

# DEVICE SELECTION GUIDE



**PM13x**



**EM13x**



**BFM-II**



**PRO SERIES**



**PM172**



**PM174/5**



**PM180**

	PM13x	EM13x	BFM-II	PRO SERIES	PM172	PM174/5	PM180			
<b>PRIMARY USAGE</b>	Power Meter	Energy Meter	Multi-Circuit Energy Meter	Power Meter / PQ Analyzer	Power Meter	Power Quality Analyzer	Power Quality Analyzer			
<b>PRIMARY MOUNTING</b>	Panel*	DIN	DIN	Panel / DIN	Panel	Panel	Panel / DIN / 19" Rack			
<b>ACCURACY CLASS</b>	0.5S	0.5S	0.5S	0.2S	0.2S	0.2S	0.2S			
<b>ADDITIONAL COM PROTOCOL</b>	Profibus	Profibus	BACnet	IEC 61850	Profibus	Profibus	IEC 61850			
<b>MAX. CURRENT INPUTS</b>	3	3	54 (18 x 3Ph)	3 + N	3	3	4 (+ 4 fault currents)			
<b>BUILT-IN</b>										
<b>I/O</b>		2 DI + 1 DO		2DI+1DO+1AI *	2 DI + 2 DO	2 DI + 2 DO				
<b>COM</b>	RS485	RS485	RS485 + ETH	RS485 + 2 x ETH	RS485	RS485	RS485 + ETH			
<b>MAX EXTRA MODULES</b>	1	1	4	3 + AUX PS	1 I/O + 1 COM	1 I/O + 1 COM	3			
<b>MODULES OF CHOICE</b>	<b>COM</b>	ETH	ETH	4G		ETH	ETH	2nd ETH (TXFX)		
		PROFIBUS	PROFIBUS		PROFIBUS	PROFIBUS	PROFIBUS			
	<b>I/O</b>	<b>DIGITAL</b>	4DI	4DI	18 DI	8 DI	2 DI	2 DI	16 DI	
			4 DI + 2 DO	4 DI + 2 DO		4 DO				8 DO
			12 DI + 4 DO + ETH com	12 DI + 4 DO + ETH com	9 DO	4 DI + 2 DO	2 DO	2 DO		8 DI + 4 DO
			4 AO	4 AO	4 AI	4AO	2 AI	2 AI		4 AI + 4 AO
			2 AI + 3G COM			2AO	2AO			
	<b>OTHER</b>	<b>ANALOG</b>		Auxillary power supply		Auxillary power supply			PMU	
				Extra voltage input module					Fault Recorder	
									Transient recorder	
<b>SPECIAL FUNCTIONS</b>	<b>POWER QUALITY</b>	Harmonics (40)	Harmonics (40)	Harmonics (25)	Class A, Ed. 3.1	Harmonics (42)	EN50160 Reports	Class A, Ed. 3		
	<b>OTHER</b>			<ul style="list-style-type: none"> <li>Fault Recorder</li> <li>Dual-voltage input</li> </ul>			Fault Recorder (PM174)	Disturbance Direction Detection		
	<b>DC METERING</b>	@ Shunt	@ Hall Sensors		@ Hall Sensors					

**All SATEC Meters Feature:**

- Open protocol
  - Modbus
  - 101/104 (Not PM17x)
  - DNP3
- DO (Relay) options:
  - EM relays or SSR
- Current input Options
  - 1A (Excl. BFM)
  - 5A (Excl. BFM)
  - 63A (EM13x only)
  - HACS CTs: 5-3,000A
  - LPIT: ABB & GWP MV Sensors (PRO & PM17x)

**HACS ARE...**

- Mandatory for BFM series
- Incompatible with EM720/920

Learn about HACS concept and available ratings on our website

\* Optional: DIN-rail mounting





**EM133**



**PRO**



**BFM136**



**BFM II**



**EM720**



**EM920**

	<b>EM133</b>	<b>PRO</b>	<b>BFM136</b>	<b>BFM II</b>	<b>EM720</b>	<b>EM920</b>
<b>MOUNTING</b>	DIN	DIN / Panel	DIN	DIN	Wall	Socket
<b>ACCURACY CLASS</b>	0.5S	0.2S	0.5S	0.5S	0.2S	0.2 (ANSI)
<b>CURRENT INPUTS *</b>	1A / 5A / 63A	1A / 5A	HACS only	HACS only	1A / 5A	1A / 5A
<b>MAX. CURRENT CHANNELS</b>	3	4	36 (12 x 3Ph)	54 (18 x 3Ph)	3	3
<b>COMMUNICATION</b>	**	**	**	**	4G ETH / Serial	ETH / Serial
<b>CERTIFICATION / STANDARD</b>	MID / UL	UL	UL	UL	KEMA / IEC	UL / ANSI
<b>POWER QUALITY</b>	Harmonics (40)	Class A, Ed. 3.1		Harmonics (25)	Class A	Class A
<b>MAX NUMBER OF DIGITAL I/O</b>	14 DI + 5 RO	26 DI / 13 RO		72 DI / 18 RO	8 DI + 4 RO	10 DI / 7 RO
<b>IR/OPTICAL PORT</b>	✓			✓	✓	✓
<b>SELF ENERGIZED FROM MEASURED VOLTAGE</b>	✓		✓	✓	✓	✓
<b>SPECIAL FEATURES</b>	<ul style="list-style-type: none"> <li>* MID Certified</li> <li>* Supports MV-90 xi</li> </ul>	<ul style="list-style-type: none"> <li>■ IEC 61850</li> <li>■ DC metering per IEC 62053-41</li> </ul>	<ul style="list-style-type: none"> <li>■ BACnet</li> <li>■ Supports MV-90 xi</li> </ul>	<ul style="list-style-type: none"> <li>■ Dual Voltage Input metering 2 independent power sources</li> <li>■ BACnet</li> </ul>	<ul style="list-style-type: none"> <li>■ 6 hour backup battery</li> <li>■ "Virtual" metering point</li> <li>■ IEC 61850</li> </ul>	<ul style="list-style-type: none"> <li>■ "Virtual" metering point</li> <li>■ IEC 61850</li> <li>■ Supports MV-90 xi</li> </ul>

\* See remarks on current inputs on previous page

\*\* See Com options on previous page

