SMB350

Features

- Simultaneously monitor up to eight 3-phase or 24 single phase load circuits.
- Can measure the voltage, current, real power, power factor, real energy, reactive energy, apparent power, reactive power, and frequency.
- Data refresh rate: 1 second
- Greatly reduces installation space required with its small and compact design.
- A wide selection of solid core or split core dedicated CTs to choose from.
- Equipped with a 16 character by 2 line LCD display for displaying the measured parameters and for changing the settings.
- Industry standard Modbus protocol over RS485 for communications
- Highly accurate: Both Voltage and Current @ 0.5%, kWh @ 1%

ACS35 Meter Reading Display Panel (option)

- For remotely reading and displaying the SMB350 parameters
- Attractive color LCD display and touch based interface
- Tab based organization for easy navigation
- CE, UL and FCC certified

Description

The SMB350 is a multi-circuit energy metering module that can simultaneously monitor up to eight separate 3-phase circuit loads, or as 24 single phase circuit loads.

The SMB350 can measure the common voltage, and the current, power, and energy for each branch, as well as other parameters. It can display them on its LCD display or send them to a remote host through its RS485 communications interface.

The SMB350 cannot directly be directly connected to the circuit loads, but must first use an external dedicated CT which is designed for this purpose.

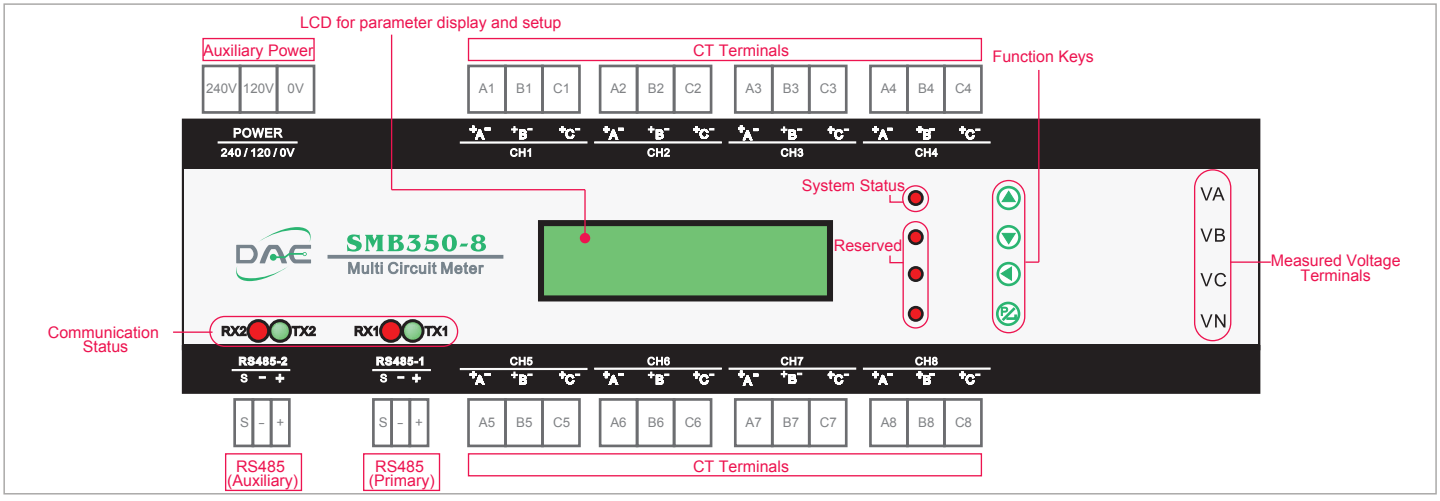
Small in size, but big in benefits.

The SMB350 has a small footprint and can be installed where multiple traditional meters would not fit. It is suitable even for retrofitting of existing power panels, which greatly reduces installation costs for both material and labor.

Applications

- Branch circuit monitoring
- Load surveying
- Load monitoring from a host PC using remote communication
- Building automation monitoring system
- Lighting failure monitoring

Front Panel & Terminals



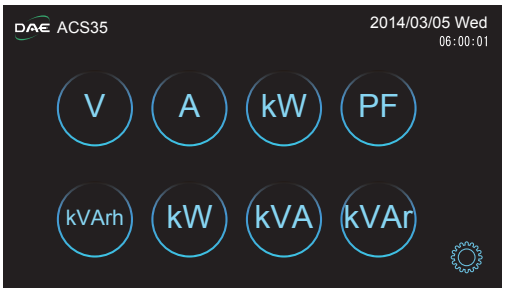
ACS35 Description

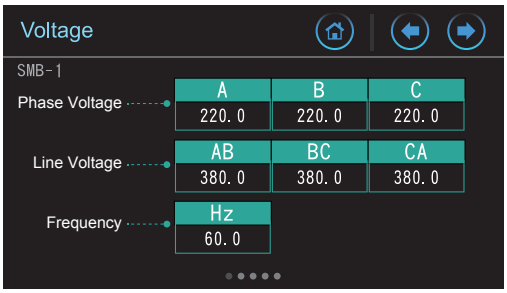
- The ACS35 extends the display capabilities of the SMB350 and can be installed on the control panel.
- The information is organized into tabs for easy navigation, and the parameters are updated in real time.
- The ACS35 allows for remotely displaying of all the relevant parameters of the SMB350. It can be mounted on the distribution panel for convenient viewing.
- Attractive color LCD display and touch based interface.
- Easy to use tab based interface.
- A single ACS35 can support 5 SMB350 units.

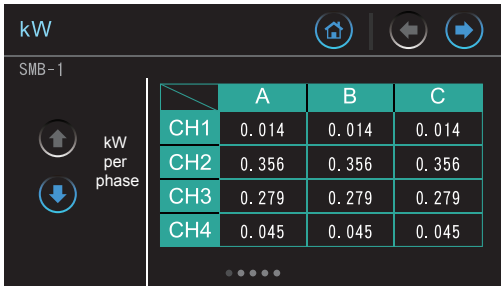
ACS35 Displayed Parameters

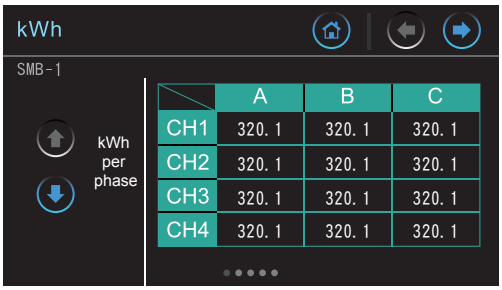
Parameter \ Phase	A	B	C	Sum or Average
Phase Voltage	V	V	V	
Line Voltage	V	V	V	
Frequency				Avg
Current	V	V	V	Avg
Real Power (kW)	V	V	V	Sum
Real Energy (kWh)	V	V	V	Sum
Reactive Power (kVAr)				Sum
Reactive Energy (kVArh)	V	V	V	Sum
Apparent Power (kVA)				Sum
Power Factor (PF)	V	V	V	Sum

Screenshots

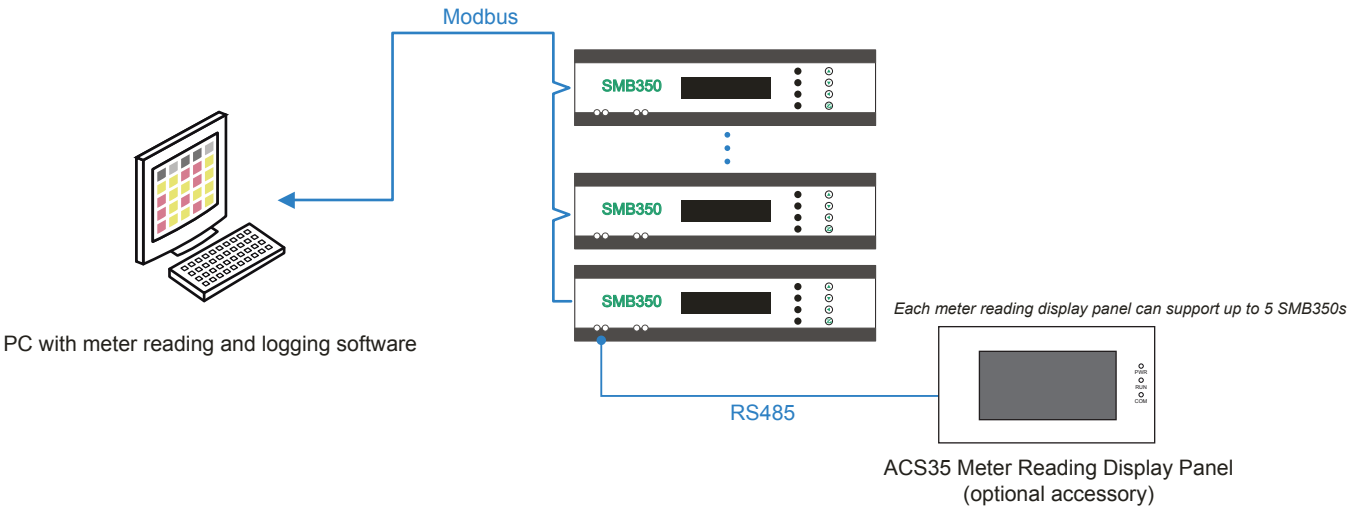








System Architecture



PC with meter reading and logging software

ACS35 Meter Reading Display Panel
(optional accessory)

Specifications

SMB350

Common Voltage	A/B/C/N
Channels (Input Current)	• SMB350-8: 8 3-phase (or 24 1-phase) channels • SMB350-4: 4 3-phase (or 12 1-phase) channels
Current Measurement	Uses external dedicated CT (5A/50A/100A/200A), sold separately, see page 4 for selection
Voltage Measurement	Max Voltage: 350 VAC (L-N), 600 VAC (L-L), 50 or 60 Hz
Display	2 lines by 16 characters LCD for displaying measurement parameters
Auxiliary Power	AC 120 or 240V, ±10%
Settable Parameters	Address, baud rate, CT ratio for each channel (5A CT only) from 1~2000 (equivalent range 1~10,000A)
Operating Temperature	0 to 50˚C
Operating Humidity	0 to 95% RH (non-condensing)
Enclosure	PVC
Mounting	DIN rail
Data Refresh Rate	78k samples per second (1300 times @ 60 Hz), accuracy within 1%, response time 160 msec, refresh rate 1.28 sec
Accuracy	• Voltage and Current: 0.5% • kWh: 1% (with 5A dedicated solid core CT); if used with split core CTs, then the accuracy is the same as the split core CT used
Host Communication	•2 wire RS485, data format 8/n/1, address 1 to 254 •Modbus/RTU protocol •Baud rates supported: 1200, 2400, 4800, 9600 •Response time: 200 msec
Memory	64k ROM
Reliability Standards	• IEC 61036 • EN 61010-1: Safety requirements - Part 1: General requirements • EN 61000-3-2: Harmonic Current Emissions • EN 61000-3-3: Limits of Voltage Fluctuations and Flicker • EN 61000-4-2: Electrostatic Discharge • EN 61000-4-3: Radiated Susceptibility • EN 61000-4-4: Electrical Fast Transient • EN 61000-4-5: Surge • EN 61000-4-6: Conducted Susceptibility • EN 61000-4-8: Magnetic Field • EN 61000-4-11: Voltage Dips and Interruption • EN 61000-6-2: Conducted Emission • EN 61000-6-4: Radiated Emission CE Certified CE , FCC Certifie FC , UL Certified c UL us (UL version available as a separate model)

* Range: 5 to 100%, PF: 0.8 to 1.0

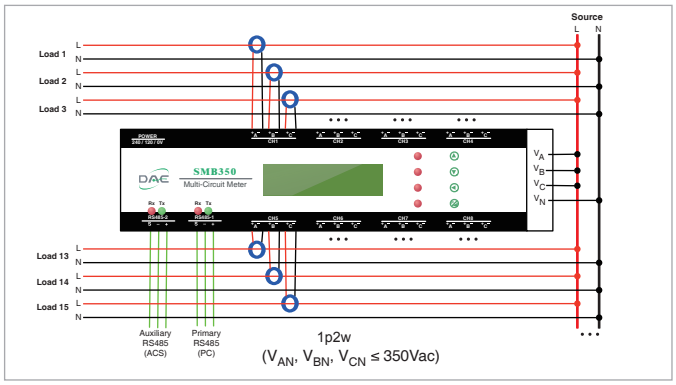
ACS35 (option)

LCD screen size	4.3 inches (width:height = 16:9)
Resolution	480 x 272 pixels
Brightness	400 cd/m^2
Contrast	400:1
Colors	262,144
Communication Ports	COM1 (RS232/RS422/RS485), USB device, USB host
Memory	128MB Flash + 64MB DDR
CPU	32-bit 400 MHz RISC
Power Supply	DC 24V (±15%), 6W
Protection	IP65 (front panel)
Operating Temperature	-10 to 65˚C
Operating Humidity	10 to 90% RH (non-condensing)
Certifications	CE CE , FCC FC UL c UL us

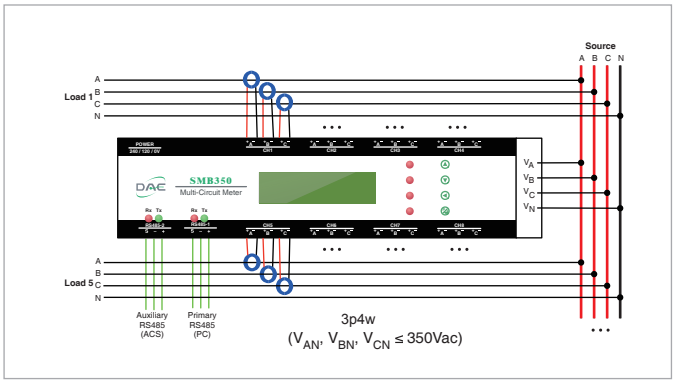
Wiring Diagram and Dimensions

Wiring Diagram

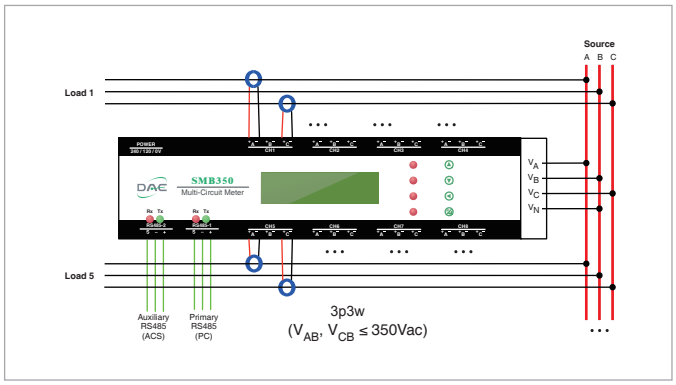
Note: The number of CTs that can be used is not limited to what is shown in these diagrams



1p2w
(V_{AN}, V_{BN}, V_{CN} ≤ 350Vac)

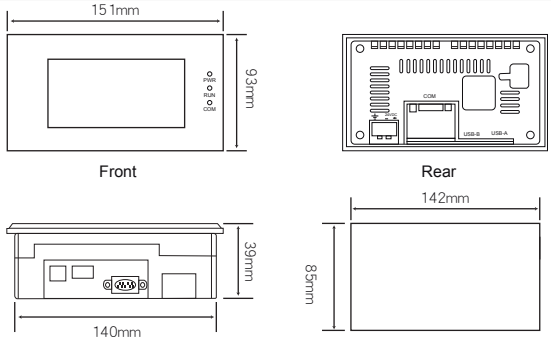


3p4w
(V_{AN}, V_{BN}, V_{CN} ≤ 350Vac)



3p3w
(V_{AB}, V_{CB} ≤ 350Vac)

ACS35 Dimensions



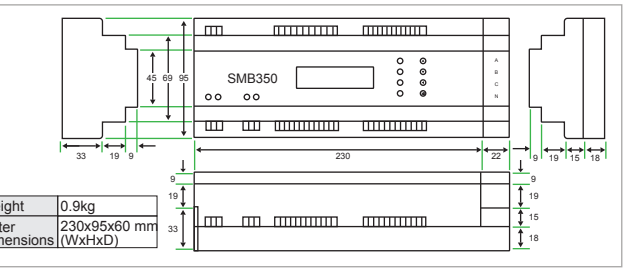
Weight: 280g

Ordering

Order Code	Description
SMB350-4	Four 3-phase (or 12 1-phase) channels
SMB350-8	Eight 3-phase (or 24 1-phase) channels
ACS35	Meter reading display panel
SMB350-4（UL）	Four 3-phase (or 12 1-phase channels), UL certified
SMB350-8（UL）	Eight 3-phase (or 24 1-phase channels), UL certified

Note: Dedicated CT is a required option

SMB350 Dimensions

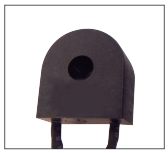


Weight	0.9kg
Outer Dimensions	230x95x60 mm (WxHxD)

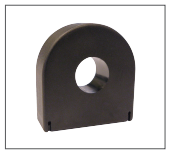
CT (Current Transformer) Specifications and Dimensions

CT Types (Required options)

Note: The SMB350 does not use regular CTs and does not have CTs built in and thus require one of the dedicated CT options below.



Dedicated Solid Core
CT-5D3

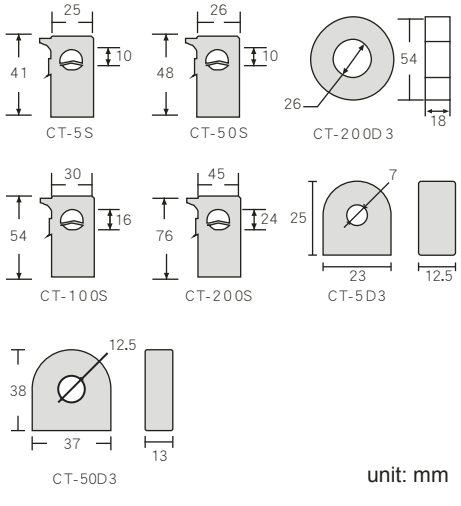


Dedicated Solid Core
CT-50D3

Dedicated Solid Core
CT-200D3

Dedicated Split Core
CT-5S/CT-50S/
CT-100S/CT-200S

Order Code	Type	Primary	Order Code	Type	Primary
CT-5D3	Solid Core	5A	CT-5S	Split Core	5A
CT-50D3	Solid Core	50A	CT-50S	Split Core	50A
CT-200D3	Solid Core	200A	CT-100S	Split Core	100A
			CT-200S	Split Core	200A



unit: mm

**This datasheet is for reference only, specifications subject to change without notice*

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