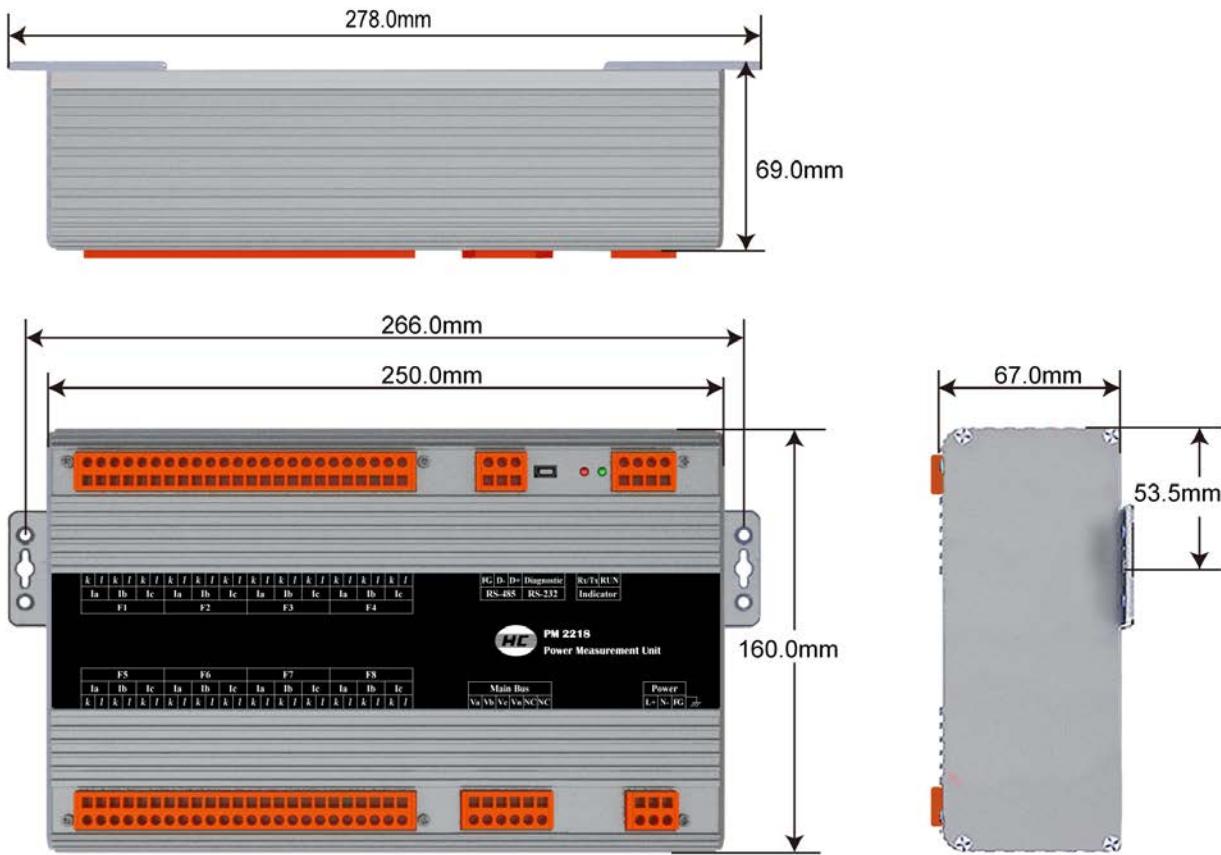
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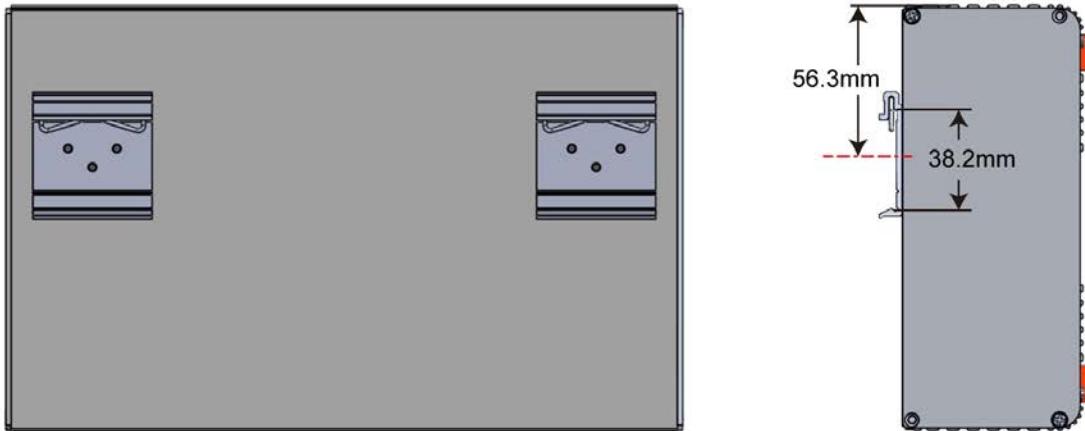
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7. Dimension/Mount



Din Rail Mount (with 35 mm)



8. Wight = 1300g ± 50g



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