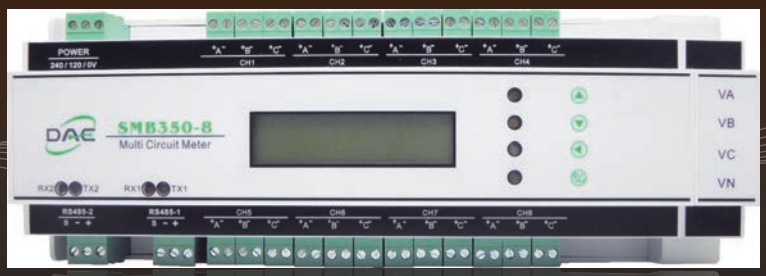
SMB350

Multi-Circuit, Multi-Function Energy Monitor



Smart for Greenlife !

Overview

The SMB350 is a multi-circuit energy metering module that can simultaneously monitor up to 8 separate 3-phase circuit loads, or 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.

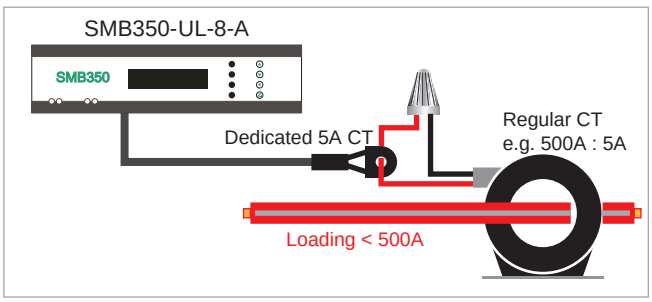
The SMB350 cannot be directly connected to the circuit loads, but must first use an external dedicated CT which is designed for this purpose.
Small in size, but big in benefits.

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 electrical 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

Use with existing Regular CT



Features

- Small footprint, can be installed in retrofitting of existing power panels
- Power Supply seperated from measured circuits in case of power interruption
- Measures the voltage, current, real power, power factor, real energy, reactive energy, apparent power, reactive power, and frequency.
- Meter can be used in the following configurations:
  - 1-Phase, 2-Wire
  - 3-Phase, 3-Wire
  - 3-Phase, 4-Wire
- Modbus/RTU over RS485 communication
- Meter reading touch panel (ACS35) interface

Specifications of SMB350

Common Voltage	A/B/C/N
Channels (Input Current)	• SMB350-8 : 8 three-phase (or 24 single-phase) channels • SMB350-4 : 4 three-phase (or 12 single-phase) channels
Current Measurement	Uses external dedicated CT (5A ~ 600A), ordered separately, please see “Current sensor information”
Voltage Measurement	Max Voltage : 80~350 VAC (L-N), 600 VAC (L-L) Frequency : 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 from 1~250 (equivalent range 1~1250A)
Operating Temperature	-30 to 50˚C (-22 to 122˚F)
Operating Humidity	0 to 95% RH (non-condensing)
Power Consumption	6W
Accuracy	Voltage and Current: 0.5% kWh: 1% (with 5A dedicated solid core CT)[1]
Mounting	DIN rail, TS35/7.5 or 15
Host Communication	RS485-1 port Address: 1-254 Modbus/RTU protocol (8/n/1) Baud rate: 1200, 2400, 4800, 9600 bps
Touch Panel Interface	RS485-2 port, Address: 1-254, Baud rate: 1200, 2400, 4800, 9600 bps
Certifications	c UL us LISTED CE FC
Dimensions (W x H x D)	9.92” x 3.74” x 2.4” (252 x 95 x 61 mm)

[1] Range: 5 to 100%, PF: 0.8 to 1.0

Specifications of ACS35 Meter Reading Touch Panel

Model No.	ACS35-4(H)	ACS35-4E(H)	ACS35-7E(H)
Power Consumption	5.67W	5.8W	12W
Ethernet Interface	n/a	10M / 100M, for remote monitoring	10M / 100M, for remote monitoring
Display Type	4.3” TFT LCD (65535 colors)		7” TFT LCD (65535 colors)
Resolution	480 x 272 pixels		800 x 480 pixels
Auxiliary Power	DC 24V (-15~+15%)		
Displays	Voltage, Current, kW, kWh, PF, kVAr, KVArh, kVA of SMB350 (up to 5 SMB350s)		
Operating Temperature	0 to 50˚C (32 to 122˚F)		
Operating Humidity	10 to 90% RH (non-condensing)		
Mounting	Panel Mount		

System Architecture

Note : Each ACS35 can support up to 5 SMB350s

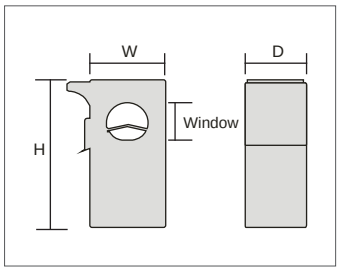
Current sensor information (Dedicated CT)

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

Split-Core CT

CT-S Series

CT-SB Series



Model #	Amp	Window (Ø)	Dimensions (W x H x D)	CT Ratio
CT-5S	5A	0.39" (10mm)	0.98" x 1.61" x 1.30" (25 x 41 x 33mm)	Depends[2]
CT-50S	50A	0.39" (10mm)	1.02" x 1.89" x 0.91" (26 x 48 x 23mm)	1
CT-100S	100A	0.63" (16mm)	1.22" x 2.13" x 1.18" (31 x 54 x 30mm)	1
CT-200S	200A	0.94" (24mm)	1.42" x 2.99" x 1.77" (36 x 76 x 45mm)	1
CT-400S	400A	1.38" (35mm)	2.36" x 3.54" x 1.57" (60 x 90 x 40mm)	2
CT-600S	600A	1.38" (35mm)	2.36" x 3.54" x 1.57" (60 x 90 x 40mm)	3
CT-50SB	50A	0.39" (10mm)	0.91" x 1.54" x 1.02" (23 x 39 x 26mm)	1
CT-100SB	100A	0.63" (16mm)	1.26" x 2.20" x 1.22" (32 x 56 x 31mm)	1
CT-200SB	200A	0.94" (24mm)	2.01" x 2.64" x 1.34" (51 x 67 x 34mm)	1

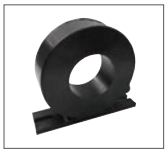
[2] Use with regular 5A output CT, depends on the CT ratio of regular 5A output CT

Solid-Core CT

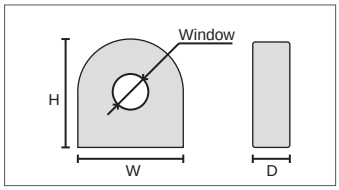
CT-5D3

CT-50D3

CT-100D3
CT-200D3



CT-400D6
CT-600D9



Model #	Amp	Window (Ø)	Dimensions (W x H x D)	CT Ratio
CT-5D3	5A	0.28" (7mm)	0.91" x 0.98" x 0.49" (23 x 25 x 12.5mm)	Depends[3]
CT-50D3	50A	0.49" (12.5mm)	1.46" x 1.50" x 0.51" (37 x 38 x 13mm)	1
CT-100D3	100A	1.02" (26mm)	2.13" x 2.13" x 0.71" (54 x 54 x 18mm)	1
CT-200D3	200A	1.02" (26mm)	2.13" x 2.13" x 0.71" (54 x 54 x 18mm)	1
CT-400D6	400A	1.38" (35mm)	2.83" x 2.87" x 0.87" (72 x 73 x 22mm)	2
CT-600D9	600A	1.38" (35mm)	2.83" x 2.87" x 0.87" (72 x 73 x 22mm)	3

[3] Use with regular 5A output CT, depends on the CT ratio of regular 5A output CT

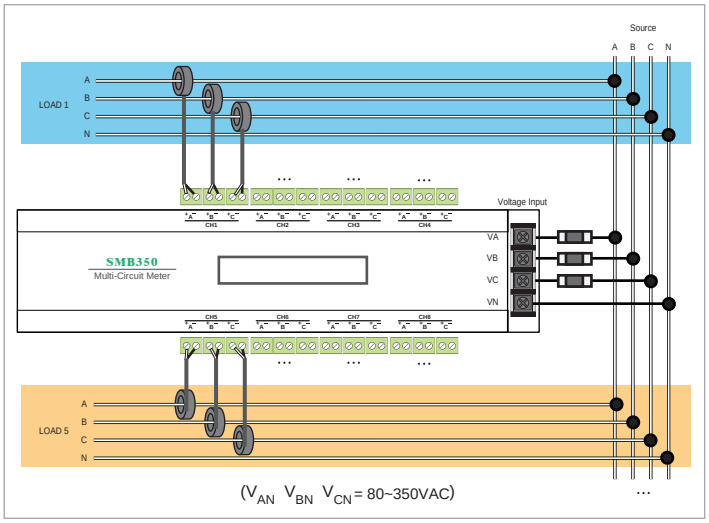
Dedicated CT requirement

Configuration	CTs required per circuit
1 phase, 2 wire	1 CT
3 phase, 3 wire	3 CTs
3 phase, 4 wire	3 CTs

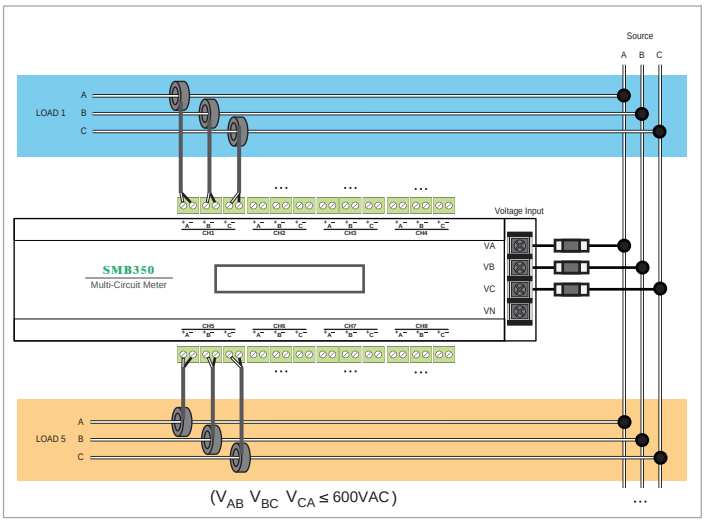
Wiring Diagram

Note1: All circuits measured by SMB350 must be from the same power source.
Note2:The number of CTs that can be used is not limited to what is shown in these diagrams

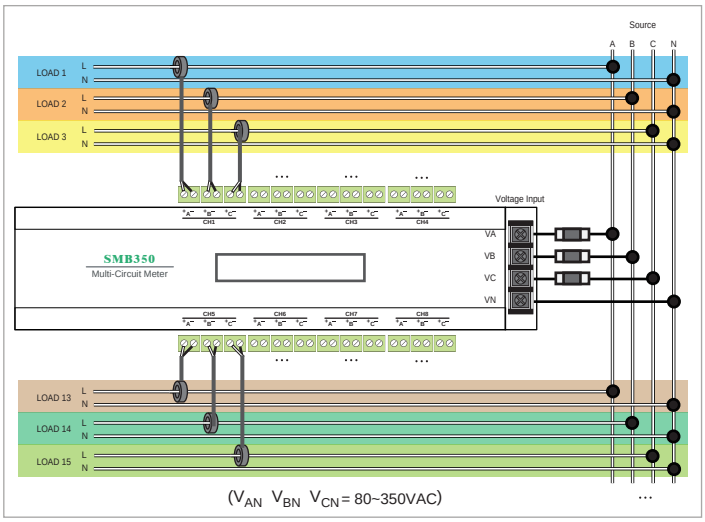
3p4w



3p3w

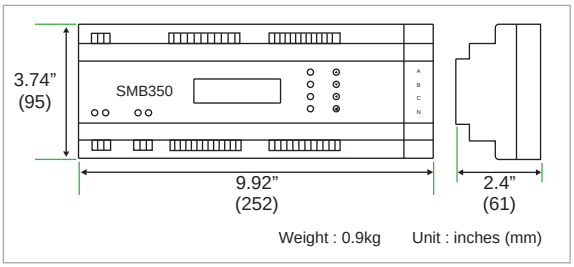


1p2w

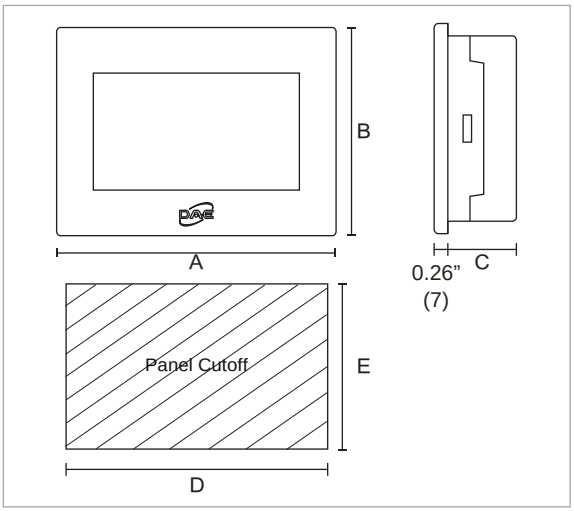


Dimensions

SMB350



ACS35



Display	A	B	C	D	E
4.3”	5.39” (137)	4.06” (103)	1.21” (30.7)	4.68” (118.8)	3.65” (92.8)
7”	8.46” (215)	6.34” (161)	2.02” (51.2)	7.75” (196.9)	5.63” (142.9)

Unit：inches (mm)

Ordering Code

SMB350 with 8 three-phase circuits

Ordering Code	Description
SMB350-UL-8-A	Compatible with 5A CT
SMB350-UL-8-B	Compatible with 50,100,200,400,600A CT
SMB350-UL-8-S	Ch-1 compatible with 5A CT Ch-2~8 compatible with 50,100,200,400,600A CT

Note : Dedicated CT is a required option

SMB350 with 4 three-phase circuits

Ordering Code	Description
SMB350-UL-4-A	Compatible with 5A CT
SMB350-UL-4-B	Compatible with 50,100,200,400,600A CT

Note : Dedicated CT is a required option

ACS35

Ordering Code	Description
ACS35-4(H)	4.3” Meter reading touch panel
ACS35-4E(H)	4.3” Meter reading touch panel with Ethernet[4]
ACS35-7E(H)	7” Meter reading touch panel with Ethernet[4]

[4] Support PC/mobile/Pad remote monitoring