

## Addendum

**This addendum is applicable to the following documents:**

PM172 Powermeter Series Installation and Operation Manual – BG0399 Rev.A9

PM174 Powermeter Series and Power Quality Analyzer Installation and Operation Manual - BG0411 Rev.A7

PM175 Powermeter Series and Power Quality Analyzer Installation and Operation Manual – BG0415 Rev.A6




**Specification change:**

PM172/174/175 series with external current transformers (CTs) include:

- PM17x-HACS is add-on power meter with High Accuracy external Current Sensor (HACS) (up to 1200A).
- PM17x\_RS5 is add-on power meter with external CT of 5A (HX0118) nominal current (max. value 10A).
- PM174-DFR is Digital Fault Recorder with external CT of 5A (HX0118) nominal current and max. fault current value 100A.

**Table 1: PM17x-RS5, PM17x-HACS and PM174-DFR:**

ORDER STRING (Catalog no.)	CS1 (EL0072)	CS1L (EL0115)	CS1S (HX0118/HX0129)
			
<b>RATING</b>	100A	100A	100A
<b>WINDOW</b>	Ø 12mm / 0.47"	Ø 23mm / 0.9"	Ø 16mm / 0.63"
<b>CORE</b>	Solid	Solid	Split
<b>ACCURACY</b>	0.1%	0.1%	0.5%
<b>BURDEN</b>	0.2 VA	0.2 VA	0.2 VA
<b>APPROX. WEIGHT</b>	156.4g / 0.34 lbs	206.3g / 0.45 lbs	103.4g / 0.23 lbs

ORDER STRING (Catalog no.)	CS2S (HX0143)	CS4 (EL0117)	CS4S (HX0139)	CS8 (EL0125)
				
<b>RATING</b>	200A	400A	400A	800A
<b>WINDOW</b>	43.2x33mm / 1.7x1.3"	∅ 26mm / 1.02"	43.2x33mm / 1.7x1.3"	100x32mm / 4x1.28"
<b>ACCURACY</b>	0.5%	0.1%	0.5%	0.1%
<b>CORE</b>	Split	Solid	Split	Solid
<b>BURDEN</b>	0.2 VA	0.2 VA	0.2 VA	0.2 VA
<b>APPROX. WEIGHT</b>	460g / 1lbs	214g / 0.47 lbs	460g / 1lbs	525g / 1.16lbs

ORDER STRING (Catalog no.)	CS8S (HX0138)	CS12S (HX0137)
		
<b>RATING</b>	800A	1200A
<b>WINDOW</b>	50x80mm / 1.9x3.1"	121x80mm / 4.7x3.1"
<b>ACCURACY</b>	0.5%	0.5%
<b>CORE</b>	Split	Split
<b>BURDEN</b>	0.2 VA	0.2 VA
<b>APPROX. WEIGHT</b>	1.0kg / 2.2 lbs	1.5kg / 3.3 lbs

### Technical Specifications

Frequency	50/60Hz
Lead Insulation	600V AC
Core Insulation	4000V AC
Lead Length	2.5m / 8.2ft (UL1015)
Operation Temperature	-40°C to +70°C
Storage Temperature	-40°C to +85°C
Standards Compliance	IEC 60044-1
Material	All materials are UL approved



Figure 1: PM172E-HACS with 3 external split core current transformers

The external current transformers are wired directly to device current inputs.

In order to improve accuracy while using HACS split core models, it is necessary to setup the device by updating the transformer correction table with the relevant values that are indicated in the HACS package label as follows:

RATIO = 0.999  
 PHASE = 25

Instrument Transformer Correction			
Channel	Ratio Correction Factor	Phase Angle Error, (+/-) minutes	Select a transformer type to preset a CT
V1	1.000	0	----
V2	1.000	0	----
V3	1.000	0	----
V4	----	----	----
I1	0.999	25	----
I2	0.999	25	----
I3	0.999	25	----
I4	----	----	----
I5	----	----	----
I6	----	----	----
I7	----	----	----
I8	----	----	----
I9	----	----	----
I10	----	----	----
I11	----	----	----
I12	----	----	----

Open Save as... Default Print Send Receive

OK Cancel Apply Help

**Figure 2: Transformer Correction Table**

Important Note: Only CTs supplied by SATEC LTD may be used, otherwise SATEC is not responsible for the measurement accuracy and any other mal-functionality.

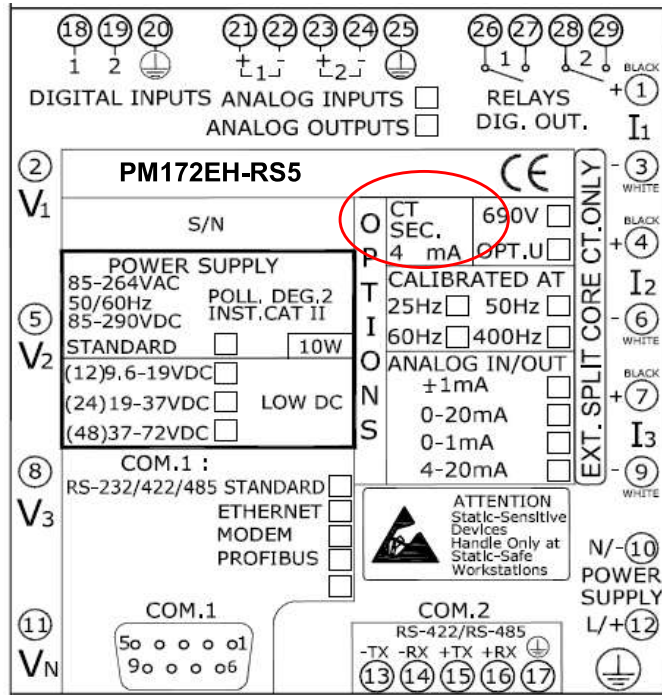


Figure 3: Rear panel of PM17x-RS5.

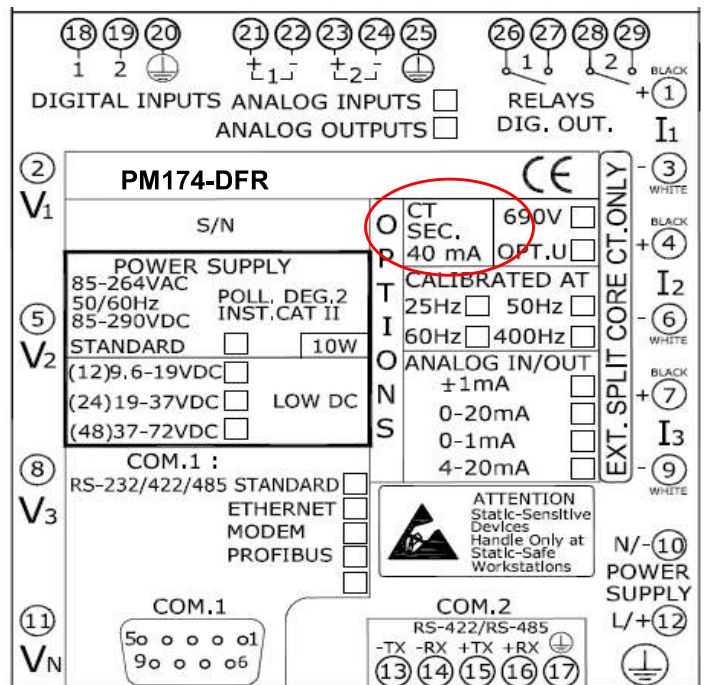
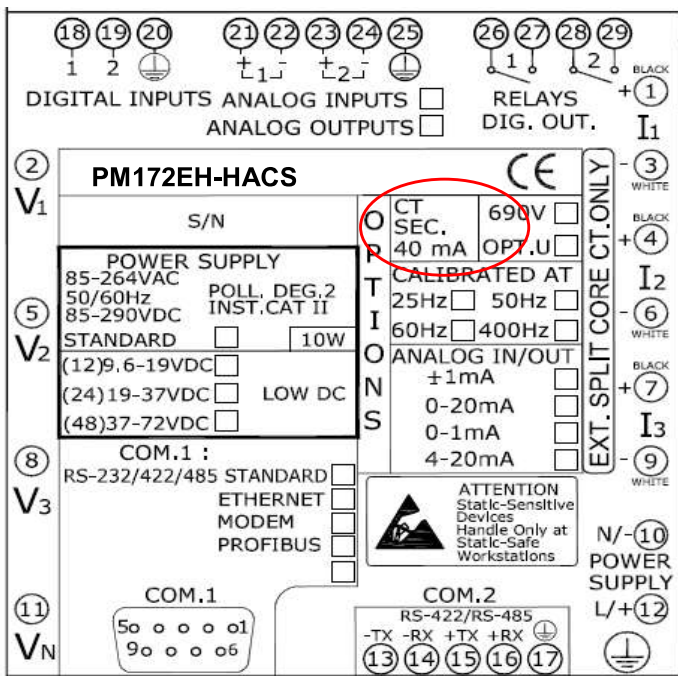


Figure 4: Rear panel of PM17x- HACS & PM174- DFR.

**Important Device Set-up Note:**

The **PM17x-RS5**, **PM17x-HACS** and **PM174-DFR** require setup of "**CT Primary current**". (see corresponding PAS General Setup\Basic Setup screen in Figure 5). This value must be set to  $I_n$ :

**Where:  $I_n = 1/2 I_{max}$  (RATING).**

If it is not direct connection this value should be multiplied to the Primary CT transformer ratio.

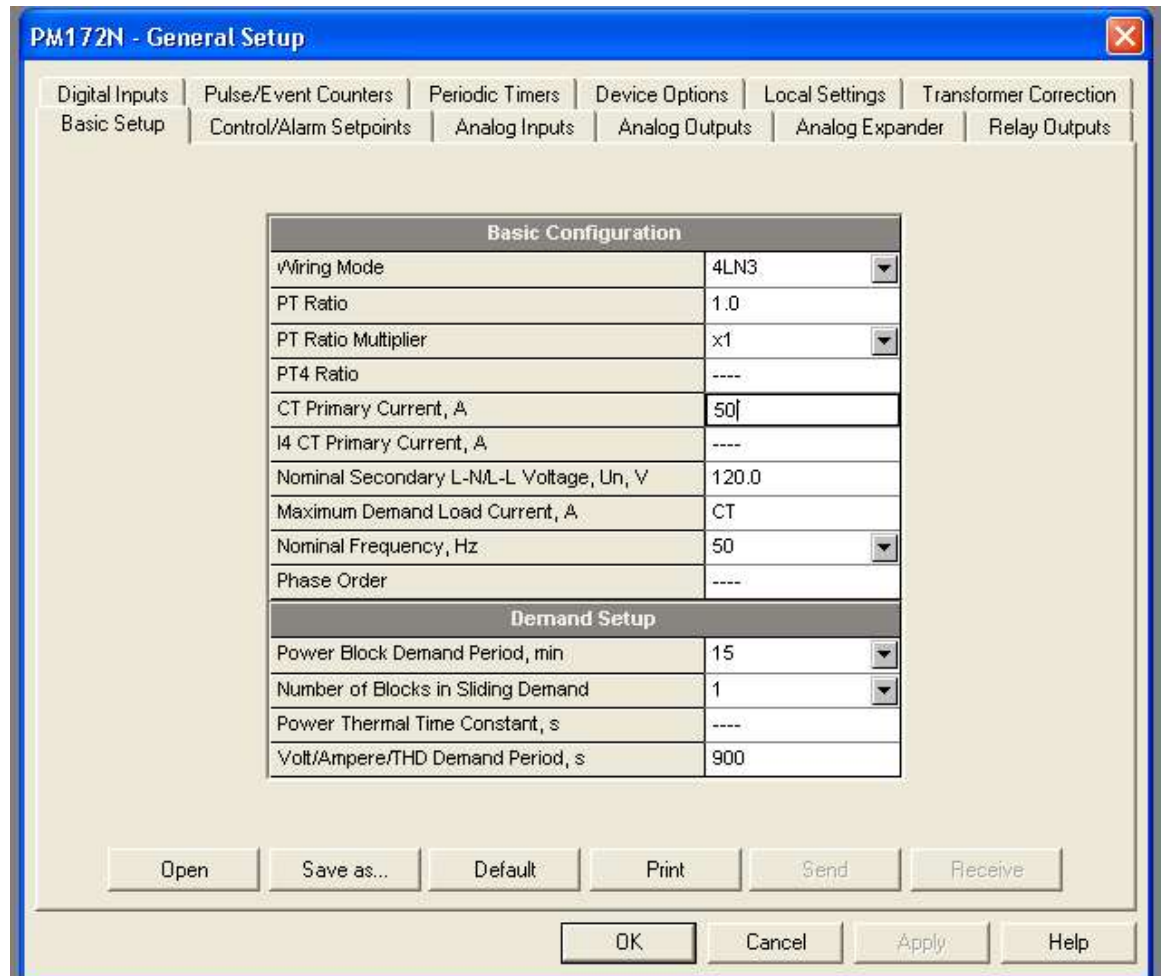


Figure 5: PAS Software "General Setup/Basic Setup" Menu.

**Application Note:**

The use of external CTs is a unique capability developed by SATEC. The **PM17x-RS5**, **PM17x-HACS** and **PM174-DFR** device family enables:

- Retrofit power meter, PQ analyzer, and fault recorder installation in the switchboard with a CT set used by protective relays or other devices.
- Retrofit upgrade of power meter, PQ analyzer, or/and fault recorder sharing the same CT set with protective relays or other devices.
- Any other retrofit upgrade requiring fast and easy installation without power outage
- Add-on precise power metering and power quality analysis. No compromise in the PM172x series accuracy
- Support of fault recording using **PM174-DFR** (maximal current 100A) keeping all other important functions of PM174 series